

BALLUFF

PRODUCTS FOR EFFICIENT AUTOMATION

Products and
Services

B *innovating automation*

RFID, Machine Vision and Optical Identification,
Human Machine Interfaces, Systems

3
I/O
Light



Innovative solutions

TO MEET YOUR AUTOMATION NEEDS

Steel and
Metallurgical
Industry

Life Science

Semiconductor
Industry

Metal Working



Plastics, Rubber
and Tires

Mobility

Packaging,
Foods and Beverages

Energy Generation



INNOVATIVE SOLUTIONS FOR ANY REQUIREMENT

To give you an overview of our range of offerings we have condensed our product portfolio into five volumes. This overview provides a list of topics contained in each volume.

1

2



Sensors 1

- Inductive Sensors
- Capacitive Sensors
- Photoelectric Sensors
- Magnetic Sensors
- Mechanical Cam Switches



Sensors 2

- Ultrasonic Sensors
- Magnetically Coded Sensors
- Magnetostrictive Sensors
- Inclination Sensors
- Pressure Sensors
- Temperature Sensors
- Microwave Sensors
- Flow Sensors

3

4

5



- RFID
- Machine Vision and Optical Identification
- Human Machine Interfaces
- Systems

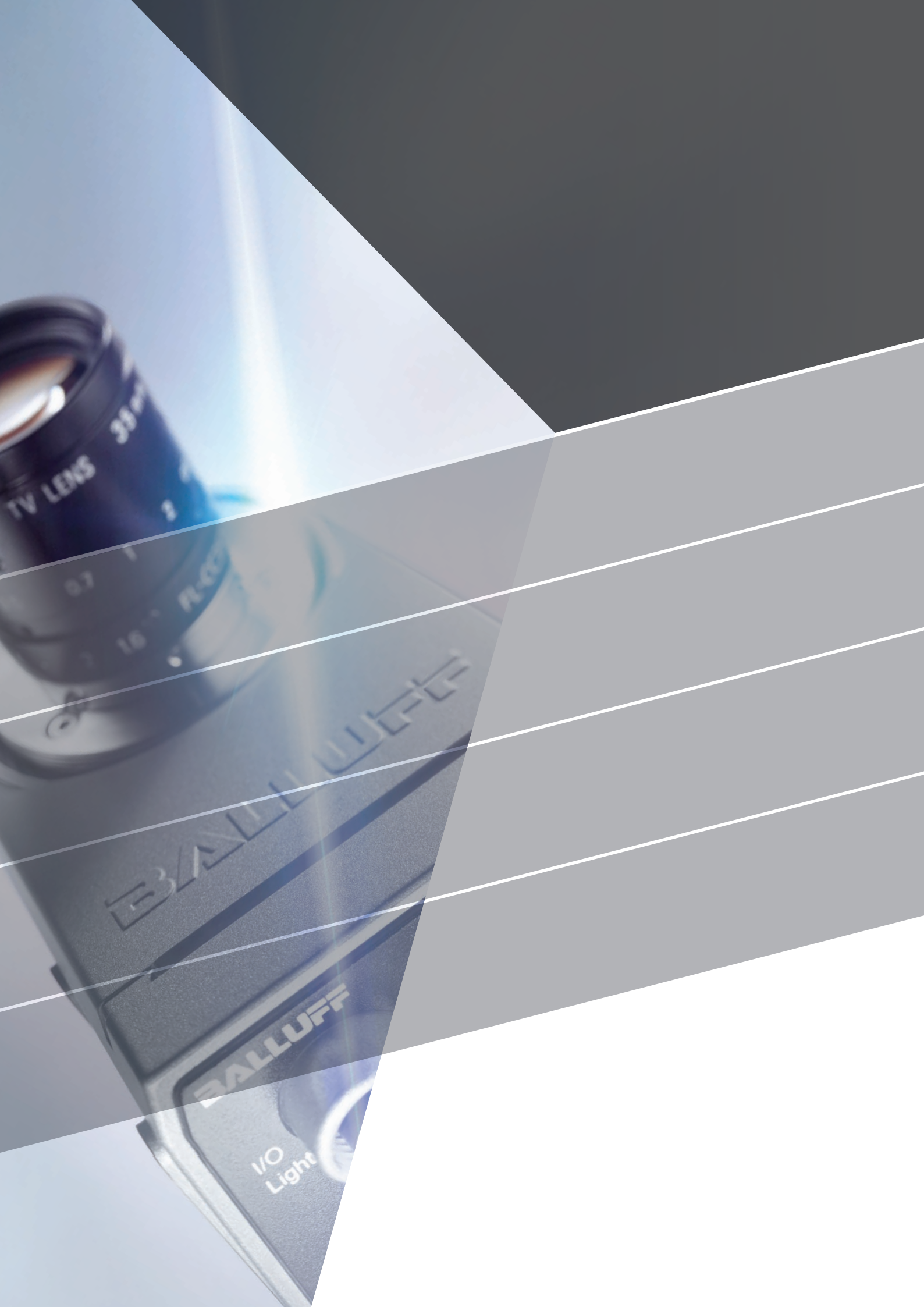


- Safety
- Industrial Networking
- Power Supplies



- Connectivity
- Accessories

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



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RFID



- 12 RFID System UHF (860/960 MHz) BIS U
- 76 RFID System HF (13.56 MHz) BIS M
- 332 RFID System LF (70/455 kHz) BIS C
- 436 RFID System LF (125 kHz) BIS L

548

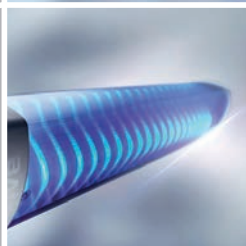
**MACHINE VISION AND
OPTICAL IDENTIFICATION**



- 552 Machine Vision
- 580 Optical Identification

600

HUMAN MACHINE INTERFACES



- 604 SmartLight – LED stack lights
- 612 Displays
- 618 Industrial Controller

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SYSTEMS



- 624 Mold ID
- 626 Easy Tool ID

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Automatic identification and tracking in production

RFID – RADIO FREQUENCY IDENTIFICATION



innovating automation



Our BIS industrial RFID systems provide an overview in a modern production facility. Objects can be automatically identified and traced using RFID. To do this, a data carrier that functions as a memory is attached to the object to be identified. The data is transferred between data carrier and read/write head and via the processor unit to the controller.

Balluff offers a broad selection of innovative products for the low frequency (LF), high frequency (HF) and ultra-high frequency (UHF) range. With the BIS V frequency-independent processor unit, all systems can be flexibly combined with each other.

Your Balluff solutions

- RFID system HF (13.56 MHz) BIS M
- RFID system LF (70/455 kHz) BIS C
- RFID system LF (125 kHz) BIS L
- RFID system UHF (860/960 MHz) BIS U

RFID



12 RFID SYSTEM UHF (860/960 MHz) BIS U

- 14 UHF data carriers (860/960 MHz)
- 32 UHF read/write heads and antennas (860/960 MHz)
- 38 UHF processor units (860/960 MHz)
- 72 Portable UHF read/write units (860/960 MHz)



76 RFID-SYSTEM HF (13.56 MHz) BIS M

- 78 HF data carriers (13.56 MHz)
- 124 HF read/write heads and antennas (13.56 MHz)
- 208 HF processor units (13.56 MHz)
- 240 HF read/write heads (13.56 MHz)
with integrated processor unit
- 318 HF communication modules (13.56 MHz)
- 322 Portable HF read/write units (13.56 MHz)



332

**RFID-SYSTEM LF
(70/455 KHZ) BIS C**

- 334 LF data carriers (70/455 kHz)
- 356 LF read/write heads and antennas (70/455 kHz)
- 388 LF data couplers (70/455 kHz)
- 396 LF processor units (70/455 kHz)
- 422 LF read/write heads (70/455 kHz)
with integrated processor unit
- 428 Portable LF read/write units (70/455kHz)



436

**RFID-SYSTEM LF
(125 KHZ) BIS L**

- 438 LF data carriers (125 kHz)
- 448 LF read/write heads and antennas (125 kHz)
- 462 LF processor units (125 kHz)
- 478 LF read/write heads (125 kHz)
with integrated processor unit
- 524 Portable LF read/write units (125 kHz)



528

**BASICS AND
GLOSSARY**



Continuous transmission security
and data transparency

RFID SYSTEM UHF (860/960 MHz) BIS U



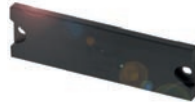
The BIS U UHF systems from Balluff ensure data transparency and traceability of your automation processes. UHF is a standard technology for identification solutions covering all processes. They help to achieve fast detection of tag information and continuous transmission security. By querying decentrally stored product- and process-data, UHF is a central component of traceability applications. Our UHF BIS U systems provide permanent data transparency in your entire delivery chain.

Features

- Problem-free integration in applications via globally used standard interfaces
- Corresponds to the global standard ISO 18000-6C and EPC Gen2 Class1
- Flexible use due to a wide range of different combinations of data carriers and antennas
- Ranges up to 6 m and more
- Bulk capture for simultaneous scanning of many data carriers (tags)
- Suitable for attachment to traditional control systems via bus interfaces and higher level IT systems
- Complete tailored system solutions realizable
- Many accessories for integration into a variety of applications



Europe: 865-868 MHz		BIS013P BIS U-142-06/CA-M8-GY	
America/Asia: 902-928 MHz	BIS0178 BIS U-142-A0/C1M-GY		
worldwide: 860-960 MHz			
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	902...928 MHz	865...868 MHz	
Dimension	Ø 17.2 x 14 mm	Ø 22 x 26 mm	
Memory type	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	
EPC memory, read/write	96 Bit	96 Bit	
TID memory, read-only	64 Bit	64 Bit	
Antenna type	Dipol	Dipol	
Installation	on metal	on metal	
Storage temperature	-25...95 °C	-25...95 °C	
Storage temperature temporary	—	—	
Ambient temperature	-25...85 °C	-25...85 °C	
Housing material	PA 12, GF30	Steel, data carrier: PA 12-GF30 gray	
Protection degree	IP68	IP68	
Approval/Conformity	CE	CE	
Productview	Page 28	Page 28	



	BIS013R BIS U-142-07/CA-M8-GY	BIS00NL BIS U-100-01/CA	BIS00RC BIS U-100-02/CA	BIS00WH BIS U-101-04/CA
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	902...928 MHz	840...960 MHz	840...960 MHz	860...960 MHz
	Ø 22 x 26 mm	37.2 x 7 x 127 mm	37.2 x 7 x 127 mm	51.5 x 6.4 x 51.5 mm
	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	512 Bit	512 Bit	512 Bit
	96 Bit	96 Bit	96 Bit	240 Bit
	64 Bit	64 Bit	64 Bit	64 Bit
	Dipol	Dipol	Dipol	Dipol
	on metal	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	-25...95 °C	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—	—
	-25...85 °C	-40...85 °C	-40...85 °C	-20...85 °C
	Steel, data carrier: PA 12-GF30 gray	PA 12, GF30	PA 12, GF30	ABS
	IP68	IP67	IP67	IP68
	CE	CE	CE	CE
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Europe: 865-868 MHz		BIS016N BIS U-104-A0/COM	
America/Asia: 902-928 MHz			
worldwide: 860-960 MHz	BIS00WE BIS U-102-05/CA		
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	860...960 MHz	866...868 MHz	
Dimension	52 x 11.5 x 128 mm	6.1 x 2.6 x 8.6 mm	
Memory type	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	
EPC memory, read/write	240 Bit	96 Bit	
TID memory, read-only	64 Bit	64 Bit	
Antenna type	Dipol	Dipol	
Installation	metal-free (clear zone)	on metal	
Storage temperature	-40...85 °C	-20...85 °C	
Storage temperature temporary	—	—	
Ambient temperature	-20...85 °C	-20...85 °C	
Housing material	ABS	Oxide ceramics	
Protection degree	IP68	IP68	
Approval/Conformity	CE	CE, RoHS	
Productview	Page 28	Page 28	



	BIS016P BIS U-104-A0/C1M	BIS016R BIS U-105-A0/COM	BIS016T BIS U-105-A0/C1M	
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	
	902...928 MHz	866...868 MHz	902...928 MHz	
	6.1 x 2.6 x 8.6 mm	7.1 x 3.1 x 13.1 mm	7.1 x 3.1 x 13.1 mm	
	EEPROM	EEPROM	EEPROM	
	512 Bit	512 Bit	512 Bit	
	96 Bit	96 Bit	96 Bit	
	64 Bit	64 Bit	64 Bit	
	Dipol	Dipol	Dipol	
	on metal	on metal	on metal	
	-20...85 °C	-20...85 °C	-20...85 °C	
	—	—	—	
	-20...85 °C	-20...85 °C	-20...85 °C	
	Oxide ceramics	Oxide ceramics	Oxide ceramics	
	IP68	IP68	IP68	
	CE, RoHS	CE, RoHS	CE, RoHS	
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Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Systems

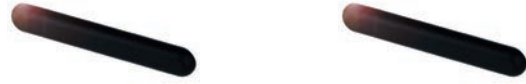
Safety

Industrial Networking

Power Supplies

Connectivity

Accessories



Europe: 865-868 MHz	BIS016Y BIS U-106-A0/COM		
America/Asia: 902-928 MHz		BIS016Z BIS U-106-A0/C1M	
worldwide: 860-960 MHz			
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	866...868 MHz	902...928 MHz	
Dimension	9.75 x 3.6 x 63 mm	9.75 x 3.6 x 63 mm	
Memory type	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	
EPC memory, read/write	96 Bit	96 Bit	
TID memory, read-only	64 Bit	64 Bit	
Antenna type	Dipol	Dipol	
Installation	on metal	on metal	
Storage temperature	-40...105 °C	-40...105 °C	
Storage temperature temporary	—	—	
Ambient temperature	-40...85 °C	-40...85 °C	
Housing material	Thermoplast Plastic	Thermoplast Plastic	
Protection degree	IP68	IP68	
Approval/Conformity	CE, RoHS	CE, RoHS	
Productview	Page 28	Page 28	



	BIS0170 BIS U-107-A0/COM			
		BIS0171 BIS U-107-A0/C1M		
			BIS0174 BIS U-103-M2/CAM	BIS0172 BIS U-108-M2/CAM
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	865...868 MHz	902...928 MHz	860...940 MHz	860...940 MHz
	38 x 9.5 x 48.5 mm	38 x 9.5 x 48.5 mm	25 x 12.85 x 110 mm	15 x 12.5 x 80 mm
	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	512 Bit	512 Bit	512 Bit
	96 Bit	96 Bit	128 Bit	128 Bit
	64 Bit	64 Bit	96 Bit	96 Bit
	Dipol	Dipol	Dipol	Dipol
	on metal	on metal	on metal	on metal
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—	—
	-40...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	Thermoplast Plastic	Thermoplast Plastic	ABS	ABS
	IP68	IP68	IP68	IP68
	CE, RoHS	CE, RoHS	CE, RoHS	CE, RoHS
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Europe: 865-868 MHz			
America/Asia: 902-928 MHz			
worldwide: 860-960 MHz	BISO173 BIS U-109-M2/CAM	BISO18F BIS U-112-M4/CAA	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	860...930 MHz	860...960 MHz	
Dimension	48 x 12.6 x 51 mm	29.3 x 19.2 x 66.2 mm	
Memory type	EEPROM	EEPROM	
User data, read/write	512 Bit	0 Bit	
EPC memory, read/write	128 Bit	96 Bit	
TID memory, read-only	96 Bit	48 Bit	
Antenna type	Dipol	Dipol	
Installation	on metal	metal-free (clear zone)	
Storage temperature	-40...85 °C	-40...85 °C	
Storage temperature temporary	—	—	
Ambient temperature	-40...85 °C	-40...85 °C	
Housing material	ABS	PVDF, PA 12, GF30	
Protection degree	IP68	IP67	
Approval/Conformity	CE, RoHS	CE	
Productview	Page 29	Page 29	



			BIS016K BIS U-110-A0/C0A	
				BIS016L BIS U-110-A0/C1A
	BIS018H BIS U-113-M4/CAA	BIS00U4 BIS U-100-01/CA-SA1		
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	860...960 MHz	840...960 MHz	865...868 MHz	902...928 MHz
	38.1 x 19 x 51.3 mm	37.4 x 24.8 x 130.2 mm	12 x 1.6 x 60 mm	12 x 1.6 x 60 mm
	EEPROM	EEPROM	EEPROM	EEPROM
	0 Bit	512 Bit	512 Bit	512 Bit
	96 Bit	96 Bit	96 Bit	96 Bit
	48 Bit	64 Bit	64 Bit	64 Bit
	Dipol	Dipol	Dipol	Dipol
	metal-free (clear zone)	on metal	metal-free (clear zone)	metal-free (clear zone)
	-40...85 °C	-40...85 °C	-40...55 °C	-40...55 °C
	—	—	—	—
	-40...85 °C	-40...85 °C	-20...55 °C	-20...55 °C
	PVDF, PA 12, GF30	PA 12, GF30	Silicone	Silicone
	IP67	IP67	IP68	IP68
	CE	CE	CE	CE
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Europe: 865-868 MHz	BISO16U BIS U-180-A0/COM		
America/Asia: 902-928 MHz		BISO16W BIS U-180-A0/C1M	
worldwide: 860-960 MHz			
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	866...868 MHz	902...928 MHz	
Dimension	5.95 x 1.3 x 57.1 mm	5.95 x 1.3 x 57.1 mm	
Memory type	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	
EPC memory, read/write	96 Bit	96 Bit	
TID memory, read-only	64 Bit	64 Bit	
Antenna type	Dipol	Dipol	
Installation	on metal	on metal	
Storage temperature	-40...120 °C	-40...120 °C	
Storage temperature temporary	—	—	
Ambient temperature	-40...85 °C	-40...85 °C	
Housing material	Epoxy resin-glass fiber, flame-retardant	Epoxy resin-glass fiber, flame-retardant	
Protection degree	IP68	IP68	
Approval/Conformity	CE, RoHS	CE, RoHS	
Productview	Page 30	Page 30	



	BIS016M BIS U-111-M2/CAA	BIS00WF BIS U-101-04/CA-HT	BIS00WC BIS U-102-05/CA-HT	BIS0163 BIS U-150-N4/CAA
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	860...960 MHz	860...960 MHz	860...960 MHz	860...960 MHz
	54 x 0.84 x 85.7 mm	51.5 x 6.4 x 51.5 mm	52 x 11.5 x 128 mm	20 x 44.45 mm
	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	512 Bit	512 Bit	0 Bit
	128 Bit	240 Bit	240 Bit	128 Bit
	96 Bit	64 Bit	64 Bit	64 Bit
	Dipol	Dipol	Dipol	Dipol
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	-25...50 °C	-40...85 °C	-40...85 °C	-20...80 °C
	—	220 °C 1 x 1000 h, 1500 x 30 min	220 °C 1 x 1000 h, 1500 x 30 min	—
	-25...50 °C	-40...85 °C	-40...85 °C	-20...80 °C
	PVC	PPS	PPS	Paper
	IP68	IP68	IP68	—
	CE	CE	CE	CE
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Europe: 865-868 MHz			
America/Asia: 902-928 MHz			
worldwide: 860-960 MHz	BISO165 BIS U-152-M3/CAA	BISO166 BIS U-153-M0/CAA	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	860...960 MHz	860...960 MHz	
Dimension	17 × 73 mm	9 × 113 mm	
Memory type	EEPROM	EEPROM	
User data, read/write	32 Bit	32 Bit	
EPC memory, read/write	128 Bit	128 Bit	
TID memory, read-only	96 Bit	96 Bit	
Antenna type	Dipol	Dipol	
Installation	metal-free (clear zone)	metal-free (clear zone)	
Storage temperature	-20...80 °C	-20...80 °C	
Storage temperature temporary	—	—	
Ambient temperature	-20...80 °C	-20...80 °C	
Housing material	Paper	Paper	
Protection degree	—	—	
Approval/Conformity	CE	CE	
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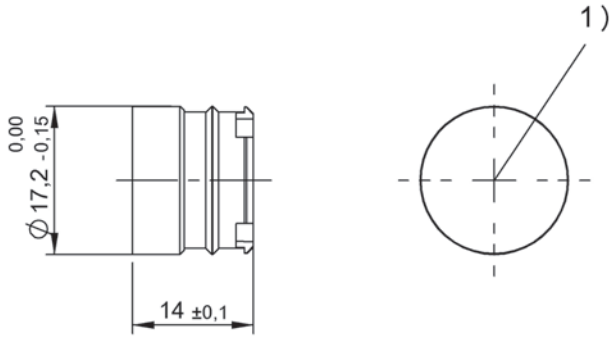
			BIS016A BIS U-157-A0/C0M	
				BIS016C BIS U-157-A0/C1M
	BIS0167 BIS U-154-M0/CAA	BIS0169 BIS U-156-M0/CAA		
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	860...960 MHz	860...960 MHz	865...868 MHz	902...928 MHz
	15 × 97 mm	53 × 53 mm	22.5 × 1.65 × 50 mm	22.5 × 1.65 × 50 mm
	EEPROM	EEPROM	EEPROM	EEPROM
	32 Bit	32 Bit	512 Bit	512 Bit
	128 Bit	128 Bit	96 Bit	96 Bit
	96 Bit	96 Bit	64 Bit	64 Bit
	Dipol	Dipol	Dipol	Dipol
	metal-free (clear zone)	metal-free (clear zone)	on metal	on metal
	-40...85 °C	-40...85 °C	-25...95 °C	-25...95 °C
	—	—	—	—
	-40...85 °C	-40...85 °C	-20...85 °C	-20...85 °C
	Paper	Paper	PET	PET
	—	—	IP67	IP67
	CE	CE	CE, REACH regulation (EU), RoHS	CE, REACH regulation (EU), RoHS
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Europe: 865-868 MHz	BIS016E BIS U-158-A0/COM-HT		
America/Asia: 902-928 MHz		BIS016F BIS U-158-A0/C1M-HT	
worldwide: 860-960 MHz			
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	865...868 MHz	902...928 MHz	
Dimension	25 x 1.65 x 88 mm	25 x 1.65 x 88 mm	
Memory type	EEPROM	EEPROM	
User data, read/write	512 Bit	512 Bit	
EPC memory, read/write	96 Bit	96 Bit	
TID memory, read-only	64 Bit	64 Bit	
Antenna type	Dipol	Dipol	
Installation	on metal	on metal	
Storage temperature	-25...95 °C	-25...95 °C	
Storage temperature temporary	160 °C 3 x 30 min	160 °C 3 x 30 min	
Ambient temperature	-30...70 °C	-30...70 °C	
Housing material	PEN	PEN	
Protection degree	IP67	IP67	
Approval/Conformity	CE, REACH regulation (EU), RoHS	CE, REACH regulation (EU), RoHS	
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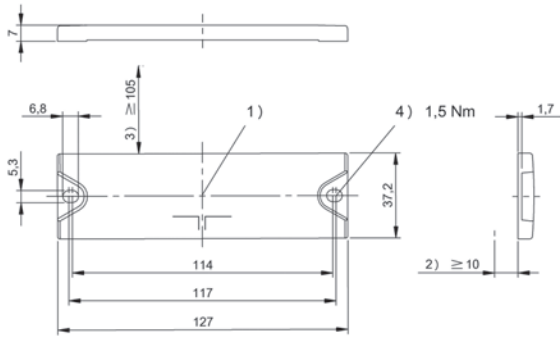


	BIS016J BIS U-160-A0/CAG	BIS0164 BIS U-151-M2/CAA	BIS0168 BIS U-155-M2/CAA	BIS016H BIS U-159-M2/CAA
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	860...960 MHz	860...960 MHz	860...960 MHz	850...960 MHz
	25.4 x 0.18 x 80 mm	54 x 34 mm	27 x 97 mm	23 x 1 x 100 mm
	EEPROM	EEPROM	EEPROM	EEPROM
	512 Bit	512 Bit	512 Bit	512 Bit
	96 Bit	128 Bit	128 Bit	128 Bit
	64 Bit	96 Bit	96 Bit	96 Bit
	Dipol	Dipol	Dipol	Dipol
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	-50...85 °C	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—	—
	-50...85 °C	-40...85 °C	-40...85 °C	-25...70 °C
	PET	Paper	Paper	PET
	IP67	—	—	IP68
	CE, REACH regulation (EU), RoHS	CE	CE	CE, REACH regulation (EU), RoHS
	Page 31	Page 31	Page 31	Page 31



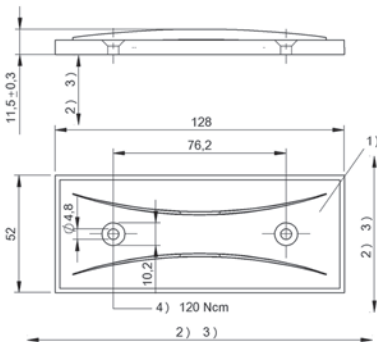
1) Sensing surface

BIS0178



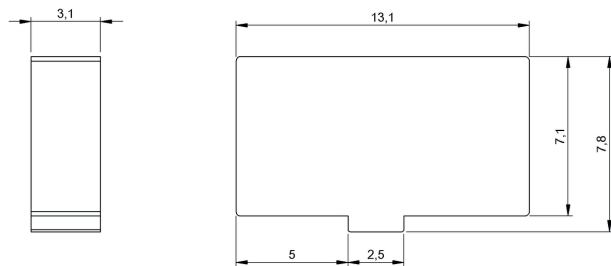
1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding, 4) Tightening torque

BIS00NL, BIS00RC



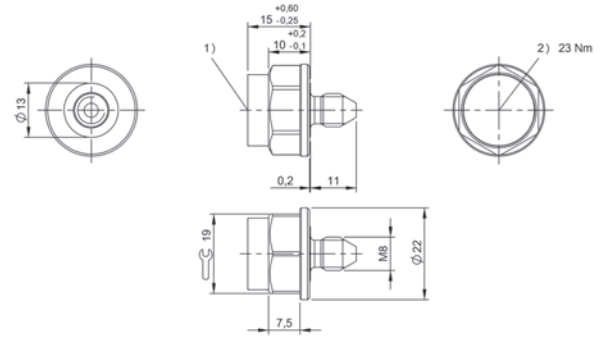
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BIS00WE, BIS00WC



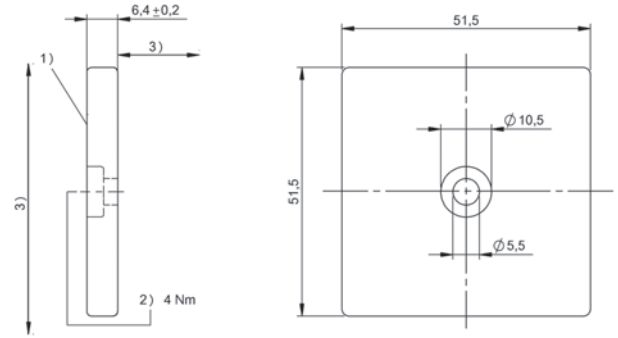
1) Sensing surface

BIS016R, BIS016T



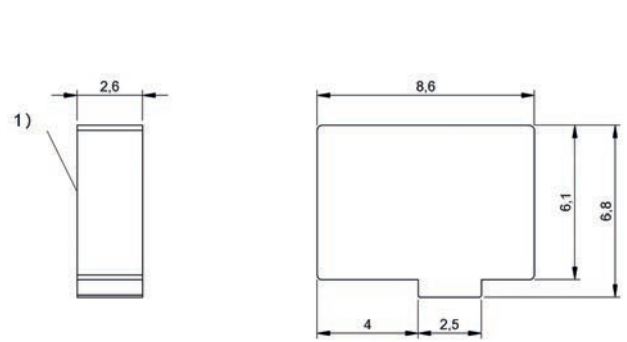
1) Sensing surface, 2) Tightening torque

BIS013P, BIS013R



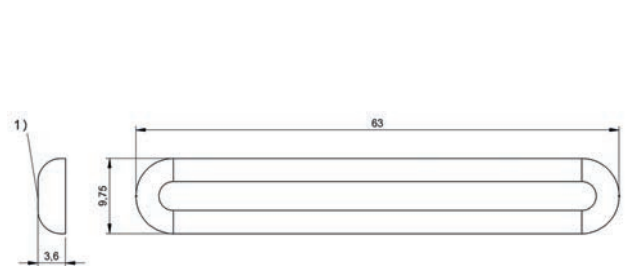
1) Sensing surface, 2) Tightening torque, 3) see R/W head table

BIS00WH, BIS00WF



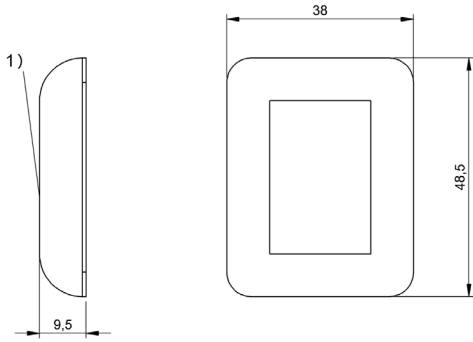
1) Sensing surface

BIS016N, BIS016P



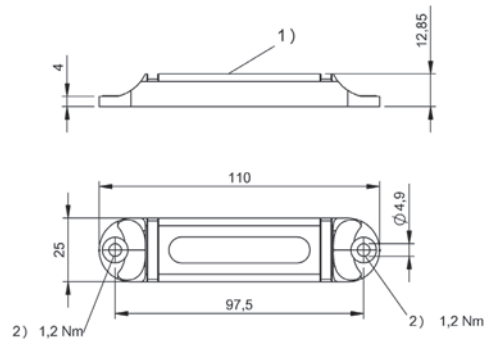
1) Sensing surface

BIS016Y, BIS016Z



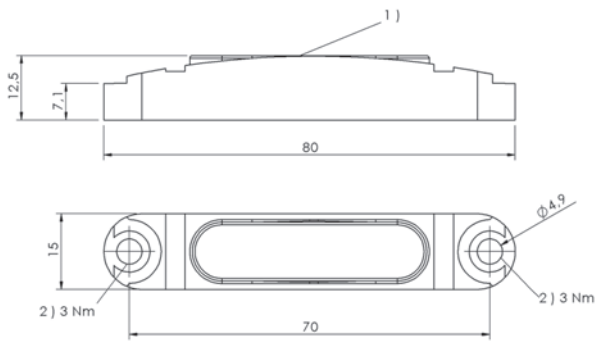
1) Sensing surface

BISO170, BISO171



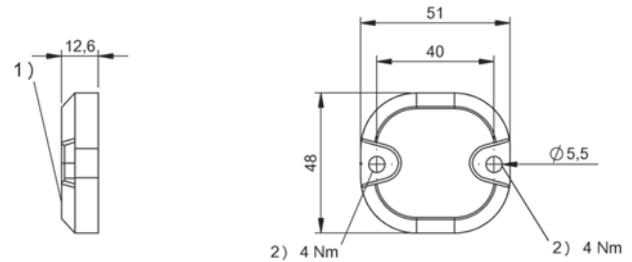
1) Sensing surface, 2) Tightening torque

BISO174



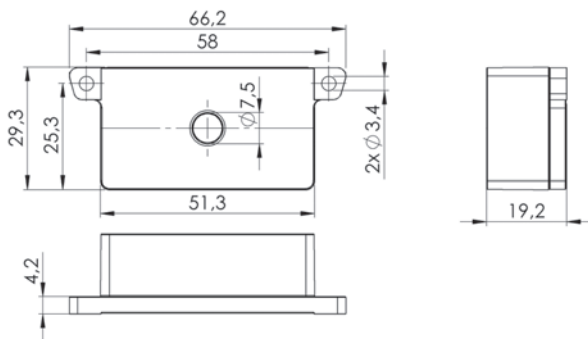
1) Sensing surface, 2) Tightening torque

BISO172

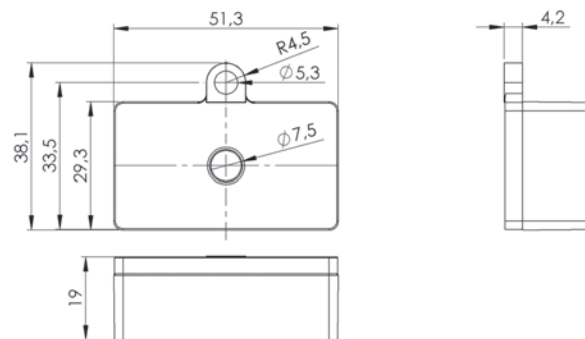


1) Sensing surface, 2) Tightening torque

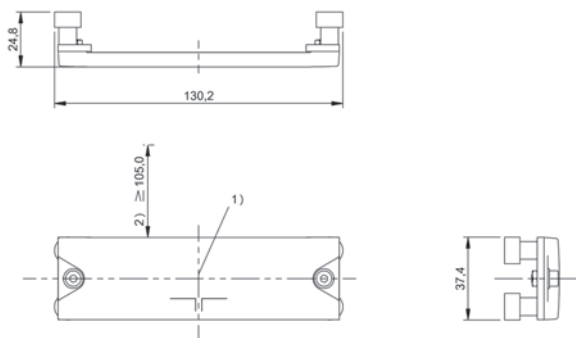
BISO173



BISO18F

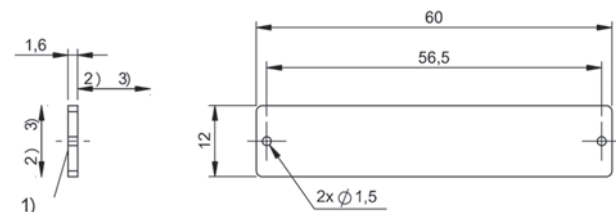


BISO18H



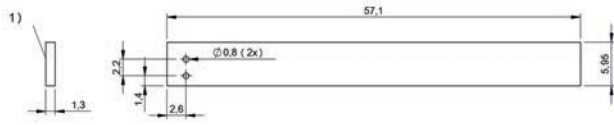
1) Sensing surface, 2) Clear zone surrounding

BISO0U4



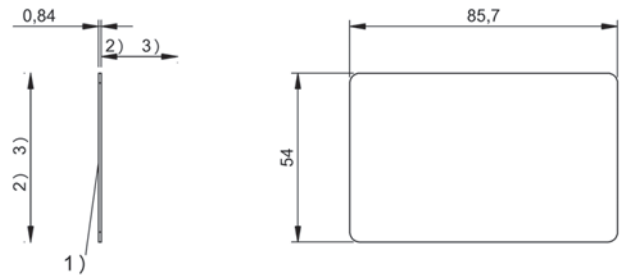
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO16K, BISO16L



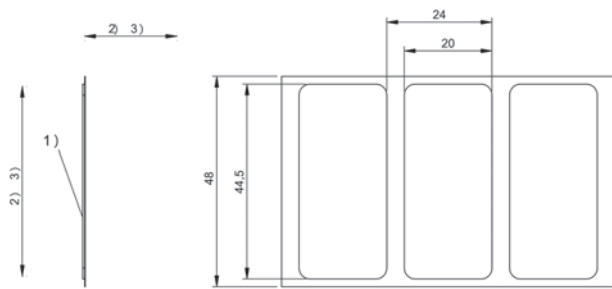
1) Sensing surface

BISO16U, BISO16W



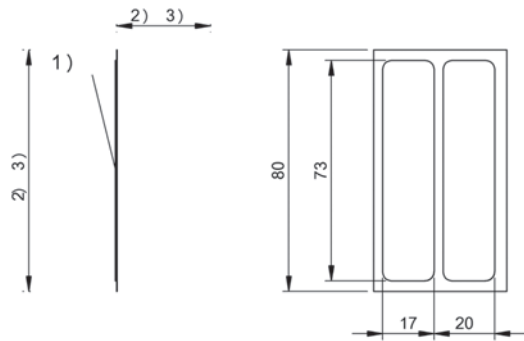
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO16M



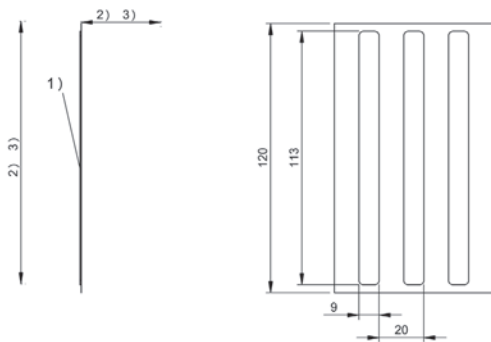
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO163



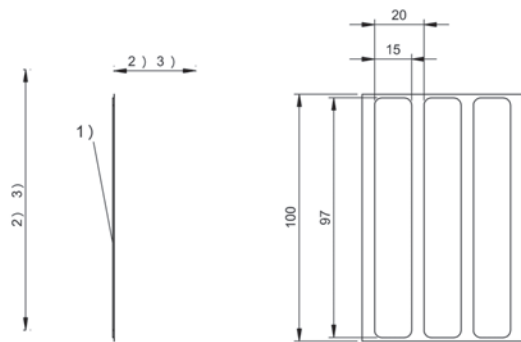
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO165



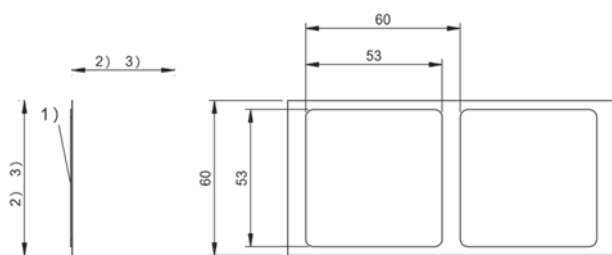
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO166



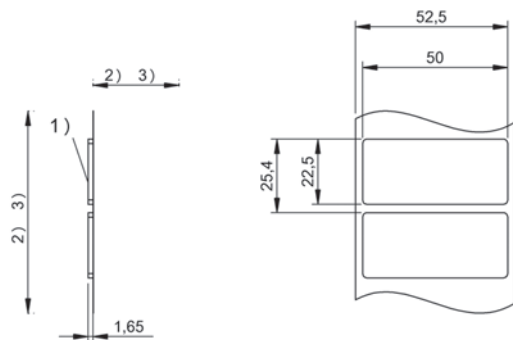
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO167



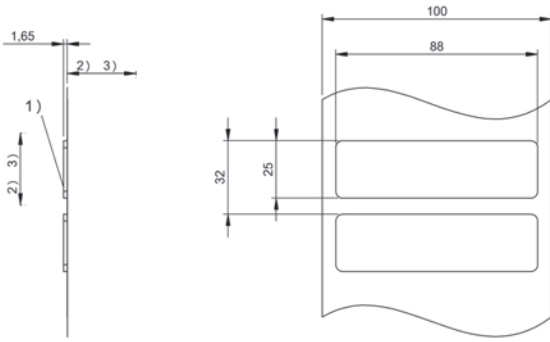
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO169



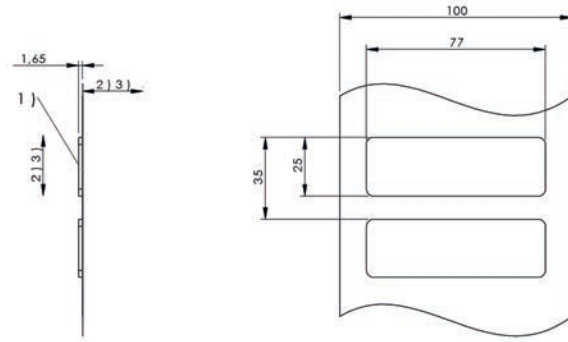
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO16A, BISO16C



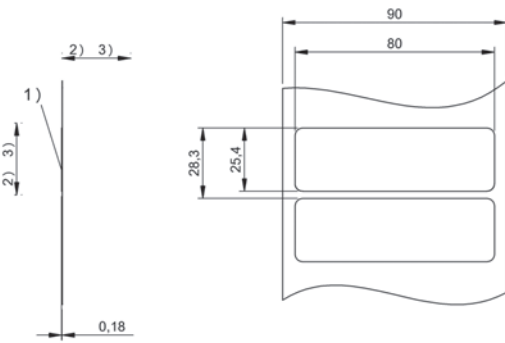
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS016E



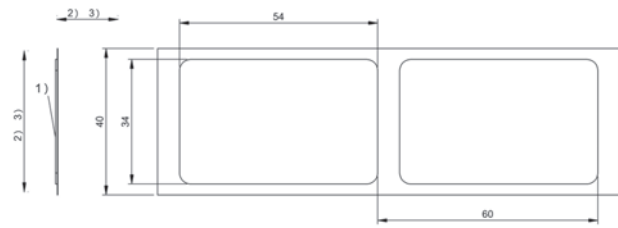
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS016F



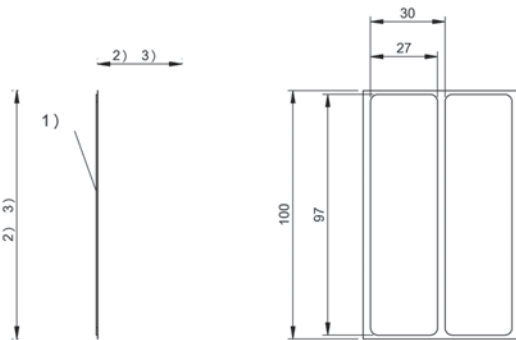
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS016J



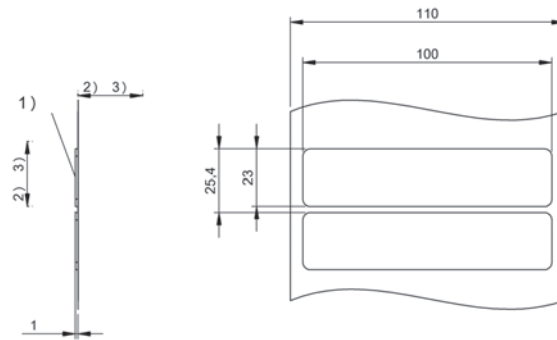
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0164



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS0168



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BIS016H



Europe: 865...868 MHz	BIS015Z BIS VU-320-C0-S4		
USA/Canada/Mexico: 902...928 MHz		BIS015Y BIS VU-320-C1-S4	
China: 920.5...924.5 MHz			
South Korea: 917...921 MHz			
Japan: 916.8...92.4 MHz			
Australia: 920.25...925.75 MHz			
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Radio license	Europe	USA, Canada, Mexico	
Dimension	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	
Antenna type	Patch	Patch	
Polarization	circular	circular	
Output power adjustable	5 dBm...24 dBm (3.2 mW...250 mW)	7 dBm...26 dBm (5 mW...400 mW)	
Connection	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	
Housing material	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	
Interface	RS485	RS485	
Operating voltage Ub	24 V DC LPS Class 2	24 V DC LPS Class 2	
Ambient temperature	-20...55 °C	-20...55 °C	
Protection degree	IP67	IP67	
Approval/Conformity	CE, ETSI EN 302 208, UL Listed	FCC Part 15, IC RSS-210, UL Listed	
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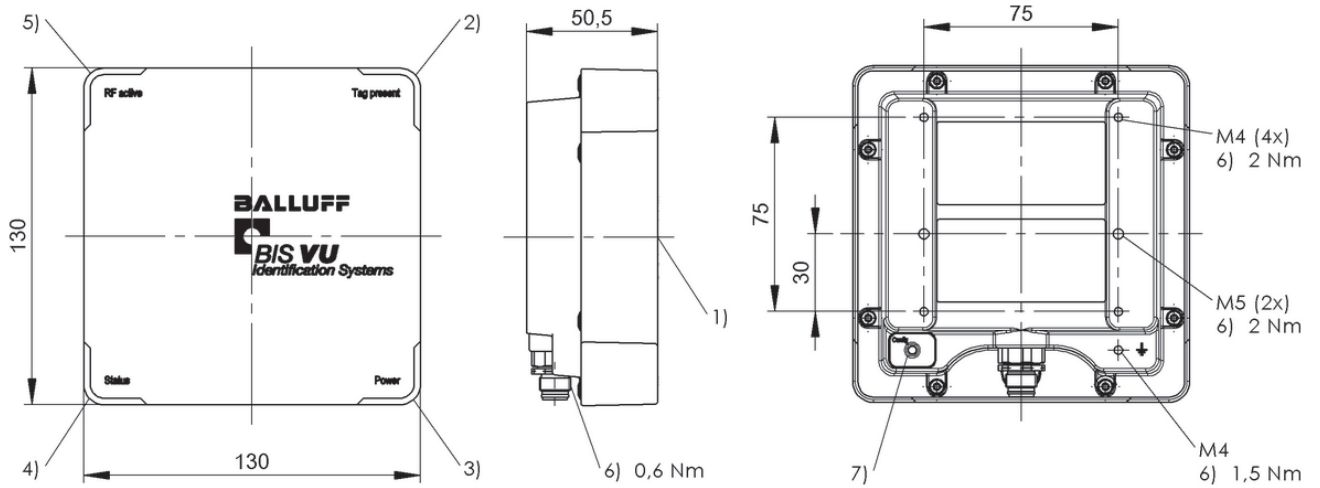
	BIS018Z BIS VU-320-C2-S4			
		BIS0190 BIS VU-320-C4-S4		
			BIS0191 BIS VU-320-C5-S4	
				BIS0192 BIS VU-320-C7-S4
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	China	South Korea	Japan	Australia
	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm	130 x 50.5 x 130 mm
	Patch	Patch	Patch	Patch
	circular	circular	circular	circular
	5 dBm...24 dBm (3.2 mW...250 mW)	7 dBm...26 dBm (5 mW...400 mW)	7 dBm...25 dBm (5 mW...320 mW)	7 dBm...26 dBm (5 mW...400 mW)
	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded	M12x1-Male, 4-pole, A-coded
	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)	PC ABS, zinc, die-cast, (connector)
	RS485	RS485	RS485	RS485
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	-20...55 °C	-20...55 °C	-20...55 °C	-20...55 °C
	IP67	IP67	IP67	IP67
	CMIIT-Radio Transmiss. Equipm., UL Listed	KC, UL Listed	ARIB T106, MIC Specified Radio Equipment, UL Listed	AS/NZS 4268, UL Listed
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Europe: 865...868 MHz	BIS00P0 BIS U-301-C0-TNCB		
America/Asia: 902...928 MHz		BIS00TY BIS U-301-C1-TNCB	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Working frequency	865...868 MHz	902...928 MHz	
Radio license	—	—	
Dimension	133 x 18.4 x 133 mm	133 x 18.4 x 133 mm	
Antenna type	Patch	Patch	
Polarization	circular	circular	
Output power adjustable	—	—	
Connection	—	—	
Housing material	PC	PC	
Interface	—	—	
Operating voltage U_b	—	—	
Ambient temperature	-30...70 °C	-30...70 °C	
Protection degree	IP67	IP67	
Approval/Conformity	—	—	
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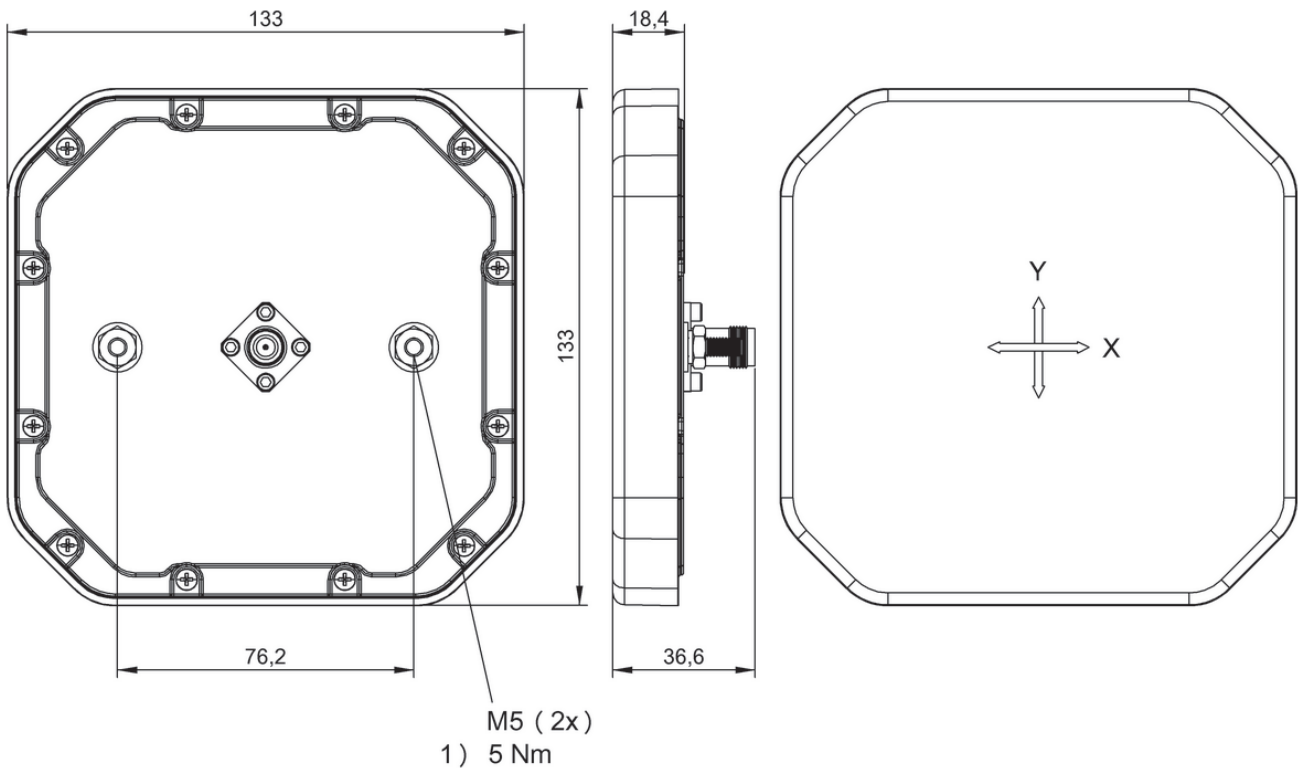


BIS00TZ BIS U-302-C0-TNCB			
	BIS00UO BIS U-302-C1-TNCB		
UHF (860...960 MHz)	UHF (860...960 MHz)		
865...868 MHz	902...928 MHz		
—	—		
271 x 42.5 x 271 mm	271 x 42.5 x 271 mm		
Patch	Patch		
circular	circular		
—	—		
—	—		
Aluminum, antenna hood: polymer blend	Aluminum, antenna hood: polymer blend		
—	—		
—	—		
-20...55 °C	-20...55 °C		
IP65	IP65		
—	—		
Page 37	Page 37		



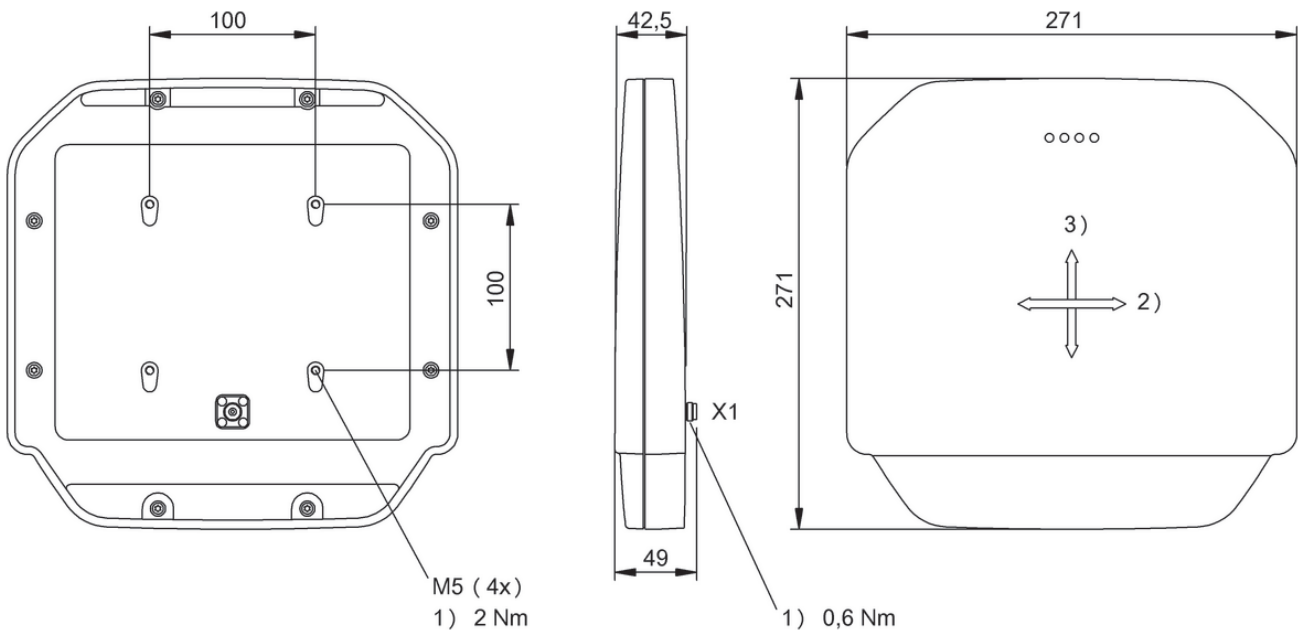
1) Sensing surface, 2) LED (Tag present), 3) LED (Power), 4) LED (Status), 5) LED (RF active), 6) Tightening torque, 7) Button (Config)

BIS015Z, BIS015Y, BIS018Z, BIS0190, BIS0191, BIS0192



1) Tightening torque

BIS00P0, BIS00TY



1) Tightening torque, 2) horizontal, 3) vertical

BIS00TZ, BIS00UO



Profibus DP Slave, galvanically isolated	BIS00T3 BIS V-6102-019-C001	
Ethernet/IP		
Product Group	Multi-Frequency Processors (BIS V)	
Working frequency	—	
Radio license	—	
Interface	Profibus DP Slave, galvanically isolated	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
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	BISO12E BIS V-6102-019-C101		
		BISO12F BIS V-6106-034-C002	BISO14C BIS V-6106-034-C102
	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
	—	—	—
	—	—	—
	Profibus DP Slave, galvanically isolated	Ethernet/IP	Ethernet/IP
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
	4	4	4
	—	—	—
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	0...60 °C	0...60 °C	0...60 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, UL Listed	CE, UL Listed	CE, UL Listed
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Ethernet/IP	BIS0122 BIS V-6106-034-C004	
Ethernet TCP/IP, USB		
Product Group	Multi-Frequency Processors (BIS V)	
Working frequency	—	
Radio license	—	
Interface	Ethernet/IP	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
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BISO146 BIS V-6106-034-C104		
	BISO186 BIS V-6107-039-C005	BISO187 BIS V-6107-039-C105
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
—	—	—
—	—	—
Ethernet/IP	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
—	—	—
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
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Ethernet TCP/IP, USB	BIS018J BIS V-6107-039-C006	
Profinet I/O (IRT), Profinet I/O (IRT), 2 port Switch		
Product Group	Multi-Frequency Processors (BIS V)	
Working frequency	—	
Radio license	—	
Interface	Ethernet TCP/IP, USB	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
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BISO18K	BISO13U	BISO13W
BIS V-6107-039-C106	BIS V-6108-048-C002	BIS V-6108-048-C102
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
—	—	—
—	—	—
Ethernet TCP/IP, USB	Profinet I/O (IRT), 2 port Switch	Profinet I/O (IRT), 2 port Switch
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
—	—	—
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
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EtherCAT	BIS00U9 BIS V-6110-063-C002	
Product Group	Multi-Frequency Processors (BIS V)	
Working frequency	—	
Radio license	—	
Interface	EtherCAT	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	—	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
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BISO147 BIS V-6110-063-C102		
Multi-Frequency Processors (BIS V)		
—		
—		
EtherCAT		
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)		
4		
—		
24 V DC LPS Class 2		
Zinc, die-cast		
0...60 °C		
IP65 with connector		
CE, UL Listed		
Page 65		

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Power Supplies

Connectivity

Accessories



Europe: 865...868 MHz	BIS00M7 BIS U-6020-053-104-00-ST26	
USA/Canada/Mexico: 902...928 MHz		
Brazil: 915...928 MHz		
Product Group	UHF (860...960 MHz)	
Radio license	Europe	
Interface	RS232	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...30 dBm (50 mW...1 W)	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Steel, aluminum	
Ambient temperature	-20...55 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, ETSI EN 302 208	
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	BIS00R2 BIS U-6020-059-114-00-ST26		BIS013J BIS U-6026-034-114-06-ST35
		BIS00UM BIS U-6020-059-134-00-ST26	
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	USA, Canada, Mexico	Brazil	USA, Canada
	RS232	RS232	Ethernet/IP, galvanically isolated
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	4	4	4
	17 dBm...30 dBm (50 mW...1 W)	17 dBm...30 dBm (50 mW...1 W)	17 dBm...30 dBm (50 mW...1 W)
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Steel, aluminum	Steel, aluminum	Steel, aluminum
	-20...55 °C	-20...55 °C	-20...55 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	FCC Part 15, IC RSS-210, SCT NOM-121-SCT1-2009	Anatel 442/2006, Anatel 506/2008	FCC Part 15, IC RSS-210
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Europe: 865...868 MHz		
USA/Canada/Mexico: 902...928 MHz		
China: 920.5...924.5 MHz	BIS018N BIS U-6026-034-124-06-ST35	
Product Group	UHF (860...960 MHz)	
Radio license	China	
Interface	Ethernet/IP, galvanically isolated	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...30 dBm (50 mW...1 W)	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Steel, aluminum	
Ambient temperature	-20...55 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CMIIT-Radio Transmiss. Equipm.	
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BIS00NA BIS U-6027-054-104-06-ST27					
		BIS00R1 BIS U-6027-060-114-06-ST27			
				BIS012R BIS U-6027-060-124-06-ST27	
UHF (860...960 MHz)		UHF (860...960 MHz)		UHF (860...960 MHz)	
Europe		USA, Canada, Mexico, Argentina		China	
Ethernet TCP/IP		Ethernet TCP/IP		Ethernet TCP/IP	
UHF 860/960 MHz (BIS U)		UHF 860/960 MHz (BIS U)		UHF 860/960 MHz (BIS U)	
4		4		4	
17 dBm...30 dBm (50 mW...1 W)		17 dBm...30 dBm (50 mW...1 W)		17 dBm...30 dBm (50 mW...1 W)	
19.2...28.8 VDC		19.2...28.8 VDC		19.2...28.8 VDC	
Steel, aluminum		Steel, aluminum		Steel, aluminum	
-20...55 °C		-20...55 °C		-20...55 °C	
IP65 with connector		IP65 with connector		IP65 with connector	
CE, ETSI EN 302 208		CNC, FCC Part 15, IC RSS-210, SCT NOM-121-SCT1-2009		CMIIT-Radio Transmiss. Equipm.	
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Brazil: 915...928 MHz	BIS00UN BIS U-6027-060-134-06-ST27	
South Korea: 917...921 MHz		
Japan: 916.8...92.4 MHz		
Australia: 920.25...925.75 MHz		
Product Group	UHF (860...960 MHz)	
Radio license	Brazil	
Interface	Ethernet TCP/IP	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...30 dBm (50 mW...1 W)	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Steel, aluminum	
Ambient temperature	-20...55 °C	
Protection degree	IP65 with connector	
Approval/Conformity	Anatel 442/2006, Anatel 506/2008	
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	BIS00UR BIS U-6027-060-144-06-ST27		
		BIS012T BIS U-6027-060-154-06-ST27	
			BIS014H BIS U-6027-060-174-06-ST27
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	South Korea	Japan	Australia
	Ethernet TCP/IP	Ethernet TCP/IP	Ethernet TCP/IP
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	4	4	4
	17 dBm...30 dBm (50 mW...1 W)	17 dBm...30 dBm (50 mW...1 W)	17 dBm...30 dBm (50 mW...1 W)
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Steel, aluminum	Steel, aluminum	Steel, aluminum
	-20...55 °C	-20...55 °C	-20...55 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	KC	ARIB T106, MIC Specified Radio Equipment	AS/NZS 4268
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Europe: 865...868 MHz	BIS012Y BIS U-6028-048-104-06-ST22	
USA/Canada: 902...928 MHz		
China: 920.5...924.5 MHz		
Product Group	UHF (860...960 MHz)	
Radio license	Europe	
Interface	Profinet, galvanically isolated	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...33 dBm (50 mW...2 W)	
Operating voltage Ub	19.2...28.8 VDC	
Housing material	Steel, aluminum	
Ambient temperature	-20...55 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, ETSI EN 302 208	
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	BIS00ZU BIS U-6028-048-104-06-ST28		
		BIS00ZW BIS U-6028-048-114-06-ST28	
			BIS017J BIS U-6028-048-124-06-ST28
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	Europe	USA, Canada	China
	Profinet, galvanically isolated	Profinet, galvanically isolated	Profinet, galvanically isolated
	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
	4	4	4
	17 dBm...33 dBm (50 mW...2 W)	17 dBm...30 dBm (50 mW...1 W)	17 dBm...30 dBm (50 mW...1 W)
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	Steel, aluminum	Steel, aluminum	Steel, aluminum
	-20...55 °C	-20...55 °C	-20...55 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, ETSI EN 302 208	FCC Part 15, IC RSS-210	CMIIT-Radio Transmiss. Equipm.
	Page 68	Page 68	Page 68



Brazil: 915...928 MHz	BIS0152 BIS U-6028-048-134-06-ST28	
Product Group	UHF (860...960 MHz)	
Radio license	Brazil	
Interface	Profinet, galvanically isolated	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	4	
Output power adjustable	17 dBm...30 dBm (50 mW...1 W)	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	Steel, aluminum	
Ambient temperature	-20...55 °C	
Protection degree	IP65 with connector	
Approval/Conformity	Anatel 442/2006, Anatel 506/2008	
Productview	Page 68	

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Systems

Safety

Industrial Networking

Power Supplies

Connectivity

Accessories



Europe: 865...868 MHz	BIS00Z9 BIS U-620-067-101-04-S92	
USA: 902...928 MHz		
Product Group	UHF (860...960 MHz)	
Radio license	Europe	
Interface	RS485	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	1	
Output power adjustable	10 dBm...27 dBm (10 mW...500 mW)	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, ETSI EN 302 208	
Productview	Page 68	



BIS00Z8 BIS U-620-067-101-04-ST30		BIS00Z7 BIS U-620-067-111-04-S92	BIS00Z6 BIS U-620-067-111-04-ST30
UHF (860...960 MHz)		UHF (860...960 MHz)	UHF (860...960 MHz)
Europe		USA	USA
RS485		RS485	RS485
UHF 860/960 MHz (BIS U)		UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
1		1	1
10 dBm...27 dBm (10 mW...500 mW)		10 dBm...27 dBm (10 mW...500 mW)	10 dBm...27 dBm (10 mW...500 mW)
19.2...28.8 VDC		19.2...28.8 VDC	19.2...28.8 VDC
Aluminum		Aluminum	Aluminum
-20...50 °C		-20...50 °C	-20...50 °C
IP65 with connector		IP65 with connector	IP65 with connector
CE, ETSI EN 302 208		FCC Part 15	FCC Part 15
Page 69		Page 68	Page 69



Europe: 865...868 MHz	BIS00Z5 BIS U-620-068-101-00-S115	
USA: 902...928 MHz		
Product Group	UHF (860...960 MHz)	
Radio license	Europe	
Interface	RS232	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	1	
Output power adjustable	10 dBm...27 dBm (10 mW...500 mW)	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, ETSI EN 302 208	
Productview	Page 69	



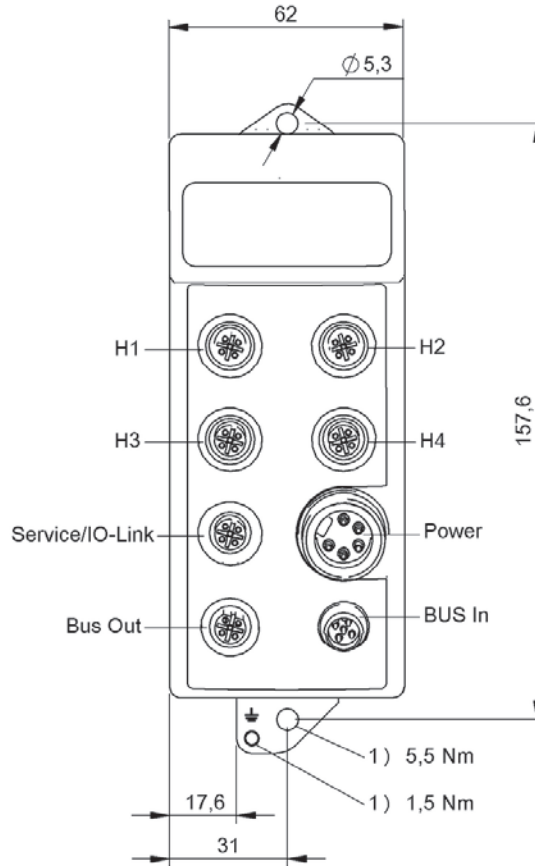
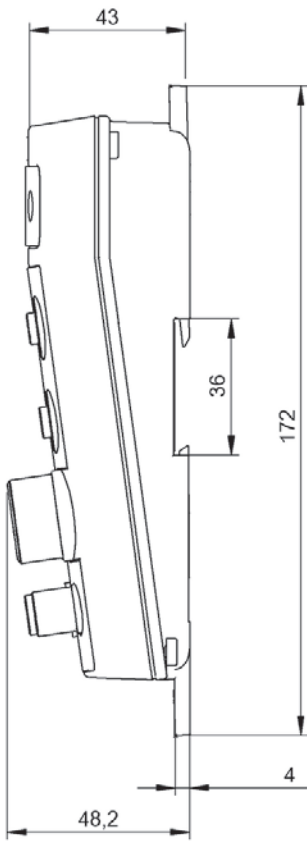
	BIS00Z4 BIS U-620-068-101-00-ST29		
		BIS00Z3 BIS U-620-068-111-00-S115	BIS00Z2 BIS U-620-068-111-00-ST29
UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
Europe	Europe	USA	USA
RS232	RS232	RS232	RS232
UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
1	1	1	1
10 dBm...27 dBm (10 mW...500 mW)	10 dBm...27 dBm (10 mW...500 mW)	10 dBm...27 dBm (10 mW...500 mW)	10 dBm...27 dBm (10 mW...500 mW)
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
Aluminum	Aluminum	Aluminum	Aluminum
-20...50 °C	-20...50 °C	-20...50 °C	-20...50 °C
IP65 with connector	IP65 with connector	IP65 with connector	IP65 with connector
CE, ETSI EN 302 208	CE, ETSI EN 302 208	FCC Part 15	FCC Part 15
Page 70	Page 70	Page 69	Page 70



Europe: 865...868 MHz	BIS00Z1 BIS U-626-069-101-06-ST31	
USA: 902...928 MHz		
Product Group	UHF (860...960 MHz)	
Radio license	Europe	
Interface	Industrial Ethernet/ Ethernet TCP/IP/MODBUS TCP	
Supported RFID technologies	UHF 860/960 MHz (BIS U)	
Number of connectable R/W heads / antennas	1	
Output power adjustable	10 dBm...27 dBm (10 mW...500 mW)	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, ETSI EN 302 208	
Productview	Page 70	

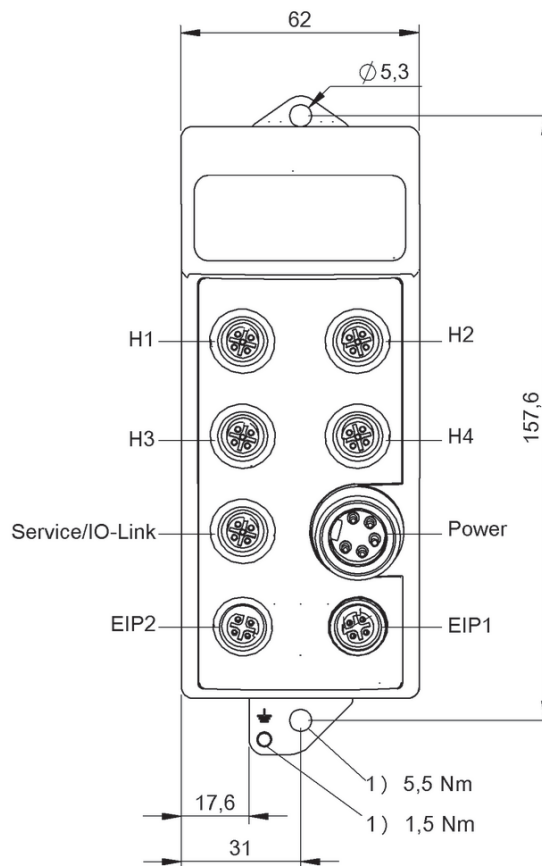
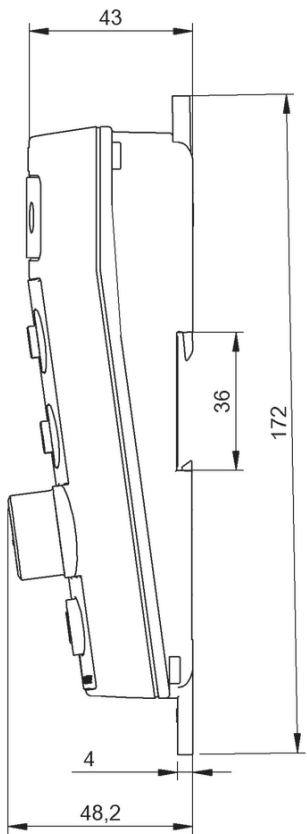


BIS00Z0 BIS U-626-069-101-06-ST32		BIS00YZ BIS U-626-069-111-06-ST31	BIS00YY BIS U-626-069-111-06-ST32
UHF (860...960 MHz)		UHF (860...960 MHz)	UHF (860...960 MHz)
Europe		USA	USA
Industrial Ethernet/ Ethernet TCP/IP/MODBUS TCP		Industrial Ethernet/ Ethernet TCP/IP/MODBUS TCP	Industrial Ethernet/ Ethernet TCP/IP/MODBUS TCP
UHF 860/960 MHz (BIS U)		UHF 860/960 MHz (BIS U)	UHF 860/960 MHz (BIS U)
1		1	1
10 dBm...27 dBm (10 mW...500 mW)		10 dBm...27 dBm (10 mW...500 mW)	10 dBm...27 dBm (10 mW...500 mW)
19.2...28.8 VDC		19.2...28.8 VDC	19.2...28.8 VDC
Aluminum		Aluminum	Aluminum
-20...50 °C		-20...50 °C	-20...50 °C
IP65 with connector		IP65 with connector	IP65 with connector
CE, ETSI EN 302 208		FCC Part 15	FCC Part 15
Page 71		Page 70	Page 71



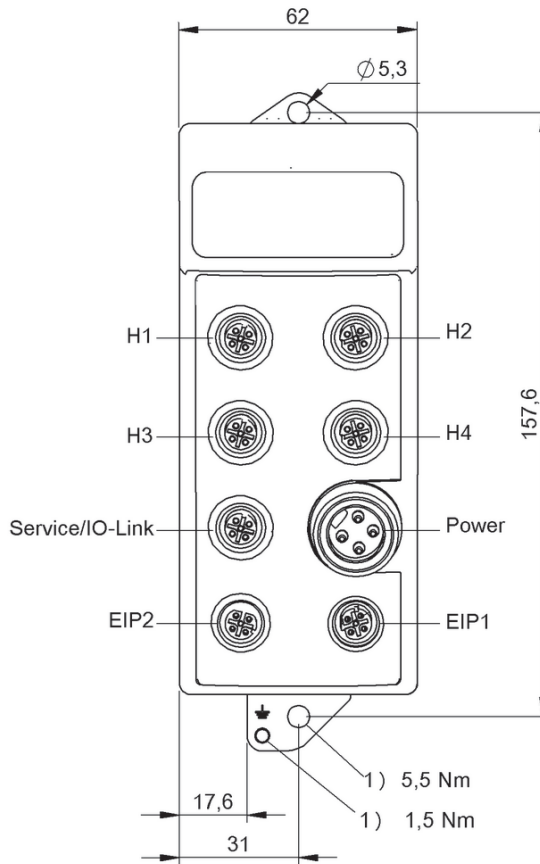
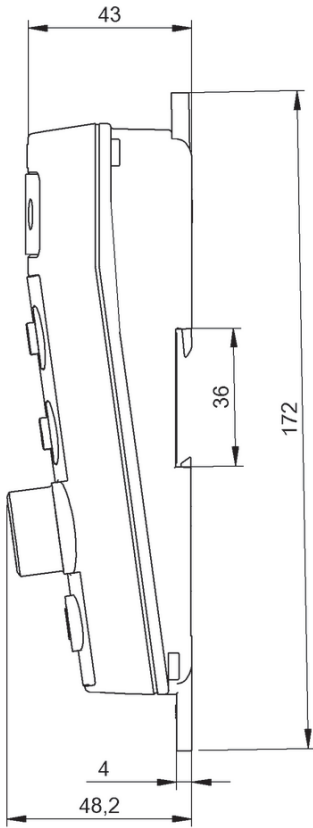
1) Tightening torque

BISO0T3, BISO12E



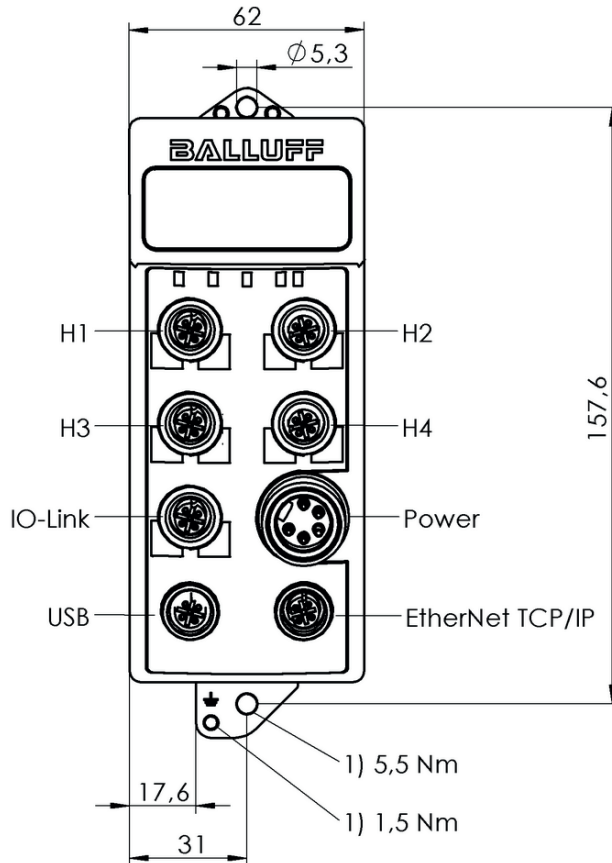
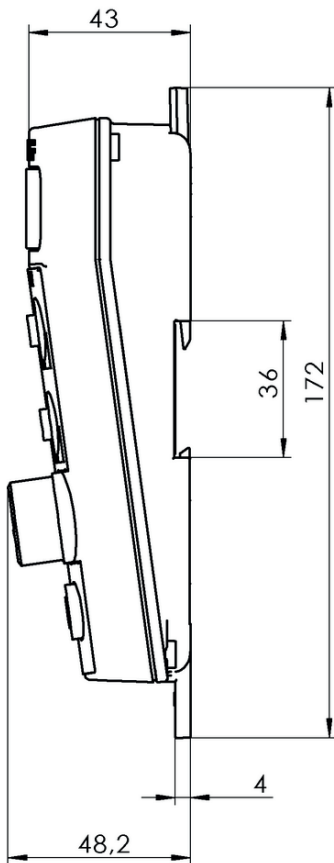
1) Tightening torque

BISO12F, BISO14C



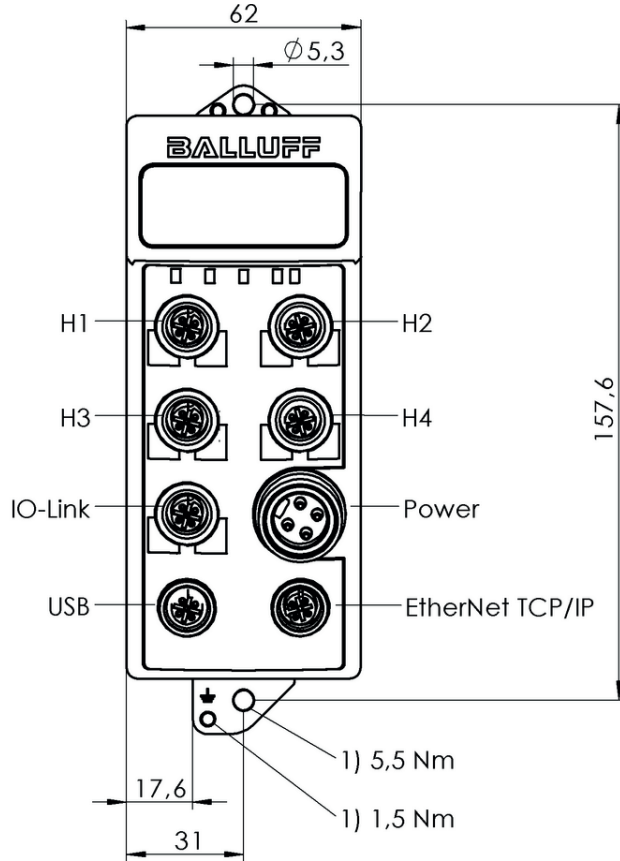
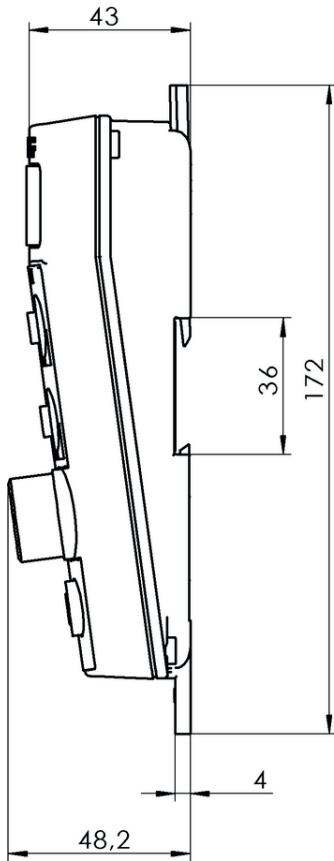
1) Tightening torque

BIS0122, BIS0146



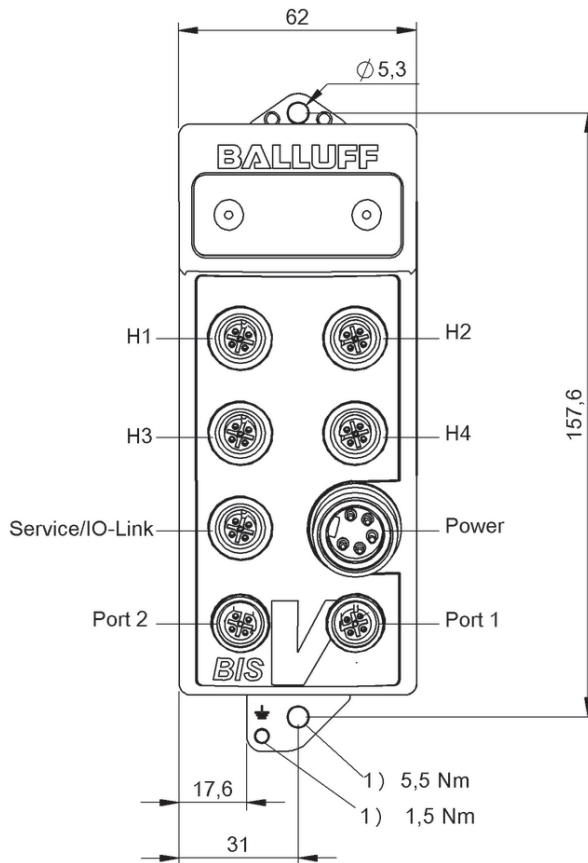
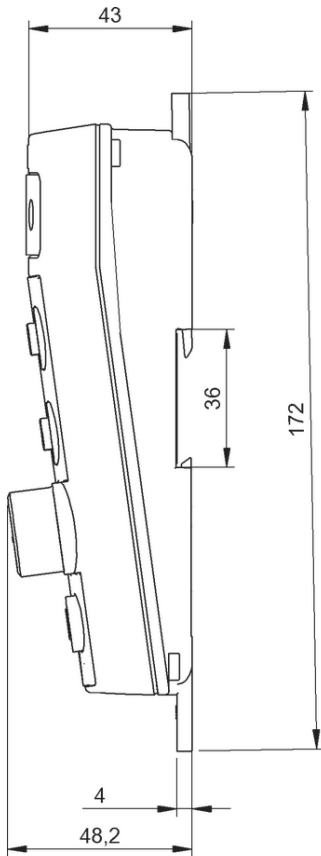
1) Tightening torque

BIS0186, BIS0187



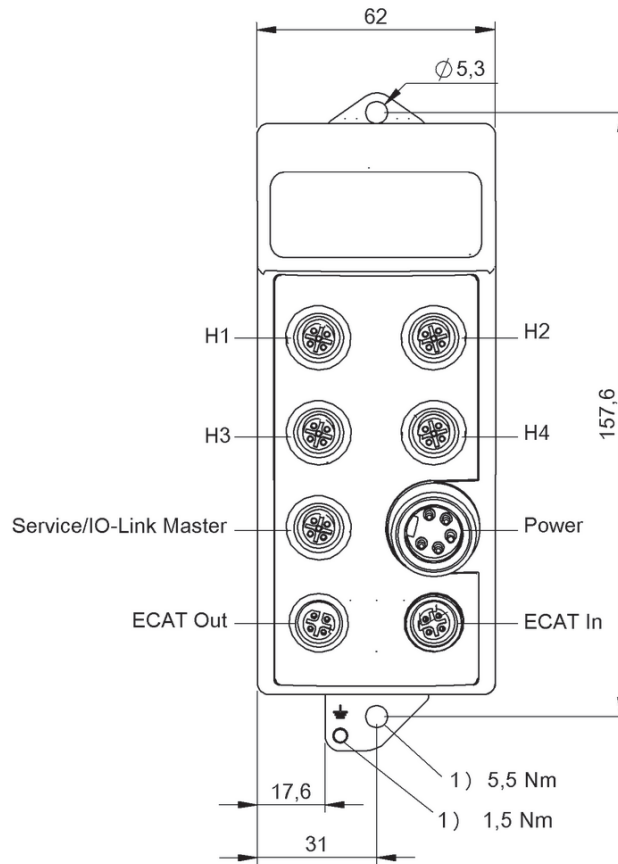
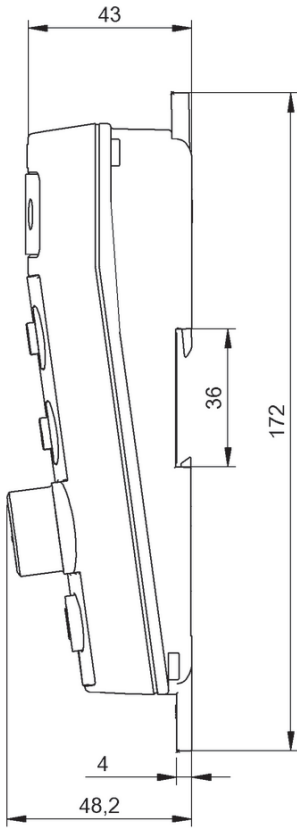
1) Tightening torque

BIS018J, BIS018K



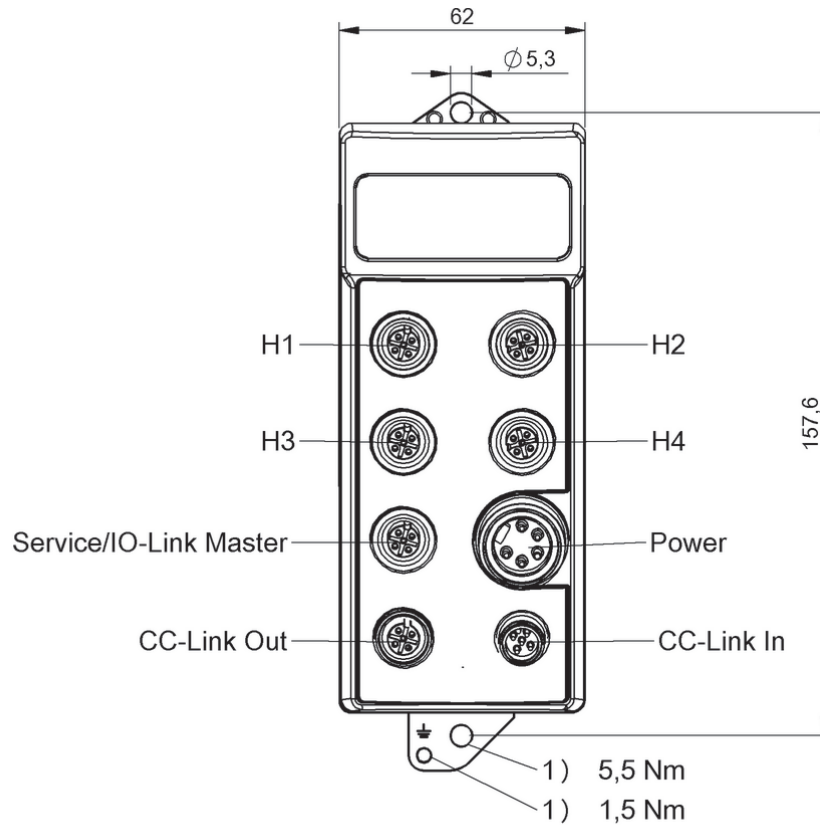
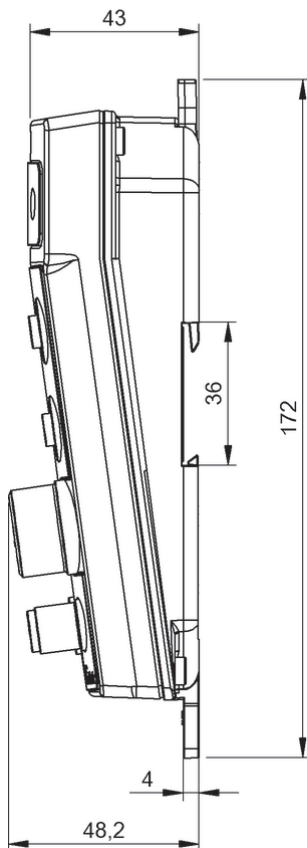
1) Tightening torque

BIS013U, BIS013W



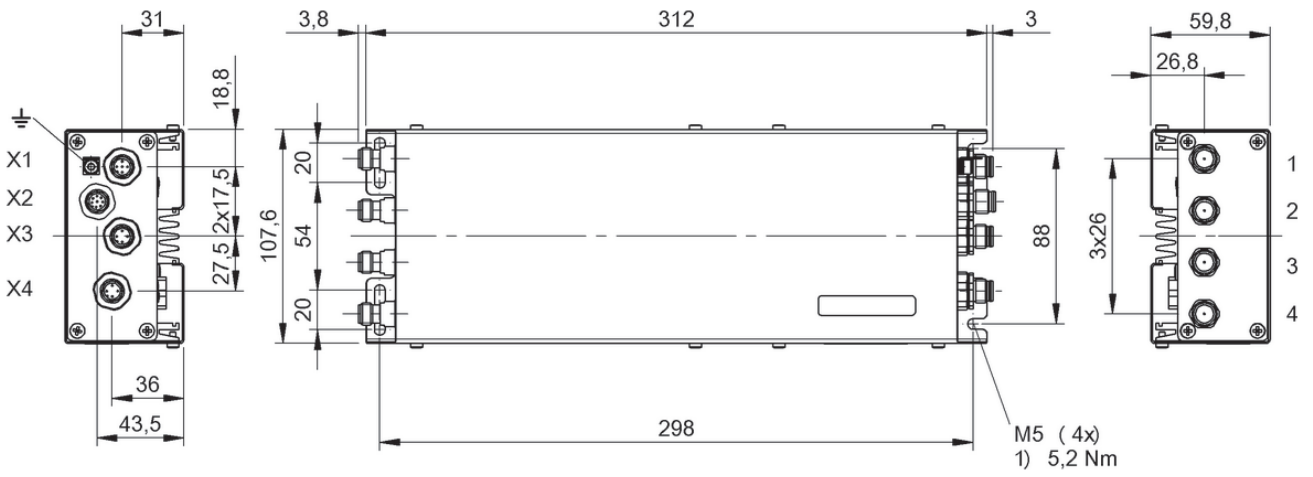
1) Tightening torque

BIS00U9, BIS0147

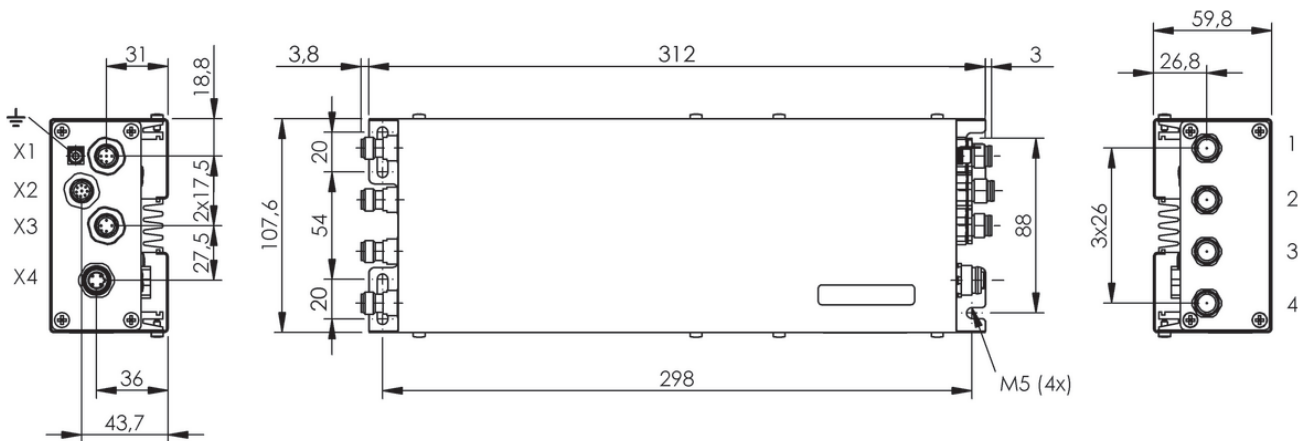


1) Tightening torque

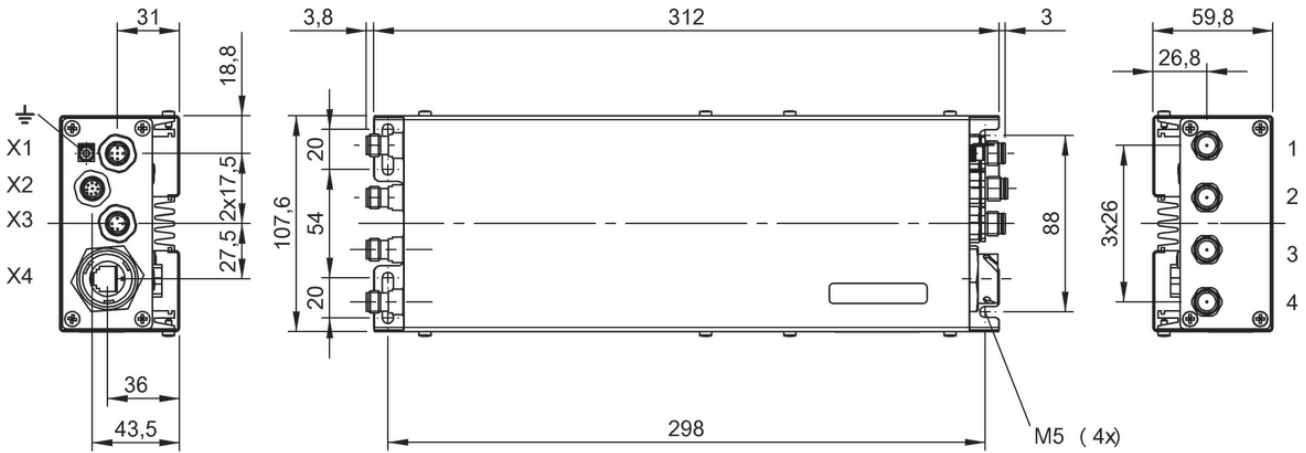
BIS010P, BIS014E



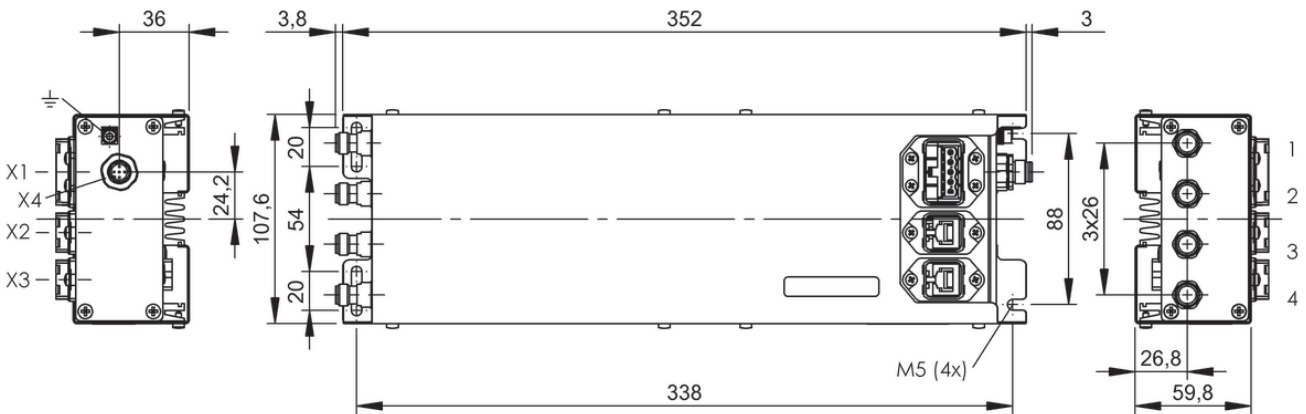
BIS00M7, BIS00R2, BIS00UM



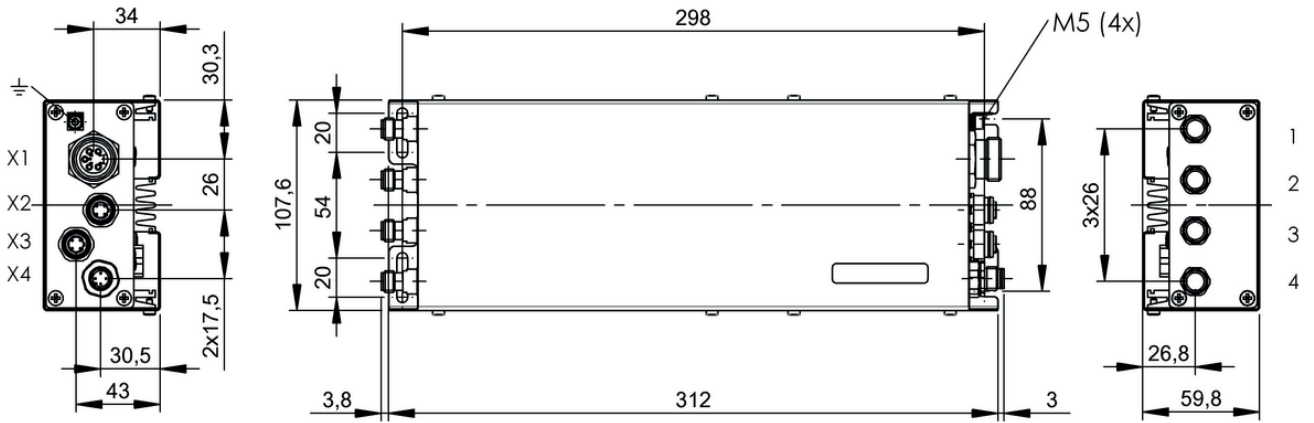
BIS013J, BIS018N



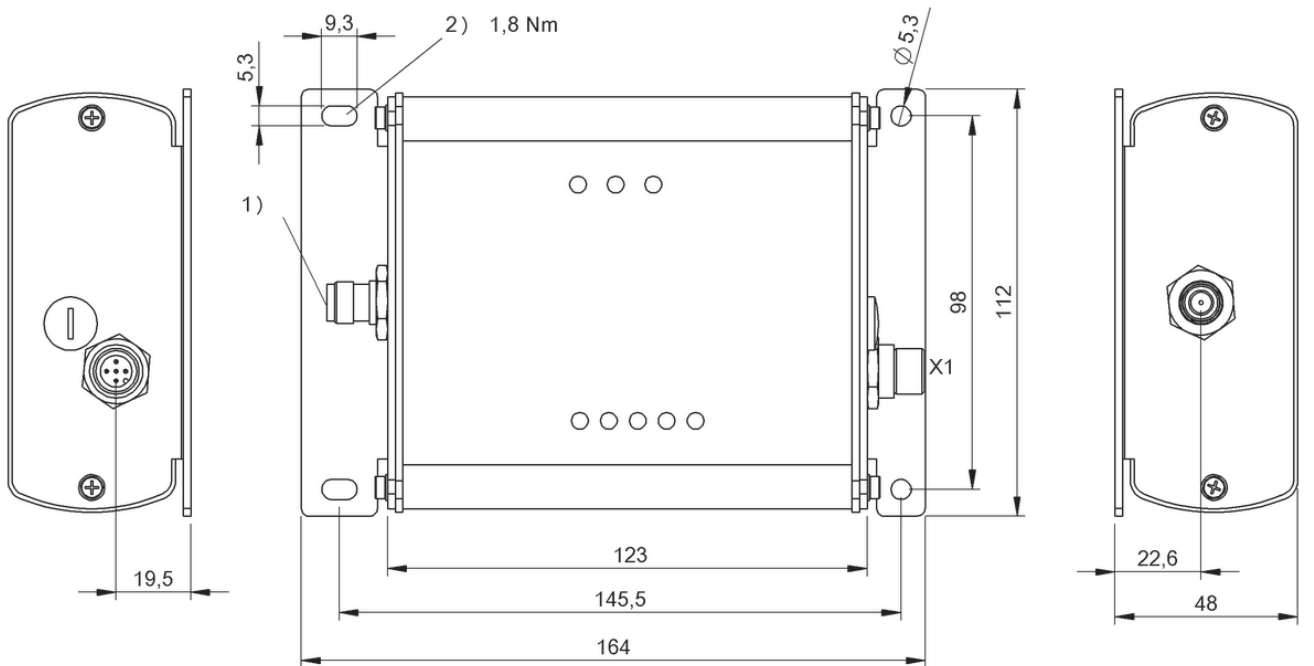
BIS00NA, BIS00R1, BIS012R, BIS00UN, BIS00UR, BIS012T, BIS014H



BIS012Y

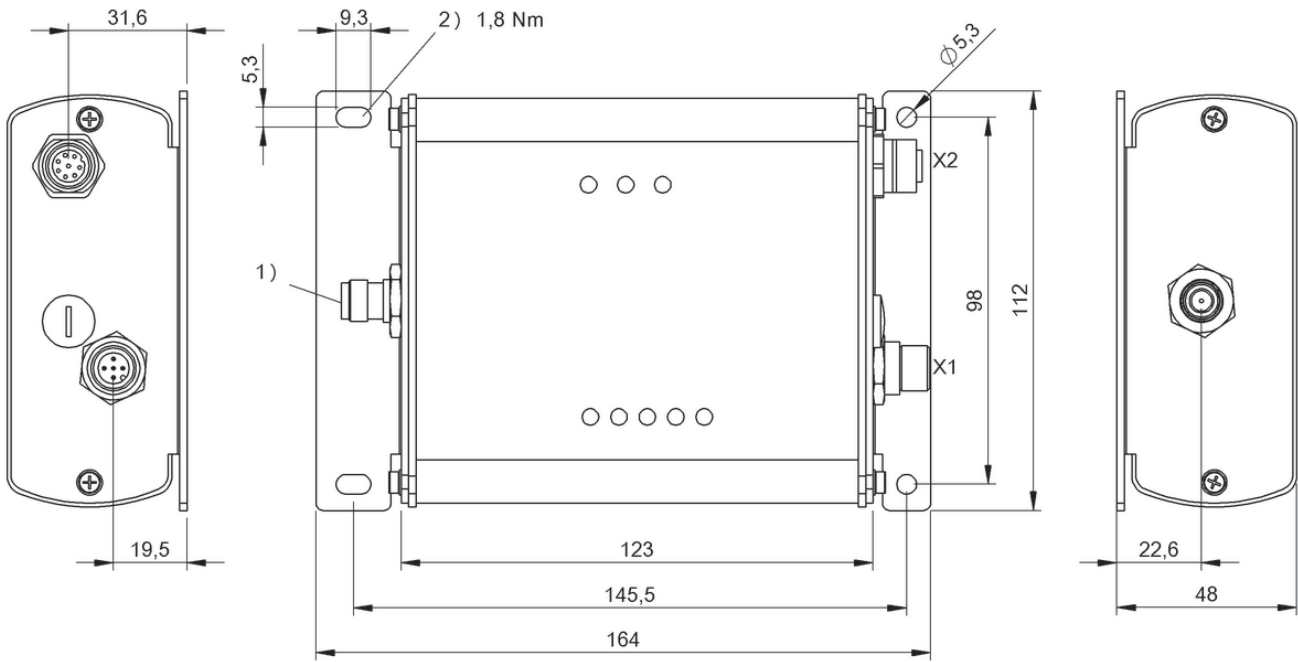


BIS00ZU, BIS00ZW, BIS017J, BIS0152



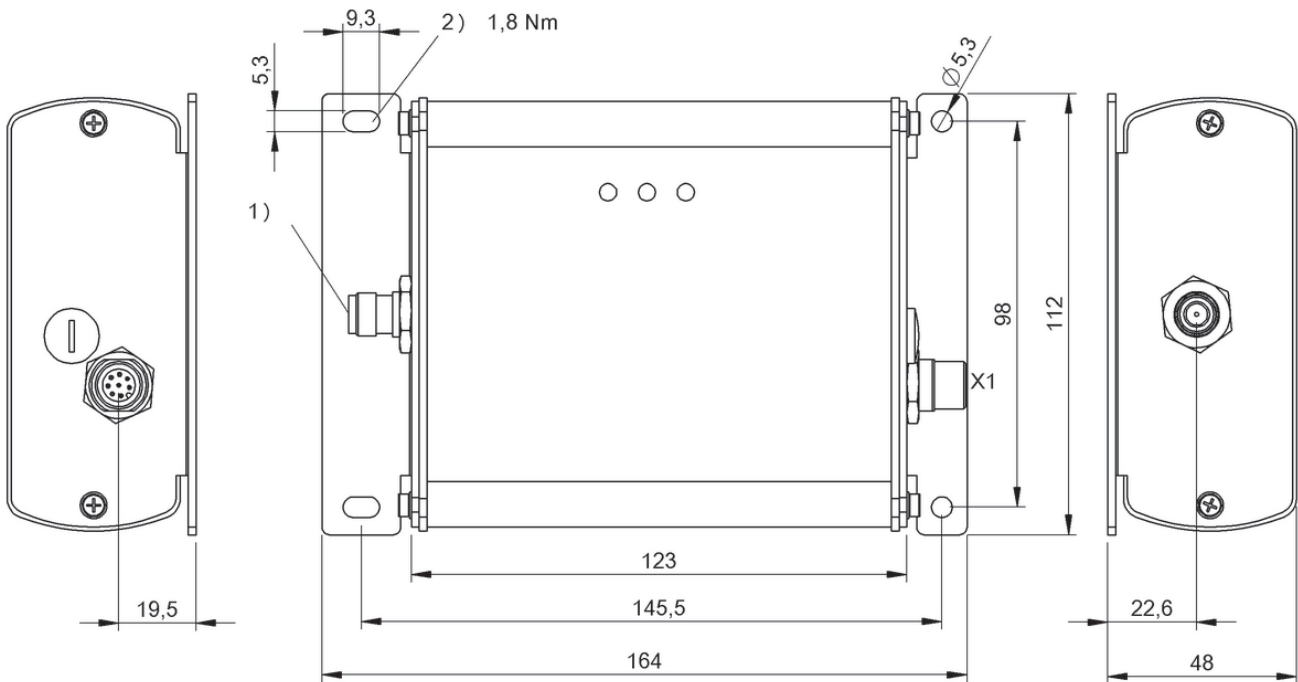
1) Antenna, 2) Tightening torque

BIS00Z9, BIS00Z7



1) Antenna, 2) Tightening torque

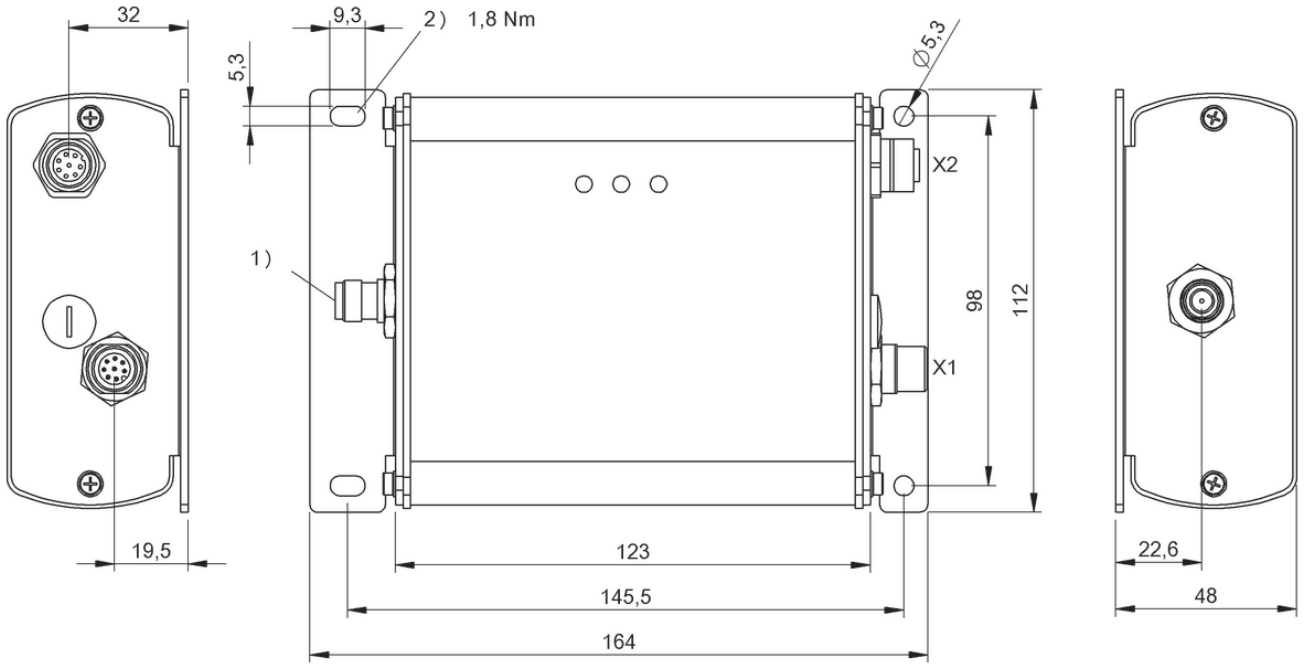
BIS0028, BIS0026



1) Antenna, 2) Tightening torque

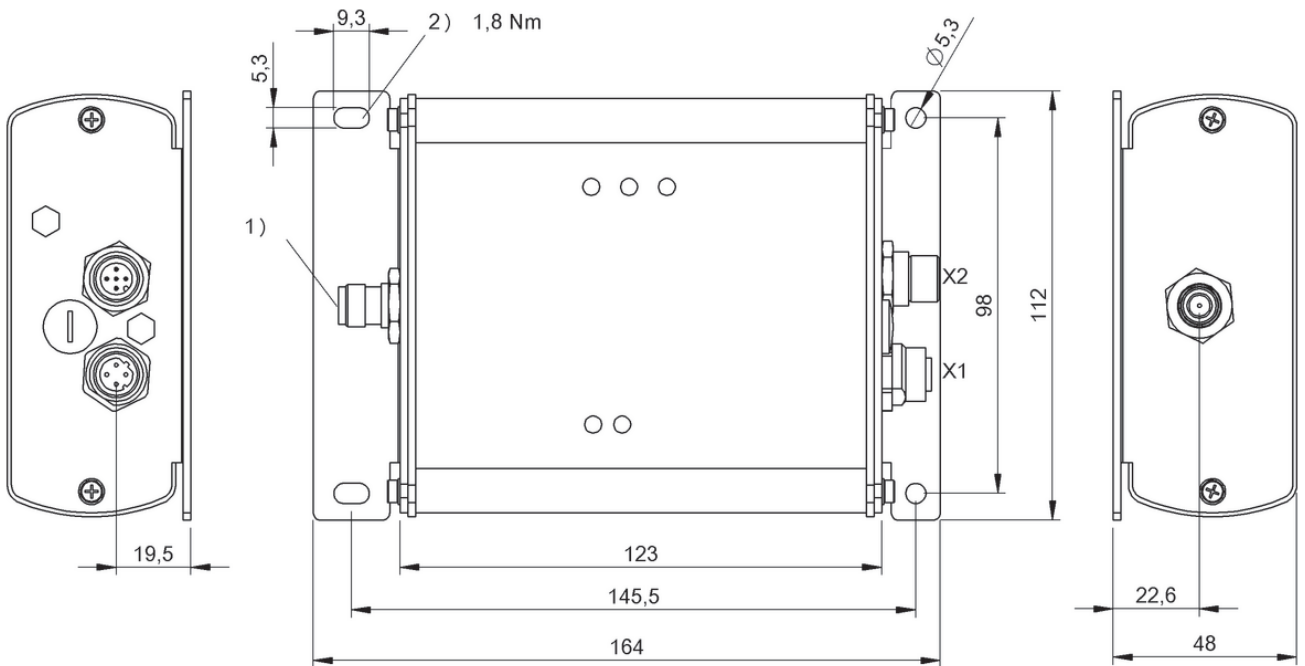
BIS0025, BIS0023

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



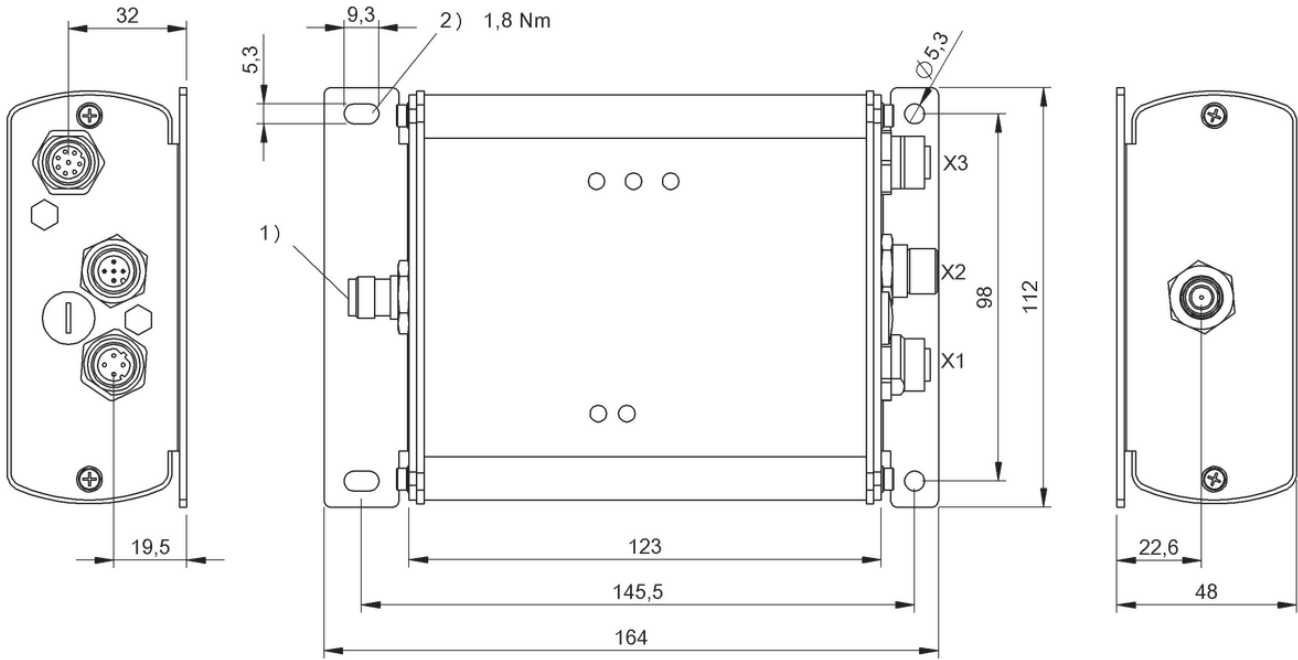
1) Antenna, 2) Tightening torque

BISO0Z4, BISO0Z2



1) Antenna, 2) Tightening torque

BISO0Z1, BISO0YZ



1) Antenna, 2) Tightening torque

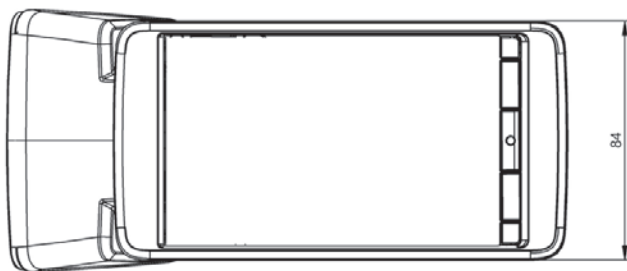
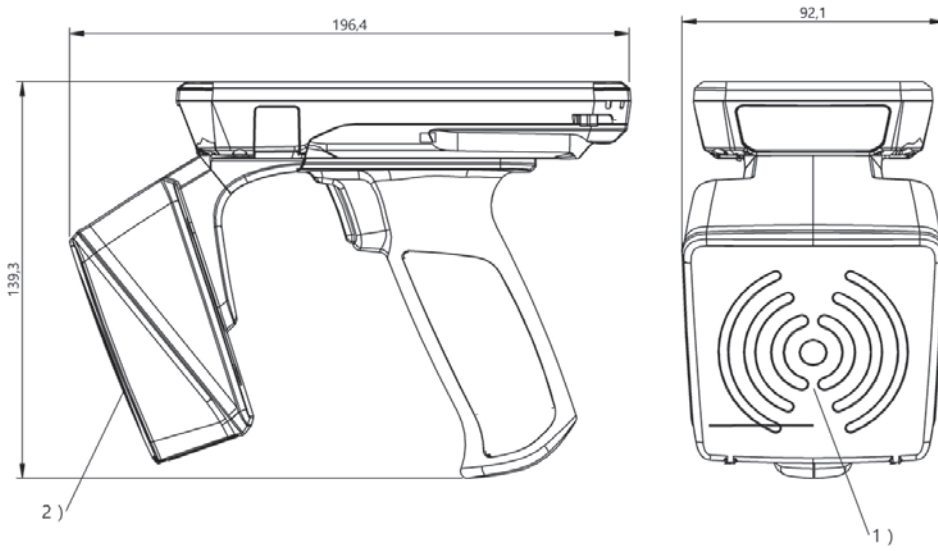
BIS00Z0, BIS00YY



	BAE0100 BIS U-890-2-020-X-005	BAE0101 BIS U-890-2-020-X-005-1	
Product Group	UHF (860...960 MHz)	UHF (860...960 MHz)	
Radio license	Europe	USA, Canada	
Product name	WLAN + 2D	WLAN + 2D	
Dimension	91 x 196 x 135 mm	91 x 196 x 135 mm	
Antenna type	Cross dipole	Cross dipole	
Display	4.3" Touchscreen display (color): 800x480 VGA resolution 262,000 colors	4.3" Touchscreen display (color): 800x480 VGA resolution 262,000 colors	
Keypad	5 buttons	5 buttons	
Operating voltage U _b	—	—	
Storage temperature	-20...60 °C	-20...60 °C	
Ambient temperature	-20...55 °C	-20...55 °C	
Protection degree	IP54	IP54	
Approval/Conformity	CE, ETSI EN 302 208	FCC, IC	
Productview	Page 74	Page 74	

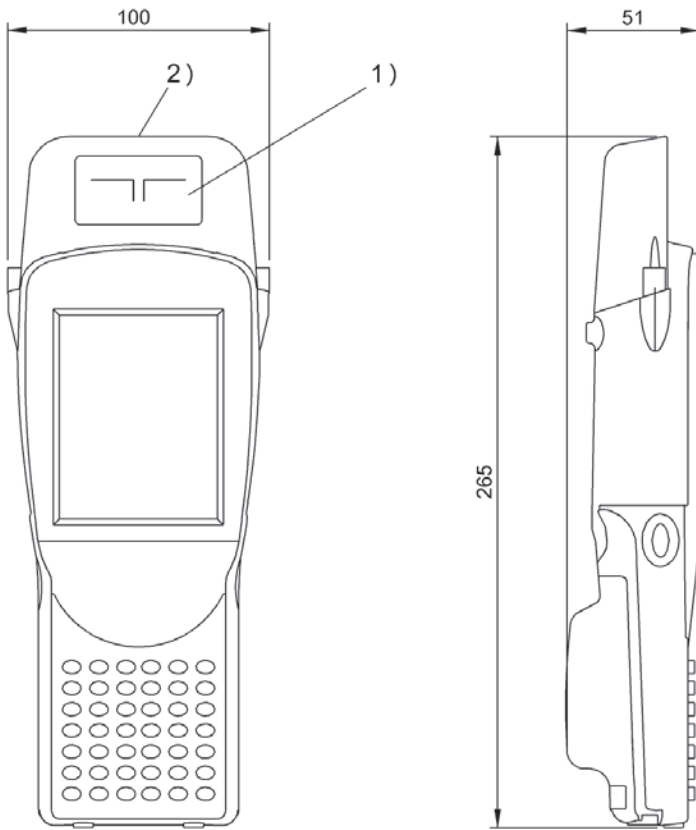


	BAE0102 BIS U-890-2-020-X-005-2	BAE00J8 BIS U-870-1-008-X-001	BAE00W7 BIS U-870-1-008-X-001-1	BAE00LK BIS U-870-1-008-X-005
	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)	UHF (860...960 MHz)
	China	—	—	—
	WLAN + 2D	WLAN	WLAN	WLAN + 2D
	91 x 196 x 135 mm	100 x 51 x 265 mm	100 x 51 x 265 mm	100 x 69 x 265 mm
	Cross dipole	Dipol	Dipol	Dipol
	4.3" Touchscreen display (color): 800x480 VGA resolution 262,000 colors	TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution
	5 buttons	52 keys, alphanumeric	52 keys, alphanumeric	52 keys, alphanumeric
	—	3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack
	-20...60 °C	-40...60 °C	-40...60 °C	-40...60 °C
	-20...55 °C	-10...50 °C	-10...50 °C	-10...50 °C
	IP54	IP65	IP65	IP65
	CMIIT-Radio Transmiss. Equipm.	CE, ETSI EN 302 208	FCC Part 15, IC RSS-210	CE, ETSI EN 302 208
	Page 74	Page 74	Page 74	Page 75



1) Sensing surface, 2) See data for antenna form

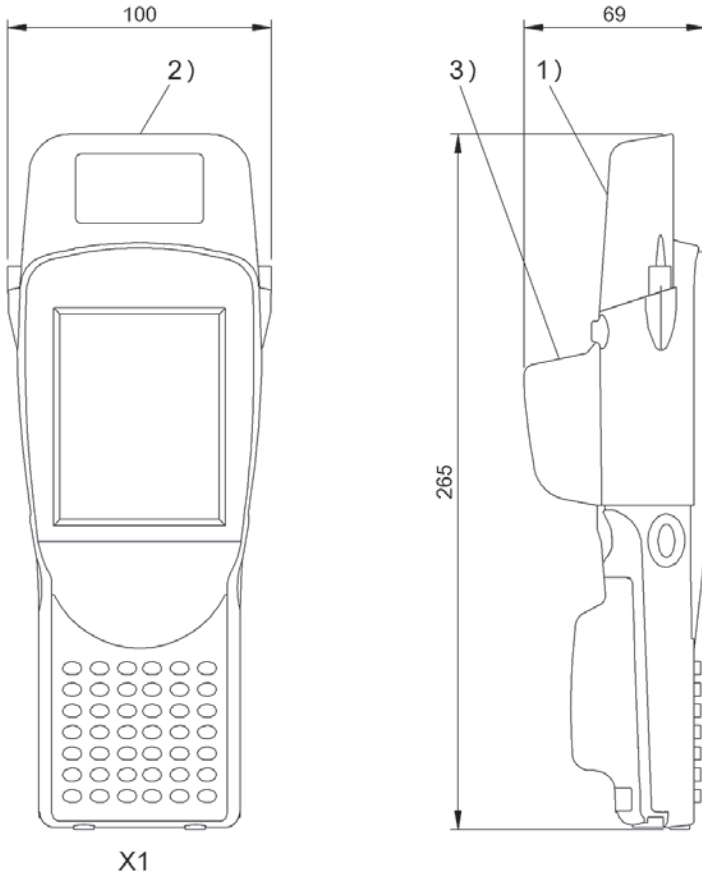
BAE0100, BAE0101, BAE0102



X1

1) Sensing surface, 2) See data for antenna form

BAE00J8, BAE00W7



1) Sensing surface, 2) See data for antenna form, 3) Barcode 2D-Scanner

BAE00LK



High transmission speed for large volumes of data

RFID SYSTEM HF (13.56 MHz) BIS M

The RFID system BIS M supports global ISO standards and scores with a high transmission speed for large volumes of data. Through various combination options of data carriers and read/write heads, the system can be used for a variety of applications. The system is ideal, for example, in close-range parts tracking or for applications in production control such as palletizing or recording data on the workpiece.

Features

- 4-pin standard wiring and IO-Link components
- In combination with passive data carriers of average ranges up to a max. of 400 mm
- Seamless integration in applications through global RFID standards ISO 15693 and ISO 14443A
- All bus systems commonly used on a global basis available
- Easy, fast commissioning
- Balluff high-speed components (up to eight times faster than ISO 15693)
- Customer-specific developments
- A variety of accessories for an easy integration available at all places of use



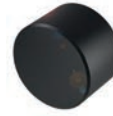
	BIS018Y BIS M-113-03/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 4.35 x 3.6 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	Epoxy-resin/fiberglass PVC	
Protection degree	IPx8	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 118	

Suitable read/write head with max. read/write working distance

Installation	flush in metal*	on metal	metal-free (clear zone)
BIS M-302			
BIS M-305			
BIS M-402-xxx-002			
BIS M-402-xxx-007			
BIS M-410			
BIS M-411			
BIS M-449		0-5.5	0-6
BIS M-451			
BIS VM-330			
BIS VM-343-401			
BIS VM-346-401			
BIS VM-348-401			
BIS VM-349-401		0-5.5	0-6

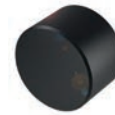
Dimensions in mm

* Installation on request



BIS00UC BIS M-116-03/A	BIS00UE BIS M-116-08/A	BIS00YL BIS M-130-03/L
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 6 x 1 mm	Ø 6 x 1 mm	Ø 7.9 x 4.9 mm
round	round	round
8 Byte	8 Byte	8 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 15693	DIN ISO 14443	DIN ISO 15693
112 Byte	160 Byte	112 Byte
-20...90 °C	-20...90 °C	-40...85 °C
—	—	—
0...50 °C	0...50 °C	-20...85 °C
Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	ABS, black
IP67	IP67	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal flush in metal
CE	CE	CE
Page 118	Page 118	Page 118

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-7			0-7			
	0-4	0-7.5						
		0-3			0-3			0-9
								0-17
								0-20
0-2	0-3	0-4.5				0-2	0-5.5	0-6
1.3-2.5	0-4	0-6.5						
0-2	0-3	0-4.5				0-2	0-5.5	0-6
		0-3.5			0-3.5	0-3	0-6	0-6.5
		0-3.5			0-3.5	0-3	0-6	0-6.5
0-2	0-3	0-5						
1.3-2.5	0-4	0-6.5						



	BIS00YJ BIS M-130-10/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 7.9 x 4.9 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	736 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS, black	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 118	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-302			
BIS M-304			
BIS M-305			
BIS M-307		0-7	0-5
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-400-xxx-401			
BIS M-402-xxx-002			0-4.5
BIS M-402-xxx-004			
BIS M-404-xxx-401			
BIS M-408-045-001			0-6.5
BIS M-410			0-6
BIS M-411			0-6.5
BIS M-414	0-1	0-3	0-2
BIS M-449			
BIS VM-305			
BIS VM-306			
BIS VM-307	0-7		0-5
BIS VM-330	0-1	0-3	0-2
BIS VM-332			
BIS VM-333			
BIS VM-343-401	0-1.5	0-4	0-2.5
BIS VM-344-401			
BIS VM-345-401			
BIS VM-346-401	0-1.5	0-4	0-2.5
BIS VM-348-401			
BIS VM-349-401			

Dimensions in mm



BISO0YK BIS M-130-07/L	BIS01A0 BIS M-122-21/A	BIS0048 BIS M-122-01/A
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 7.9 x 4.9 mm	Ø 10 x 4.5 mm	Ø 10 x 4.5 mm
round	round	round
8 Byte	8 Byte	4 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 15693	—	DIN ISO 14443
992 Byte	32 Byte	752 Byte
-40...85 °C	-25...85 °C	-25...85 °C
—	—	—
-20...85 °C	-25...70 °C	-25...70 °C
ABS, black	PA 12, PU potting	PA 12, PU potting
IP68	IP67	IP67
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) flush in metal
CE	CE	CE
Page 118	Page 118	Page 118

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
			0-5.5		0-7.5	0-5		0-7
			0-3.5		0-5.5	0-4		0-5
			0-3.5		0-5.5	0-4		0-5
	0-8	0-10	0-3.5		0-5.5	0-4		0-5
			0-5.5		0-11.5			0-9.5
			0-3.5		0-4.5	0-4		0-5
					0-7.5			
		0-9	0-3.5		0-6.5	0-4		0-5
			0-3.5		0-6.5	0-4		0-5
			0-2	0-4	0-4.5			
		0-13		0-7.5	0-9.5			
		0-12						
		0-13						
0-2	0-4	0-4.5	0-2	0-3.5	0-4			
			0-4.5	0-6.5	0-6.5			
			0-3.5		0-5.5	0-4		0-5
			0-3.5			0-4		
0-8		0-10	0-3.5		0-5.5	0-4		0-5
0-2	0-4	0-4.5	0-2	0-3.5	0-4			
			0-3	0-5	0-5.5			
					0-8.5			
0-2.5	0-5	0-5	0-2	0-3	0-3.5			
				0-7.5				
0-2.5	0-5	0-5	0-2	0-3	0-3.5			
			0-3.5		0-5.5			
			0-4.5	0-6.5	0-6.5			



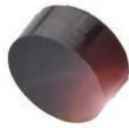
	BIS004A BIS M-122-02/A	
Product Group	HF (13.56 MHz)	
Dimension	Ø 10 x 4.5 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PA 12, PU potting	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 118	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-302	0-6		0-9
BIS M-304	0-5		0-7
BIS M-305	0-5		0-7
BIS M-307	0-5		0-7
BIS M-400-xxx-001	0-7		0-13
BIS M-400-xxx-002	0-5		0-6
BIS M-400-xxx-401			0-9
BIS M-402-xxx-002	0-5		0-8
BIS M-402-xxx-004	0-5		0-8
BIS M-404-xxx-401	0-3.5	0-5.5	0-6
BIS M-405-xxx-001			
BIS M-408-045-001		0-9	0-11
BIS M-414	0-3.5	0-5	0-5.5
BIS M-449	0-6	0-8	0-8
BIS VM-300			
BIS M-302			
BIS M-304			
BIS VM-305	0-5		0-7
BIS VM-306	0-5		
BIS VM-307	0-5		0-7
BIS VM-330	0-3.5	0-5	0-5.5
BIS VM-332	0-4.5	0-6.5	0-7
BIS VM-333			0-10
BIS VM-343-401	0-3.5	0-4.5	0-5
BIS VM-344-401			
BIS VM-345-401		0-9	0-1
BIS VM-346-401	0-3.5	0-4.5	0-5
BIS VM-348-401	0-5		0-7
BIS VM-349-401	0-6	0-8	0-8

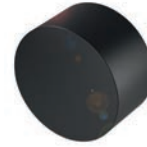
Dimensions in mm

* Installation on request



BISO19C BIS M-1R1-02/L	BIS0040 BIS M-105-01/A	BIS0042 BIS M-105-02/A
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 10.1 x 4.5 mm	Ø 11.98 x 6 mm	Ø 11.98 x 6 mm
round	round	round
8 Byte	4 Byte	8 Byte
FRAM	EEPROM	FRAM
DIN ISO 15693	DIN ISO 14443	DIN ISO 15693
2000 Byte	752 Byte	2000 Byte
-25...85 °C	-25...85 °C	-25...85 °C
—	—	—
-25...85 °C	-25...70 °C	-25...70 °C
PEEK, GF30	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF
IP68	IP67	IP67
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
CE	CE	CE
Page 118	Page 118	Page 118

flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
					0-9			0-11
0-7	0-8		0-5		0-7	0-6		0-9
0-6.5	0-7		0-5		0-5	0-6		0-7
			0-4		0-6	0-4		0-8
			0-4		0-6	0-6		0-8
					0-7			0-11
			0-5		0-6	0-5		0-9
								0-13
			0-4		0-6	0-4		0-6
			0-4		0-6	0-6		0-8
						0-6	0-8	0-8.5
					0-7		0-8	0-11
							0-11	0-13
						0-5	0-6	0-6.5
						0-7	0-9.5	0-10
					0-9			0-11
0-7	0-8							
0-6.5	0-7							
			0-4		0-6	0-6		0-8
			0-5			0-6		
			0-4		0-6	0-6		0-8
						0-5	0-6	0-6.5
						0-6	0-8	0-8.5
								0-13
						0-4	0-5	0-5.5
								0-11
						0-4	0-5	0-5.5
						0-5		0-7
						0-7	0-9.5	0-10



	BIS00YH BIS M-131-10/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 12 x 6.4 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	736 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 118	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-301			
BIS M-302			
BIS M-304			
BIS M-305			
BIS M-307		0-8	0-10
BIS M-340			
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-373-000-A01			
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-400-xxx-401			
BIS M-401			
BIS M-402-xxx-002			0-9
BIS M-402-xxx-004			
BIS M-404-xxx-401			
BIS M-405-xxx-001			
BIS M-408-045-001			0-13
BIS M-410			0-12
BIS M-411			0-13
BIS M-451	0-2	0-4	0-4.5
BIS VM-300			
BIS VM-301			
BIS M-302			
BIS M-304			
BIS VM-305			
BIS VM-307			
BIS VM-332			
BIS VM-333			
BIS VM-344-401			
BIS VM-345-401			
BIS VM-348-401			
BIS VM-349-401			
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-373-000-A01			
BIS M-410			0-5
BIS M-411			

Dimensions in mm, * Installation on request



BIS019E BIS M-1R2-02/L	BIS0044 BIS M-110-02/L	BIS00YF BIS M-132-03/L
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 15.3 x 4.5 mm	Ø 20 x 2.8 mm	Ø 24.9 x 4.8 mm
round	round	round
8 Byte	8 Byte	8 Byte
FRAM	FRAM	EEPROM
DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
2000 Byte	2000 Byte	112 Byte
-25...85 °C	-25...85 °C	-40...85 °C
—	—	—
-25...85 °C	-25...85 °C	-20...85 °C
PEEK, GF30	PA 6	ABS, black
IP68	IP68	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)
CE	CE	CE
Page 119	Page 119	Page 119

flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
					0-22 0-32			
0-11 0-10	0-12 0-10				0-16 0-14 0-13 0-13 0-90 0-70 0-115			0-100 0-160 0-160
					0-20 0-15 0-18 0-30 0-15 0-15 0-10 0-20 0-23			
					0-45 0-12			0-48 0-80
				0-5 0-22 0-32				
0-11 0-10	0-12 0-10			0-13 0-13 0-10 0-18 0-22 0-22 0-12 0-12				0-100 0-160 0-160 0-48 0-80

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Systems

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Industrial Networking

Power Supplies

Connectivity

Accessories



	BIS00YC BIS M-132-10/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 24.9 x 4.8 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	736 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS, black	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 119	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-301			
BIS M-302			
BIS M-304			
BIS M-340			
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-400-xxx-401			
BIS M-401			
BIS M-402-xxx-002			
BIS M-402-xxx-004			
BIS M-404-xxx-401			
BIS M-405-xxx-001			
BIS M-406-045-001			
BIS M-408-045-001			
BIS M-410			0-15
BIS M-411			0-26
BIS M-449			
BIS M-4006-001			
BIS M-4008-001			
BIS VM-300			
BIS VM-301			
BIS VM-332			
BIS VM-333			
BIS VM-344-401			
BIS VM-345-401			
BIS VM-349-401			
BIS M-410			0-15
BIS M-411			0-26

Dimensions in mm

* Installation on request



BIS0143 BIS M-128-03/L	BIS003Y BIS M-101-01/L	BIS0045 BIS M-111-02/L
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 26 x 6 mm	Ø 30 x 1 mm	Ø 30 x 2.8 mm
round	round	round
8 Byte	4 Byte	8 Byte
EEPROM	EEPROM	FRAM
DIN ISO 15693	DIN ISO 14443	DIN ISO 15693
112 Byte	752 Byte	2000 Byte
-25...85 °C	-25...85 °C	-25...85 °C
—	—	—
-25...70 °C	-25...70 °C	-25...85 °C
Epoxy-resin/fiberglass	Epoxy resin-glass fiber, GF	PA 6
IP67	IP67	IP68
metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
CE	CE	CE
Page 119	Page 119	Page 119

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
					0-22			0-28
					0-34			0-45
					0-16			0-20
					0-14			
								0-140
								0-120
								0-175
		0-27			0-20			0-28
					0-15			0-20
		0-21						0-21
					0-28			0-40
					0-14			0-18
					0-15			
		0-13						
					0-12			0-28
								0-28
		0-26						
								0-67
								3-13
								0-52
								0-52
					0-15	0-28	0-18	0-10
					0-15	0-45	0-30	
		0-13						
		0-21				0-21		
						0-28	0-18	0-10
						0-28		
						3-13		



	BIS00Y8 BIS M-134-10/L	
Product Group	HF (13.56 MHz)	
Dimension	Ø 49.8 x 5.3 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	736 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS, black	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 119	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-301			
BIS M-302			
BIS M-304			
BIS M-305			
BIS M-307			
BIS M-340			
BIS M-341			
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-373-000-A01			
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-400-xxx-401			
BIS M-401			
BIS M-402-xxx-002			
BIS M-402-xxx-004			
BIS M-404-xxx-401			
BIS M-405-xxx-001			
BIS M-406-045-001			
BIS M-408-045-001			
BIS M-410			0-32
BIS M-411			0-56
BIS M-414			
BIS M-449			
BIS M-4006-001			
BIS M-4008-001			
BIS VM-300			
BIS VM-301			
BIS VM-305			
BIS VM-307			
BIS VM-330			
BIS VM-332			
BIS VM-333			
BIS VM-341-001			
BIS VM-341-401			
BIS VM-343-401			
BIS VM-344-401			
BIS VM-345-401			
BIS VM-346-401			
BIS VM-349-401			
Dimensions in mm			



BIS003Z BIS M-102-01/L	BIS0046 BIS M-112-02/L	BIS00NW BIS M-143-02/A-M8
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 50 x 1 mm	Ø 50 x 3.3 mm	Ø 22 x 21 mm
round	round	round
4 Byte	8 Byte	8 Byte
FRAM	FRAM	FRAM
DIN ISO 14443	DIN ISO 15693	DIN ISO 15693
752 Byte	2000 Byte	2000 Byte
-25...85 °C	-25...85 °C	-25...95 °C
—	140 °C 1x100 h, -40 °C...90 °C 1x1000 h	—
-25...70 °C	-25...85 °C	-25...70 °C
Epoxy resin-glass fiber, GF	PA 6	Steel, data carrier: PA 12-GF30
IP67	IP68	IP68, IPx9K
metal-free (clear zone)	metal-free (clear zone)	on metal
CE	CE	CE
Page 119	Page 120	Page 120

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		0-32			0-44		0-13	
		0-45			0-70			
		0-20			0-30		0-13	
		0-18						
							0-12	
							0-12	
					0-170			
					35-90		0-23	
					0-150			
					0-235			
					0-270			
		0-28			0-38		0-13	
		0-18			0-28		0-12	
					0-30		0-13	
		0-45			0-60		0-16	
							0-9	
							0-9	
							0-9,5	
		0-28			0-38		0-13	
					0-38			
					0-40		0-13	
							0-7	
							0-10	
					0-80		0-18	
					0-80		0-18	
		0-32			0-44		0-13	
		0-45			0-70			
							0-12	
							0-12	
							0-7	
							0-9,5	
					0-30		0-13	
					35-90		0-23	
					0-100			
					0-44		0-7,5	
					0-45		0-13	
							0-16	
							0-7,5	
							0-10	

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	BIS0100 BIS M-143-02/A-M8-SA2	
Product Group	HF (13.56 MHz)	
Dimension	Ø 21 x 21 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Steel, data carrier: PA 12-GF30	
Protection degree	IP68, IPx9K	
Installation	on metal	
Approval/Conformity	CE	
Productview	Page 120	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300		0-13		
BIS M-302		0-13		
BIS M-305		0-12		
BIS M-307		0-12		
BIS M-341		0-23		
BIS M-400-xxx-001		0-13		
BIS M-400-xxx-002		0-12		
BIS M-400-xxx-401		0-13		
BIS M-401		0-16		
BIS M-402-xxx-002		0-9		
BIS M-402-xxx-004		0-9		
BIS M-404-xxx-401		0-9.5		
BIS M-405-xxx-001		0-13		
BIS M-408-045-001		0-13		
BIS M-414		0-7		
BIS M-449		0-10		
BIS M-4006-001		0-18		
BIS M-4008-001		0-18		
BIS VM-300		0-13		
BIS VM-305		0-12		
BIS VM-307		0-12		
BIS VM-330		0-7		
BIS VM-332		0-9.5		
BIS VM-333		0-13		
BIS VM-341-001		0-23		
BIS VM-343-401		0-7.5		
BIS VM-344-401		0-13		
BIS VM-345-401		0-16		
BIS VM-346-401		0-7.5		
BIS VM-349-401		0-10		
Dimensions in mm				



BISO0NU BIS M-143-02/A-M6	BISO0M8 BIS M-140-02/A-M8	BISO0M9 BIS M-140-02/A-M6
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Ø 21 x 21 mm	Ø 22 x 31 mm	Ø 22 x 31 mm
round	round	round
8 Byte	8 Byte	8 Byte
FRAM	FRAM	FRAM
DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
2000 Byte	2000 Byte	2000 Byte
-25...95 °C	-25...95 °C	-25...95 °C
—	—	—
-25...70 °C	-25...70 °C	-25...70 °C
Steel, data carrier: PA 12-GF30	Steel, data carrier: PA 12-GF30	Steel, data carrier: PA 12-GF30
IP68, IPx9K	IP68, IPx9K	IP68, IPx9K
on metal	on metal	on metal
CE	CE	CE
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flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-13			0-22			0-22	
	0-13			0-17			0-17	
	0-12			0-17			0-17	
	0-12			0-16			0-16	
	0-23			0-46			0-46	
	0-13			0-22			0-22	
	0-12							
	0-13							
	0-16			0-32			0-32	
	0-9							
	0-9							
	0-9.5							
	0-13			0-22			0-22	
	0-13			0-22			0-22	
	0-7			0-9			0-9	
	0-10			0-13			0-13	
	0-18							
	0-18							
	0-13			0-22			0-22	
	0-12			0-17			0-17	
	0-12			0-16			0-16	
	0-7							
	0-9.5							
	0-13							
	0-23			0-46			0-46	
	0-7.5							
	0-13			0-22			0-22	
	0-16							
	0-7.5							
	0-10							



	BIS0119 BIS M-142-20/A-M8-GY	
Product Group	HF (13.56 MHz)	
Dimension	Ø 22 x 26 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	8192 Byte	
Storage temperature	-25...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Steel, data carrier: PA 12-GF30 gray	
Protection degree	IP68, IPx9K	
Installation	on metal	
Approval/Conformity	CE	
Productview	Page 120	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-301			
BIS M-302			
BIS M-304			
BIS M-305			
BIS M-341			
BIS M-371-000-A01		0-50	
BIS M-372-000-A01		0-65	
BIS M-373-000-A01		0-65	
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-400-xxx-401			
BIS M-401			
BIS M-404-xxx-401			
BIS M-405-xxx-001			
BIS M-410			
BIS M-449			
BIS M-458-045-001			
BIS M-4006-001		0-38	
BIS M-4006-002			
BIS M-4008-001		0-38	
BIS VM-300			
BIS VM-301			
BIS VM-305			
BIS VM-332			
BIS VM-333			
BIS VM-341-001			
BIS VM-341-401		0-40	
BIS VM-343-401		0-7.5	
BIS VM-344-401			
BIS VM-345-401		0-22	
BIS VM-346-401		0-7.5	
BIS VM-349-401			

Dimensions in mm

* Installation on request



	BIS004E BIS M-125-01/L	BIS0043 BIS M-108-02/L	BIS011F BIS M-108-11/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	30 x 6 x 30 mm	32 x 11 x 52 mm	32 x 11 x 52 mm
	round	round	round
	4 Byte	8 Byte	8 Byte
	EEPROM	FRAM	FRAM
	DIN ISO 14443	DIN ISO 15693	DIN ISO 15693 (High Memory)
	752 Byte	2000 Byte	8192 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	—	—	—
	-25...70 °C	-25...70 °C	-25...70 °C
	PBT	PBT, GF	PBT, GF
	IP67	IP67	IP67
	metal-free (clear zone) on metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal
	CE	CE	CE
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	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
				0-16		0-30			
						0-45			
				0-12		0-20			
				0-10		0-18			
				0-11		0-17			
				0-50		20-60			
						0-110			
						0-160			
						0-185			
				0-16		0-28			
				0-12		0-20			
				0-13	0-15	0-21			
						0-40			
				0-6	0-8	0-11	0-5	0-6	0-6.5
				0-16		0-28			
						0-40			
				0-7	0-9.5	0-13			
							11-18	0-28	0-36
				10-19	0-32	0-52			
							11-18	0-28	0-36
				10-19	0-32	0-52			
				0-16		0-30			
						0-45			
				0-11		0-17			
				0-6	0-8	0-11	0-5	0-6	0-6.5
				0-13	0-15	0-21			
				14-25		20-60			
				14-20	0-36	0-64	11-20	0-30	0-42
				0-16		0-30		0-15	0-18
						0-28			0-18
				0-7	0-9.5	0-13			



	BIS0111 BIS M-108-20/A	
Product Group	HF (13.56 MHz)	
Dimension	32 x 11 x 52 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	8192 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PBT, GF	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE	
Productview	Page 121	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-301			0-45	
BIS M-371-000-A01			0-100	
BIS M-372-000-A01			0-150	
BIS M-373-000-A01			0-150	
BIS M-400-xxx-401	0-13	0-15	0-21	
BIS M-404-xxx-401				
BIS M-4006-001				
BIS M-4008-001	11-18	0-28	0-36	
BIS VM-301			0-50	
BIS VM-332				
BIS VM-333	0-13	0-15	0-21	
BIS VM-341-401				
BIS VM-344-401	0-16		0-30	
BIS VM-345-401			0-28	
Dimensions in mm				



	BIS011E BIS M-108-13/A	BIS011A BIS M-108-14/A	BIS0139 BIS M-108-15/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	32 x 11 x 52 mm	32 x 11 x 52 mm	32 x 11 x 52 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)
	32768 Byte	65536 Byte	131072 Byte
	-25...85 °C	-25...85 °C	-25...85 °C
	—	—	—
	-25...70 °C	-25...70 °C	-25...70 °C
	PBT, GF	PBT, GF	PBT, GF
	IP67	IP67	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	CE	CE	CE
	Page 121	Page 121	Page 121

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-5	0-6	0-6.5	0-5	0-6	0-6.5	0-5	0-6	0-6.5
	11-18	0-28	0-36	11-18	0-28	0-36	11-18	0-28	0-36
	11-18	0-28	0-36	11-18	0-28	0-36	11-18	0-28	0-36
	0-5	0-6	0-6.5	0-5	0-6	0-6.5	0-5	0-6	0-6.5
	11-20	0-30	0-42	11-20	0-30	0-42	11-20	0-30	0-42
		0-15	0-18		0-15	0-18		0-15	0-18
			0-18			0-18			0-18



	BIS00Y5 BIS M-135-03/L	
Product Group	HF (13.56 MHz)	
Dimension	51.5 x 6.4 x 51.5 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...85 °C	
Storage temperature temporary	—	
Ambient temperature	-20...85 °C	
Housing material	ABS, black	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 121	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-371-000-A01			10-205
BIS M-372-000-A01			0-300
BIS M-373-000-A01			0-340
BIS M-400-xxx-001			0-50
BIS M-408-045-001			0-48
BIS M-410			0-68
BIS M-411			0-110
BIS M-371-000-A01			10-205
BIS M-372-000-A01			0-300
BIS M-373-000-A01			0-340
BIS M-400-xxx-001			0-50
BIS M-408-045-001			0-48
BIS M-410			0-68
BIS M-411			0-110

Dimensions in mm



	BISO0Y3 BIS M-135-07/L	BISO0Y6 BIS M-135-02/L	BISO0W9 BIS M-136-03/L
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	51.5 x 6.4 x 51.5 mm	51.5 x 6.4 x 51.5 mm	52 x 11.5 x 128 mm
	round	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	FRAM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	992 Byte	2000 Byte	112 Byte
	-40...85 °C	-40...85 °C	-40...85 °C
	—	—	—
	-20...85 °C	-20...85 °C	-20...85 °C
	ABS, black	ABS, black	ABS, black
	IP68	IP68	IP68
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE	CE	CE
	Page 121	Page 121	Page 121

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						25-140			15-210
						0-230			0-350
						0-230			0-370
			23-46			0-60			
			11-75			0-100			
						25-140			15-210
						0-230			0-350
						0-230			0-370
			23-46			0-60			
			11-75			0-100			



	BIS00Y9 BIS M-133-02/A
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 9.7 mm
Antenna type	round
UID serial number, read-only	8 Byte
Memory type	FRAM
Supported data carrier types	DIN ISO 15693
User data, read/write	2000 Byte
Storage temperature	-40...130 °C
Storage temperature temporary	—
Ambient temperature	-40...85 °C
Housing material	PA, black
Protection degree	IP67
Installation	metal-free (clear zone) on metal
Approval/Conformity	CE
Productview	Page 121

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-340			
BIS M-351			
BIS M-371-000-A01			0-70
BIS M-372			
BIS M-400-xxx-001			
BIS M-408-045-001			
BIS M-410			0-32
BIS M-411			38-52
BIS M-451			
BIS M-458-045-001			
BIS M-4006-001			0-55
BIS M-4006-002			
BIS M-4008-001		0-45	0-55
BIS M-4008-002			
BIS VM-300			
BIS VM-343-401			
BIS VM-344-401			
BIS VM-346-401			
BIS VM-351-001			
BIS VM-351-401			
BIS M-410			0-32
BIS M-411			38-52
BIS M-4006-001			0-55
BIS M-4008-001		0-45	0-55

Dimensions in mm

** Combined with metal mounting plate BAM012M



	BIS00LC BIS M-107-03/L-H200	BIS004F BIS M-150-02/A	BIS004H BIS M-151-02/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	22 x 6.5 x 40 mm	22 x 6.5 x 40 mm	22 x 6.5 x 40 mm
	round	Rod	Rod
	8 Byte	8 Byte	8 Byte
	EEPROM	FRAM	FRAM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	112 Byte	2000 Byte	2000 Byte
	-25...85 °C	—	—
	200 °C 1x1000 h	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h
	-25...70 °C	-25...70 °C	-25...70 °C
	PPS, GF40, with EP potting	PPS, GF40, with EP potting	PPS, GF40, with EP potting
	IP67	IP67	IP67
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 121	Page 121	Page 121

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
		0-13	0-27 0-100						
					0-65	0-65		0-65	0-65
		0-13 0-12	0-27 0-25						
					0-65 0-42	0-65 0-42		0-65 0-38	0-65 0-38
					0-60	0-60		0-65	0-65
					0-60 0-27 0-7	0-60 0-27 0-7		0-65	0-65
		0-13	0-13		0-27 0-7	0-27 0-7			
		0-13	0-13		0-65 0-52	0-65 0-52		0-65 0-52	0-65 0-52



	BIS011M BIS M-155-11/A	
Product Group	HF (13.56 MHz)	
Dimension	22 x 9.7 x 40 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693 (High Memory)	
User data, read/write	8192 Byte	
Storage temperature	—	
Storage temperature temporary	-25...130 °C 1x1000 h	
Ambient temperature	-25...70 °C	
Housing material	PPS, GF40, with EP potting	
Protection degree	—	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 121	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)**
BIS M-4006-002		0-42	0-42
BIS M-4008-002		0-42	0-42
BIS VM-351-401		0-50	0-50
BIS VM-355-401		0-34	0-34

Dimensions in mm

** Combined with metal mounting plate BAM012M



	BIS0117 BIS M-155-20/A	BIS012J BIS M-156-11/A	BIS0112 BIS M-156-20/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm
	Rod	Rod	Rod
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693	DIN ISO 15693 (High Memory)	DIN ISO 15693
	8192 Byte	8192 Byte	8192 Byte
	—	—	—
	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h
	-25...70 °C	-25...70 °C	-25...70 °C
	PPS, GF40, with EP potting	PPS, GF40, with EP potting	PPS, GF40, with PU potting
	—	—	—
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 121	Page 122	Page 122

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
		0-68	0-68		0-42	0-42		0-68	0-68
		0-68	0-68		0-42	0-42		0-68	0-68
		0-75	0-75		0-42	0-42		0-70	0-70
		0-45	0-45		0-30	0-30		0-45	0-45



	BIS011Z BIS M-155-13/A	
Product Group	HF (13.56 MHz)	
Dimension	22 x 9.7 x 40 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693 (High Memory)	
User data, read/write	32768 Byte	
Storage temperature	—	
Storage temperature temporary	-25...130 °C 1x1000 h	
Ambient temperature	-25...70 °C	
Housing material	PPS, GF40, with EP potting	
Protection degree	—	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 121	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)**
BIS M-4006-002		0-42	0-42
BIS M-4008-002		0-42	0-42
BIS VM-351-401		0-50	0-50
BIS VM-355-401		0-34	0-34

Dimensions in mm

** Combined with metal mounting plate BAM012M



	BIS012K BIS M-156-13/A	BIS011N BIS M-155-14/A	BIS012L BIS M-156-14/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm	22 x 9.7 x 40 mm
	Rod	Rod	Rod
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)
	32768 Byte	65536 Byte	65536 Byte
	—	—	—
	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h	-25...130 °C 1x1000 h
	-25...70 °C	-25...70 °C	-25...70 °C
	PPS, GF40, with EP potting	PPS, GF40, with EP potting	PPS, GF40, with EP potting
	—	—	—
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 122	Page 121	Page 122

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)**
		0-42	0-42		0-42	0-42		0-42	0-42
		0-42	0-42		0-42	0-42		0-42	0-42
		0-42	0-42		0-50	0-50		0-42	0-42
		0-30	0-30		0-34	0-34		0-30	0-30



	BIS013C BIS M-155-15/A	
Product Group	HF (13.56 MHz)	
Dimension	22 x 9.7 x 40 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693 (High Memory)	
User data, read/write	131072 Byte	
Storage temperature	—	
Storage temperature temporary	-25...130 °C 1x1000 h	
Ambient temperature	-25...70 °C	
Housing material	PPS, GF40, with EP potting	
Protection degree	—	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 121	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)**	
BIS M-351				
BIS M-451				
BIS M-458-045-001				
BIS M-4006-002		0-42	0-42	
BIS M-4008-002		0-42	0-42	
BIS VM-351-001				
BIS VM-351-401		0-50	0-50	
BIS VM-355-401		0-34	0-34	

Dimensions in mm

** Combined with metal mounting plate BAM012M



	BIS013F BIS M-156-15/A	BIS00P3 BIS M-153-02/A	BIS011W BIS M-153-11/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	22 x 9.7 x 40 mm	40 x 22 x 80 mm	40 x 22 x 80 mm
	Rod	Rod	Rod
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	FRAM
	DIN ISO 15693 (High Memory)	DIN ISO 15693	DIN ISO 15693 (High Memory)
	131072 Byte	2000 Byte	8192 Byte
	—	-25...85 °C	-25...85 °C
	-25...130 °C 1x1000 h	—	—
	-25...70 °C	-25...85 °C	-25...85 °C
	PPS, GF40, with EP potting	POM	POM
	—	—	—
	metal-free (clear zone) on metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal
	CE	CE	CE
	Page 122	Page 122	Page 122

	flush in metal	on metal	metal-free (clear zone)**	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						0-100			
						0-100			
						0-54			
		0-42	0-42			0-100			0-55
		0-42	0-42			0-100			0-55
				0-100				0-60	
		0-42	0-42	0-100	0-100				
		0-30	0-30	0-60	0-60			0-36	



	BIS011Y BIS M-153-13/A	
Product Group	HF (13.56 MHz)	
Dimension	40 x 22 x 80 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693 (High Memory)	
User data, read/write	32768 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	POM	
Protection degree	—	
Installation	metal-free (clear zone) on metal	
Approval/Conformity	CE	
Productview	Page 122	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-371-000-A01			
BIS M-372-000-A01			
BIS M-373-000-A01			
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-401			
BIS M-402-xxx-002			
BIS M-411			
BIS M-4006-001			
BIS M-4006-002			0-55
BIS M-4008-001			
BIS M-4008-002			0-55
BIS VM-300			
BIS VM-344-401			
BIS VM-345-401			
BIS VM-351-401		0-60	
BIS VM-355-401		0-36	

Dimensions in mm

** Combined with metal mounting plate BAM012M



	BIS011U BIS M-153-14/A	BIS013E BIS M-153-15/A	BIS00YE BIS M-132-03/L-HT
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	40 x 22 x 80 mm	40 x 22 x 80 mm	Ø 24.9 x 4.8 mm
	Rod	Rod	round
	8 Byte	8 Byte	8 Byte
	FRAM	FRAM	EEPROM
	DIN ISO 15693 (High Memory)	DIN ISO 15693 (High Memory)	DIN ISO 15693
	65536 Byte	131072 Byte	112 Byte
	-25...85 °C	-25...85 °C	-40...220 °C
	—	—	—
	-25...85 °C	-25...85 °C	-40...85 °C
	POM	POM	PPS
	—	—	IP68
	metal-free (clear zone) on metal	metal-free (clear zone) on metal	metal-free (clear zone)
	CE	CE	CE, Ecolab
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	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
									0-30
									0-100
									0-145
									0-155
									0-30
									0-24
									0-50
									0-20
									0-70
									0-60
			0-55			0-55			0-60
			0-55			0-55			0-30
									0-30
									0-34
		0-60			0-60				
		0-36			0-36				



	BIS00YA BIS M-132-10/L-HT	
Product Group	HF (13.56 MHz)	
Dimension	Ø 24.9 x 4.8 mm	
Antenna type	round	
UID serial number, read-only	4 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 14443	
User data, read/write	736 Byte	
Storage temperature	-40...220 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PPS	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, Ecolab	
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Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300				
BIS M-371-000-A01			0-40	
BIS M-372-000-A01			0-30	
BIS M-373-000-A01				
BIS M-400-xxx-001				
BIS M-401				
BIS M-406-045-001				
BIS M-408-045-001				
BIS M-410			0-15	
BIS M-411			0-22	
BIS M-4006-001				
BIS M-4008-001				
BIS VM-300				
BIS VM-341-401				
BIS VM-344-401				
BIS VM-345-401				
BIS M-371-000-A01			0-40	
BIS M-372-000-A01			0-30	
BIS M-400-xxx-001				
BIS M-406-045-001				
BIS M-410			0-15	
BIS M-411			0-22	
Dimensions in mm				



	BISO0Y7 BIS M-134-10/L-HT	BISO18P BIS M-137-10/L-HT	BISO0Y4 BIS M-135-03/L-HT
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 49.8 x 5.3 mm	Ø 49.8 x 5.3 mm	51.5 x 6.4 x 51.5 mm
	round	round	round
	4 Byte	4 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 14443	DIN ISO 14443	DIN ISO 15693
	736 Byte	736 Byte	112 Byte
	-40...220 °C	-40...220 °C	-40...220 °C
	—	—	—
	-40...85 °C	-40...85 °C	-40...85 °C
	PPS	PPS	PPS
	IP68	IP68	IP68
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE, Ecolab	CE	CE, Ecolab
	Page 119	Page 122	Page 121

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
									0-42
									10-205
									0-300
									0-340
			0-24			0-24			0-42
									0-75
			0-24			0-24			0-42
									0-48
			0-36			0-36			0-70
			0-60			0-60			0-125
									0-90
									0-90
									0-42
									0-120
									0-42
									0-52
			0-24			0-24			
			0-24			0-24			
			0-36			0-36			
			0-60			0-60			



	BIS018R BIS M-138-03/L-HT	
Product Group	HF (13.56 MHz)	
Dimension	51.5 x 6.4 x 51.5 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	112 Byte	
Storage temperature	-40...220 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	PPS	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 122	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300			0-42	
BIS M-371-000-A01			10-205	
BIS M-372-000-A01			0-300	
BIS M-373-000-A01			0-340	
BIS M-400-xxx-001			0-42	
BIS M-401			0-75	
BIS M-406-045-001			0-42	
BIS M-408-045-001			0-48	
BIS M-410			0-70	
BIS M-411			0-125	
BIS M-4006-001			0-90	
BIS M-4008-001			0-90	
BIS VM-300			0-42	
BIS VM-341-401			0-120	
BIS VM-344-401			0-42	
BIS VM-345-401			0-52	

Dimensions in mm



BISO0Y2 BIS M-135-07/L-HT	BISO18T BIS M-138-07/L-HT	BISO0Y1 BIS M-136-03/L-HT
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
51.5 x 6.4 x 51.5 mm	51.5 x 6.4 x 51.5 mm	52 x 11.5 x 128 mm
round	round	round
8 Byte	8 Byte	8 Byte
EEPROM	EEPROM	EEPROM
DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
992 Byte	992 Byte	112 Byte
-40...220 °C	-40...220 °C	-40...220 °C
—	—	—
-40...85 °C	-40...85 °C	-40...85 °C
PPS	PPS	PPS
IP68	IP68	IP68
metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
CE, Ecolab	CE	CE, Ecolab
Page 121	Page 122	Page 121

flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
		10-135			10-135			
		0-190			0-190			
		0-215			0-215			
		23-46			23-46			
		11-75			11-75			
		0-65			0-65			0-95
		0-65			0-65			0-95



	BIS00NZ BIS M-191-02/A	
Product Group	HF (13.56 MHz)	
Dimension	24 x 21 x 24 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	FRAM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	2000 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	PBT, PU potted	
Protection degree	IP67	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 122	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS M-300				
BIS M-352			0-22	
BIS M-401				
BIS M-458-045-001			0-25	
BIS M-4006-002			0-55	
BIS M-4008-002			0-55	
BIS VM-301				
BIS VM-351-401			0-25	
BIS VM-352			0-17	
BIS VM-355-401			0-15	
Dimensions in mm				



	BISO180 BIS M-127-02/A-SA1	BIS0047 BIS M-120-01/L	BISO176 BIS M-127-02/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	40 x 23 x 28 mm	54 x 0.76 x 85.6 mm	93 x 43.3 x 57.2 mm
	round	round	round
	8 Byte	4 Byte	8 Byte
	FRAM	EEPROM	FRAM
	DIN ISO 15693	DIN ISO 14443	DIN ISO 15693
	2000 Byte	752 Byte	2000 Byte
	-25...85 °C	-25...70 °C	-25...85 °C
	—	—	—
	-25...70 °C	-25...70 °C	-25...70 °C
	PA 12 Cast aluminum	PVC	PA 12 Cast aluminum
	IP67	IP67	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
	CE	CE	CE
	Page 122	Page 122	Page 122

	Combined with BISO18E	flush in metal	on metal	metal-free (clear zone)	Combined with BISO189
				0-50	
				0-50	
				0-50	



	BIS017F BIS M-157-17/A	
Product Group	HF (13.56 MHz)	
Dimension	Ø 2.12 x 12 mm	
Antenna type	Rod	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	208 Byte	
Storage temperature	-25...85 °C	
Storage temperature temporary	120 °C 1x100 h, -40 °C...90 °C 1x1000 h, 140 °C 1x10 h	
Ambient temperature	-25...85 °C	
Housing material	Glass, transparent	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 123	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS M-300			
BIS M-301			
BIS M-351			
BIS M-352			
BIS M-371-000-A01			0-17
BIS M-400-xxx-001			
BIS M-400-xxx-002			
BIS M-401			
BIS M-402-xxx-002			
BIS M-406-045-001			
BIS M-451			
BIS M-458-045-001			
BIS M-4006-002			
BIS M-4008-002			
BIS VM-300			
BIS VM-301			
BIS VM-344-401			
Dimensions in mm			



	BIS00M2 BIS M-152-03/A	BIS00L8 BIS M-106-03/L	BIS00KM BIS M-115-03/A
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	Ø 4 x 22.2 mm	Ø 18 x 15 mm	25 x 3 x 65 mm
	Rod	round	round
	8 Byte	8 Byte	8 Byte
	EEPROM	EEPROM	EEPROM
	DIN ISO 15693	DIN ISO 15693	DIN ISO 15693
	112 Byte	112 Byte	112 Byte
	-25...85 °C	10...126 °C	-30...60 °C
	120 °C 1x100 h, -40 °C...90 °C 1x1000 h	—	—
	-25...85 °C	10...70 °C	-25...50 °C
	Glass, transparent	Glass	Epoxy-resin/fiberglass PVC
	IP68	IP68	IP65
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE	CE	CE
	Page 123	Page 123	Page 123

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						0-32			0-18
									0-38
			0-30						
			0-17						
									0-85
									0-24
									0-17
									0-44
									0-14
									0-18
			0-30						
			0-18						
			0-35						
			0-35						
									0-18
						0-32			
									0-18



	BIS00N5 BIS M-115-07A-SA1	
Product Group	HF (13.56 MHz)	
Dimension	25 x 3 x 65 mm	
Antenna type	round	
UID serial number, read-only	8 Byte	
Memory type	EEPROM	
Supported data carrier types	DIN ISO 15693	
User data, read/write	992 Byte	
Storage temperature	-30...60 °C	
Storage temperature temporary	—	
Ambient temperature	-25...50 °C	
Housing material	Epoxy-resin/fiberglass PVC	
Protection degree	IP65	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 123	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)*
BIS M-405			

Dimensions in mm

* Installation on request



BISO12H BIS M-1L4-03/L-D018			
HF (13.56 MHz)			
1 x 20 x 20 mm			
round			
8 Byte			
EEPROM			
DIN ISO 15693			
112 Byte			
-20...80 °C			
—			
0...50 °C			
PET, transparent			
IP20			
metal-free (clear zone) on metal			
CE			
Page 123			

flush in metal	on metal*	metal-free (clear zone)							
		0-18							

Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Systems

Safety

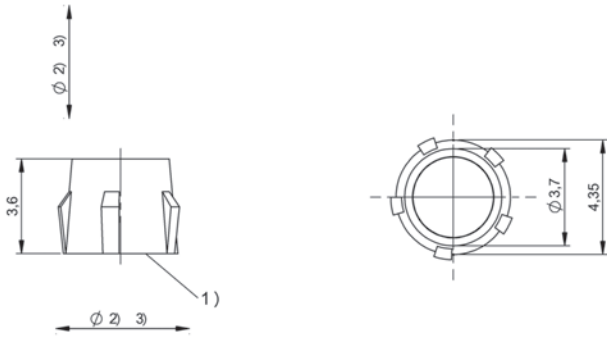
Industrial Networking

Power Supplies

Connectivity

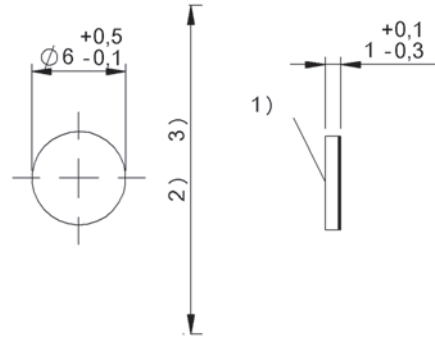
Accessories

118 | RFID | HF (13.56 MHz)



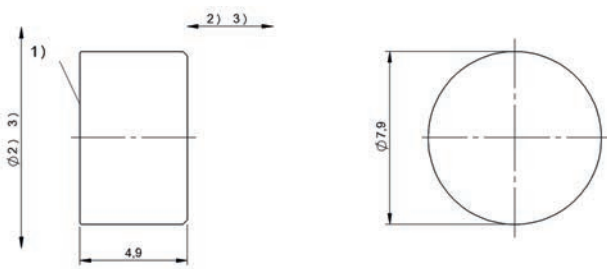
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO18Y



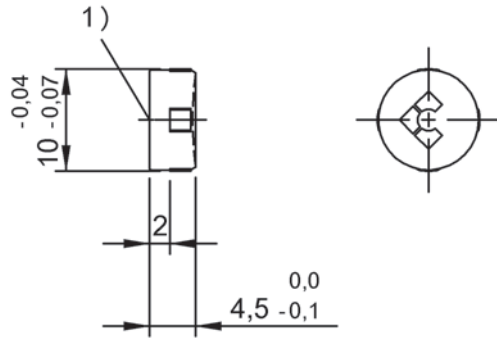
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO00C, BISO00E



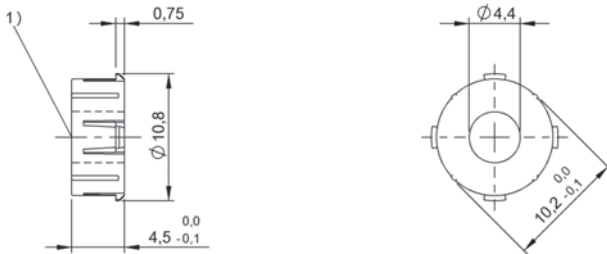
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO00YL, BISO00YJ, BISO00YK



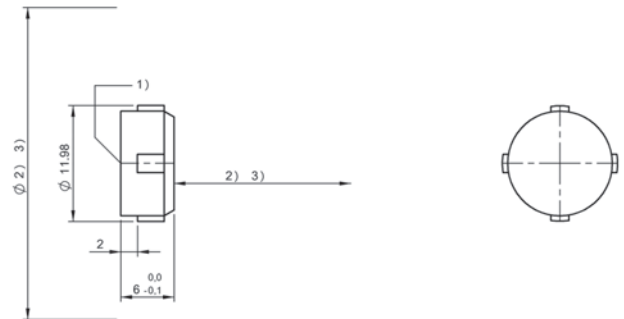
1) Sensing surface

BISO1A0, BISO048, BISO04A



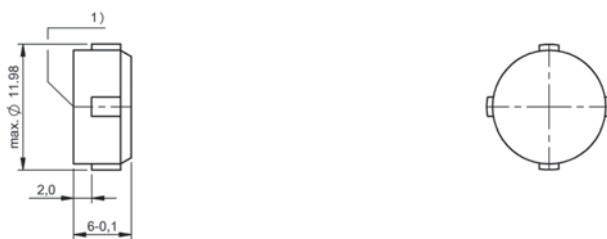
1) Sensing surface

BISO19C



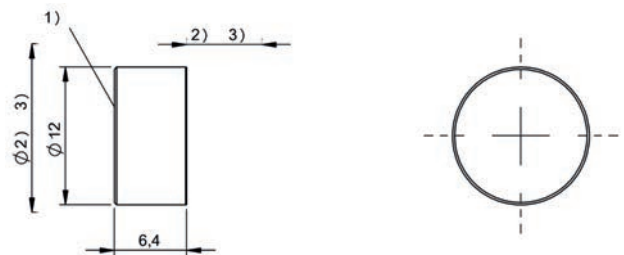
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO040



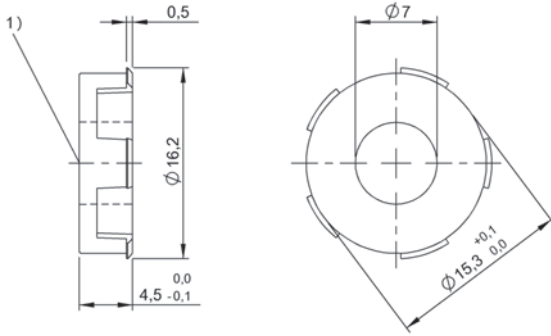
1) Sensing surface

BISO042



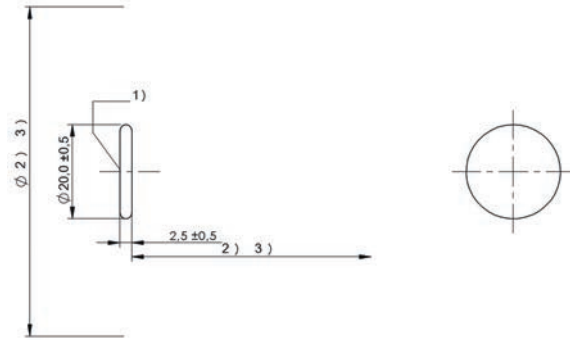
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO00YH



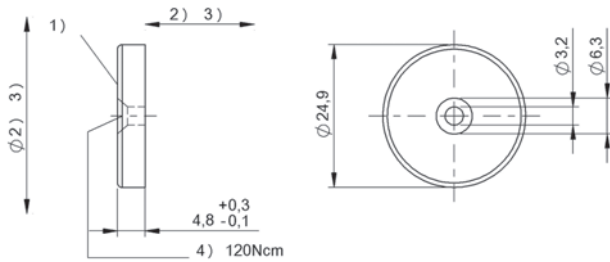
1) Sensing surface

BISO19E



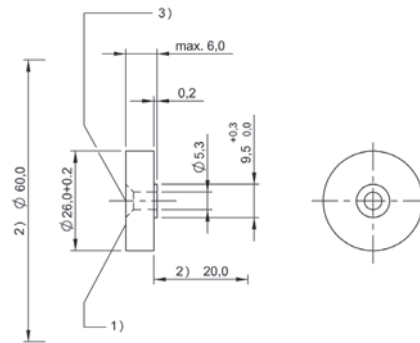
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO044



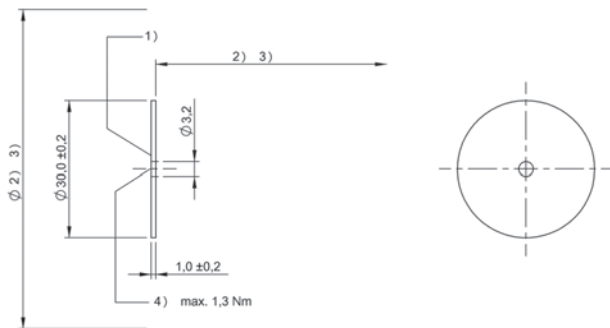
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO00YF, BISO00YC, BISO00YE, BISO00YA



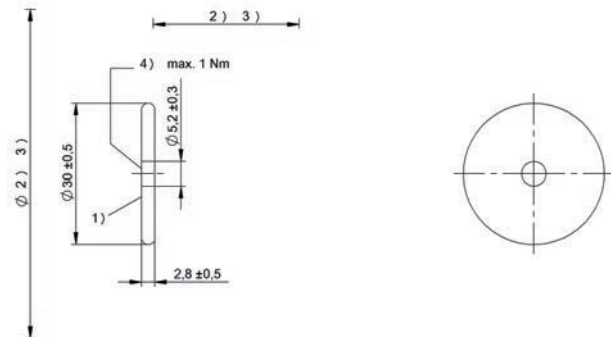
1) Sensing surface, 2) Clear zone, 3) Tightening torque max. 2.5 Nm

BISO143



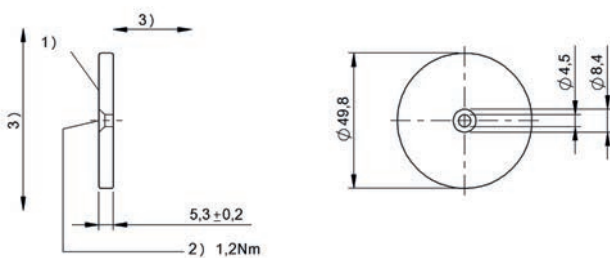
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO003Y



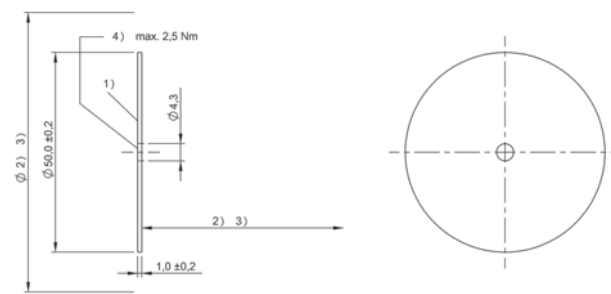
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO0045



1) Sensing surface, 2) Tightening torque, 3) see R/W head table

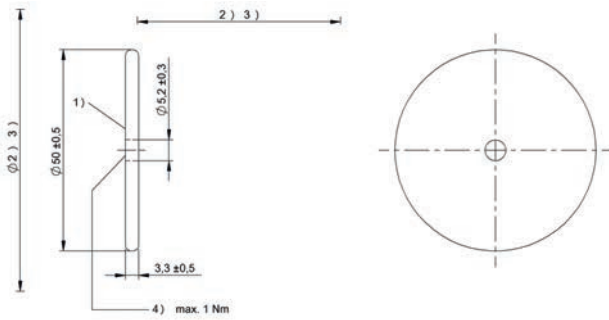
BISO00Y8, BISO00Y7



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

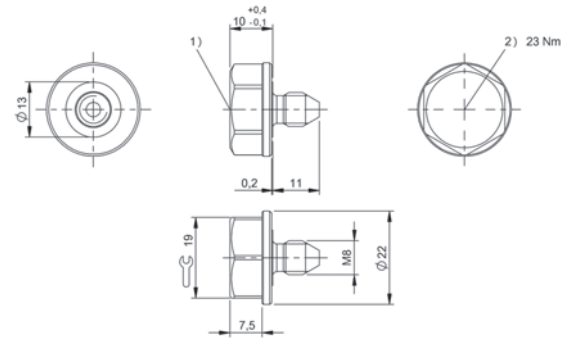
BISO003Z

120 I RFID | HF (13.56 MHz)



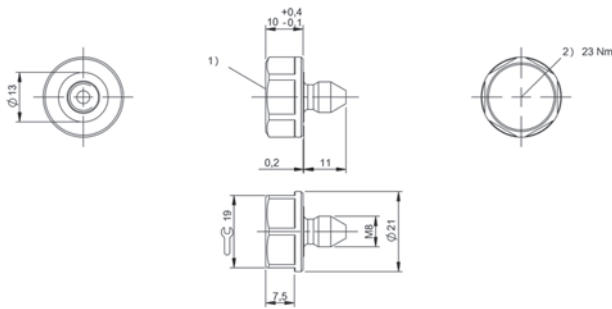
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO046



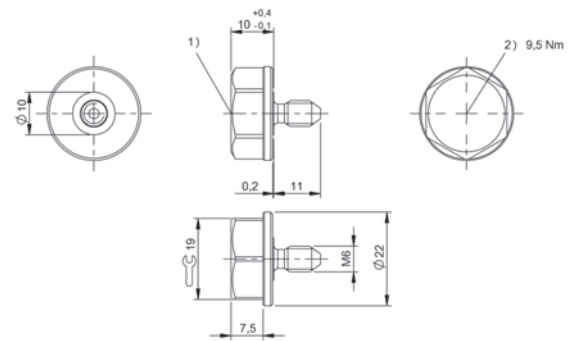
1) Sensing surface, 2) Tightening torque

BISO0NW



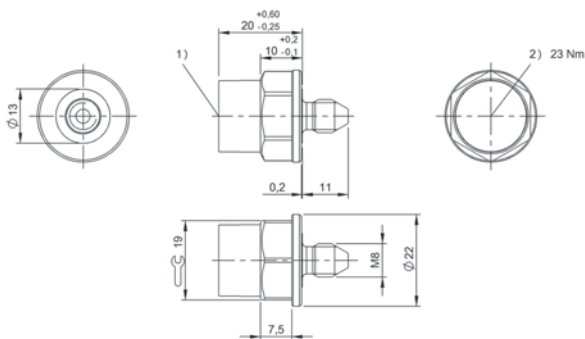
1) Sensing surface, 2) Tightening torque

BISO100



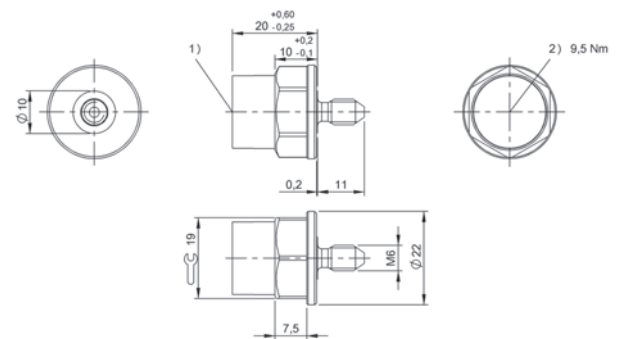
1) Sensing surface, 2) Tightening torque

BISO0NU



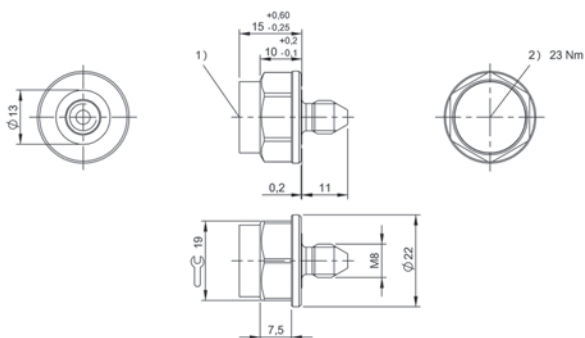
1) Sensing surface, 2) Tightening torque

BISO0M8



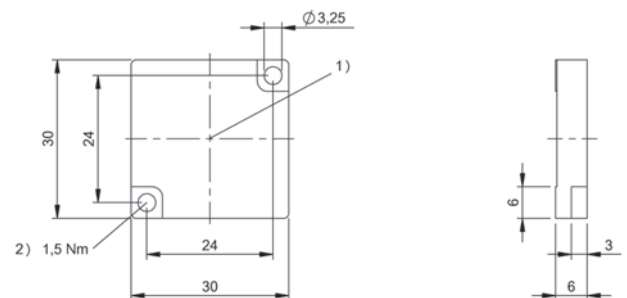
1) Sensing surface, 2) Tightening torque

BISO0M9



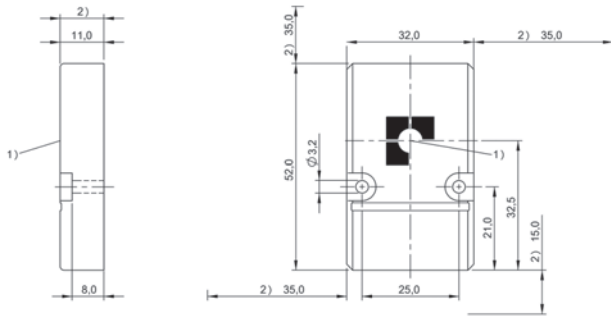
1) Sensing surface, 2) Tightening torque

BISO119



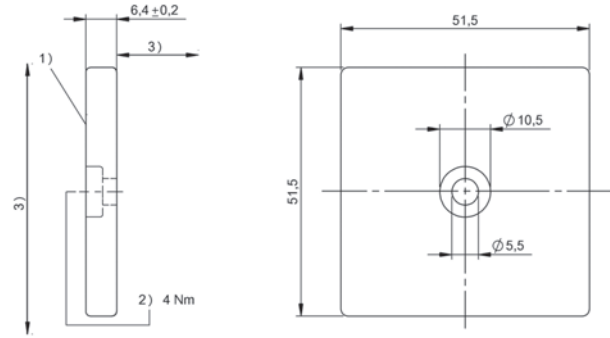
1) Sensing surface, 2) Tightening torque

BISO04E



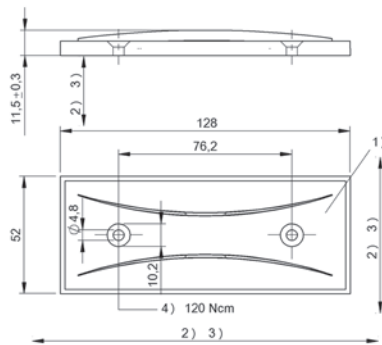
1) Sensing surface, 2) Clear zone

BISO043, BISO11F, BISO111, BISO11E, BISO11A, BISO139



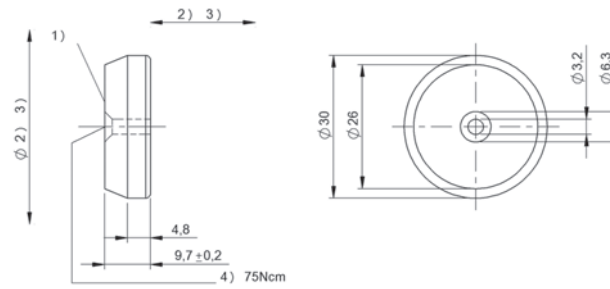
1) Sensing surface, 2) Tightening torque, 3) see R/W head table

BISO0Y5, BISO0Y3, BISO0Y6, BISO0Y4, BISO0Y2



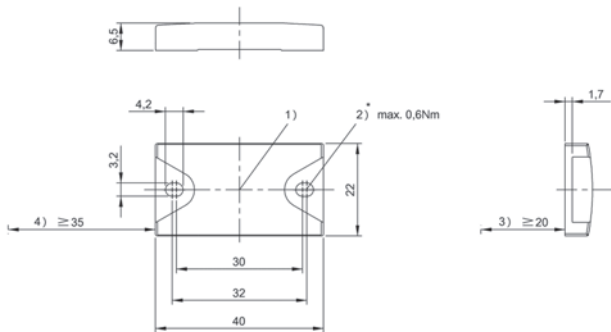
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO0W9, BISO0Y1



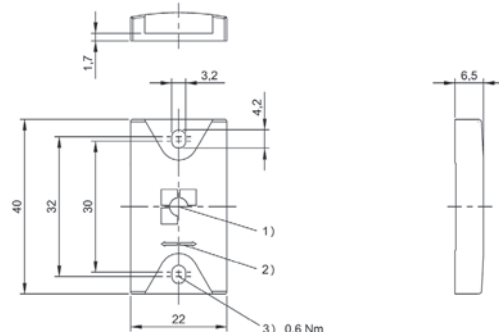
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO0Y9



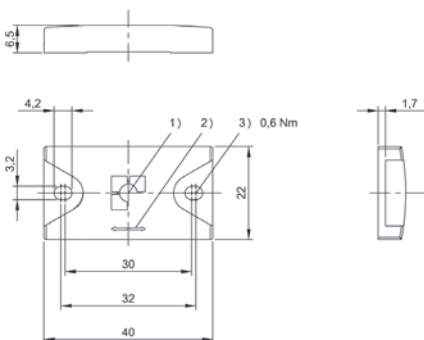
1) Sensing surface, 2) Tightening torque, 3) Clear zone, 4) Clear zone surrounding

BISO0LC



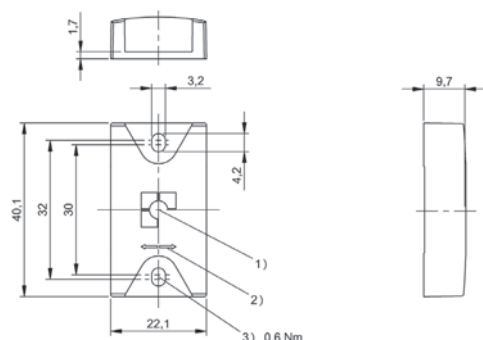
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BISO04F



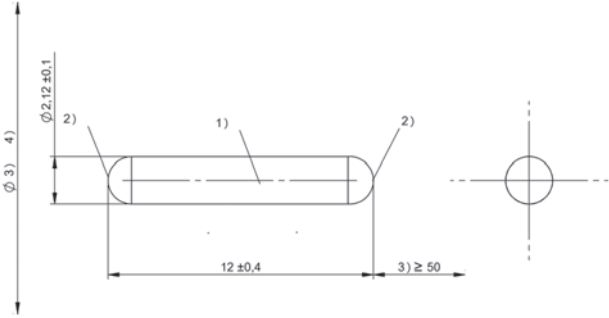
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BISO04H



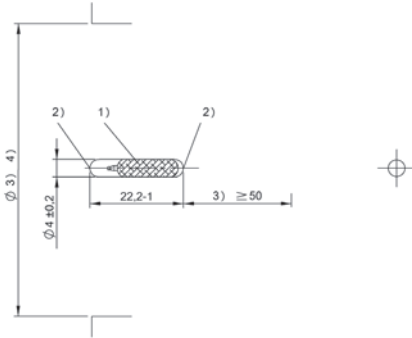
1) Sensing surface, 2) Read/write axis, 3) Tightening torque

BISO11M, BISO117, BISO11Z, BISO11N, BISO13C



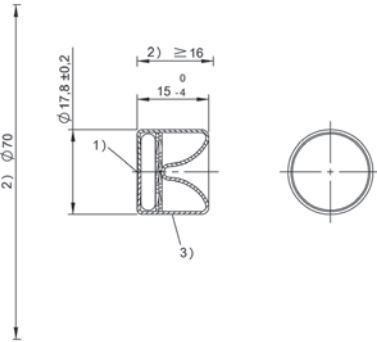
1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

BISO17F



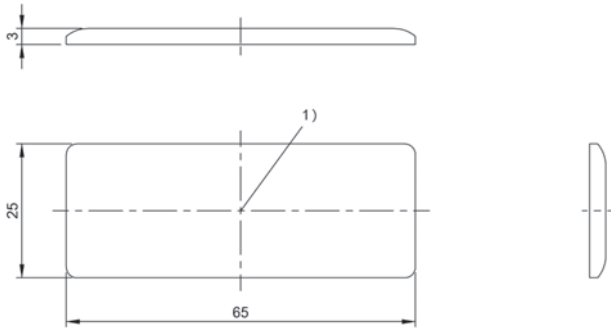
1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

BISO0M2



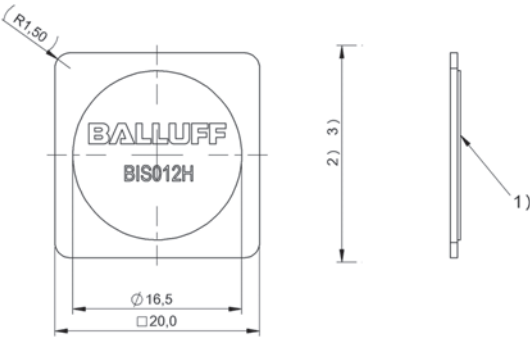
1) Sensing surface, 2) Clear zone, 3) Glass

BISO0L8



1) Sensing surface

BISO0KM, BISO0N5



1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO12H

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Systems

Safety

Industrial Networking

Power Supplies

Connectivity

Accessories

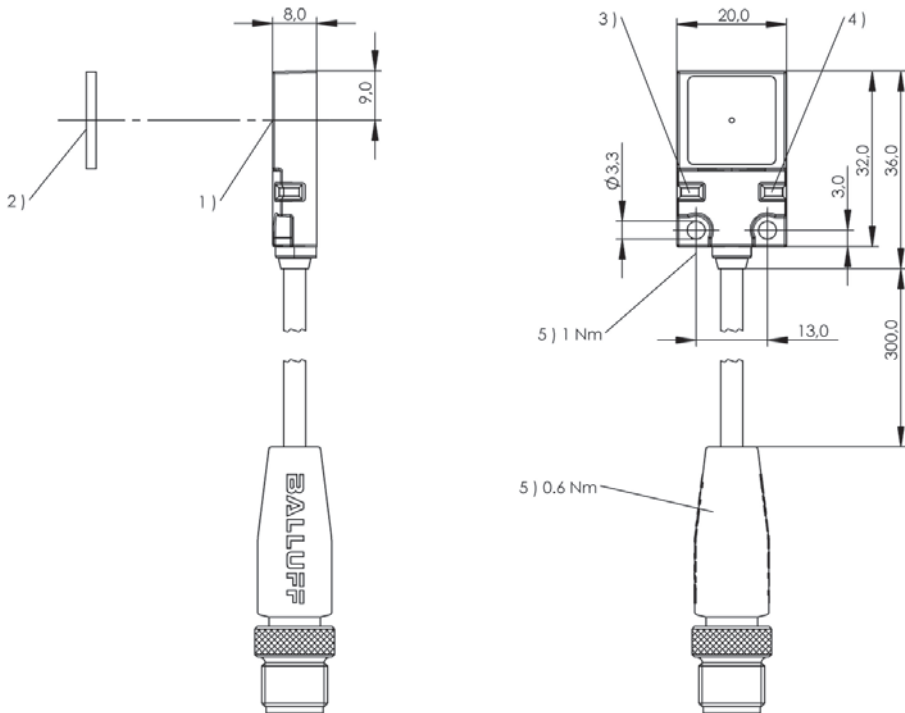


For processor units BIS V-6...	BIS0197 BIS VM-349-401-S4
Product Group	HF (13.56 MHz)
Dimension	20 x 8 x 32 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...80 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL Listed

Appropriate data carrier

	BIS0042			BIS0043			BIS0044		BIS0045		BIS018Y			
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>25	>0	>25			>20	>0	
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>100			>100	>100	
Working distance for writing	0-10	0-9.5	0-7	0-13	0-9.5	0-7	0-12	0-5	3-13			0-6	0-5.5	
Working distance for reading	0-10	0-9.5	0-7	0-13	0-9.5	0-7	0-12	0-5	3-13			0-6	0-5.5	
Offset at distance														
	0	±5	±5	±5	±9	±8	±7	±7	±5			0	±5	±4
	2	±5	±5	±5	±9	±8	±7	±7	±5			2	±5	±4
	4	±5	±5	±4.5	±9	±8	±6	±7	±4	±9		2.5	±4	±3.5
	5	±4.5	±4	±4	±9	±7	±5	±7	±2	±9		3	±4	±3.5
	6	±4.5	±4	±4	±8	±7	±5	±6		±8		4	±4	±3.5
	7	±4.5	±4	±2	±8	±7	±1.5	±6		±8		5	±4	±2
	8	±4.5	±4		±8	±7		±6		±8		5.5	±2	±2
	9	±2	±2		±8	±4		±6		±8		6	±2	
	9.5	±2	±2		±8	±4		±6		±8		6.5		
	10	±1			±8			±6		±8		7		
	12				±3			±3		±3		8		
	13				±3					±3		9		
	15											9.5		
	20											10		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) LED (Power), 4) LED (CP), 5) Tightening torque

BIS00UC			BIS004A			BIS00NU BIS00NW BIS0100		
>20	>0	>0	>20	>0	>0	>0		
>100	>100	>0	>100	>100	>0	>100		
0-6.5	0-4	1.3-2.5	0-8	0-8	0-6	0-10		
0-6.5	0-4	1.3-2.5	0-8	0-8	0-6	0-10		
±4	±4		±5	±4.5	±4	±6		
±4	±4	±2	±5	±4.5	±4	±6		
±3	±3	±0.5	±5	±4.5	±3	±6		
±3	±3		±5	±4.5	±3	±6		
±3	±2		±5	±4.5	±3	±6		
±3			±4	±4	±3	±5		
±2			±4	±4	±2	±5		
±2			±4	±4	±2	±5		
±2			±4	±4		±5		
			±4	±4		±5		
			±2	±2		±5		
						±3		
						±3		
						±3		

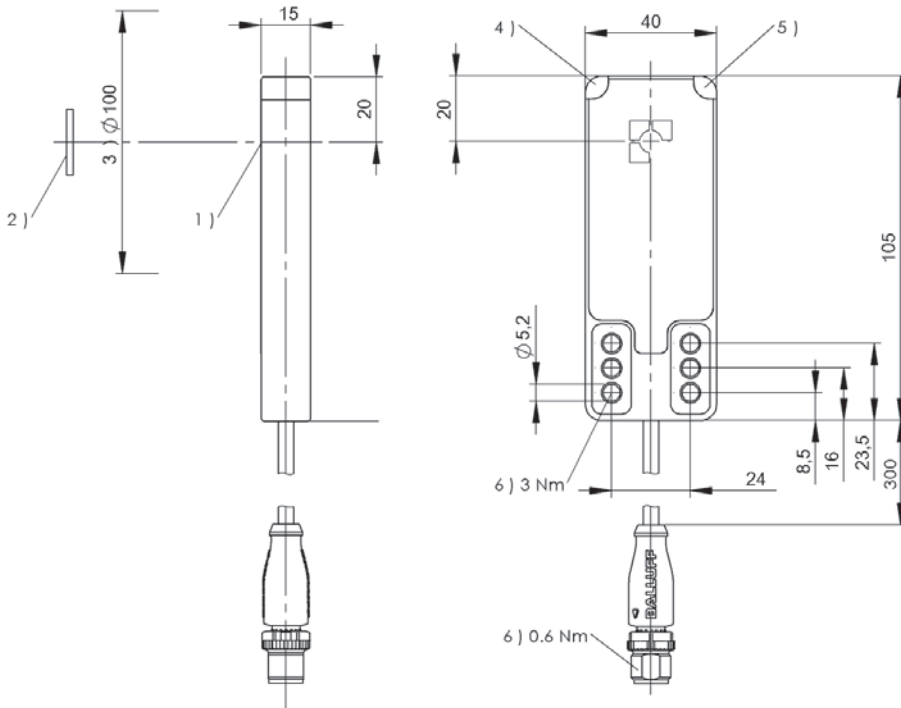


For processor units BIS V-6...	BIS0133 BIS VM-345-401-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0043 BIS0111	BIS011F BIS011E BIS011A BIS0139	BIS004A	BIS00YE	BIS00Y4		BIS0044	BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100		
Data carrier distance to metal	>50	>50	>10	>0	>25	>50	>50	>0	>50	>50	>0	>0		
Data carrier clear zone	>200	>200	>60	>60	>100	>200	>200	>200	>200	>200	>100	>100		
Working distance for writing	0-28	0-18	0-11	0-9	0-34	0-52	0-22	0-5	0-28	0-45	0-22	0-16		
Working distance for reading	0-28	0-18	0-11	0-9	0-34	0-52	0-22	0-5	0-28	0-45	0-22	0-16		
Offset at distance														
	0 ±16	±14	±8	±8	±20	±30	0	±14	±7	±16	±26	0	±13	±10
	4 ±16	±14	±8	±8	±20	±30	4	±14	±6	±16	±26	5	±13	±10
	8 ±16	±14	±7	±6	±20	±30	5	±14	±3	±16	±26	10	±13	±9
	9 ±16	±14	±7	±4	±20	±30	10	±14		±16	±26	13	±10	±8
	10 ±16	±14	±7		±20	±30	15	±12		±14	±26	16	±10	±4
	11 ±14	±11	±4		±18	±30	18	±10		±14	±26	18	±10	
	15 ±14	±11			±18	±30	20	±10		±14	±26	20	±10	
	18 ±14	±5			±18	±30	22	±6		±12	±24	22	±6	
	22 ±12				±15	±28	24			±12	±24	24		
	25 ±12				±15	±28	28			±9	±24	28		
	28 ±9				±15	±28	30				±24	30		
	32				±8	±28	31				±24	31		
	35					±28	35				±24	35		
	40					±28	40				±24	40		
	42					±24	43				±15	43		
	45					±24	45				±15	45		
	48					±24	48					48		
	50					±24	52					52		
	52					±10	60					60		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

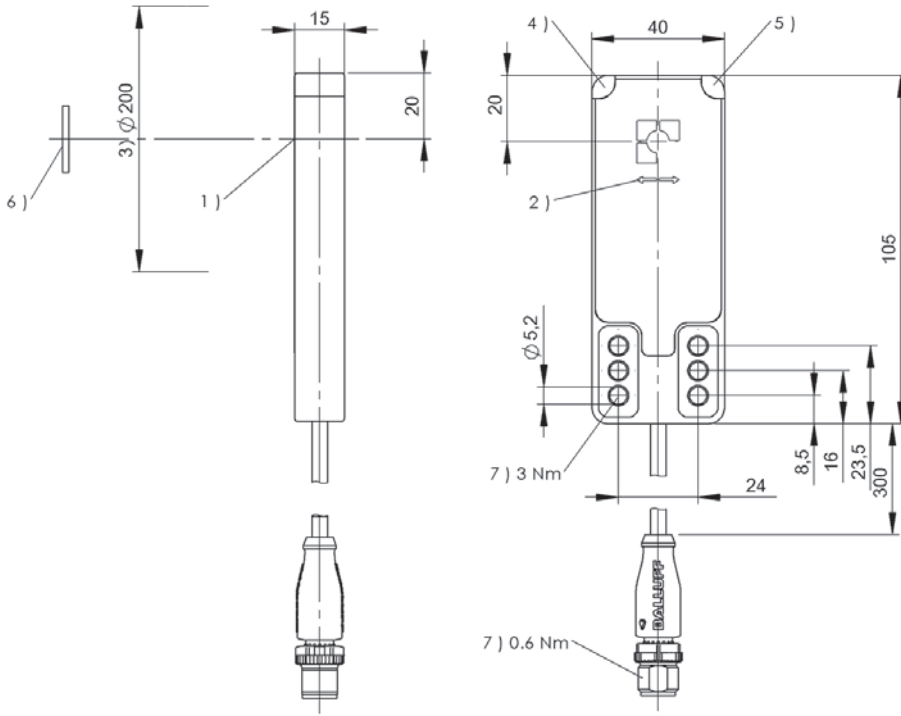


For processor units BIS V-6...	BIS0131 BIS VM-355-401-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Zinc, die-cast
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2		BIS00P3				
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>240	>240	>240	>240	
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>480	>480	>480	>480	
Data carrier clear zone C										>50	>50	>50	>50	>0	>0	
Metallic mounting surface 40 x 22 mm	0-45	0-45			0-45	0-45										
Metallic mounting surface > 200 x 200 mm			0-45	0-45			0-45	0-45								
Working distance for writing	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-45		0-25	0-25	0-60	0-60	0-60	0-60	
Working distance for reading	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-45		0-25	0-25	0-60	0-60	0-60	0-60	
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y	
	0	±50	±24	±50	±24	±24	±50	±24	±50	0	±32	±16	±80	±36	±80	±36
	5	±50	±24	±50	±24	±24	±50	±24	±50	5	±32	±16	±80	±36	±80	±36
	12	±50	±24	±50	±24	±24	±50	±24	±50	10	±32	±16	±80	±36	±80	±36
	15	±50	±24	±50	±24	±24	±50	±24	±50	13	±30	±14	±80	±36	±80	±36
	18	±50	±24	±50	±24	±24	±50	±24	±50	15	±30	±14	±80	±36	±80	±36
	20	±50	±24	±50	±24	±24	±50	±24	±50	20	±30	±14	±80	±36	±80	±36
	22	±40	±20	±40	±20	±20	±40	±20	±40	25	±15	±8	±75	±30	±75	±30
	25	±40	±20	±40	±20	±20	±40	±20	±40	30			±75	±30	±75	±30
	30	±40	±20	±40	±20	±20	±40	±20	±40	36			±75	±30	±75	±30
	32	±40	±20	±40	±20	±20	±40	±20	±40	40			±75	±30	±75	±30
	35	±40	±20	±40	±20	±20	±40	±20	±40	42			±75	±30	±75	±30
	40	±38	±18	±38	±18	±18	±38	±18	±38	50			±75	±30	±75	±30
	45	±20	±10	±20	±10	±10	±20	±10	±20	52			±55	±25	±55	±25
	50									60			±20	±10	±20	±10
	52									75						
	60									83						
	65									100						

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque

BIS011W BIS011Y BIS011U BIS013E		BIS017F		BIS011M BIS011Z BIS011N BIS013C				BIS012J BIS012K BIS012L BIS013F				BIS0117				BIS0112				BIS00NZ				
>240	>240	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27			
>480	>480	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27			
>50	>50	>50	>50																					
				0-34	0-34			0-30	0-30			0-45	0-45			0-45	0-45							
						0-34	0-34			0-30	0-30			0-45	0-45			0-45	0-45					
0-36	0-36	0-15	0-15	0-34	0-34	0-34	0-34	0-30	0-30	0-30	0-30	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-25	0-25			
0-36	0-36	0-15	0-15	0-34	0-34	0-34	0-34	0-30	0-30	0-30	0-30	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-45	0-25	0-25			
X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y			
±50	±26	±20	±11	0	±38	±18	±40	±18	±20	±40	±20	±40	0	±58	±24	±58	±24	±24	±55	±20	±48	0	±30	±20
±50	±26	±20	±11	5	±38	±18	±40	±18	±20	±40	±20	±40	5	±58	±24	±58	±24	±24	±55	±20	±48	5	±30	±20
±50	±26	±17	±9	10	±38	±18	±40	±18	±20	±40	±20	±40	10	±58	±24	±58	±24	±24	±55	±20	±48	10	±30	±20
±50	±26	±14	±7	15	±38	±18	±40	±18	±17	±38	±17	±38	15	±58	±24	±58	±24	±24	±55	±20	±48	15	±25	±15
±50	±26	±8	±3	18	±35	±15	±40	±18	±17	±38	±17	±38	20	±58	±24	±58	±24	±24	±55	±20	±48	20	±15	±10
±50	±26			20	±35	±15	±40	±18	±17	±38	±17	±38	25	±53	±21	±53	±21	±20	±50	±16	±38	25	±5	±5
±40	±20			22	±35	±15	±35	±16	±15	±30	±15	±30	30	±53	±21	±53	±21	±20	±50	±16	±38	27		
±35	±17			25	±35	±15	±35	±16	±7	±16	±7	±16	35	±53	±21	±53	±21	±20	±50	±16	±38	35		
±20	±10			30	±27	±12	±35	±16	±7	±16	±7	±16	40	±45	±18	±45	±18	±18	±40	±16	±38	40		
				34	±15	±8	±15	±8					45	±25	±12	±25	±12	±10	±20	±10	±20	42		
				36									50									50		
				39									54									57		
				42									56									60		
				50									60									65		
				52									70									70		
				60									75									75		
				65									80											

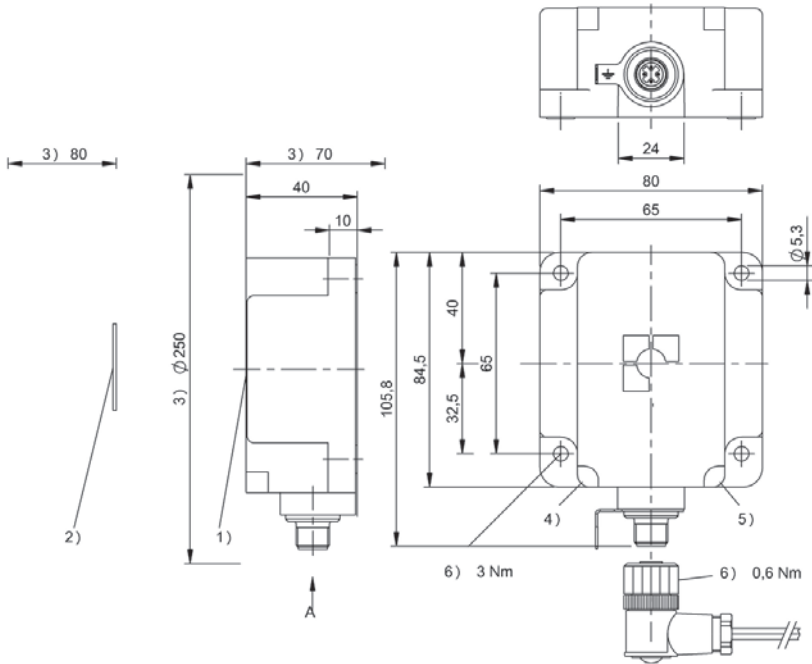


For processor units BIS V-6...	BIS00T0 BIS VM-301-001-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043		BIS0044		BIS0045		BIS0046		BIS0047		BIS00L8		BIS0111	
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80	>1	0	>50		
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250	>70	>70	>200		
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50			0-32	0-32	0-50
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50			0-32	0-32	0-50
Offset at distance																				
0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30			±30	±25	±30
5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30			±30	±25	±30
9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30			±30	±25	±30
12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30			±25	±25	±30
15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30			±25	±25	±30
16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30			±25	±25	±30
18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30			±25	±22	±30
20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30			±25	±22	±30
22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30			±25	±22	±25
25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30			±25	±22	±25
30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28			±20	±17	±25
32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24			±20	±17	±25
35	±4			±30	±16	±4	±20				±20		±40	±20	±22					±25
40				±24	±10		±20				±20		±40	±20	±18					±25
43				±20	±4		±12				±12		±35	±15	±14					±25
45				±16			±12				±12		±35	±12	±12					±25
50				±4									±35		±4					±5
52													±35							
60													±30							
65													±30							
70													±20							

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

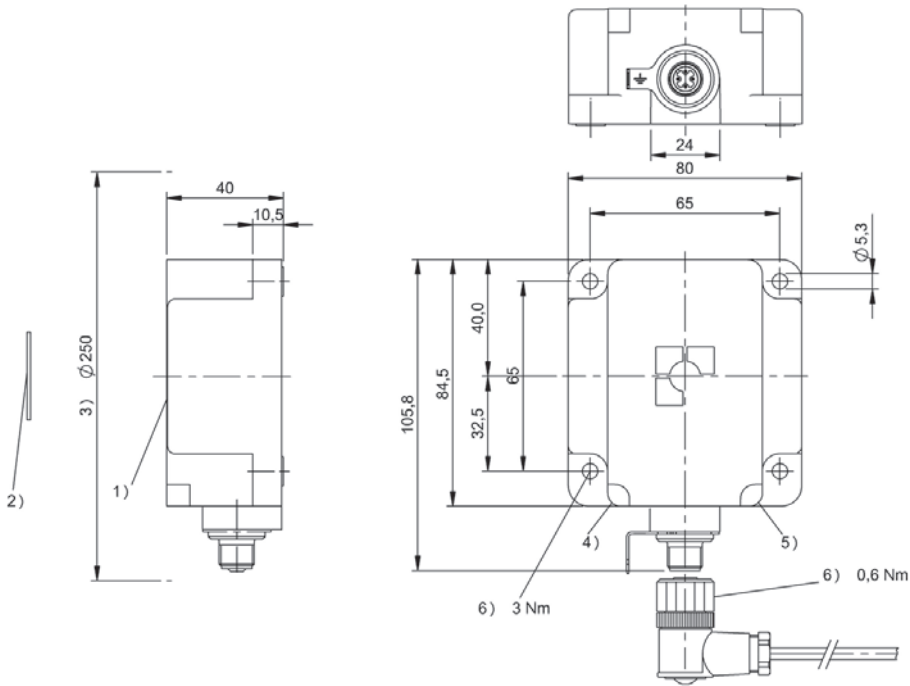


For processor units BIS V-6...	BISO130 BIS VM-341-401-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS0046	BIS00Y4		BIS0119	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50	>50		>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200	>200		>100	
Working distance for writing	0-64	0-36	14-20	0-42	0-30	11-20	0-100	0-120		0-40	
Working distance for reading	0-64	0-36	14-20	0-42	0-30	11-20	0-100	0-120		0-40	
Offset at distance											
	0	±40	±25		±30	±24		±50		0	±30
	8	±40	±25		±30	±24		±50		5	±30
	11	±40	±25		±30	±24	±25	±50		10	±30
	14	±40	±25	±20	±30	±24	±25	±50		12	±25
	16	±40	±25	±20	±30	±24	±9	±50		15	±25
	18	±40	±25	±10	±30	±24	±9	±50		16	±25
	20	±40	±25	±10	±30	±24	±9	±50		18	±25
	25	±36	±22		±25	±20		±50		20	±25
	30	±36	±22		±25	±10		±50		22	±25
	36	±36	±10		±25			±50		25	±25
	40	±36			±25			±50		30	±25
	42	±30			±5			±50		32	±20
	50	±30						±50		36	±20
	60	±30						±45		40	±15
	64	±15						±45		43	
	80							±45		45	
	90							±45		50	
	100							±20		52	
	110									60	
	120									65	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

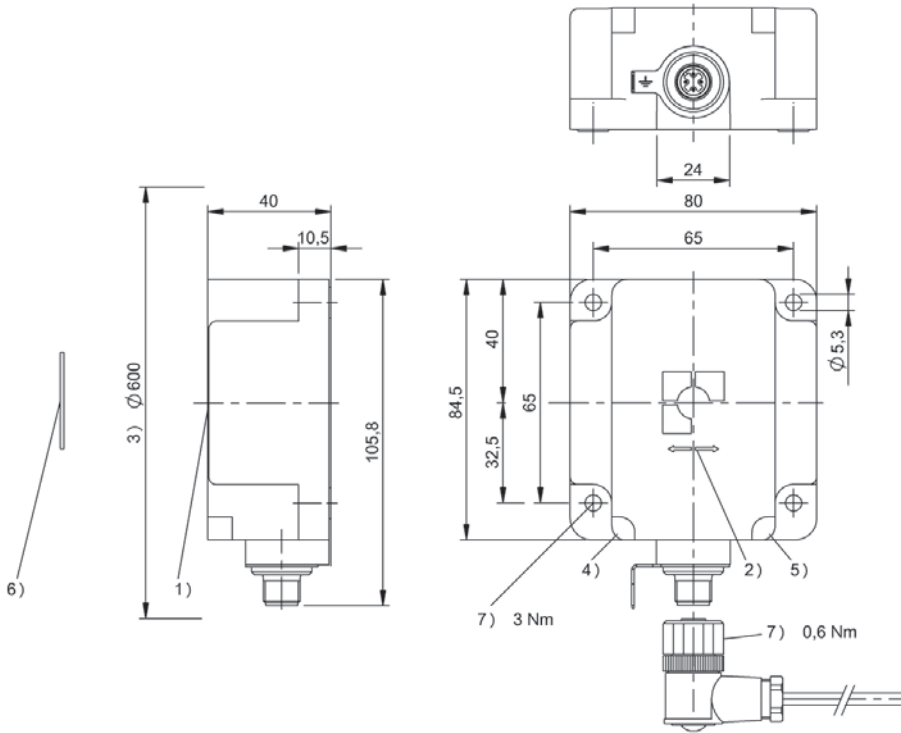


For processor units BIS V-6...	BIS012Z BIS VM-351-401-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H					BIS00M2		BIS00P3					
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>240	>240	>240	>240		
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200		>200	>200	>480	>480	>480	>480		
Data carrier clear zone C										>50	>50	>50	>50	>0	>0		
Metallic mounting surface 40 x 22 mm	0-52	0-52			0-52	0-52											
Metallic mounting surface > 200 x 200 mm			0-52	0-52			0-52	0-52									
Working distance for writing	0-52	0-52	0-52	0-52	0-52	0-52	0-52	0-52		0-36	0-36	0-100	0-100	0-100	0-100		
Working distance for reading	0-52	0-52	0-52	0-52	0-52	0-52	0-52	0-52		0-36	0-36	0-100	0-100	0-100	0-100		
Offset at distance	X	Y	X	Y	X	Y	X	Y		X	Y	X	Y	X	Y		
	0	±60	±25	±60	±25	±25	±60	±25	±60		0	±45	±23	±110	±50	±120	±50
	5	±60	±25	±60	±25	±25	±60	±25	±60		5	±45	±23	±110	±50	±120	±50
	12	±60	±25	±60	±25	±25	±60	±25	±60		10	±45	±23	±110	±50	±120	±50
	15	±60	±25	±60	±25	±25	±60	±25	±60		15	±45	±23	±110	±50	±120	±50
	18	±60	±25	±60	±25	±25	±60	±25	±60		20	±40	±20	±110	±50	±120	±50
	20	±60	±25	±60	±25	±25	±60	±25	±60		25	±40	±20	±100	±50	±100	±50
	22	±60	±25	±60	±25	±25	±60	±25	±60		30	±36	±18	±100	±50	±100	±50
	25	±60	±25	±60	±25	±25	±60	±25	±60		36	±20	±10	±100	±50	±100	±50
	30	±60	±25	±60	±25	±25	±60	±25	±60		40			±100	±50	±100	±50
	32	±50	±25	±50	±25	±25	±50	±25	±50		45			±100	±50	±100	±50
	35	±50	±25	±50	±25	±25	±50	±25	±50		50			±100	±50	±100	±50
	40	±50	±20	±50	±20	±20	±50	±20	±50		60			±80	±35	±80	±35
	45	±25	±20	±25	±20	±20	±25	±20	±25		70			±80	±35	±80	±35
	50	±25	±20	±25	±20	±20	±25	±20	±25		80			±80	±35	±80	±35
	52	±25	±8	±25	±8	±8	±25	±8	±25		90			±80	±35	±80	±35
	60										100			±35	±15	±80	±35
	65										110					±25	±15

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque

BIS011W BIS011Y BIS011U BIS013E		BIS017F		BIS011M BIS011Z BIS011N BIS013C				BIS012J BIS012K BIS012L BIS013F				BIS0117				BIS0112				BIS00NZ			
>240	>240	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27	
>480	>480	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27	
>50	>50	>50	>50																				
				0-40	0-40			0-42	0-42					0-75	0-75			0-70	0-70				
						0-50	0-50			0-42	0-42					0-70	0-70			0-54	0-54		
0-60	0-60	0-25	0-25	0-40	0-40	0-50	0-50	0-42	0-42	0-42	0-42			0-75	0-75	0-70	0-70	0-70	0-70	0-54	0-54	0-57	
0-60	0-60	0-25	0-25	0-40	0-40	0-50	0-50	0-42	0-42	0-42	0-42			0-75	0-75	0-70	0-70	0-70	0-70	0-54	0-54	0-57	
X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	
±70	±30	±35	±21	0	±50	±24	±55	±28	±25	±50	±25	±50	0	±85	±35	±80	±34	±34	±80	±30	±60	0	
±70	±30	±35	±21	5	±50	±24	±55	±28	±25	±50	±25	±50	5	±85	±35	±80	±34	±34	±80	±30	±60	5	
±70	±30	±35	±21	12	±50	±24	±55	±28	±25	±50	±25	±50	10	±85	±35	±80	±34	±34	±80	±30	±60	10	
±70	±30	±33	±19	15	±50	±24	±55	±28	±25	±45	±25	±45	15	±85	±35	±80	±34	±34	±80	±30	±60	15	
±70	±30	±23	±13	18	±50	±24	±55	±28	±22	±45	±22	±45	20	±85	±35	±80	±34	±34	±80	±30	±60	20	
±60	±30	±7	±5	20	±50	±24	±55	±28	±22	±45	±22	±45	25	±85	±35	±75	±30	±30	±75	±25	±52	25	
±60	±30			22	±40	±22	±50	±25	±22	±45	±22	±45	30	±85	±35	±75	±30	±30	±75	±25	±52	27	
±60	±30			25	±40	±22	±50	±25	±22	±45	±22	±45	35	±75	±30	±75	±30	±30	±75	±25	±52	35	
±60	±30			30	±40	±22	±50	±25	±19	±36	±19	±36	40	±75	±30	±75	±30	±30	±75	±25	±52	40	
±50	±25			32	±40	±22	±40	±20	±19	±36	±19	±36	45	±75	±30	±65	±27	±27	±65	±20	±45	45	
±50	±25			35	±40	±22	±40	±20	±19	±36	±19	±36	50	±75	±30	±65	±27	±27	±65	±20	±45	50	
±15	±10			40	±20	±10	±40	±20	±10	±18	±10	±18	54	±60	±25	±65	±27	±27	±65	±12	±22	57	
				42			±40	±20	±10	±18	±10	±18	60	±60	±25	±65	±27	±27	±65			60	
				50			±20	±10					65	±60	±25	±40	±20	±20	±40			65	
				52									70	±60	±25	±40	±20	±20	±40			70	
				60									75	±40	±15							75	
				65									80										

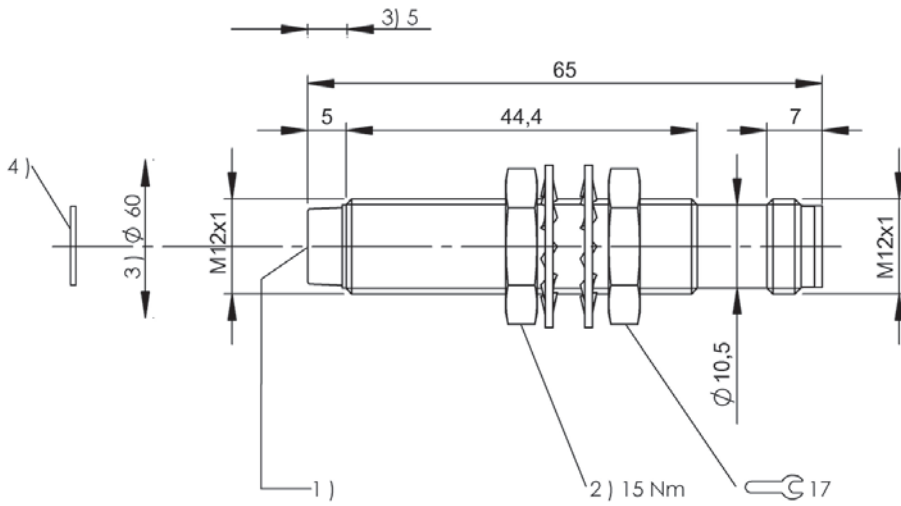


For processor units BIS V-6...	BIS013H BIS VM-348-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 65 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042		BIS004A		BIS0044		BIS00UC		
Data carrier distance to metal	>50	>0	>50	>0	>50		>50	>0	>0
Data carrier clear zone	>200	>0	>200	>0	>200		>200	>200	>0
Working distance for writing	0-7	0-5	0-7	0-5	0-12		0-5	0-3	0-2
Working distance for reading	0-7	0-5	0-7	0-5	0-12		0-5	0-3	0-2
Offset at distance									
	0	±5	±3	±4.5	±3	±7	±4	±2.5	±2
	1	±5	±3	±4.5	±3	±7	±4	±2.5	±1
	2	±5	±3	±4.5	±3	±7	±4	±2	
	3	±4.5	±2.5	±4	±2.5	±7	±3	±1	
	4	±4.5	±2.5	±4	±2.5	±7	±3		
	5	±4.5	±1	±4	±1	±6	±1.5		
	6	±4.5		±4		±6			
	7	±2.5		±2		±6			
	8					±6			
	10					±3			
	12					±3			
	18								

Dimensions in mm



1) Sensing surface, 2) Tightening torque, 3) Clear zone, 4) Data carrier

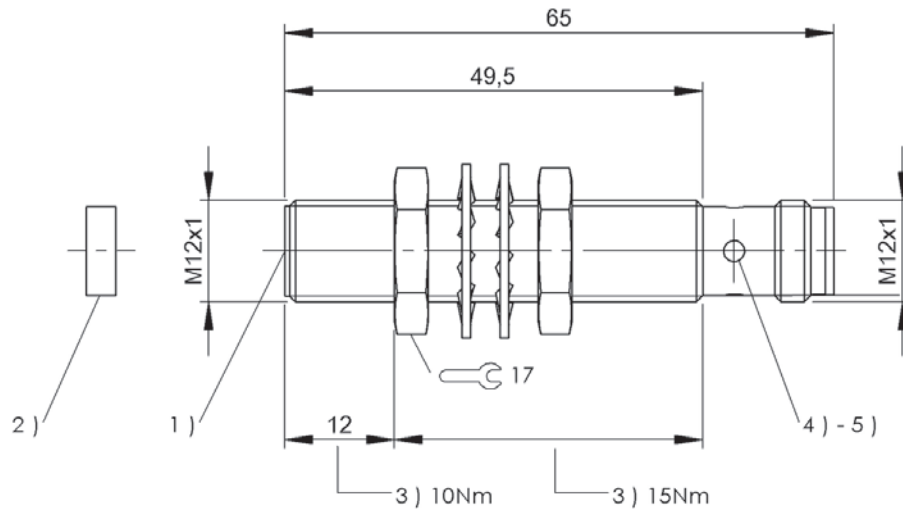


For processor units BIS V-6...	BIS015M BIS VM-330-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042			BIS00UC			BIS004A			BIS00YL			BIS00YK			BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>0	
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	
Working distance for writing	0-6.5	0-6	0-5	0-4.5	0-3	0-2	0-5.5	0-5	0-3.5	0-6	0-5.5	0-2	0-4.5	0-4	0-2	0-7	
Working distance for reading	0-6.5	0-6	0-5	0-4.5	0-3	0-2	0-5.5	0-5	0-3.5	0-6	0-5.5	0-2	0-4.5	0-4	0-2	0-7	
Offset at distance																	
	0	±4	±3.5	±3.5	±2.5	±2.5	±2	±3	±3	±2.5	±3.5	±3.5	±2	±3.5	±3	±2	0 ±4.5
	1	±4	±3.5	±3.5	±2.5	±2.5	±2	±3	±3	±2.5	±3.5	±3.5	±2	±3.5	±3	±2	2 ±4.5
	2	±4	±3.5	±3.5	±2.5	±2	±1	±3	±3	±2.5	±3.5	±3.5	±1	±3.5	±3	±1	3 ±4
	3	±3	±3	±2.5	±2	±1		±2	±2	±2	±3	±3		±3	±2		4 ±4
	3.5	±3	±3	±2.5	±2			±2	±2	±1	±3	±3		±2	±1		5 ±4
	4	±3	±3	±2.5	±2			±2	±2		±3	±3		±2	±1		7 ±1.5
	4.5	±3	±3	±1.5	±1			±1	±1		±2	±2		±2			9
	5	±3	±3	±1.5				±1	±1		±2	±2					10
	5.5	±2	±2					±1			±2	±2					15
	6	±2	±2								±2						20
	6.5	±2															25

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

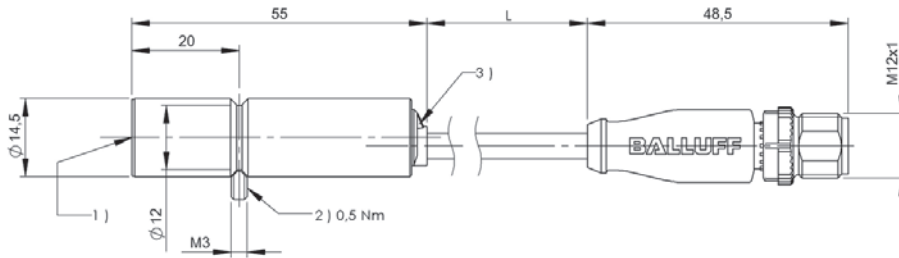


For processor units BIS V-6...	BIS013Z BIS VM-343-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 55 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pole, 0.30 m, PU
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0042			BIS00UC BIS00UE		BIS004A			BIS00YL			BIS00YK		
Data carrier distance to metal	>50	>0	>0	>50		>50	>0	>0	>50	>0	>0	>50	>0	>0
Data carrier clear zone	>200	>200	>0	>200		>200	>200	>0	>200	>200	>0	>200	>200	>0
Working distance for writing	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5
Working distance for reading	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5
Offset at distance														
	0	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
	1	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
	2	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±2	±3	±3	±2
	2.5	±3	±2.5	±2	±2	±3	±2.5	±2	±3	±3	±1	±2.5	±2.5	±1
	3	±3	±2.5	±2	±2	±3	±2.5	±1	±3	±3	±1	±2.5	±2.5	
	3.5	±3	±2.5	±1	±1	±3	±2.5	±1	±3	±3		±2.5	±2.5	
	4	±3	±2.5	±1		±3	±1.5		±3	±3		±2	±2	
	4.5	±2	±1.5			±2	±1.5		±3	±3		±1	±1	
	5	±2	±1.5			±2			±3	±3		±1	±1	
	5.5	±2							±2	±2				
	6								±2	±2				
	6.5								±2					

Dimensions in mm



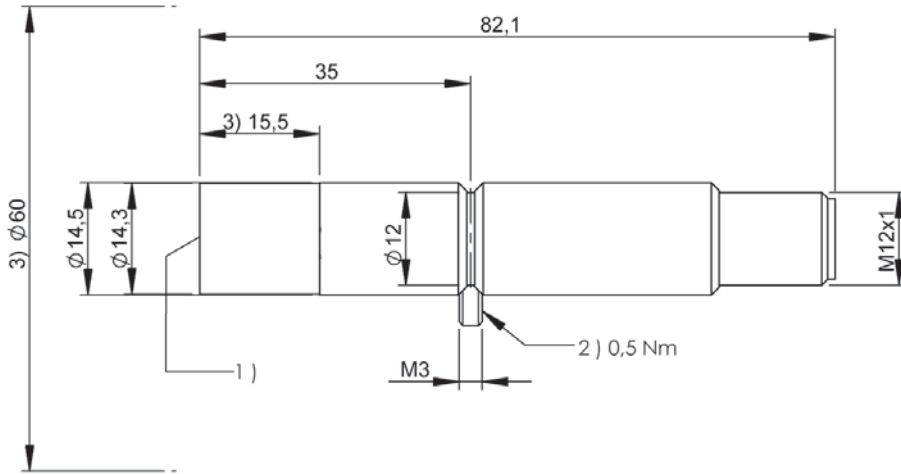
1) Sensing surface, 2) Tightening torque, 3) Function indicator

	BIS00LC	BIS0119	BIS00NU BIS00NW BIS0100
	>25	>0	>0
	>100	>100	>100
	0-7	0-7.5	0-7.5
	0-7	0-7.5	0-7.5
	0 ±4	±5	±5
	2 ±4	±5	±5
	4 ±3.5	±5	±4.5
	5 ±3.5	±4	±4
	6 ±2	±4	±4
	7 ±2	±2.5	±2
	7.5	±2.5	±2
	10		
	14		
	16		
	18		
	20		



For processor units BIS V-6...	BIS019U BIS VM-343-501/05-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request

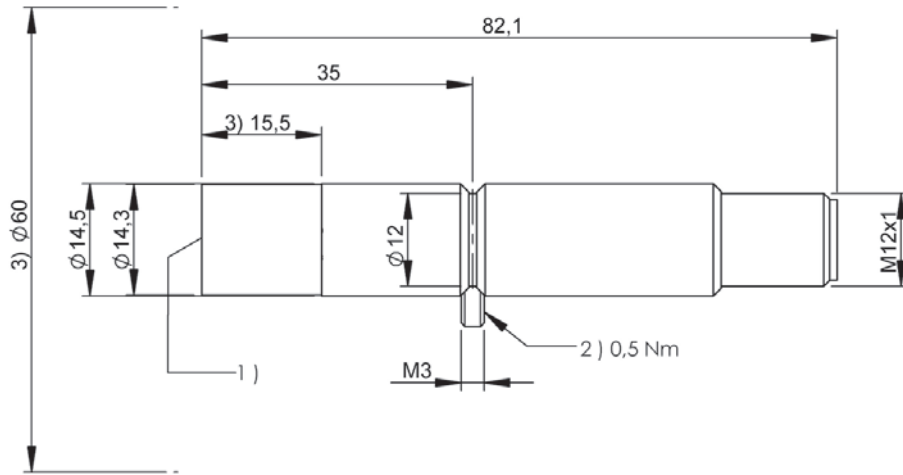


1) Sensing surface, 2) Tightening torque



For processor units BIS V-6...	BIS019W BIS VM-343-501/10-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 14.5 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request



1) Sensing surface, 2) Tightening torque

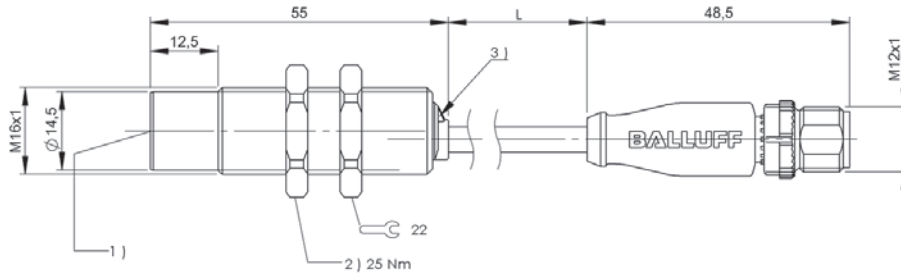


For processor units BIS V-6...	BISO140 BIS VM-346-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 55 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	0.30 m, PU
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BISO042			BISO0UC BISO0UE		BISO04A			BISO0YL			BISO0YK		
Data carrier distance to metal	>50	>0	>0	>50		>50	>0	>0	>50	>0	>0	>50	>0	>0
Data carrier clear zone	>200	>200	>0	>200		>200	>200	>0	>200	>200	>0	>200	>200	>0
Working distance for writing	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5
Working distance for reading	0-5.5	0-5	0-4	0-3.5		0-5	0-4.5	0-3.5	0-6.5	0-6	0-3	0-5	0-5	0-2.5
Offset at distance														
	0	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
	1	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±3	±3	±3	±2.5
	2	±3.5	±3	±2.5	±3	±3.5	±3	±2.5	±4	±3.5	±2	±3	±3	±2
	2.5	±3	±2.5	±2	±2	±3	±2.5	±2	±3	±3	±1	±2.5	±2.5	±1
	3	±3	±2.5	±2	±2	±3	±2.5	±1	±3	±3	±1	±2.5	±2.5	
	3.5	±3	±2.5	±1	±1	±3	±2.5	±1	±3	±3		±2.5	±2.5	
	4	±3	±2.5	±1		±3	±1.5		±3	±3		±2	±2	
	4.5	±2	±1.5			±2	±1.5		±3	±3		±1	±1	
	5	±2	±1.5			±2			±3	±3		±1	±1	
	5.5	±2							±2	±2				
	6								±2	±2				
	6.5								±2					

Dimensions in mm



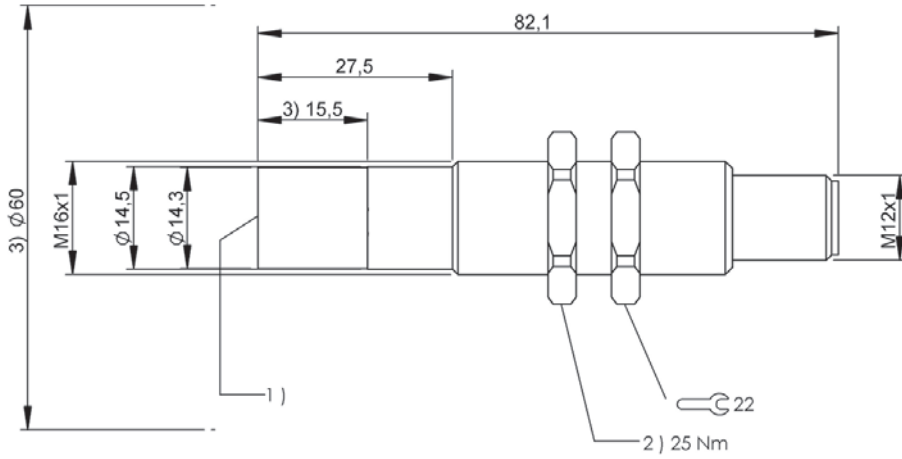
1) Sensing surface, 2) Tightening torque, 3) Function indicator

	BIS00LC	BIS0119	BIS00NU BIS00NW BIS0100
	>25	>0	>0
	>100	>100	>100
	0-7	0-7.5	0-7.5
	0-7	0-7.5	0-7.5
	0 ±4	±5	±5
	2 ±4	±5	±5
	4 ±3.5	±5	±4.5
	5 ±3.5	±4	±4
	6 ±2	±4	±4
	7 ±2	±2.5	±2
	7.5	±2.5	±2
	10		
	14		
	16		
	18		
	20		



For processor units BIS V-6...	BIS019Y BIS VM-346-501/05-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request

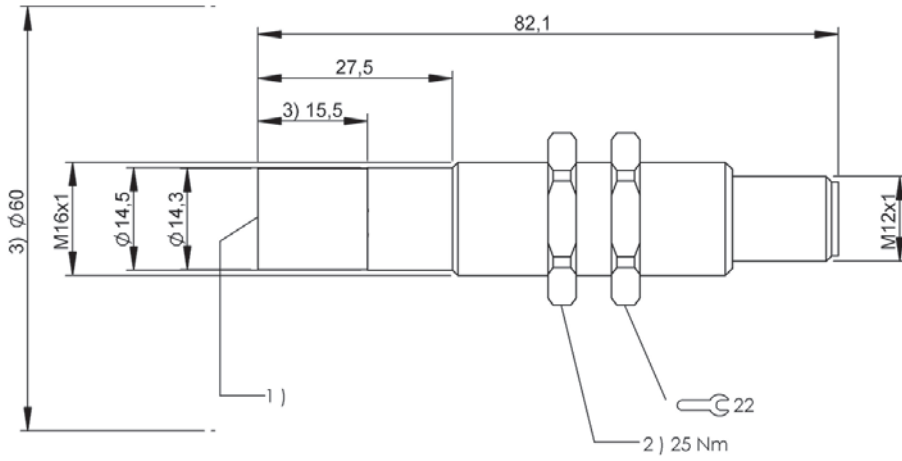


1) Sensing surface, 2) Tightening torque



For processor units BIS V-6...	BIS019Z BIS VM-346-501/10-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 16 x 82.1 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory), LF 70/455 kHz
Connection	Male, 8-pin
Housing material	Brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carriers on request



1) Sensing surface, 2) Tightening torque

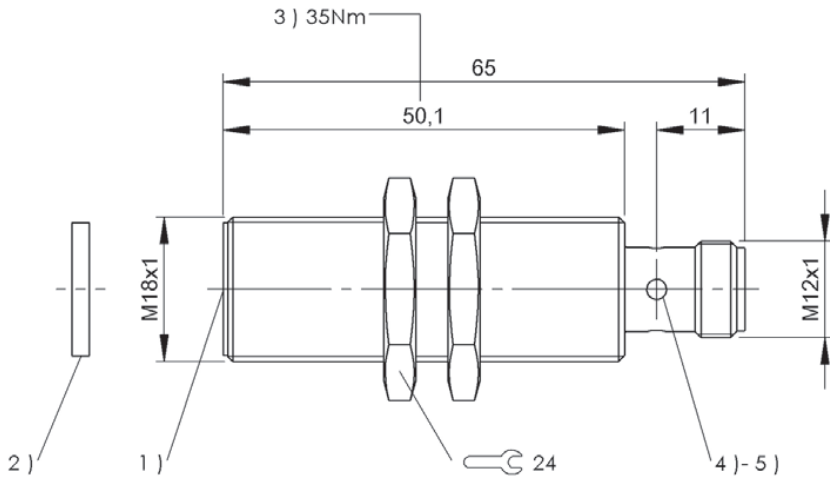


For processor units BIS V-6...	BIS015P BIS VM-332-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042			BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS004A			BIS0143		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20		
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100		
Working distance for writing	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-7	0-6.5	0-4.5	0-13		
Working distance for reading	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-7	0-6.5	0-4.5	0-13		
Offset at distance															
	0	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8	
	2	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8	
	4	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3	±2.5	±8	
	4.5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3	±1.5	±8	
	5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3		±8	
	6	±4	±3	±2	±7	±5	±1	±4	±3		±3.5	±2		±7	
	6.5	±4	±3		±7	±5		±4			±2	±2		±7	
	7	±4	±3		±7	±5					±2			±7	
	8	±2	±2		±7	±4								±7	
	8.5	±2			±7									±7	
	10				±7									±7	
	11				±4									±4	
	13													±4	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

	BIS0044	BIS00NU BIS00NW BIS0100
	>25	>0
	>100	>100
	0-10	0-9.5
	0-10	0-9.5
	0 ±6	±5
	2 ±6	±5
	4 ±6	±5
	5 ±6	±5
	6 ±5	±4
	7 ±5	±4
	8 ±5	±4
	9.5 ±3	±2
	10 ±3	
	12	
	15	
	20	
	25	

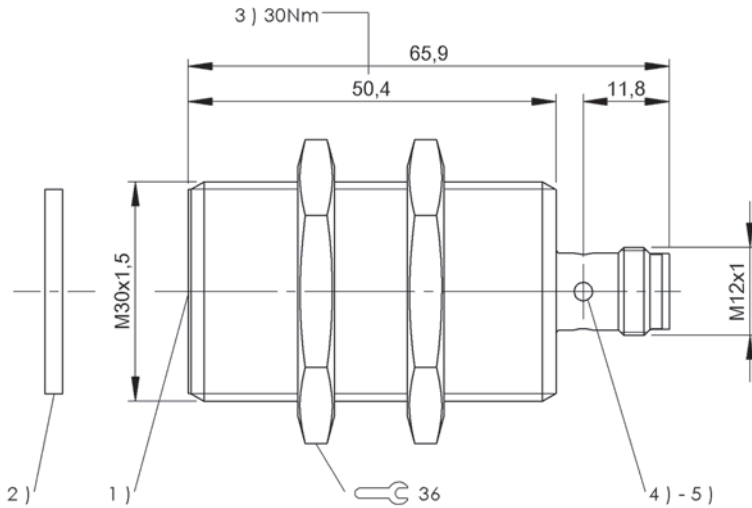


For processor units BIS V-6...	BIS015K BIS VM-333-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 65.9 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042		BIS0043 BIS0111			BIS004A		BIS0143		BIS0044		BIS0045	
Data carrier distance to metal	>20		>25	>0	>0	>20	>20			>25	>25		
Data carrier clear zone	>100		>100	>100	>0	>100	>100			>100	>100		
Working distance for writing	0-13		0-21	0-15	0-13	0-10	0-21			0-18	0-21		
Working distance for reading	0-13		0-21	0-15	0-13	0-10	0-21			0-18	0-21		
Offset at distance													
	0	±8	±13	±10	±10	±7	±12			0	±9	±13	
	5	±8	±13	±10	±10	±7	±12			5	±9	±13	
	8	±8	±13	±10	±9	±6	±12			10	±9	±13	
	10	±7	±13	±8	±8	±4	±12			13	±8	±12	
	13	±4	±12	±8	±3		±11			15	±8	±12	
	15		±12	±3			±11			16	±4	±11	
	18		±11				±10			18	±4	±11	
	20		±5				±5			20		±5	
	21		±5				±5			21		±5	
	25									25			
	30									30			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

BIS0046		BIS00NU BIS00NW BIS0100		BIS011A	
>50		>0		>20	
>150		>100		>100	
0-30		0-13		0-15	
0-30		0-13		0-15	
±20		±9		0	±11
±20		±9		5	±11
±20		±7		10	±10
±18		±3		12	±8
±18				13	±8
±18				15	±4
±18				18	
±18				20	
±16				21	
±16				25	
±8				30	

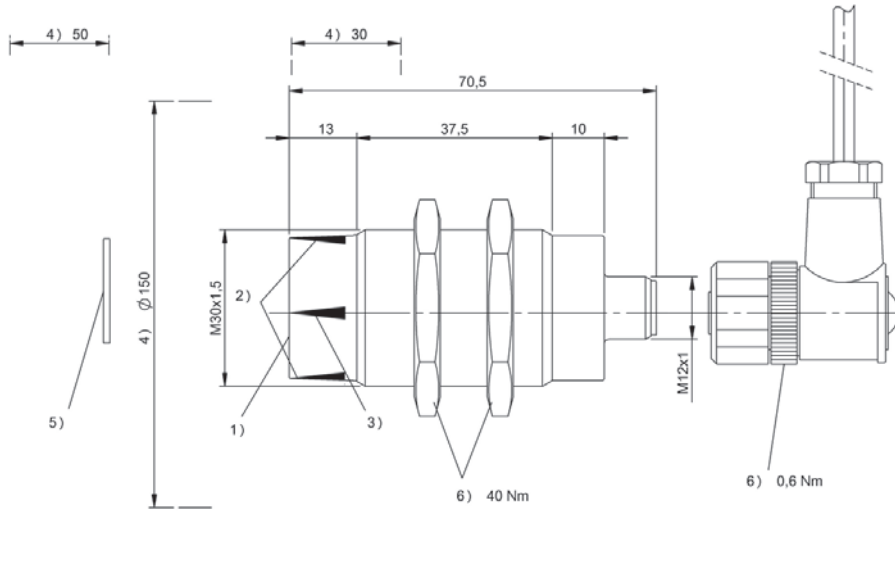


For processor units BIS V-6...	BIS00RF BIS VM-300-001-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 4-pin
Housing material	Brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043			BIS0044				
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0		>25	>10	>5		
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0		>100	>60	>50		
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10		
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16		0-22	0-16	0-10		
Offset at distance																		
	0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7	
	5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7	
	9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2	
	12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2	
	15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5		
	16	±12	±6		±20	±10						±16	±4	15	±12	±4		
	18	±12	±6		±20	±8						±16		16	±10	±2		
	20	±12	±4		±20	±6						±16		18	±10			
	22	±4			±18	±4						±14		20	±10			
	25				±14							±14		22	±6			
	30				±10							±10		25				
	32				±4									30				
	35													32				
	40													35				
	43													40				
	45													42				
	50													44				

Dimensions in mm



1) Sensing surface, 2) LED (CP), 3) LED (Power), 4) Clear zone, 5) Data carrier, 6) Tightening torque

BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
>25	>10	>5	>50	>15	>10	>25	>0	>50		>25	>0	>0		>0	
>100	>60	>50	>150	>90	>70	>100	>100	>150		>100	>100	>100		>100	
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22		0-13	
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22		0-13	
±16	±10	±7	±25	±18	±15	±18	±8	±30		0	±16	±10	±13		±10
±16	±10	±7	±25	±18	±15	±18	±6	±30		5	±16	±10	±13		±10
±14	±8	±2	±25	±16	±12	±18	±3	±30		10	±16	±7	±13		±9
±14	±8	±2	±25	±16	±12	±18		±30		13	±14	±5	±11		±5
±14	±7		±24	±15	±10	±16		±28		15	±14		±11		
±14	±6		±24	±14	±8	±16		±28		18	±14		±11		
±14	±3		±24	±12		±16		±28		20	±14		±7		
±14	±2		±24	±12		±16		±28		22	±12		±7		
±14			±24	±10		±16		±28		25	±12				
±12			±22	±8		±16		±24		27	±5				
±12			±22	±6		±16		±24		30					
			±22			±10		±24		32					
			±16					±24		35					
			±16					±24		40					
			±16					±5		43					
			±10					±5		45					
			±5							50					

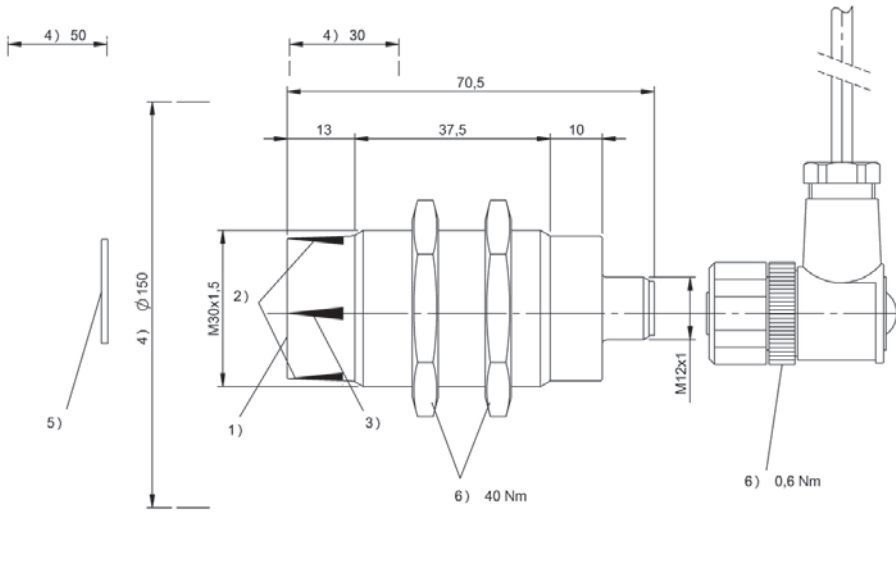


For processor units BIS V-6...	BISS0132 BIS VM-344-401-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Male, 4-pin
Housing material	Brass, nuts nickel plated brass, nuts brass with white bronze
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0042		BIS00LC		BIS0043 BIS0111		BIS011F BIS011E BIS011A BIS0139		BIS0044			BIS0045				
Data carrier distance to metal	>20	>5	>25	>0	>25	>0	>25	>0	>25	>10	>5	>25	>10	>5		
Data carrier clear zone	>100	>100	>100	>100	>100	>0	>100	>100	>100	>60	>50	>100	>60	>50		
Working distance for writing	0-11	0-11	0-27	0-13	0-30	0-16	0-18	0-15	0-22	0-16	0-10	0-28	0-18	0-10		
Working distance for reading	0-11	0-11	0-27	0-13	0-30	0-16	0-18	0-15	0-22	0-16	0-10	0-28	0-18	0-10		
Offset at distance																
	0	±10	±7	±16	±10	±18	±10	±12	±11	0	±14	±8	±7	±16	±10	±7
	5	±8	±7	±16	±10	±18	±10	±12	±11	5	±14	±8	±7	±16	±10	±7
	9	±5	±3	±16	±7	±18	±8	±11	±10	8	±12	±6	±2	±14	±8	±2
	13			±14	±5	±16	±6	±10	±9	10	±12	±6	±2	±14	±8	±2
	15			±14		±16	±6	±10	±5	12	±12	±5		±14	±7	
	16			±14		±16	±4	±5		15	±12	±4		±14	±6	
	18			±14		±16		±5		16	±10	±2		±14	±3	
	20			±14		±16				18	±10			±14	±2	
	22			±12		±14				20	±10			±14		
	25			±12		±14				22	±6			±12		
	27			±5		±10				25				±12		
	32									30						
	35									32						
	40									35						
	43									40						
	45									42						
	50									44						

Dimensions in mm



1) Sensing surface, 2) LED (CP), 3) LED (Power), 4) Clear zone, 5) Data carrier, 6) Tightening torque

	BIS0046			BIS00YE		BIS00Y4		BIS00M9 BIS00M8	BIS00NU BIS00NW BIS0100	
	>50	>15	>10	>25	>0	>50		>0	>0	
	>150	>90	>70	>100	>100	>150		>100	>100	
	0-44	0-25	0-15	0-30	0-8	0-42		0-22	0-13	
	0-44	0-25	0-15	0-30	0-8	0-42		0-22	0-13	
	±25	±18	±15	±18	±8	±30		0 ±13	±10	
	±25	±18	±15	±18	±6	±30		5 ±13	±10	
	±25	±16	±12	±18	±3	±30		10 ±13	±9	
	±25	±16	±12	±18		±30		12 ±11	±5	
	±24	±15	±10	±16		±28		13 ±11	±5	
	±24	±14	±8	±16		±28		15 ±11		
	±24	±12		±16		±28		18 ±11		
	±24	±12		±16		±28		20 ±7		
	±24	±10		±16		±28		22 ±7		
	±22	±8		±16		±24		28		
	±22	±6		±16		±24		30		
	±22			±10		±24		32		
	±16					±24		35		
	±16					±24		40		
	±16					±5		43		
	±10					±5		45		
	±5							50		

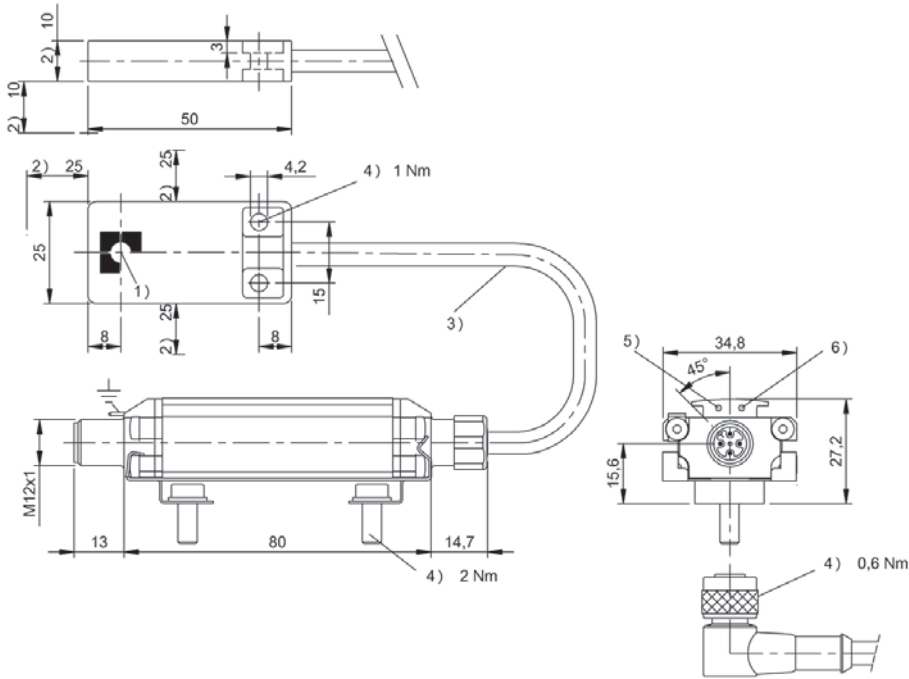


For processor units BIS V-6...	BIS00T9 BIS VM-305-001-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS0043		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>25	>0	>0		>0
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100	>0	>100		>100
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17		0-12
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17		0-12
Offset at distance																
	0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±12	±8	±10	±7
	5	±2		±4	±2	±6		±2		±3	±2	5	±12	±8	±10	±7
	9					±4						8	±12	±6	±10	±6
	12					±2						10	±12	±6	±9	±6
	15											11	±8	±4	±9	±3
	16											12	±8		±9	±3
	18											15	±8		±4	
	20											17	±4		±4	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque, 5) LED (Power), 6) LED (CP)

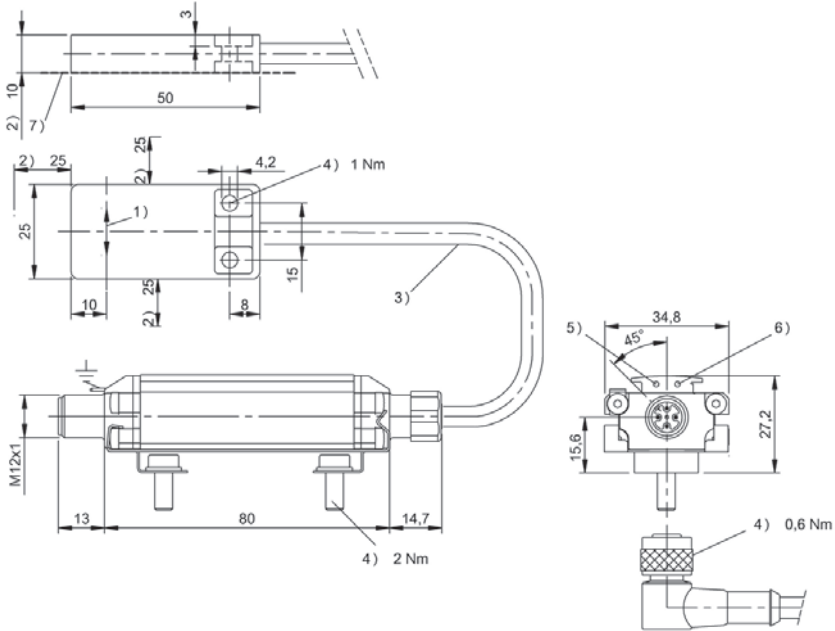


For processor units BIS V-6...	BIS00T6 BIS VM-352-001-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00NZ		BIS017F	
Data carrier clear zone A	>27	>27	>200	>200
Data carrier clear zone B	>27	>27	>200	>200
Data carrier clear zone C			>50	>50
Metallic mounting surface 40 × 22 mm				
Metallic mounting surface > 200 × 200 mm				
Working distance for writing	0-22	0-22	0-17	0-17
Working distance for reading	0-22	0-22	0-17	0-17
Offset at distance	X	Y	X	Y
	0 ±25	±5	0 ±22	±9
	5 ±25	±5	5 ±22	±9
	10 ±25	±5	10 ±19	±8
	15 ±25	±5	15 ±12	±6
	20 ±15	±5	17 ±3	±2
	22 ±15	±5	20	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque, 5) LED (Power), 6) LED (CP), 7) Mounting on steel

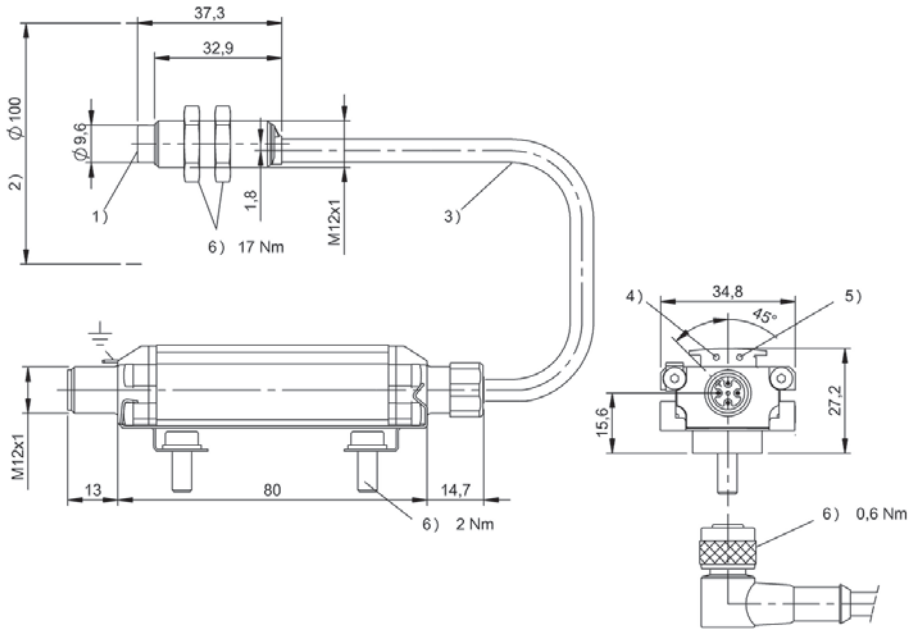


For processor units BIS V-6...	BIS00T7 BIS VM-306-001-S4
Produktgruppe	HF (13.56 MHz)
Abmessung	Ø 12 x 37.3 mm
Einbau	metallfrei (Freizone)
Antennenform	rund
Unterstützte Datenträgertypen	DIN ISO 14443, DIN ISO 15693
Anschluss	Stecker, 4-polig, 0.50 m, PU
Gehäusematerial	Messing, Interface Aluminium
Umgebungstemperatur	0...70 °C
Schutzart	IP67
Zulassung/Konformität	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0040	BIS0042	BIS0048	BIS004A
Data carrier distance to metal	>10	>10	>10	>10
Data carrier clear zone	>60	>60	>60	>60
Working distance for writing	0-5	0-6	0-4	0-5
Working distance for reading	0-5	0-6	0-4	0-5
Offset at distance				
	0 ±2	±2	±2	±2
	2 ±2	±2	±2	±2
	4 ±1	±1	±1	±1
	5 ±1	±1		±1
	6	±1		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED (Power), 5) LED (CP), 6) Tightening torque

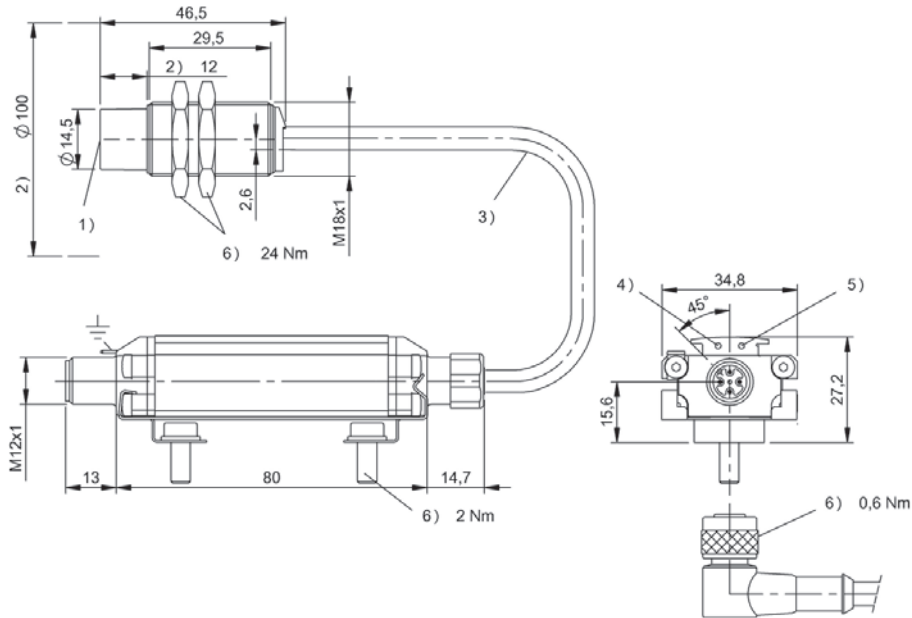


For processor units BIS V-6...	BIS00T8 BIS VM-307-001-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 12 x 37.3 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00YK		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>10	>0	>0		>0
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>60	>60	>100		>100
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-10	0-8	0-16		0-12
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-10	0-8	0-16		0-12
Offset at distance																
	0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±7	±5	±9	±7
	5	±2		±4	±2	±6		±2		±3	±2	5	±7	±5	±9	±7
	9					±4						7	±6	±4	±9	±6
	12					±2						8	±6	±2	±9	±6
	15											10	±3		±8	±6
	16											12			±8	±3
	18											14			±8	
	20											16			±3	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED (Power), 5) LED (CP), 6) Tightening torque

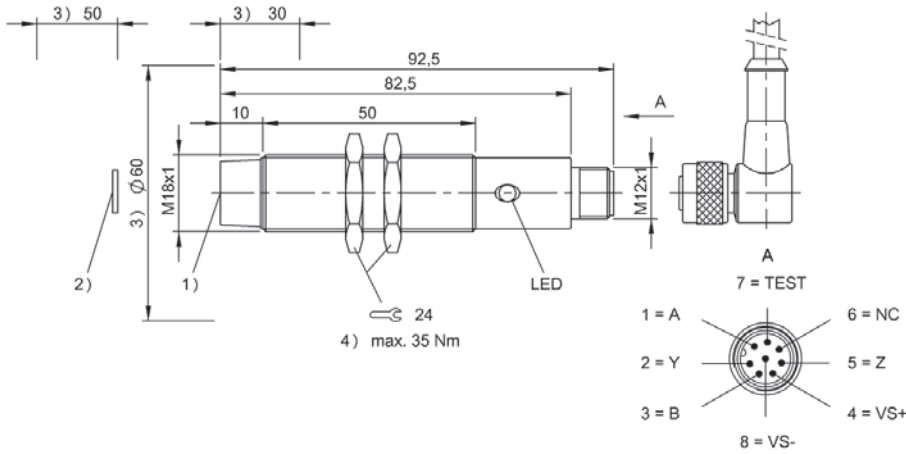


For processor units BIS M-60...	BIS0057 BIS M-302-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 92.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12	
Working distance for reading	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12	
Offset at distance																	
	0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±3	±4	±3	±14	±10
	5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3	±2	±3	±2	±12	±8
	9	±10	±7	±2	±16	±12	±4			±3.5						±12	±6
	12	±8	±6		±14	±8										±10	±4
	15	±7	±4		±12	±6										±10	
	16	±4			±10	±4										±7	
	18				±8	±4										±7	
	20				±4											±5	
	22																
	25																
	30																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS0045			BIS0046			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00UC BIS00UE		BIS019C		BIS019E	
>25	>10	>5	>25	>10	>5	>50	>25	>20	>0	>100	>0	>100	>10	>60	>0	>0	>0	>0
>80	>50	>50	>80	>50	>50	>150	>90	>70	>100	>100	>100	>100	>60	>100	>0	>0	>100	>0
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12	0-17	0-13	0-13	0-13	0-7	0-8	0-7	0-12	0-12	0-11
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12	0-17	0-13	0-13	0-13	0-7	0-8	0-7	0-12	0-12	0-11
±8	±6	±4	±12	±8	±7	±20	±16	±14	0	±10	±8	±8	±4	±6	±4.5	±7	±6	
±8	±6	±4	±12	±8	±4	±20	±16	±14	5	±10	±8	±8	±4	±6	±4.5	±7	±6	
±6	±5		±10	±6		±18	±16	±10	7	±10	±7	±7	±4	±5.5	±4	±7	±6	
±4	±3		±10	±4		±18	±14	±6	8	±10	±7	±7		±3	±2	±6.5	±5.5	
±4			±10			±18	±14		10	±9	±7	±7		±3		±6.5	±5.5	
±3			±5			±16	±12		13	±9	±4	±4				±6.5	±5.5	
			±5			±16	±12		14	±9						±6.5	±3	
						±16	±12		17	±4						±3	±3	
						±12	±8		22							±3		
						±12			25									
						±8			30									

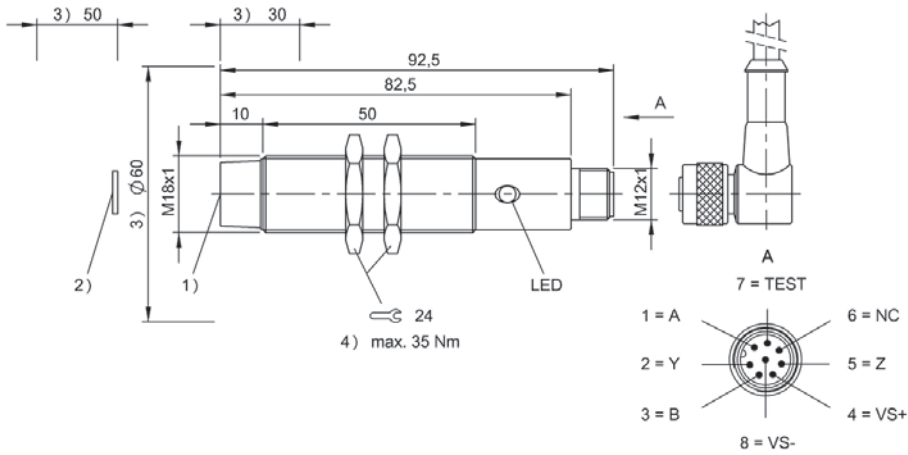


For processor unit BIS00EP	BIS0059 BIS M-302-003-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 92.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12	
Working distance for reading	0-16	0-15	0-10	0-20	0-18	0-10	0-7	0-5	0-9	0-6	0-7	0-5	0-9	0-6	0-20	0-12	
Offset at distance																	
	0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±3	±4	±3	±14	±10
	5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3	±2	±3	±2	±12	±8
	9	±10	±7	±2	±16	±12	±4			±3.5						±12	±6
	12	±8	±6		±14	±8										±10	±4
	15	±7	±4		±12	±6										±10	
	16	±4			±10	±4										±7	
	18				±8	±4										±7	
	20				±4											±5	
	22																
	25																
	30																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS0045			BIS0046			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00UC BIS00UE		BIS019C		BIS019E	
>25	>10	>5	>25	>10	>5	>50	>25	>20	>0	>0	>10	>0	>0	>0	>0	>0		
>80	>50	>50	>80	>50	>50	>150	>90	>70	>100	>100	>60	>100	>0	>100	>0	>0		
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12	0-17	0-13	0-7	0-8	0-7	0-12	0-11	0-11		
0-16	0-12	0-8	0-20	0-12	0-5	0-30	0-22	0-12	0-17	0-13	0-7	0-8	0-7	0-12	0-11	0-11		
±8	±6	±4	±12	±8	±7	±20	±16	±14	0	±10	±8	±4	±6	±4.5	±7	±6		
±8	±6	±4	±12	±8	±4	±20	±16	±14	5	±10	±8	±4	±6	±4.5	±7	±6		
±6	±5		±10	±6		±18	±16	±10	7	±10	±7	±4	±5.5	±4	±7	±6		
±4	±3		±10	±4		±18	±14	±6	8	±10	±7		±3	±2	±6.5	±5.5		
±4			±10			±18	±14		10	±9	±7		±3		±6.5	±5.5		
±3			±5			±16	±12		13	±9	±4				±6.5	±5.5		
			±5			±16	±12		14	±9					±6.5	±3		
			±5			±16	±12		17	±4					±3	±3		
						±12	±8		22						±3			
						±12			25									
						±8			30									

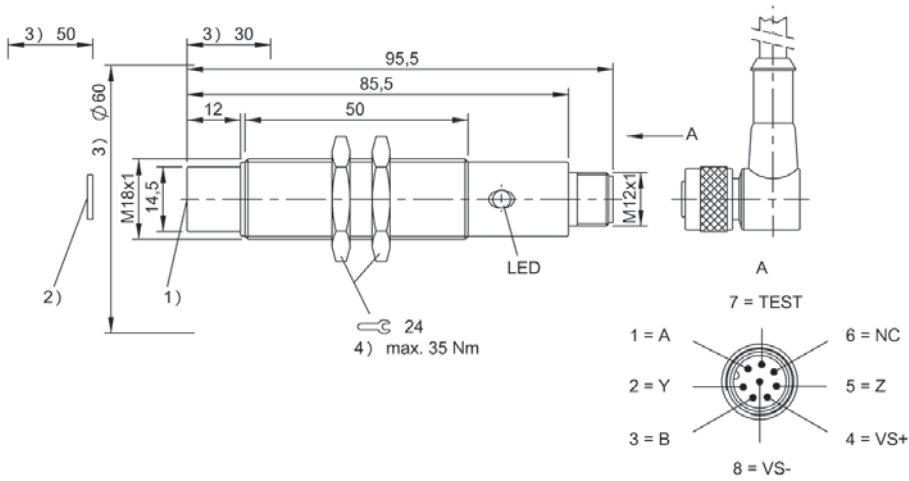


For processor units BIS M-60...	BIS005A BIS M-304-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 95.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-14	0-10	0-8	0-18	0-15	0-10	0-5	0-5	0-7	0-6	0-5	0-4	0-7	0-5	0-18	0-10	
Working distance for reading	0-14	0-10	0-8	0-18	0-15	0-10	0-5	0-5	0-7	0-6	0-5	0-4	0-7	0-5	0-18	0-10	
Offset at distance																	
	0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±2	±4	±3	±14	±10
	5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3		±3	±2	±12	±8
	9	±10	±7		±16	±12	±4			±3						±12	±6
	12	±8			±14	±8										±10	
	15				±12	±6										±10	
	16				±10											±7	
	18				±8											±5	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS019C		BIS019E	
>25	>10	>5	>0	>0	>0	>0
>80	>50	>50	>100	>0	>100	>0
0-14	0-10	0-8	0-7	0-6.5	0-10	0-10
0-14	0-10	0-8	0-7	0-6.5	0-10	0-10
± 8	± 6	± 4	0	± 5	± 5	± 6.5
± 8	± 6	± 4	2	± 5	± 5	± 6.5
± 6	± 5		5	± 4	± 4	± 6.5
± 4			6	± 2	± 2	± 6
			7	± 2		± 6
			8			± 6
			10			± 2

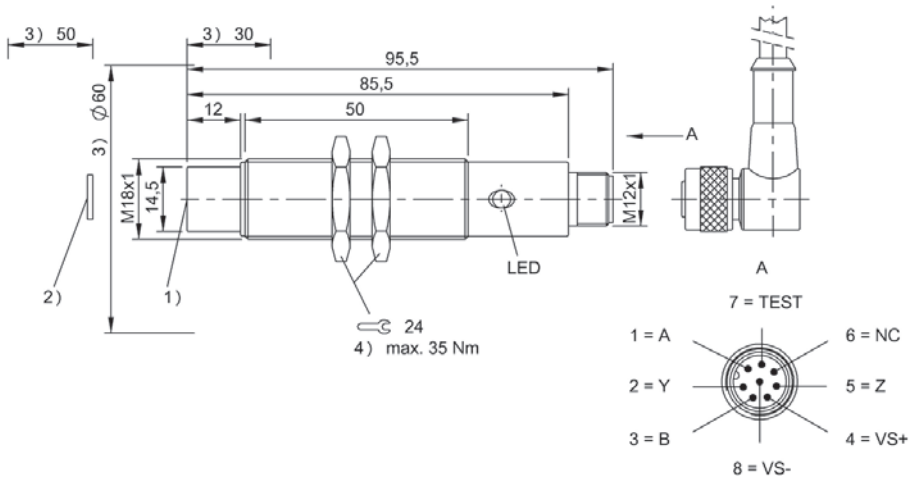


For processor unit BIS00EP	BIS008P BIS M-304-003-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 95.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-14	0-10	0-8	0-18	0-15	0-10	0-5	0-5	0-7	0-6	0-5	0-4	0-7	0-5	0-18	0-10	
Working distance for reading	0-14	0-10	0-8	0-18	0-15	0-10	0-5	0-5	0-7	0-6	0-5	0-4	0-7	0-5	0-18	0-10	
Offset at distance																	
	0	±10	±8	±4	±18	±14	±8	±5	±4	±5	±5	±4	±2	±4	±3	±14	±10
	5	±10	±8	±4	±18	±14	±6	±4	±3	±5	±3.5	±3		±3	±2	±12	±8
	9	±10	±7		±16	±12	±4			±3						±12	±6
	12	±8			±14	±8										±10	
	15				±12	±6										±10	
	16				±10											±7	
	18				±8											±5	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS019C		BIS019E	
>25	>10	>5	>0	>0	>0	>0
>80	>50	>50	>100	>0	>100	>0
0-14	0-10	0-8	0-7	0-6.5	0-10	0-10
0-14	0-10	0-8	0-7	0-6.5	0-10	0-10
±8	±6	±4	0	±5	±5	±6.5
±8	±6	±4	2	±5	±5	±6.5
±6	±5		5	±4	±4	±6.5
±4			6	±2	±2	±6
			7	±2		±6
			8			±6
			10			±2

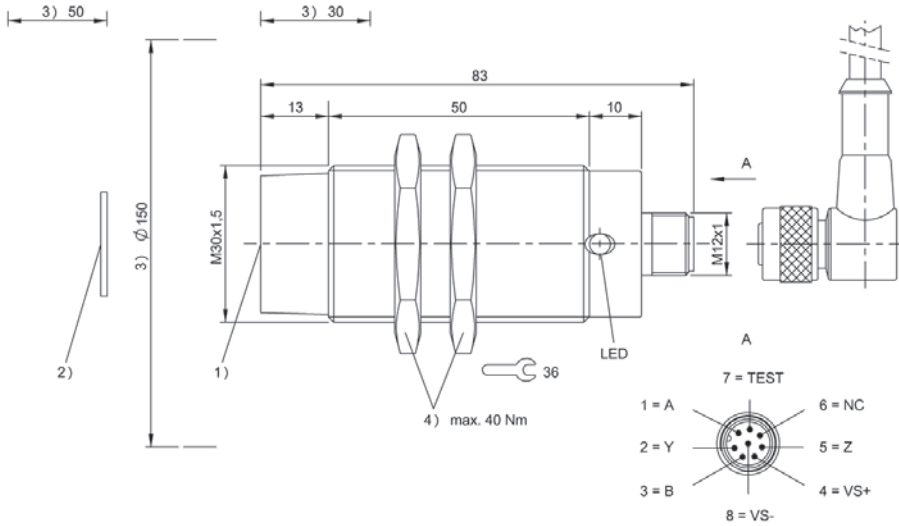


For processor units BIS M-60...	BIS0053 BIS M-300-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044				
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5		
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50		
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16	0-22	0-16	0-10		
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16	0-22	0-16	0-10		
Offset at distance	0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7
	5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7
	9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2
	12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2
	15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5	
	16	±12	±6		±20	±10						±16	±4	15	±12	±4	
	18	±12	±6		±20	±8						±16		16	±10	±2	
	20	±12	±4		±20	±6						±16		18	±10		
	22	±4			±18	±4						±14		20	±10		
	25				±14							±14		22	±6		
	30				±10							±10		25			
	32				±4									30			
														32			
														35			
														40			
														42			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
>25	>10	>5	>50	>15	>10	>25	>0	>50		>25	>0	>0	>0	>0	>0	>0
>100	>60	>50	>150	>90	>70	>100	>100	>150		>100	>100	>100	>100	>100	>100	>100
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22	0-22	0-13	0-22	0-13
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22	0-22	0-13	0-22	0-13
±16	±10	±7	±25	±18	±15	±18	±8	±30		0	±16	±10	±13	±13	±13	±10
±16	±10	±7	±25	±18	±15	±18	±6	±30		5	±16	±10	±13	±13	±13	±10
±14	±8	±2	±25	±16	±12	±18	±3	±30		10	±16	±7	±13	±13	±13	±9
±14	±8	±2	±25	±16	±12	±18		±30		13	±14	±5	±11	±11	±11	±5
±14	±7		±24	±15	±10	±16		±28		15	±14		±11	±11	±11	
±14	±6		±24	±14	±8	±16		±28		18	±14		±11	±11	±11	
±14	±3		±24	±12		±16		±28		20	±14		±7	±7	±7	
±14	±2		±24	±12		±16		±28		22	±12		±7	±7	±7	
±14			±24	±10		±16		±28		25	±12					
±12			±22	±8		±16		±24		27	±5					
±12			±22	±6		±16		±24								
			±22			±10		±24								
			±16					±24								
			±16					±24								
			±16					±5								
			±10					±5								

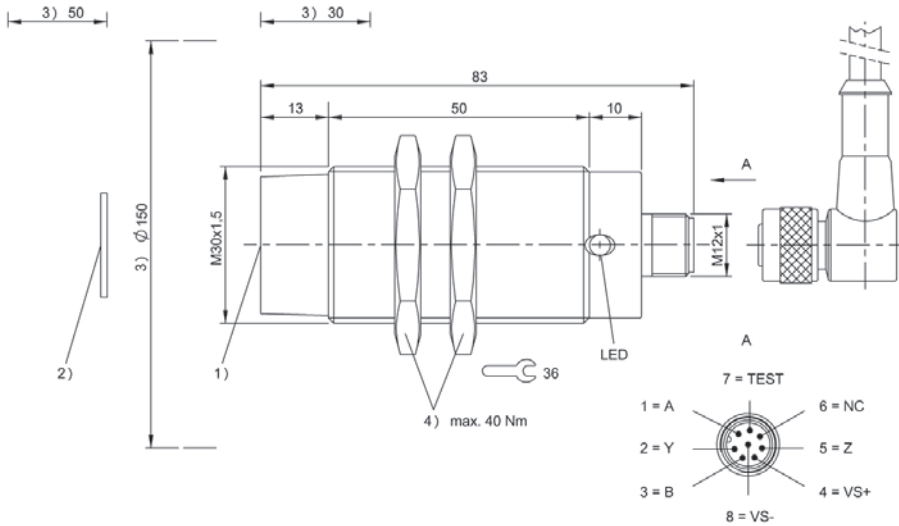


For processor unit BIS00EP	BISS0054 BIS M-300-003-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	Brass, nuts nickel plated brass
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

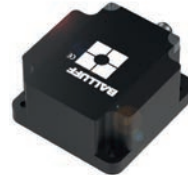
	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044				
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5		
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50		
Working distance for writing	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16	0-22	0-16	0-10		
Working distance for reading	0-22	0-20	0-15	0-32	0-22	0-12	0-9	0-9	0-11	0-11	0-30	0-16	0-22	0-16	0-10		
Offset at distance	0	±15	±12	±8	±20	±15	±6	±7	±6	±10	±7	±18	±10	0	±14	±8	±7
	5	±15	±12	±8	±20	±15	±6	±7	±6	±8	±7	±18	±10	5	±14	±8	±7
	9	±15	±10	±6	±20	±15	±5	±2	±1	±5	±3	±18	±8	8	±12	±6	±2
	12	±15	±8	±4	±20	±15	±4					±16	±6	10	±12	±6	±2
	15	±15	±8	±4	±20	±12						±16	±6	12	±12	±5	
	16	±12	±6		±20	±10						±16	±4	15	±12	±4	
	18	±12	±6		±20	±8						±16		16	±10	±2	
	20	±12	±4		±20	±6						±16		18	±10		
	22	±4			±18	±4						±14	±18	20	±10		
	25				±14							±14		22	±6		
	30				±10							±10		25			
	32				±4									30			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0045			BIS0046			BIS00YE		BIS00Y4		BIS00LC			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
>25	>10	>5	>50	>15	>10	>25	>0	>50		>25	>0	>0	>0	>0		
>100	>60	>50	>150	>90	>70	>100	>100	>150		>100	>100	>100	>100	>100		
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22	0-22	0-13		
0-28	0-18	0-10	0-44	0-25	0-15	0-30	0-8	0-42		0-27	0-13	0-22	0-22	0-13		
±16	±10	±7	±25	±18	±15	±18	±8	±30	0	±16	±10	±13	±13	±10		
±16	±10	±7	±25	±18	±15	±18	±6	±30	5	±16	±10	±13	±13	±10		
±14	±8	±2	±25	±16	±12	±18	±3	±30	10	±16	±7	±13	±13	±9		
±14	±8	±2	±25	±16	±12	±18		±30	13	±14	±5	±11	±11	±5		
±14	±7		±24	±15	±10	±16		±28	15	±14		±11	±11			
±14	±6		±24	±14	±8	±16		±28	18	±14		±11	±11			
±14	±3		±24	±12		±16		±28	20	±14		±7	±7			
±14	±2		±24	±12		±16		±28	22	±12		±7	±7			
±14			±24	±10		±16		±28	25	±12						
±12			±22	±8		±16		±24	27	±5						
±12			±22	±6		±16		±24								
			±22			±10		±24								

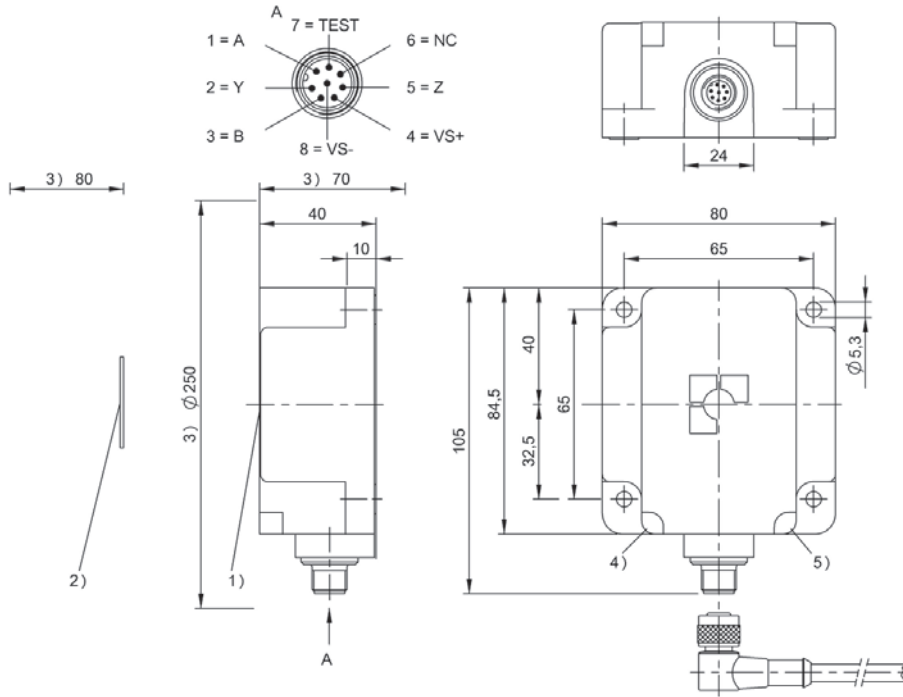


For processor units BIS M-60...	BIS0055 BIS M-301-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

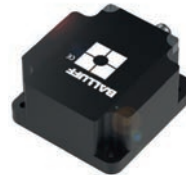
Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043 BIS0111			BIS0044		BIS0045		BIS0046		BIS0047		BIS00L8	
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80		>1	0	
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250		>70	>70	
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32	
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50		0-32	0-32	
Offset at distance	0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25
	5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30		±30	±25
	9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30		±30	±25
	12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30		±25	±25
	15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25
	16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30		±25	±25
	18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30		±25	±22
	20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30		±25	±22
	22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30		±25	±22
	25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30		±25	±22
	30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28		±20	±17
	32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24		±20	±17
	35	±4			±30	±16	±4	±20				±20		±40	±20	±22			
	40				±24	±10		±20				±20		±40	±20	±18			
	43				±20	±4		±12				±12		±35	±15	±14			
	45				±16			±12				±12		±35	±12	±12			
	50				±4									±35		±4			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

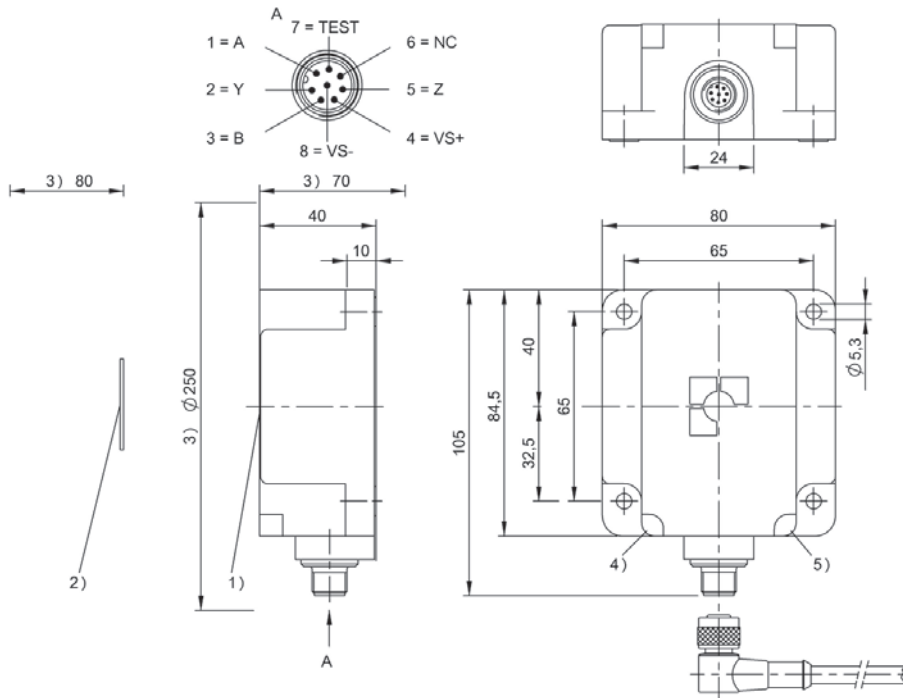


For processor unit BIS00EP	BIS0056 BIS M-301-003-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

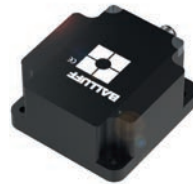
Appropriate data carrier

	BIS003Y			BIS003Z			BIS0043 BIS0111		BIS0044	BIS0045		BIS0046		BIS0047	BIS00L8			
Data carrier distance to metal	>50	>10	>5	>50	>25	>10	>50	>20	>50	>30	>50	>30	>50	>30	>80	>1	0	
Data carrier clear zone	>200	>60	>50	>200	>150	>150	>200	>60	>200	>100	>200	>100	>200	>100	>250	>70	>70	
Working distance for writing	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50	0-32	0-32	
Working distance for reading	0-34	0-20	0-15	0-45	0-43	0-35	0-45	8-22	0-32	0-20	0-45	0-30	0-70	0-45	0-50	0-32	0-32	
Offset at distance																		
	0	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30	±30	±25
	5	±22	±18	±14	±30	±24	±18	±32	±20	±28	±20	±32	±22	±40	±25	±30	±30	±25
	9	±22	±18	±14	±30	±24	±18	±32	±20	±28	±18	±32	±22	±40	±25	±30	±30	±25
	12	±22	±18	±10	±30	±24	±18	±32	±18	±24	±18	±32	±22	±40	±25	±30	±25	±25
	15	±22	±18	±10	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30	±25	±25
	16	±22	±16	±8	±30	±24	±18	±32	±18	±24	±15	±32	±20	±40	±25	±30	±25	±25
	18	±22	±16	±6	±30	±24	±18	±32	±16	±24	±12	±32	±18	±40	±25	±30	±25	±22
	20	±22	±16	±4	±30	±24	±18	±32	±16	±24	±8	±32	±16	±40	±25	±30	±25	±22
	22	±20	±10		±30	±24	±15	±25	±14	±20		±25	±14	±40	±22	±30	±25	±22
	25	±15	±10		±30	±24	±15	±25		±20		±25	±12	±40	±22	±30	±25	±22
	30	±15	±4		±30	±20	±12	±25		±12		±25	±10	±40	±22	±28	±20	±17
	32	±8			±30	±18	±8	±20		±12		±20		±40	±22	±24	±20	±17
	35	±4			±30	±16	±4	±20				±20		±40	±20	±22		
	40				±24	±10		±20				±20		±40	±20	±18		
	43				±20	±4		±12				±12		±35	±15	±14		
	45				±16			±12				±12		±35	±12	±12		
	50				±4									±35	±4			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

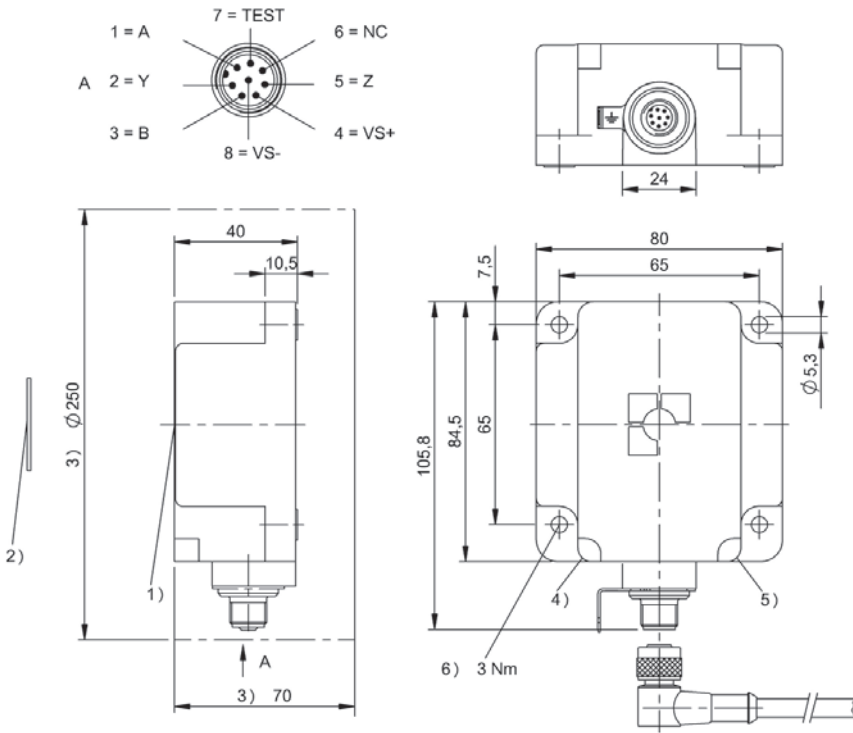


For processor units BIS M-60...	BIS00M6 BIS M-341-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0046		BIS0043		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50		>50	>0	>0		>0	
Data carrier clear zone	>200		>200	>0	>100		>100	
Working distance for writing	35-90		20-60	0-50	0-46		0-23	
Working distance for reading	35-90		20-60	0-50	0-46		0-23	
Offset at distance								
	0			±30	0	±33		±25
	5			±30	5	±33		±25
	9			±30	10	±33		±25
	12			±30	12	±33		±20
	15			±30	16	±33		±20
	16			±30	20	±30		±20
	18			±30	23	±30		±10
	20		±35	±30	25	±30		
	22		±35	±30	30	±30		
	25		±35	±30	35	±24		
	30		±35	±30	40	±24		
	35	±55	±30	±20	46	±8		
	40	±55	±30	±20	50			
	45	±55	±30	±20	55			
	50	±55	±30	±20	60			
	60	±55	±30		65			
	70	±40			70			
	80	±40			80			
	90	±20			90			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

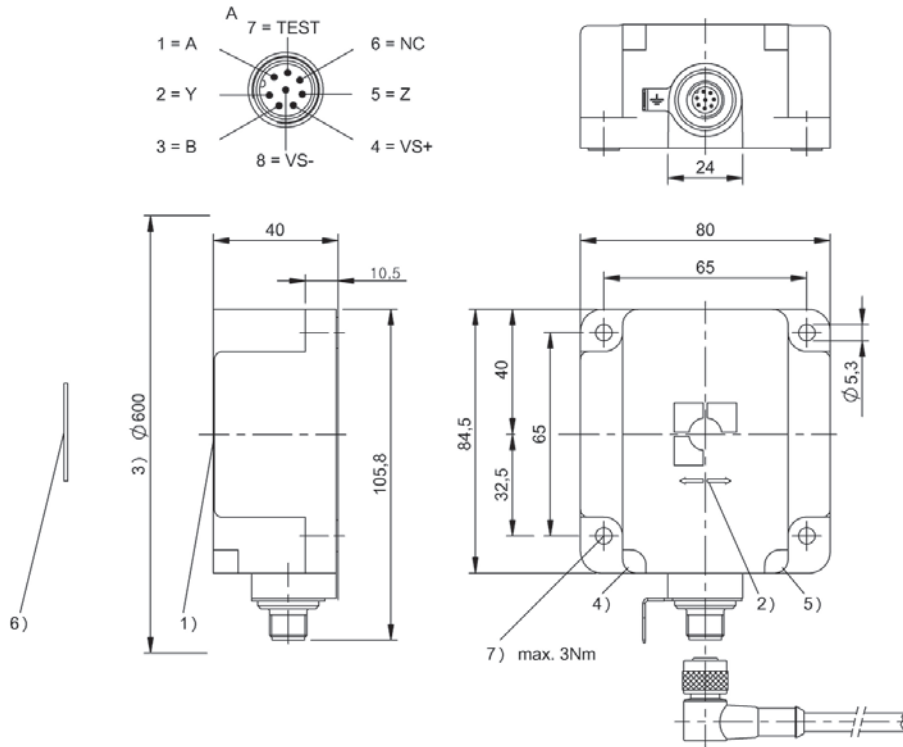


For processor units BIS M-60...	BIS005C BIS M-351-001-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3				
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240	>240	>240	
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480	>480	>480	
Data carrier clear zone C										>50	>2	>2	>50	>50	0	0	
Metallic mounting surface 40 x 22 mm	0-52	0-52			0-52	0-52											
Metallic mounting surface > 200 x 200 mm			0-65	0-65			0-65	0-65									
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100	0-90	0-90	
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100	0-90	0-90	
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	
	0	±60	±25	±65	±26	±25	±60	±26	±65	±35	±20			±100	±20	±100	±20
	5	±60	±25	±65	±26	±25	±60	±26	±65	±35	±20			±100	±20	±100	±20
	12	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20			±100	±20	±100	±20
	15	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20	±35	±15	±100	±20	±100	±20
	18	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20	±35	±15	±100	±20	±100	±20
	20	±60	±25	±65	±25	±25	±60	±25	±65	±20	±12	±28	±15	±80	±20	±80	±20
	22	±60	±25	±65	±25	±25	±60	±25	±65	±20	±12	±28	±15	±80	±20	±80	±20
	25	±60	±25	±65	±25	±25	±60	±25	±65					±80	±20	±80	±20
	30	±60	±25	±65	±25	±25	±60	±25	±65					±80	±20	±80	±20
	32	±50	±25	±65	±25	±25	±50	±25	±65					±80	±20	±80	±20
	35	±50	±25	±65	±25	±25	±50	±25	±65					±80	±20	±80	±20
	40	±50	±20	±50	±25	±20	±50	±25	±50					±65	±20	±65	±20
	45	±25	±20	±50	±25	±20	±25	±25	±50					±65	±20	±65	±20
	50	±25	±20	±50	±25	±20	±25	±25	±50					±65	±20	±65	±20
	52	±25	±8	±25	±25	±8	±25	±25	±25					±50	±20	±50	±20
	60			±25	±10			±10	±25					±40	±20		
	65			±25	±10			±10	±25								

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

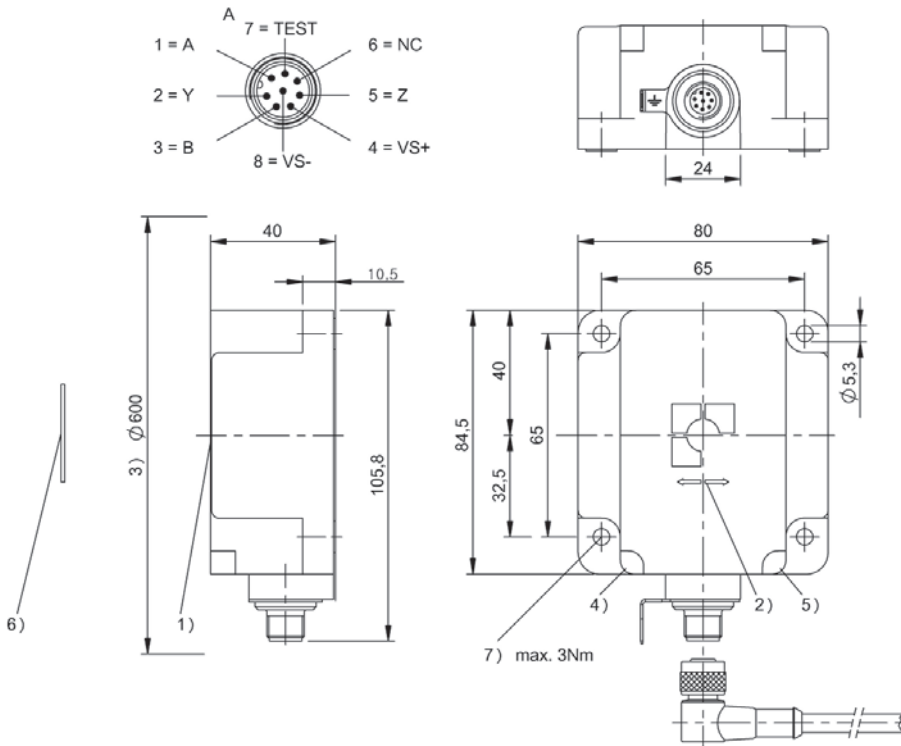


For processor unit BIS00EP	BIS00KU BIS M-351-003-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Male, 8-pin
Housing material	PBT
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3				
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240	>240	>240	
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480	>480	>480	
Data carrier clear zone C									>50	>50	>2	>2	>50	>50	0	0	
Metallic mounting surface 40 × 22 mm	0-52	0-52			0-52	0-52											
Metallic mounting surface > 200 × 200 mm			0-65	0-65			0-65	0-65									
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100	0-90	0-90	
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100	0-90	0-90	
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	
	0	±60	±25	±65	±26	±25	±60	±26	±65	±35	±20			±100	±20	±100	±20
	5	±60	±25	±65	±26	±25	±60	±26	±65	±35	±20			±100	±20	±100	±20
	12	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20			±100	±20	±100	±20
	15	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20	±35	±15	±100	±20	±100	±20
	18	±60	±25	±65	±25	±25	±60	±25	±65	±35	±20	±35	±15	±100	±20	±100	±20
	20	±60	±25	±65	±25	±25	±60	±25	±65	±20	±12	±28	±15	±80	±20	±80	±20
	22	±60	±25	±65	±25	±25	±60	±25	±65	±20	±12	±28	±15	±80	±20	±80	±20
	25	±60	±25	±65	±25	±25	±60	±25	±65					±80	±20	±80	±20
	30	±60	±25	±65	±25	±25	±60	±25	±65					±80	±20	±80	±20
	32	±50	±25	±65	±25	±25	±50	±25	±65					±80	±20	±80	±20
	35	±50	±25	±65	±25	±25	±50	±25	±65					±80	±20	±80	±20
	40	±50	±20	±50	±25	±20	±50	±25	±50					±65	±20	±65	±20
	45	±25	±20	±50	±25	±20	±25	±25	±50					±65	±20	±65	±20
	50	±25	±20	±50	±25	±20	±25	±25	±50					±65	±20	±65	±20
	52	±25	±8	±25	±25	±8	±25	±25	±25					±50	±20	±50	±20
	60			±25	±10			±10	±25					±40	±20		
	65			±25	±10			±10	±25								

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

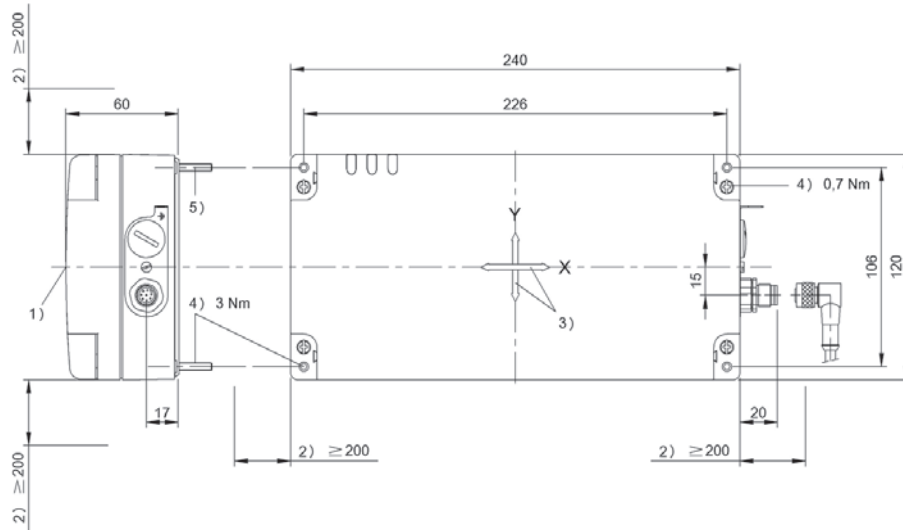


For processor units BIS M-60...	BISO0N6 BIS M-340-001-S115
Product Group	HF (13.56 MHz)
Dimension	120 x 60 x 240 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 15693
Connection	Male, 8-pin
Housing material	PC
Ambient temperature	0...55 °C
Protection degree	IP65
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BISO0LC				BISO044		BISO045		BISO046						
Data carrier clear zone A	>240		>240		>25		>25		>50		>10				
Data carrier clear zone B	>480		>480		>100		>100		>150		>150				
Data carrier clear zone C	>120		>10		>0		>0		>0		>0				
Metallic mounting surface 40 x 22 mm															
Metallic mounting surface > 200 x 200 mm															
Montage mit BIS Z-HW-002 auf Metall			30-75	30-75											
Working distance for writing	0-100	0-100	30-75	30-75	0-90	0-90	0-140	0-140	0-170	0-170	0-90	0-90			
Working distance for reading	0-100	0-100	30-75	30-75	0-90	0-90	0-140	0-140	0-170	0-170	0-90	0-90			
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y			
	0	±50	±100				0	±30	±65	±55	±75	±60	±85	±30	±85
	5	±50	±100				10	±30	±65	±55	±75	±60	±85	±30	±85
	10	±50	±100				20	±30	±65	±55	±75	±60	±85	±30	±85
	20	±50	±100				30	±30	±65	±55	±75	±60	±85	±30	±85
	30	±50	±100	±35	±90		40	±30	±65	±55	±75	±60	±85	±30	±85
	40	±50	±100	±35	±85		50	±30	±65	±55	±75	±60	±85	±30	±80
	50	±50	±95	±30	±80		60	±30	±65	±55	±75	±60	±85	±30	±70
	60	±50	±90	±25	±80		70	±30	±65	±55	±75	±60	±85	±30	±55
	70	±50	±90	±25	±75		80	±30	±55	±55	±75	±60	±85	±24	±30
	75	±45	±85	±25	±70		90	±25	±40	±55	±75	±60	±85	±1	±1
	80	±45	±85				100			±55	±75	±60	±85		
	90	±45	±80				120			±55	±75	±60	±85		
	100	±40	±75				140			±50	±65	±60	±85		
	110						160					±55	±75		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Read/write axis, 4) Tightening torque, 5) 4x screws M4 DIN 912

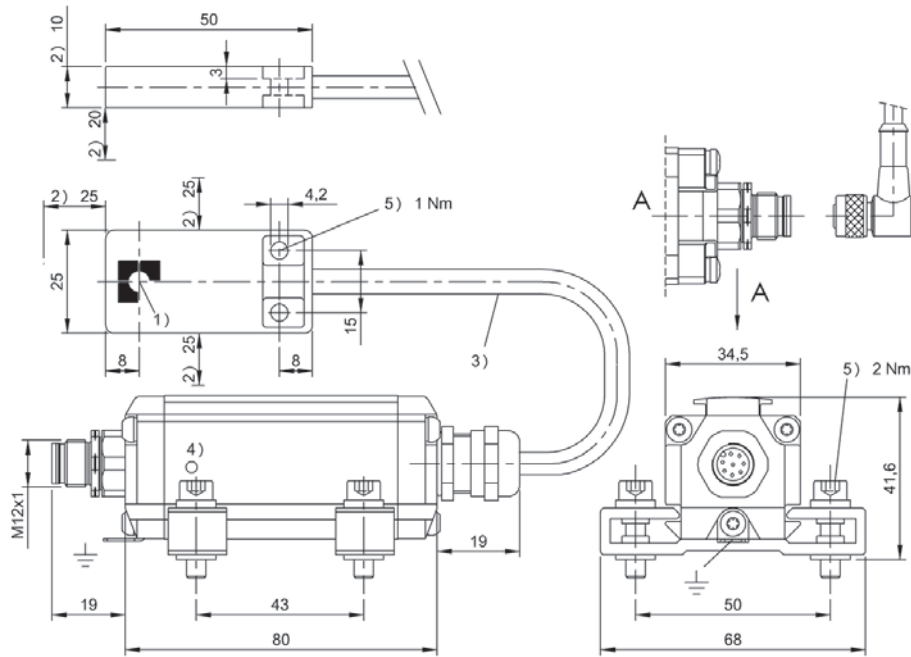


For processor units BIS M-60...	BISO0NK BIS M-305-001-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS0043		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00UC				
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>25	>0	>0			>10	>0			
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100	>0	>100			>60	>60			
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17			0-7.5	0-4			
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5		0-17	0-11	0-17			0-7.5	0-4			
Offset at distance																					
	0	±3	±3	±4	±4	±6		±3	±3	±4	±3	0	±12	±8	±10		±7		0	±5	±3.5
	5	±2		±4	±2	±6		±2		±3	±2	5	±12	±8	±10		±7		2	±5	±3.5
	9					±4						8	±12	±6	±10		±6		3	±4	±3
	12					±2						10	±12	±6	±9		±6		4	±4	±1
	15											11	±8	±4	±9		±3		5	±4	
	16											12	±8		±9		±3		6	±4	
	18											15	±8		±4				7.5	±1.5	
	20											17	±4		±4				10		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

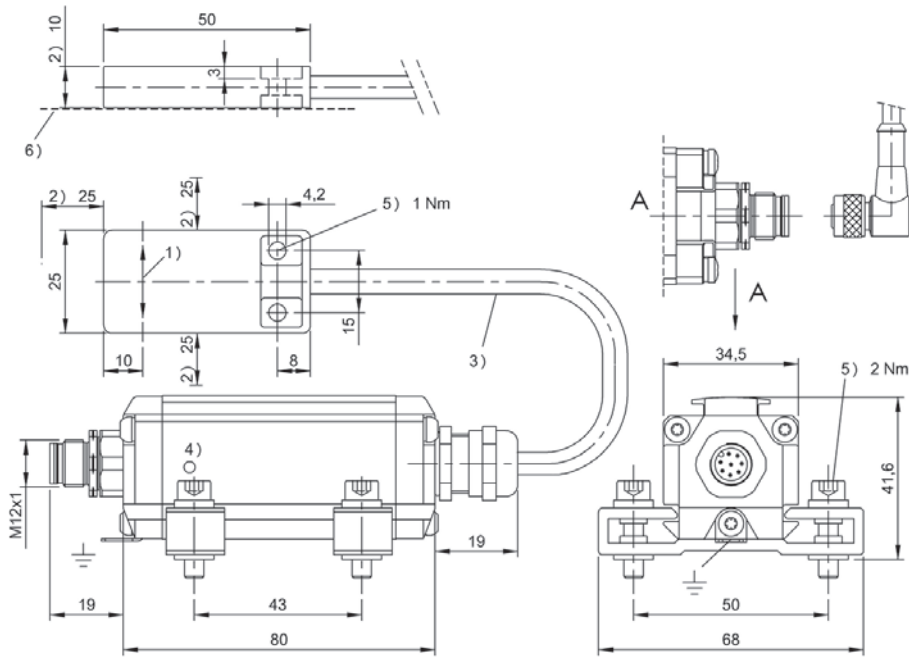


For processor units BIS M-60...	BIS00NY BIS M-352-001-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS00NZ		BIS017F		BIS00M2			
Data carrier clear zone A	>27	>27	>200	>200	>200	>200	>200	>200
Data carrier clear zone B	>27	>27	>200	>200	>200	>200	>200	>200
Data carrier clear zone C			>50	>50	>50	>50	>0	>0
Metallic mounting surface 40 x 22 mm								
Metallic mounting surface > 200 x 200 mm								
Working distance for writing	0-22	0-22	0-17	0-17	0-17	0-17	0-20	0-20
Working distance for reading	0-22	0-22	0-17	0-17	0-17	0-17	0-20	0-20
Offset at distance	X	Y	X	Y	X	Y	X	Y
	0	±25 ±5	0	±22 ±9	±22	±10	±25	±12
	5	±25 ±5	5	±22 ±9	±22	±10	±25	±12
	10	±25 ±5	10	±19 ±8	±20	±9	±25	±12
	15	±25 ±5	15	±12 ±6	±16	±7	±22	±10
	20	±15 ±5	17	±3 ±2	±5	±3	±18	±8
	22	±15 ±5	20				±8	±4

Dimensions in mm



1) Read/write axis, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque, 6) Mounting on steel

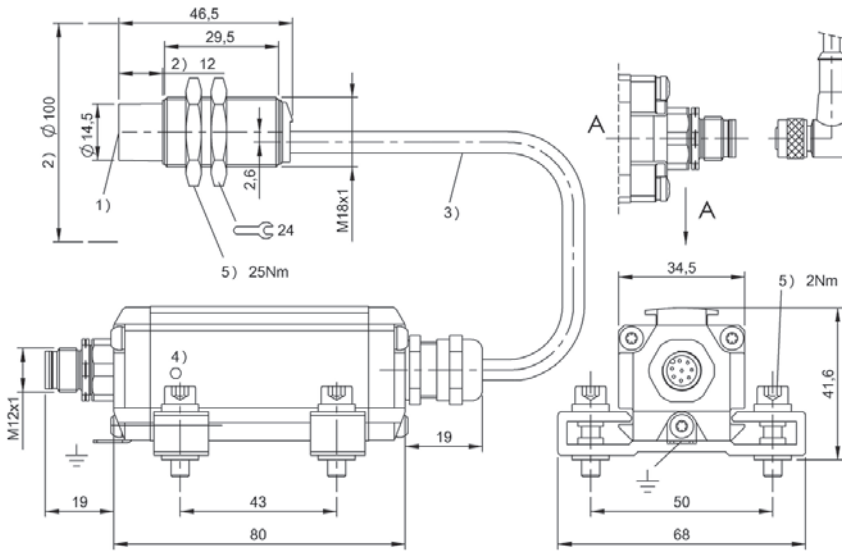


For processor units BIS M-60...	BISO0P2 BIS M-307-001-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 46.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Plug, 8-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00YK		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0	>10	>0	>0		>0	
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0	>60	>60	>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5	0-10	0-8	0-16		0-12	
Working distance for reading	0-6	0-4	0-8	0-6	0-13		0-5	0-4	0-7	0-5	0-10	0-8	0-16		0-12	
Offset at distance																
	0	±3	±3	±4	±4	±6	±3	±3	±4	±3	0	±7	±5	±9	±7	
	5	±2		±4	±2	±6	±2		±4	±2	5	±7	±5	±9	±7	
	9					±4					7	±6	±4	±9	±6	
	12					±2					8	±6	±2	±9	±6	
	15										10	±3		±8	±6	
	16										12			±8	±3	
	18										14			±8		
	20										16			±3		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque



For processor units BIS M-62... For processor units BIS V-6... with BIS014N	BIS00WM BIS M-371-000-A01
Product Group	HF (13.56 MHz)
Dimension	113.4 x 42.4 x 118 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

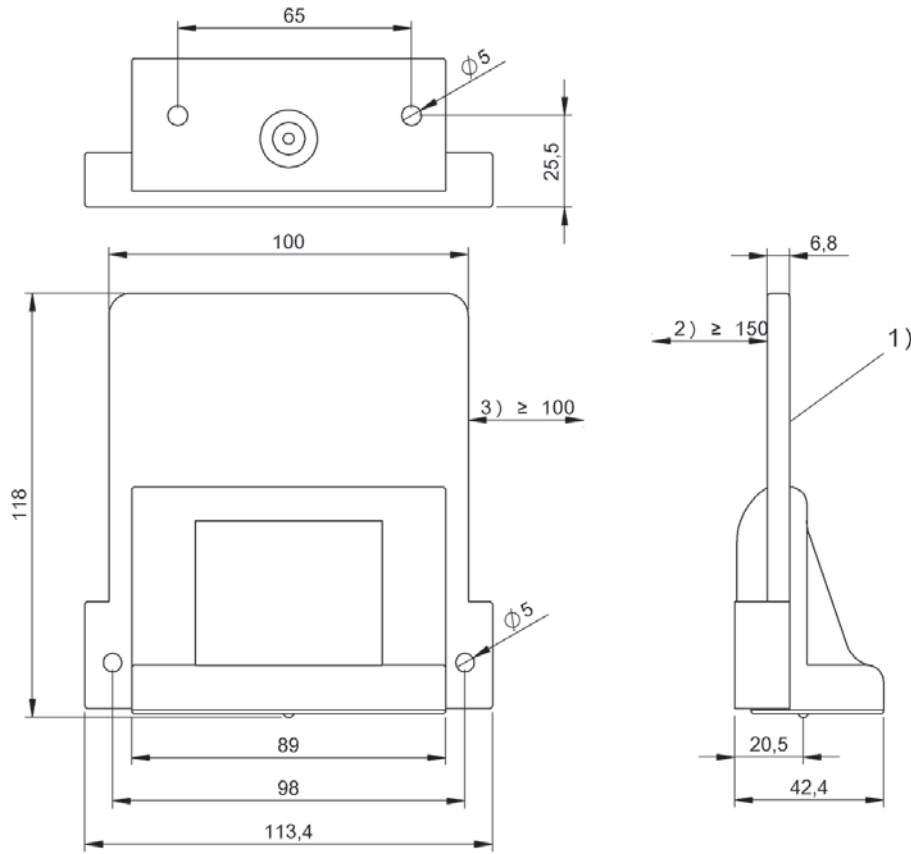
	BIS0043	BIS0111	BIS0044	BIS0045	BIS0046	BIS0119	BIS00YF
Data carrier distance to metal	>40	>40	>40	>40	>40	>0	>25
Data carrier clear zone	>230	>230	>220	>230	>250	>120	>230
Working distance for writing	0-110	0-100	0-70	0-120	0-150	0-50	0-100
Working distance for reading	0-110	0-100	0-70	0-120	0-150	0-50	0-100
Offset at distance							
	0 ±40	±40	±40	±40	±40	0 ±30	0 ±75
	20 ±40	±40	±40	±40	±40	5 ±30	20 ±75
	40 ±40	±40	±40	±40	±40	15 ±30	30 ±75
	60 ±40	±40	±40	±40	±40	28 ±30	40 ±75
	70 ±40	±40	±25	±40	±40	35 ±30	50 ±70
	100 ±40	±25		±40	±40	50 ±20	70 ±70
	110 ±25			±40	±40		100 ±25
	120			±25	±40		
	150				±25		

Dimensions in mm

Appropriate data carrier

	BIS00YE	BIS00YA	BIS00Y9	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2
Data carrier distance to metal	>25	>25	>40	>40	>40	>40	>40
Data carrier clear zone	>230	>230	>230	>250	>250	>250	>250
Working distance for writing	0-100	0-40	0-70	25-140	10-205	10-205	10-135
Working distance for reading	0-100	0-40	0-70	25-140	10-205	10-205	10-135
Offset at distance							
	0 ±75	±30	±40	50 ±75	±75	±75	±75
	20 ±75	±30	±40	75 ±75	±75	±75	±75
	30 ±75	±30	±40	100 ±75	±75	±75	±75
	40 ±75	±20	±40	120 ±75	±75	±75	±75
	50 ±70		±40	135 ±75	±75	±75	±25
	70 ±70		±25	140 ±25	±75	±75	
	100 ±25			190	±75	±75	
				205	±25	±25	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding



For processor units BIS M-62... For processor units BIS V-6... with BIS014N	BIS00WL BIS M-372-000-A01
Product Group	HF (13.56 MHz)
Dimension	200 x 42.4 x 218 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

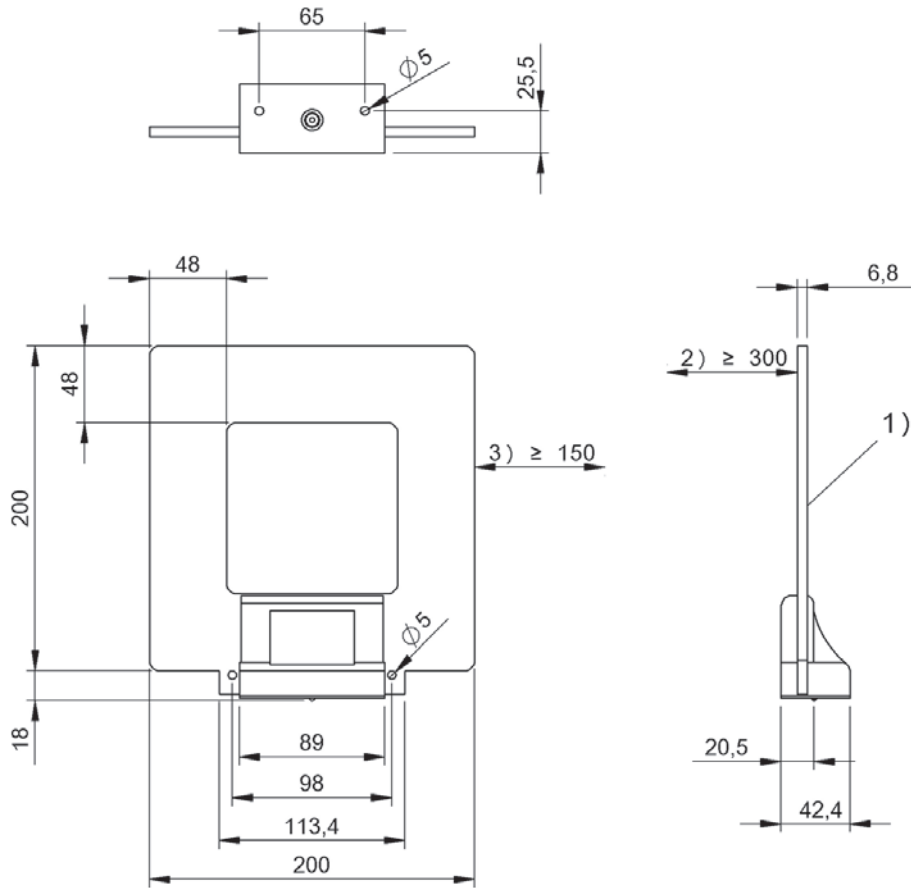
	BIS0043	BIS0111	BIS0044	BIS0045	BIS0046		BIS0119		BIS00YF
Data carrier distance to metal	>45	>45	>45	>45	>45		>0		>45
Data carrier clear zone	>430	>430	>420	>430	>450		>420		>430
Working distance for writing	0-160	0-150	0-115	0-175	0-235		0-65		0-160
Working distance for reading	0-160	0-150	0-115	0-175	0-235		0-65		0-160
Offset at distance									
	0 ±75	±75	±50	±75	±75		0 ±50		0 ±100
	25 ±75	±75	±50	±75	±75		20 ±50		20 ±100
	50 ±75	±75	±50	±75	±75		37 ±50		30 ±100
	80 ±75	±75	±50	±75	±75		65 ±30		40 ±100
	100 ±75	±75	±50	±75	±75		80		60 ±100
	115 ±75	±75	±30	±75	±75		100		90 ±100
	135 ±75	±75		±75	±75		115		115 ±50
	150 ±75	±50		±75	±75				130 ±50
	160 ±50			±75	±75				145 ±50
	175			±50	±75				160 ±25

Dimensions in mm

Appropriate data carrier

	BIS00YE	BIS00YA	BIS00Y9		BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2
Data carrier distance to metal	>45	>45	>45		>45	>45	>45	>45
Data carrier clear zone	>430	>430	>430		>450	>450	>450	>450
Working distance for writing	0-145	0-30	0-115		0-230	0-300	0-300	0-190
Working distance for reading	0-145	0-30	0-115		0-230	0-300	0-300	0-190
Offset at distance								
	0 ±100	±50	±75		0 ±100	±100	±100	±100
	20 ±100	±50	±75		50 ±100	±100	±100	±100
	30 ±100	±30	±75		100 ±100	±100	±100	±100
	40 ±100		±75		150 ±100	±100	±100	±100
	60 ±100		±75		190 ±100	±100	±100	±50
	90 ±100		±75		230 ±50	±100	±100	
	115 ±50		±50		250	±100	±100	
	130 ±50				300	±50	±50	
	145 ±25							
	160							

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding

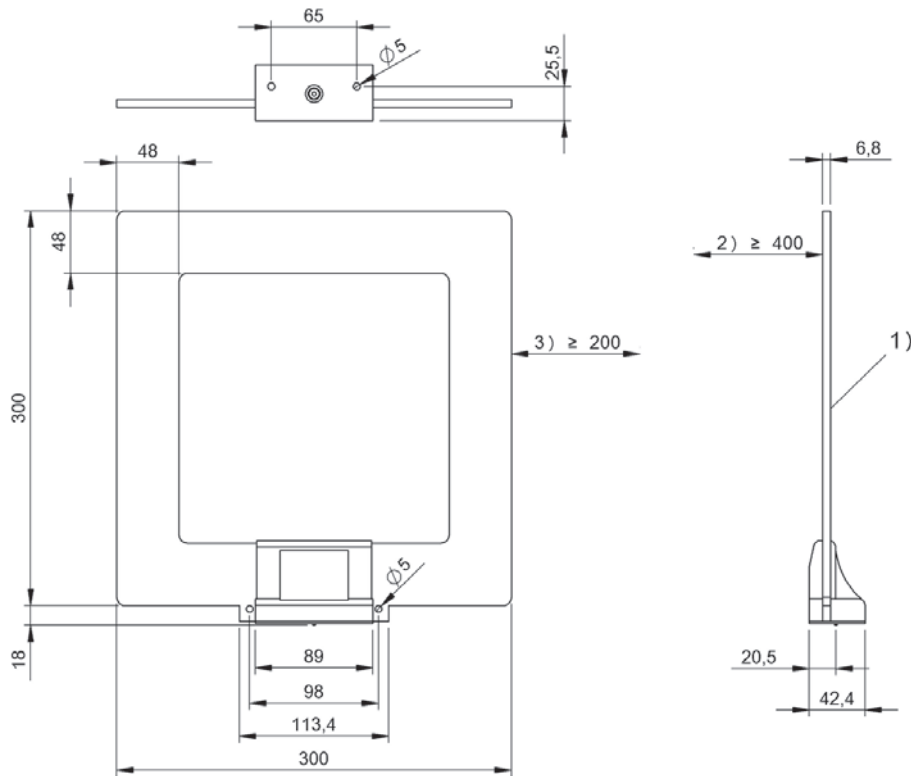


For processor units BIS M-62... For processor units BIS V-6... with BIS014N	BIS00WK BIS M-373-000-A01
Product Group	HF (13.56 MHz)
Dimension	300 x 42.4 x 318 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

	BIS00YF	BIS00YE	BIS00Y5	BIS00Y4	BIS00W9
Working distance for writing	0-195	0-185	0-320	0-355	0-360
Working distance for reading	0-195	0-185	0-320	0-355	0-360

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding

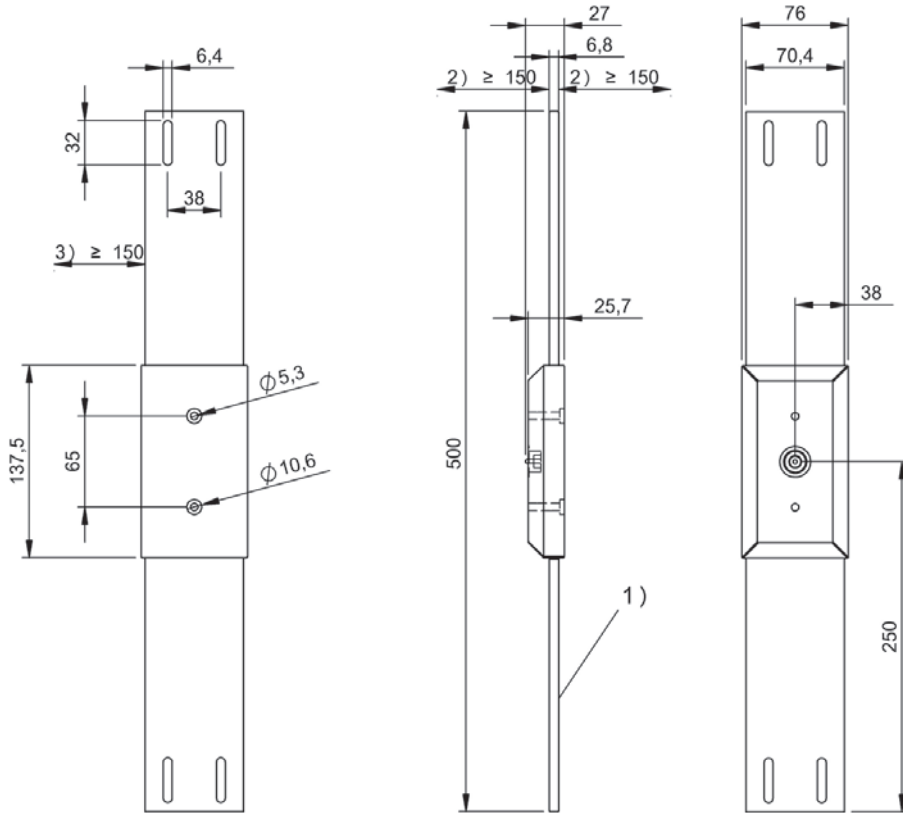


For processor units BIS M-62... For processor units BIS V-6... with BIS014N	BIS00WN BIS M-370-000-A02
Product Group	HF (13.56 MHz)
Dimension	500 x 27 x 76 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, RCA
Housing material	PA
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE

Appropriate data carrier

	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y2	BIS00Y1
Working distance for writing	0-48	10-95	0-135	0-130	15-95	0-100
Working distance for reading	0-48	10-95	0-135	0-130	15-95	0-100

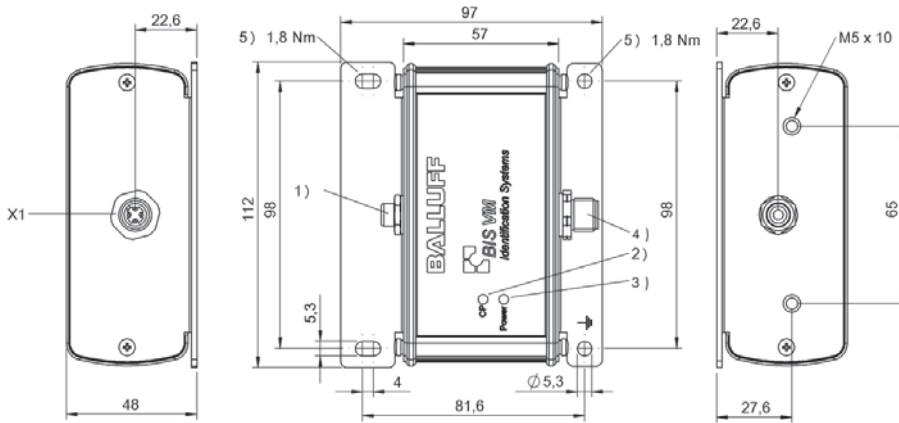
Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding



For antennas BIS M-37...	BISO14N BIS VM-920
Product Group	HF (13.56 MHz)
Dimension	112 x 48 x 97 mm
Connection	Male, 4-pin
Housing material	Aluminum
Ambient temperature	-20...50 °C
Protection degree	IP65
Approval/Conformity	CE



1) Antenna connection, 2) LED (CP), 3) LED (Power), 4) Read head connection X1, 5) Tightening torque



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS013U BIS V-6108-048-C002	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	Profinet I/O (IRT), 2 port Switch	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	
Productview	Page 226	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS013W BIS V-6108-048-C102	BIS00T3 BIS V-6102-019-C001	BIS012E BIS V-6102-019-C101
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
Profinet I/O (IRT), 2 port Switch	Profibus DP Slave, galvanically isolated	Profibus DP Slave, galvanically isolated
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded 7/8"-Male, 5-pole
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For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS0186 BIS V-6107-039-C005	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	Ethernet TCP/IP, USB	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole	
Productview	Page 227	

* Use adapter **BISOFC** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS018J BIS V-6107-039-C006	BIS0187 BIS V-6107-039-C105	BIS018K BIS V-6107-039-C106
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
Ethernet TCP/IP, USB	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 4-pole	M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole	M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 4-pole
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For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS012F BIS V-6106-034-C002	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	Ethernet/IP	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	
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* Use adapter **BISOFCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS0122 BIS V-6106-034-C004	BIS014C BIS V-6106-034-C102	BIS0146 BIS V-6106-034-C104
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
Ethernet/IP	Ethernet/IP	Ethernet/IP
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 4-pole	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 4-pole
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For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS00U9 BIS V-6110-063-C002	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	EtherCAT	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	
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* Use adapter **BISOFC** to connect read/write heads **BIS C (LF 70/455 kHz)**.



	BIS0147 BIS V-6110-063-C102	BIS010P BIS V-6111-073-C003	BIS014E BIS V-6111-073-C103
	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
	EtherCAT	CC-Link	CC-Link
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	0...60 °C	0...60 °C	0...60 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, UL Listed	CE, UL Listed	CE, UL Listed
	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, A-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, A-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole
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For read/write heads BIS M-3xx-001...	BIS00N1 BIS M-6000-007-050-00-ST15	
Product Group	HF (13.56 MHz)	
Interface	RS232	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	2	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, cULus	
Connection	Male, 4-pole Male, 5-pole	
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BIS00J0 BIS M-6000-007-050-00-ST24	BIS00L7 BIS M-6008-048-050-06-ST23	BIS00KZ BIS M-6028-048-050-06-ST22
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
RS232	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch	Profinet
HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
2	2	2
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
ABS	ABS	Aluminum, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Male, 5-pole, B-coded Male, 5-pole	Female, 4-pole, D-coded M12x1-Female, 4-pole, D-coded Male, 5-pole	2x RJ45-Female, 8-pole Male, 5-pole
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For read/write heads BIS M-3xx-001...	BIS00TW BIS M-6028-048-050-06-ST8	
For read/write heads BIS M-3xx-003...		
Product Group	HF (13.56 MHz)	
Interface	Profinet	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	2	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	Aluminum, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Female, 4-pole, D-coded M12x1-Female, 4-pole, D-coded Male, 5-pole	
Productview	Page 232	



BIS00EW BIS M-6002-019-050-03-ST11	BIS00FO BIS M-6022-019-050-03-ST14	BIS00EP BIS M-407-039-003-06-S115
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated	Ethernet TCP/IP
HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
2	2	1
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
ABS	Aluminum, die-cast	Aluminum
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP67 with connector
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole	Female, 4-pole, D-coded Male, 5-pole
Page 232	Page 233	Page 233



For read/write heads BIS M-3xx-001...	BISO0F2 BIS M-6026-034-050-06-ST19	
Product Group	HF (13.56 MHz)	
Interface	Ethernet/IP	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	2	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	Aluminum, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Female, 4-pole, D-coded Male, 5-pole	
Productview	Page 234	



	BIS00EY BIS M-6003-025-050-03-ST12	BIS00F1 BIS M-6023-025-050-03-ST13	BIS00LY BIS M-699-052-050-03-ST11
	HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
	DeviceNet galvanically isolated	DeviceNet galvanically isolated	CC-Link
	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
	2	2	2
	19.2...28.8 VDC	19.2...28.8 VDC	21.6...26.4 VDC Supports only LPS/Class 2
	ABS	Aluminum, die-cast	Aluminum, die-cast
	0...60 °C	0...60 °C	0...55 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, CLPA, UL-FILE E227256, Vol.X1, BIS
	Male, 5-pole Female, 5-pole Male, 5-pole	Male, 5-pole Female, 5-pole Male, 5-pole	Male, 5-pole Female, 5-pole Male, 5-pole
	Page 234	Page 235	Page 235

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For read/write heads BIS M-37x-000...	BIS00ZJ BIS M-620-068-A01-00-S115	
Product Group	HF (13.56 MHz)	
Interface	RS232	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	1	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	M12x1 connector, 8-pin	
Productview	Page 236	



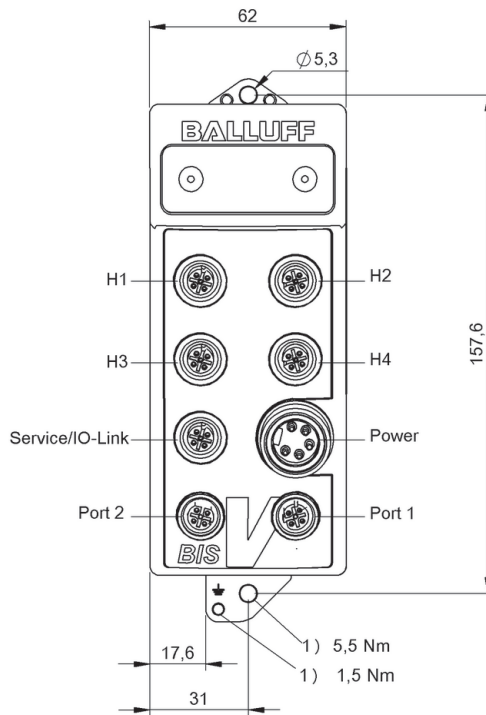
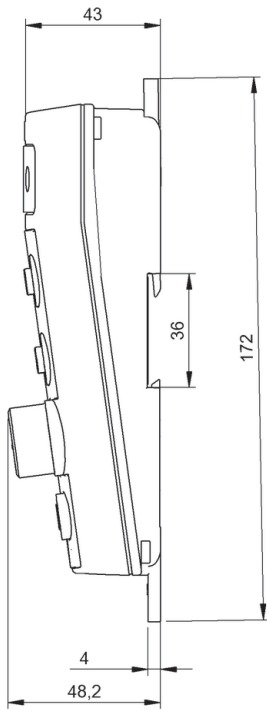
BIS00ZH BIS M-620-068-A01-00-ST29	BIS011P BIS M-628-075-A01-03-ST34	BIS00ZF BIS M-622-070-A01-03-ST33
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
RS232	Profinet galvanically isolated	Profibus DP Slave galvanically isolated
HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)
1	1	1
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
Aluminum	Aluminum	Aluminum
-20...50 °C	-20...50 °C	-20...50 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
M12x1 connector, 8-pin	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	M12x1-Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded M12x1-Male, 5-pole
Page 236	Page 237	Page 237



For read/write heads BIS M-37x-000...	BIS00ZC BIS M-626-069-A01-06-ST31	
Product Group	HF (13.56 MHz)	
Interface	Industrial Ethernet/Ethernet TCP/IP/MODBUS TCP	
Supported RFID technologies	HF 13.56 MHz (BIS M)	
Number of connectable R/W heads / antennas	1	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum	
Ambient temperature	-20...50 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	
Productview	Page 238	

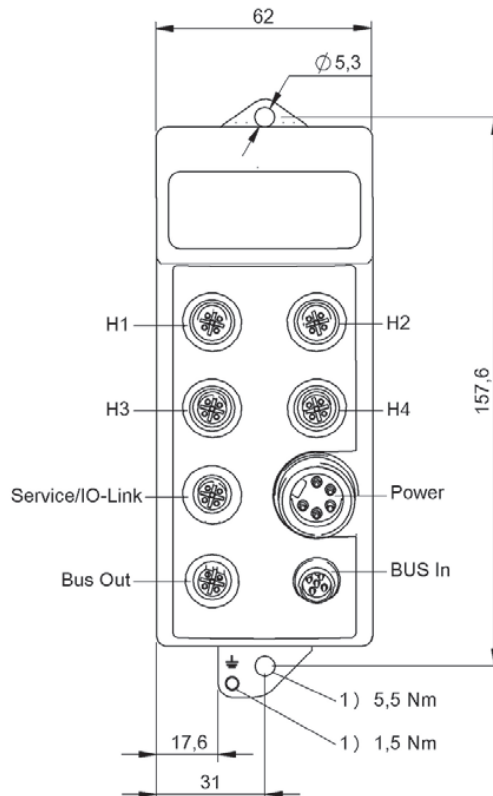
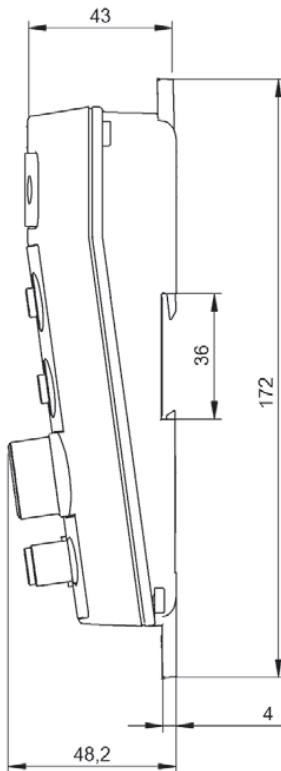


BIS00ZA BIS M-626-069-A01-06-ST32	BIS00ZE BIS M-623-071-A01-03-ST30	
HF (13.56 MHz)	HF (13.56 MHz)	
Industrial Ethernet/Ethernet TCP/IP/MODBUS TCP	DeviceNet galvanically isolated	
HF 13.56 MHz (BIS M)	HF 13.56 MHz (BIS M)	
1	1	
19.2...28.8 VDC	19.2...28.8 VDC	
Aluminum	Aluminum	
-20...50 °C	-20...50 °C	
IP65 with connector	IP65 with connector	
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	
M12x1-Female, 4-pole, D-coded M12x1-Male, 5-pole	M12x1-Male, 5-pole M12x1-Male, 8-pole	
Page 238	Page 239	



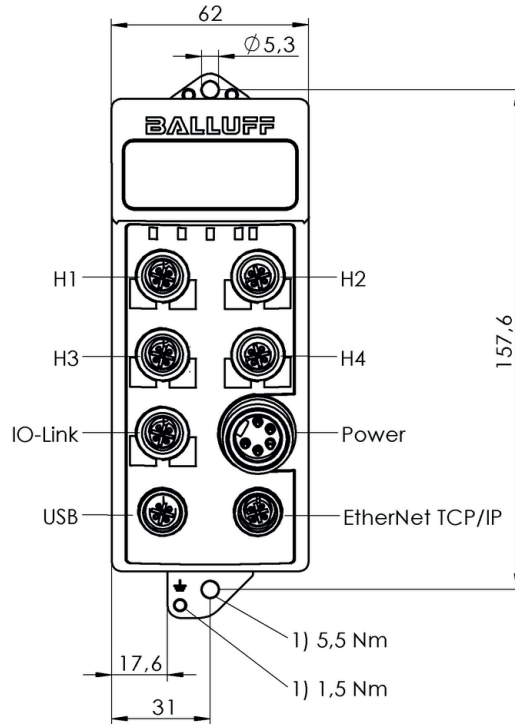
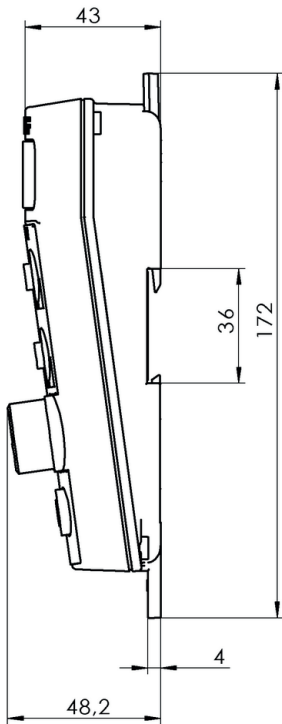
1) Tightening torque

BIS013U, BIS013W



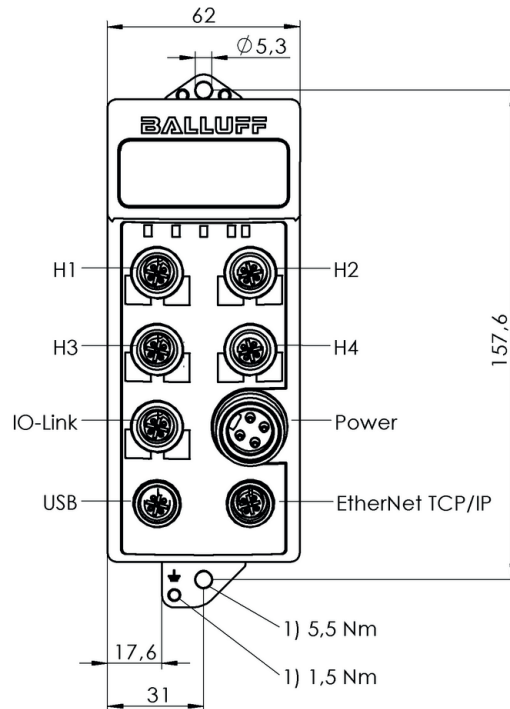
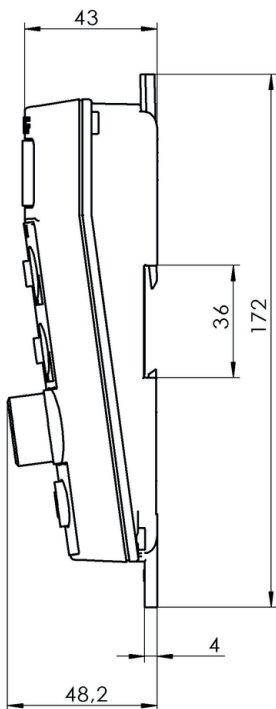
1) Tightening torque

BIS00T3, BIS012E



1) Tightening torque

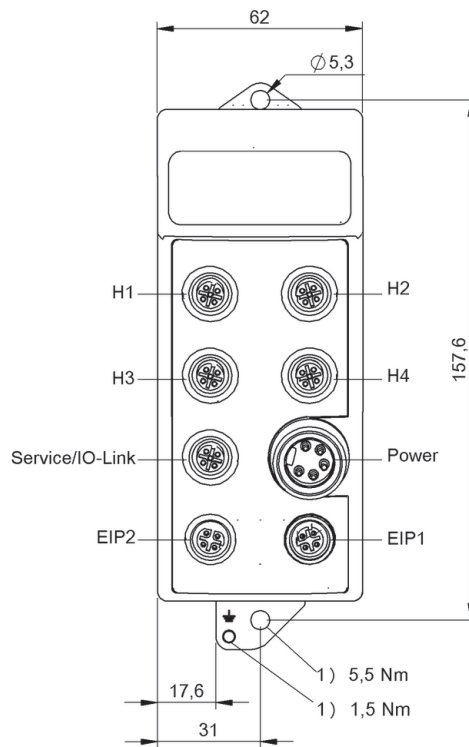
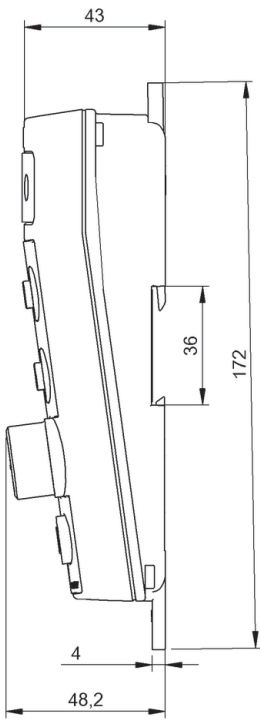
BIS0186, BIS0187



1) Tightening torque

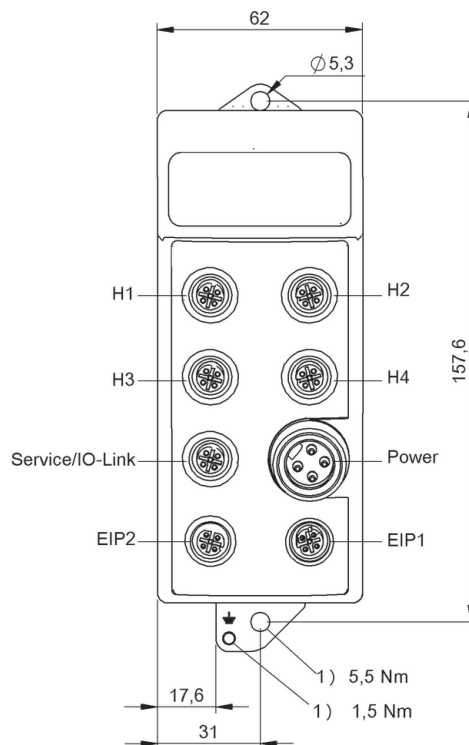
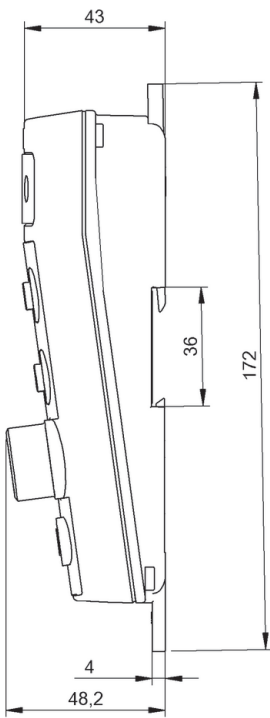
BIS018J, BIS018K

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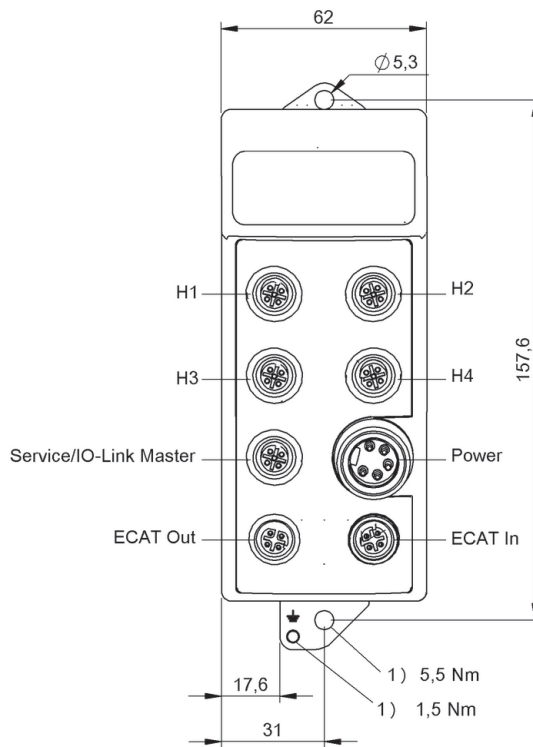
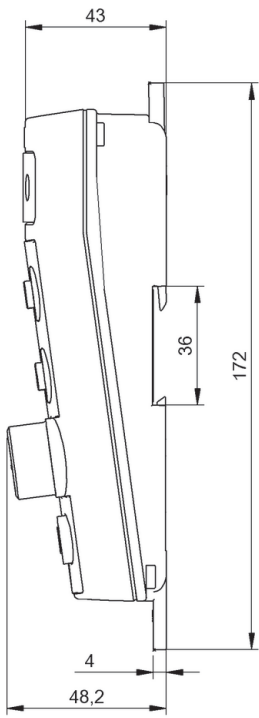
1) Tightening torque

BISO12F, BISO14C



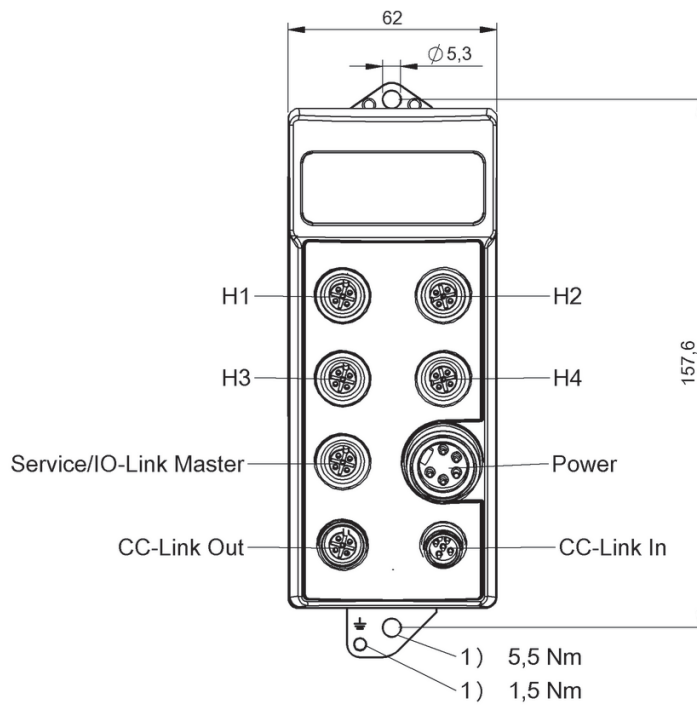
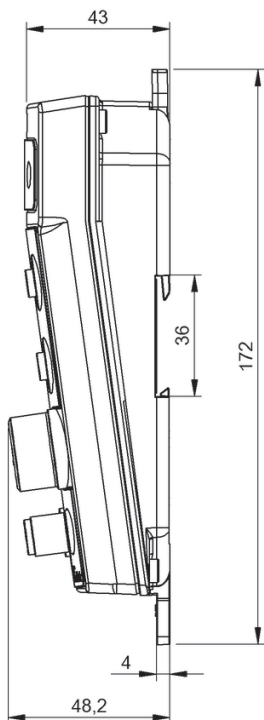
1) Tightening torque

BISO122, BISO146



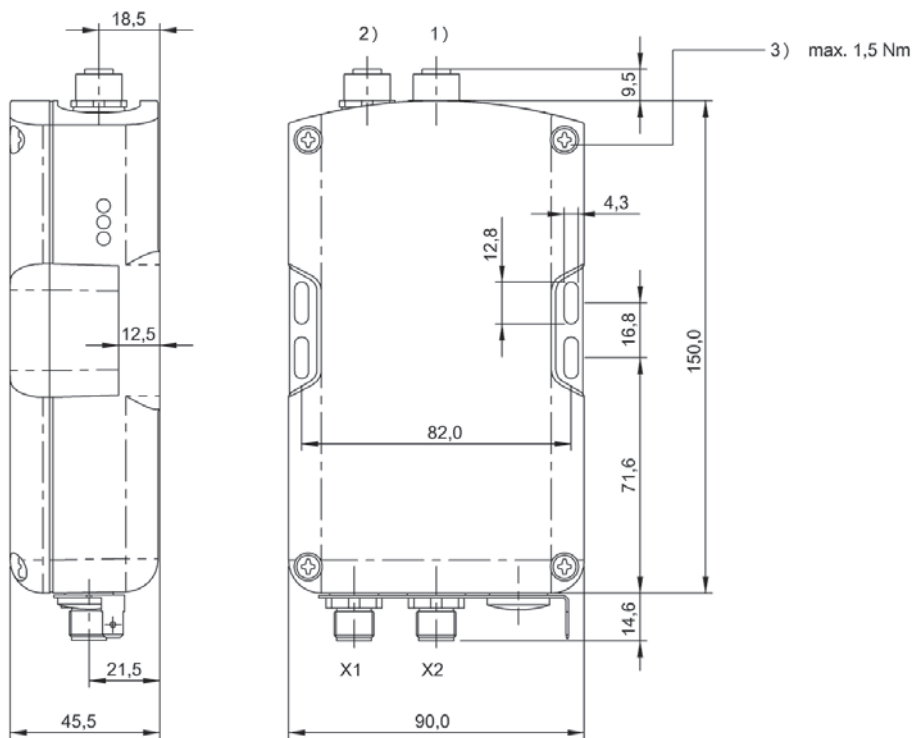
1) Tightening torque

BIS00U9, BIS0147



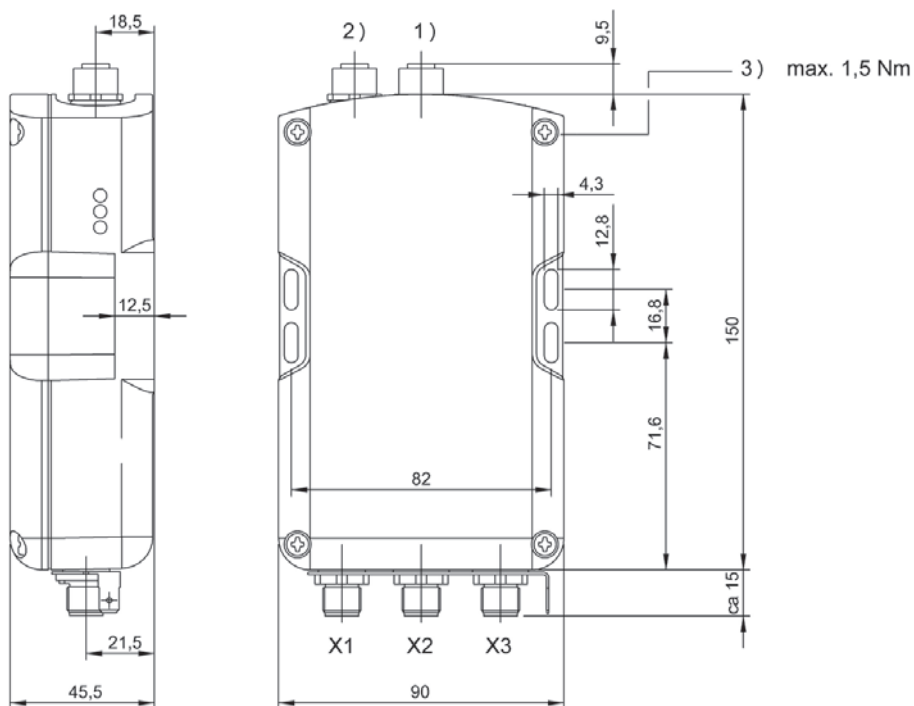
1) Tightening torque

BIS010P, BIS014E



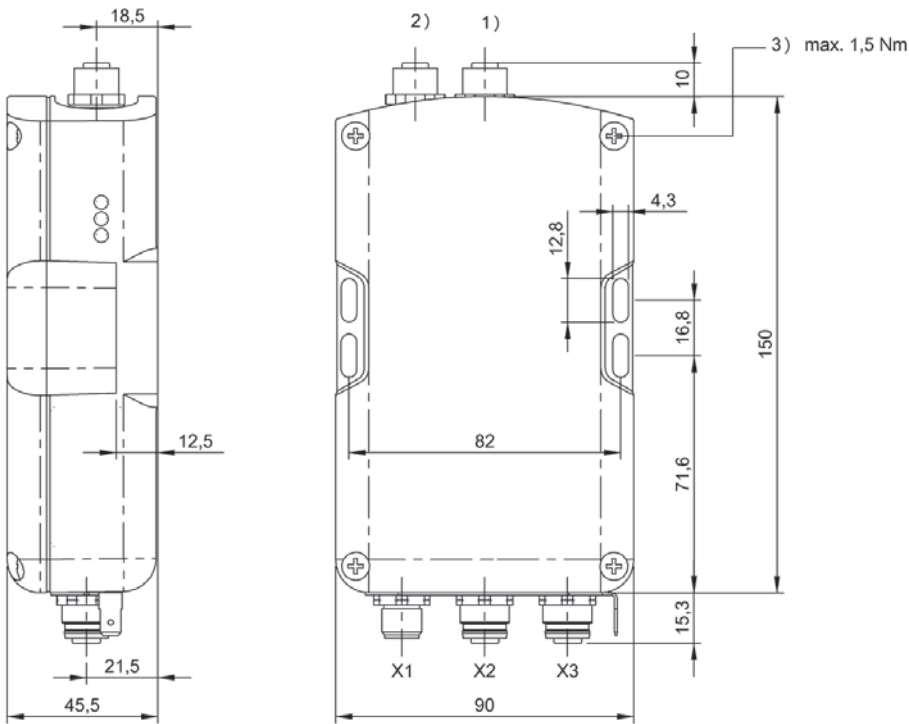
1) Head 1, 2) Head 2, 3) Tightening torque

BISO0N1



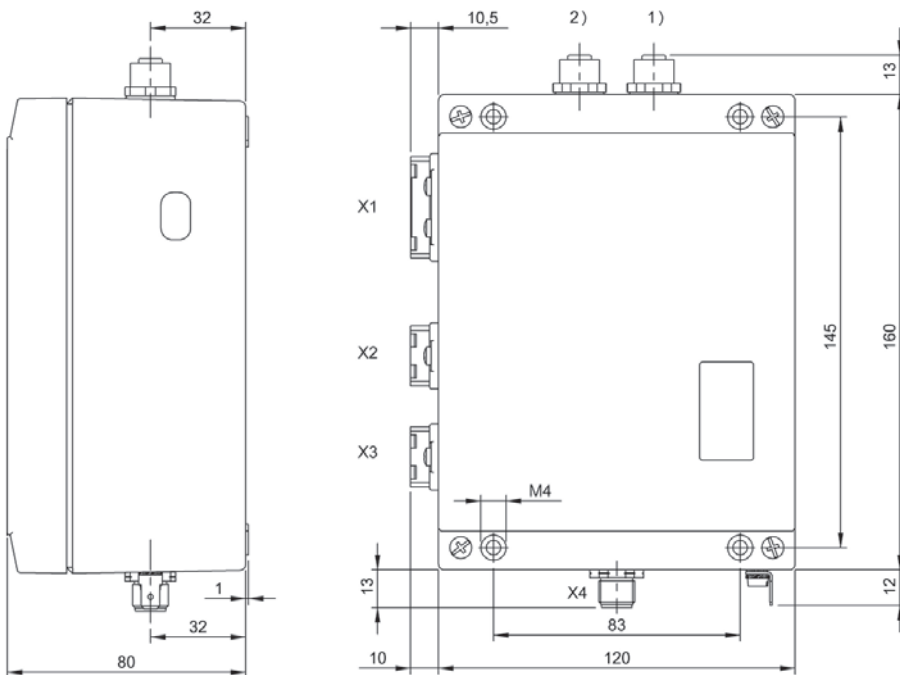
1) Head 1, 2) Head 2, 3) Tightening torque

BISO0J0



1) Head 1, 2) Head 2, 3) Tightening torque

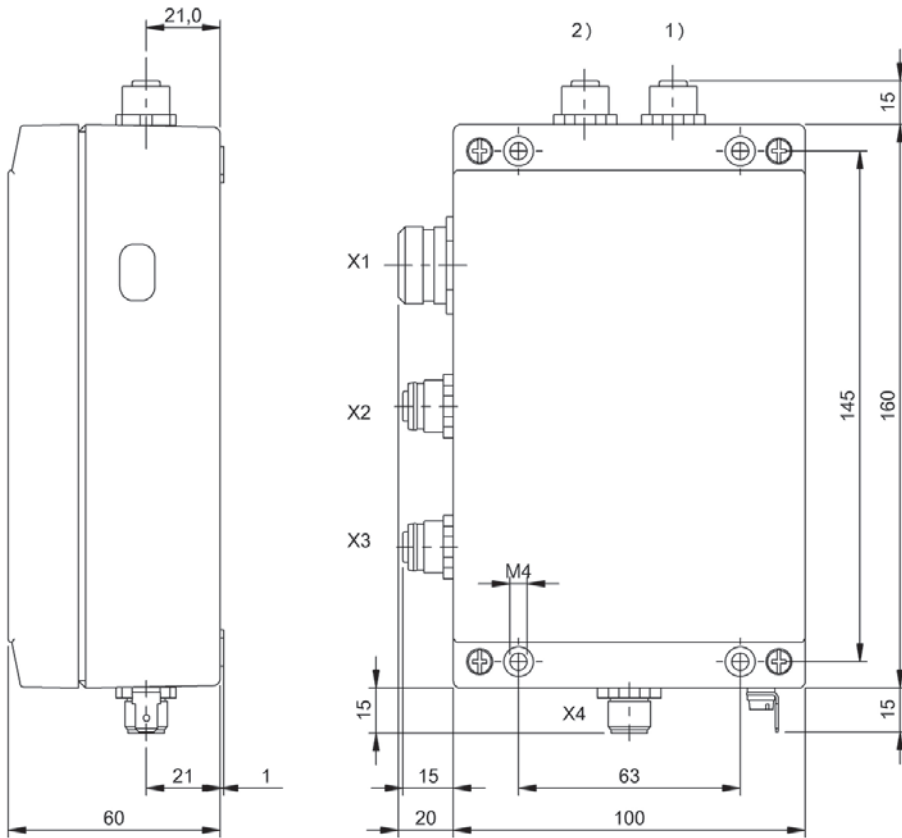
BISO0L7



1) Head 1, 2) Head 2

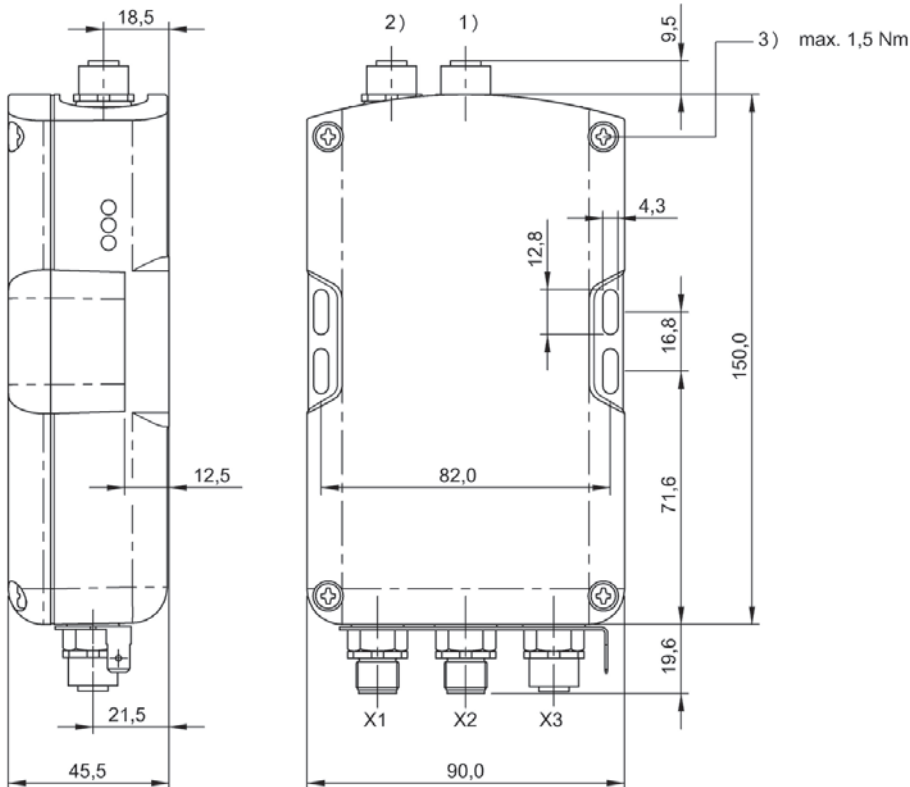
BISO0KZ

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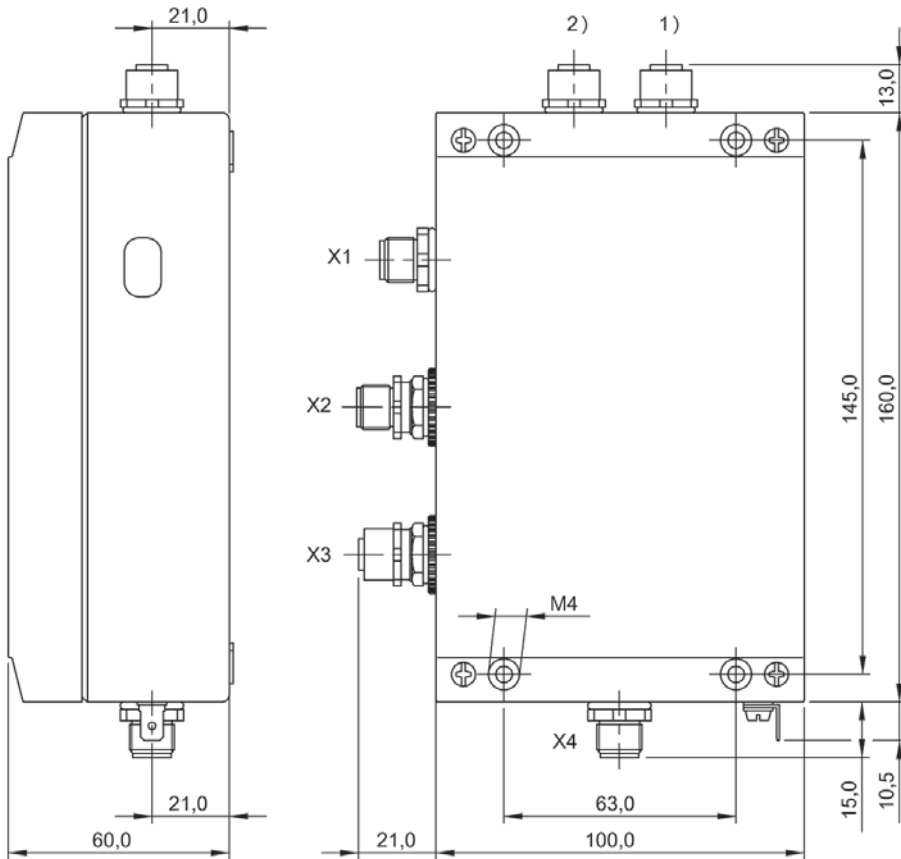
1) Head 1, 2) Head 2

BISO0TW



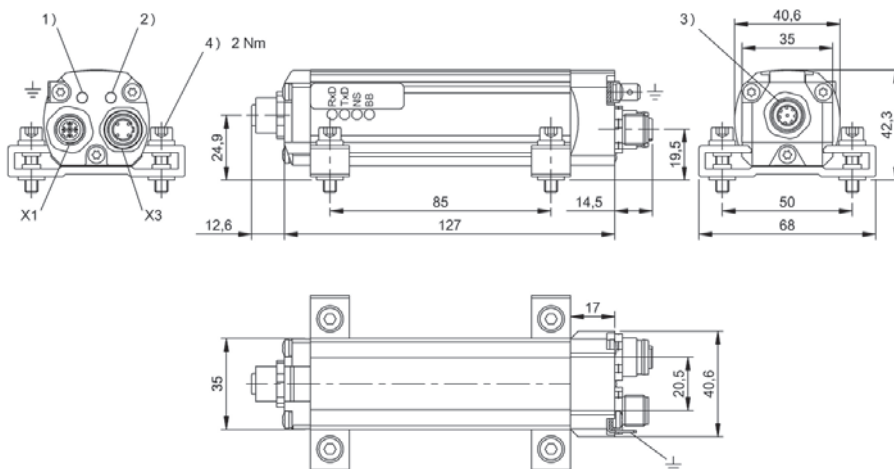
1) Head 1, 2) Head 2, 3) Tightening torque

BISO0EW



1) Head 1, 2) Head 2

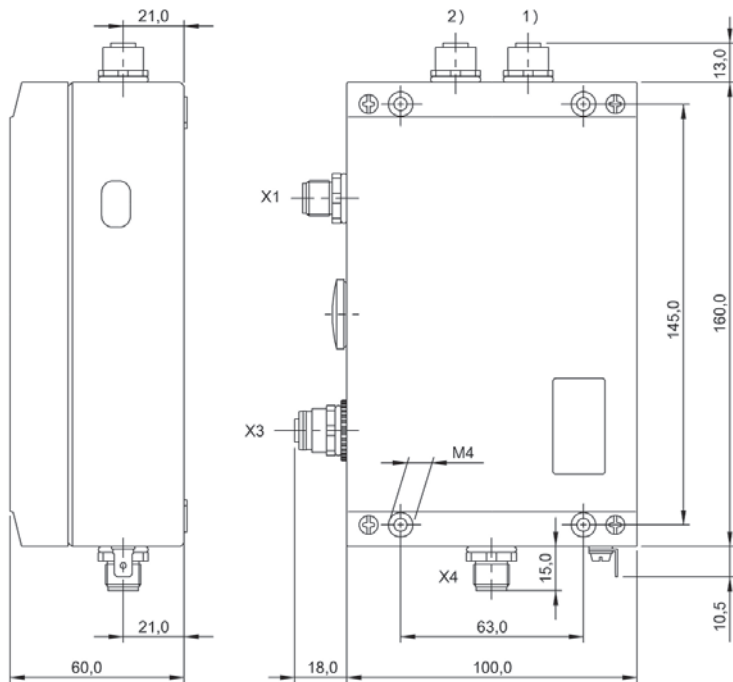
BISO0F0



1) LED1 Ethernet Status, 2) LED2 Ethernet Status, 3) Head, 4) Tightening torque

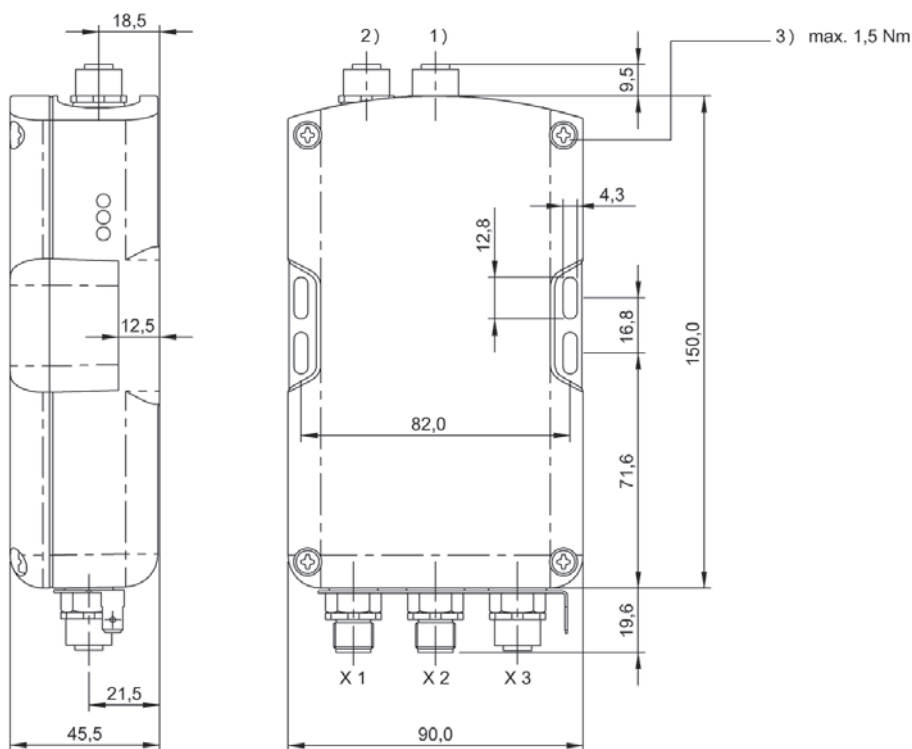
BISO0EP

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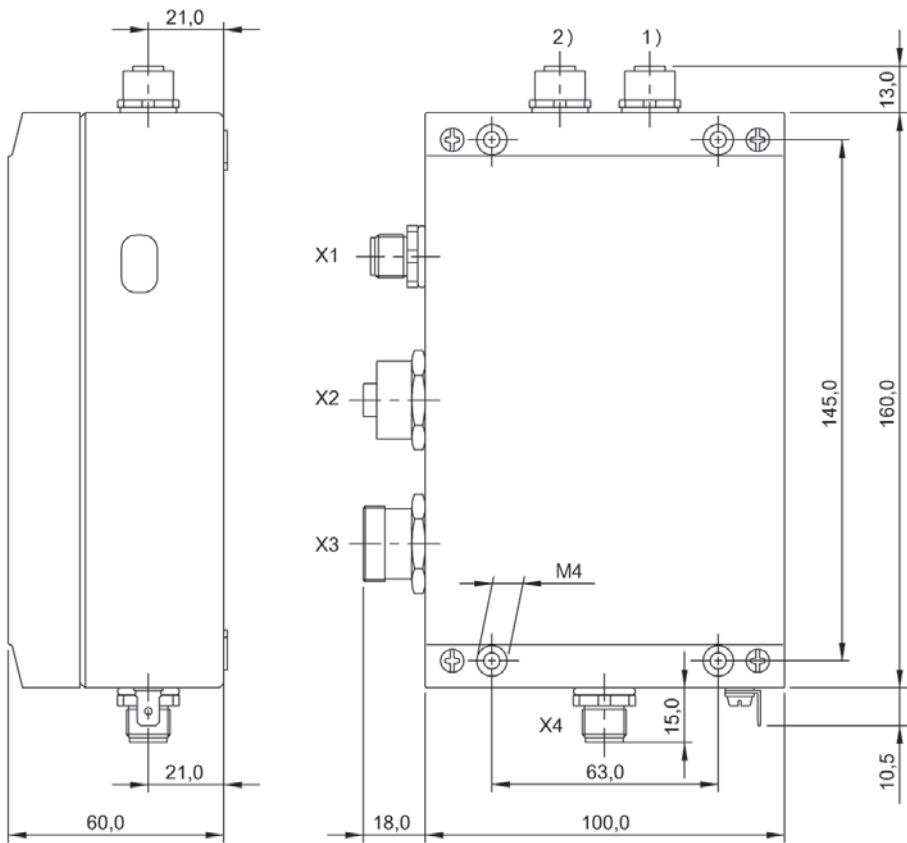
1) Head 1, 2) Head 2

BISO0F2



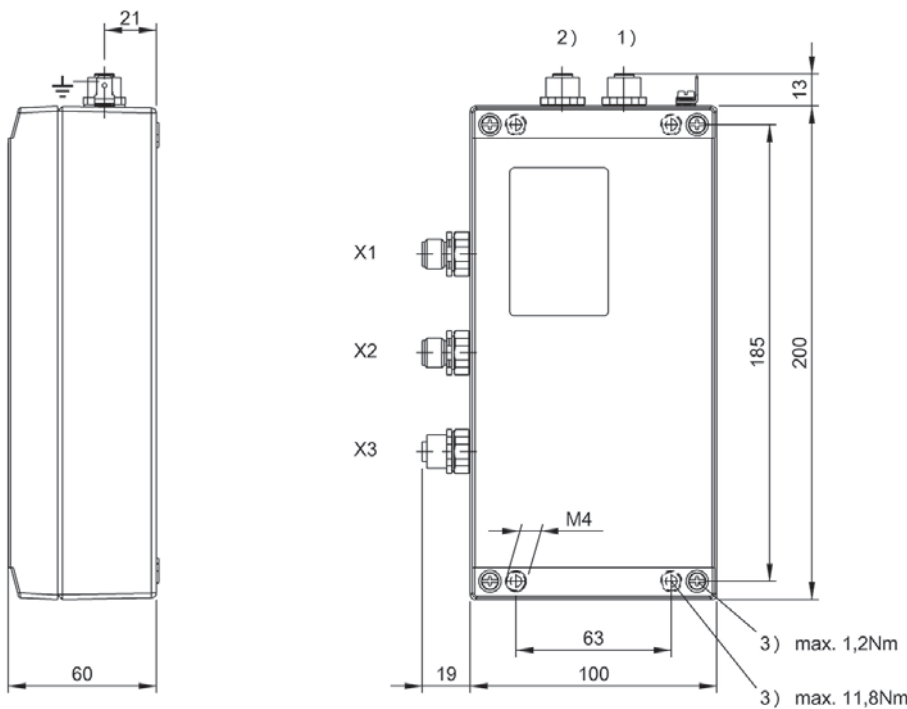
1) Head 1, 2) Head 2, 3) Tightening torque

BISO0EY



1) Head 1, 2) Head 2

BISO0F1



1) Head 1, 2) Head 2, 3) Tightening torque

BISO0LY

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Sensors

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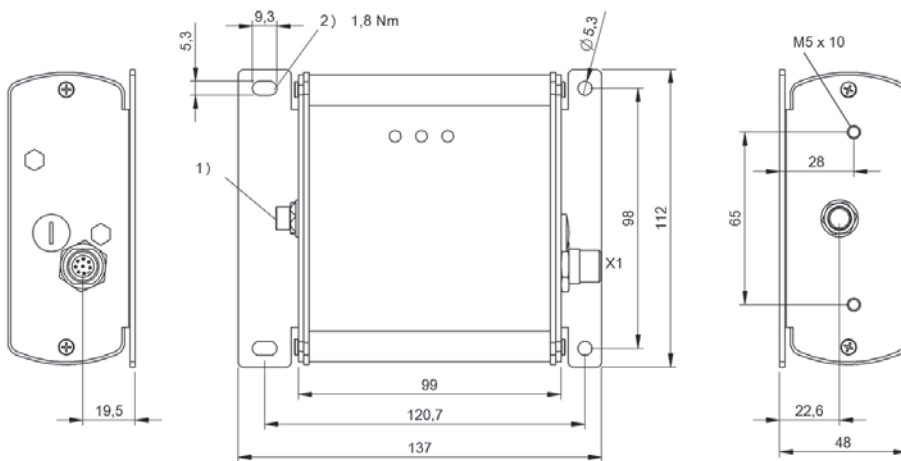
Safety

Industrial Networking

Power Supplies

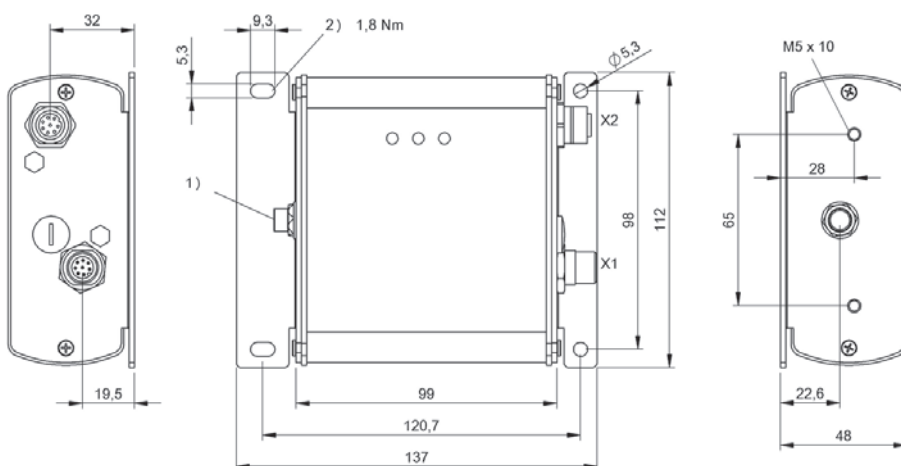
Connectivity

Accessories



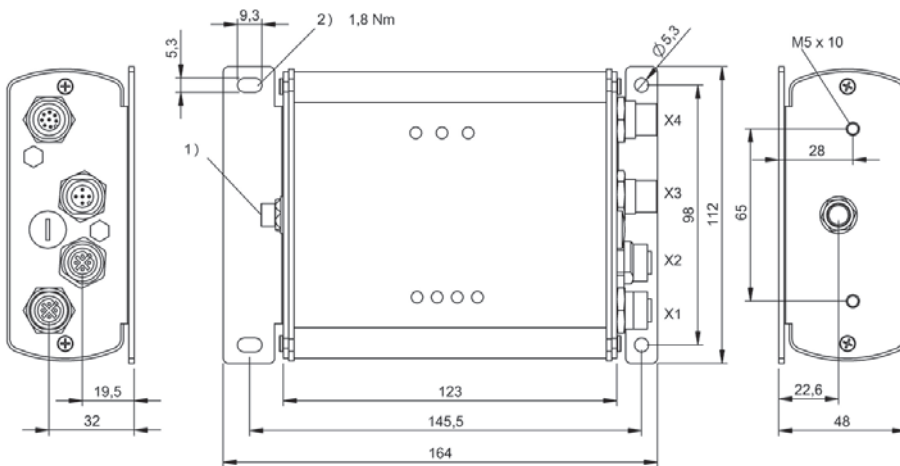
1) Antenna, 2) Tightening torque

BISO0ZJ



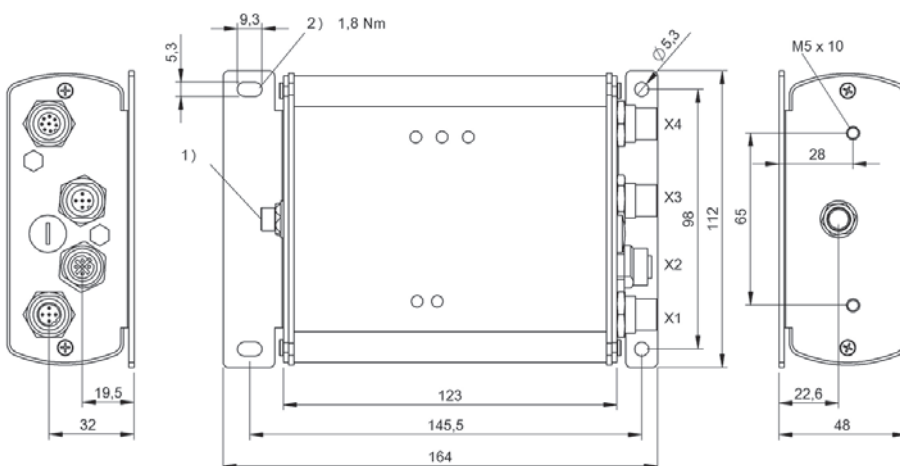
1) Antenna, 2) Tightening torque

BISO0ZH



1) Antenna

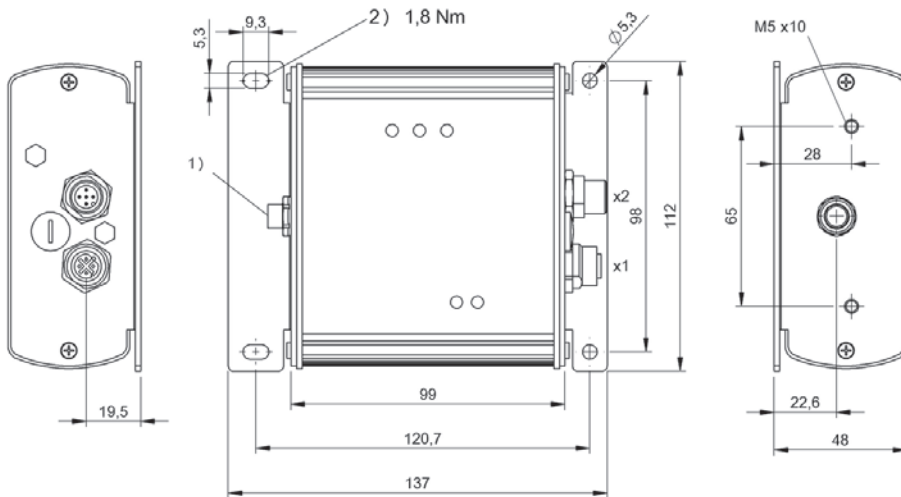
BISO11P



1) Antenna, 2) Tightening torque

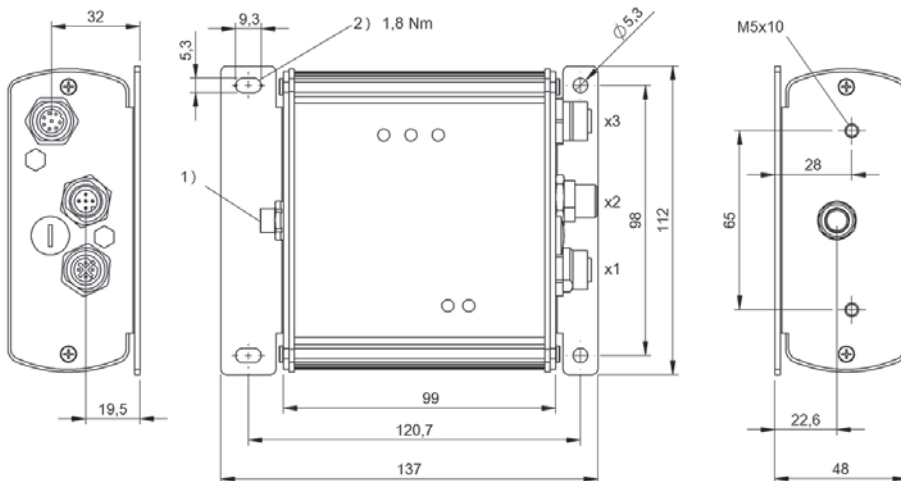
BISO02F

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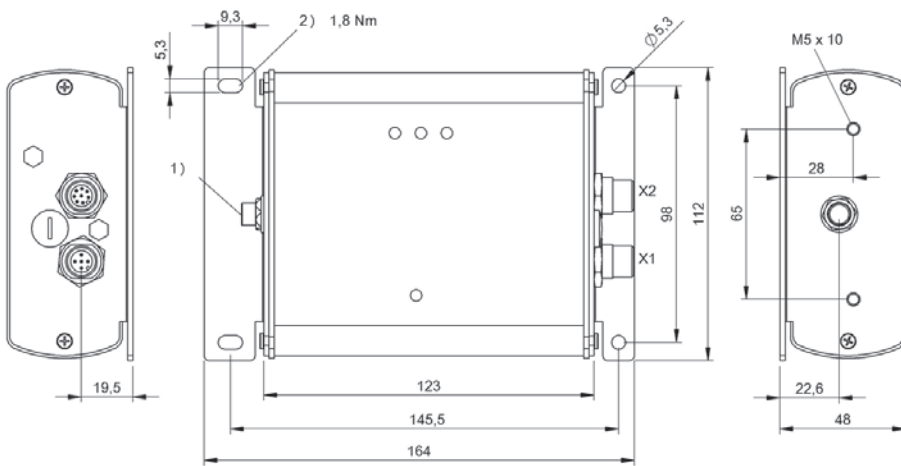
1) Antenna, 2) Tightening torque

BISO0ZC



1) Antenna, 2) Tightening torque

BISO0ZA



1) Antenna, 2) Tightening torque

BIS00ZE

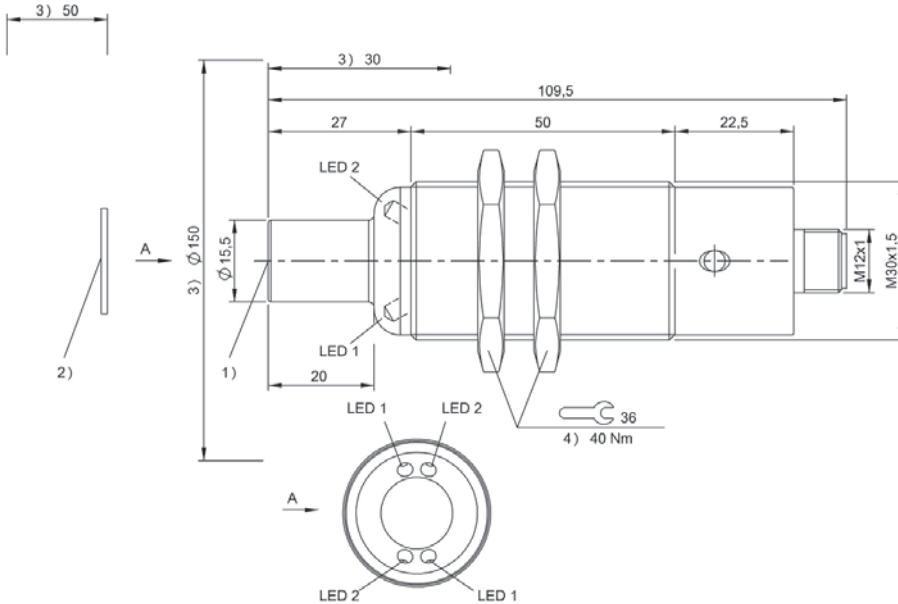


	BIS00EK BIS M-400-007-002-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	Brass, nuts nickel plated brass
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Offset at distance																	
	0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
	5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
	9	±8	±4	±2	±12	±10	±2			±2						±12	±6
	12	±6	±2		±8	±5										±10	±4
	15	±4			±8	±5										±10	
	16				±7	±3										±7	
	18				±6	±2										±7	
	20															±7	
	22																
	25																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

	BIS0044			BIS0045			BIS0046				BIS00YE	BIS00NU BIS00NW BIS0100
	>25	>15	>5	>25	>10	>5	>50	>25	>20		>25	>0
	>80	>50	>50	>80	>50	>50	>150	>90	>70		>100	>100
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24	0-12
	0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10		0-24	0-12
	±8	±6	±4	±12	±8	±7	±20	±14	±14	0	±14	±7
	±8	±6	±4	±12	±8	±4	±20	±14	±14	5	±14	±7
	±6	±5		±10	±6		±18	±14	±10	10	±14	±6
	±4			±10	±4		±18	±12	±6	12	±12	±2
	±4			±10			±18	±12		15	±12	
				±7			±16	±10		20	±12	
				±7			±16	±8		24	±6	
				±7			±16			30		
							±12			35		
							±12			40		

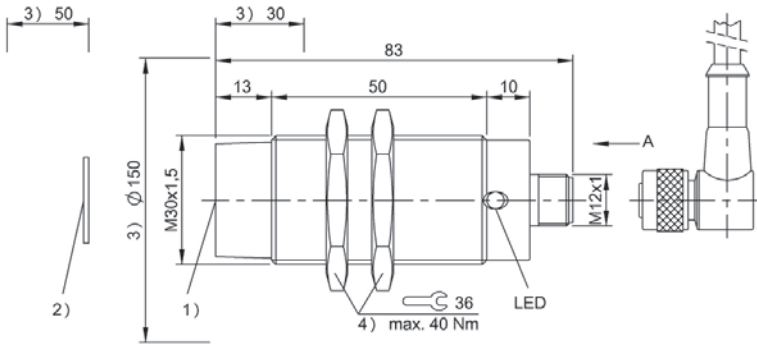


	BIS00EJ BIS M-400-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	Brass, nuts nickel plated brass
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044			BIS0045				
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5	>25	>10	>5		
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50	>100	>60	>50		
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10		
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10		
Offset at distance																				
	0																			
	5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
	9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
	12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
	15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
	16	±10	±2	±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2	
	18	±8		±18	±3						±14	±4	9	±10	±6		±14	±8	±2	
	20	±6		±16							±14		10	±8	±4		±14	±7	±1	
	22	±5		±15							±14		12	±8	±4		±14	±7		
	25			±15							±12		13	±8	±2		±14	±6		
	30			±10							±12		15	±8	±2		±14	±6		
	32												16	±5			±14	±3		
	35												18	±5			±14	±2		
	40												20	±5			±14			
	43												22				±12			
	45												25				±12			
	50												27				±6			
	52												28				±6			
	60												30							
	65												35							
	70												38							
													45							

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0046			BIS0048		BIS004A		BIS00LC			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS0143			BIS00YE			BIS00Y7		BIS00Y5		BIS00Y4						
>50	>15	>10	>20	>20	>0	>0	>25	>0	>0	>0	>0	>25	>25	>0	>25	>50	>50	>150	>90	>70	>100	>100	>100	>100	>150	>150	>50	>50		
0-38	0-25	0-15	0-9.5	0-13	0-7	0-7	0-27	0-13	0-22	0-13	0-13	0-27	0-30	0-8	0-24	0-50	0-42	0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-30	0-8	0-24	0-50	0-42	
±22	±16	±13	±9	±10	±7	±7	0 ±16	±10	±13	±10	±10	0 ±18	±18	±8	±18	±30	±30	±22	±16	±13	±9	±10	±7	±10	±10	±18	±18	±18	±30	±30
±22	±16	±13	±8	±10	±6	±6	10 ±16	±7	±13	±9	±9	7 ±18	±18	±6	±18	±30	±30	±22	±16	±13	±8	±10	±6	±10	±10	±18	±18	±18	±30	±30
±22	±14	±10	±7	±8	±1	±1	13 ±14	±5	±11	±5	±5	8 ±18	±18	±3	±18	±30	±30	±22	±14	±10	±1	±8	±1	±8	±11	±18	±18	±18	±30	±30
±22	±14	±10	±1	±8			15 ±14		±11			10 ±18	±18		±18	±30	±30	±22	±14	±10	±1	±8		±8	±11	±18	±18	±16	±30	±28
±20	±13	±8		±8			18 ±14		±7			15 ±16	±18		±16	±30	±28	±20	±13	±8		±8		±8	±7	±18	±18	±16	±30	±28
±20	±13	±8		±3			22 ±12		±7			24 ±10	±16		±5	±25	±24	±20	±13	±8		±3		±3	±7	±18	±16	±5	±25	±24
±20	±12	±6		±3			25 ±12					25 ±10	±16			±25	±24	±20	±12	±6		±3		±3		±18	±16		±25	±24
±20	±12	±6					27 ±5					27 ±5	±5			±25	±24	±20	±12	±6						±18	±5		±25	±24
±20	±10						30					30				±25	±24	±20	±10							±18			±25	±24
±20	±10						32					35				±25	±24	±20	±10							±18			±25	±24
±20	±8						35					40				±25	±5	±20	±8							±18			±25	±5
±20	±6						40					42				±5	±5	±20	±6							±18			±5	±5
±20	±4						43					45						±20	±4							±18				
±16							45					50						±16								±18				
±16							50					40						±16								±18				
±16							52					42						±16								±18				
±10							60					45						±10								±18				
±5							65					50						±5								±18				
							70					55														±18				

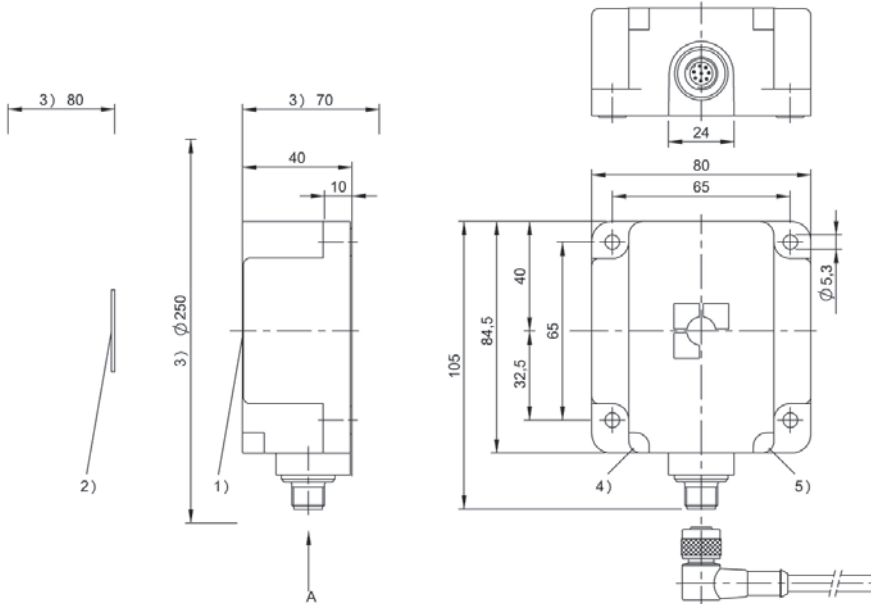


	BIS00EM BIS M-401-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0047	BIS0043	BIS0044	BIS0045	BIS0046					
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80	>50	>20	>50	>30	>50	>30			
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250	>200	>60	>200	>100	>200	>100			
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Offset at distance																
	0	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	5	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	9	±22	±18	±10	±30	±24	±16	±30	±30	±16	±25	±15	±30	±20	±35	±25
	12	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±15	±25	±20	±35	±25
	15	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±12	±25	±18	±35	±25
	16	±20	±15	±6	±30	±20	±12	±30	±25	±16	±20	±12	±25	±18	±35	±25
	18	±20	±13	±4	±30	±20	±10	±30	±25	±14	±20	±8	±25	±16	±35	±25
	20	±20	±12	±2	±30	±20	±10	±30	±25		±20		±25	±14	±35	±25
	22	±16	±8		±24	±18	±8	±30	±20		±15		±20	±12	±35	±22
	25	±12	±4		±24	±18	±8	±30	±20		±15		±20	±10	±35	±22
	30				±24	±15	±6	±28	±20		±10		±20		±35	±22
	32				±20	±12	±4	±24	±15		±10		±15		±35	±22
	35				±20	±10		±22	±15				±15		±35	±20
	40				±15	±5		±18	±15				±15		±35	
	43				±8			±14							±25	
	45				±5			±12							±25	
	50							±4							±25	
	52														±25	
	60														±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP)

	BIS00M9 BIS00M8	BIS00NU BIS00NW BIS0100		BIS00YE	BIS00Y4
	>0	>0		>50	>50
	>100	>100		>200	>200
	0-32	0-16		0-50	0-75
	0-32	0-16		0-50	0-75
	±25	±24	0	±30	±50
	±25	±24	5	±30	±50
	±25	±20	10	±30	±50
	±25	±14	15	±30	±50
	±25	±4	20	±30	±50
	±25	±4	25	±28	±50
	±25		30	±28	±50
	±25		35	±28	±50
	±20		40	±28	±50
	±20		45	±10	±45
	±15		50	±10	±45
	±15		55		±45
			60		±45
			65		±35
			70		±35
			75		±35
			80		
			85		
			90		

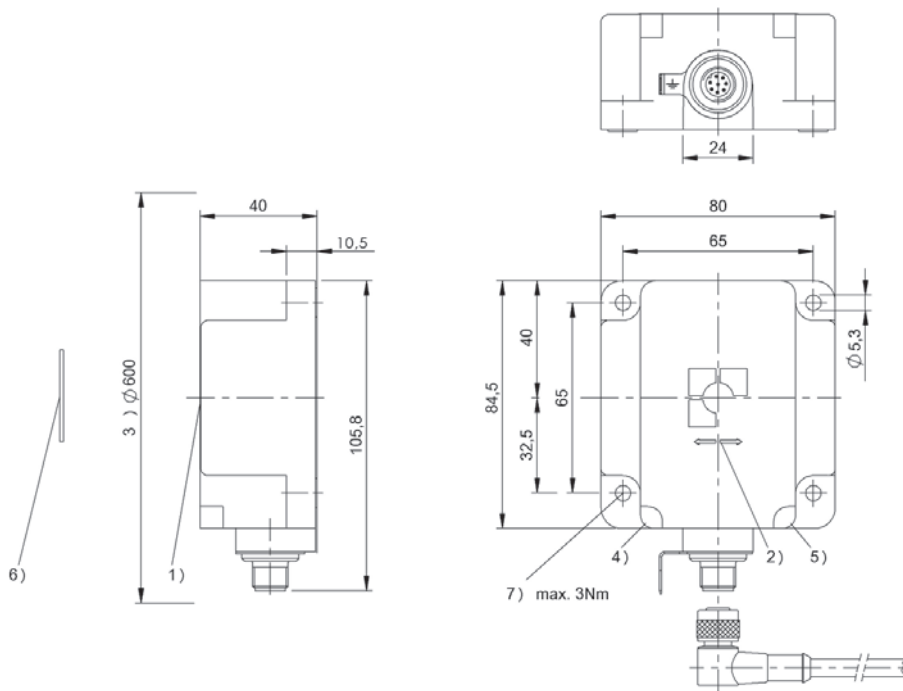


	BIS00ER BIS M-451-007-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3		
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480
Data carrier clear zone C												>2	>2	>50	>50
Metallic mounting surface 40 x 22 mm	0-52	0-52			0-52	0-52									
Metallic mounting surface > 200 x 200 mm			0-65	0-65			0-65	0-65							
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65		0-30	0-30	15-30	15-30	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	
	0 ±60	±25	±65	±26	±25	±60	±26	±65	0	±35	±20			±60	±20
	5 ±60	±25	±65	±26	±25	±60	±26	±65	5	±35	±20			±60	±20
	12 ±60	±25	±65	±25	±25	±60	±25	±65	10	±35	±20			±60	±20
	15 ±60	±25	±65	±25	±25	±60	±25	±65	15	±35	±20	±35	±15	±60	±20
	18 ±60	±25	±65	±25	±25	±60	±25	±65	20	±35	±20	±35	±15	±60	±20
	20 ±60	±25	±65	±25	±25	±60	±25	±65	25	±20	±12	±28	±15	±60	±20
	22 ±60	±25	±65	±25	±25	±60	±25	±65	30	±20	±12	±28	±15	±60	±20
	25 ±60	±25	±65	±25	±25	±60	±25	±65	35					±60	±20
	30 ±60	±25	±65	±25	±25	±60	±25	±65	40					±60	±20
	32 ±50	±25	±65	±25	±25	±50	±25	±65	45					±60	±20
	35 ±50	±25	±65	±25	±25	±50	±25	±65	50					±60	±20
	40 ±50	±20	±50	±25	±20	±50	±25	±50	60					±60	±20
	45 ±25	±20	±50	±25	±20	±25	±25	±50	70					±60	±20
	50 ±25	±20	±50	±25	±20	±25	±25	±50	80					±60	±20
	52 ±25	±8	±25	±25	±8	±25	±25	±25	90					±40	±20
	60		±25	±10			±10	±25	100					±40	±20
	65		±25	±10			±10	±25							

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque

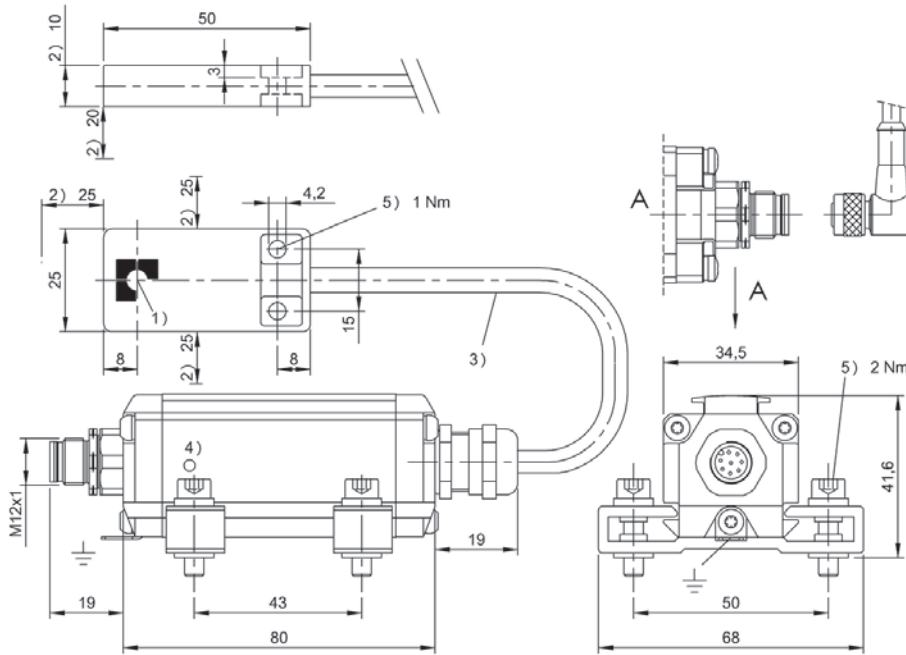


	BIS00RU BIS M-402-007-004-00-S115
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00NU BIS00NW BIS0100		BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Offset at distance														
	0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6	±11
	5	±2		±5	±2	±8		±2		±4	±2	5	±6	±11
	9					±6						7	±6	±9
	12					±4						9	±4	±9
	15					±4						12		±9
	16											15		±5

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

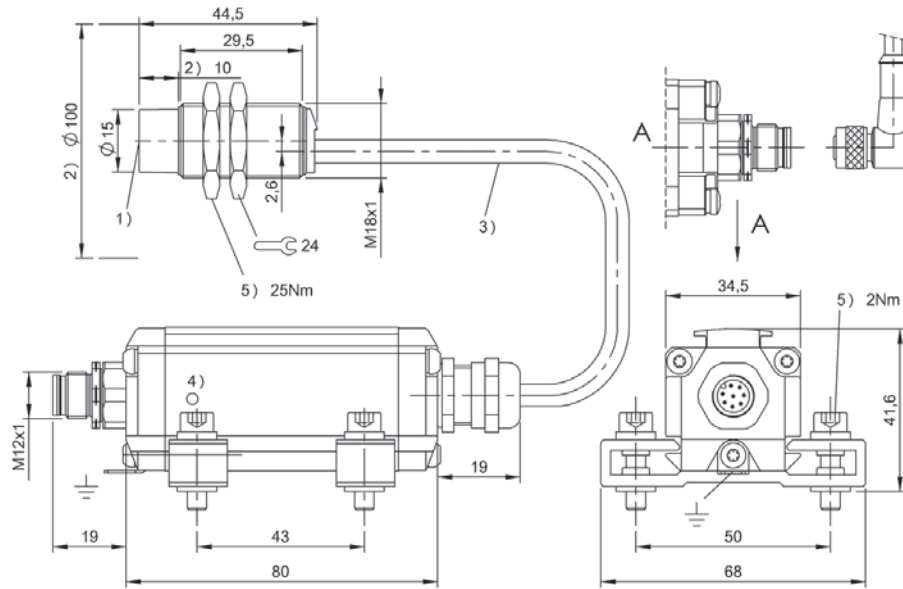


	BIS00EN BIS M-402-007-002-00-S115
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 44.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044			BIS003Y		BIS0045	
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25			>25		>25	
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80			>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Offset at distance															
	0	±3	±3	±4	±3	±3	±2	±4	±3	±7		0	±10		±12
	5	±2		±3	±2	±2		±3	±2	±7		5	±10		±12
	9									±5		10	±9		±11
	12									±3		14	±5		±10
	15									±3		15			±10
	16											18			±5

Dimensions in mm



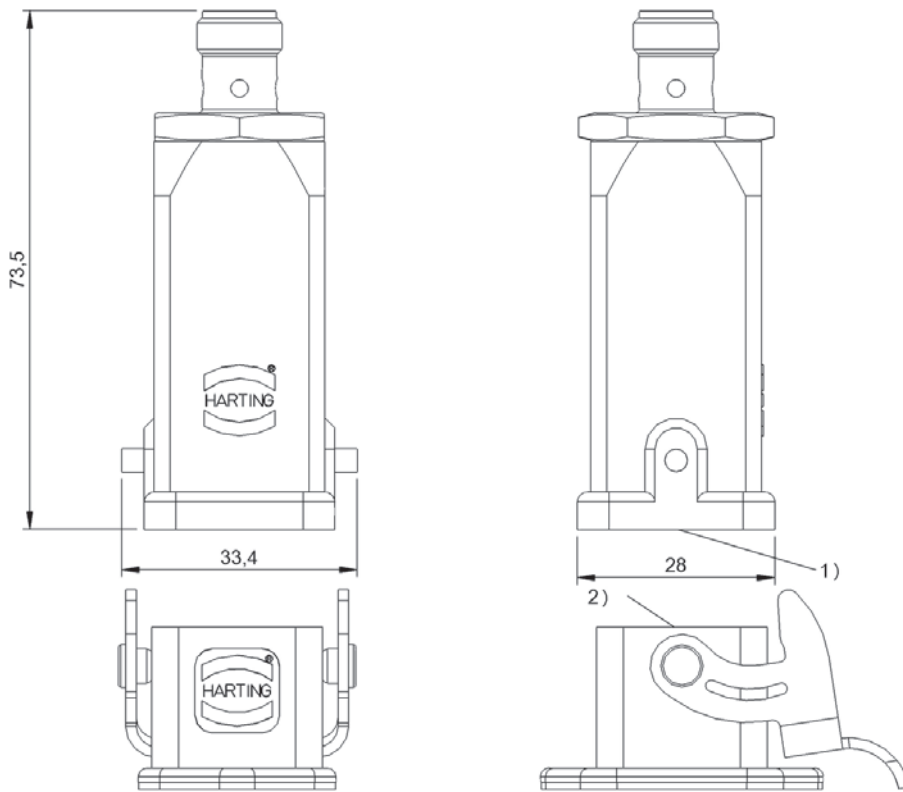
1) Sensing surface, 2) Clear zone, 3) Cable length, 4) LED function indicator, 5) Tightening torque

BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
>25	>25	>25	>0
>100	>100	>100	>100
0-9	0-9	0-20	0-9
0-9	0-9	0-20	0-9
±6	±6	±12	±6
±6	±6	±12	±6
±5	±5	±12	±6
±1	±1	±12	±4
		±12	
		±10	



IO-Link, 10 bytes process data length	BIS018E BIS M-404-045-401-07-S4-SA1
Product Group	HF (13.56 MHz)
Dimension	28 x 60 x 33.4 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Die casting Brass nickel plated, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with data carrier **BIS0180** only



1) Sensing surface, 2) Data carrier



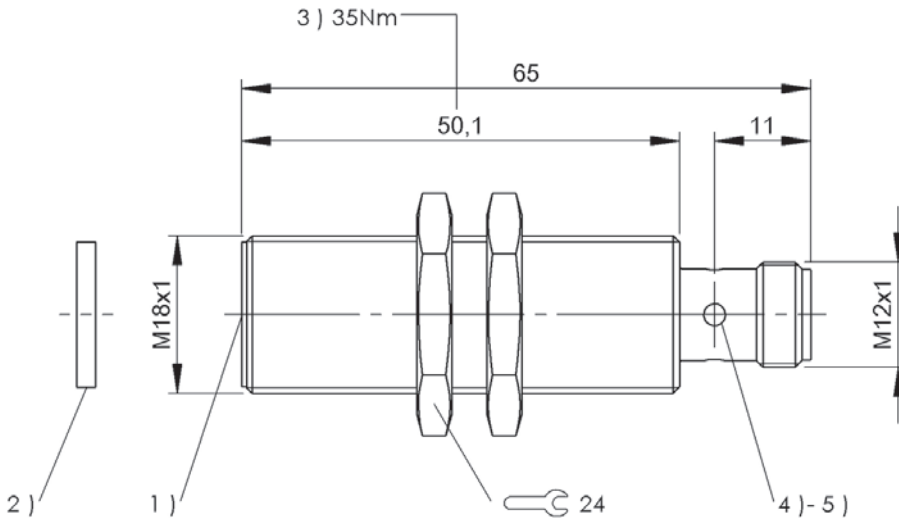
IO-Link, 10 bytes process data length	BIS015R BIS M-404-045-401-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 65 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U _b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS0042			BIS0043			BIS011F BIS011E BIS011A BIS0139			BIS004A			BIS0143		
Data carrier distance to metal	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20	>0	>0	>20		
Data carrier clear zone	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100	>100	>0	>100		
Working distance for writing	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-6	0-5.5	0-3.5	0-13		
Working distance for reading	0-8.5	0-8	0-6	0-11	0-8	0-6	0-6.5	0-6	0-5	0-6	0-5.5	0-3.5	0-13		
Offset at distance															
	0	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3.5	±8	
	2	±5	±5	±4	±8	±8	±7	±8	±8	±7	±4.5	±4	±3	±8	
	3.5	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3	±1.5	±8	
	4	±4.5	±4	±3	±8	±7	±6	±7	±7	±6	±4	±3		±8	
	4.5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±3		±8	
	5	±4.5	±4	±3	±8	±7	±4	±7	±6	±3	±3.5	±2		±8	
	5.5	±4	±3	±2	±7	±5	±1	±4	±3		±2	±2		±7	
	6	±4	±3	±2	±7	±5	±1	±4	±3		±2			±7	
	6.5	±4	±3		±7	±5		±4						±7	
	7	±4	±3		±7	±5								±7	
	8	±2	±2		±7	±4								±7	
	8.5	±2			±7									±7	
	10				±7									±7	
	11				±4									±4	
	13													±4	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Tightening torque, 4) LED (CP), 5) LED (Power)

	BIS0044	BIS00NU BIS00NW BIS0100
	>25	>0
	>100	>100
	0-10	0-9.5
	0-10	0-9.5
	0 ±6	±5
	2 ±6	±5
	4 ±6	±5
	5 ±6	±5
	6 ±5	±4
	7 ±5	±4
	8 ±5	±4
	9.5 ±3	±2
	10 ±3	
	12	
	15	
	20	
	25	
	30	
	35	



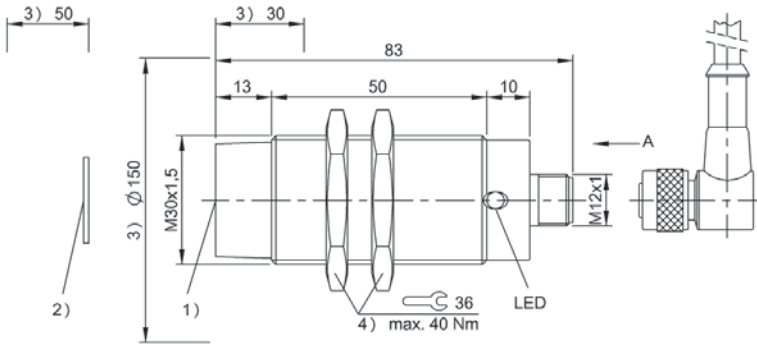
IO-Link, 10 bytes process data length	BIS00LH BIS M-400-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044			BIS0045			
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5	>25	>10	>5	
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50	>100	>60	>50	
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10	
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10	
Offset at distance																			
0																			
5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
16	±10	±2		±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2
18	±8			±18	±3						±14	±4	9	±10	±6		±14	±8	±2
20	±6			±16							±14		10	±8	±4		±14	±7	±1
22	±5			±15							±14		12	±8	±4		±14	±7	
25				±15							±12		13	±8	±2		±14	±6	
30				±10							±12		15	±8	±2		±14	±6	
32													16	±5			±14	±3	
35													18	±5			±14	±2	
40													20	±5			±14		
43													22				±12		
45													25				±12		
50													27				±6		
52													28				±6		
60													30						
65													35						
70													38						
													45						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0046		BIS0048		BIS004A		BIS00LC		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS0143		BIS00YE		BIS00Y7		BIS00Y5		BIS00Y4		
>50	>15	>10	>20	>20	>0	>25	>0	>0	>0	>25	>0	>25	>25	>0	>25	>25	>50	>50	>150	>150	>150	>150
0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13	0-27	0-13	0-27	0-30	0-8	0-24	0-24	0-50	0-42	0-50	0-42	0-42	
±22	±16	±13	±9	±10	±7	0	±16	±10	±13	±10	±10	0	±18	±18	±8	±18	±30	±30	±30	±30	±30	
±22	±16	±13	±9	±10	±7	5	±16	±10	±13	±10	±10	5	±18	±18	±8	±18	±30	±30	±30	±30	±30	
±22	±16	±13	±8	±10	±6	10	±16	±7	±13	±9	±9	7	±18	±18	±6	±18	±30	±30	±30	±30	±30	
±22	±14	±10	±7	±8	±1	13	±14	±5	±11	±5	±5	8	±18	±18	±3	±18	±30	±30	±30	±30	±30	
±22	±14	±10	±1	±8		15	±14		±11			10	±18	±18		±18	±30	±30	±30	±30	±30	
±22	±14	±10	±1	±8		18	±14		±11			15	±16	±18		±16	±30	±28	±30	±28	±28	
±20	±13	±8		±8		20	±14		±7			20	±16	±18		±16	±30	±28	±30	±28	±28	
±20	±13	±8		±3		22	±12		±7			24	±10	±16		±5	±25	±24	±25	±24	±24	
±20	±12	±6		±3		25	±12					25	±10	±16			±25	±24	±25	±24	±24	
±20	±12	±6				27	±5					27	±5	±5			±25	±24	±25	±24	±24	
±20	±10					30						30		±5			±25	±24	±25	±24	±24	
±20	±10					32						35					±25	±24	±25	±24	±24	
±20	±8					35						40					±25	±5	±25	±5	±5	
±20	±6					40						42					±5	±5	±5	±5	±5	
±20	±4					43						45					±5		±5			
±16						45						50						±5				
±16						50						40										
±16						52						42										
±10						60						45										
±5						65						50										
						70						55										



IO-Link, 10 bytes process data length	BIS015T BIS M-400-045-401-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 65.9 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS0042		BIS0043 BIS0111			BIS004A		BIS0143		BIS0044		BIS0045		BIS0046	
Data carrier distance to metal	>20		>25	>0	>0	>20		>20		>25		>25		>50	
Data carrier clear zone	>100		>100	>100	>0	>100		>100		>100		>100		>150	
Working distance for writing	0-13		0-21	0-15	0-13	0-9		0-21		0-18		0-21		0-30	
Working distance for reading	0-13		0-21	0-15	0-13	0-9		0-21		0-18		0-21		0-30	
Offset at distance															
	0	±8	±13	±10	±10	±7		±12		0	±9	±13		±20	
	5	±8	±13	±10	±10	±7		±12		5	±9	±13		±20	
	8	±8	±13	±10	±9	±6		±12		10	±9	±13		±20	
	9	±7	±13	±8	±8	±4		±12		13	±8	±12		±18	
	10	±7	±13	±8	±8			±12		15	±8	±12		±18	
	13	±4	±12	±8	±3			±11		16	±4	±11		±18	
	15		±12	±3				±11		18	±4	±11		±18	
	18		±11					±10		20		±5		±18	
	20		±5					±5		21		±5		±16	
	21		±5					±5		25				±16	
	30									30				±8	

Dimensions in mm

	BISO0NU	BISO0NW	BISO100
	>0		
	>100		
	0-13		
	0-13		
	±9		
	±9		
	±7		
	±3		



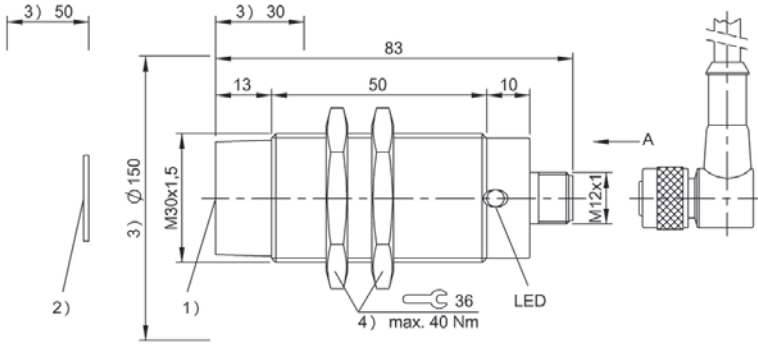
IO-Link, 32 bytes process data length	BIS0108 BIS M-400-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0043		BIS0044			BIS0045			
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5	>25	>10	>5	
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50	>100	>60	>50	
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10	
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	0-28	0-18	0-10	
Offset at distance																			
0																			
5	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	0	±12	±8	±6	±16	±10	±7
9	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	2	±12	±8	±5	±16	±10	±7
12	±14	±8	±4	±20	±15	±3			±5		±14	±8	5	±12	±8	±5	±16	±10	±7
15	±10	±4	±2	±20	±13	±2					±14	±6	7	±10	±6	±4	±14	±8	±2
16	±10	±2		±20	±10						±14	±6	8	±10	±6	±2	±14	±8	±2
18	±8			±18	±3						±14	±4	9	±10	±6		±14	±8	±2
20	±6			±16							±14		10	±8	±4		±14	±7	±1
22	±5			±15							±14		12	±8	±4		±14	±7	
25				±15							±12		13	±8	±2		±14	±6	
30				±10							±12		15	±8	±2		±14	±6	
32													16	±5			±14	±3	
35													18	±5			±14	±2	
40													20	±5			±14		
43													22				±12		
45													25				±12		
50													27				±6		
52													28				±6		
60													30						
65													35						
70													38						
													45						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0046			BIS0048			BIS004A			BIS00LC			BIS00M9 BIS00M8			BIS00NU BIS00NW BIS0100			BIS0143			BIS00YE			BIS00Y7			BIS00Y5			BIS00Y4		
>50	>15	>10	>20	>20	>0	>25	>0	>0	>0			>25	>0	>0	>0			>25	>25	>0	>25	>50	>50	>25	>25	>0	>25	>50	>50	>25	>50	>50
>150	>90	>70	>100	>100	>0	>100	>100	>100	>100			>100	>100	>100	>100			>100	>100	>100	>100	>150	>150	>100	>100	>100	>100	>150	>150	>100	>150	>150
0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13			0-27	0-13	0-22	0-13			0-27	0-30	0-8	0-24	0-50	0-42	0-30	0-8	0-24	0-50	0-50	0-42	0-50	0-42	0-42
0-38	0-25	0-15	0-9.5	0-13	0-7	0-27	0-13	0-22	0-13			0-27	0-13	0-22	0-13			0-27	0-30	0-8	0-24	0-50	0-42	0-30	0-8	0-24	0-50	0-50	0-42	0-50	0-42	0-42
±22	±16	±13	±9	±10	±7	0	±16	±10	±13			0	±18		±10			0	±18	±18	±8	±18	±30	±18	±8	±18	±30	±30	±30	±30	±30	±30
±22	±16	±13	±9	±10	±7	5	±16	±10	±13			5	±18		±10			5	±18	±18	±8	±18	±30	±18	±8	±18	±30	±30	±30	±30	±30	±30
±22	±16	±13	±8	±10	±6	10	±16	±7	±13			7	±18		±9			7	±18	±18	±6	±18	±30	±18	±6	±18	±30	±30	±30	±30	±30	±30
±22	±14	±10	±7	±8	±1	13	±14	±5	±11			8	±18		±5			8	±18	±18	±3	±18	±30	±18	±3	±18	±30	±30	±30	±30	±30	±30
±22	±14	±10	±1	±8		15	±14		±11			10	±18					10	±18	±18		±18	±30	±18		±18	±30	±30	±30	±30	±30	±30
±22	±14	±10	±1	±8		18	±14		±11			15	±16					15	±16	±18		±16	±30	±18		±16	±30	±28	±28	±30	±28	±28
±20	±13	±8		±8		20	±14		±7			20	±16					20	±16	±18		±16	±30	±18		±16	±30	±28	±28	±30	±28	±28
±20	±13	±8		±3		22	±12		±7			24	±10					24	±10	±16		±5	±25	±16		±5	±25	±24	±24	±25	±24	±24
±20	±12	±6		±3		25	±12					25	±10					25	±10	±16			±25	±16			±25	±24	±24	±25	±24	±24
±20	±12	±6				27	±5					27	±5					27	±5	±5			±25	±5			±25	±24	±24	±25	±24	±24
±20	±10					30						30						30		±5			±25	±5			±25	±24	±24	±25	±24	±24
±20	±10					32						35						35					±25				±25	±24	±24	±25	±24	±24
±20	±8					35						40						40					±25				±25	±5	±5	±25	±5	±5
±20	±6					40						42						42					±5				±5	±5	±5	±5	±5	±5
±20	±4					43						45						45					±5				±5	±5	±5	±5	±5	±5
±16						45						50						50					±5				±5	±5	±5	±5	±5	±5
±16						50						50						40														
±16						52						42						42														
±10						60						45						45														
±5						65						50						50														
						70						55						55														



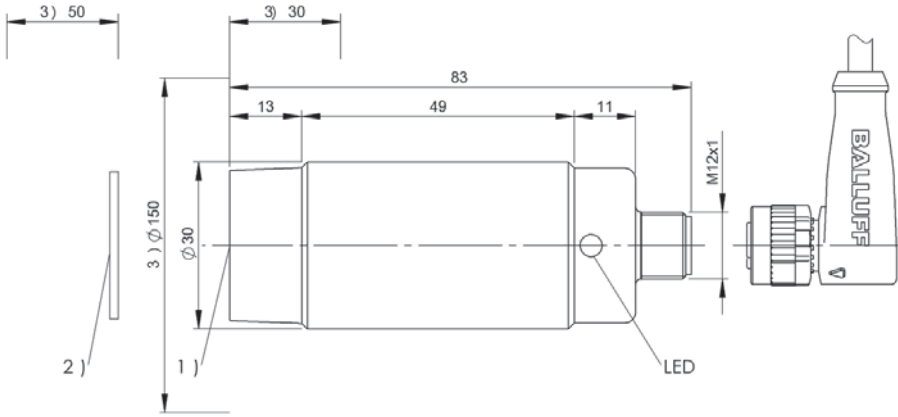
IO-Link, 10 bytes process data length	BIS0157 BIS M-406-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 83 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Stainless steel (1.4404), Adapter PA 6
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP68
Approval/Conformity	CE, Ecolab, UL-FILE E227256, Vol.X1, BIS, FCC, IC

Use with **IO-Link master** only

Appropriate data carrier

	BIS0046			BIS00Y7		BIS00Y4	
Data carrier distance to metal	>50	>15	>10	>50		>50	
Data carrier clear zone	>150	>90	>70	>150		>150	
Working distance for writing	0-38	0-25	0-15	0-24		0-42	
Working distance for reading	0-38	0-25	0-15	0-24		0-42	
Offset at distance							
	0	±22	±16	±13	±18		±28
	5	±22	±16	±13	±18		±28
	9	±22	±14	±10	±18		±28
	12	±20	±13	±8	±16		±28
	15	±20	±12	±6	±16		±28
	18	±20	±10		±16		±28
	20	±20	±8		±16		±28
	22	±20	±6		±5		±25
	24	±20	±4		±5		±25
	25	±20	±4				±25
	30	±16					±25
	35	±10					±20
	38	±10					±5
	42						±5

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone



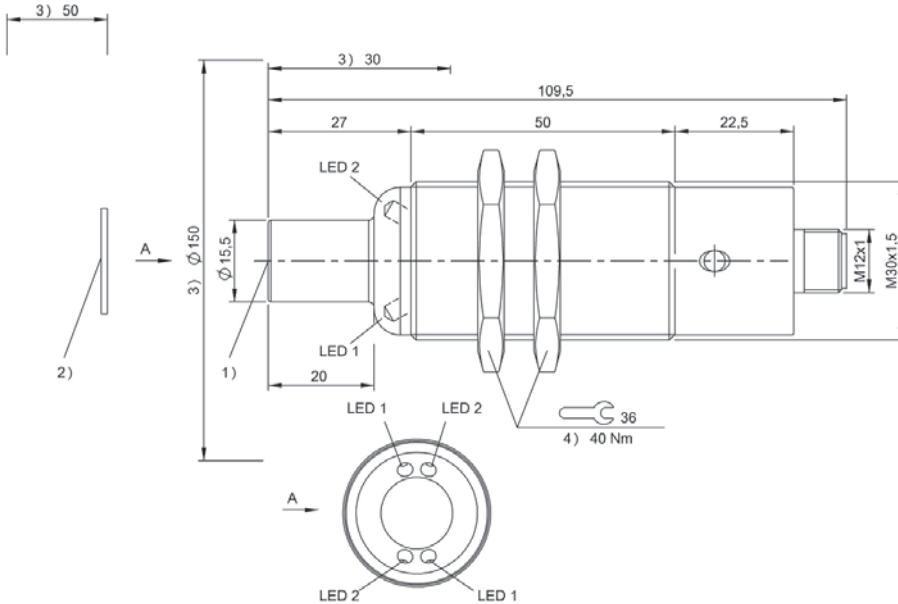
IO-Link, 10 bytes process data length	BIS00LJ BIS M-400-045-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Offset at distance																	
	0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
	5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
	9	±8	±4	±2	±12	±10	±2			±2						±12	±6
	12	±6	±2		±8	±5										±10	±4
	15	±4			±8	±5										±10	
	16				±7	±3										±7	
	18				±6	±2										±7	
	20															±7	
	22																
	25																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS0045			BIS0046			BIS00YE		BIS00NU BIS00NW BIS0100	
>25	>15	>5	>25	>10	>5	>50	>25	>20	>25	>0		
>80	>50	>50	>80	>50	>50	>150	>90	>70	>100	>100		
0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10	0-24	0-12		
0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10	0-24	0-12		
±8	±6	±4	±12	±8	±7	±20	±14	±14	0 ±14	±7		
±8	±6	±4	±12	±8	±4	±20	±14	±14	5 ±14	±7		
±6	±5		±10	±6		±18	±14	±10	10 ±14	±6		
±4			±10	±4		±18	±12	±6	12 ±12	±2		
±4			±10			±18	±12		15 ±12			
			±7			±16	±10		20 ±12			
			±7			±16	±8		24 ±6			
			±7			±16			30			
						±12			35			
						±12			40			



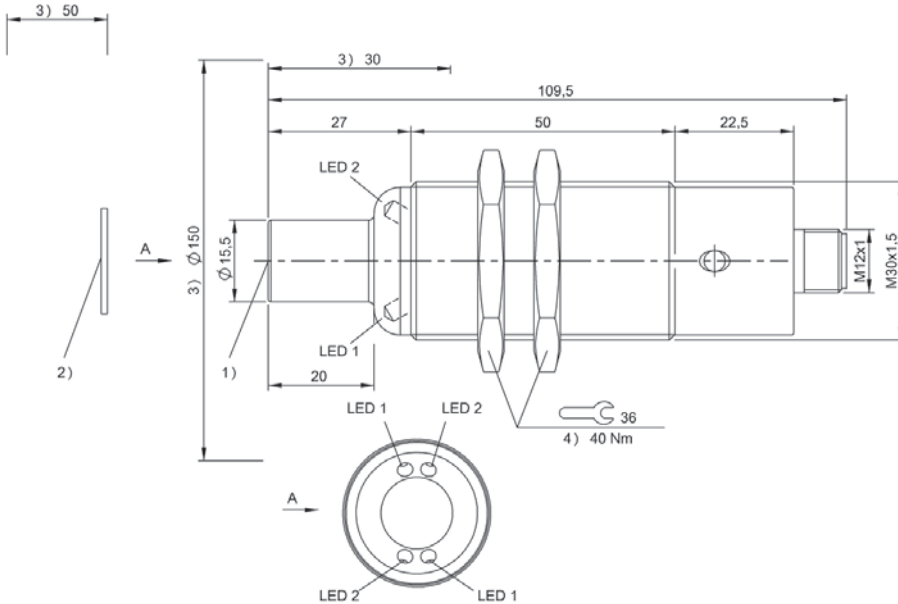
IO-Link, 32 bytes process data length	BIS0104 BIS M-400-072-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 30 x 109.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Brass, nuts nickel plated brass
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0040		BIS0042		BIS0048		BIS004A		BIS0043		
Data carrier distance to metal	>25	>10	>5	>50	>25	>10	>10	>0	>10	>0	>10	>0	>10	>0	>25	>0	
Data carrier clear zone	>60	>50	>50	>60	>50	>50	>60	>0	>60	>0	>60	>0	>60	>0	>60	>0	
Working distance for writing	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Working distance for reading	0-15	0-12	0-9	0-18	0-18	0-10	0-6	0-5	0-9	0-5	0-5	0-4	0-6	0-5	0-20	0-12	
Offset at distance																	
	0	±9	±6	±4	±16	±12	±4	±5	±4	±6	±4	±4	±3	±4	±3	±14	±10
	5	±9	±6	±4	±16	±12	±4	±4	±2	±6	±2	±3		±3	±2	±14	±8
	9	±8	±4	±2	±12	±10	±2			±2						±12	±6
	12	±6	±2		±8	±5										±10	±4
	15	±4			±8	±5										±10	
	16				±7	±3										±7	
	18				±6	±2										±7	
	20																
	22																
	25																

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque

BIS0044			BIS0045			BIS0046			BIS00YE		BIS00NU BIS00NW BIS0100	
>25	>15	>5	>25	>10	>5	>50	>25	>20	>25	>0		
>80	>50	>50	>80	>50	>50	>150	>90	>70	>100	>100		
0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10	0-24	0-12		
0-15	0-10	0-6	0-20	0-12	0-5	0-28	0-18	0-10	0-24	0-12		
±8	±6	±4	±12	±8	±7	±20	±14	±14	0 ±14	±7		
±8	±6	±4	±12	±8	±4	±20	±14	±14	5 ±14	±7		
±6	±5		±10	±6		±18	±14	±10	10 ±14	±6		
±4			±10	±4		±18	±12	±6	12 ±12	±2		
±4			±10			±18	±12		15 ±12			
			±7			±16	±10		20 ±12			
			±7			±16	±8		24 ±6			
			±7			±16			30			
						±12			35			
						±12			40			



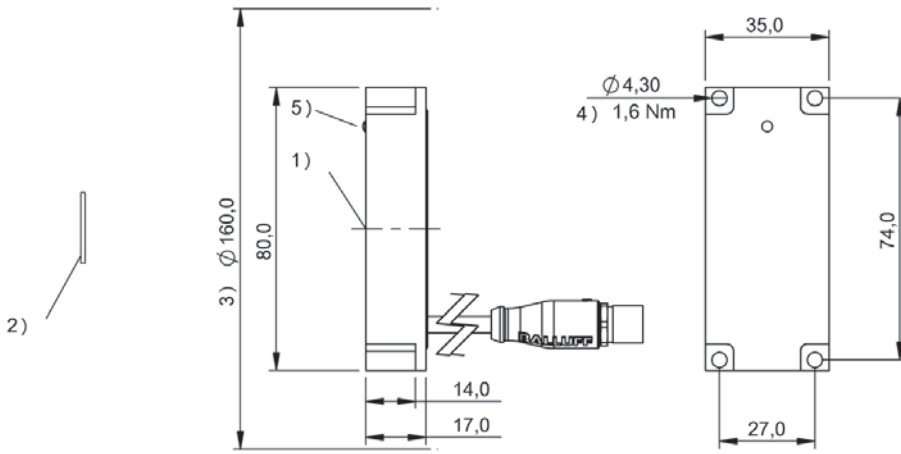
IO-Link, 10 bytes process data length	BISO12N BIS M-405-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	35 x 17 x 80 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.30 m
Housing material	ABS
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BISO03Y			BISO03Z			BISO040		BISO042		BISO043		BISO044			
Data carrier distance to metal	>25	>10	>5	>50	>15	>10	>20	>5	>20	>5	>25	>0	>25	>10	>5	
Data carrier clear zone	>100	>60	>50	>150	>90	>70	>100	>100	>100	>100	>100	>0	>100	>60	>50	
Working distance for writing	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	
Working distance for reading	0-20	0-15	0-12	0-28	0-20	0-12	0-7	0-6	0-11	0-7	0-28	0-16	0-20	0-15	0-8	
Offset at distance																
	0	±14	±10	±6	±20	±15	±6	±7	±6	±9	±6	±16	±10	±12	±8	±6
	5	±14	±10	±6	±20	±15	±6	±7	±6	±8	±6	±16	±10	±12	±8	±5
	9	±14	±8	±4	±20	±15	±3			±5		±14	±8	±10	±6	
	12	±10	±4	±2	±20	±13	±2					±14	±6	±8	±4	
	15	±10	±2		±20	±10						±14	±6	±8	±2	
	16	±8			±18	±3						±14	±4	±5		
	18	±6			±16							±14		±5		
	20	±5			±15							±14		±5		
	22				±15							±12				
	25				±10							±12				
	30															
	32															
	35															

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque, 5) LED Power

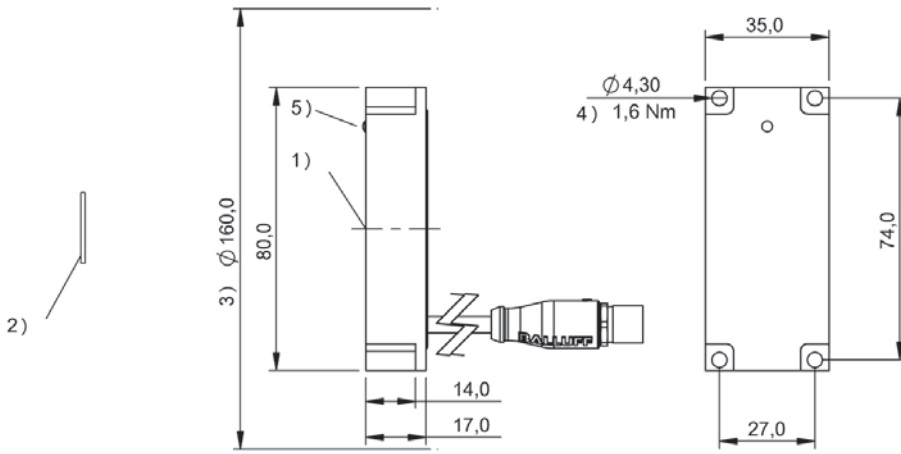
BIS0045			BIS0046			BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS012H	
>25	>10	>5	>50	>15	>10	>0	>0	>25			
>100	>60	>50	>150	>90	>70	>100	>100	>100			
0-28	0-18	0-10	0-38	0-25	0-15	0-22	0-13	0-18			
0-28	0-18	0-10	0-38	0-25	0-15	0-22	0-13	0-18			
±16	±10	±7	±22	±16	±13	0 ±13	±10	±11			
±16	±10	±7	±22	±16	±13	5 ±13	±10				
±14	±8	±2	±22	±14	±10	10 ±13	±9				
±14	±7		±20	±13	±8	13 ±11	±5				
±14	±6		±20	±12	±6	15 ±11					
±14	±3		±20	±10		18 ±11					
±14	±2		±20	±10		20 ±7					
±14			±20	±8		22 ±7					
±12			±20	±6		25					
±12			±20	±4		28					
			±16			30					
			±10			32					
			±10			35					



IO-Link, 10 bytes process data length	BISO155 BIS M-405-045-008-07-S4
Product Group	HF (13.56 MHz)
Dimension	35 x 17 x 80 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.30 m
Housing material	ABS
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier on request



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Tightening torque, 5) LED Power



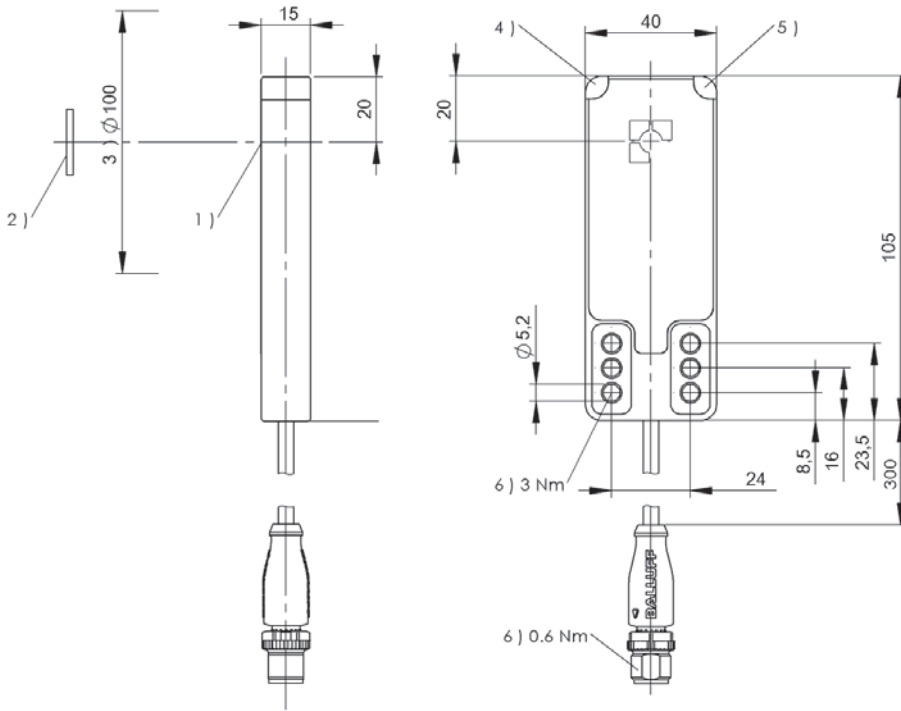
IO-Link, 10 bytes process data length	BIS014J BIS M-408-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Zinc, die-cast
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BIS0042		BIS004A		BIS0044		BIS0045		BIS0143		BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>10	>0	>10	>0	>25	>25	>25	>25	>25	>25	>0	>0	>0	>0
Data carrier clear zone	>60	>60	>60	>60	>100	>100	>100	>100	>100	>100	>100	>100	>100	>100
Working distance for writing	0-13	0-11	0-11	0-9	0-23	0-23	0-28	0-26	0-26	0-26	0-22	0-22	0-13	0-13
Working distance for reading	0-13	0-11	0-11	0-9	0-23	0-23	0-28	0-26	0-26	0-26	0-22	0-22	0-13	0-13
Offset at distance	0	±10	±8	±8	±8	±8	±15	±16	±15	±15	0	±13	±10	±10
	4	±10	±8	±8	±8	±8	±15	±16	±15	±15	5	±13	±10	±10
	5	±10	±8	±8	±7	±7	±15	±16	±15	±15	10	±13	±9	±9
	6	±9	±7	±7	±7	±7	±15	±16	±15	±15	13	±11	±5	±5
	7	±9	±7	±7	±7	±6	±15	±16	±15	±15	15	±11		
	8	±9	±7	±7	±6	±6	±15	±16	±15	±15	18	±11		
	9	±9	±7	±7	±3	±3	±15	±16	±15	±15	20	±7		
	10	±7	±4	±4	±4	±4	±15	±16	±15	±15	22	±7		
	11	±7	±4	±4	±4	±4	±12	±15	±13	±13	25			
	13	±4					±12	±15	±13	±13	28			
	15						±12	±15	±13	±13	30			
	20						±12	±15	±13	±13	32			
	23						±5	±10	±5	±5	35			
	25							±10	±5	±5	40			
	26							±5	±5	±5	43			
	28							±5			45			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

	BIS00YK	BIS0046	BIS00Y5	BIS00Y4	BIS00LC	
	>10	>25	>50	>50	>25	>0
	>60	>100	>200	>200	>100	>100
	0-13	0-40	0-48	0-48	0-25	0-12
	0-13	0-40	0-48	0-48	0-25	0-12
	0	±9	±25	±26	±30	±15 ±10
	5	±9	±25	±26	±30	±15 ±10
	10	±8	±25	±26	±30	±15 ±8
	12	±4	±25	±26	±30	±13 ±2
	13	±4	±25	±26	±30	±13
	15		±25	±26	±30	±13
	18		±25	±26	±30	±13
	20		±25	±26	±30	±13
	25		±23	±24	±25	±5
	30		±20	±24	±25	
	36		±20	±24	±25	
	40		±10	±24	±25	
	45			±5	±10	
	48			±5	±10	
	55					
	60					



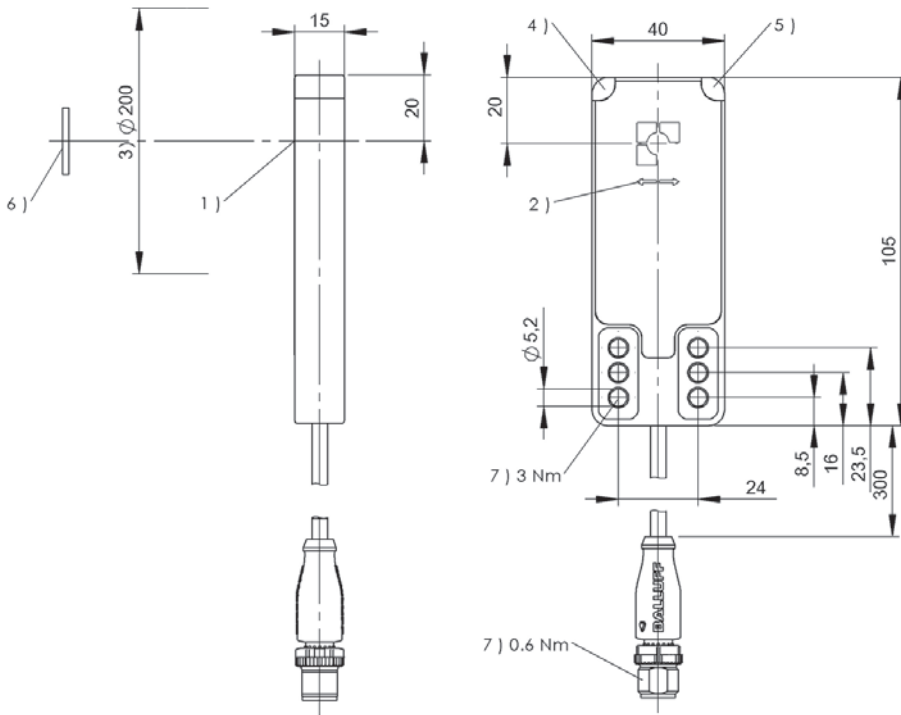
IO-Link, 10 bytes process data length	BISO14K BIS M-458-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	40 x 15 x 105 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	Zinc, die-cast
Interface	IO-Link 1.1
Operating voltage Ub	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210

Use with **IO-Link master** only

Appropriate data carrier

	BISO04F				BISO04H				BISO0M2		BISO0P3				BISO0NZ	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>240	>240	>240	>240	>27	>27
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>480	>480	>480	>480	>27	>27
Data carrier clear zone C											>50	>50	>50	>50	>0	>0
Metallic mounting surface 40 x 22 mm	0-38	0-38			0-38	0-38										
Metallic mounting surface > 200 x 200 mm			0-42	0-42			0-34	0-34								
Working distance for writing	0-38	0-38	0-42	0-42	0-38	0-38	0-34	0-34	0-18	0-18	0-54	0-54	0-54	0-54	0-25	0-25
Working distance for reading	0-38	0-38	0-42	0-42	0-38	0-38	0-34	0-34	0-18	0-18	0-54	0-54	0-54	0-54	0-25	0-25
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
0	±43	±18	±45	±21	±20	±40	±17	±35	0	±22	±12	±60	±30	±60	±30	±30
5	±43	±18	±45	±21	±20	±40	±17	±35	5	±22	±12	±60	±30	±60	±30	±30
10	±43	±18	±45	±21	±20	±40	±17	±35	10	±21	±10	±60	±30	±60	±30	±30
15	±40	±17	±43	±20	±18	±35	±15	±33	15	±16	±8	±55	±27	±55	±27	±25
20	±40	±17	±43	±20	±18	±35	±15	±33	16	±5	±2	±55	±27	±55	±27	±15
30	±35	±15	±40	±18	±15	±30	±13	±28	18	±5	±2	±55	±27	±55	±27	±5
34	±18	±5	±24	±12	±5	±10	±5	±10	30			±55	±27	±55	±27	
38	±18	±5	±24	±12	±5	±10			35			±50	±25	±50	±25	
40			±24	±12					40			±50	±25	±50	±25	
42			±15	±8					45			±35	±17	±35	±17	
50									50			±35	±17	±35	±17	
60									54			±15	±7	±15	±7	

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Data carrier, 7) Tightening torque



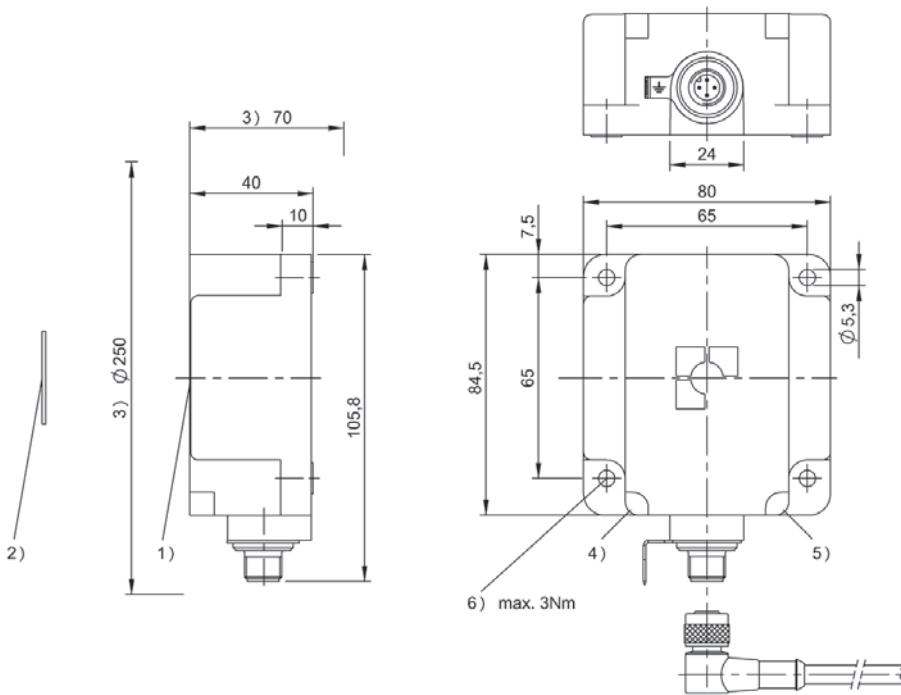
IO-Link, 10 bytes process data length	BIS00LK BIS M-401-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003Y			BIS003Z			BIS0047	BIS0043	BIS0044	BIS0045	BIS0046					
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80	>50	>20	>50	>30	>50	>30			
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250	>200	>60	>200	>100	>200	>100			
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25			
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25			
Offset at distance																
	0	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	5	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	9	±22	±18	±10	±30	±24	±16	±30	±30	±16	±25	±15	±30	±20	±35	±25
	12	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±15	±25	±20	±35	±25
	15	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±12	±25	±18	±35	±25
	16	±20	±15	±6	±30	±20	±12	±30	±25	±16	±20	±12	±25	±18	±35	±25
	18	±20	±13	±4	±30	±20	±10	±30	±25	±14	±20	±8	±25	±16	±35	±25
	20	±20	±12	±2	±30	±20	±10	±30	±25		±20		±25	±14	±35	±25
	22	±16	±8		±24	±18	±8	±30	±20		±15		±20	±12	±35	±22
	25	±12	±4		±24	±18	±8	±30	±20		±15		±20	±10	±35	±22
	30				±24	±15	±6	±28	±20		±10		±20		±35	±22
	32				±20	±12	±4	±24	±15		±10		±15		±35	±22
	35				±20	±10		±22	±15				±15		±35	±20
	40				±15	±5		±18	±15				±15		±35	
	43				±8			±14							±25	
	45				±5			±12							±25	
	50							±4							±25	
	52														±25	
	60														±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Tightening torque

BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00YE		BIS00Y4	
>0	>0	>0		>50	>50		
>100	>100	>100		>200	>200		
0-32	0-16	0-16		0-50	0-75		
0-32	0-16	0-16		0-50	0-75		
±25	±24		0	±30	±50		
±25	±24		5	±30	±50		
±25	±20		10	±30	±50		
±25	±14		15	±30	±50		
±25	±4		20	±30	±50		
±25	±4		25	±28	±50		
±25			30	±28	±50		
±25			35	±28	±50		
±20			40	±28	±50		
±20			45	±10	±45		
±15			50	±10	±45		
±15			55		±45		
			60		±45		
			65		±35		
			70		±35		
			75		±35		
			80				
			85				
			90				



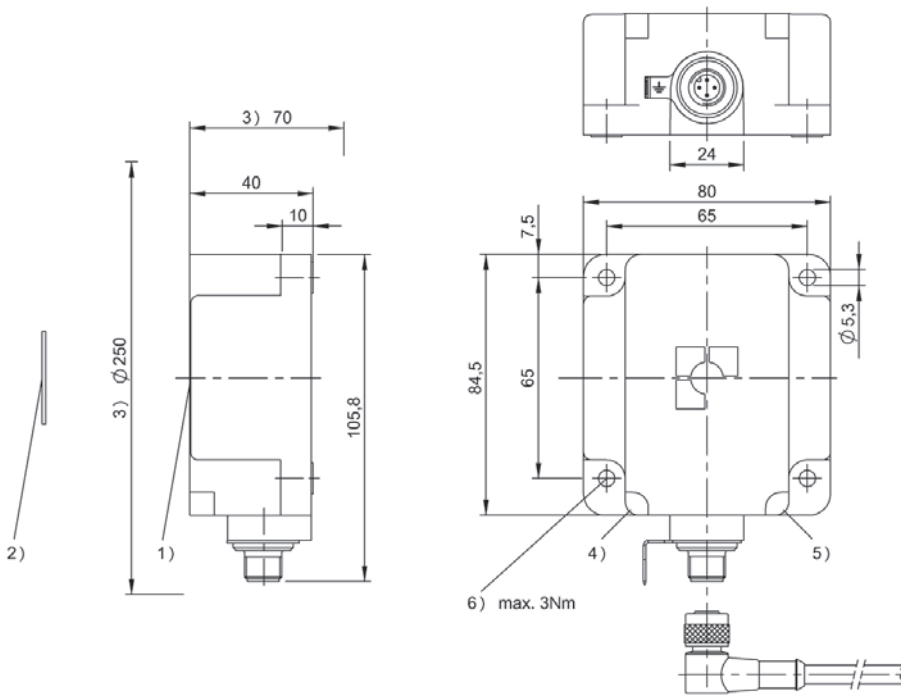
IO-Link, 32 bytes process data length	BIS0102 BIS M-401-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

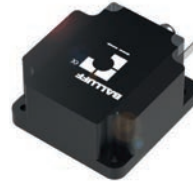
	BIS003Y			BIS003Z			BIS0047	BIS0043	BIS0044	BIS0045	BIS0046					
Data carrier distance to metal	>50	>25	>10	>50	>25	>10	>80	>50	>20	>50	>30	>50	>30			
Data carrier clear zone	>200	>150	>150	>200	>150	>150	>250	>200	>60	>200	>100	>200	>100			
Working distance for writing	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Working distance for reading	0-28	0-25	0-20	0-45	0-40	0-34	0-50	0-40	0-18	0-30	0-18	0-40	0-25	0-60	0-35	
Offset at distance																
	0	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	5	±22	±18	±12	±30	±24	±16	±30	±30	±16	±25	±18	±30	±20	±35	±25
	9	±22	±18	±10	±30	±24	±16	±30	±30	±16	±25	±15	±30	±20	±35	±25
	12	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±15	±25	±20	±35	±25
	15	±22	±16	±8	±30	±24	±14	±30	±25	±16	±20	±12	±25	±18	±35	±25
	16	±20	±15	±6	±30	±20	±12	±30	±25	±16	±20	±12	±25	±18	±35	±25
	18	±20	±13	±4	±30	±20	±10	±30	±25	±14	±20	±8	±25	±16	±35	±25
	20	±20	±12	±2	±30	±20	±10	±30	±25		±20		±25	±14	±35	±25
	22	±16	±8		±24	±18	±8	±30	±20		±15		±20	±12	±35	±22
	25	±12	±4		±24	±18	±8	±30	±20		±15		±20	±10	±35	±22
	30				±24	±15	±6	±28	±20		±10		±20		±35	±22
	32				±20	±12	±4	±24	±15		±10		±15		±35	±22
	35				±20	±10		±22	±15				±15		±35	±20
	40				±15	±5		±18	±15				±15		±35	
	43				±8			±14							±25	
	45				±5			±12							±25	
	50							±4							±25	
	52														±25	
	60														±25	

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Tightening torque

BIS00M9 BIS00M8		BIS00NU BIS00NW BIS0100		BIS00YE		BIS00Y4	
>0	>0	>0	>0	>50	>50	>50	>50
>100	>100	>100	>100	>200	>200	>200	>200
0-32	0-16	0-16	0-16	0-50	0-50	0-75	0-75
0-32	0-16	0-16	0-16	0-50	0-50	0-75	0-75
±25	±24	±24	0	±30	±30	±50	±50
±25	±24	±24	5	±30	±30	±50	±50
±25	±20	±20	10	±30	±30	±50	±50
±25	±14	±14	15	±30	±30	±50	±50
±25	±4	±4	20	±30	±30	±50	±50
±25	±4	±4	25	±28	±28	±50	±50
±25			30	±28	±28	±50	±50
±25			35	±28	±28	±50	±50
±20			40	±28	±28	±50	±50
±20			45	±10	±10	±45	±45
±15			50	±10	±10	±45	±45
±15			55			±45	±45
			60			±45	±45
			65			±35	±35
			70			±35	±35
			75			±35	±35
			80				
			85				
			90				



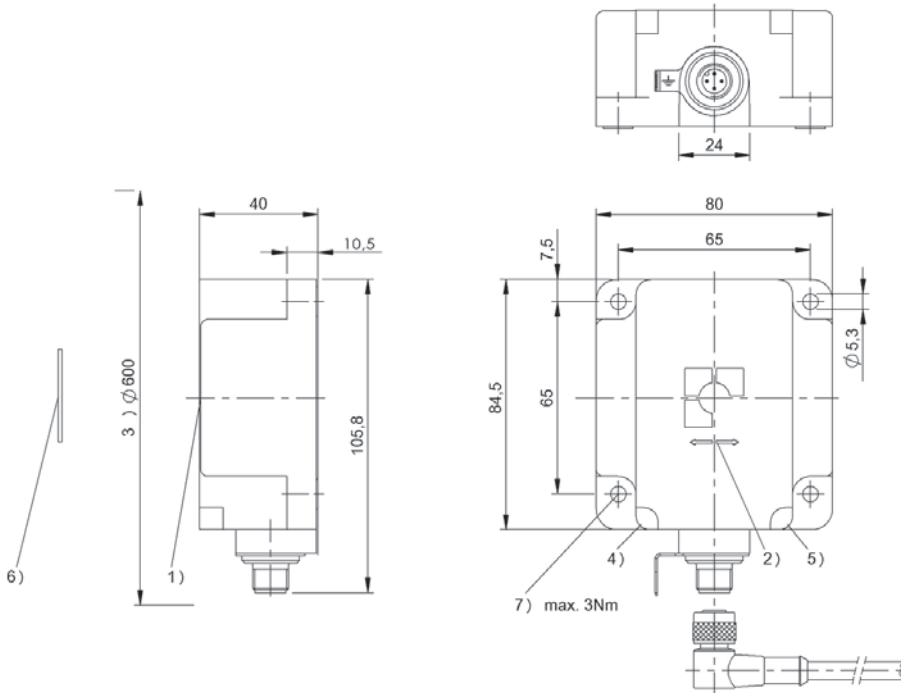
IO-Link, 10 bytes process data length	BIS00LM BIS M-451-045-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3	
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480
Data carrier clear zone C									>50	>50	>2	>2	>50	>50
Metallic mounting surface 40 × 22 mm	0-52	0-52			0-52	0-52								
Metallic mounting surface > 200 × 200 mm			0-65	0-65			0-65	0-65						
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
	0 ±60	±25	±65	±26	±25	±60	±26	±65	0 ±35	±20			±60	±20
	5 ±60	±25	±65	±26	±25	±60	±26	±65	5 ±35	±20			±60	±20
	12 ±60	±25	±65	±25	±25	±60	±25	±65	10 ±35	±20			±60	±20
	15 ±60	±25	±65	±25	±25	±60	±25	±65	15 ±35	±20	±35	±15	±60	±20
	18 ±60	±25	±65	±25	±25	±60	±25	±65	20 ±35	±20	±35	±15	±60	±20
	20 ±60	±25	±65	±25	±25	±60	±25	±65	25 ±20	±12	±28	±15	±60	±20
	22 ±60	±25	±65	±25	±25	±60	±25	±65	30 ±20	±12	±28	±15	±60	±20
	25 ±60	±25	±65	±25	±25	±60	±25	±65	35				±60	±20
	30 ±60	±25	±65	±25	±25	±60	±25	±65	40				±60	±20
	32 ±50	±25	±65	±25	±25	±50	±25	±65	45				±60	±20
	35 ±50	±25	±65	±25	±25	±50	±25	±65	50				±60	±20
	40 ±50	±20	±50	±25	±20	±50	±25	±50	60				±60	±20
	45 ±25	±20	±50	±25	±20	±25	±25	±50	70				±60	±20
	50 ±25	±20	±50	±25	±20	±25	±25	±50	80				±60	±20
	52 ±25	±8	±25	±25	±8	±25	±25	±25	90				±40	±20
	60		±25	±10			±10	±25	100				±40	±20
	65		±25	±10			±10	±25						

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque



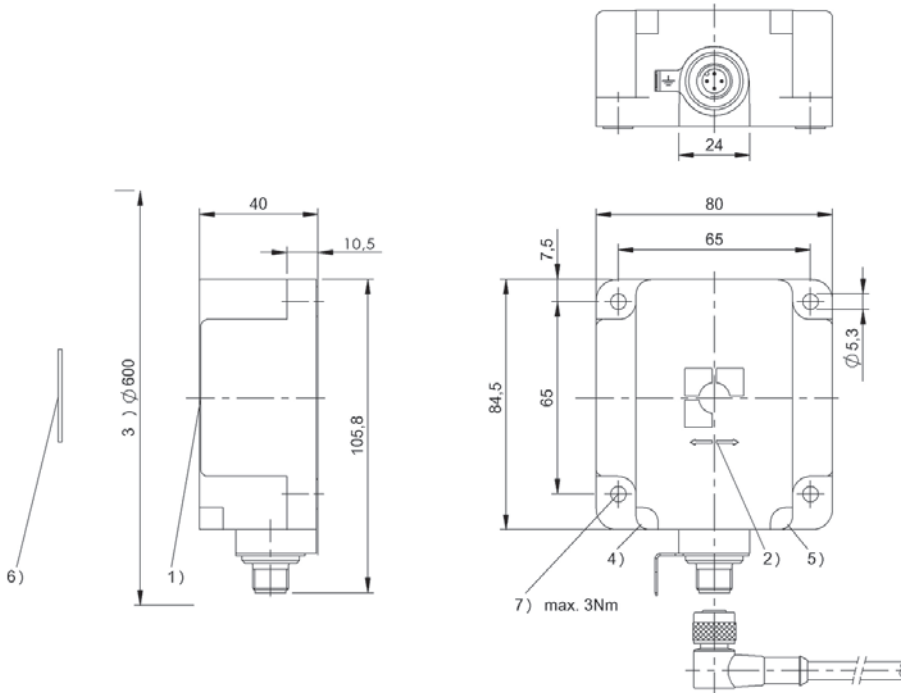
IO-Link, 32 bytes process data length	BIS0103 BIS M-451-072-001-07-S4
Product Group	HF (13.56 MHz)
Dimension	80 x 40 x 84.5 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, FCC Part 15, IC RSS-210, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2				BIS00P3			
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>10	>10	>240	>240		
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>50	>50	>480	>480		
Data carrier clear zone C									>50	>50	>2	>2	>50	>50		
Metallic mounting surface 40 x 22 mm	0-52	0-52			0-52	0-52										
Metallic mounting surface > 200 x 200 mm			0-65	0-65			0-65	0-65								
Working distance for writing	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100		
Working distance for reading	0-52	0-52	0-65	0-65	0-52	0-52	0-65	0-65	0-30	0-30	15-30	15-30	0-100	0-100		
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y		
	0	±60	±25	±65	±26	±25	±60	±26	±65	0	±35	±20		±60	±20	
	5	±60	±25	±65	±26	±25	±60	±26	±65	5	±35	±20		±60	±20	
	12	±60	±25	±65	±25	±25	±60	±25	±65	10	±35	±20		±60	±20	
	15	±60	±25	±65	±25	±25	±60	±25	±65	15	±35	±20	±35	±15	±60	±20
	18	±60	±25	±65	±25	±25	±60	±25	±65	20	±35	±20	±35	±15	±60	±20
	20	±60	±25	±65	±25	±25	±60	±25	±65	25	±20	±12	±28	±15	±60	±20
	22	±60	±25	±65	±25	±25	±60	±25	±65	30	±20	±12	±28	±15	±60	±20
	25	±60	±25	±65	±25	±25	±60	±25	±65	35					±60	±20
	30	±60	±25	±65	±25	±25	±60	±25	±65	40					±60	±20
	32	±50	±25	±65	±25	±25	±50	±25	±65	45					±60	±20
	35	±50	±25	±65	±25	±25	±50	±25	±65	50					±60	±20
	40	±50	±20	±50	±25	±20	±50	±25	±50	60					±60	±20
	45	±25	±20	±50	±25	±20	±25	±25	±50	70					±60	±20
	50	±25	±20	±50	±25	±20	±25	±25	±50	80					±60	±20
	52	±25	±8	±25	±25	±8	±25	±25	±25	90					±40	±20
	60			±25	±10			±10	±25	100					±40	±20
	65			±25	±10			±10	±25							

Dimensions in mm



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) LED (Power), 5) LED (TP), 6) Data carrier on steel, 7) Tightening torque



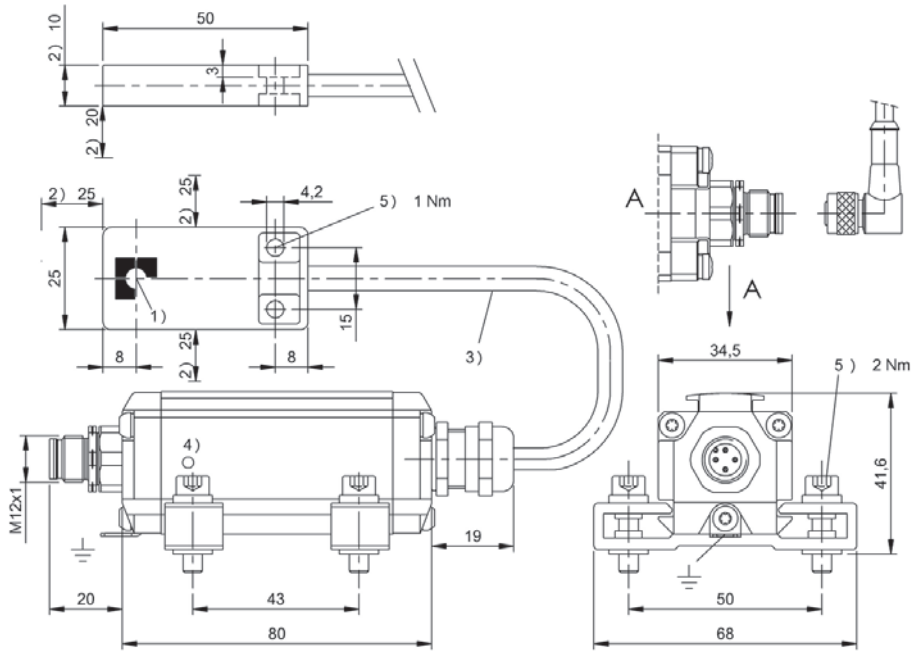
IO-Link, 10 bytes process data length	BIS00M1 BIS M-402-045-004-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00NU BIS00NW BIS0100		BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Offset at distance														
	0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6	±11
	5	±2		±5	±2	±8		±2		±4	±2	5	±6	±11
	9					±6						7	±6	±9
	12					±4						9	±4	±9
	15					±4						12		±9
	16											15		±5

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque



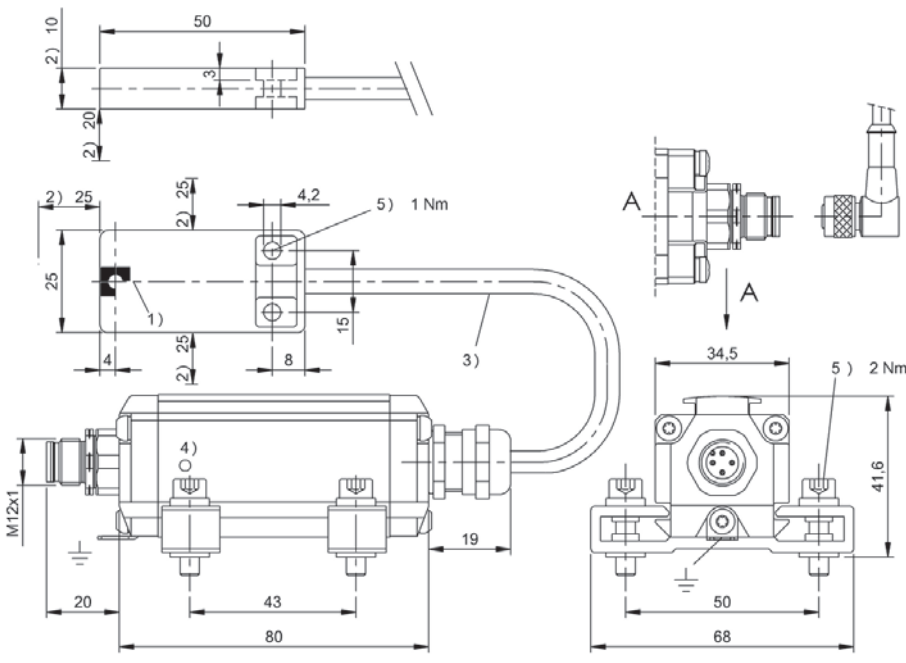
IO-Link, 10 bytes process data length	BISO126 BIS M-402-045-007-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BISO0UC	BISO0UE
Data carrier distance to metal	>10	
Data carrier clear zone	>60	
Working distance for writing	0-3	
Working distance for reading	0-3	
Offset at distance		
	0	±5
	1	±5
	2	±5
	3	±2
	15	
	16	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque



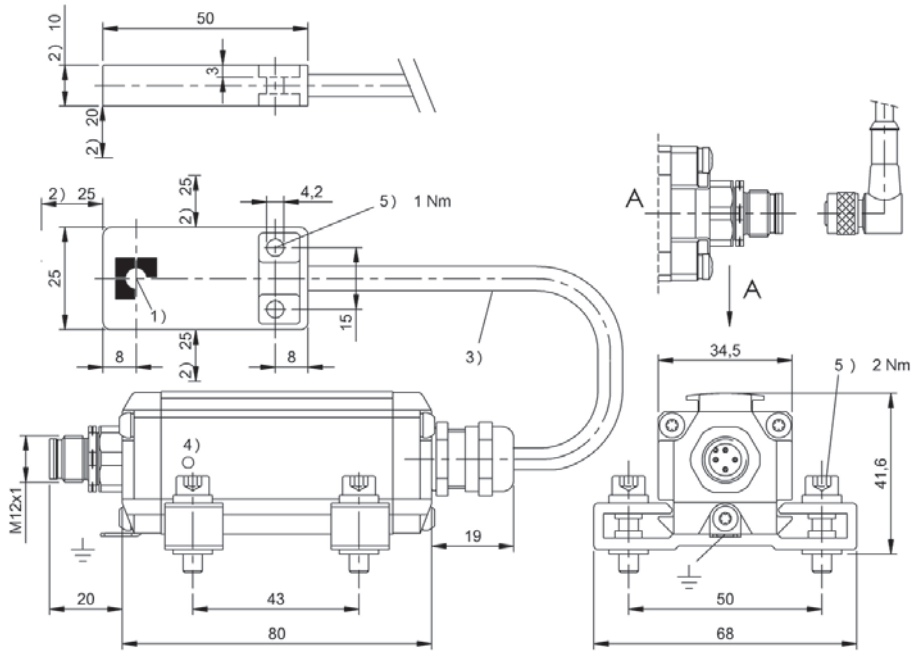
IO-Link, 32 bytes process data length	BIS0106 BIS M-402-072-004-07-S4
Product Group	HF (13.56 MHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	IO-Link
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0044		BIS0048		BIS004A		BIS00NU BIS00NW BIS0100		BIS003Y	
Data carrier distance to metal	>10	>0	>10	>0	>25		>10	>0	>10	>0		>0		>25
Data carrier clear zone	>60	>0	>60	>0	>80		>60	>0	>60	>0		>100		>100
Working distance for writing	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Working distance for reading	0-6	0-4	0-8	0-6	0-15		0-5	0-4	0-8	0-5		0-9		0-15
Offset at distance														
	0	±4	±3	±5	±4	±8		±4	±3	±4	±4	0	±6	±11
	5	±2		±5	±2	±8		±2		±4	±2	5	±6	±11
	9					±6						7	±6	±9
	12					±4						9	±4	±9
	15					±4						12		±9
	16											15		±5

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque



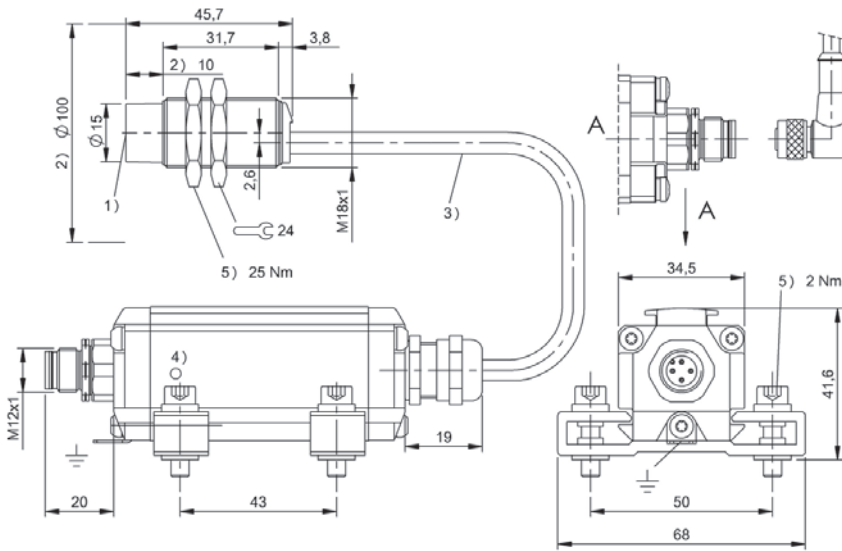
IO-Link, 10 bytes process data length	BIS00LW BIS M-402-045-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 45.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	IO-Link 1.1
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044			BIS003Y		BIS0045	
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25			>25		>25	
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80			>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Offset at distance															
	0	±3	±3	±4	±3	±3	±2	±4	±3	±7		0	±10		±12
	5	±2		±3	±2	±2		±3	±2	±7		5	±10		±12
	9									±5		10	±9		±11
	12									±3		14	±5		±10
	15									±3		15			±10
	16											18			±5

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
>25	>25	>25	>0
>100	>100	>100	>100
0-9	0-9	0-20	0-9
0-9	0-9	0-20	0-9
±6	±6	±12	±6
±6	±6	±12	±6
±5	±5	±12	±6
±1	±1	±12	±4
		±12	
		±10	



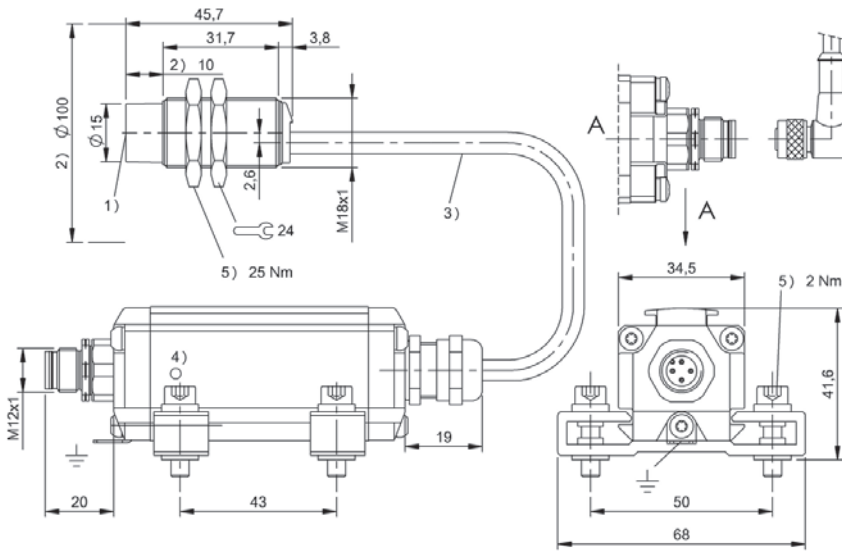
IO-Link, 32 bytes process data length	BIS0105 BIS M-402-072-002-07-S4
Product Group	HF (13.56 MHz)
Dimension	Ø 18 x 45.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface aluminum
Interface	IO-Link
Operating voltage U_b	18...30 VDC Supports only LPS/Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS0040		BIS0042		BIS0048		BIS004A		BIS0044			BIS003Y		BIS0045	
Data carrier distance to metal	>10	>0	>10	>0	>10	>0	>10	>0	>25			>25		>25	
Data carrier clear zone	>60	>0	>60	>0	>60	>0	>60	>0	>80			>100		>100	
Working distance for writing	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Working distance for reading	0-6	0-4	0-8	0-6	0-5	0-4	0-8	0-5	0-15			0-14		0-18	
Offset at distance															
	0	±3	±3	±4	±3	±3	±2	±4	±3	±7		0	±10		±12
	5	±2		±3	±2	±2		±3	±2	±7		5	±10		±12
	9									±5		10	±9		±11
	12									±3		14	±5		±10
	15									±3		15			±10
	16											18			±5

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) LED function indicator, 5) Tightening torque

	BIS00YL	BIS00YK	BIS00YE	BIS00NU BIS00NW BIS0100
	>25	>25	>25	>0
	>100	>100	>100	>100
	0-9	0-9	0-20	0-9
	0-9	0-9	0-20	0-9
	±6	±6	±12	±6
	±6	±6	±12	±6
	±5	±5	±12	±6
	±1	±1	±12	±4
			±12	
			±10	

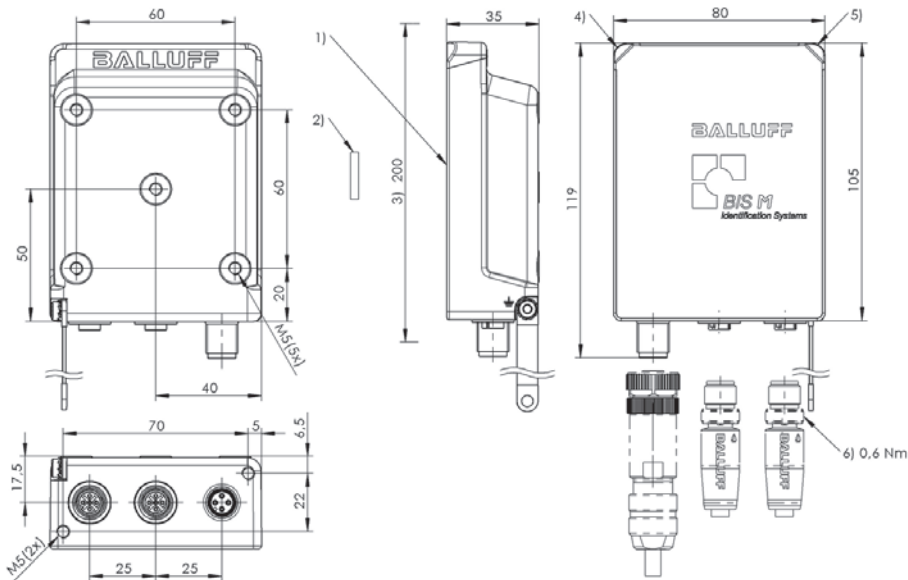


	BIS0179 BIS M-4008-048-001-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole, A-coded
Housing material	Zinc, die-cast
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch
Operating voltage U_b	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0043			BIS011F BIS011E BIS011A BIS0139				BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50		>50		>0	>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200		>200		>100	>100	
Working distance for writing	0-52	0-32	10-19	0-36	0-28	11-18	0-52		0-80		0-38	0-18	
Working distance for reading	0-52	0-32	10-19	0-36	0-28	11-18	0-52		0-80		0-38	0-18	
Offset at distance													
	0	±32	±25		±27	±22			±32		0	±27	±22
	5	±32	±25		±27	±22			±32		5	±27	±22
	10	±32	±25	±20	±27	±22			±32		10	±27	±20
	11	±32	±22	±20	±25	±20	±18		±32		15	±25	±18
	12	±32	±22	±20	±25	±20	±18		±32		18	±25	±10
	16	±32	±22	±15	±25	±20	±15		±32		20	±25	
	17	±32	±22	±15	±25	±20	±2		±32		25	±22	
	18	±32	±22	±8	±25	±20	±2		±32		30	±22	
	19	±32	±22	±8	±25	±20			±32		35	±10	
	20	±32	±22		±25	±20			±32		38	±10	
	25	±28	±15		±22	±15			±28		40		
	28	±28	±15		±22	±1			±28		45		
	30	±28	±15		±22				±28		50		
	32	±28	±10		±5				±28		55		
	36	±28			±5				±28		60		
	40	±28							±28		65		
	50	±12							±12		70		
	52	±6							±6		75		
	65										80		
	75								±20		85		
	80								±5		90		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

	BIS00YE	BIS00Y9	BIS00Y4	BIS00Y2
	>50	>50 >0	>50	>50
	>200	>200 >200	>200	>200
	0-60	0-55 0-45	0-90	0-65
	0-60	0-55 0-45	0-90	0-65
	0 ±35	±32 ±27	±50	±36
	10 ±35	±32 ±27	±50	±36
	20 ±35	±32 ±27	±50	±36
	30 ±30	±30 ±25	±50	±33
	40 ±30	±30 ±20	±45	±33
	45 ±20	±24 ±5	±45	±25
	50 ±20	±24	±45	±25
	55 ±20	±10	±45	±25
	60 ±10		±45	±25
	65		±30	±10
	70		±30	
	75		±30	
	80		±30	
	85		±20	
	90		±20	
	100			
	110			
	120			
	130			
	140			
	150			

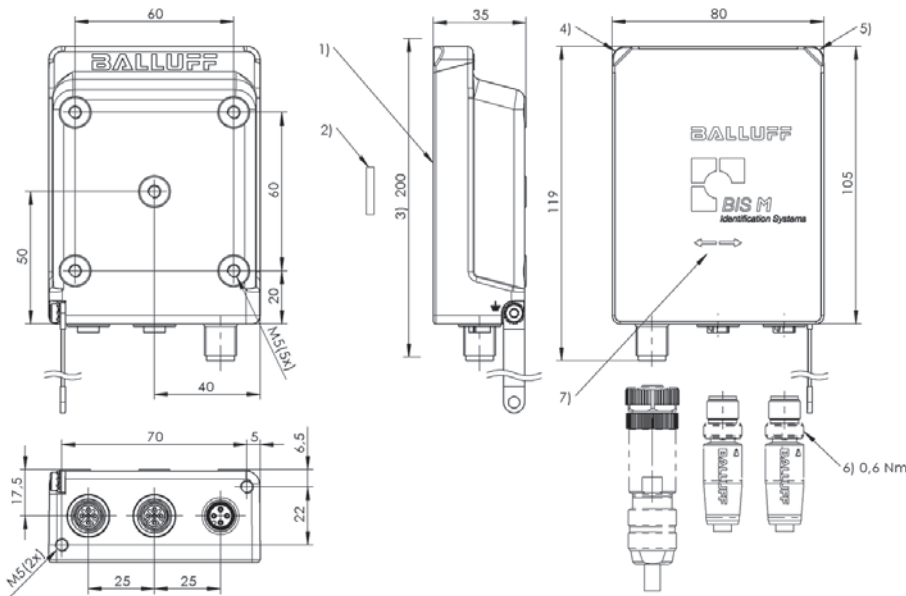


	BIS017A BIS M-4008-048-002-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole, A-coded
Housing material	Zinc, die-cast
Interface	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch
Operating voltage U _b	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2		BIS00P3				BIS011W BIS011Y BIS011U BIS013E			
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>240	>240	>240	>240	>240	>240		
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>240	>240	>240	>240	>240	>240		
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>480	>480	>480	>480	>480	>480		
Data carrier clear zone C										>50	>50	>50	>50	>0	>0	>50		
Metallic mounting surface 40 x 22 mm	0-65	0-65			0-65	0-65												
Metallic mounting surface > 200 x 200 mm			0-60	0-60			0-45	0-45										
Working distance for writing	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45	0-35	0-35	0-100	0-100	0-100	0-100	0-55	0-55		
Working distance for reading	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45	0-35	0-35	0-100	0-100	0-100	0-100	0-55	0-55		
Offset at distance																		
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y		
0	±70	±30	±65	±30	±30	±70	±25	±50	0	±44	±22	0	±100	±40	±100	±40	±65	±30
5	±70	±30	±65	±30	±30	±70	±25	±50	5	±44	±22	5	±100	±40	±100	±40	±65	±30
10	±70	±30	±65	±30	±30	±70	±25	±50	10	±44	±22	10	±100	±40	±100	±40	±65	±30
15	±70	±30	±65	±30	±30	±70	±25	±50	15	±40	±20	20	±100	±40	±100	±40	±65	±30
20	±70	±30	±65	±30	±30	±70	±25	±50	20	±40	±20	25	±100	±40	±100	±40	±60	±25
25	±65	±25	±60	±25	±25	±65	±20	±40	25	±32	±18	30	±100	±40	±100	±40	±60	±25
30	±65	±25	±60	±25	±25	±65	±20	±40	30	±32	±18	40	±100	±40	±100	±40	±60	±25
35	±65	±25	±60	±25	±25	±65	±20	±40	35	±10	±3	50	±80	±35	±80	±35	±30	±20
40	±65	±25	±60	±25	±25	±65	±15	±30	40			55	±80	±35	±80	±35	±20	±10
45	±40	±20	±40	±20	±20	±40	±5	±5	45			60	±80	±35	±80	±35		
50	±40	±20	±40	±20	±20	±40			50			70	±80	±35	±80	±35		
55	±40	±20	±40	±20	±20	±40			55			75	±80	±35	±80	±35		
60	±40	±20	±20	±10	±20	±40			60			80	±80	±35	±80	±35		
65	±20	±10			±10	±20			80			95	±55	±25	±55	±25		
70									95			100	±30	±10	±30	±10		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque, 7) Read/write axis

	BIS011M BIS011Z BIS011N BIS013C				BIS012J BIS012K BIS012L BIS013F				BIS0117				BIS0112				BIS00NZ					
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27		
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27		
	0-42	0-42			0-42	0-42			0-68	0-68			0-68	0-68					0-30	0-30		
			0-42	0-42			0-42	0-42			0-68	0-68			0-58	0-58	0-55	0-55				
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58	0-55	0-55	0-30	0-30		
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58	0-55	0-55	0-30	0-30		
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y		
0	±45	±25	±45	±25	±25	±45	±45	±25	0	±75	±32	±75	±32	±75	±32	±60	±28	0	±65	±28	±44	±24
5	±45	±25	±45	±25	±25	±45	±45	±25	5	±75	±32	±75	±32	±75	±32	±60	±28	5	±65	±28	±44	±24
10	±45	±25	±45	±25	±25	±45	±45	±25	10	±75	±32	±75	±32	±75	±32	±60	±28	10	±65	±28	±44	±24
15	±45	±25	±45	±25	±25	±45	±45	±25	15	±75	±32	±75	±32	±75	±32	±60	±28	15	±65	±28	±38	±21
20	±45	±25	±45	±25	±25	±45	±45	±25	20	±75	±32	±75	±32	±75	±32	±60	±28	20	±65	±28	±38	±21
25	±30	±18	±30	±18	±18	±30	±30	±18	25	±70	±28	±70	±28	±70	±28	±55	±25	25	±55	±25	±25	±15
30	±30	±18	±30	±18	±18	±30	±30	±18	30	±70	±28	±70	±28	±70	±28	±55	±25	30	±55	±25	±8	±5
35	±30	±18	±30	±18	±18	±30	±30	±18	35	±70	±28	±70	±28	±70	±28	±55	±25	35	±55	±25		
40	±20	±10	±20	±10	±10	±20	±20	±10	40	±70	±28	±70	±28	±70	±28	±55	±25	40	±55	±25		
42	±10	±5	±10	±5	±5	±10	±10	±5	45	±50	±25	±50	±25	±50	±25	±35	±18	45	±40	±20		
45									50	±50	±25	±50	±25	±50	±25	±35	±18	50	±40	±20		
50									55	±50	±25	±50	±25	±50	±25	±35	±18	55	±5	±5		
55									58	±50	±25	±50	±25	±50	±25	±15	±5					
60									65	±50	±25	±50	±25	±50	±25			65				
65									68	±20	±10	±20	±10	±20	±10			70				

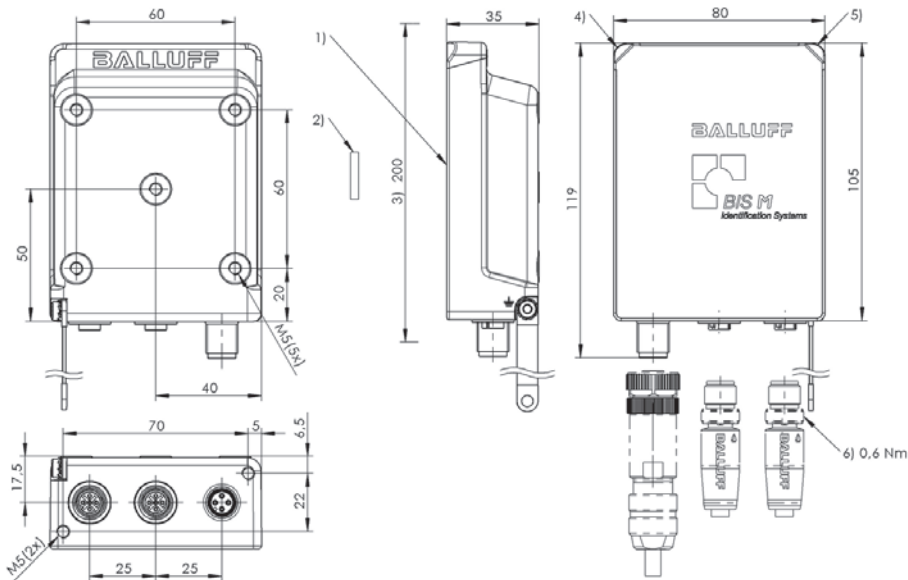


	BIS018A BIS M-4006-034-001-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole
Housing material	Zinc, die-cast
Interface	Ethernet/IP, Ethernet/IP 2 port Switch
Operating voltage U_b	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0043			BIS011F BIS011E BIS011A BIS0139				BIS0045	BIS0046		BIS0119	BIS00NU BIS00NW BIS0100	
Data carrier distance to metal	>50	>0	>0	>50	>0	>0	>50		>50		>0	>0	
Data carrier clear zone	>200	>200	>0	>200	>200	>0	>200		>200		>100	>100	
Working distance for writing	0-52	0-32	10-19	0-36	0-28	11-18	0-52		0-80		0-38	0-18	
Working distance for reading	0-52	0-32	10-19	0-36	0-28	11-18	0-52		0-80		0-38	0-18	
Offset at distance													
	0	±32	±25		±27	±22		±32		±42	0	±27	±22
	5	±32	±25		±27	±22		±32		±42	5	±27	±22
	10	±32	±25	±20	±27	±22		±32		±42	10	±27	±20
	11	±32	±22	±20	±25	±20	±18	±32		±42	15	±25	±18
	12	±32	±22	±20	±25	±20	±18	±32		±42	18	±25	±10
	16	±32	±22	±15	±25	±20	±15	±32		±42	20	±25	
	17	±32	±22	±15	±25	±20	±2	±32		±42	25	±22	
	18	±32	±22	±8	±25	±20	±2	±32		±42	30	±22	
	19	±32	±22	±8	±25	±20		±32		±42	35	±10	
	20	±32	±22		±25	±20		±32		±42	38	±10	
	25	±28	±15		±22	±15		±28		±42	40		
	28	±28	±15		±22	±1		±28		±42	45		
	30	±28	±15		±22			±28		±42	50		
	32	±28	±10		±5			±28		±38	55		
	36	±28			±5			±28		±38	60		
	40	±28						±28		±38	65		
	50	±12						±12		±38	70		
	52	±6						±6		±38	75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque

	BIS00YE	BIS00Y9	BIS00Y4	BIS00Y2
	>50	>50 >0	>50	>50
	>200	>200 >200	>200	>200
	0-60	0-55 0-45	0-90	0-65
	0-60	0-55 0-45	0-90	0-65
	0 ±35	±32 ±27	±50	±36
	10 ±35	±32 ±27	±50	±36
	20 ±35	±32 ±27	±50	±36
	30 ±30	±30 ±25	±50	±33
	40 ±30	±30 ±20	±45	±33
	45 ±20	±24 ±5	±45	±25
	50 ±20	±24	±45	±25
	55 ±20	±10	±45	±25
	60 ±10		±45	±25
	65		±30	±10
	70		±30	
	75		±30	
	80		±30	
	85		±20	
	90		±20	
	100			
	110			
	120			

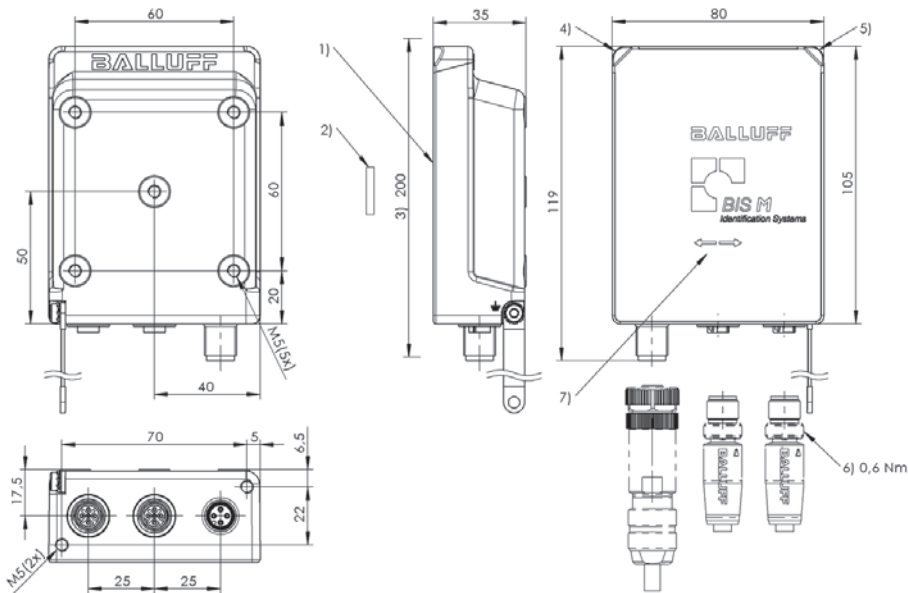


	BIS018C BIS M-4006-034-002-ST4
Product Group	HF (13.56 MHz)
Dimension	80 x 35 x 119 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	Rod
Supported data carrier types	DIN ISO 15693, DIN ISO 15693 (High Memory)
Connection	2x M12x1-Female, 4-pole, D-coded M12x1-Male, 4-pole
Housing material	Zinc, die-cast
Interface	Ethernet/IP, Ethernet/IP 2 port Switch
Operating voltage U _b	24 V DC LPS Class 2
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS004F				BIS004H				BIS00M2		BIS00P3				BIS011W BIS011Y BIS011U BIS013E				
Data carrier clear zone A	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>240	>240	>240	>240	>240	>240			
Data carrier clear zone B	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>480	>480	>480	>480	>480	>480			
Data carrier clear zone C									>50	>50	>50	>50	>0	>0	>50	>50			
Metallic mounting surface 40 x 22 mm	0-65	0-65			0-65	0-65													
Metallic mounting surface > 200 x 200 mm			0-60	0-60			0-45	0-45											
Working distance for writing	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45	0-35	0-35	0-100	0-100	0-100	0-100	0-55	0-55			
Working distance for reading	0-65	0-65	0-60	0-60	0-65	0-65	0-45	0-45	0-35	0-35	0-100	0-100	0-100	0-100	0-55	0-55			
Offset at distance	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y			
	0	±70	±30	±65	±30	±30	±70	±25	±50	0	±44	±22	0	±100	±40	±100	±40	±65	±30
	5	±70	±30	±65	±30	±30	±70	±25	±50	5	±44	±22	5	±100	±40	±100	±40	±65	±30
	10	±70	±30	±65	±30	±30	±70	±25	±50	10	±44	±22	10	±100	±40	±100	±40	±65	±30
	15	±70	±30	±65	±30	±30	±70	±25	±50	15	±40	±20	20	±100	±40	±100	±40	±65	±30
	20	±70	±30	±65	±30	±30	±70	±25	±50	20	±40	±20	25	±100	±40	±100	±40	±60	±25
	25	±65	±25	±60	±25	±25	±65	±20	±40	25	±32	±18	30	±100	±40	±100	±40	±60	±25
	30	±65	±25	±60	±25	±25	±65	±20	±40	30	±32	±18	40	±100	±40	±100	±40	±60	±25
	35	±65	±25	±60	±25	±25	±65	±20	±40	35	±10	±3	50	±80	±35	±80	±35	±30	±20
	40	±65	±25	±60	±25	±25	±65	±15	±30	40			55	±80	±35	±80	±35	±20	±10
	45	±40	±20	±40	±20	±20	±40	±5	±5	45			60	±80	±35	±80	±35		
	50	±40	±20	±40	±20	±20	±40			50			70	±80	±35	±80	±35		
	55	±40	±20	±40	±20	±20	±40			55			75	±80	±35	±80	±35		
	60	±40	±20	±20	±10	±20	±40			60			80	±80	±35	±80	±35		
	65	±20	±10			±10	±20			80			95	±55	±25	±55	±25		
	70									95			100	±30	±10	±30	±10		
	75									100			110						
	80									110			120						

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) LED (Power), 5) LED (CP), 6) Tightening torque, 7) Read/write axis

	BIS011M BIS011Z BIS011N BIS013C				BIS012J BIS012K BIS012L BIS013F				BIS0117				BIS0112				BIS00NZ					
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27		
	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>27	>27	>27	>27		
	0-42	0-42			0-42	0-42			0-68	0-68			0-68	0-68					0-30	0-30		
			0-42	0-42			0-42	0-42			0-68	0-68			0-58	0-58	0-55	0-55				
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58	0-55	0-55	0-30	0-30		
	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-42	0-68	0-68	0-68	0-68	0-68	0-68	0-58	0-58	0-55	0-55	0-30	0-30		
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y		
0	±45	±25	±45	±25	±25	±45	±45	±25	0	±75	±32	±75	±32	±75	±32	±60	±28	0	±65	±28	±44	±24
5	±45	±25	±45	±25	±25	±45	±45	±25	5	±75	±32	±75	±32	±75	±32	±60	±28	5	±65	±28	±44	±24
10	±45	±25	±45	±25	±25	±45	±45	±25	10	±75	±32	±75	±32	±75	±32	±60	±28	10	±65	±28	±44	±24
15	±45	±25	±45	±25	±25	±45	±45	±25	15	±75	±32	±75	±32	±75	±32	±60	±28	15	±65	±28	±38	±21
20	±45	±25	±45	±25	±25	±45	±45	±25	20	±75	±32	±75	±32	±75	±32	±60	±28	20	±65	±28	±38	±21
25	±30	±18	±30	±18	±18	±30	±30	±18	25	±70	±28	±70	±28	±70	±28	±55	±25	25	±55	±25	±25	±15
30	±30	±18	±30	±18	±18	±30	±30	±18	30	±70	±28	±70	±28	±70	±28	±55	±25	30	±55	±25	±8	±5
35	±30	±18	±30	±18	±18	±30	±30	±18	35	±70	±28	±70	±28	±70	±28	±55	±25	35	±55	±25		
40	±20	±10	±20	±10	±10	±20	±20	±10	40	±70	±28	±70	±28	±70	±28	±55	±25	40	±55	±25		
42	±10	±5	±10	±5	±5	±10	±10	±5	45	±50	±25	±50	±25	±50	±25	±35	±18	45	±40	±20		
45									50	±50	±25	±50	±25	±50	±25	±35	±18	50	±40	±20		
50									55	±50	±25	±50	±25	±50	±25	±35	±18	55	±5	±5		
55									58	±50	±25	±50	±25	±50	±25	±15	±5	60				
60									65	±50	±25	±50	±25	±50	±25			65				
65									68	±20	±10	±20	±10	±20	±10			70				
70									75									75				
75									80													

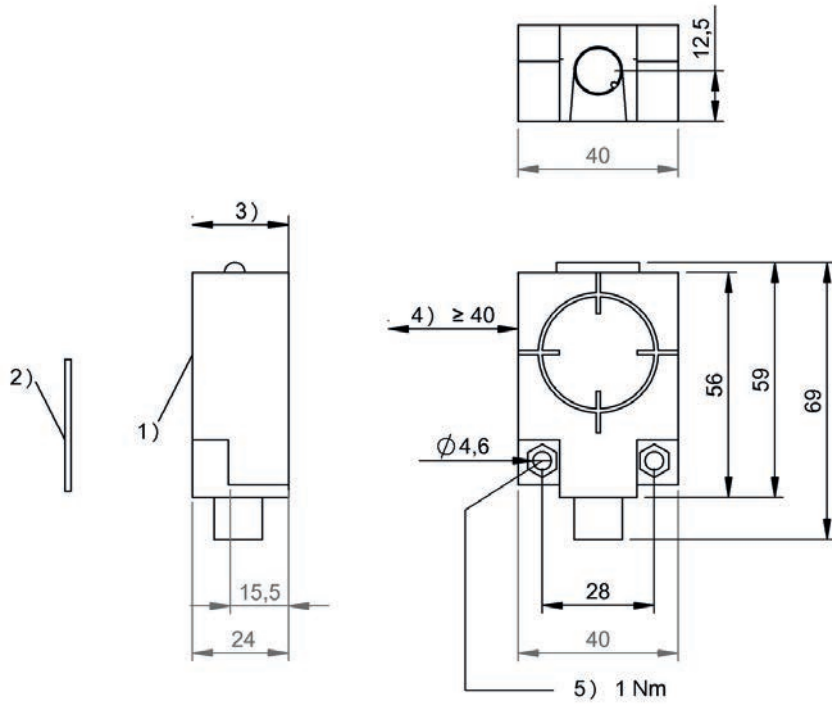


	BIS00W4 BIS M-410-068-001-09-S72
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	USB 2.0
Operating voltage U_b	5 V DC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA	
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25	
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100	
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Offset at distance									
	0 ±15	±12	±10	±30	±25		0 ±15	±15	
	2 ±15	±12	±10	±30	±25		5 ±15	±15	
	4 ±15	±12	±7.5	±30	±25		10 ±12	±12	
	5 ±15	±12	±5	±30	±25		15 ±8	±8	
	10 ±14	±10		±30	±25		20		
	12 ±12	±5		±25	±20		25		
	15 ±12			±25	±20		30		
	17 ±7			±25	±20		32		
	20			±25	±20		36		
	25			±25	±20		40		
	30			±25	±20		45		
	35			±20	±12		50		
	40			±20	±12		55		
	45			±12			60		
	48			±12			65		
	75						68		
	80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y9		BIS00Y8		BIS00Y7		BIS00Y6		BIS00Y5		BIS00Y4		BIS00Y3		BIS00Y2		BIS0043	
>25		>50		>50		>50		>50		>50		>50		>50		>25	
>100		>150		>150		>150		>150		>150		>150		>150		>120	
0-32		0-32		0-36		0-60		0-68		0-70		23-46		23-46		0-40	
0-32		0-32		0-36		0-60		0-68		0-70		23-46		23-46		0-40	
±20		±22		±25		0 ±35		±40		±44						0 ±22	
±20		±22		±25		5 ±35		±40		±44						5 ±22	
±20		±22		±25		10 ±35		±40		±44						10 ±22	
±16		±20		±25		15 ±35		±40		±44						15 ±22	
±16		±20		±25		20 ±35		±40		±44						20 ±22	
±10		±12		±20		23 ±30		±32		±32		±24		±24		25 ±20	
±10		±12		±20		30 ±30		±32		±32		±24		±24		30 ±20	
±8		±8		±12		32 ±30		±32		±32		±18		±18		35 ±20	
				±12		35 ±30		±32		±32		±18		±18		40 ±10	
						40 ±30		±32		±32		±18		±18			
						46 ±24		±32		±32		±10		±10			
						50 ±24		±32		±32							
						55 ±16		±24		±25							
						60 ±16		±24		±25							
						65		±15		±15							
						68		±15		±15							
						70				±15							



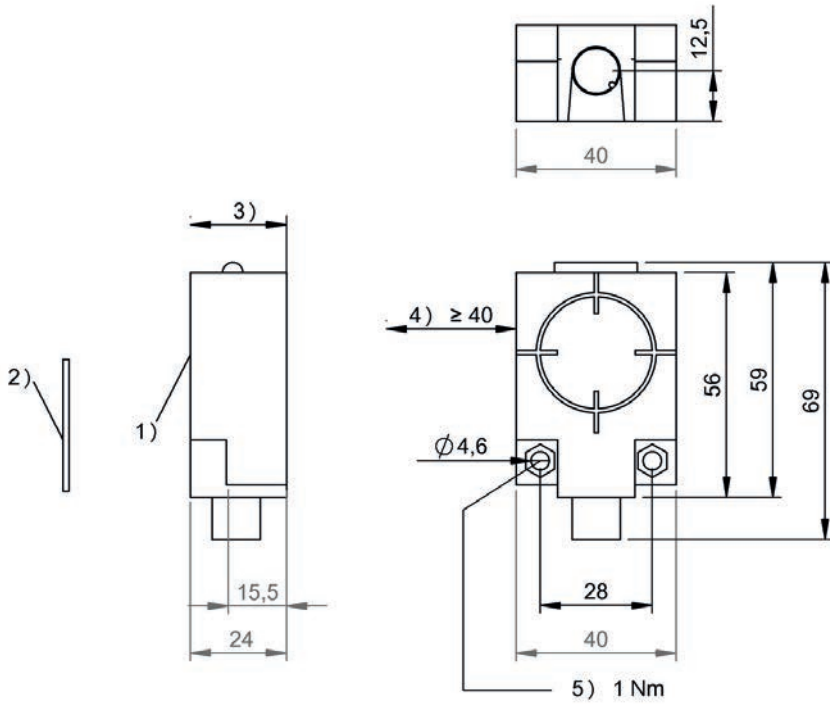
BIS00W1 BIS M-410-067-001-04-S92	
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	Subnet 16 (RS485)
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

* Use with **BIS Z-GW-001...** only

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA	
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25	
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100	
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Offset at distance									
	0 ±15	±12	±10	±30	±25		0 ±15	±15	
	2 ±15	±12	±10	±30	±25		5 ±15	±15	
	4 ±15	±12	±7,5	±30	±25		10 ±12	±12	
	5 ±15	±12	±5	±30	±25		15 ±8	±8	
	10 ±14	±10		±30	±25		20		
	12 ±12	±5		±25	±20		25		
	15 ±12			±25	±20		30		
	17 ±7			±25	±20		32		
	20			±25	±20		36		
	25			±25	±20		40		
	30			±25	±20		45		
	35			±20	±12		50		
	40			±20	±12		55		
	45			±12			60		
	48			±12			65		
	75						68		
	80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y9	BIS00Y8	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2	BIS0043
>25	>50	>50	>50	>50	>50	>50	>50	>25
>100	>150	>150	>150	>150	>150	>150	>150	>120
0-32	0-32	0-36	0-60	0-68	0-70	23-46	23-46	0-40
0-32	0-32	0-36	0-60	0-68	0-70	23-46	23-46	0-40
±20	±22	±25	0 ±35	±40	±44			0 ±22
±20	±22	±25	5 ±35	±40	±44			5 ±22
±20	±22	±25	10 ±35	±40	±44			10 ±22
±16	±20	±25	15 ±35	±40	±44			15 ±22
±16	±20	±25	20 ±35	±40	±44			20 ±22
±10	±12	±20	23 ±30	±32	±32	±24	±24	25 ±20
±10	±12	±20	30 ±30	±32	±32	±24	±24	30 ±20
±8	±8	±12	32 ±30	±32	±32	±18	±18	35 ±20
		±12	35 ±30	±32	±32	±18	±18	40 ±10
			40 ±30	±32	±32	±18	±18	
			46 ±24	±32	±32	±10	±10	
			50 ±24	±32	±32			
			55 ±16	±24	±25			
			60 ±16	±24	±25			
			65	±15	±15			
			68	±15	±15			
			70	±15	±15			

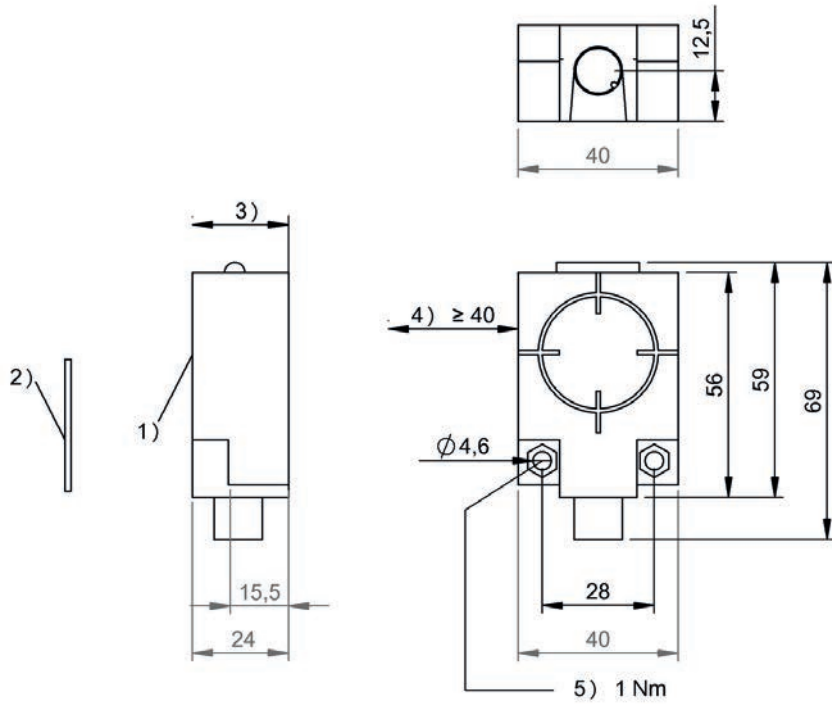


BIS00W3 BIS M-410-068-001-02-S115	
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS422
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA	
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25	
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100	
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Offset at distance									
	0 ±15	±12	±10	±30	±25		0 ±15	±15	
	2 ±15	±12	±10	±30	±25		5 ±15	±15	
	4 ±15	±12	±7.5	±30	±25		10 ±12	±12	
	5 ±15	±12	±5	±30	±25		15 ±8	±8	
	10 ±14	±10		±30	±25		20		
	12 ±12	±5		±25	±20		25		
	15 ±12			±25	±20		30		
	17 ±7			±25	±20		32		
	20			±25	±20		36		
	25			±25	±20		40		
	30			±25	±20		45		
	35			±20	±12		50		
	40			±20	±12		55		
	45			±12			60		
	48			±12			65		
	75						68		
	80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y9		BIS00Y8		BIS00Y7		BIS00Y6		BIS00Y5		BIS00Y4		BIS00Y3		BIS00Y2		BIS0043	
>25		>50		>50		>50		>50		>50		>50		>50		>25	
>100		>150		>150		>150		>150		>150		>150		>150		>120	
0-32		0-32		0-36		0-60		0-68		0-70		23-46		23-46		0-40	
0-32		0-32		0-36		0-60		0-68		0-70		23-46		23-46		0-40	
±20		±22		±25		0 ±35		±40		±44						0 ±22	
±20		±22		±25		5 ±35		±40		±44						5 ±22	
±20		±22		±25		10 ±35		±40		±44						10 ±22	
±16		±20		±25		15 ±35		±40		±44						15 ±22	
±16		±20		±25		20 ±35		±40		±44						20 ±22	
±10		±12		±20		23 ±30		±32		±32		±24		±24		25 ±20	
±10		±12		±20		30 ±30		±32		±32		±24		±24		30 ±20	
±8		±8		±12		32 ±30		±32		±32		±18		±18		35 ±20	
				±12		35 ±30		±32		±32		±18		±18		40 ±10	
						40 ±30		±32		±32		±18		±18			
						46 ±24		±32		±32		±10		±10			
						50 ±24		±32		±32							
						55 ±16		±24		±25							
						60 ±16		±24		±25							
						65		±15		±15							
						68		±15		±15							
						70				±15							

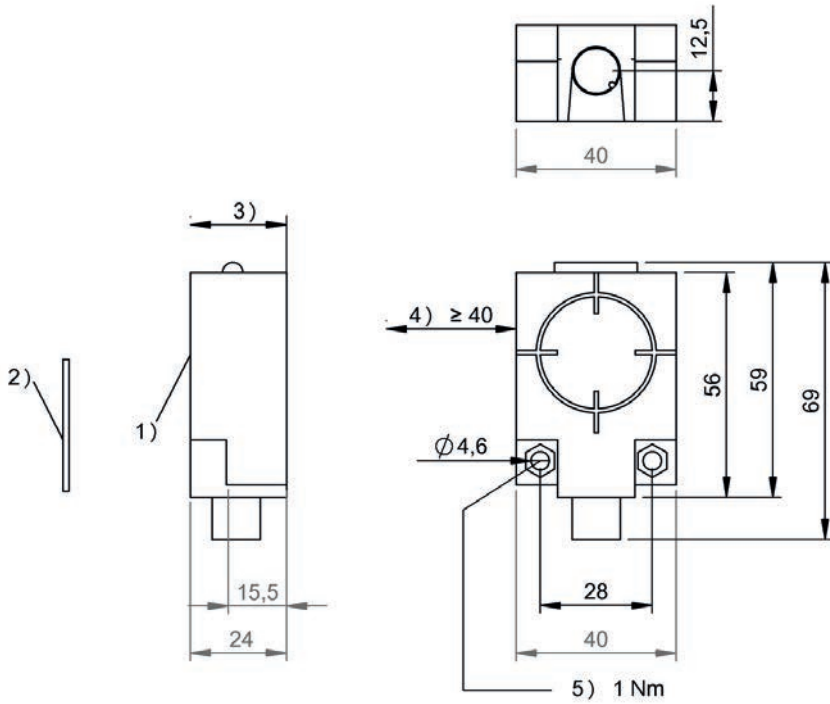


	BIS00W2 BIS M-410-068-001-00-S115
Product Group	HF (13.56 MHz)
Dimension	40 x 24 x 56 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS232
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YH	BIS00YF	BIS00YE		BIS00YC	BIS00YA	
Data carrier distance to metal	>10	>10	>10	>25	>25		>25	>25	
Data carrier clear zone	>60	>60	>60	>100	>100		>100	>100	
Working distance for writing	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Working distance for reading	0-17	0-12	0-5	0-48	0-40		0-15	0-15	
Offset at distance									
	0 ±15	±12	±10	±30	±25		0 ±15	±15	
	2 ±15	±12	±10	±30	±25		5 ±15	±15	
	4 ±15	±12	±7.5	±30	±25		10 ±12	±12	
	5 ±15	±12	±5	±30	±25		15 ±8	±8	
	10 ±14	±10		±30	±25		20		
	12 ±12	±5		±25	±20		25		
	15 ±12			±25	±20		30		
	17 ±7			±25	±20		32		
	20			±25	±20		36		
	25			±25	±20		40		
	30			±25	±20		45		
	35			±20	±12		50		
	40			±20	±12		55		
	45			±12			60		
	48			±12			65		
	75						68		
	80						75		

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y9		BIS00Y8		BIS00Y7		BIS00Y6		BIS00Y5		BIS00Y4		BIS00Y3		BIS00Y2		BIS0043	
>25	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>25	>120
>100	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150
0-32	0-32	0-32	0-36	0-36	0-60	0-60	0-68	0-70	0-70	23-46	23-46	23-46	23-46	23-46	23-46	0-40	0-40
0-32	0-32	0-32	0-36	0-36	0-60	0-60	0-68	0-70	0-70	23-46	23-46	23-46	23-46	23-46	23-46	0-40	0-40
±20	±22	±25	±25	±25	0 ±35	±40	±40	±44	±44	±44	±44	±44	±44	±44	±44	0 ±22	0 ±22
±20	±22	±25	±25	±25	5 ±35	±40	±40	±44	±44	±44	±44	±44	±44	±44	±44	5 ±22	5 ±22
±20	±22	±25	±25	±25	10 ±35	±40	±40	±44	±44	±44	±44	±44	±44	±44	±44	10 ±22	10 ±22
±16	±20	±25	±25	±25	15 ±35	±40	±40	±44	±44	±44	±44	±44	±44	±44	±44	15 ±22	15 ±22
±16	±20	±25	±25	±25	20 ±35	±40	±40	±44	±44	±44	±44	±44	±44	±44	±44	20 ±22	20 ±22
±10	±12	±20	±20	±20	23 ±30	±32	±32	±32	±32	±24	±24	±24	±24	±24	±24	25 ±20	25 ±20
±10	±12	±20	±20	±20	30 ±30	±32	±32	±32	±32	±24	±24	±24	±24	±24	±24	30 ±20	30 ±20
±8	±8	±12	±12	±12	32 ±30	±32	±32	±32	±32	±18	±18	±18	±18	±18	±18	35 ±20	35 ±20
		±12	±12	±12	35 ±30	±32	±32	±32	±32	±18	±18	±18	±18	±18	±18	40 ±10	40 ±10
					40 ±30	±32	±32	±32	±32	±18	±18	±18	±18	±18	±18		
					46 ±24	±32	±32	±32	±32	±10	±10	±10	±10	±10	±10		
					50 ±24	±32	±32	±32	±32								
					55 ±16	±24	±24	±25	±25								
					60 ±16	±24	±24	±25	±25								
					65	±15	±15	±15	±15								
					68	±15	±15	±15	±15								
					70			±15	±15								

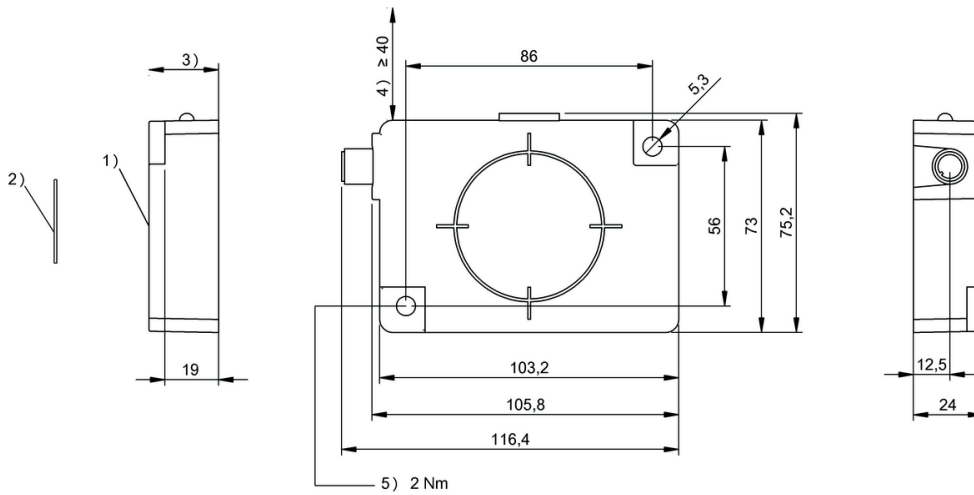


	BIS00W8 BIS M-411-068-001-09-S72
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	USB 2.0
Operating voltage U_b	5 V DC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9	
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25	
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100	
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Offset at distance									
	0 ±22	±22	±50	±42		0 ±20	±20		
	5 ±22	±22	±50	±42		5 ±20	±20		
	9 ±19	±20	±50	±42		10 ±20	±20		
	12 ±19	±12	±50	±42		15 ±20	±20		
	13 ±19	±5	±50	±42		20 ±15	±15		
	15 ±19		±50	±42		22 ±15	±10		
	20 ±14		±50	±42		26 ±15			
	22		±40	±39		30			
	26		±40	±39		38		±25	
	30		±40	±39		40		±25	
	35		±40	±39		45		±25	
	40		±40	±39		50		±25	
	45		±35	±36		52		±25	
	50		±35	±36		56			
	60		±35	±36		60			
	65		±30	±28		70			
	70		±30	±28		80			
	75		±30			90			
	80		±30			100			
	90					110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2	BIS0044	BIS0045
>50	>50	>50	>50	>50	>50	>50	>25	>25
>150	>150	>150	>150	>150	>150	>150	>100	>100
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
±35	±32	0 ±50	±62	±65			0 ±30	±40
±35	±32	5 ±50	±62	±65			5 ±30	±40
±35	±32	11 ±50	±62	±65	±52	±50	10 ±30	±40
±35	±32	15 ±50	±62	±65	±52	±50	15 ±28	±40
±35	±32	20 ±50	±62	±65	±52	±50	20 ±28	±40
±30	±30	25 ±50	±62	±65	±52	±50	25 ±28	±38
±30	±30	30 ±50	±62	±65	±52	±50	30 ±28	±38
±30	±30	35 ±50	±58	±65	±48	±42	35 ±25	±38
±30	±30	40 ±50	±58	±65	±48	±42	40 ±25	±38
±30	±30	45 ±50	±58	±62	±48	±42	45 ±10	±35
±30	±25	50 ±50	±58	±62	±48	±42	50	±35
±25	±25	55 ±50	±58	±62	±48	±42	55	±35
±25	±20	60 ±50	±58	±62	±48	±35	60	±35
±25	±20	75 ±45	±52	±62	±44	±35	67	±10
	±20	85 ±45	±52	±58	±44		70	
		95 ±45	±52	±58	±40		75	
		100 ±45	±52	±58			80	
		110	±48	±58			85	
		120		±58			90	
		125		±50			95	



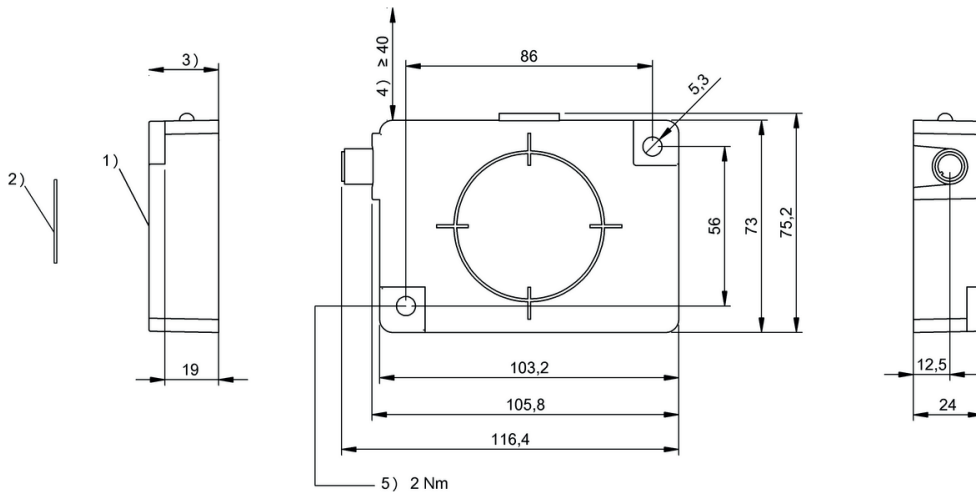
	BIS00W5 BIS M-411-067-001-04-S92
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 5-pin
Housing material	PC, with PU potting
Interface	Subnet 16 (RS485)
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

* Use with **BIS Z-GW-001...** only

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9	
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25	
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100	
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Offset at distance									
	0 ±22	±22	±50	±42		0 ±20	±20		
	5 ±22	±22	±50	±42		5 ±20	±20		
	9 ±19	±20	±50	±42		10 ±20	±20		
	12 ±19	±12	±50	±42		15 ±20	±20		
	13 ±19	±5	±50	±42		20 ±15	±15		
	15 ±19		±50	±42		22 ±15	±10		
	20 ±14		±50	±42		26 ±15			
			±40	±39		30			
			±40	±39		38		±25	
			±40	±39		40		±25	
			±40	±39		45		±25	
			±40	±39		50		±25	
			±35	±36		52		±25	
			±35	±36		56			
			±35	±36		60			
			±30	±28		70			
			±30	±28		80			
			±30			90			
			±30			100			
						110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8		BIS00Y7		BIS00Y6		BIS00Y5		BIS00Y4		BIS00Y3		BIS00Y2		BIS0044		BIS0045	
>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>50	>25	>25	>25	>25	>100	>100
>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>150	>100	>100	>100	>100	>100	>100
0-56	0-60	0-60	0-60	0-100	0-110	0-125	0-125	11-95	11-95	11-95	11-95	11-75	11-75	11-75	11-75	0-45	0-67
0-56	0-60	0-60	0-60	0-100	0-110	0-125	0-125	11-95	11-95	11-95	11-95	11-75	11-75	11-75	11-75	0-45	0-67
±35	±32	0	±50	±62	±65	±65	±65	±52	±50	±50	±50	0	±30	±40	±40	±40	±40
±35	±32	5	±50	±62	±65	±65	±65	±52	±50	±50	±50	5	±30	±40	±40	±40	±40
±35	±32	11	±50	±62	±65	±65	±65	±52	±50	±50	±50	10	±30	±40	±40	±40	±40
±35	±32	15	±50	±62	±65	±65	±65	±52	±50	±50	±50	15	±28	±40	±40	±40	±40
±35	±32	20	±50	±62	±65	±65	±65	±52	±50	±50	±50	20	±28	±40	±40	±40	±40
±30	±30	25	±50	±62	±65	±65	±65	±52	±50	±50	±50	25	±28	±38	±38	±38	±38
±30	±30	30	±50	±62	±65	±65	±65	±52	±50	±50	±50	30	±28	±38	±38	±38	±38
±30	±30	35	±50	±58	±65	±65	±65	±48	±42	±42	±42	35	±25	±38	±38	±38	±38
±30	±30	40	±50	±58	±65	±65	±65	±48	±42	±42	±42	40	±25	±38	±38	±38	±38
±30	±30	45	±50	±58	±62	±62	±62	±48	±42	±42	±42	45	±10	±35	±35	±35	±35
±30	±25	50	±50	±58	±62	±62	±62	±48	±42	±42	±42	50		±35	±35	±35	±35
±25	±25	55	±50	±58	±62	±62	±62	±48	±42	±42	±42	55		±35	±35	±35	±35
±25	±20	60	±50	±58	±62	±62	±62	±48	±35	±35	±35	60		±35	±35	±35	±35
±25	±20	75	±45	±52	±62	±62	±62	±44	±35	±35	±35	75		±10	±10	±10	±10
	±20	85	±45	±52	±58	±58	±58	±44				85					
		95	±45	±52	±58	±58	±58	±40				95					
		100	±45	±52	±58	±58	±58					100					
		110		±48	±58	±58	±58					110					
		120			±58	±58	±58					120					
		125			±50	±50	±50					125					

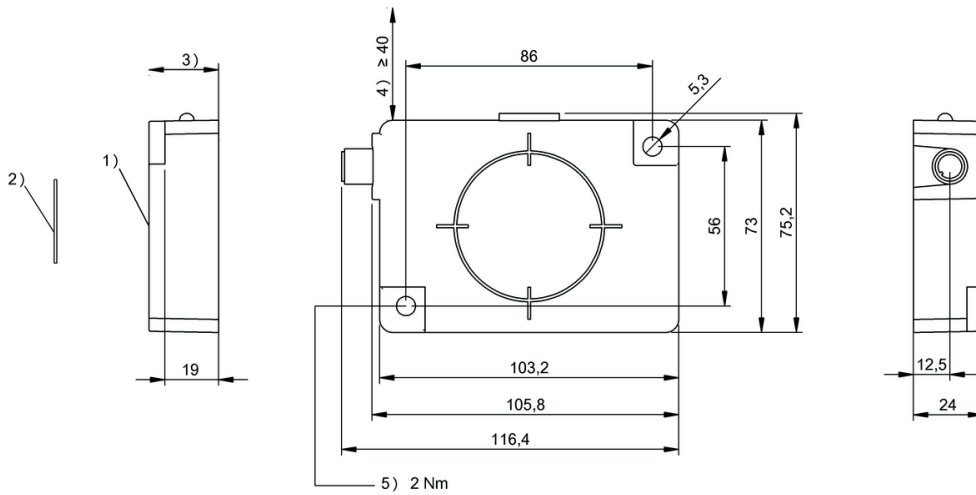


BIS00W7 BIS M-411-068-001-02-S115	
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS422
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9	
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25	
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100	
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Offset at distance									
	0 ±22	±22	±50	±42		0 ±20	±20		
	5 ±22	±22	±50	±42		5 ±20	±20		
	9 ±19	±20	±50	±42		10 ±20	±20		
	12 ±19	±12	±50	±42		15 ±20	±20		
	13 ±19	±5	±50	±42		20 ±15	±15		
	15 ±19		±50	±42		22 ±15	±10		
	20 ±14		±50	±42		26 ±15			
	22		±40	±39		30			
	26		±40	±39		38		±25	
	30		±40	±39		40		±25	
	35		±40	±39		45		±25	
	40		±40	±39		50		±25	
	45		±35	±36		52		±25	
	50		±35	±36		56			
	60		±35	±36		60			
	65		±30	±28		70			
	70		±30	±28		80			
	75		±30			90			
	80		±30			100			
	90					110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

BIS00Y8	BIS00Y7	BIS00Y6	BIS00Y5	BIS00Y4	BIS00Y3	BIS00Y2	BIS0044	BIS0045
>50	>50	>50	>50	>50	>50	>50	>25	>25
>150	>150	>150	>150	>150	>150	>150	>100	>100
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
±35	±32	0 ±50	±62	±65			0 ±30	±40
±35	±32	5 ±50	±62	±65			5 ±30	±40
±35	±32	11 ±50	±62	±65	±52	±50	10 ±30	±40
±35	±32	15 ±50	±62	±65	±52	±50	15 ±28	±40
±35	±32	20 ±50	±62	±65	±52	±50	20 ±28	±40
±30	±30	25 ±50	±62	±65	±52	±50	25 ±28	±38
±30	±30	30 ±50	±62	±65	±52	±50	30 ±28	±38
±30	±30	35 ±50	±58	±65	±48	±42	35 ±25	±38
±30	±30	40 ±50	±58	±65	±48	±42	40 ±25	±38
±30	±30	45 ±50	±58	±62	±48	±42	45 ±10	±35
±30	±25	50 ±50	±58	±62	±48	±42	50	±35
±25	±25	55 ±50	±58	±62	±48	±42	55	±35
±25	±20	60 ±50	±58	±62	±48	±35	60	±35
±25	±20	75 ±45	±52	±62	±44	±35	67	±10
	±20	85 ±45	±52	±58	±44		70	
		95 ±45	±52	±58	±40		75	
		100 ±45	±52	±58			80	
		110	±48	±58			85	
		120		±58			90	
		125		±50			95	

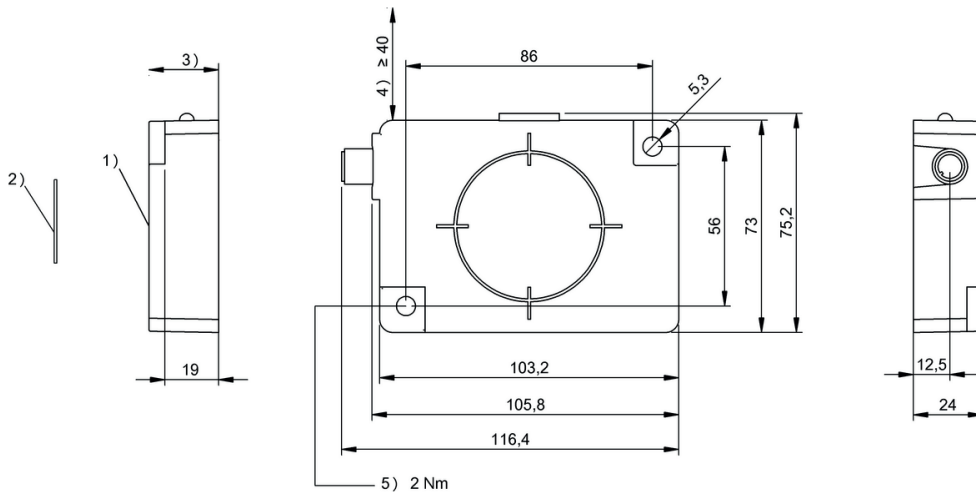


BIS00W6 BIS M-411-068-001-00-S115	
Product Group	HF (13.56 MHz)
Dimension	75 x 24 x 105 mm
Installation	metal-free (clear zone)
Antenna type	round
Supported data carrier types	DIN ISO 14443, DIN ISO 15693
Connection	Connector, M12x1 connector, 8-pin
Housing material	PC, with PU potting
Interface	RS232
Operating voltage U_b	10...30 VDC
Ambient temperature	-20...50 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS00YL	BIS00YK	BIS00YF	BIS00YE		BIS00YC	BIS00YA	BIS00Y9	
Data carrier distance to metal	>10	>10	>25	>25		>25	>25	>25	
Data carrier clear zone	>60	>60	>100	>100		>100	>100	>100	
Working distance for writing	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Working distance for reading	0-20	0-13	0-80	0-70		0-26	0-22	38-52	
Offset at distance									
	0 ±22	±22	±50	±42		0 ±20	±20		
	5 ±22	±22	±50	±42		5 ±20	±20		
	9 ±19	±20	±50	±42		10 ±20	±20		
	12 ±19	±12	±50	±42		15 ±20	±20		
	13 ±19	±5	±50	±42		20 ±15	±15		
	15 ±19		±50	±42		22 ±15	±10		
	20 ±14		±50	±42		26 ±15			
	22		±40	±39		30			
	26		±40	±39		38		±25	
	30		±40	±39		40		±25	
	35		±40	±39		45		±25	
	40		±40	±39		50		±25	
	45		±35	±36		52		±25	
	50		±35	±36		56			
	60		±35	±36		60			
	65		±30	±28		70			
	70		±30	±28		80			
	75		±30			90			
	80		±30			100			
	90					110			

Dimensions in mm



1) Sensing surface, 2) Data carrier, 3) Clear zone, 4) Clear zone surrounding, 5) Tightening torque

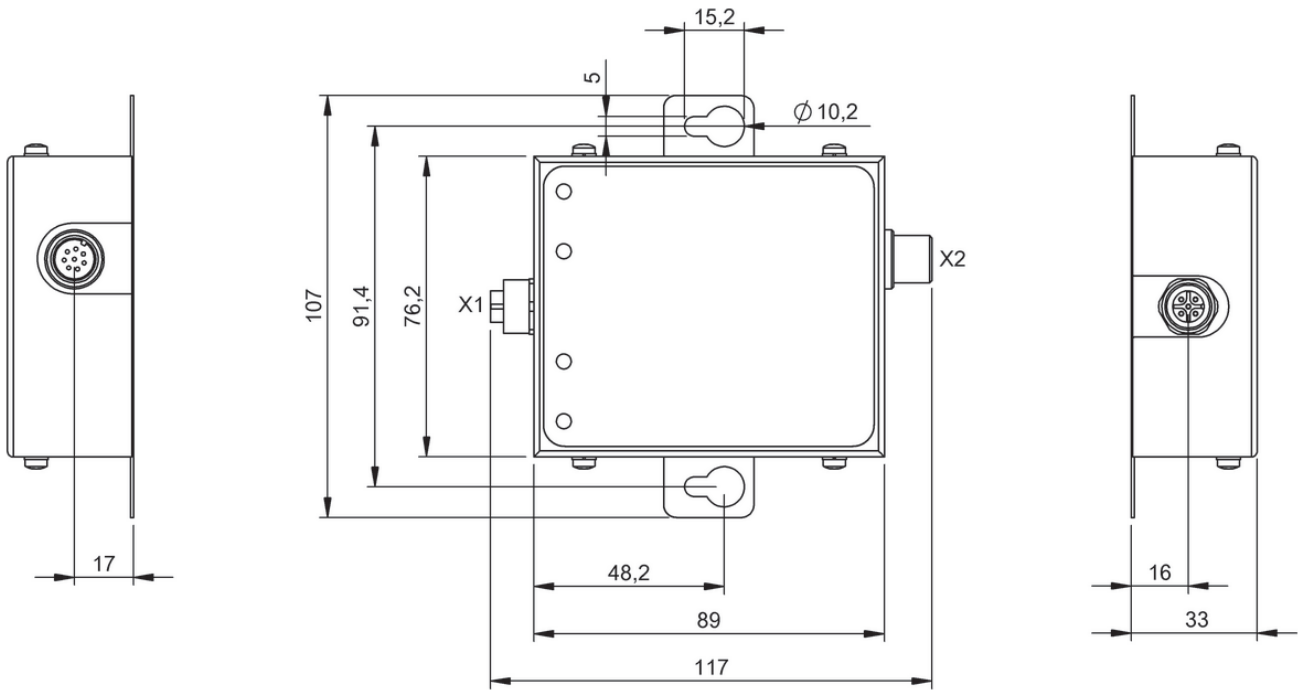
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>50	>50	>50	>50	>50	>50	>50	>25	>25
>150	>150	>150	>150	>150	>150	>150	>100	>100
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
0-56	0-60	0-100	0-110	0-125	11-95	11-75	0-45	0-67
±35	±32	0 ±50	±62	±65			0 ±30	±40
±35	±32	5 ±50	±62	±65			5 ±30	±40
±35	±32	11 ±50	±62	±65	±52	±50	10 ±30	±40
±35	±32	15 ±50	±62	±65	±52	±50	15 ±28	±40
±35	±32	20 ±50	±62	±65	±52	±50	20 ±28	±40
±30	±30	25 ±50	±62	±65	±52	±50	25 ±28	±38
±30	±30	30 ±50	±62	±65	±52	±50	30 ±28	±38
±30	±30	35 ±50	±58	±65	±48	±42	35 ±25	±38
±30	±30	40 ±50	±58	±65	±48	±42	40 ±25	±38
±30	±30	45 ±50	±58	±62	±48	±42	45 ±10	±35
±30	±25	50 ±50	±58	±62	±48	±42	50	±35
±25	±25	55 ±50	±58	±62	±48	±42	55	±35
±25	±20	60 ±50	±58	±62	±48	±35	60	±35
±25	±20	75 ±45	±52	±62	±44	±35	67	±10
	±20	85 ±45	±52	±58	±44		70	
		95 ±45	±52	±58	±40		75	
		100 ±45	±52	±58			80	
		110	±48	±58			85	
		120		±58			90	
		125		±50			95	



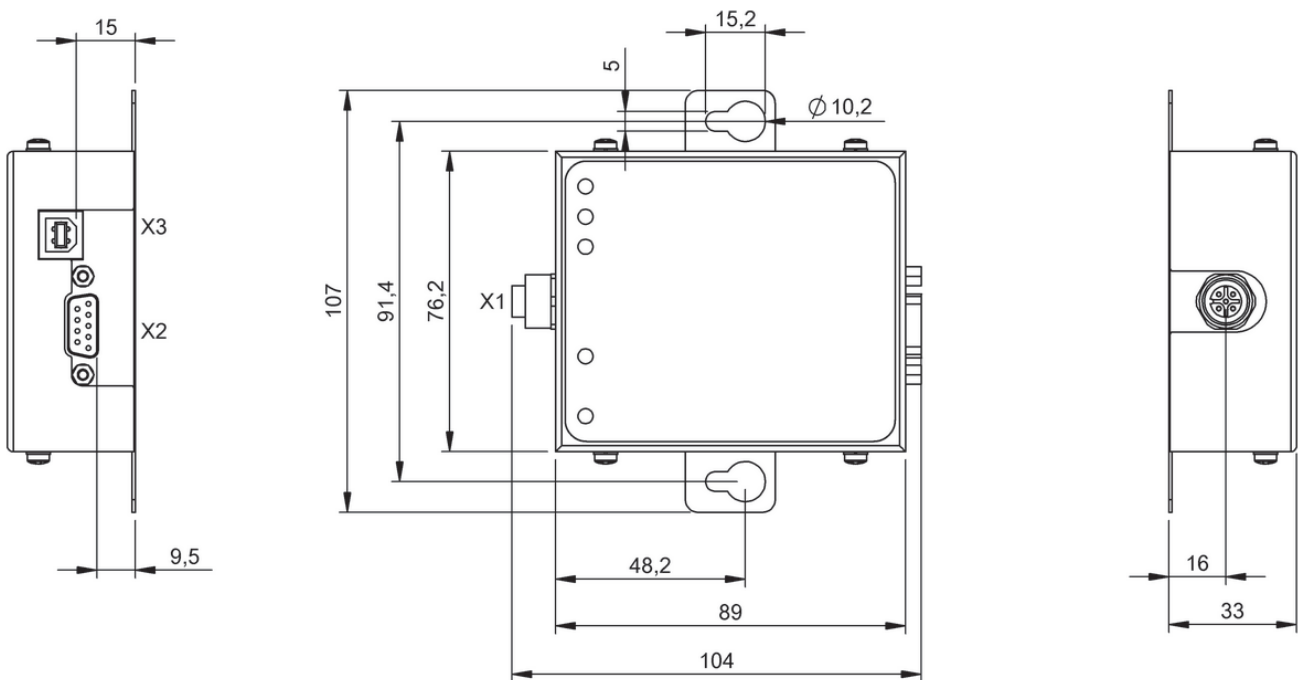
	BAE00.JL BIS Z-GW-001-RS232	
Dimension	107 x 33 x 117 mm	
Interface	RS232	
Auxiliary interfaces	Subnet 16 (RS485)	
Housing material	Aluminum, die-cast	
Ambient temperature	-20...50 °C	
Protection degree	IP30	
Approval/Conformity	CE, FCC Part 15	
Productview	Page 320	



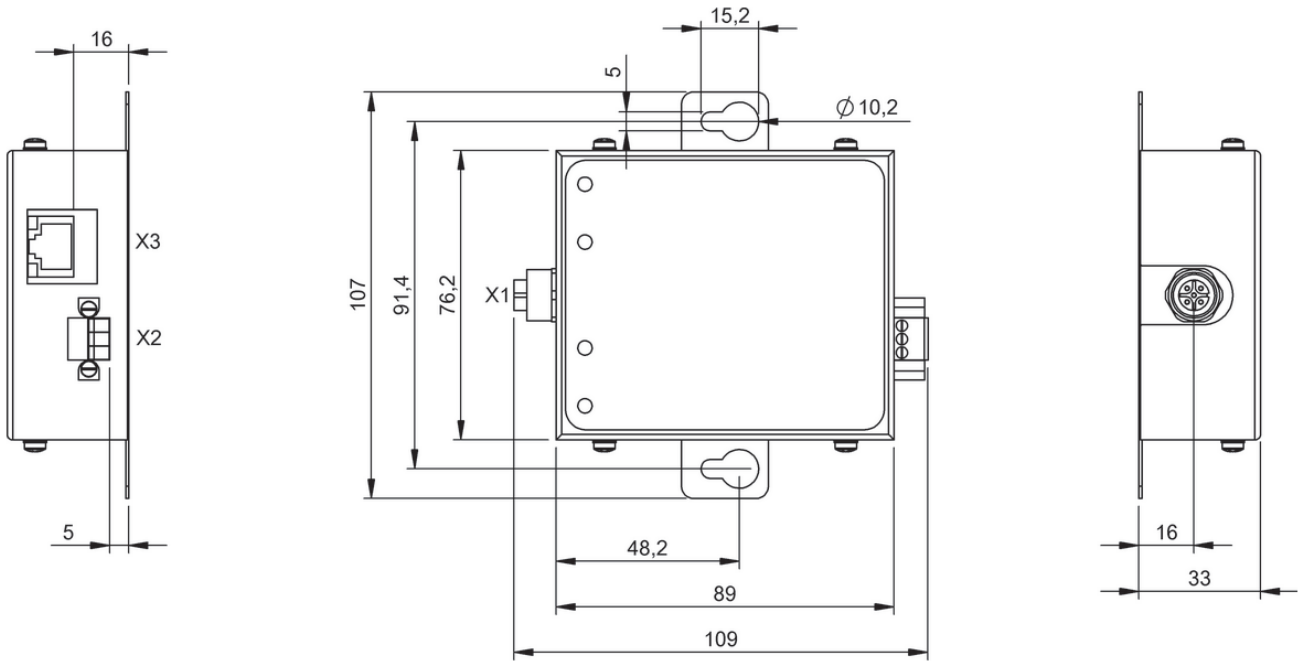
BAE00JK BIS Z-GW-001-PBS	BAE00JJ BIS Z-GW-001-IND	BAE00JM BIS Z-GW-001-TCP
107 x 33 x 104 mm	107 x 33 x 109 mm	107 x 33 x 109 mm
Profibus DP Slave, USB 2.0 galvanically isolated	Industrial Ethernet / MODBUS TCP	Ethernet TCP/IP
Subnet 16 (RS485)	Subnet 16 (RS485)	Subnet 16 (RS485)
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
-20...50 °C	-20...50 °C	-20...50 °C
IP30	IP30	IP30
CE, FCC Part 15	CE, FCC Part 15	CE, FCC Part 15
Page 320	Page 321	Page 321



BAE00JL



BAE00JK



BAE00JJ, BAE00JM



Standard, WLAN	BAE00M1 BIS M-870-1-008-X-001	
Standard, 1D code reader, WLAN	BAE00C BIS M-870-1-008-X-004	
Standard, 2D code reader, WLAN	BAE00L3 BIS M-870-1-008-X-005	
Product Group	HF (13.56 MHz)	
Product name	WLAN	
Dimension	100 x 51 x 265 mm	
Antenna type	round	
Supported data carrier types	DIN ISO 14443, DIN ISO 15693	
Use	for data carriers $\varnothing \geq 20$ mm	
Display	TFT Touchscreen-display (color): 480x640 VGA resolution	
Keypad	52 keys, alphanumeric	
Operating voltage U_b	3.7 V DC rechargeable battery pack	
Storage temperature	-40...60 °C	
Ambient temperature	-10...50 °C	
Protection degree	IP65	
Approval/Conformity	CE	
Productview	Page 326	



BAE00W4 BIS M-870-1-010-X-001	BAE00U1 BIS M-871-1-008-X-001	BAE00W5 BIS M-871-1-010-X-001
HF (13.56 MHz)	HF (13.56 MHz)	HF (13.56 MHz)
WLAN	WLAN	WLAN
100 x 51 x 265 mm	100 x 51 x 265 mm	100 x 51 x 265 mm
round	Rod	Rod
DIN ISO 15693, DIN ISO 15693 (High Memory)	DIN ISO 14443, DIN ISO 15693	DIN ISO 15693, DIN ISO 15693 (High Memory)
for data carriers $\varnothing \geq 20$ mm	—	—
TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution
55 keys, alphanumeric	52 keys, alphanumeric	55 keys, alphanumeric
3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack
-40...60 °C	-40...60 °C	-40...60 °C
-10...50 °C	-10...50 °C	-10...50 °C
IP65	IP65	IP65
CE	CE	CE
Page 327	Page 328	Page 328



Standard, WLAN	BAE00F0 BIS M-873-1-008-X-001	
Standard, 1D code reader, WLAN	BAE00E9 BIS M-873-1-008-X-004	
Standard, 2D code reader, WLAN	BAE00KL BIS M-873-1-008-X-005	
Product Group	HF (13.56 MHz)	
Product name	WLAN	
Dimension	100 x 51 x 265 mm	
Antenna type	round	
Supported data carrier types	DIN ISO 14443, DIN ISO 15693	
Use	for data carriers $\varnothing < 20$ mm	
Display	TFT Touchscreen-display (color): 480x640 VGA resolution	
Keypad	52 keys, alphanumeric	
Operating voltage U_b	3.7 V DC rechargeable battery pack	
Storage temperature	-40...60 °C	
Ambient temperature	-10...50 °C	
Protection degree	IP65	
Approval/Conformity	CE	
Productview	Page 329	



BAE00W6 BIS M-873-1-010-X-001		
HF (13.56 MHz)		
WLAN		
100 x 51 x 265 mm		
round		
DIN ISO 15693, DIN ISO 15693 (High Memory)		
for data carriers Ø < 20 mm		
TFT Touchscreen-display (color): 480x640 VGA resolution		
55 keys, alphanumeric		
3.7 V DC rechargeable battery pack		
-40...60 °C		
-10...50 °C		
IP65		
CE		
Page 330		

Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Systems

Safety

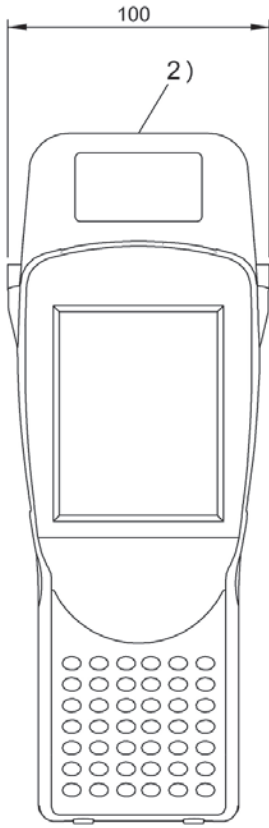
Industrial Networking

Power Supplies

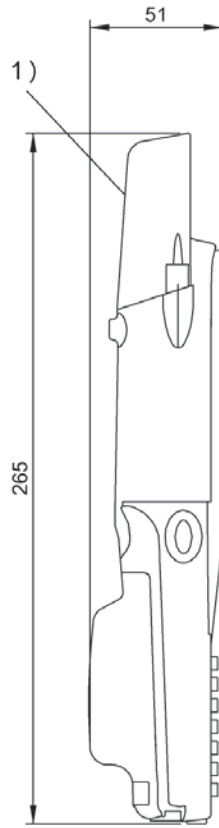
Connectivity

Accessories

326 | RFID | HF (13.56 MHz)

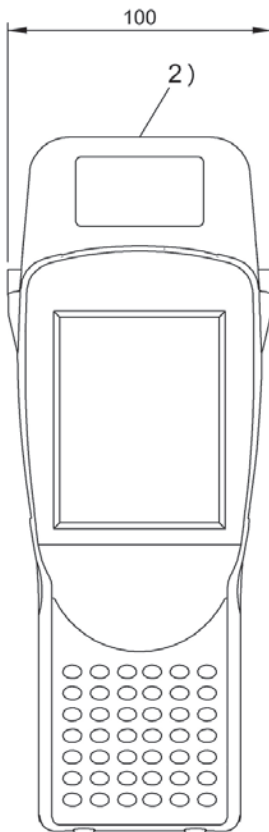


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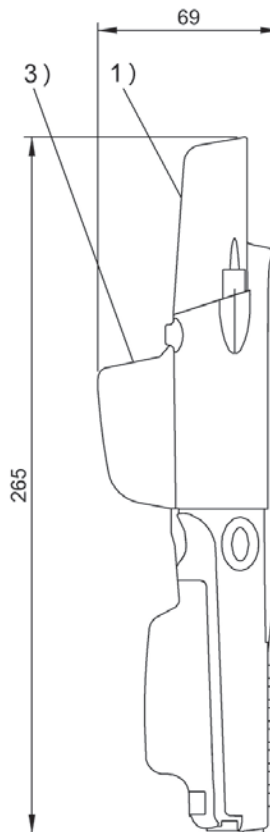


1) Sensing surface, 2) See data for antenna form

BAE00M1

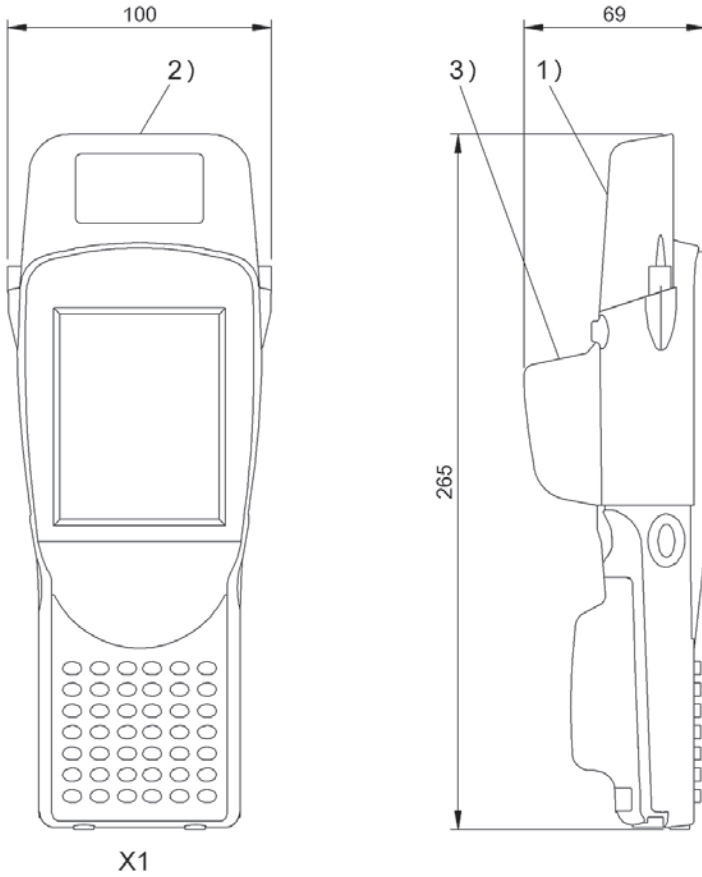


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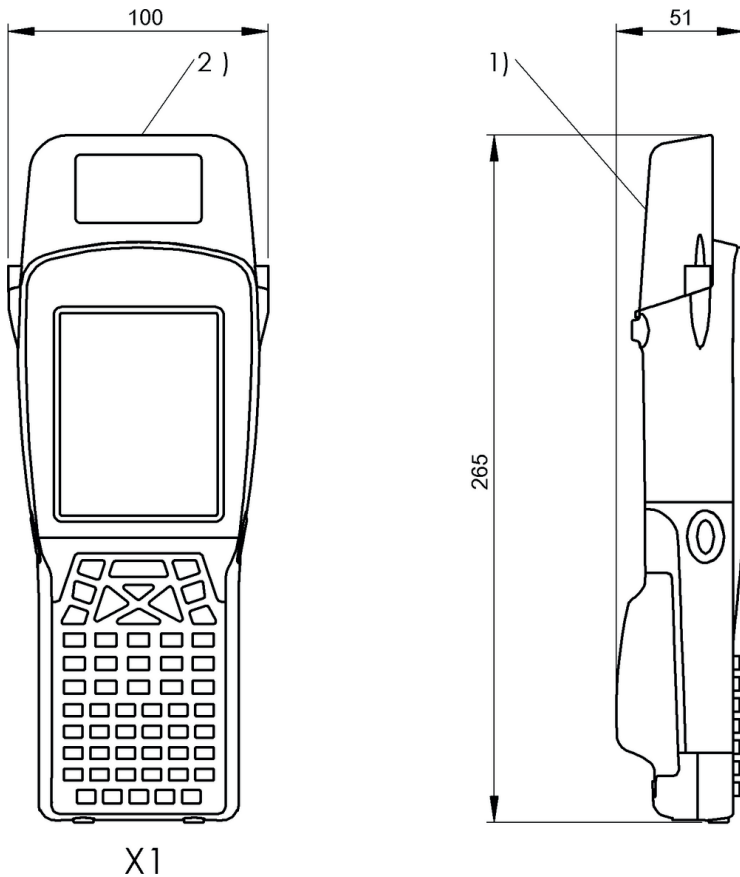
1) Sensing surface, 2) See data for antenna form, 3) Barcode 1D-Scanner

BAE00CC



1) Sensing surface, 2) See data for antenna form, 3) Barcode 2D-Scanner

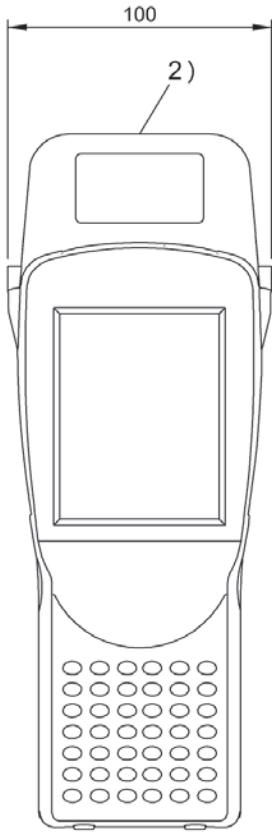
BAE00L3



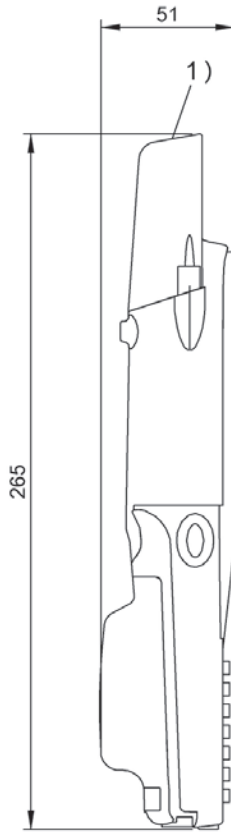
1) Sensing surface, 2) See data for antenna form

BAE00W4

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.

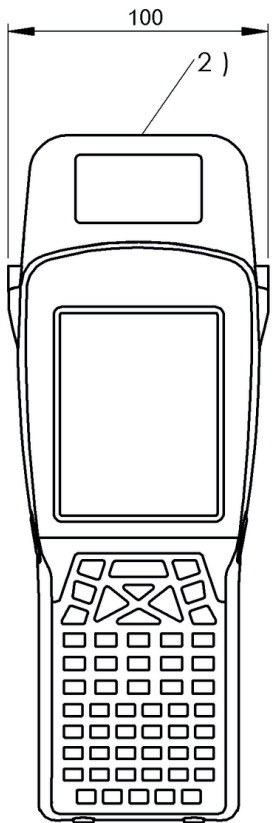


X1

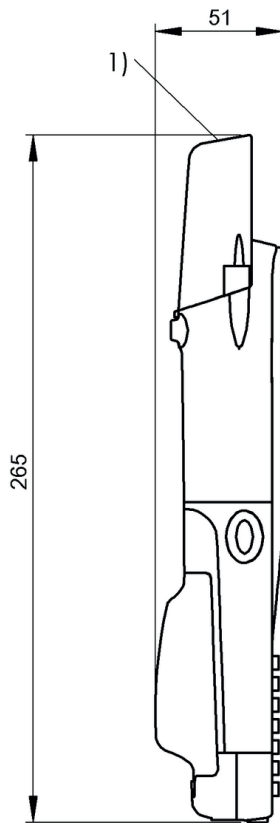


1) Sensing surface, 2) See data for antenna form

BAE00U1

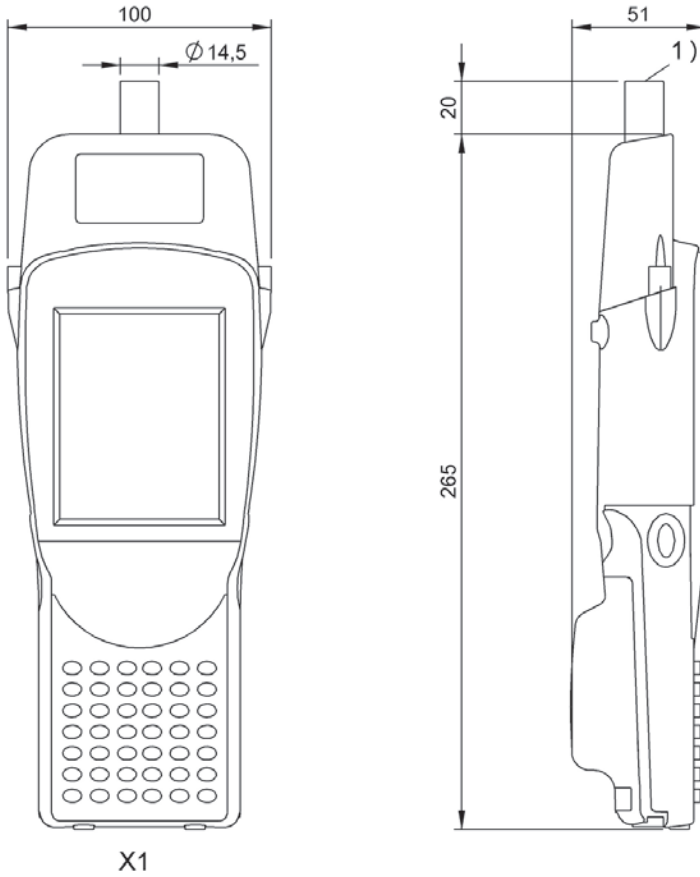


X1



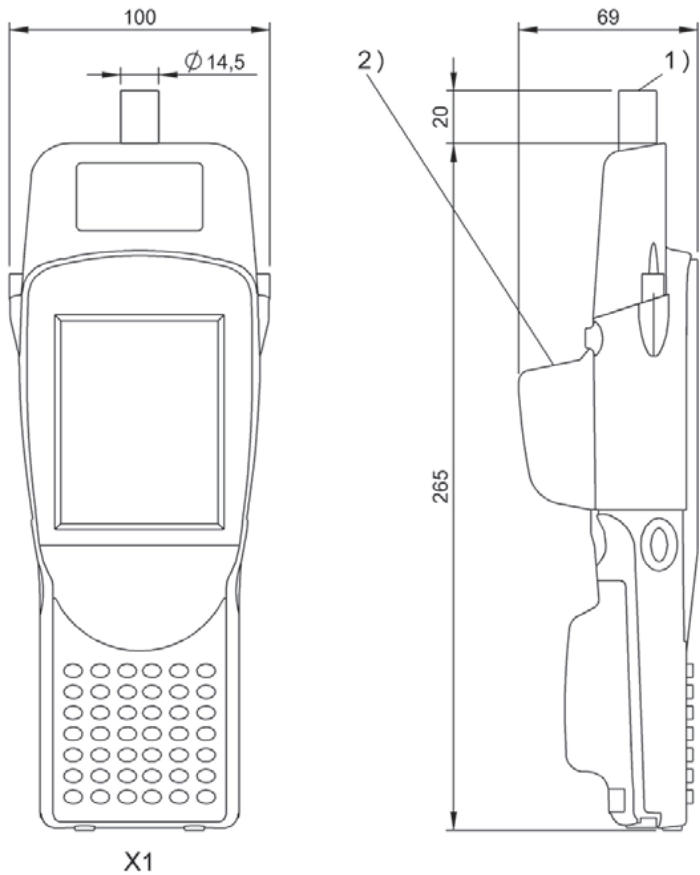
1) Sensing surface, 2) See data for antenna form

BAE00W5



1) Sensing surface, 2) See data for antenna form

BAE00F0

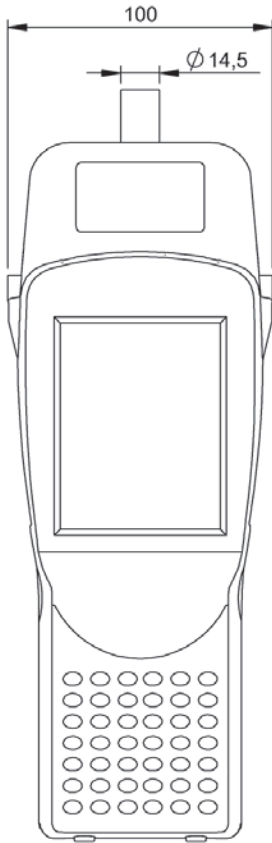


1) Sensing surface, 2) Barcode 1D-Scanner

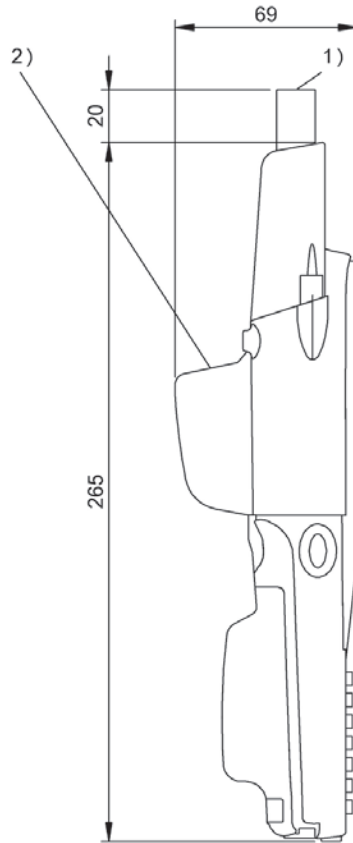
BAE00E9

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.

330 I RFID I HF (13.56 MHz)

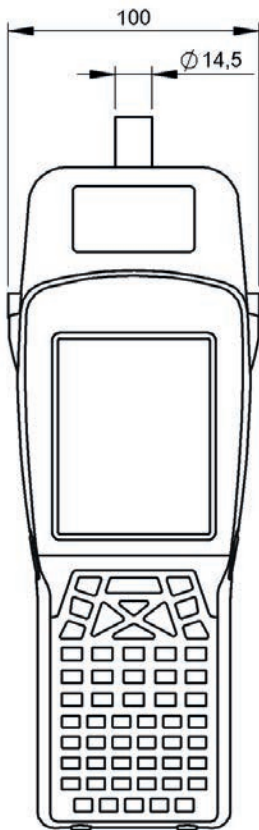


X1

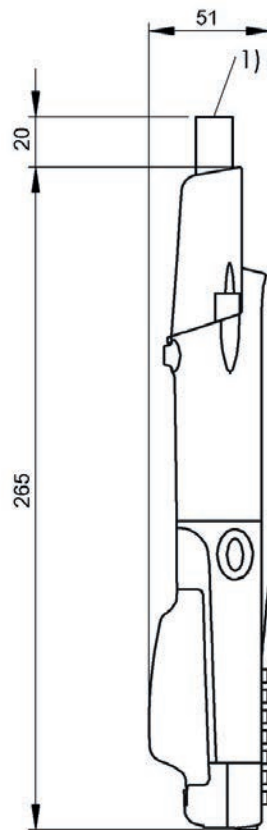


1) Sensing surface, 2) Barcode 2D-Scanner

BAE00KL



X1



1) Sensing surface, 2) See data for antenna form

BAE00W6



Tool identification even at short ranges

RFID SYSTEM LF (70/455 KHZ) BIS C

Especially high-performing and flexible are the BIS C low-frequency RFID systems with reliable tool identification in coolant- and lubricant-heavy machining centers. Exact positioning is not always necessary: Many data carriers can be dynamically read and described in passing.

The LF RFID system (70/455 kHz) is also the first choice for tool identification over short ranges. Other areas of use are tool transport with conveyor systems, FTS and pallet transport systems as well as assembly technology and resource organization.

Features

- Great variety of data carriers and read/write heads for very diverse applications and difficult operating conditions
- Wear-free, maintenance-free and insensitive to dirt
- High noise immunity and assured data transfer with special checking software in the processor units
- All bus systems commonly used on a global basis available
- Memory capacity up to 8 kB



	BIS000T BIS C-121-04/L	
Product Group	LF (70/455 kHz)	
Dimension	Ø 9 x 4.5 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	511 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	0...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 352	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)
BIS C-300	0-2		0-3
BIS C-302	0-1.5		0-2.5
BIS C-305	0-2		0-3
BIS C-306	0-2		0-3
BIS C-322	0-2		0-3
BIS C-325	0-2		0-3

Dimensions in mm

* Installation on request



BIS0011 BIS C-122-04/L	BIS015W BIS C-122-05/L	BIS0015 BIS C-122-11/L
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 10 x 4.5 mm	Ø 10 x 4.5 mm	Ø 10 x 4.5 mm
round	round	round
EEPROM	EEPROM	EEPROM
511 Byte	1023 Byte	2047 Byte
-30...85 °C	-30...85 °C	-30...85 °C
—	—	120 °C
0...70 °C	0...70 °C	-30...70 °C
Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	Epoxy-resin/fiberglass
IP68	IP68	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 352	Page 352	Page 352

flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
0-2		0-2.5	0-2		0-2.5	0-2		0-2.5
0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
0-2.5		0-3	0-2.5		0-3	0-2.5		0-3
0-4.5		0-5	0-4.5		0-5	0-4.5		0-5



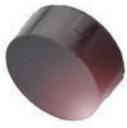
	BIS0004 BIS C-103-05/A	
Product Group	LF (70/455 kHz)	
Dimension	Ø 12 x 8 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	120 °C	
Ambient temperature	-30...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 352	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)
BIS C-300	0-3.5		0-4
BIS C-302	0-3		0-3.5
BIS C-305	0-5		0-6
BIS C-306	0-3.5		0-4
BIS C-310			
BIS C-315			
BIS C-319			
BIS C-322	0-5		0-6
BIS C-323			
BIS C-324			
BIS C-325	0-4.5		0-5
BIS C-326			

Dimensions in mm

* Installation on request



BIS0009 BIS C-105-05/A	BIS001E BIS C-130-05/L	BIS0002 BIS C-100-05/A
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 12 x 6 mm	Ø 15.98 x 7 mm	Ø 16 x 10.5 mm
round	round	round
EEPROM	EEPROM	EEPROM
1023 Byte	1023 Byte	1023 Byte
-30...85 °C	-30...85 °C	-20...85 °C
120 °C	—	—
-30...70 °C	-30...70 °C	0...70 °C
Epoxy-resin/fiberglass	Epoxy-resin/fiberglass	PA 6.6
IP68	IP68	IP68
metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone) on metal flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 352	Page 352	Page 352

flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
0-3.5		0-4	0-4		0-4	0-4		0-4
0-3		0-3.5	0-3.5		0-4	0-4		0-4
0-5		0-6			0-7	0-4		0-4
0-3.5		0-4	0-4		0-4	0-4		0-4
					0-11			
					0-18			
			0-6		0-13			
0-5		0-6			0-7	0-4		0-4
					0-11			
					0-11			
0-5		0-6	0-4		0-4	0-4		0-4
					0-13			



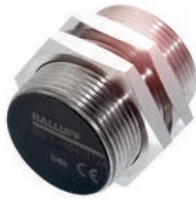
	BIS0019 BIS C-128-05/L	
Product Group	LF (70/455 kHz)	
Dimension	Ø 26 x 6 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	120 °C	
Ambient temperature	-30...70 °C	
Housing material	Epoxy-resin/fiberglass	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 352	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-305			0-6	
BIS C-310	0-8		0-13	
BIS C-315			0-18	
BIS C-322			0-6	
BIS C-323	0-8		0-13	
BIS C-324	0-8		0-13	
BIS C-326			0-15	

Dimensions in mm

* Installation on request



	BIS001C BIS C-128-11/L	BIS0006 BIS C-104-11/A	BIS0007 BIS C-104-32/A
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Ø 26 x 6 mm	Ø 30 x 35 mm	Ø 30 x 35 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	2047 Byte	2047 Byte	8192 Byte
	-30...85 °C	-30...85 °C	-30...85 °C
	120 °C	—	—
	-30...70 °C	-30...70 °C	-30...70 °C
	Epoxy-resin/fiberglass	Brass	Brass
	IP68	IP67	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 352	Page 352	Page 352

	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)*	flush in metal	on metal	metal-free (clear zone)*
			0-6						
	0-8		0-13	1-11	0-12		1-11	0-12	
			0-18	1-13	0-14		1-13	0-14	
			0-6						
	0-8		0-13	1-11	0-12		1-11	0-12	
	0-8		0-13	1-11	0-12		1-11	0-12	
			0-15						



	BIS00M BIS C-117-05/A	
Product Group	LF (70/455 kHz)	
Dimension	Ø 30 x 16 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 353	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-300				
BIS C-305	1-8		0-10	
BIS C-306				
BIS C-310	1-12		0-13	
BIS C-315	0-15		0-22	
BIS C-319	0-13		0-16	
BIS C-322	1-8		0-10	
BIS C-323	1-12		0-13	
BIS C-324			0-13	
BIS C-325				
BIS C-326				

Dimensions in mm

* Installation on request



Use in vacuum



Use in vacuum

BIS000N BIS C-117-05/L	BIS00J4 BIS C-140-05/L-M6	BIS00J2 BIS C-140-05/L-M8
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 30 x 16 mm	Ø 22 x 21 mm	Ø 22 x 21 mm
round	round	round
EEPROM	EEPROM	EEPROM
1023 Byte	1023 Byte	1023 Byte
-30...85 °C	-25...95 °C	-25...95 °C
—	—	—
-30...70 °C	-25...70 °C	-25...70 °C
PBT	Steel, PA 12, GF30	Steel, PA 12, GF30
IP68	—	—
metal-free (clear zone)	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Page 353	Page 353	Page 353

flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)*
			0-3			0-3		
		0-7	0-4.5			0-4.5		
			0-3			0-3		
		0-13	0-7			0-7		
		0-18						
0-8		0-15						
		0-7						
		0-13	0-7			0-7		
		0-13	0-7			0-7		
			0-5			0-5		
		0-18						



Use in vacuum

	BIS00L9 BIS C-140-11/L-M10	
Product Group	LF (70/455 kHz)	
Dimension	Ø 22 x 21 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	2047 Byte	
Storage temperature	-25...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...70 °C	
Housing material	Steel, PA 12, GF30	
Protection degree	—	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 353	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)*	
BIS C-300	0-3			
BIS C-305	0-4.5			
BIS C-306	0-3			
BIS C-310	0-7			
BIS C-315				
BIS C-319				
BIS C-322				
BIS C-323	0-7			
BIS C-324	0-7			
BIS C-325	0-5			
BIS C-327				

Dimensions in mm

* Installation on request



Use in vacuum



Use in vacuum

	BIS00J1 BIS C-140-11/L-M8	BIS000C BIS C-108-05/L	BIS000F BIS C-108-05/L-SA2
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Ø 22 x 21 mm	32 x 11 x 52 mm	32 x 11 x 52 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	2047 Byte	1023 Byte	1023 Byte
	-25...95 °C	-30...85 °C	-30...85 °C
	—	—	—
	-25...70 °C	-30...70 °C	-30...70 °C
	Steel, PA 12, GF30	PBT	PBT
	—	IP68	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 353	Page 353	Page 353

	flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)
	0-3								
	0-4.5					0-6			0-6
	0-3								
	0-7			0-5		0-12	0-4		0-12
				0-10		2-16	0-10		2-16
				0-11		0-14			
						0-6			0-6
	0-7					0-12			0-12
	0-7					0-12	0-4		0-11
	0-5						0-4		
						0-8			0-8



	BIS000H BIS C-108-11/L	
Product Group	LF (70/455 kHz)	
Dimension	32 x 11 x 52 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	2047 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 353	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal*	metal-free (clear zone)	
BIS C-305			0-6	
BIS C-310	0-5		0-12	
BIS C-315	0-10		2-16	
BIS C-319	0-11		0-14	
BIS C-322			0-6	
BIS C-323			0-12	
BIS C-324			0-12	
BIS C-327			0-8	

Dimensions in mm

* Installation on request



Use in vacuum



	BIS000J BIS C-108-11/L-SA2	BIS000K BIS C-108-32/L	BIS0017 BIS C-127-05/L
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	32 x 11 x 52 mm	32 x 11 x 52 mm	53 x 4.8 x 85 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	2047 Byte	8192 Byte	1023 Byte
	-30...85 °C	-30...85 °C	-20...60 °C
	—	—	—
	-30...70 °C	-30...70 °C	0...60 °C
	PBT	PBT	ABS
	IP67	IP68	IP65
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 353	Page 353	Page 353

	flush in metal	on metal*	metal-free (clear zone)	flush in metal	on metal*	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)
			0-6			0-6			
	0-5		0-12	0-5		0-12			
	0-10		2-16	0-10		2-16			10-30
	0-11		0-14	0-11		0-14			
			0-6			0-6			
			0-12			0-12			
			0-12			0-12			
			0-8			0-8			



	BIS0028 BIS C-150-05/A	
Product Group	LF (70/455 kHz)	
Dimension	40 x 22 x 80 mm	
Antenna type	Rod	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	POM	
Protection degree	IP68	
Installation	on metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 353	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS C-300				
BIS C-305				
BIS C-306				
BIS C-310				
BIS C-315				
BIS C-319				
BIS C-322				
BIS C-323				
BIS C-324				
BIS C-325				
BIS C-326				
BIS C-351		0-45		

Dimensions in mm

* Installation on request



	BIS002A BIS C-150-11/A	BIS002E BIS C-150-32/A	BIS0021 BIS C-134-11/L
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	40 x 22 x 80 mm	40 x 22 x 80 mm	25 x 11 x 25 mm
	Rod	Rod	round
	EEPROM	EEPROM	EEPROM
	2047 Byte	8192 Byte	2047 Byte
	-30...85 °C	-30...85 °C	-30...85 °C
	—	—	—
	-30...70 °C	-30...70 °C	-30...70 °C
	POM	POM	PA 6.6, GF30, PU potting
	IP68	IP68	IP68
	on metal	on metal	metal-free (clear zone) flush in metal
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 353	Page 353	Page 354

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
							0-3		
							0-3		0-6
									0-10
									0-16
									0-12
									0-6
									0-10
									0-10
									0-4
									0-12
		0-45			0-45				



	BIS0023 BIS C-136-05/L	
Product Group	LF (70/455 kHz)	
Dimension	32 x 8 x 52 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	POM	
Protection degree	IP67	
Installation	metal-free (clear zone) on metal flush in metal	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 354	

Suitable read/write head with max. read/write working distance

Installation	flush in metal*	on metal*	metal-free (clear zone)*	
BIS C-310				
BIS C-315				
BIS C-323				
BIS C-324				
BIS C-326				
BIS C-327				

Dimensions in mm

* Installation on request



	BIS0026 BIS C-138-11/L	BIS002K BIS C-190-05/L	BIS002N BIS C-190-32/L
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	30 x 17 x 30 mm	34 x 35 x 34 mm	34 x 35 x 34 mm
	round	round	round
	EEPROM	EEPROM	EEPROM
	2047 Byte	1023 Byte	8192 Byte
	-30...85 °C	-30...85 °C	-30...85 °C
	—	—	—
	-30...70 °C	-30...70 °C	-30...70 °C
	PA 6.6, GF30, PU potting	PBT	PBT
	IP68	IP68	IP68
	metal-free (clear zone)	metal-free (clear zone)	metal-free (clear zone)
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Page 354	Page 354	Page 354

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
						0-11			0-11
						0-20			0-20
			0-9			0-11			0-11
						0-11			0-11
						0-18			0-18
									0-8



	BIS002P BIS C-191-05/L	
Product Group	LF (70/455 kHz)	
Dimension	24 x 21 x 24 mm	
Antenna type	round	
Memory type	EEPROM	
User data, read/write	1023 Byte	
Storage temperature	-30...85 °C	
Storage temperature temporary	—	
Ambient temperature	-30...70 °C	
Housing material	PBT	
Protection degree	IP68	
Installation	metal-free (clear zone)	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Productview	Page 354	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)*
BIS C-300			0-3.5
BIS C-302			0-3
BIS C-305			
BIS C-306			0-3.5
BIS C-310			0-10
BIS C-315			
BIS C-319			0-11
BIS C-322			
BIS C-323			0-9
BIS C-324			0-10
BIS C-325			0-3.5
BIS C-326			

Dimensions in mm

* Installation on request

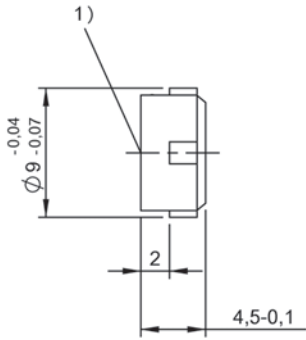


Use in vacuum



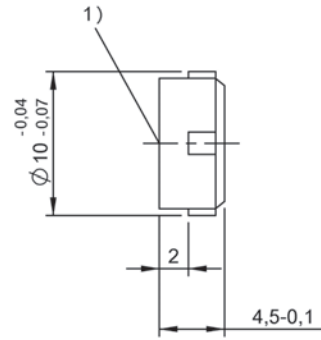
BIS002Y BIS C-122-04/L-ZC1	BIS001H BIS C-130-05/L-SA1	BIS001Y BIS C-131-05/L
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Ø 15 x 50 mm	Ø 15.5 x 7 mm	Ø 125 x 7 mm
round	round	round
EEPROM	EEPROM	EEPROM
511 Byte	1023 Byte	1023 Byte
-30...85 °C	-30...85 °C	-30...85 °C
—	—	—
0...70 °C	-30...70 °C	-30...70 °C
POM, EP	PBT	POM
IP68	IP68	IP67
metal-free (clear zone) on metal flush in metal	metal-free (clear zone)	metal-free (clear zone)
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
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flush in metal	on metal*	metal-free (clear zone)*	flush in metal	on metal*	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
			0-4		0-4			
					0-4			
			0-6		0-7			
			0-4		0-4			
			0-8		0-8			
					0-8			
			0-7		0-13			
0-2.5					0-7			
			0-8					
			0-8					
0-2.5			0-4		0-8			
					0-12			



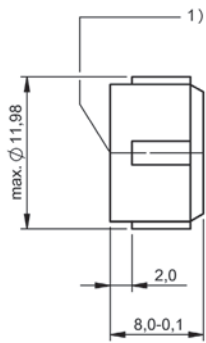
1) Sensing surface

BISO00T



1) Sensing surface

BISO011, BISO15W, BISO015



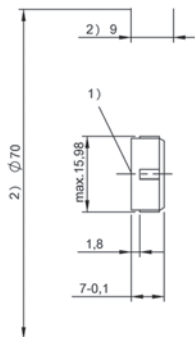
1) Sensing surface

BISO004



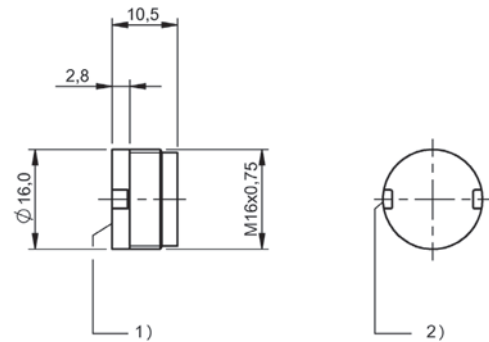
1) Sensing surface

BISO009



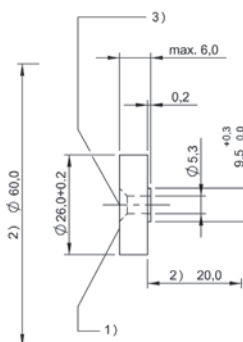
1) Sensing surface, 2) Clear zone

BISO01E



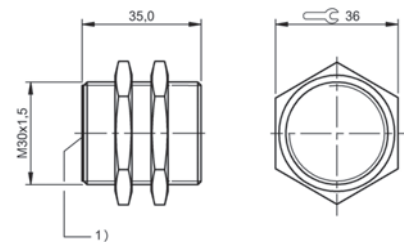
1) Sensing surface, 2) For mounting key 710691

BISO002



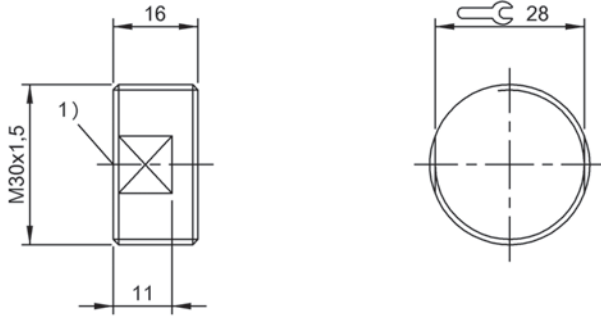
1) Sensing surface, 2) Clear zone, 3) Tightening torque max. 2.5 Nm

BISO019, BISO01C



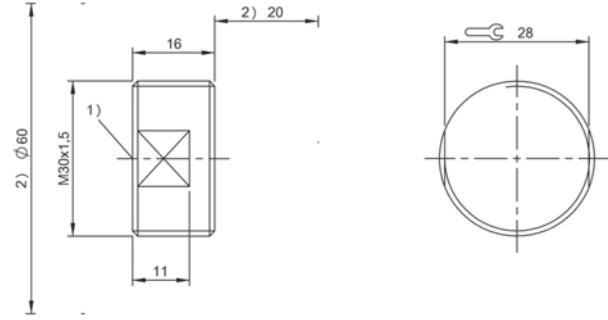
1) Sensing surface

BISO006, BISO007



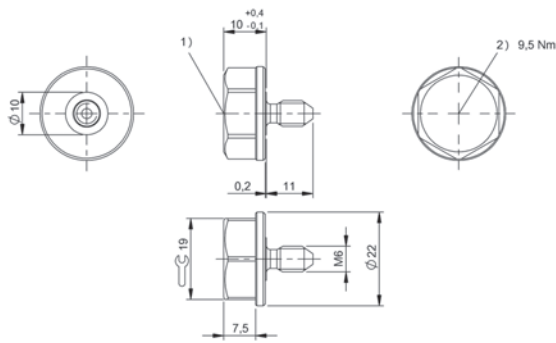
1) Sensing surface

BISO00M



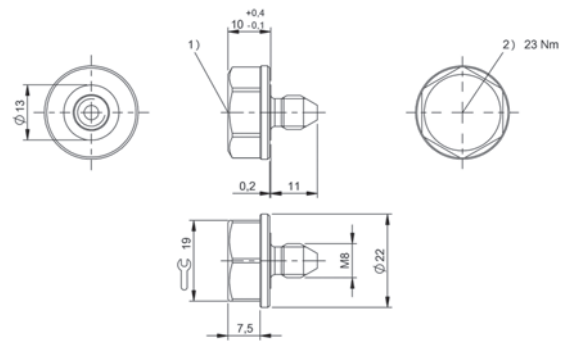
1) Sensing surface, 2) Clear zone

BISO00N



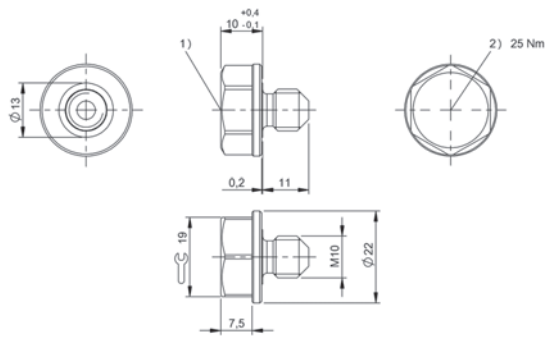
1) Sensing surface, 2) Tightening torque

BISO0J4



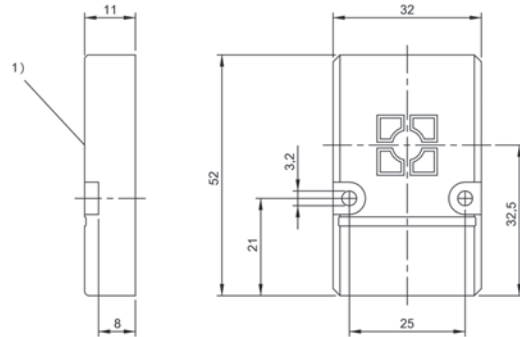
1) Sensing surface, 2) Tightening torque

BISO0J2, BISO0J1



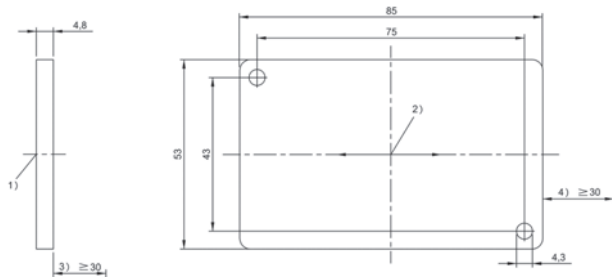
1) Sensing surface, 2) Tightening torque

BISO0L9



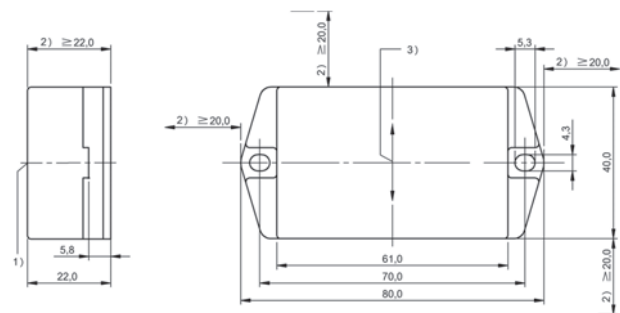
1) Sensing surface

BISO00C, BISO00F, BISO00H, BISO00J, BISO00K



1) Sensing surface, 2) Read/write axis, 3) Clear zone, 4) Clear zone surrounding

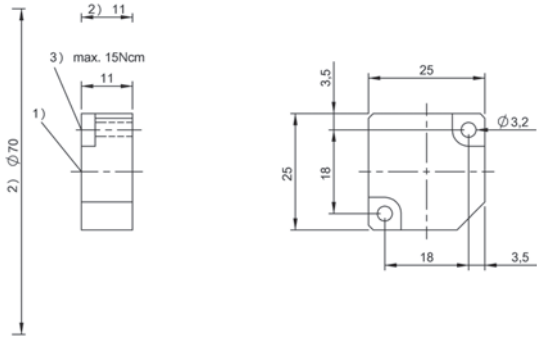
BISO017



1) Sensing surface, 2) Clear zone, 3) Read/write axis

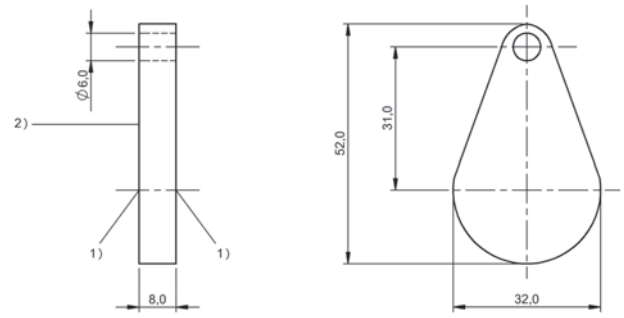
BISO028, BISO02A, BISO02E

354 | RFID | LF (70/455 kHz)



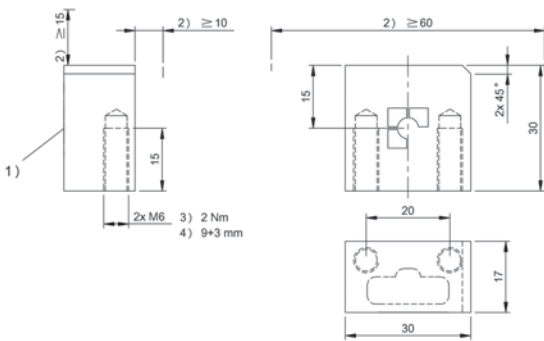
1) Sensing surface, 2) Clear zone, 3) Tightening torque

BISO021



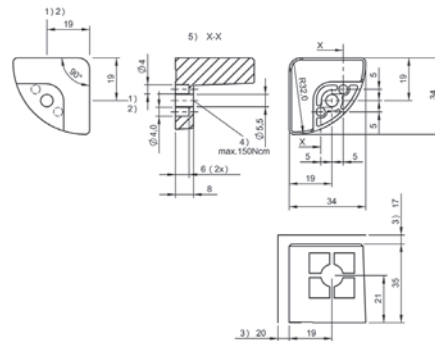
1) Sensing surface, 2) Label

BISO023



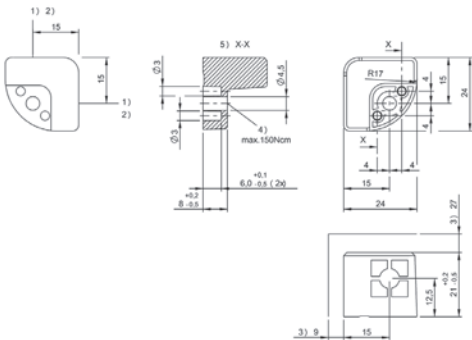
1) Sensing surface, 2) Clear zone, 3) Tightening torque, 4) Screw-in depth

BISO026



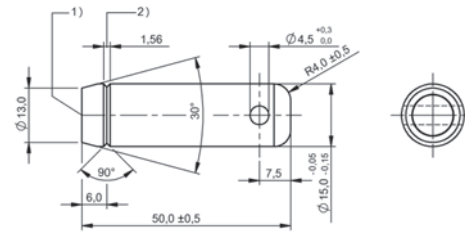
1) Sensing surface, 2) Do not use at same time, 3) Clear zone, 4) Tightening torque, 5) Cut-out

BISO02K, BISO02N



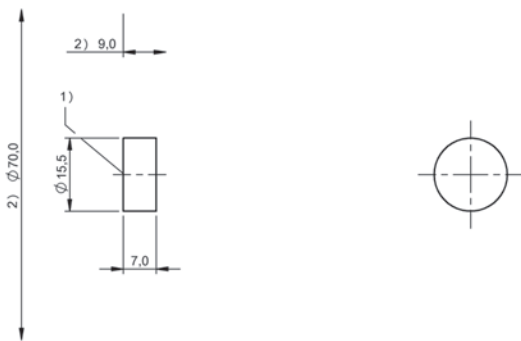
1) Sensing surface, 2) Do not use at same time, 3) Clear zone, 4) Tightening torque, 5) Cut-out

BISO02P



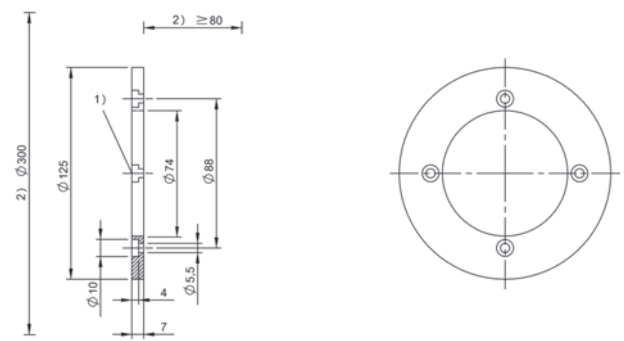
1) Sensing surface, 2) Notch

BISO02Y



1) Sensing surface, 2) Clear zone

BISO01H



1) Sensing surface, 2) Clear zone

BISO01Y

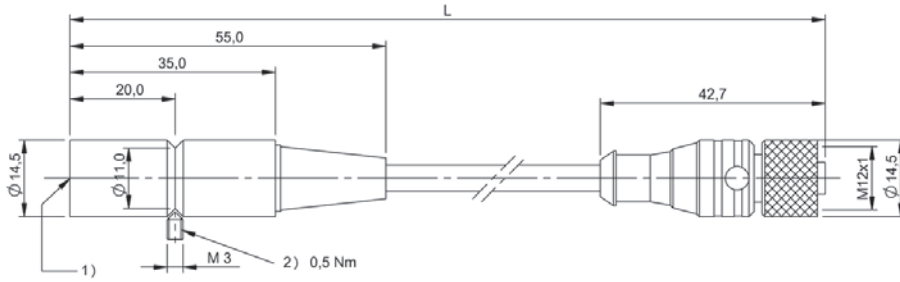


1 m cable PU	BIS00P5 BIS C-300-PU1-01
2 m cable PU	BIS0138 BIS C-300-PU1-02
5 m cable PU	BIS005Z BIS C-300-PU1-05
10 m cable PU	BIS00P6 BIS C-300-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 14.5 x 35 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E	BIS0021	BIS001H	BIS002P
Data carrier distance to metal	flush	flush	flush	flush	flush	flush metal-free	flush	metal-free	metal-free
Working distance for writing	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4 0-4	0-3	0-4	0-3.5
Working distance for reading	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4 0-4	0-3	0-4	0-3.5
Offset at distance									
	1 ±3	±3	±3	±2	±2.5	±3.5 ±5	±4	±5	±4
	3 ±2	±2	±2			±3 ±4		±4	±3

Dimensions in mm



1) Sensing surface, 2) Tightening torque

	BIS00J4	BIS00J2	BIS00L9	BIS00J1
	metal-free	metal-free	metal-free	metal-free
	0-3	0-3	0-3	0-3
	0-3	0-3	0-3	0-3
	±3.5	±3.5	±3.5	±3.5
	±2	±2	±2	±2

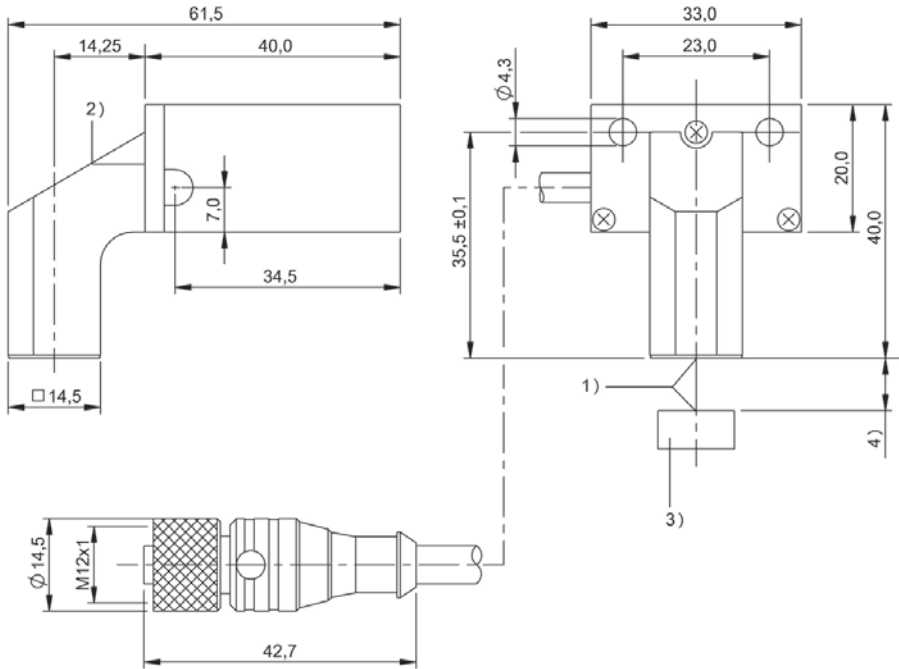


5 m cable PU	BIS00PA BIS C-302-PU1-05
10 m cable PU	BIS00P9 BIS C-302-PU1-10
Product Group	LF (70/455 kHz)
Dimension	40 x 33 x 61.5 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Aluminum, PA 6.6
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E	BIS001H	BIS002P
Data carrier distance to metal	flush	flush	flush	flush	flush	flush metal-free	metal-free	metal-free
Working distance for writing	0-4	0-3	0-3	0-1.5	0-2	0-3.5 0-4	0-4	0-3
Working distance for reading	0-4	0-3	0-3	0-1.5	0-2	0-3.5 0-4	0-4	0-3
Offset at distance	1 ±3	±3	±3	±1.5	±2	±3 ±5	±5	±4
	3 ±2	±1.5	±1.5			±2 ±3	±3	±2

Dimensions in mm



1) Sensing surface, 2) Mounting surface, 3) Data carrier, 4) Read range

BIS00J4	BIS00J2	BIS00L9	BIS00J1
metal-free	metal-free	metal-free	metal-free
0-3	0-3	0-3	0-3
0-3	0-3	0-3	0-3
±3.5	±3.5	±3.5	±3.5
±2	±2	±2	±2

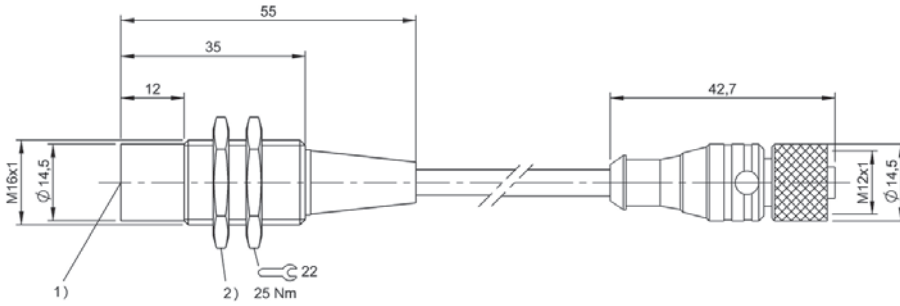


1 m cable PU	BIS00PC BIS C-306-PU1-01
5 m cable PU	BIS006F BIS C-306-PU1-05
10 m cable PU	BIS00PE BIS C-306-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 16 x 35 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004	BIS0009	BIS000T	BIS0011	BIS001E	BIS0021	BIS001H	BIS002P	
Data carrier distance to metal	flush	flush	flush	flush	flush	flush metal-free	flush	metal-free	metal-free	
Working distance for writing	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4	0-4	0-3	0-4	0-3.5
Working distance for reading	0-4	0-3.5	0-3.5	0-2	0-2.5	0-4	0-4	0-3	0-4	0-3.5
Offset at distance	1 ±3	±3	±3	±2	±2.5	±3.5	±5	±4	±5	±4
	3 ±2	±2	±2			±3	±4		±4	±3

Dimensions in mm



1) Sensing surface, 2) Tightening torque

	BIS00J4	BIS00J2	BIS00L9	BIS00J1
	metal-free	metal-free	metal-free	metal-free
	0-3	0-3	0-3	0-3
	0-3	0-3	0-3	0-3
	±3.5	±3.5	±3.5	±3.5
	±2	±2	±2	±2

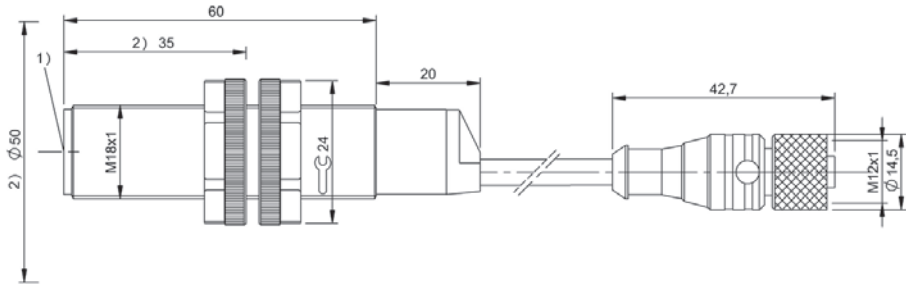


1 m cable PU	BIS0077 BIS C-319-PU1-01
5 m cable PU	BIS0078 BIS C-319-PU1-05
10 m cable PU	BIS0079 BIS C-319-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 80 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Female
Housing material	PBT, blue, nuts PA 6.6 black
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS000C BIS000H BIS000K	BIS000N	BIS001E BIS001H	BIS0021	BIS002P
Data carrier distance to metal	metal-free	metal-free	metal-free	metal-free	metal-free
Working distance for writing	0-14	0-15	0-13	0-12	0-11
Working distance for reading	0-14	0-15	0-13	0-12	0-11
Offset at distance					
	1 ±12	±13	±9	±9	±9
	3 ±12	±12	±9	±9	±9
	5 ±11	±12	±9	±9	±9
	7 ±11	±11	±8.5	±8.5	±8
	10 ±9	±10	±7.5	±7.5	

Dimensions in mm



1) Sensing surface, 2) Clear zone

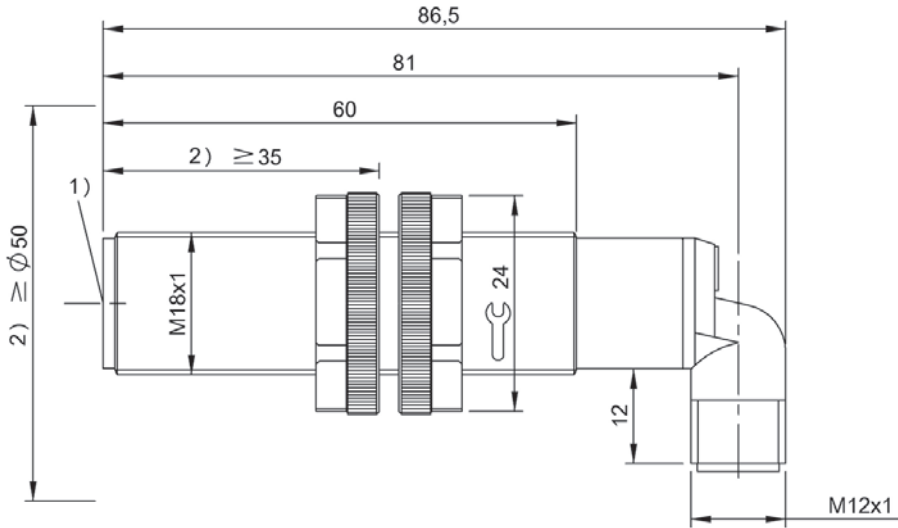


For 5 m cable	BIS007A BIS C-319/05-S4
For 10 m cable	BIS007C BIS C-319/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 86.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 male
Housing material	PBT, blue, nuts PA 6.6 black
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS000C BIS000H BIS000K	BIS000N	BIS001E BIS001H	BIS0021	BIS002P
Data carrier distance to metal	metal-free	metal-free	metal-free	metal-free	metal-free
Working distance for writing	0-14	0-15	0-13	0-12	0-11
Working distance for reading	0-14	0-15	0-13	0-12	0-11
Offset at distance					
	1 ±12	±13	±9	±9	±9
	3 ±12	±12	±9	±9	±9
	5 ±11	±12	±9	±9	±9
	7 ±11	±11	±8.5	±8.5	±8
	10 ±9	±10	±7.5	±7.5	

Dimensions in mm



1) Sensing surface, 2) Clear zone

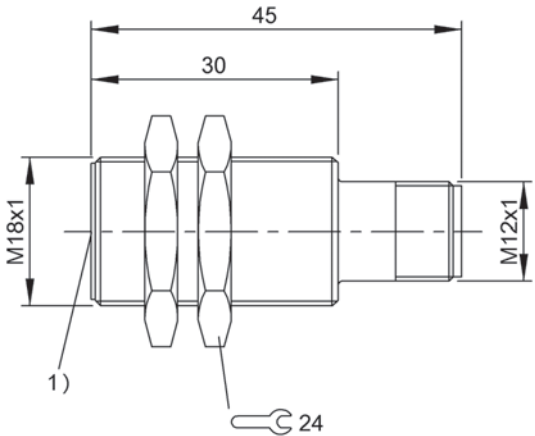


For 1 m cable	BIS007P BIS C-325/01-S4
For 5 m cable	BIS007R BIS C-325/05-S4
For 10 m cable	BIS007T BIS C-325/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 18 x 45 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1 male
Housing material	Stainless steel (1.4571), stainless steel (1.4571)
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0011 BIS002Y BIS015W BIS0015	BIS001E	BIS001H	BIS0021	BIS002P	BIS00J2
Data carrier distance to metal	flush	flush	metal-free	metal-free	metal-free	metal-free	auf Metall
Working distance for writing	0-4	0-2.5	0-4	0-3	0-4	0-3	0-5
Working distance for reading	0-4	0-2.5	0-4	0-8	0-4	0-3.5	0-5
Offset at distance							
	1 ±3.5	±2.5	±4	±4	±4	±4	
	2						±3
	3 ±3		±2	±2	±2	±2	
	4						±2

Dimensions in mm



1) Sensing surface

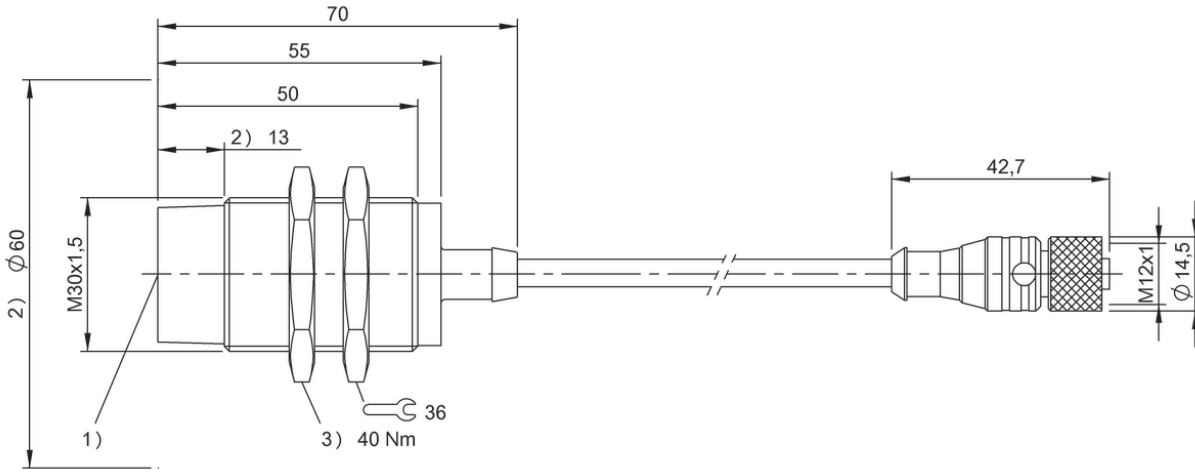


1 m cable PU	BIS00PF BIS C-310-PU1-01
5 m cable PU	BIS00PH BIS C-310-PU1-05
10 m cable PU	BIS00PJ BIS C-310-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 70 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006		BIS0007		BIS000C BIS000F BIS000H BIS000J BIS000K		BIS000M		BIS000N		BIS0019		BIS001C		BIS001E	
Data carrier distance to metal	flush	metal-free	flush	metal-free	metal-free		flush		metal-free		flush	metal-free	flush	metal-free	metal-free	
Working distance for writing	1-11	0-12	1-11	0-12	0-12		1-12		0-13		0-8	0-13	0-8	0-13	0-11	
Working distance for reading	1-11	0-12	1-11	0-12	0-12		1-12		0-13		0-8	0-13	0-8	0-13	0-11	
Offset at distance																
	1	±7.5	±7.5	±7.5	±7.5	±10		±7.5		±11	±8	±10	±8	±10	±9	
	3	±7	±7	±7	±7	±9		±7.5		±10	±7	±10	±7	±10	±8	
	5	±7	±7	±7	±7	±9		±7		±10	±6.5	±9	±6.5	±9	±7	
	7	±7	±7	±7	±7	±8.5		±6.5		±9.5	±5.5	±9	±5.5	±9	±5	
	10															

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Tightening torque

	BIS001H	BIS0021	BIS002K BIS002N	BIS002P
	metal-free	metal-free	metal-free	metal-free
	0-8	0-10	0-11	0-10
	0-8	0-10	0-11	0-10
	±6.5	±9	±10	±8
	±6	±8	±9	±7.5
	±5.5	±7	±9	±7
		±4	±8	±6.5
			±6.5	

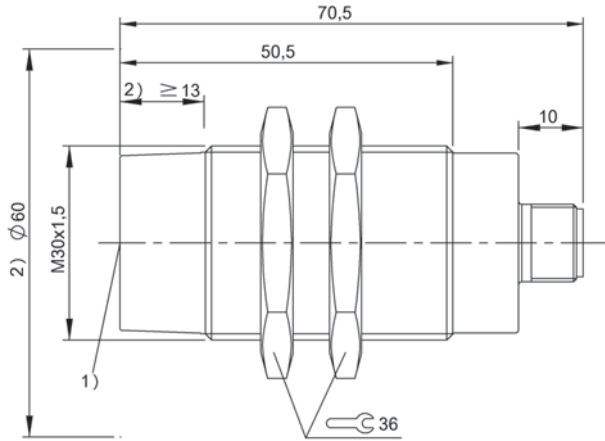


For 1 m cable	BIS007J BIS C-323/01-S4
For 5 m cable	BIS007K BIS C-323/05-S4
For 10 m cable	BIS007L BIS C-323/10-S4
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 70.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 male
Housing material	1.4305 stainless steel
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007		BIS000C BIS000F BIS000H BIS000J BIS000K		BIS000M		BIS000N		BIS0019 BIS001C		BIS001E		BIS001H		BIS0021	
Data carrier distance to metal	flush	metal-free	metal-free		flush	metal-free		flush	metal-free	metal-free	flush	metal-free		flush	metal-free	
Working distance for writing	1-11	0-12	0-12		1-12	0-13		0-8	0-13	0-11	0-8	0-10		0-10	0-10	
Working distance for reading	1-11	0-12	0-12		1-12	0-13		0-8	0-13	0-11	0-8	0-10		0-10	0-10	
Offset at distance																
	1	±7.5	±7.5	±10	±7.5	±11	±8	±10	±9	±6.5	±9					
	3	±7	±7	±9	±7.5	±10	±7	±10	±8	±6	±8					
	5	±7	±7	±9	±7	±10	±6.5	±9	±7	±5.5	±7					
	7	±7	±7	±8.5	±6.5	±9.5	±5.5	±9	±5							
	10															

Dimensions in mm



1) Sensing surface, 2) Clear zone

	BIS0026	BIS002K BIS002N	BIS002P
	metal-free	metal-free	metal-free
	0-9	0-11	0-9
	0-9	0-11	0-9
	±8	±10	±8
	±7	±9	±7.5
	±5	±9	±7
		±8	±6.5
		±6.5	

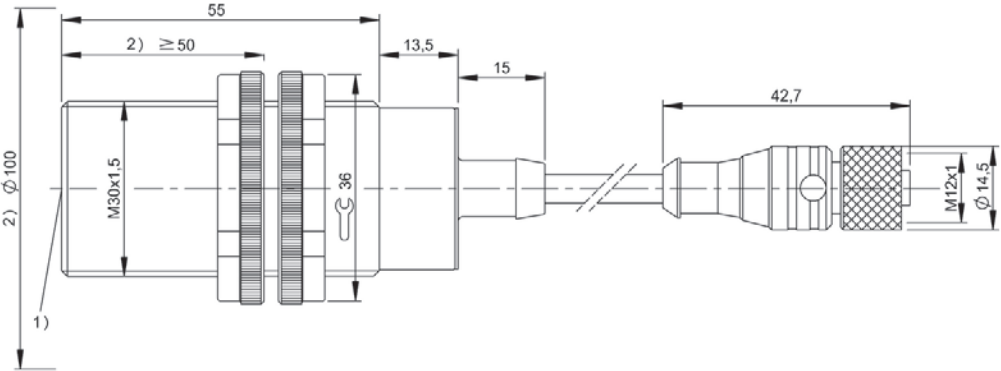


1 m cable PU	BIS007Y BIS C-326-PU1-05
10 m cable PU	BIS007Z BIS C-326-PU1-10
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 83.5 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Female
Housing material	PVDF, nuts PA 6.6
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS000N	BIS0019 BIS001C		BIS001E	BIS001H	BIS0021	BIS002K BIS002N	
Data carrier distance to metal	metal-free	metal-free	on metal	metal-free	metal-free	metal-free	metal-free	
Working distance for writing	0-18	0-15	0-12.5	0-13	0-13	0-12	0-18	
Working distance for reading	0-18	0-15	0-12.5	0-13	0-13	0-12	0-18	
Offset at distance								
	1 ±15	±14	±13	±12	±12	±12	±17	
	3 ±15	±14	±12	±12	±12	±12	±17	
	5 ±15	±14	±12	±10	±10	±10	±17	
	7 ±14	±14	±11	±10	±10	±10	±16	
	10 ±11	±8.5	±8				±14	

Dimensions in mm



1) Sensing surface, 2) Clear zone

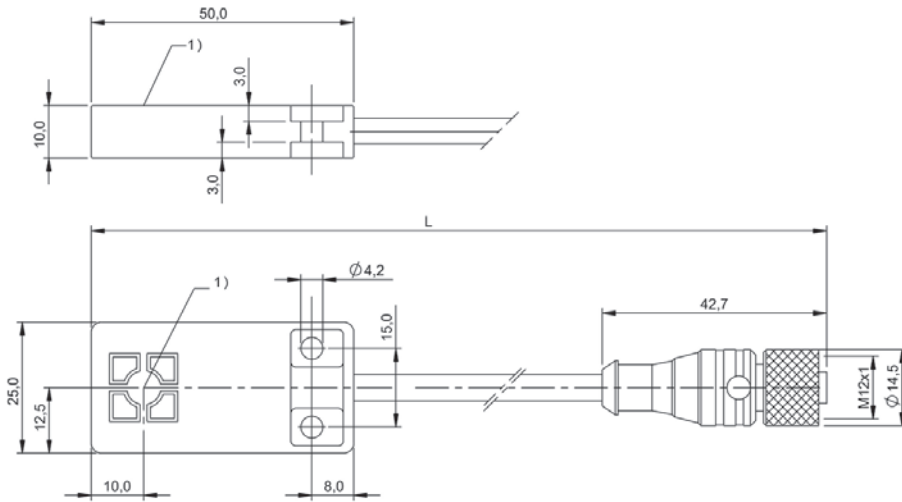


1 m cable PU	BIS0066 BIS C-305-PU1-01
5 m cable PU	BIS0067 BIS C-305-PU1-05
10 m cable PU	BIS0068 BIS C-305-PU1-10
Product Group	LF (70/455 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	ABS, GF16
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004 BIS0009	BIS000C BIS000F BIS000H BIS000J BIS000K	BIS000M		BIS000N		BIS000T		BIS0011		BIS0019	
Data carrier distance to metal	flush	flush	metal-free	flush	metal-free	metal-free		flush		flush		metal-free	
Freizone Datenträger													
Working distance for writing	0-4	0-5	0-6	1-8	0-10	0-7		0-2		0-2.5		0-6	
Working distance for reading	0-4	0-5	0-6	1-8	0-10	0-7		0-2		0-2.5		0-6	
Offset at distance													
	1 ±3	±4	±8	±5	±6	±8.5		±2		±3		±8	
	3 ±2	±3	±7	±4	±6	±7.5				±2		±7	
	5		±5	±5	±6	±6						±5	
	7			±2	±5	±4							
	10				±3								

Dimensions in mm



1) Sensing surface

	BIS001E BIS001H	BIS0021	BIS00J4 BIS00J2
	metal-free	metal-free	metal-free
	0-7	0-6	0-4.5
	0-7	0-6	0-4.5
	±5	±5	±4.5
	±5	±5	±3.5
	±4	±4	
	±2		

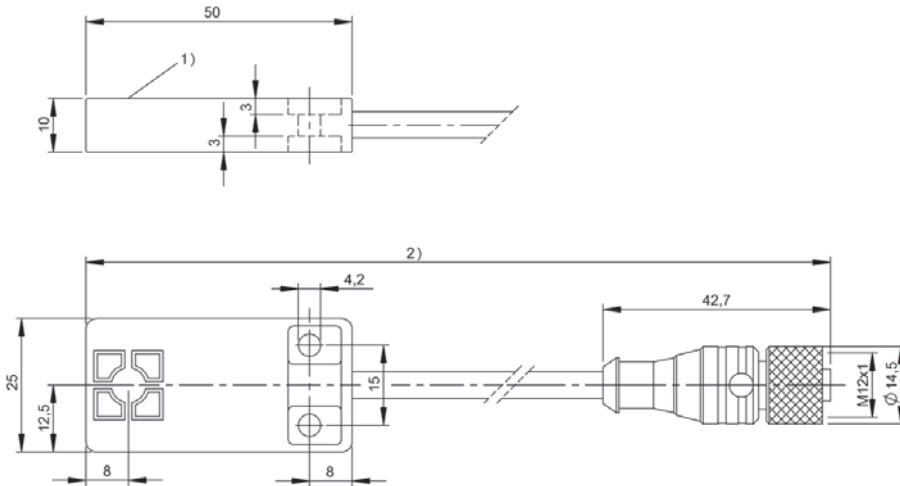


5 m cable PU	BIS007H BIS C-322-PU1-05
Product Group	LF (70/455 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	ABS, GF16
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0002	BIS0004 BIS0009	BIS000C BIS000F BIS000H BIS000J BIS000K	BIS000M	BIS000N	BIS000T	BIS0011	BIS002Y	
Data carrier distance to metal	flush	flush	metal-free	flush	metal-free	metal-free	flush	flush	flush
Working distance for writing	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-2.5
Working distance for reading	0-4	0-5	0-6	1-8	0-10	0-7	0-2	0-2.5	0-2.5
Offset at distance	0.7								
	1 ±3	±4	±8	±5	±6	±8.5	±2	±3	±3
	3 ±2	±3	±7	±4	±6	±7.5		±2	±2
	4 ±2								
	5		±5	±3	±6	±6			
	7				±5	±4			
	10				±3				

Dimensions in mm



1) Sensing surface, 2) Cable length see text

	BIS0019	BIS001E BIS001H	BIS0021
	metal-free	metal-free	metal-free
	0-6	0-7	0-6
	0-6	0-7	0-6
	±8	±5	±5
	±7	±5	±5
	±5	±4	±4
		±2	

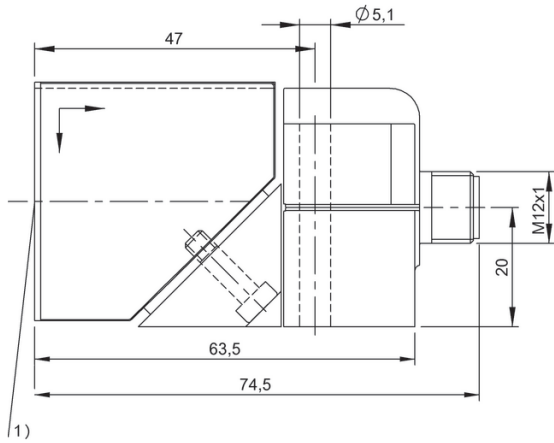


For 5 m cable	BIS007M BIS C-324/05-S4
For 10 m cable	BIS007N BIS C-324/10-S4
Product Group	LF (70/455 kHz)
Dimension	40 x 41 x 74.5 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1 male
Housing material	PBT, zinc fastener
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007		BIS000C BIS000H BIS000K		BIS000F BIS000J		BIS000M		BIS000N		BIS0019 BIS001C		BIS001E		BIS001H	
Data carrier distance to metal	flush	metal-free	metal-free		metal-free		metal-free		metal-free		flush	metal-free	metal-free		flush	
Freizone Datenträger																
Working distance for writing	1-11	0-12	0-12		0-11		1-12		0-13		0-8	0-13	0-11		0-8	
Working distance for reading	1-11	0-12	0-12		0-11		1-12		0-13		0-8	0-13	0-11		0-8	
Offset at distance																
	1	±7.5	±7.5	±10	±10		±7.5		±11		±8	±10	±9		±6.5	
	3	±7	±7	±9	±9		±7.5		±10		±7	±10	±8		±6	
	5	±7	±7	±9	±8.5		±7		±10		±6.5	±9	±7		±5.5	
	7	±7	±7	±8.5	±7.5		±6.5		±9.5		±5.5	±9	±5			
	10															

Dimensions in mm



1)

1) Sensing surface

	BIS0021	BIS002K BIS002N	BIS002P
	metal-free	metal-free	metal-free
	0-10	0-11	0-10
	0-10	0-11	0-10
	± 9	± 10	± 8
	± 8	± 9	$\pm 7,5$
	± 7	± 9	± 7
	± 4	± 8	$\pm 6,5$
		$\pm 6,5$	

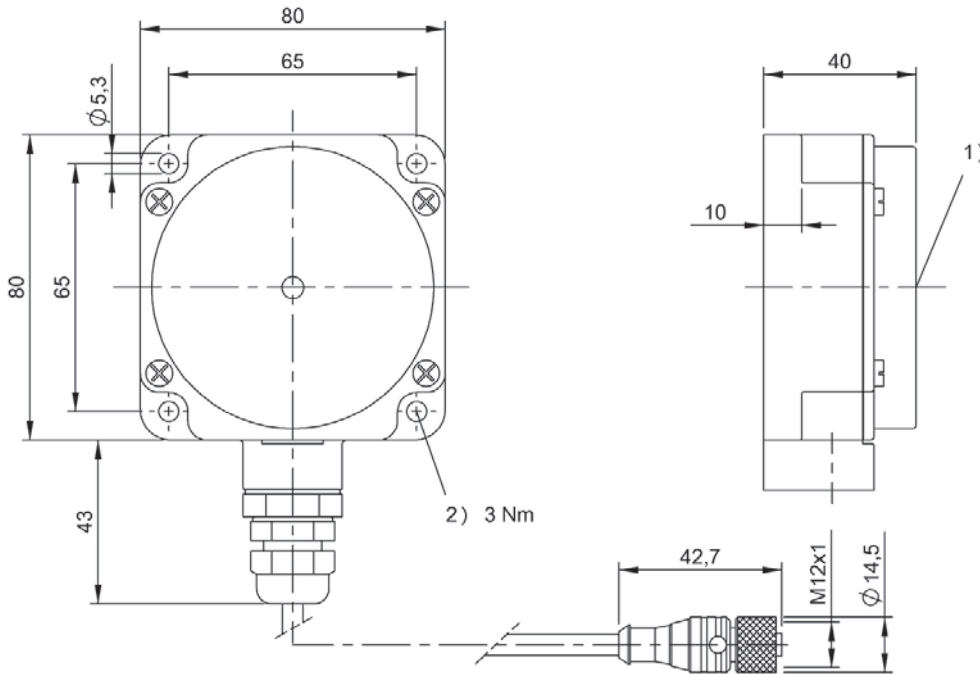


1 m cable PU	BIS00PK BIS C-315-PU1-01
5 m cable PU	BIS00PL BIS C-315-PU1-05
10 m cable PU	BIS00PM BIS C-315-PU1-10
Product Group	LF (70/455 kHz)
Dimension	80 x 40 x 80 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1-Female
Housing material	Brass
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007	BIS000C BIS000H BIS000K	BIS000F BIS000J	BIS000M	BIS000N	BIS0017	BIS0019 BIS001C	BIS001E	
Data carrier distance to metal	flush	metal-free	metal-free	flush	metal-free	metal-free	metal-free	metal-free	
Freizone Datenträger									
Working distance for writing	1-13	2-16	2-16	0-15	0-18	10-30	0-18	0-18	
Working distance for reading	1-13	2-16	2-16	0-15	0-18	10-30	0-18	0-18	
Offset at distance									
	1 ±15			±15	±17		±17	±16	
	2	±15	±15						
	3 ±14	±14	±15	±15	±17		±17	±16	
	5 ±11	±12	±12	±14	±17		±17	±16	
	7 ±10	±11	±10	±12	±15		±15	±14	
	10 ±8	±8	±8	±12	±15	±30	±15	±14	
	15				±14	±27	±14	±11	
	20					±20			

Dimensions in mm



1) Sensing surface, 2) Tightening torque

	BIS001H	BIS0021	BIS002K BIS002N
	metal-free	metal-free	metal-free
	0-8	0-16	0-20
	0-8	0-16	0-20
	± 6.5	± 16	± 18
	± 6	± 16	± 18
	± 5.5	± 16	± 18
		± 14	± 18
		± 12	± 18
			± 16

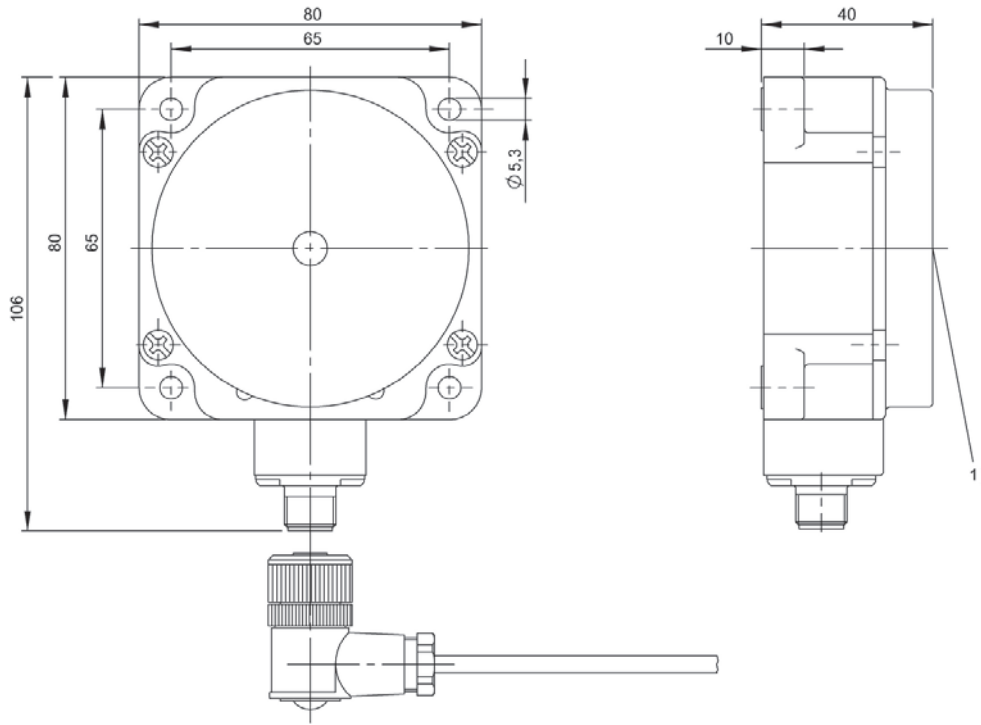


For 5 m cable	BIS006Y BIS C-315/05-S4
For 10 m cable	BIS006Z BIS C-315/10-S4
Product Group	LF (70/455 kHz)
Dimension	80 x 40 x 80 mm
Installation	metal-free (clear zone) on metal flush in metal
Antenna type	round
Connection	M12x1 male
Housing material	PBT
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0006 BIS0007	BIS000C BIS000H BIS000K	BIS000F BIS000J	BIS000M	BIS000N	BIS0017	BIS0019 BIS001C	BIS001E
Data carrier distance to metal	flush	metal-free	metal-free	flush	metal-free	metal-free	metal-free	metal-free
Working distance for writing	1-13	2-16	2-16	0-15	0-18	10-30	0-18	0-18
Working distance for reading	1-13	2-16	2-16	0-15	0-18	10-30	0-18	0-18
Offset at distance								
	1 ±15			±15	±17		±17	±16
	2	±15	±15					
	3 ±14	±14	±15	±15	±17		±17	±16
	5 ±11	±12	±12	±14	±17		±17	±16
	7 ±10	±11	±10	±12	±15		±15	±14
	10 ±8	±8	±8	±12	±15	±30	±15	±14
	15				±14	±27	±14	±11
	20					±20		

Dimensions in mm



1) Sensing surface

	BIS001H	BIS0021	BIS002K BIS002N
	metal-free	metal-free	metal-free
	0-8	0-16	0-20
	0-8	0-16	0-20
	±6.5	±16	±18
	±6	±16	±18
	±5.5	±16	±18
		±14	±18
		±12	±18
			±16

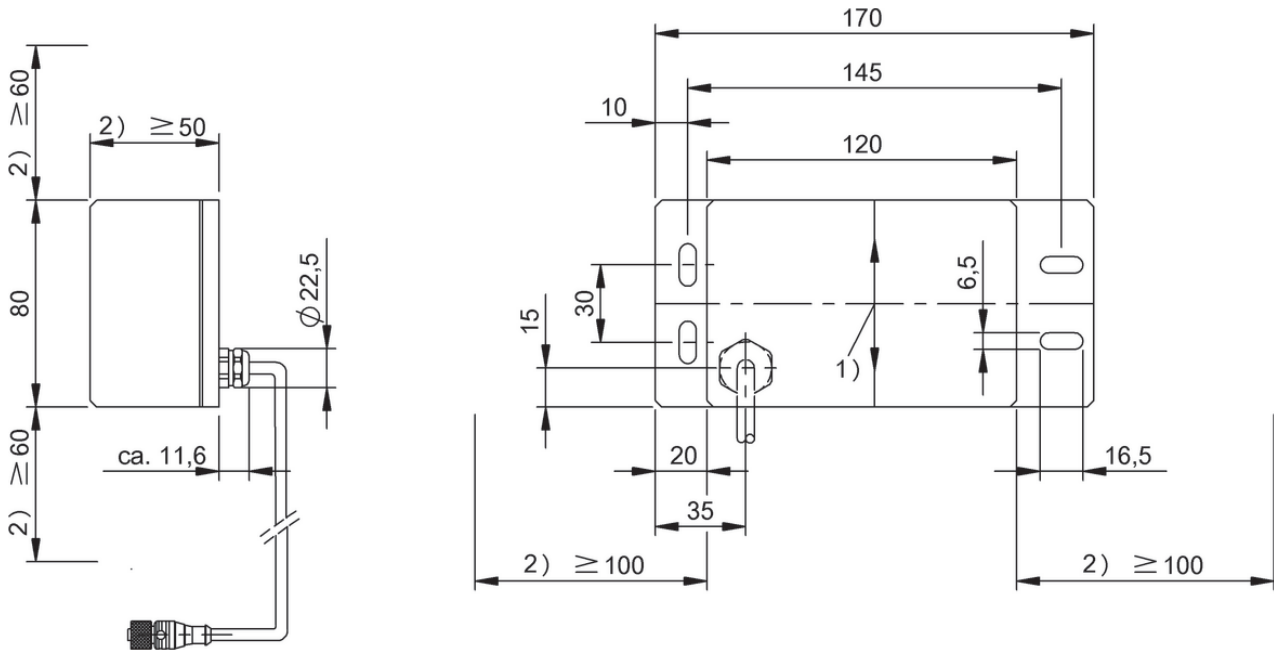


5 m cable PU	BIS00PN BIS C-351-PU1-05
10 m cable PU	BIS00PP BIS C-351-PU1-10
Product Group	LF (70/455 kHz)
Dimension	80 x 50 x 170 mm
Installation	metal-free (clear zone)
Antenna type	Rod
Connection	M12x1-Female
Housing material	POM, mounting plate aluminum
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS0028	BIS002A	BIS002E
Data carrier distance to metal	metal-free		
Working distance for writing	0-45		
Working distance for reading	0-45		
Offset at distance			
	1	±15	
	2	±15	
	3	±15	
	4	±15	
	5	±15	
	6	±15	
	10	±15	
	20	±15	

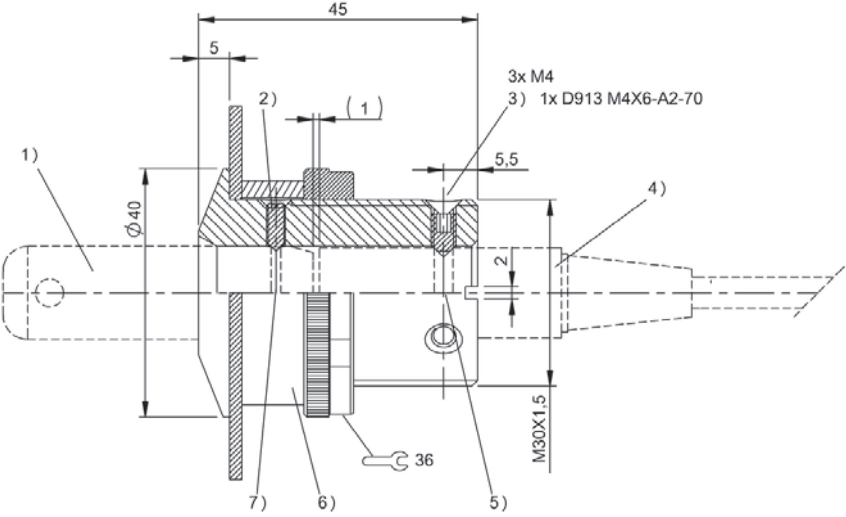
Dimensions in mm



1) Sensing surface, 2) Clear zone



	BAM012C BIS C-300-ZA1
Product Group	LF (70/455 kHz)
Dimension	Ø 40 x 45 mm
Installation	—
Antenna type	—
Connection	—
Housing material	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	—
Approval/Conformity	CE



1) Data carrier, 2) Spring-loaded compression piece, 3) Threaded pin, 4) Read/write head, 5) Notch in read/write head, 6) Spacer ring, 7) Notch in data carrier



0.7 m cable	BIS00JA BIS C-380-01/10-00,7	
1 m cable		
1,5 m cable		
2 m cable		
5 m cable		
Style 1	M12x1	
Style 2	M30x1.5	
Antenna type	round	
Storage temperature	-20...85 °C	
Ambient temperature	0...70 °C	
Housing material	Brass, nuts nickel plated brass	
Protection degree	IP67	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 392	

Appropriate data carrier

	BIS0002 BIS0004 BIS0009 BIS000T BIS0011	
Installation	flush	
Appropriate read/write head	BIS00P5	
	BIS005Z	
	BIS00P6	



	BIS00JJ BIS C-380-06/06-01	
	BIS00JK BIS C-380-06/06-01,5	
	BIS00LU BIS C-380-06/06-02	BIS00JM BIS C-380-06/10-02
	BIS00N9 BIS C-380-06/06-05	
	M16x1	M16x1
	M16x1	M30x1.5
	round	round
	-20...85 °C	-20...85 °C
	0...70 °C	0...70 °C
	Brass, nuts nickel plated brass	Brass, nuts nickel plated brass
	IP67	IP67
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone)
	CE	CE
	Page 392	Page 393

	BIS0002 BIS0004 BIS0009 BIS000T BIS0011	BIS0002 BIS0004 BIS0009 BIS000T BIS0011
	flush	flush
	BIS00P5	BIS00P5
	BIS005Z	BIS005Z
	BIS00P6	BIS00P6



1 m cable	BIS00JP BIS C-380-10/10-01	
2 m cable		
5 m cable	BIS00JR BIS C-380-10/10-05	
Style 1	M30x1.5	
Style 2	M30x1.5	
Antenna type	round	
Storage temperature	-20...85 °C	
Ambient temperature	0...70 °C	
Housing material	Brass, nuts nickel plated brass	
Protection degree	IP67	
Installation	metal-free (clear zone)	
Approval/Conformity	CE	
Productview	Page 393	

Appropriate data carrier

	BIS000N BIS001E BIS C-104-xx/A BIS C-108-xx/L BIS C-128-xx/L	
Installation	metal-free	
Appropriate read/write head	BIS00PF BIS00PH BIS00PJ	



	BIS00JE BIS C-380-05/06-02	
	—	
	M16x1	
	round	
	-20...85 °C	
	0...70 °C	
	Brass, ABS-GF16	
	IP67	
	metal-free (clear zone) on metal flush in metal	
	CE	
	Page 394	

	BIS0002 BIS0004 BIS0009 BIS000T BIS0011	
	flush	
	BIS00P5	
	BIS005Z	
	BIS00P6	

Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Systems

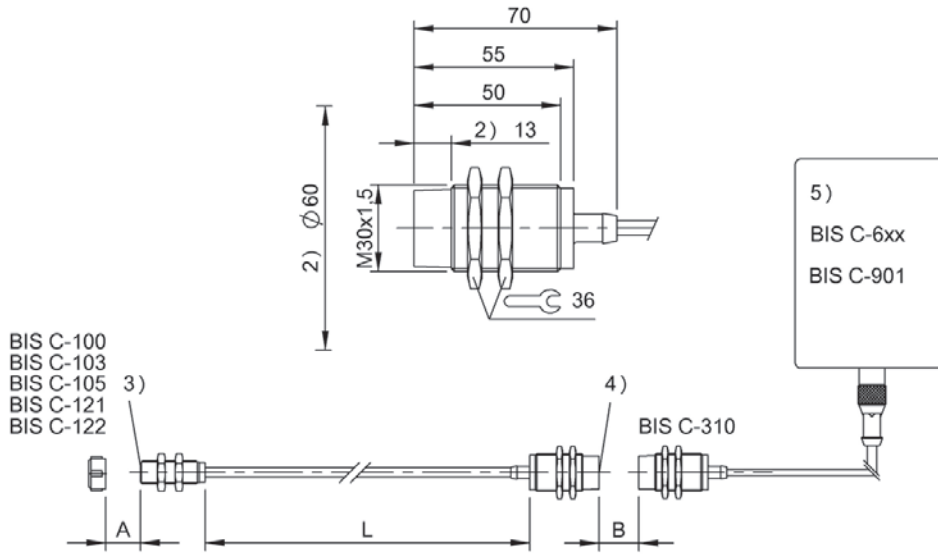
Safety

Industrial Networking

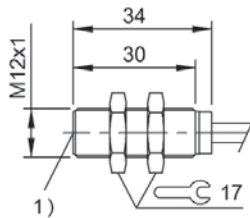
Power Supplies

Connectivity

Accessories

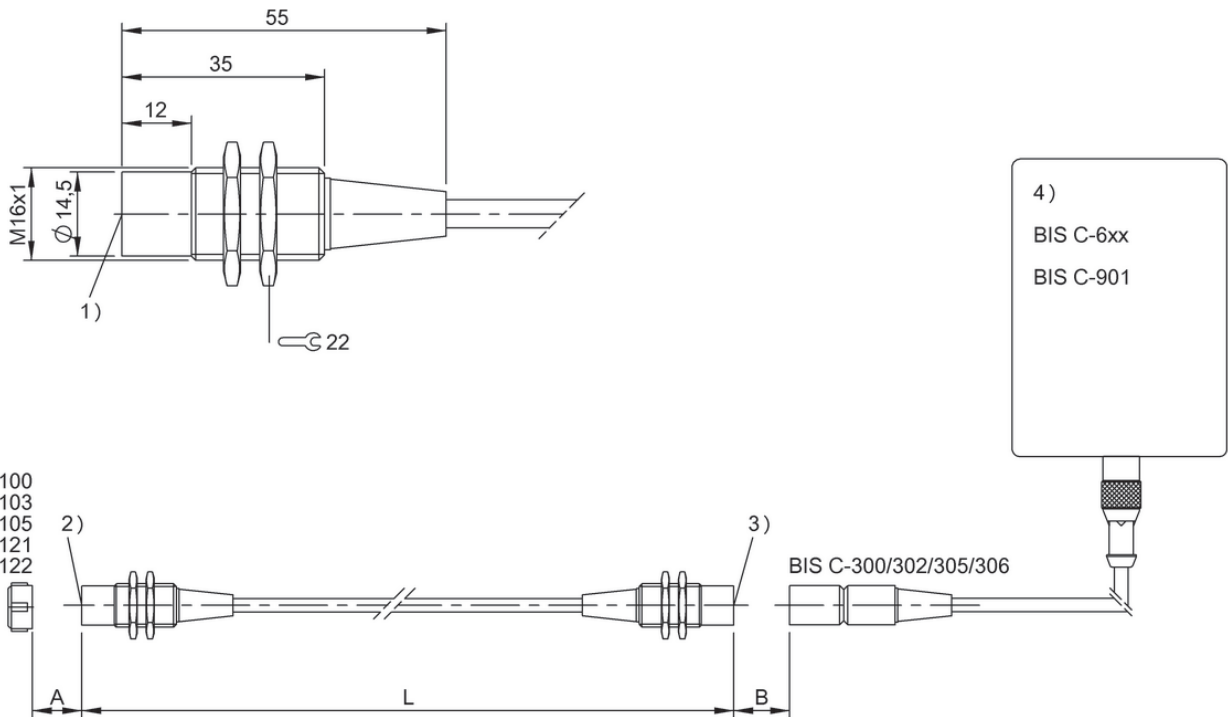


6)



1) Sensing surface, 2) Clear zone, 3) Active surface data carrier, 4) Active surface R/W head, 5) Processor or converter, 6) see remarks

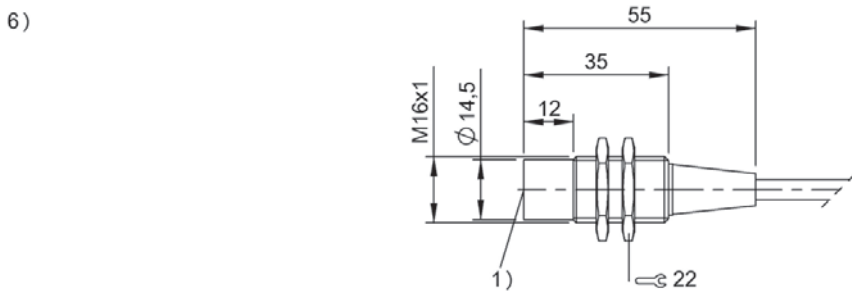
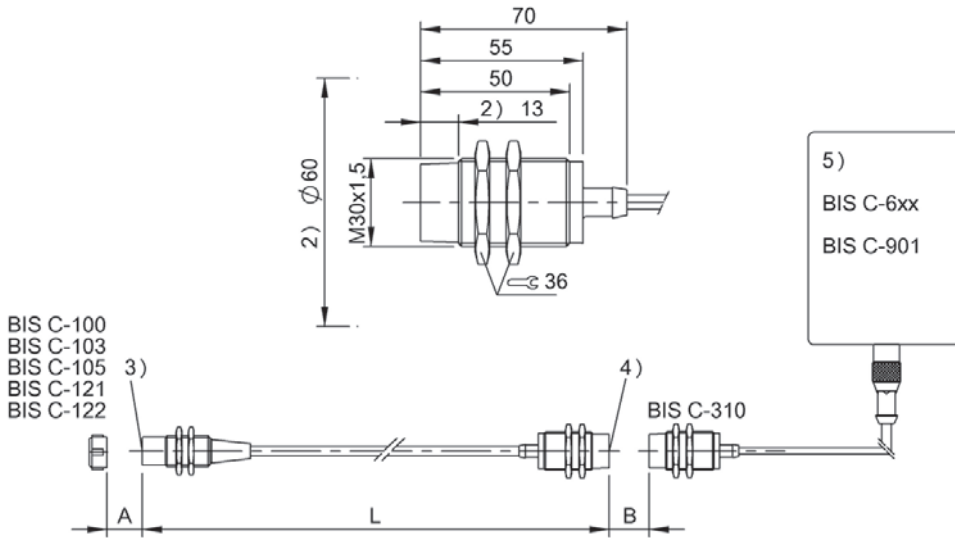
BIS00JA



5)

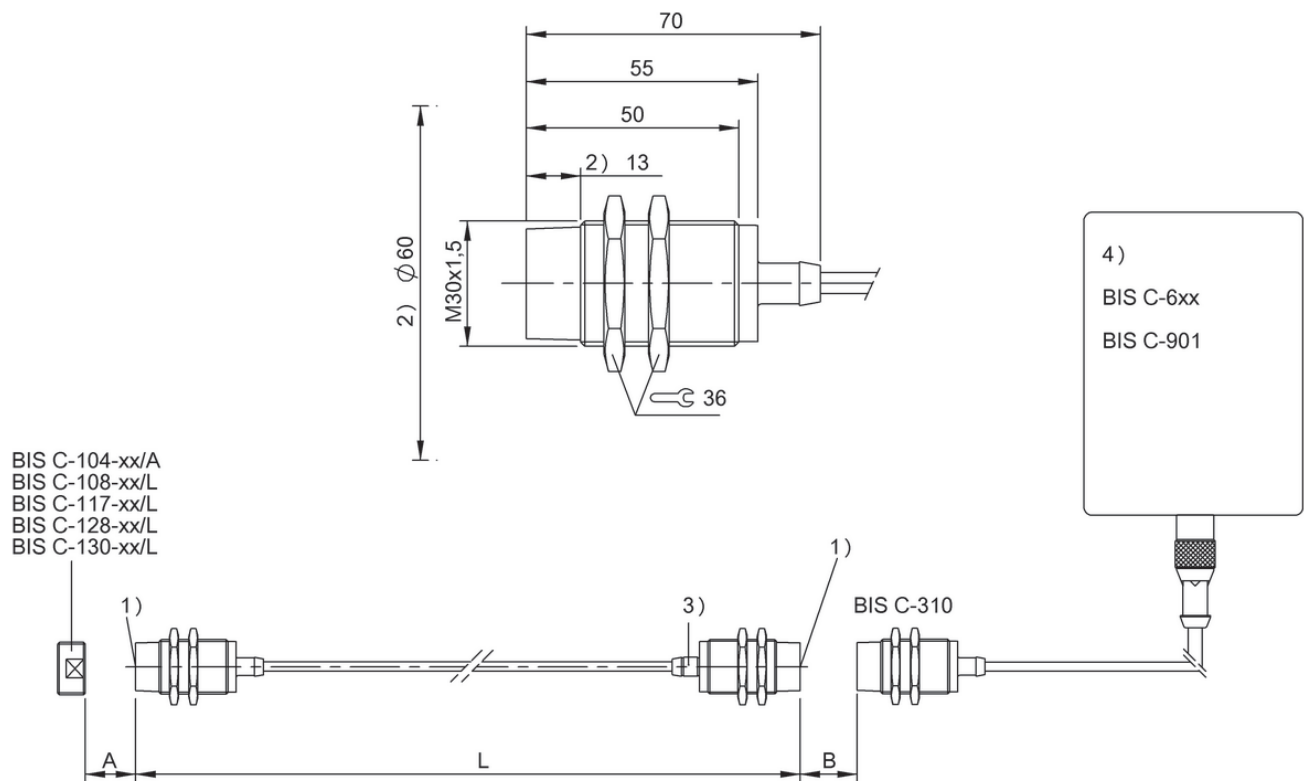
1) Sensing surface, 2) Active surface data carrier, 3) Active surface R/W head, 4) Processor or converter, 5) see remarks

BIS00JJ, BIS00JK, BIS00LU, BIS00N9



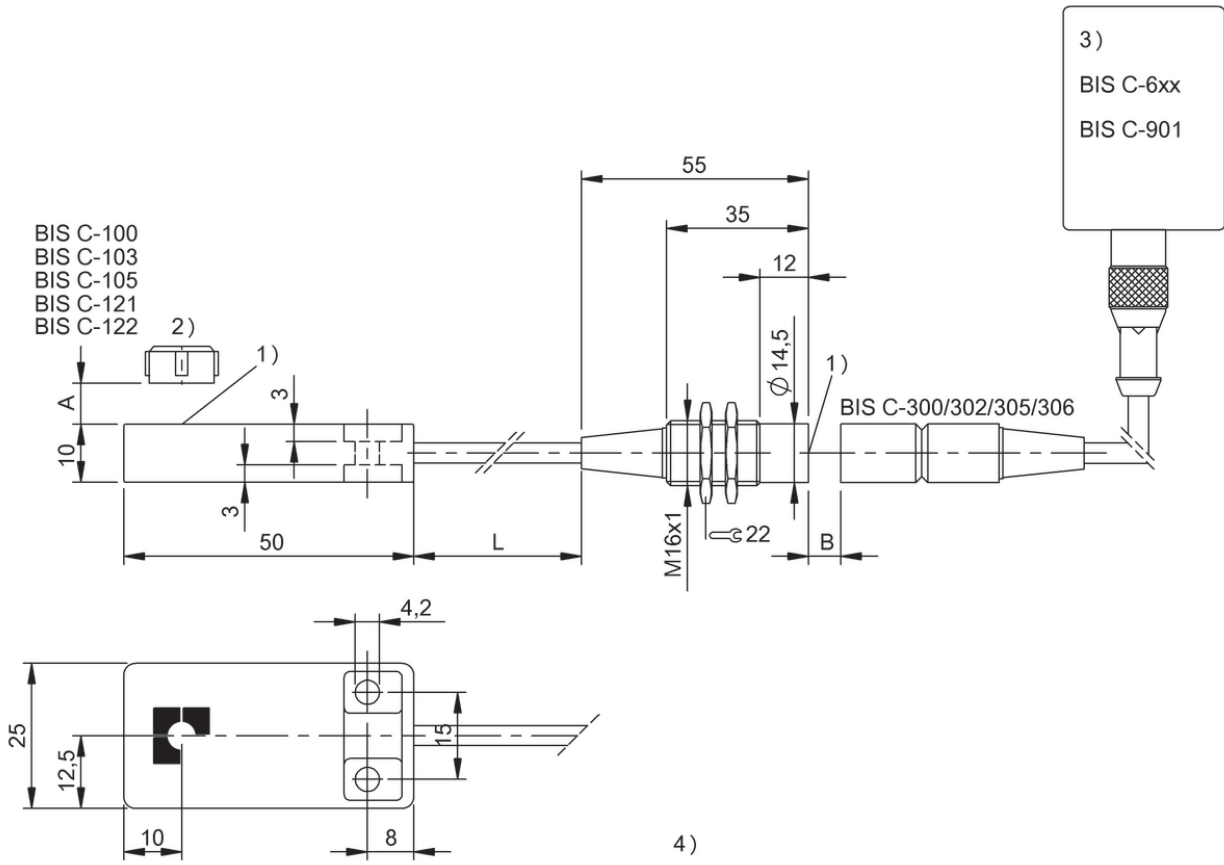
1) Sensing surface, 2) Clear zone, 3) Active surface data carrier, 4) Active surface R/W head, 5) Processor or converter, 6) see remarks

BIS00JM



5) 1) Sensing surface, 2) Clear zone, 3) Yellow marking, 4) Processor or converter, 5) see remarks

BIS00JP, BIS00JR



1) Sensing surface, 2) Data carrier, 3) Processor or converter, 4) see remarks

BIS00JE



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS013W BIS V-6108-048-C102	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	Profinet I/O (IRT), 2 port Switch	
Supported RFID technologies	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	
Productview	Page 410	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS012E BIS V-6102-019-C101	BIS0187 BIS V-6107-039-C105	BIS018K BIS V-6107-039-C106
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
Profibus DP Slave galvanically isolated	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
M12x1-Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded 7/8"-Male, 5-pole	M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole	M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 4-pole
Page 410	Page 411	Page 411



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS014C BIS V-6106-034-C102	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	Ethernet/IP	
Supported RFID technologies	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	
Productview	Page 412	

* Use adapter **BISOFC** to connect read/write heads **BIS C (LF 70/455 kHz)**.



	BIS0146 BIS V-6106-034-C104	BIS0147 BIS V-6110-063-C102	BIS014E BIS V-6111-073-C103
	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
	Ethernet/IP	EtherCAT	CC-Link
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	0...60 °C	0...60 °C	0...60 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, UL Listed	CE, UL Listed	CE, UL Listed
	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 4-pole	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, A-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole
	Page 412	Page 413	Page 413



	BIS008U BIS C-600-007-650-00-KL1	
Product Group	LF (70/455 kHz)	
Interface	RS232	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with read/write head	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Terminal strip, 19-pole	
Productview	Page 414	



BIS00AZ BIS C-620-007-050-00-ST2	BIS00K3 BIS C-6008-048-650-06-ST23	BIS00K4 BIS C-6028-048-050-06-ST22
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
RS232	Profinet I/O (IRT), Profinet I/O (IRT) 2 port Switch	Profinet
LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
2	2	2
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
Aluminum, die-cast	ABS	Aluminum, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Male, 9-pole Male, 5-pole	Female, 4-pole, D-coded M12x1-Female, 4-pole, D-coded Male, 5-pole	2x RJ45-Female, 8-pole Male, 5-pole
Page 414	Page 415	Page 415



	BIS00TU BIS C-6028-048-050-06-ST28	
Product Group	LF (70/455 kHz)	
Interface	Profinet	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Female, 4-pole, D-coded M12x1-Female, 4-pole, D-coded Male, 5-pole	
Productview	Page 416	



	BIS009F BIS C-6002-019-654-03-ST11	BIS009L BIS C-6002-028-650-03-KL2	BIS0099 BIS C-6002-019-650-03-KL2
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated
	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
	1	1	2
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	ABS	ABS	ABS
	0...60 °C	0...60 °C	0...60 °C
	IP65 with read/write head	IP65 with read/write head	IP65 with read/write head
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole	Terminal strip, 19-pole	Terminal strip, 19-pole
	Page 416	Page 417	Page 417



	BIS009A BIS C-6002-019-650-03-ST11	
Product Group	LF (70/455 kHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with read/write head	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole	
Productview	Page 417	



BIS009H BIS C-6002-019-655-03-KL2	BIS009J BIS C-6002-019-655-03-ST11	BIS009M BIS C-6002-028-650-03-ST11
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated
LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
2	2	2
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
ABS	ABS	ABS
0...60 °C	0...60 °C	0...60 °C
IP65 with read/write head	IP65 with read/write head	IP65 with read/write head
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
Terminal strip, 19-pole	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole
Page 418	Page 418	Page 417



	BIS00A4 BIS C-602-019-650-03-KL2	
Product Group	LF (70/455 kHz)	
Interface	Profibus DP Slave galvanically isolated	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with read/write head	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Terminal strip, 19-pole	
Productview	Page 417	



BIS00AL BIS C-6022-019-050-03-ST10	BIS00AM BIS C-6022-019-050-03-ST14	BIS00AN BIS C-6022-019-056-03-ST14
LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated
LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)
2	2	2
19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
2x Female, 12-pole Male, 5-pole	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole	Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded Male, 5-pole
Page 419	Page 419	Page 419



	BIS00AY BIS C-6027-039-050-06-ST19	
Product Group	LF (70/455 kHz)	
Interface	Ethernet TCP/IP	
Supported RFID technologies	LF 70/455 kHz (BIS C)	
Number of connectable R/W heads / antennas	2	
Operating voltage U _b	19.2...28.8 VDC	
Housing material	Aluminum, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Connection	Female, 4-pole, D-coded Male, 5-pole	
Productview	Page 420	



BIS00AU BIS C-6026-034-050-06-ST19	BIS009N BIS C-6003-025-650-03-ST12	
LF (70/455 kHz)	LF (70/455 kHz)	
Ethernet/IP	DeviceNet galvanically isolated	
LF 70/455 kHz (BIS C)	LF 70/455 kHz (BIS C)	
2	2	
19.2...28.8 VDC	19.2...28.8 VDC	
Aluminum, die-cast	ABS	
0...60 °C	0...60 °C	
IP65 with connector	IP65 with connector	
CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	
Female, 4-pole, D-coded Male, 5-pole	Male, 5-pole Female, 5-pole Male, 5-pole	
Page 420	Page 420	

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Systems

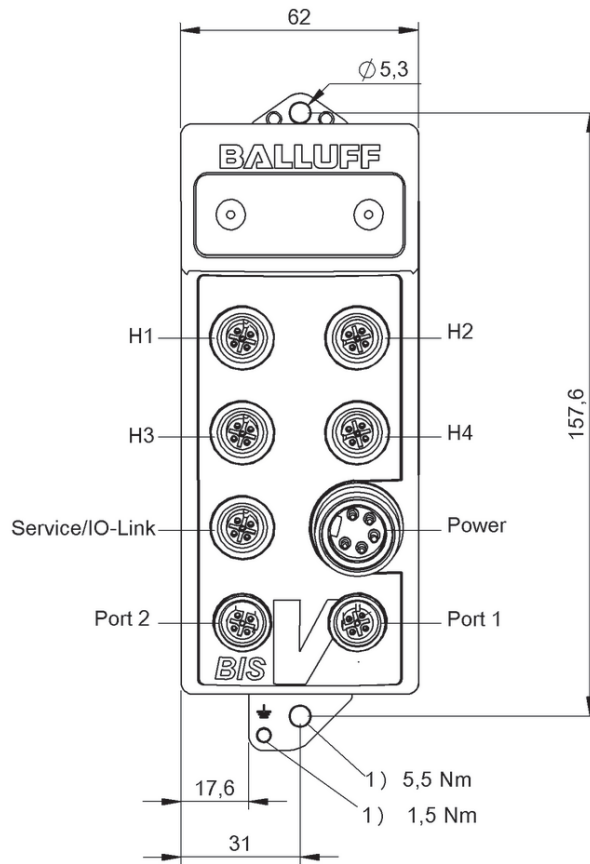
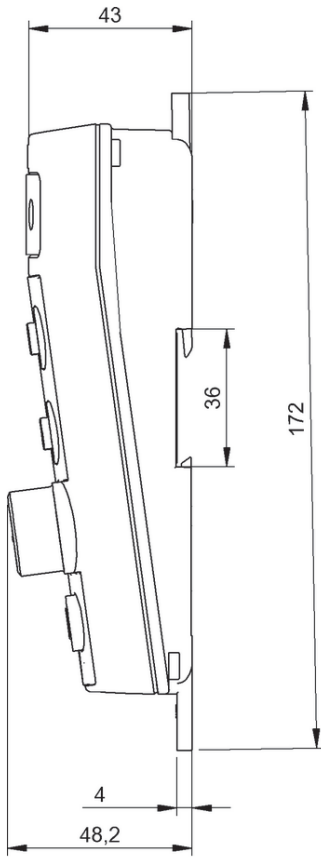
Safety

Industrial Networking

Power Supplies

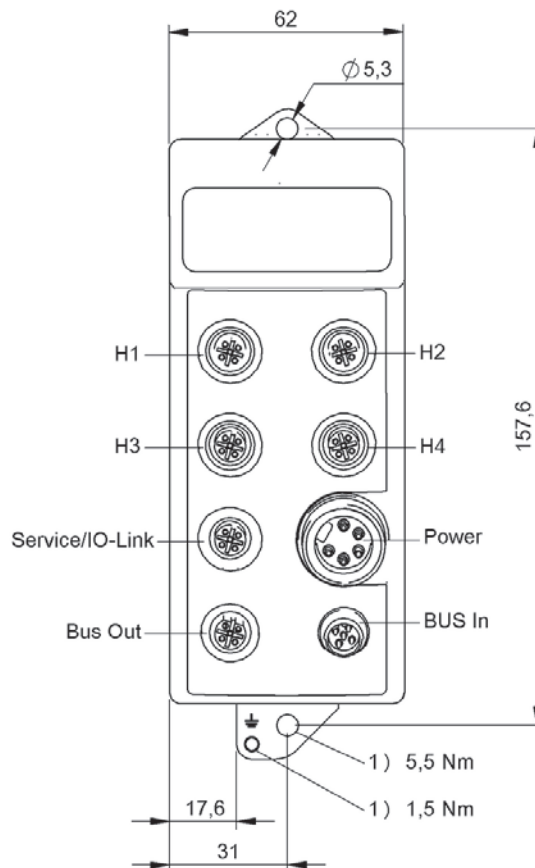
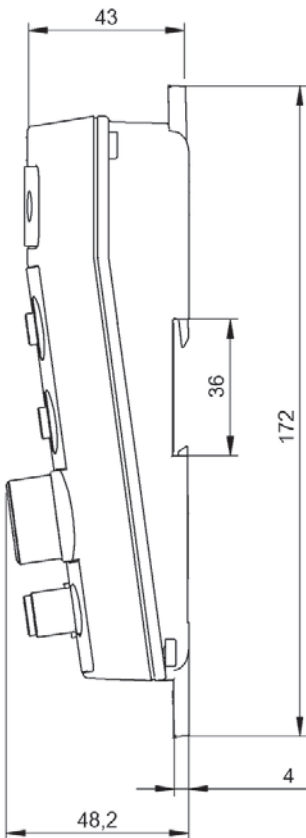
Connectivity

Accessories



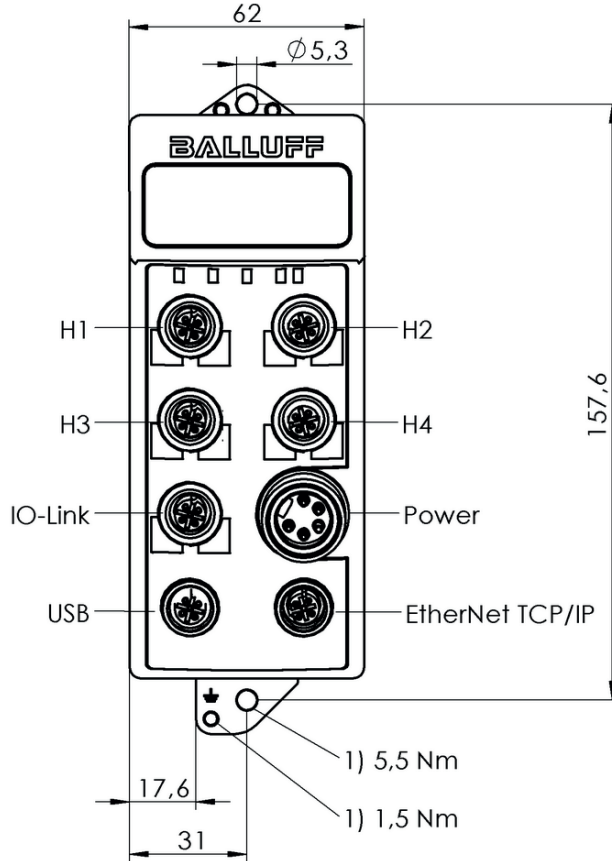
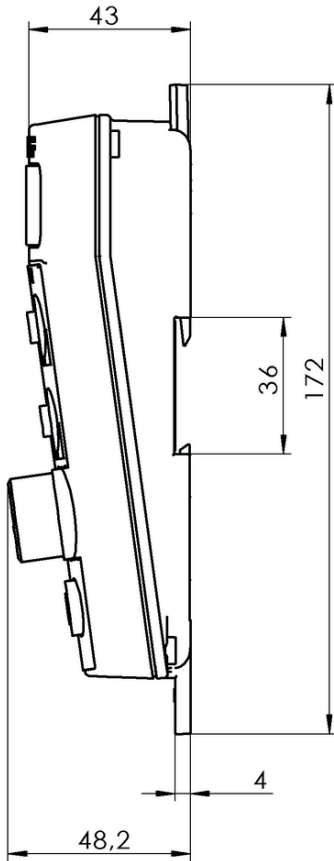
1) Tightening torque

BIS013W



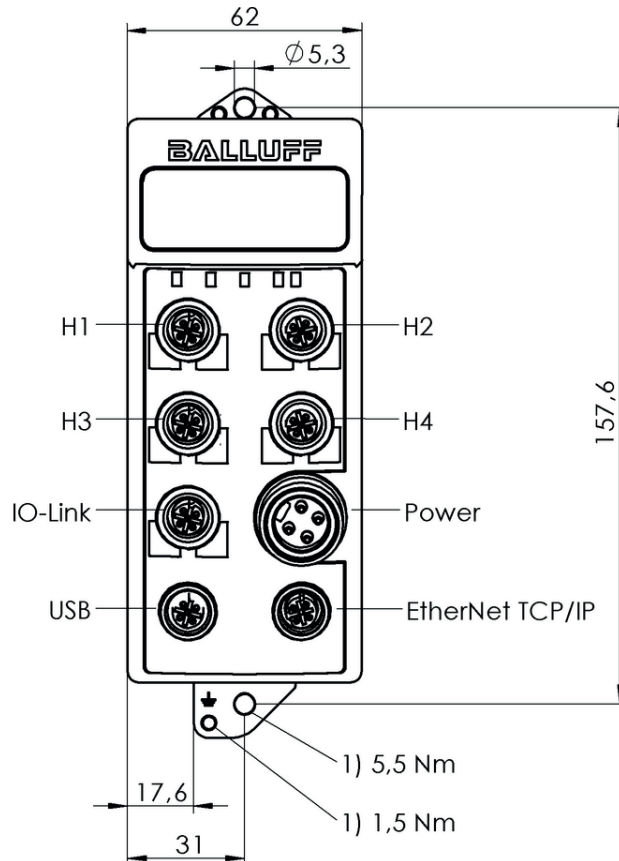
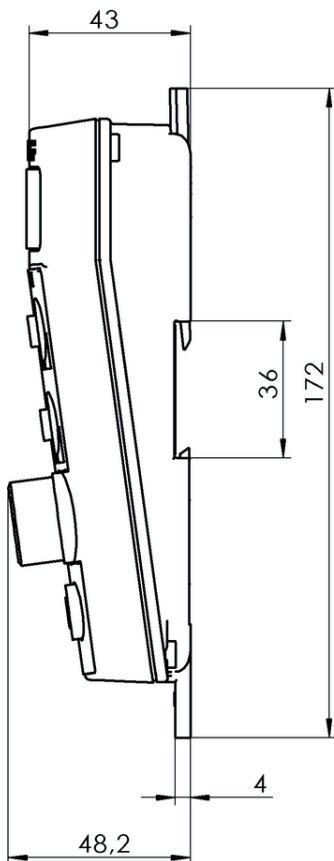
1) Tightening torque

BIS012E



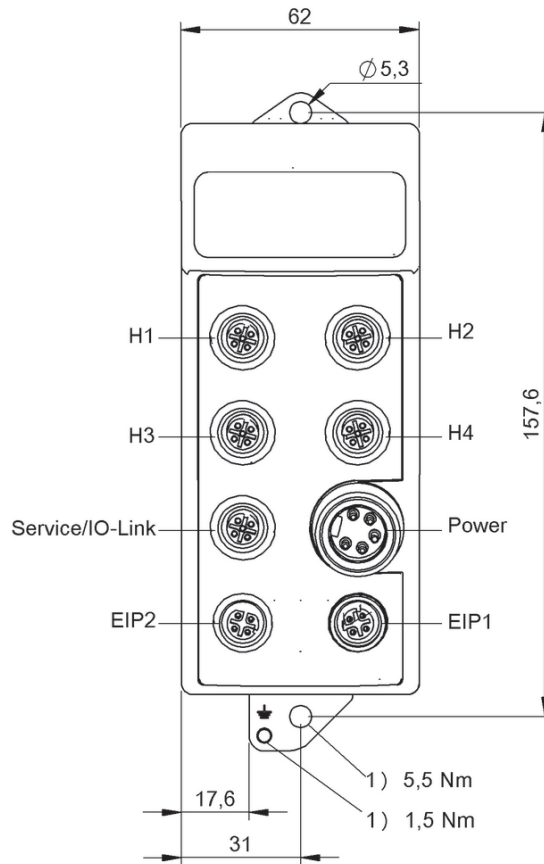
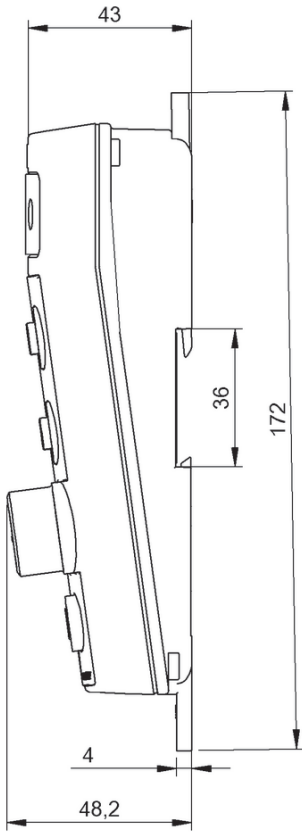
1) Tightening torque

BIS0187



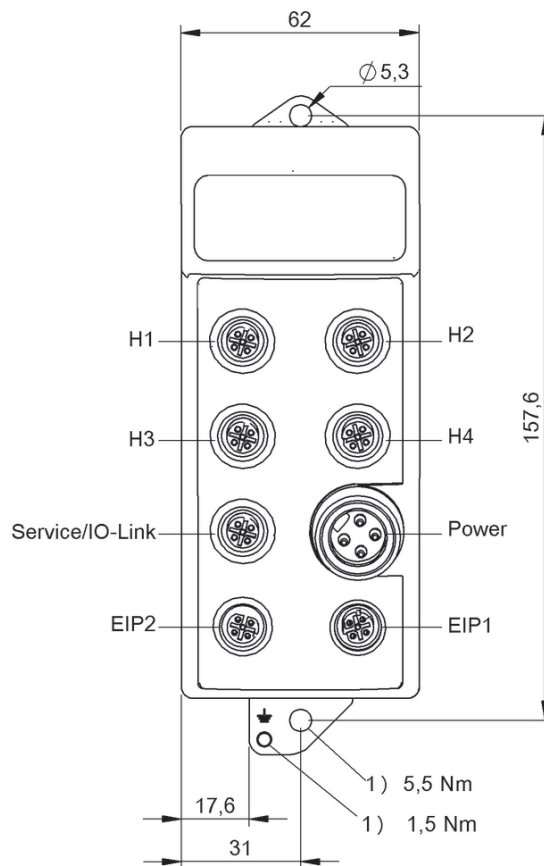
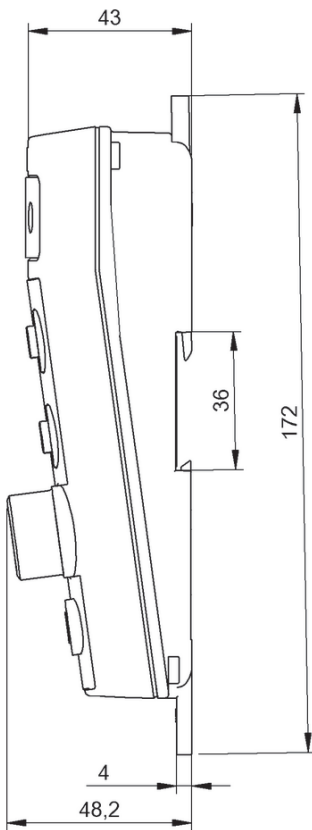
1) Tightening torque

BIS018K



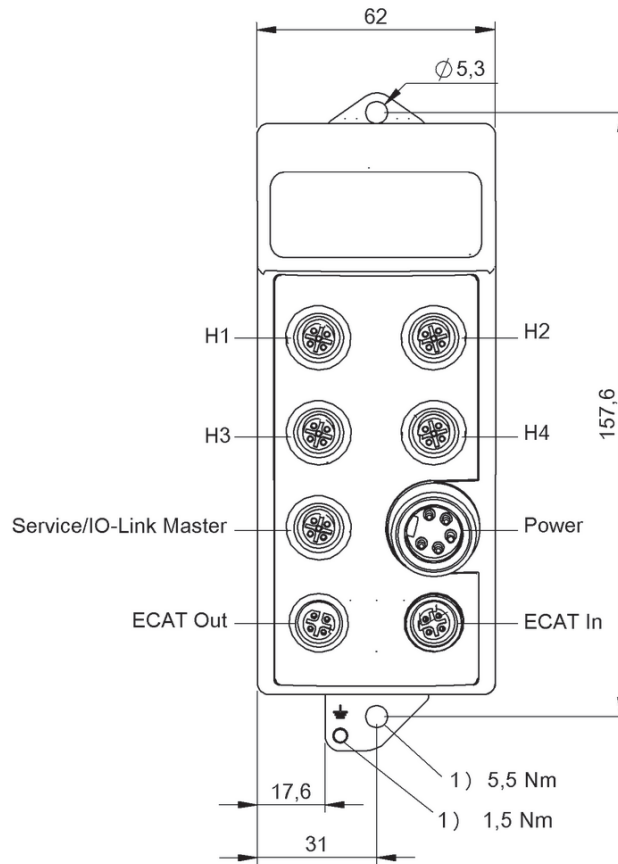
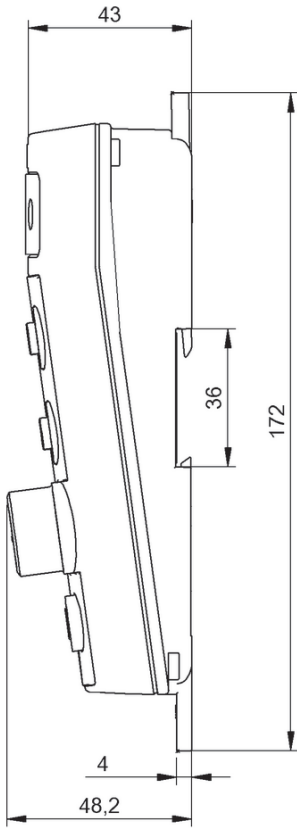
1) Tightening torque

BIS014C



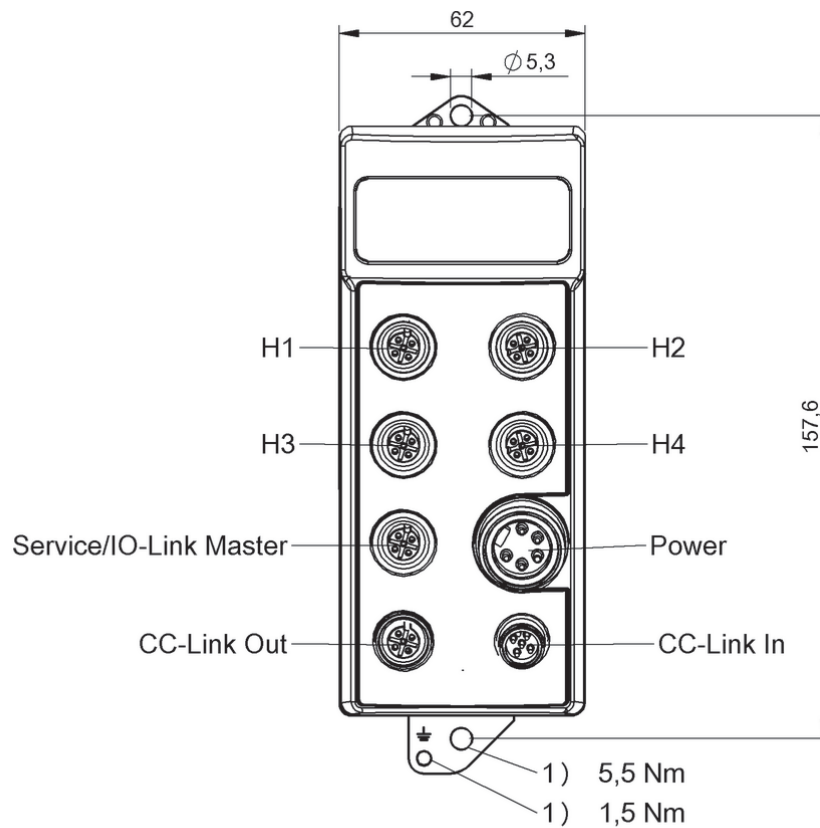
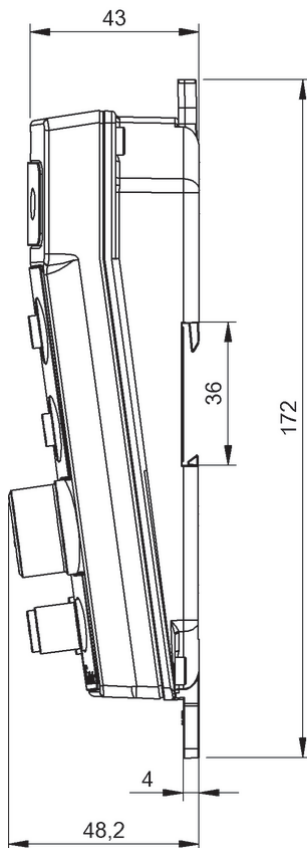
1) Tightening torque

BIS0146



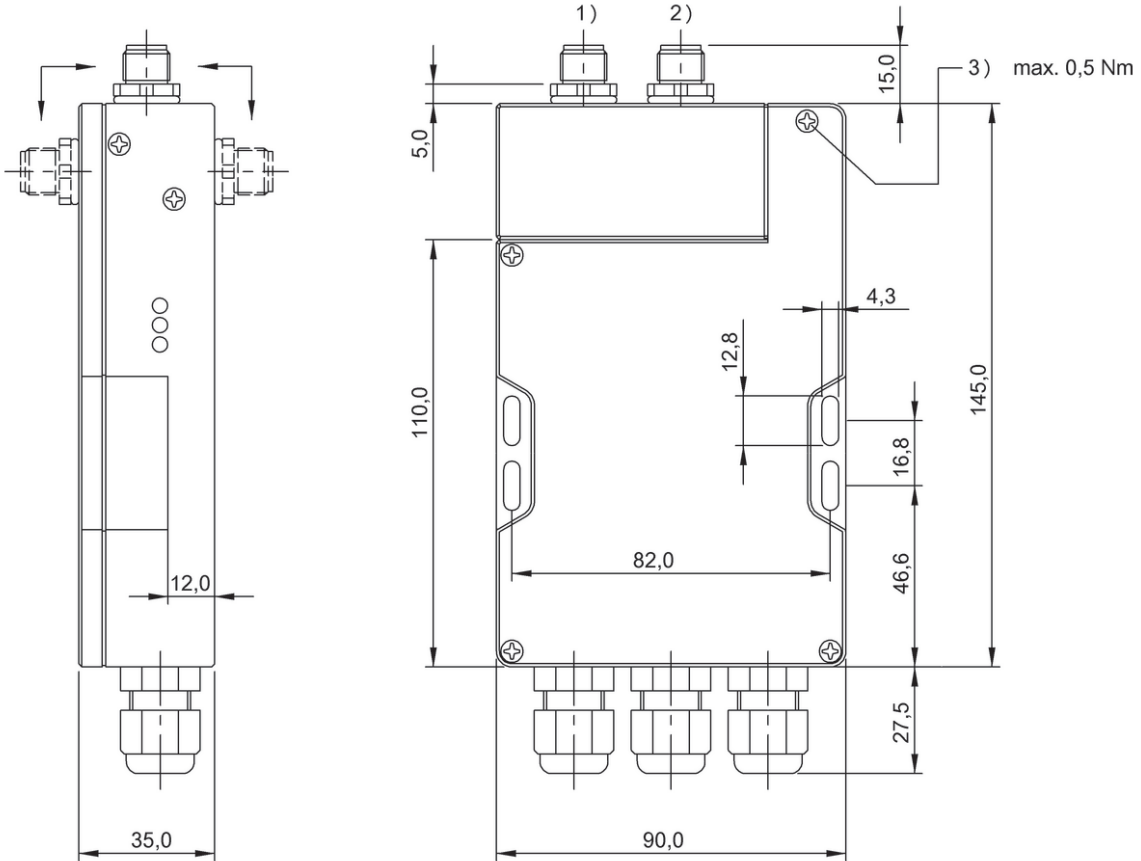
1) Tightening torque

BISO147



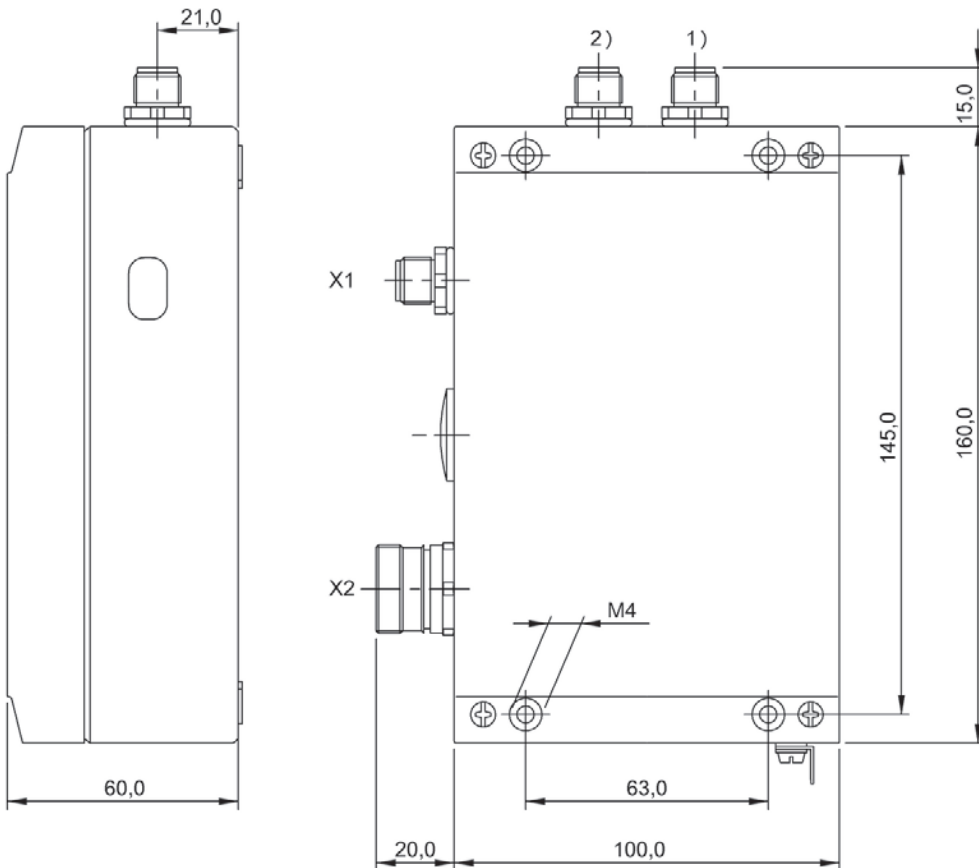
1) Tightening torque

BISO14E



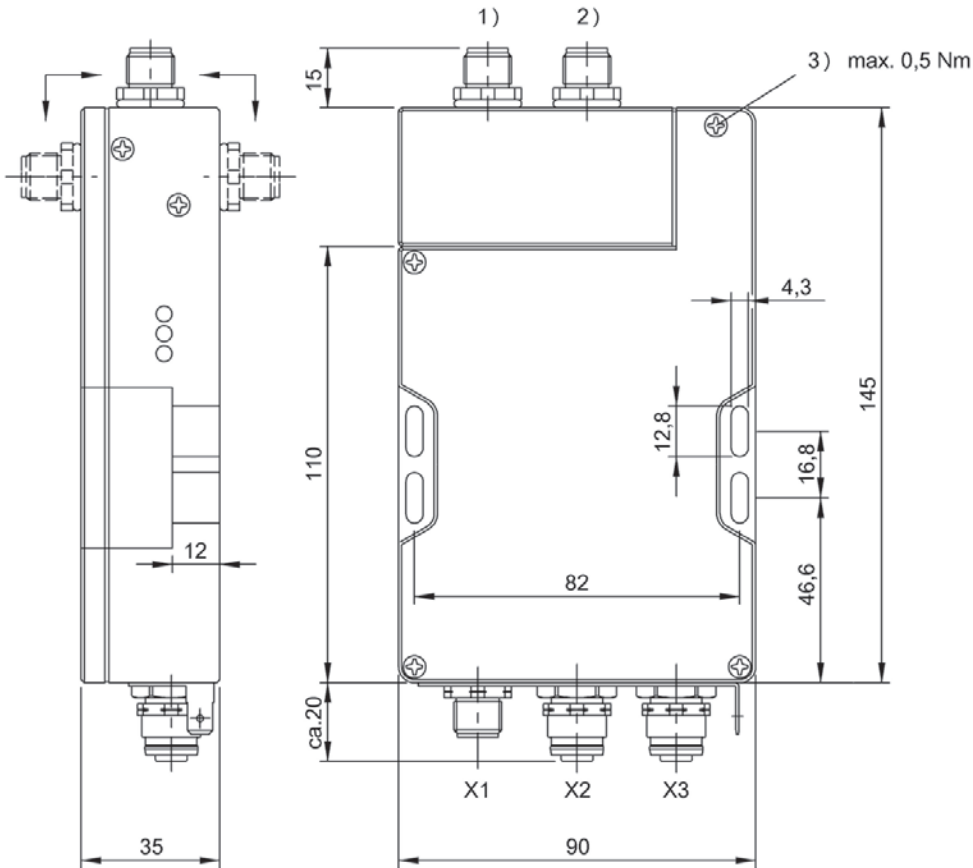
1) Head 1, 2) Head 2, 3) Tightening torque

BIS008U



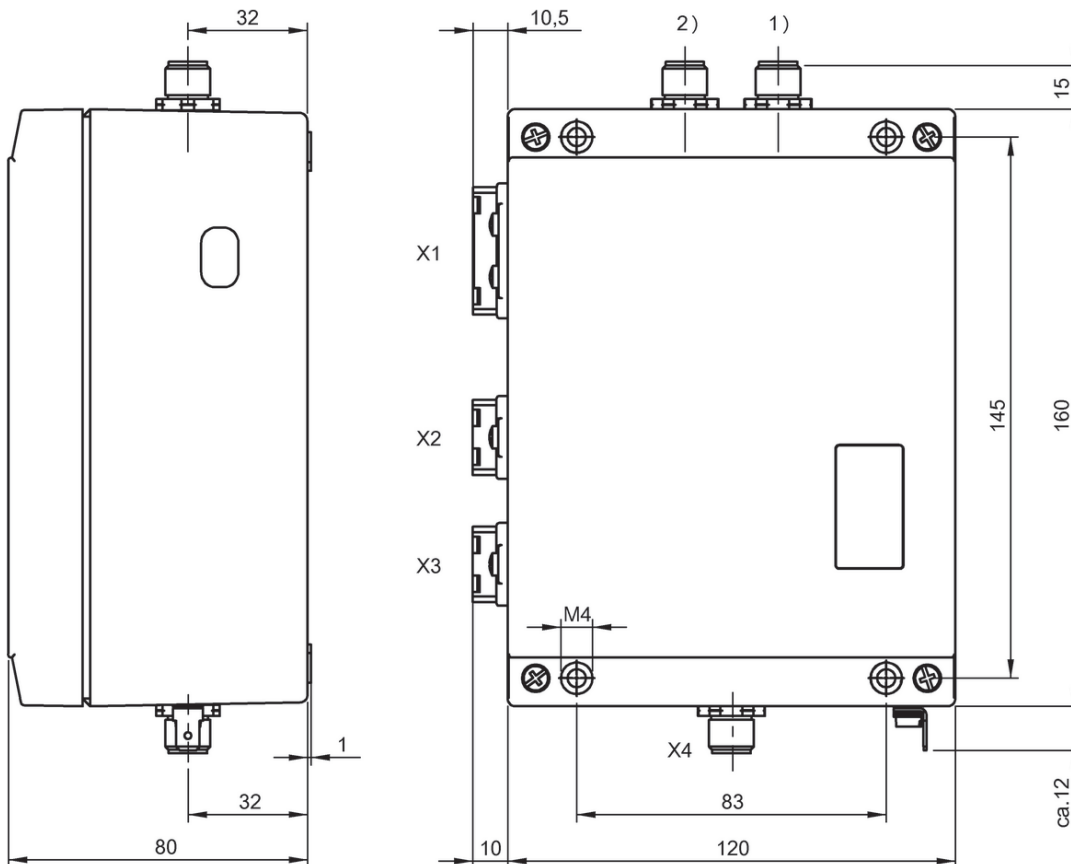
1) Head 1, 2) Head 2

BIS00AZ



1) Head 1, 2) Head 2, 3) Tightening torque

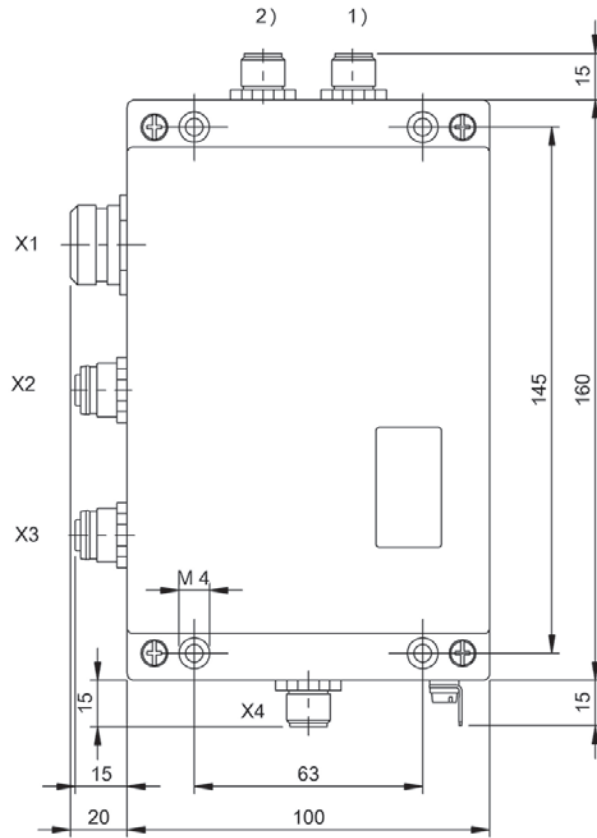
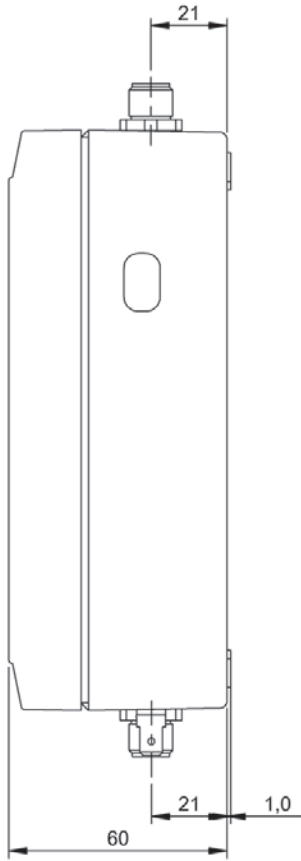
BIS00K3



1) Head 1, 2) Head 2

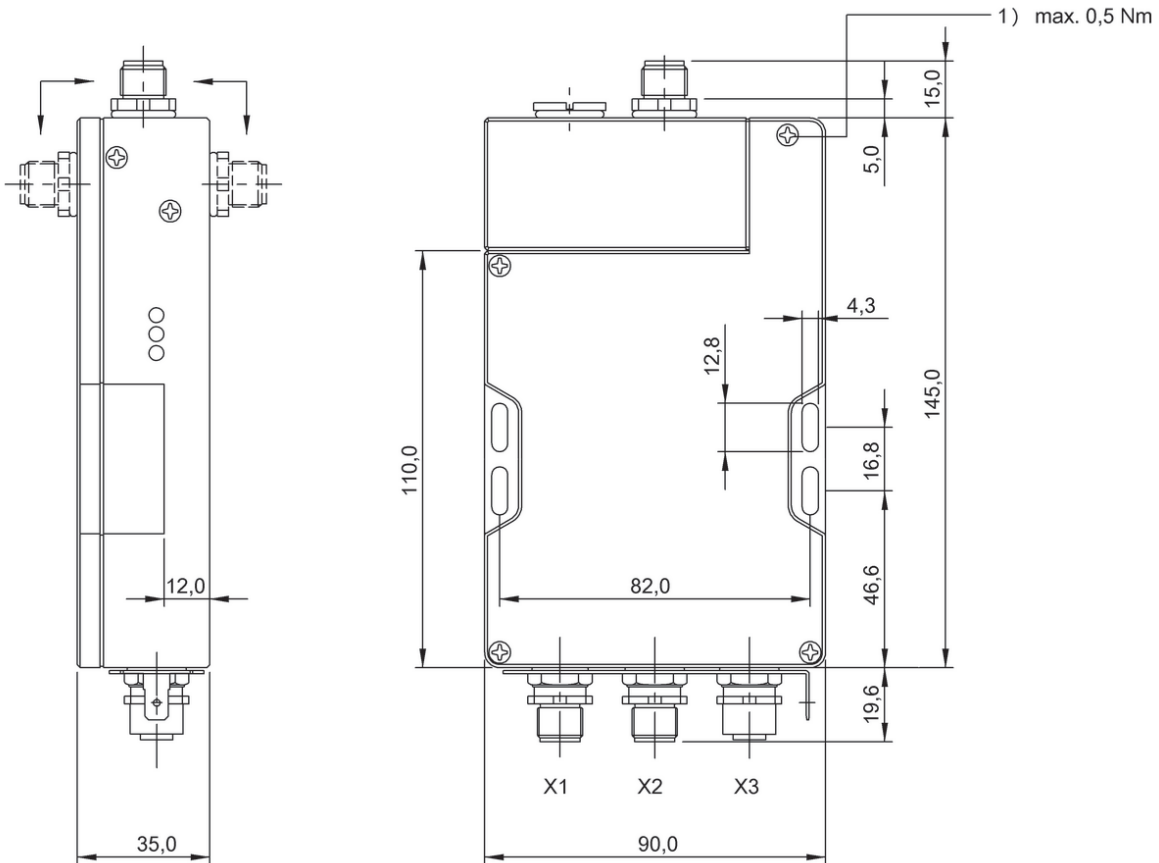
BIS00K4

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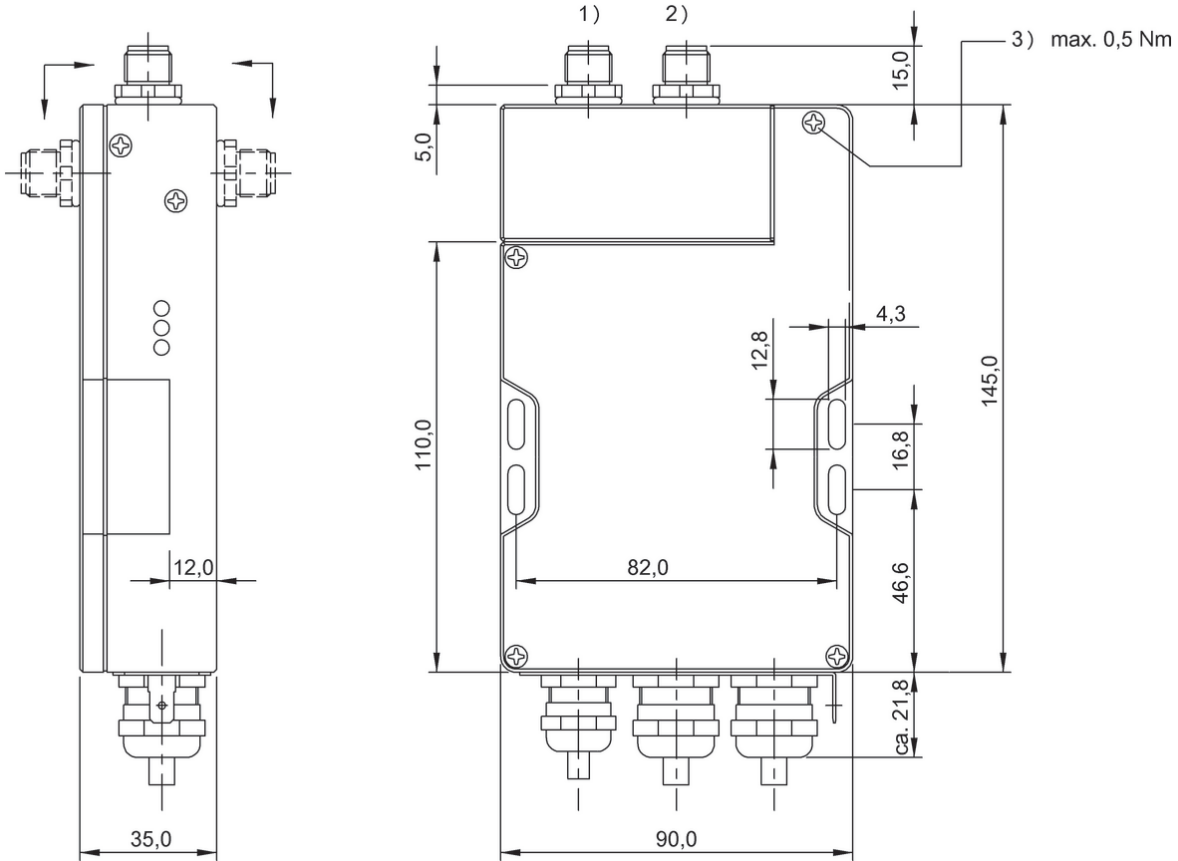
1) Head 1, 2) Head 2

BIS00TU



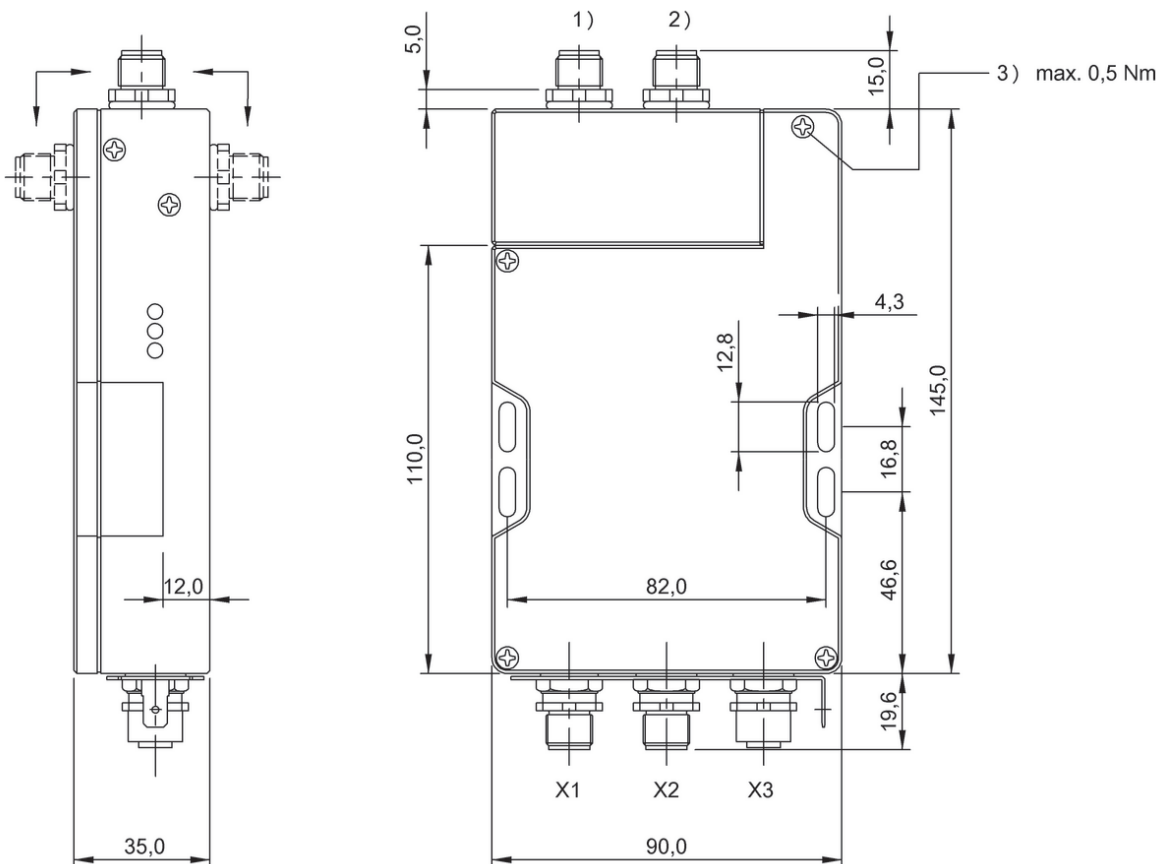
1) Tightening torque

BIS009F



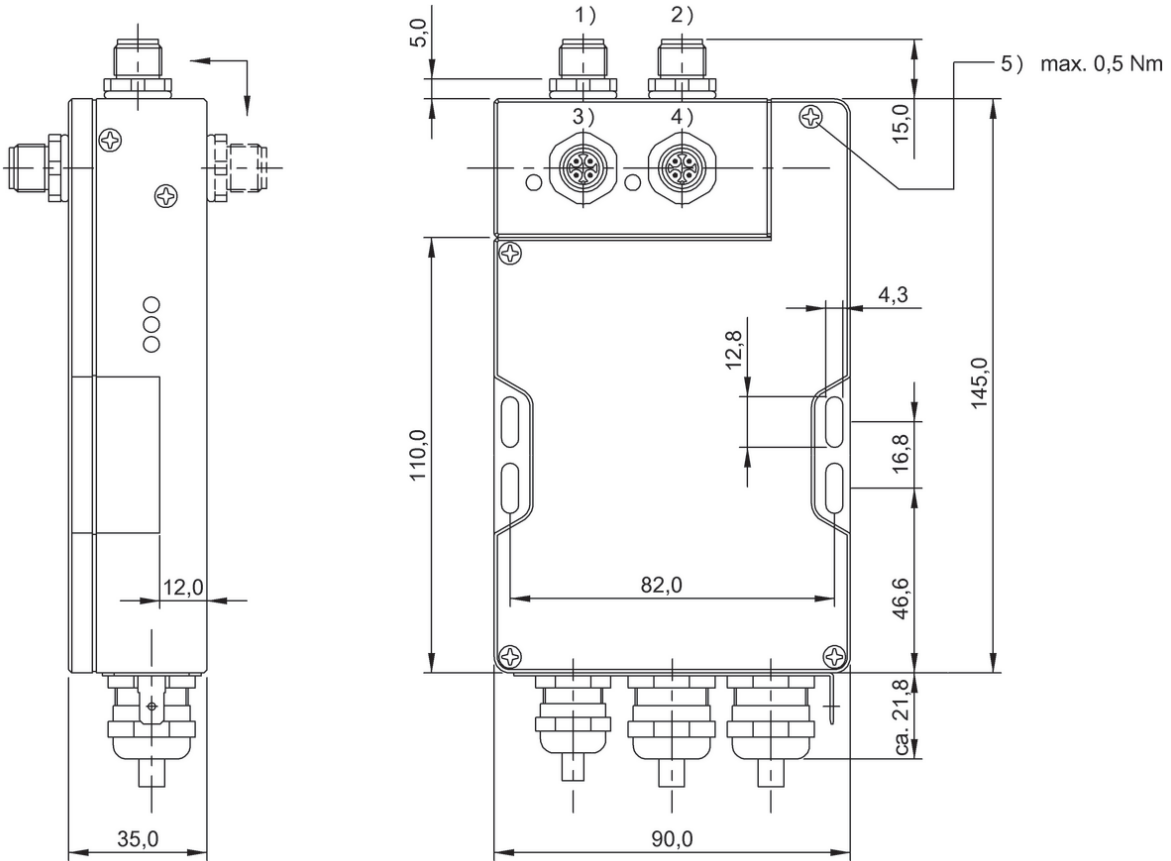
1) Head 1, 2) Head 2, 3) Tightening torque

BIS009L, BIS0099, BIS00A4



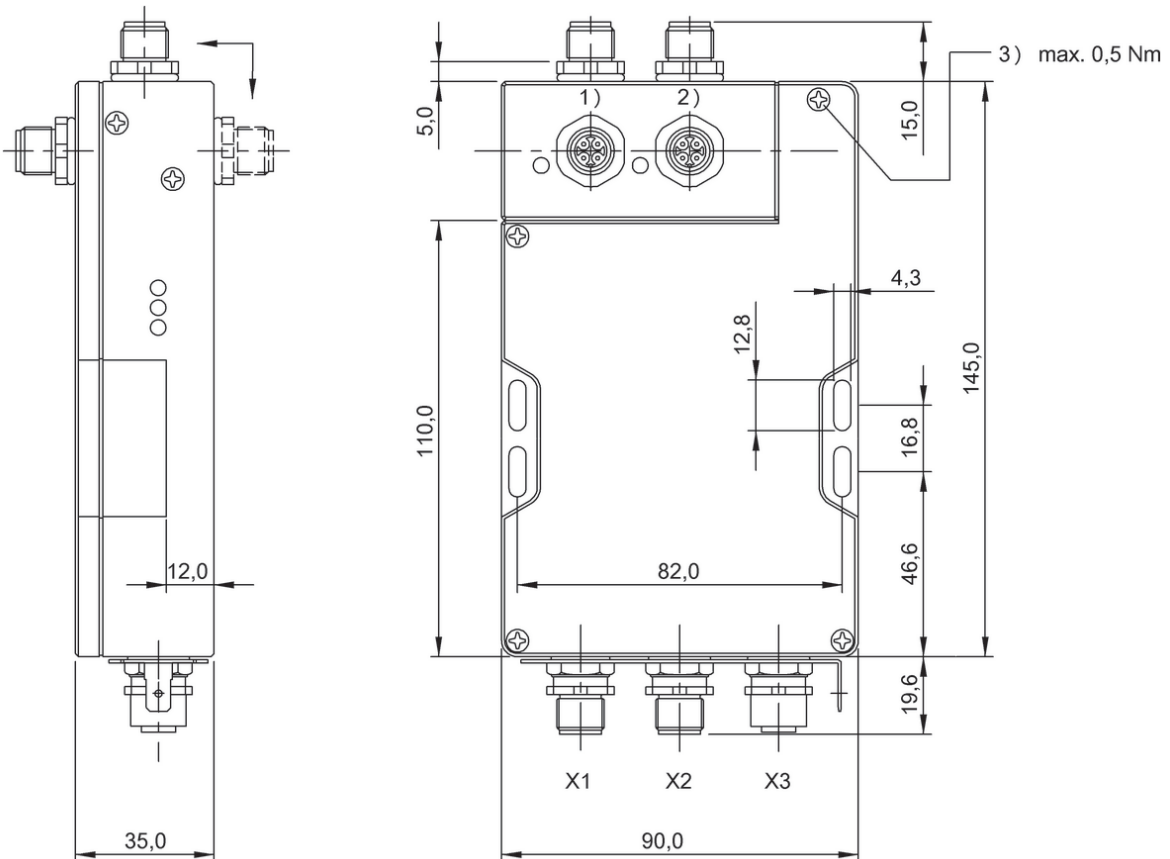
1) Head 1, 2) Head 2, 3) Tightening torque

BIS009A, BIS009M



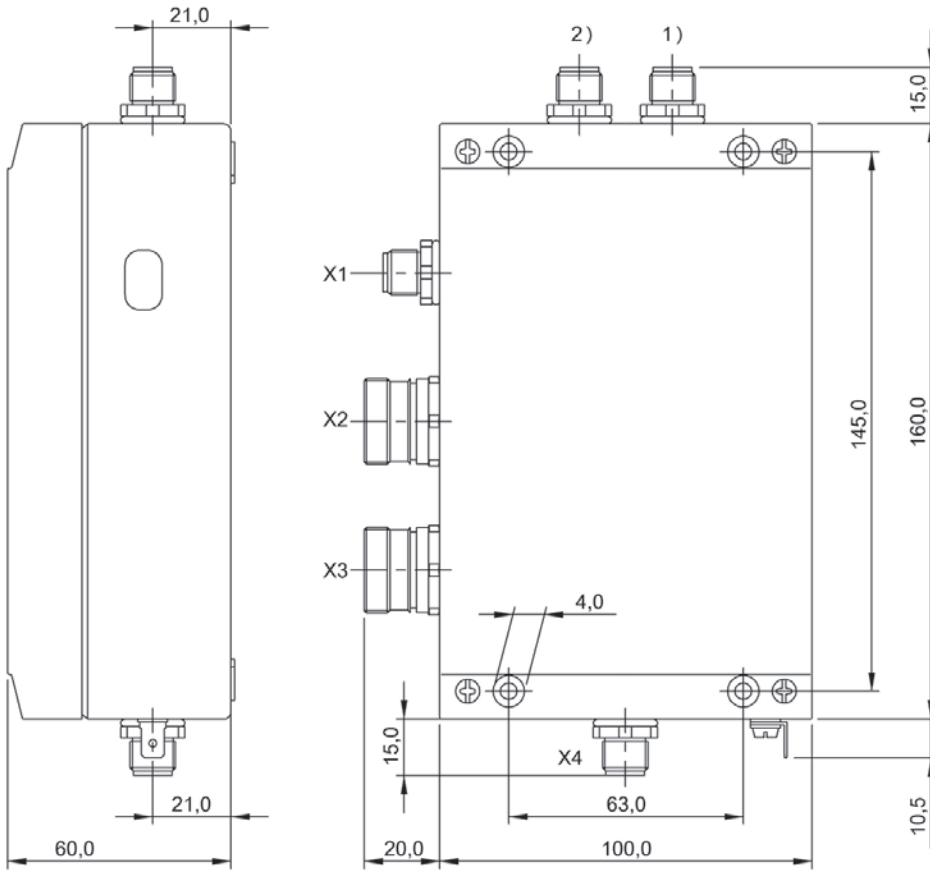
1) Head 1.1, 2) Head 2.1, 3) Head 1.2, 4) Head 2.2, 5) Tightening torque

BIS009H



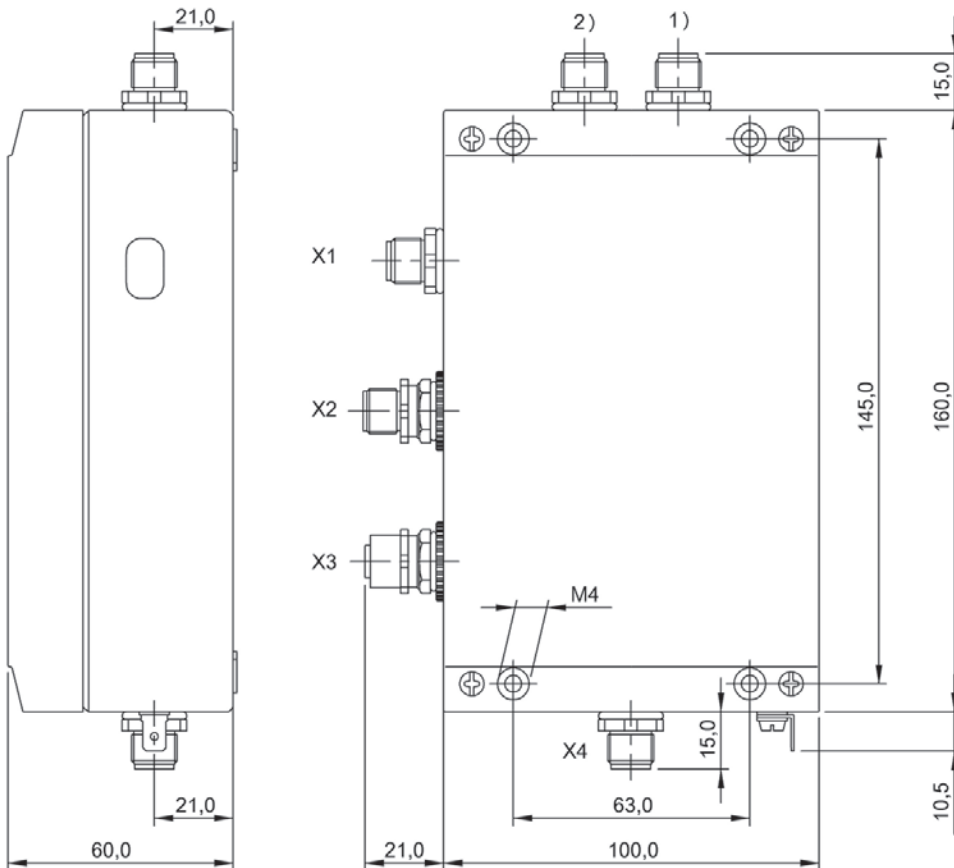
1) Head 1.1, 2) Head 2.1, 3) Head 1.2, 4) Head 2.2, 5) Tightening torque

BIS009J



1) Head 1, 2) Head 2

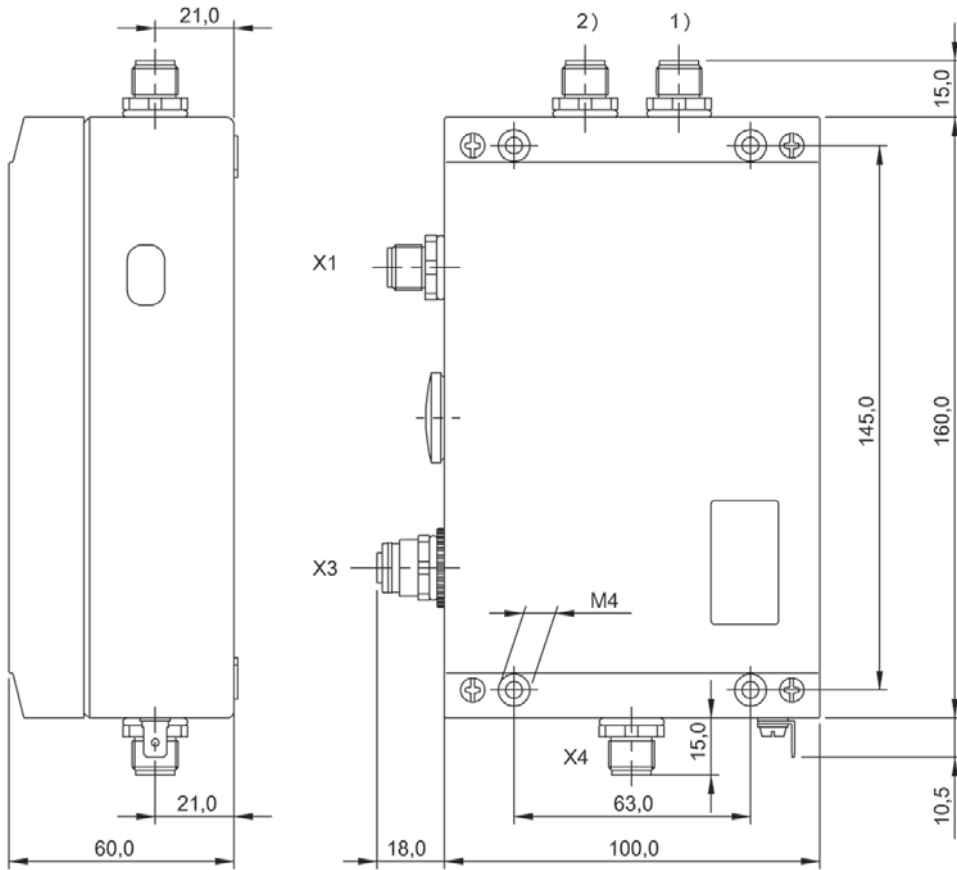
BISO00AL



1) Head 1, 2) Head 2

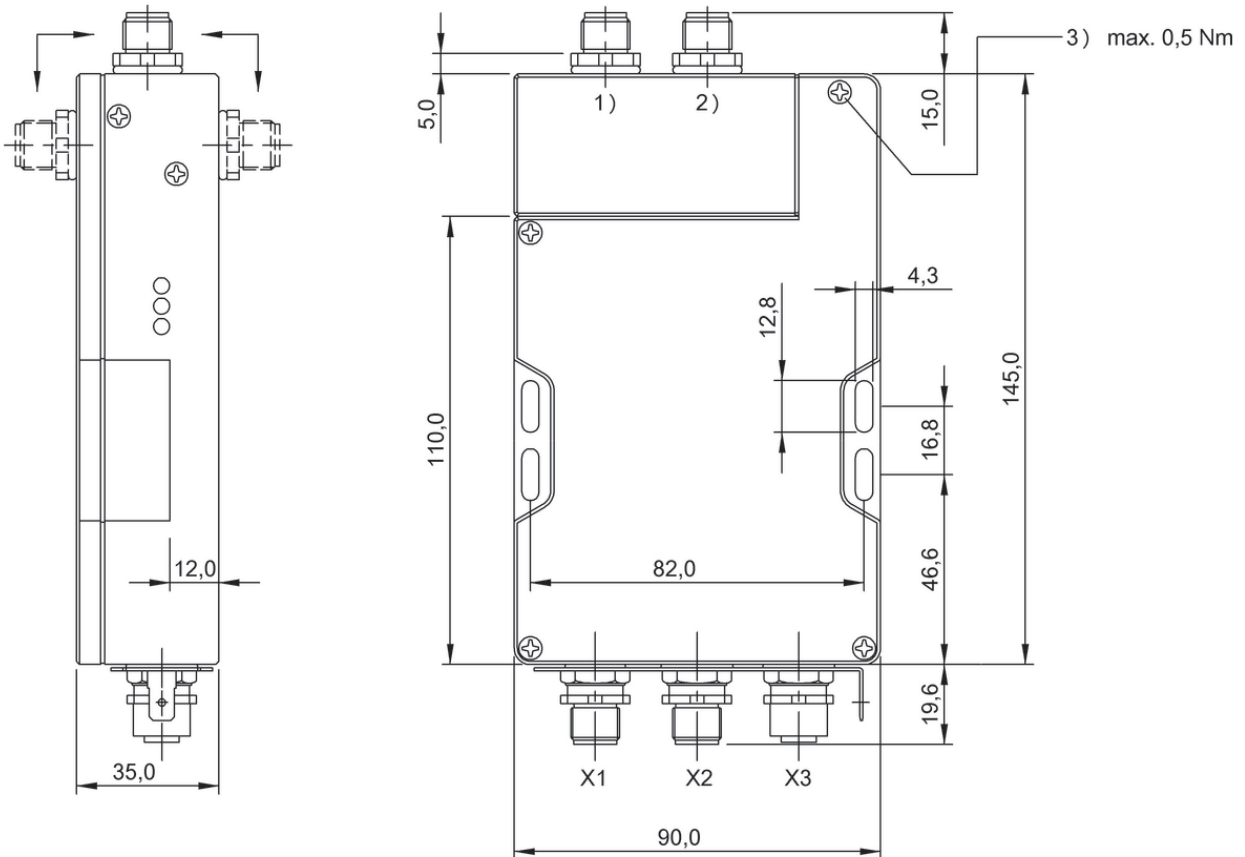
BISO00AM, BISO00AN

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1) Head 1, 2) Head 2

BIS00AY, BIS00AU

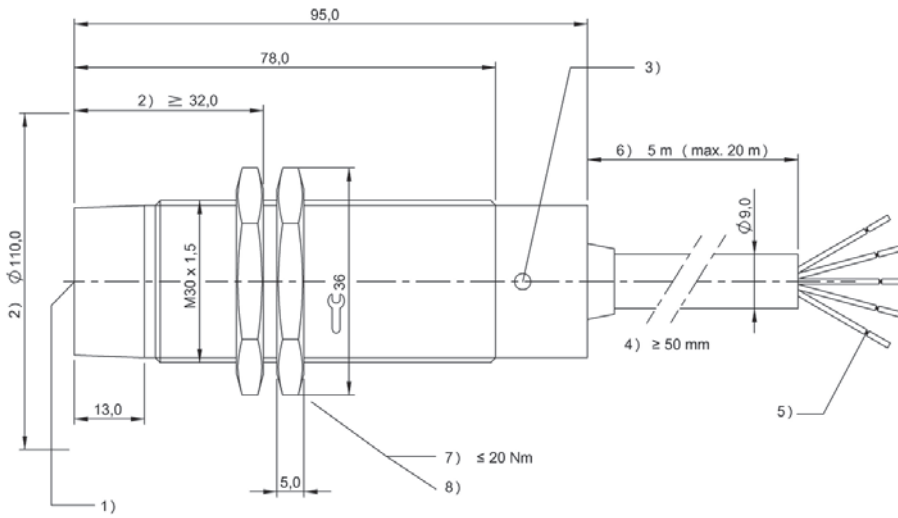


1) Head 1, 2) Head 2, 3) Tightening torque

BIS009N



5 m cable PU	BIS00HH BIS C-60R-003-08P-PU-05
10 m cable PU	BIS00HJ BIS C-60R-003-08P-PU-10
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 95 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Cable (shielded), 15-pin
Housing material	Brass
Interface	2x8 Bit parallel dynamic
Ambient temperature	0...50 °C
Protection degree	IP67
Approval/Conformity	CE



1) Sensing surface, 2) Clear zone, 3) data valid, 4) Cable bending radius, 5) strip, 6) standard length, 7) Tightening torque, 8) see remarks

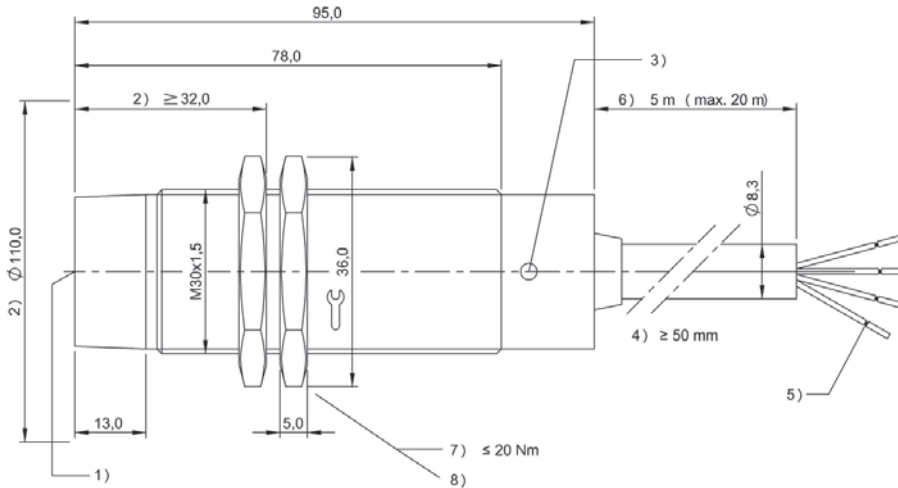


5 m cable PU	BIS00H6 BIS C-60R-001-08P-PU-05
10 m cable PU	BIS00H7 BIS C-60R-001-08P-PU-10
20 m cable PU	BIS00H8 BIS C-60R-001-08P-PU-20
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 95 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Cable (shielded), 11-pin
Housing material	Brass
Interface	8 Bit parallel
Ambient temperature	0...50 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS000T		BIS0011		BIS0004		BIS001E		BIS0002		BIS0019		BIS000M		BIS000N	
Data carrier distance to metal	flush	metal-free	metal-free		flush	metal-free	flush	metal-free	flush	metal-free	metal-free		flush		metal-free	
Working distance for reading	0-3	0-5	1-5		0-4	1-5	0-5	1-8	0-5	1-6	3-12		1-8		1-8	
Offset at distance																
	1	±2	±3	±3		±4	±2.5	±3	±4	±2.5	±3		±5		±7	
	3	±2	±3	±3		±2.5	±2.5	±3	±5	±3	±3	±7	±5		±7	
	5		±3	±3			±2.5	±3	±5	±3	±3	±6	±5		±7	
	7							±5			±5		±5		±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) data valid, 4) Cable bending radius, 5) strip, 6) standard length, 7) Tightening torque, 8) see remarks

BIS000C		BIS0006	
flush	metal-free	flush	
0-6	1-8	1-8	
±7	±7	±4	
±7	±7	±4	
±6	±7	±4	
	±6	±4	

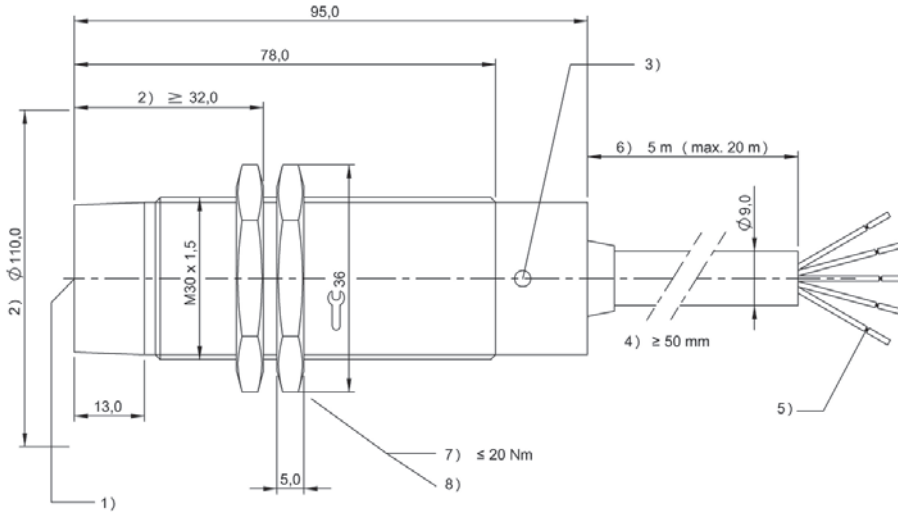


5 m cable PU	BIS00HC BIS C-60R-002-08P-PU-05
10 m cable PU	BIS00HE BIS C-60R-002-08P-PU-10
20 m cable PU	BIS00TC BIS C-60R-002-08P-PU-20
Product Group	LF (70/455 kHz)
Dimension	Ø 30 x 95 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Cable (shielded), 15-pin
Housing material	Brass
Interface	8x8 Bit parallel
Ambient temperature	0...50 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS000T		BIS0011		BIS0004		BIS001E		BIS0002		BIS0019		BIS000M		BIS000N	
Data carrier distance to metal	flush	metal-free	metal-free		flush	metal-free	flush	metal-free	flush	metal-free	metal-free		flush		metal-free	
Working distance for reading	0-3	0-5	1-5		0-4	1-5	0-5	1-8	0-5	1-6	3-12		1-8		1-8	
Offset at distance																
	1	±2	±3	±3		±4	±2.5	±3	±4	±2.5	±3		±5		±7	
	3	±2	±3	±3		±2.5	±2.5	±3	±5	±3	±3	±7	±5		±7	
	5		±3	±3			±2.5	±3	±5	±3	±3	±6	±5		±7	
	7							±5			±5		±5		±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) data valid, 4) Cable bending radius, 5) strip, 6) standard length, 7) Tightening torque, 8) see remarks

BIS000C		BIS0006	
flush	metal-free	flush	
0-6	1-8	1-8	
±7	±7	±4	
±7	±7	±4	
±6	±7	±4	
	±6	±4	



	BAE004C BIS C-720-01-03	BAE0088 BIS C-810-0-003	
Product Group	LF (70/455 kHz)	LF (70/455 kHz)	
Product name	Read / write gun	Standard	
Dimension	90 x 85 x 200 mm	97 x 55 x 232 mm	
Antenna type	—	—	
Use	for all C-85x with jack plug Ø6.3 mm	for all C-85x with jack plug Ø6.3 mm	
Display	—	LCD display 20 characters/4 lines	
Keypad	—	32 keys, alphanumeric (4x8)	
Operating voltage U _b	—	2.4 V DC rechargeable battery pack NiMH	
Storage temperature	-20...70 °C	—	
Ambient temperature	0...50 °C	0...50 °C	
Protection degree	IP40	IP40	
Approval/Conformity	CE	CE	
Productview	Page 432	Page 432	



	BAE0094 BIS C-850	BAE0095 BIS C-851	BAE0096 BIS C-852	BAE0097 BIS C-853
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	Read / write heads	Read / write heads	Read / write heads	Read / write heads
	—	Ø 14.5 x 94 mm	Ø 30 x 97 mm	27 x 27 x 72 mm
	—	round	round	Rod
	—	—	—	—
	—	—	—	—
	—	—	—	—
	—	-20...85 °C	-20...85 °C	-20...60 °C
	—	0...70 °C	0...70 °C	0...60 °C
	IP67	IP67	IP67	IP67
	CE	CE	CE	CE
	Page 433	Page 433	Page 433	Page 433

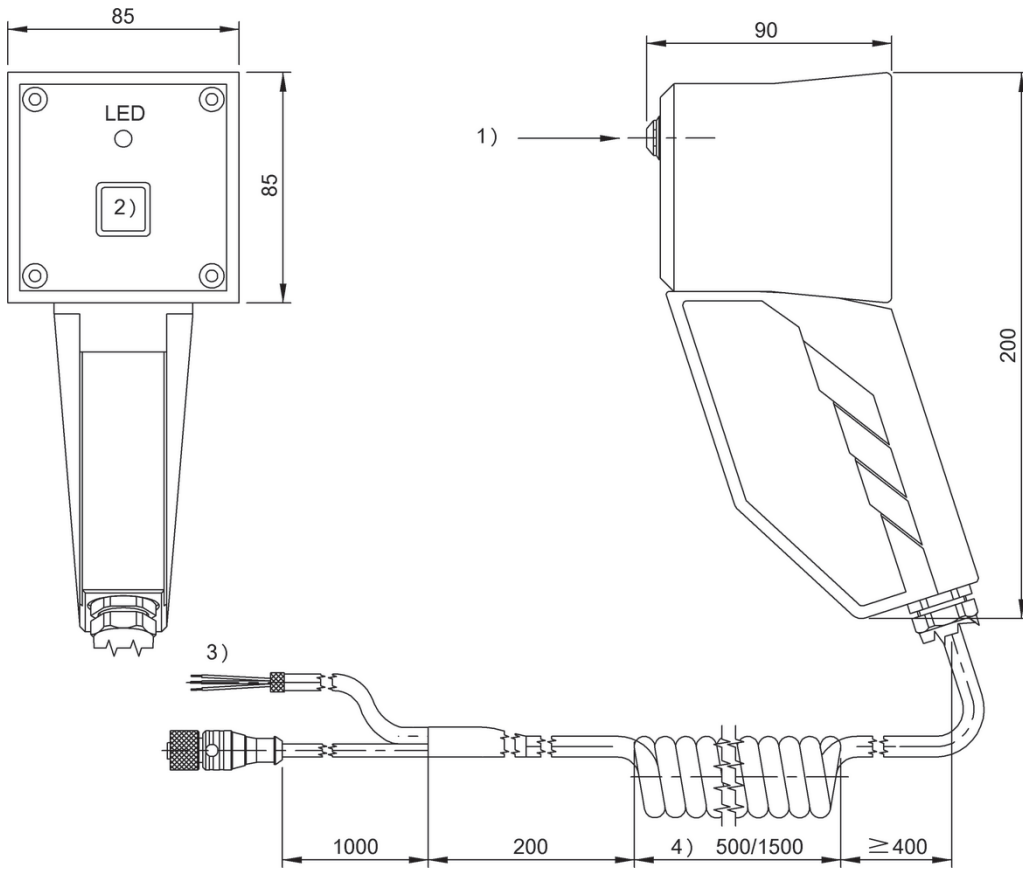


	BAE00CR BIS C-870-1-008-X-001	BAE00J6 BIS C-870-1-008-X-004	
Product Group	LF (70/455 kHz)	LF (70/455 kHz)	
Product name	WLAN	WLAN + 1D	
Dimension	100 x 51 x 265 mm	100 x 51 x 265 mm	
Antenna type	round	round	
Use	for data carriers $\varnothing \geq 20$ mm	for data carriers $\varnothing \geq 20$ mm	
Display	TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution	
Keypad	52 keys, alphanumeric	52 keys, alphanumeric	
Operating voltage U_b	3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack	
Storage temperature	-40...60 °C	-40...60 °C	
Ambient temperature	-10...50 °C	-10...50 °C	
Protection degree	IP65	IP65	
Approval/Conformity	CE	CE	
Productview	Page 434	Page 434	



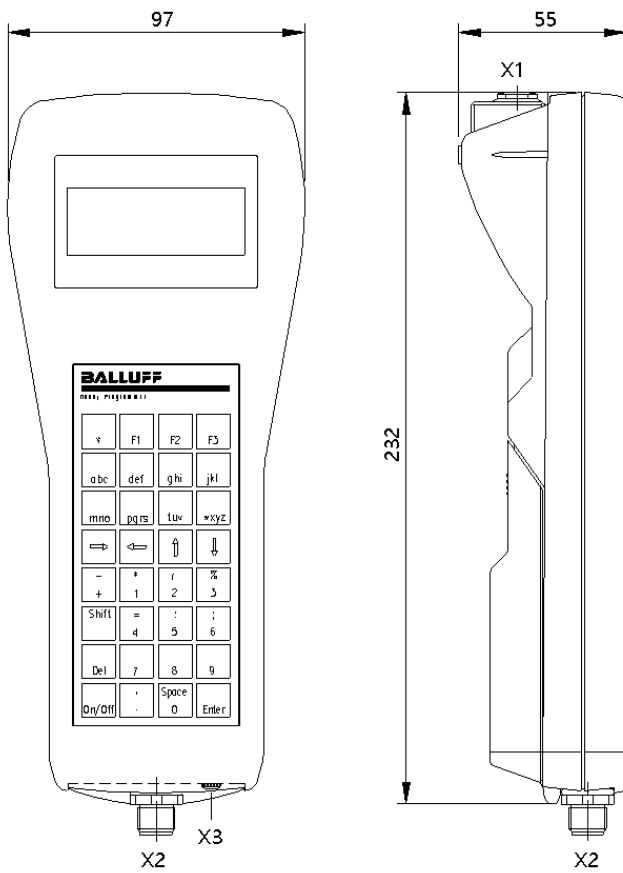
	BAE00K6 BIS C-870-1-008-X-005	BAE00NR BIS C-873-1-008-X-001	BAE00E8 BIS C-873-1-008-X-004	BAE00KM BIS C-873-1-008-X-005
	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)	LF (70/455 kHz)
	WLAN + 2D	WLAN	WLAN + 1D	WLAN + 2D
	100 x 51 x 265 mm	100 x 69 x 265 mm	100 x 69 x 265 mm	100 x 69 x 265 mm
	round	round	round	round
	for data carriers $\varnothing \geq 20$ mm	for data carriers $\varnothing < 20$ mm	for data carriers $\varnothing < 20$ mm	for data carriers $\varnothing < 20$ mm
	TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution
	52 keys, alphanumeric	52 keys, alphanumeric	52 keys, alphanumeric	52 keys, alphanumeric
	3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack
	-40...60 °C	-40...60 °C	-40...60 °C	-40...60 °C
	-10...50 °C	-10...50 °C	-10...50 °C	-10...50 °C
	IP65	IP65	IP65	IP65
	CE	CE	CE	CE
	Page 435	Page 435	Page 435	Page 435

432 I RFID I LF (70/455 kHz)

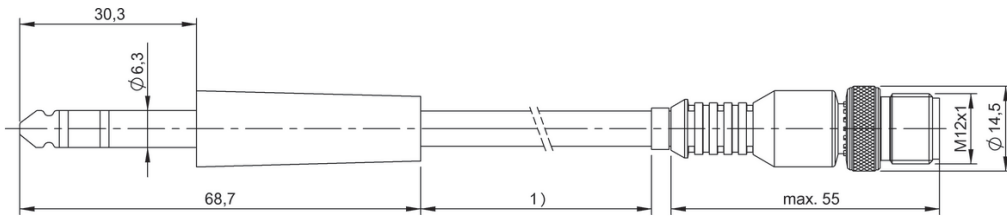


1) see remarks, 2) Button, 3) see connection diagram, 4) Spiral length retracted/extended

BAE004C

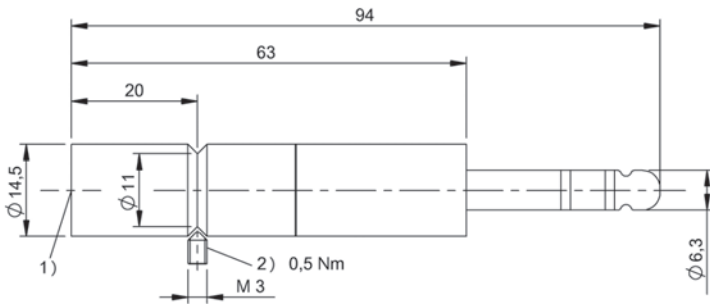


BAE0088



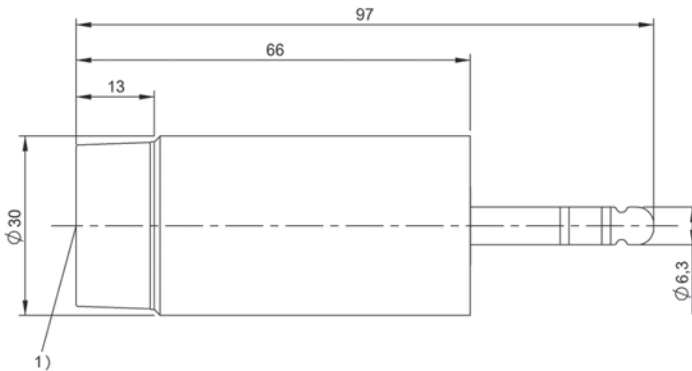
1) Cable length see text

BAE0094



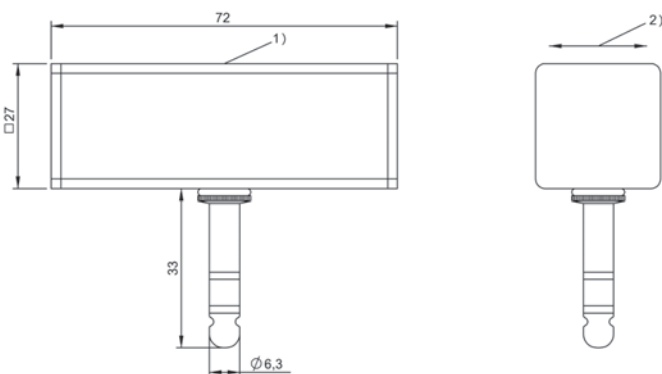
1) Sensing surface, 2) Tightening torque

BAE0095



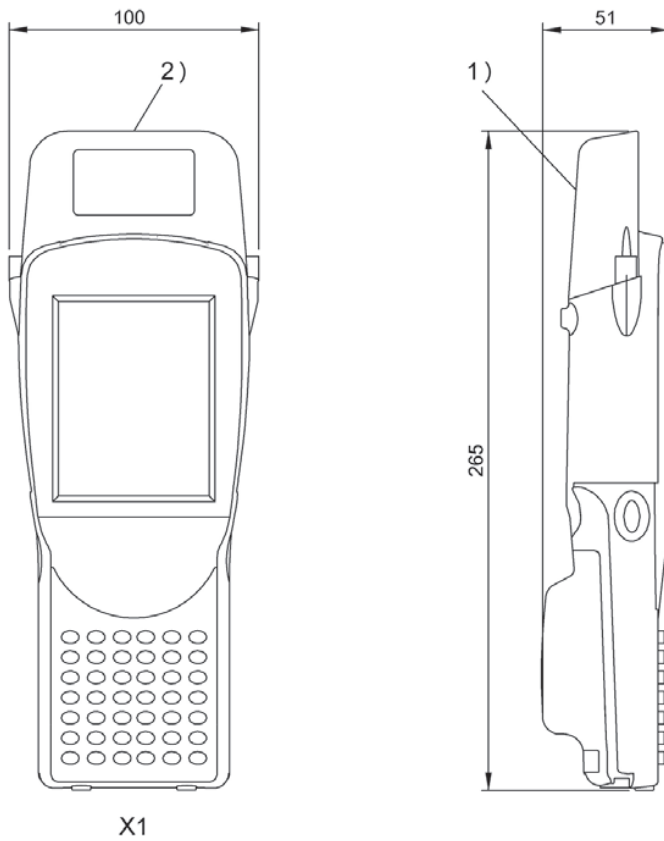
1) Sensing surface

BAE0096



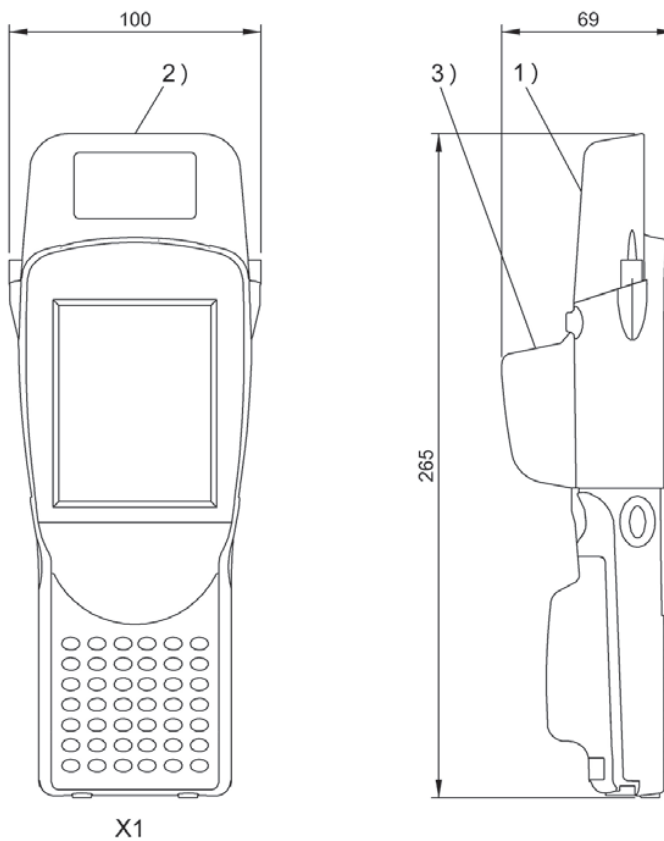
1) Sensing surface, 2) Read/write axis

BAE0097



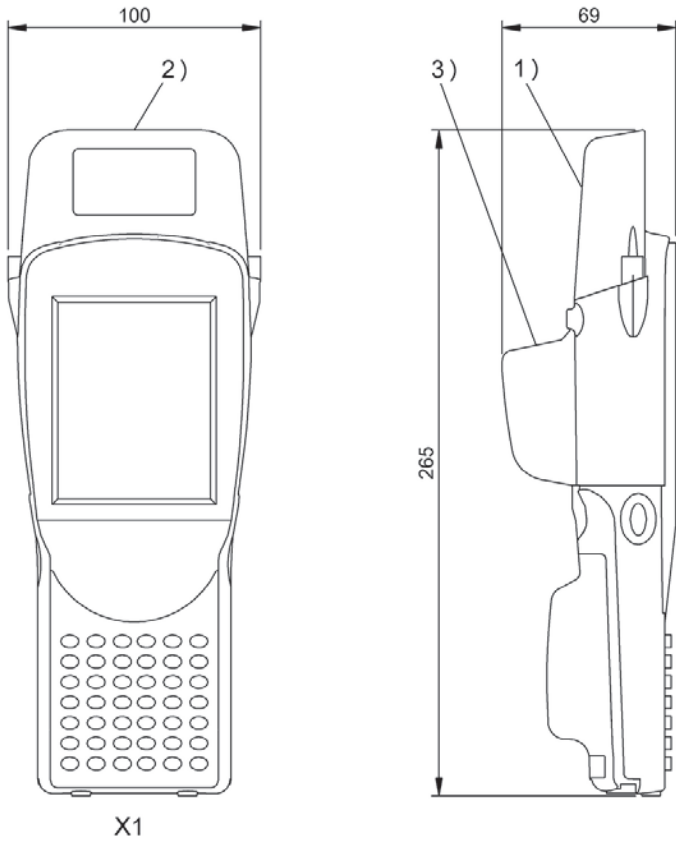
1) Sensing surface, 2) See data for antenna form

BAE00CR



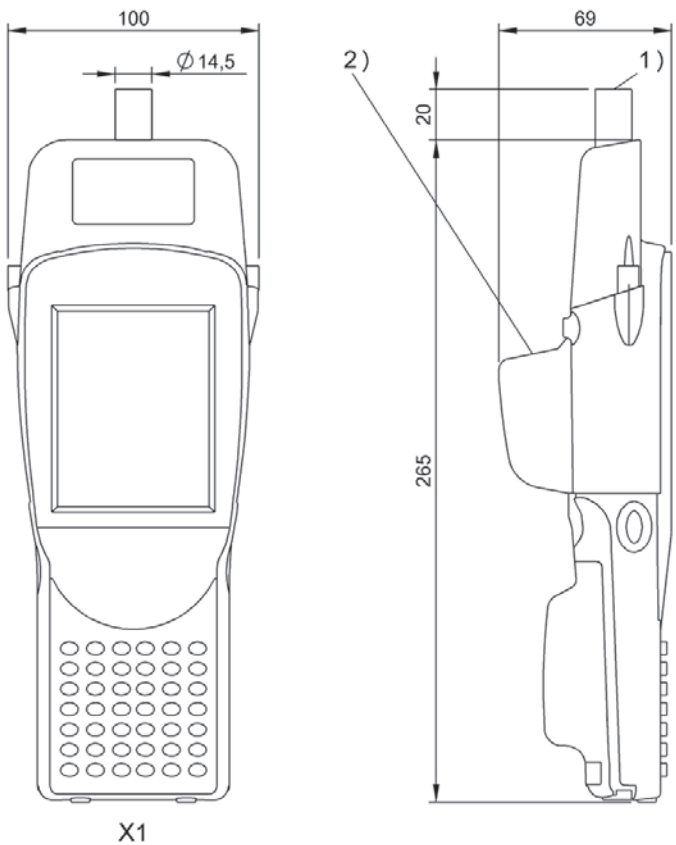
1) Sensing surface, 2) See data for antenna form, 3) Barcode 1D-Scanner

BAE00J6



1) Sensing surface, 2) See data for antenna form, 3) Barcode 2D-Scanner

BAE00K6



1) Sensing surface, 2) Barcode 1D-Scanner

BAE00NR, BAE00E8, BAE00KM

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



Cost-effective solution
for simple identification tasks

RFID-SYSTEM LF (125 KHZ) BIS L



Our low-frequency RFID systems BIS L are suitable for applications that involve only the identification and require less data processing. For example, often only a (read-only) code is required for tracing. The 125-kHz systems function reliably up to ranges of 100 mm and are relatively neutral with respect to materials such as water, textiles, wood and aluminum.

Features

- Data carrier memory limited to 192 bytes
- For sending smaller quantities of data
- Wide range of data carriers
- Unique ID with 5 bytes, read-only
- Read-only data carriers available (protection against manipulation)



	BIS0035 BIS L-100-05/L-R0	
Product Group	LF (125 kHz)	
Dimension	Ø 20 x 1.6 mm	
UID serial number, read-only	5 Byte	
User data, read/write	—	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Productview	Page 447	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS L-40x-xxx-001	5-12	0-15	0-30
BIS L-40x-xxx-002			0-23
BIS L-40x-xxx-003			
BIS L-40x-xxx-004			0-23
BIS VL-300	10-20	10-25	0-40
BIS VL-301	20-50	20-50	0-70
BIS VL-302	8-15	8-15	0-25
BIS VL-304	8-15	8-15	0-25
BIS VL-306			

Dimensions in mm

* Installation on request



	BIS0038 BIS L-101-05/L-RO	BIS003C BIS L-102-05/L-RO	BIS003F BIS L-103-05/L-RO
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 30 x 1.6 mm	Ø 50 x 1.6 mm	Ø 12.4 x 2 mm
	5 Byte	5 Byte	5 Byte
	—	—	—
	EEPROM	EEPROM	EEPROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	-40...95 °C	—
	—	—	-40...130 °C 1x1000 h
	-25...85 °C	-25...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF	PPS, EP
	IP67	IP67	IP68
	CE	CE	CE
	Page 447	Page 447	Page 447

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-18	0-24	0-40 0-27	0-28	0-32	0-55			0-20
			0-27						0-16
			0-27						0-11
			0-27						0-16
	10-30	10-35	0-50	15-40	15-45	0-70	3-10	3-12	0-25
	20-40	20-45	0-70	25-55	25-60	0-100			
	10-20	10-20	0-30	10-20	10-25	0-40	3-8	4-10	0-15
	10-20	10-20	0-30	10-20	10-25	0-40	3-8	4-10	0-15
									0-7



	BIS003R BIS L-200-03/L	
Product Group	LF (125 kHz)	
Dimension	Ø 20 x 1.6 mm	
UID serial number, read-only	5 Byte	
User data, read/write	—	
Memory type	PROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-40...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Productview	Page 447	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS L-40x-xxx-001	5-12	0-15	0-30
BIS L-40x-xxx-002			0-23
BIS L-40x-xxx-003			
BIS L-40x-xxx-004			0-23
BIS VL-300	10-20	10-25	0-40
BIS VL-301	20-50	20-50	0-70
BIS VL-302	8-15	8-15	0-25
BIS VL-304	8-15	8-15	0-25
BIS VL-306			

Dimensions in mm

* Installation on request



	BIS003T BIS L-201-03/L	BIS003U BIS L-202-03/L	BIS003W BIS L-203-03/L
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 30 x 1.6 mm	Ø 50 x 1.6 mm	Ø 12.4 x 2 mm
	5 Byte	5 Byte	5 Byte
	—	—	—
	PROM	PROM	PROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	-40...95 °C	—
	—	—	-40...130 °C 1x1000 h
	-40...85 °C	-40...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF	PPS, EP
	IP67	IP67	IP68
	CE	CE	CE
	Page 447	Page 447	Page 447

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)
	0-18	0-24	0-40 0-23	0-28	0-32	0-55			0-20
									0-16
									0-11
			0-27						0-16
	10-30	10-35	0-50	15-40	15-45	0-70	3-10	3-12	0-25
	20-40	20-45	0-70	25-55	25-60	0-100			
	10-20	10-20	0-30	10-20	10-25	0-40	3-8	4-10	0-15
	10-20	10-20	0-30	10-20	10-25	0-40	3-8	4-10	0-15
									0-7



	BIS0033 BIS L-100-01/L	
Product Group	LF (125 kHz)	
Dimension	Ø 20 x 1.6 mm	
UID serial number, read-only	4 Byte	
User data, read/write	192 Byte	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Productview	Page 447	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)	
BIS VL-300	10-20	10-20	0-30	
BIS VL-301	15-25	15-30	0-40	
BIS VL-302	8-15	8-15	0-20	
BIS VL-304	8-15	8-15	0-20	
BIS VL-306				

Dimensions in mm

* Installation on request



	BIS0034 BIS L-100-05/L	BIS0036 BIS L-101-01/L	BIS0037 BIS L-101-05/L
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 20 x 1.6 mm	Ø 30 x 1.6 mm	Ø 30 x 1.6 mm
	4 Byte	4 Byte	4 Byte
	192 Byte	192 Byte	192 Byte
	EEPROM	EEPROM	EEPROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	-40...95 °C	-40...95 °C
	—	—	—
	-25...85 °C	-25...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF	Epoxy resin-glass fiber, GF
	IP67	IP67	IP67
	CE	CE	CE
	Page 447	Page 447	Page 447

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
				10-30	10-30	0-40			
				15-35	15-40	0-55			
				10-20	10-20	0-25			
				10-20	10-20	0-25			
			0-12						



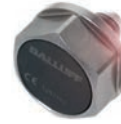
	BIS0039 BIS L-102-01/L	
Product Group	LF (125 kHz)	
Dimension	Ø 50 x 1.6 mm	
UID serial number, read-only	4 Byte	
User data, read/write	192 Byte	
Memory type	EEPROM	
Antenna type	round	
Installation	metal-free (clear zone) on metal flush in metal	
Storage temperature	-40...95 °C	
Storage temperature temporary	—	
Ambient temperature	-25...85 °C	
Housing material	Epoxy resin-glass fiber, GF	
Protection degree	IP67	
Approval/Conformity	CE	
Productview	Page 447	

Suitable read/write head with max. read/write working distance

Installation	flush in metal	on metal	metal-free (clear zone)
BIS VL-300	15-40	15-40	0-55
BIS VL-301	20-50	20-50	0-70
BIS VL-302	10-20	10-25	0-30
BIS VL-304	10-20	10-25	0-30
BIS VL-306			

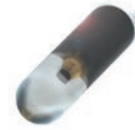
Dimensions in mm

* Installation on request



	BIS003A BIS L-102-05/L	BIS003E BIS L-103-05/L	BIS00KR BIS L-140-05/L-M8
	LF (125 kHz)	LF (125 kHz)	LF (125 kHz)
	Ø 50 x 1.6 mm	Ø 12.4 x 2 mm	Ø 22 x 21 mm
	4 Byte	4 Byte	4 Byte
	192 Byte	192 Byte	192 Byte
	EEPROM	EEPROM	PROM
	round	round	round
	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal	metal-free (clear zone) on metal flush in metal
	-40...95 °C	—	-25...95 °C
	—	-40...130 °C 1x1000 h	—
	-25...85 °C	-25...85 °C	-25...85 °C
	Epoxy resin-glass fiber, GF	PPS, EP	Steel, PA 12, GF30
	IP67	IP68	—
	CE	CE	CE
	Page 447	Page 447	Page 447

	flush in metal	on metal	metal-free (clear zone)	flush in metal	on metal	metal-free (clear zone)	flush in metal*	on metal*	metal-free (clear zone)*
	15-40	15-45	0-70						
	25-55	25-60	0-100						
	10-20	10-25	0-40						
	10-20	10-25	0-40						
						0-7			

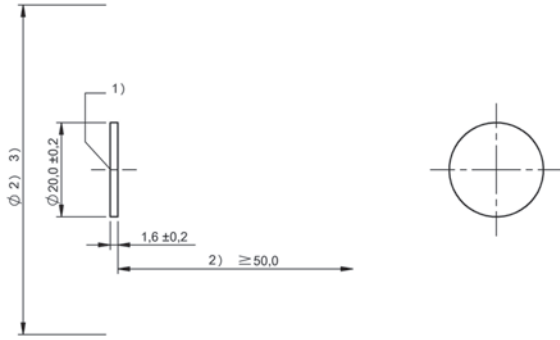


	BIS003N BIS L-150-05/A
Product Group	LF (125 kHz)
Dimension	Ø 3.15 x 13.3 mm
UID serial number, read-only	4 Byte
User data, read/write	192 Byte
Memory type	EEPROM
Antenna type	Rod
Installation	metal-free (clear zone) on metal flush in metal
Storage temperature	—
Storage temperature temporary	-40...90 °C 1x1000 h
Ambient temperature	-40...85 °C
Housing material	Glass, transparent
Protection degree	IP68
Approval/Conformity	CE
Productview	Page 447

Suitable read/write head with max. read/write working distance

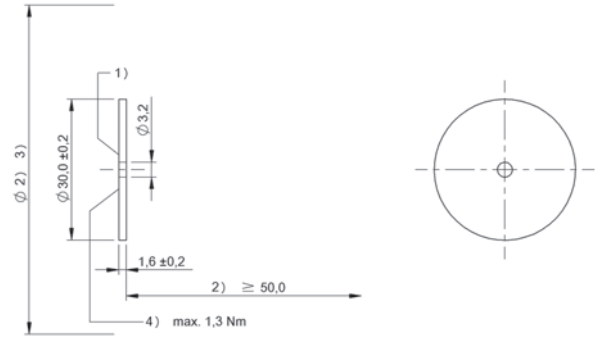
Installation	flush in metal	on metal	metal-free (clear zone)
BIS VL-301			0-32
BIS VL-350	0-24	0-24	0-17

Dimensions in mm



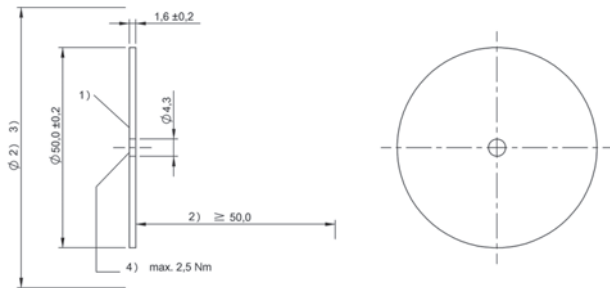
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO035, BISO03R, BISO033, BISO034



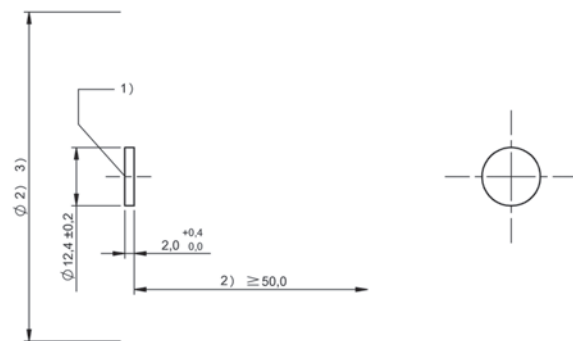
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO038, BISO03T, BISO036, BISO037



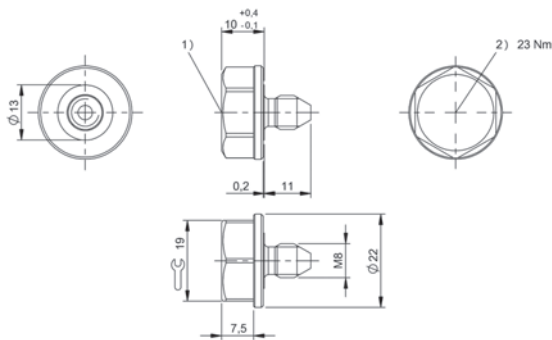
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head, 4) Tightening torque

BISO03C, BISO03U, BISO039, BISO03A



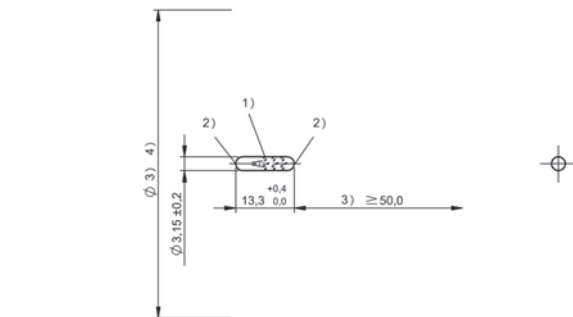
1) Sensing surface, 2) Clear zone, 3) see corresponding R/W head

BISO03F, BISO03W, BISO03E



1) Sensing surface, 2) Tightening torque

BISO0KR



1) Sensing surface parallel, 2) Sensing surface axial, 3) Clear zone, 4) see corresponding R/W head

BISO03N

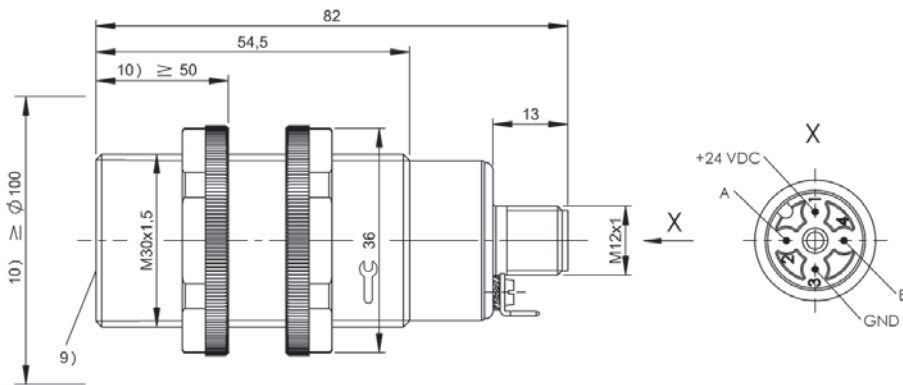


	BIS00UL BIS VL-300-001-S4
Product Group	LF (125 kHz)
Dimension	Ø 30 x 82 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	PVDF, nuts PA 6.6
Interface	—
Operating voltage U_b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			BIS003R BIS0035			BIS003T BIS0038			
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	
Data carrier clear zone																
Working distance for writing	0-30	10-20	10-20	0-40	10-30	10-30	0-55	15-40	15-40							
Working distance for reading	0-30	10-20	10-20	0-40	10-30	10-30	0-55	15-40	15-40	0-40	10-25	10-20	0-50	10-35	10-30	
Offset at distance																
	0	±18		±28			±30			±20			±28			
	3	±18		±28			±30			±20			±28			
	7	±18		±28			±30			±20			±28			
	8	±18		±28			±30			±20			±28			
	10	±18	±8	±8	±28	±15	±13	±30		±20	±15	±10	±28	±20	±17	
	12	±18	±8	±8	±28	±15	±13	±30		±20	±15	±10	±28	±20	±17	
	15	±18	±5	±5	±28	±15	±10	±30	±20	±20	±20	±10	±10	±28	±20	±17
	18	±18	±2	±2	±28	±15	±10	±30	±20	±18	±20	±10	±10	±28	±20	±17
	20	±18	±0	±0	±28	±15	±10	±30	±20	±15	±20	±10	±0	±28	±20	±17
	25	±18			±28	±10	±5	±30	±15	±15	±20	±0		±28	±20	±15
	30	±18			±28	±0	±0	±30	±15	±10	±20			±28	±15	±0
	35				±28			±30	±15	±0	±20			±28	±0	
	40				±28			±30	±0		±20			±28		
	45							±30						±28		
	50							±30						±28		
	55							±0								
	60															
	70															

Dimensions in mm



9) Sensing surface, 10) Clear zone

BIS003U BIS003C			BIS003W BIS003F		
metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
0-70	15-45	15-40	0-25	3-12	3-10
±35			±15		
±35			±15	±12	±9
±35			±15	±12	±8
±35			±15	±12	±8
±35			±15	±9	±7
±35			±15	±0	
±35	±25	±20	±15		
±35	±25	±20	±15		
±35	±25	±20	±15		
±35	±20	±20	±13		
±35	±20	±20			
±35	±15	±15			
±35	±12	±0			
±35	±0				
±35					
±35					
±35					
±35					

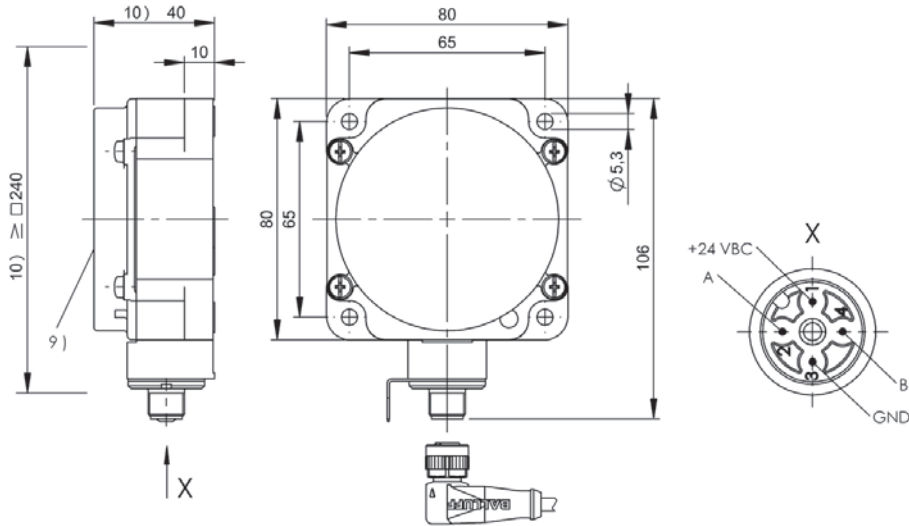


	BIS00U6 BIS VL-301-001-S4
Product Group	LF (125 kHz)
Dimension	80 x 80 x 40 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	PBT
Interface	—
Operating voltage U_b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			BIS003N BIS017H	BIS003R BIS0035			
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	metal-free	on metal	flush in metal	
Data carrier distance to metal														
Data carrier clear zone														
Working distance for writing	0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-32		0-70	20-50	20-50
Working distance for reading	0-40	15-30	15-25	0-55	15-40	15-35	0-70	20-50	20-50	0-32		0-70	20-50	20-50
Offset at distance														
	0	±30		±35			±40			±24		±40		
	3	±30		±35			±40			±24		±40		
	7	±30		±35			±40			±24		±40		
	8	±30		±35			±40			±24		±40		
	10	±30		±35			±40			±24		±40		
	12	±30		±35			±40			±24		±40		
	15	±30	±20	±15	±35	±20	±20	±40		±24		±40		
	18	±30	±15	±10	±35	±20	±20	±40		±24		±40		
	20	±30	±15	±10	±35	±20	±20	±40	±25	±22	±24	±40	±25	±22
	25	±30	±10	±0	±35	±20	±15	±40	±25	±22	±24	±40	±25	±22
	30	±30	±0		±35	±20	±15	±40	±25	±22	±24	±40	±25	±22
	35	±30			±35	±15	±0	±40	±20	±15		±40	±20	±15
	40	±30			±35	±0		±40	±15	±15		±40	±15	±15
	45				±35			±40	±15	±10		±40	±15	±10
	50				±35			±40	±0	±0		±40	±0	±0
	55				±35			±40				±40		
	60							±40				±40		
	70							±40				±40		

Dimensions in mm



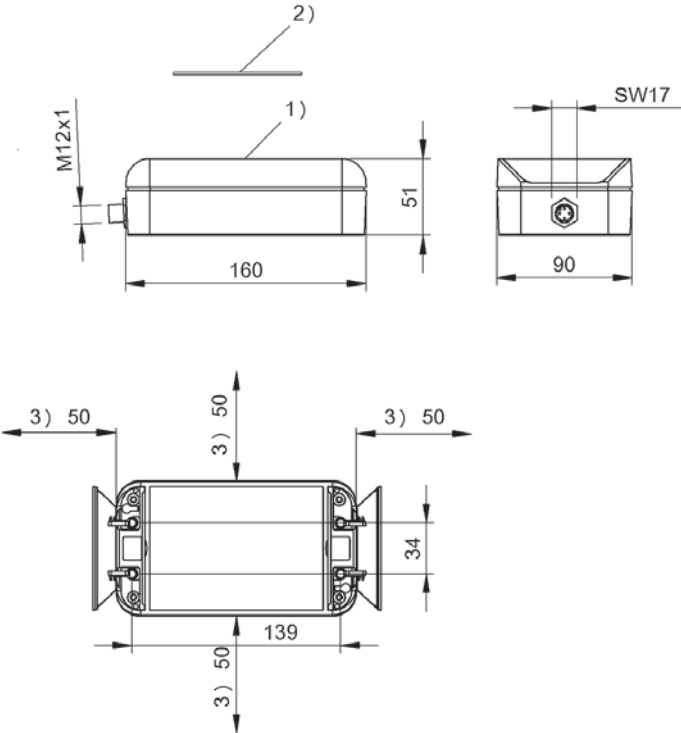
9) Sensing surface, 10) Clear zone

BIS003T BIS0038			BIS003U BIS003C		
metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
0-70	20-45	20-40	0-100	25-60	25-55
±40			±45		
±40			±45		
±40			±45		
±40			±45		
±40			±45		
±40			±45		
±40			±45		
±40	±24	±20	±45	±30	±30
±40	±24	±20	±45	±30	±30
±40	±20	±20	±45	±30	±25
±40	±20	±15	±45	±30	±25
±40	±18	±0	±45	±25	±20
±40	±0		±45	±20	±20
±40			±45	±10	±0
±40			±45	±0	
±40			±45		
±40			±45		



	BIS015U BIS VL-308-001-S4
Product Group	LF (125 kHz)
Dimension	90 x 51 x 160 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1 connector, 4-pin
Housing material	ABS
Interface	—
Operating voltage U_b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Suitable data carriers on request



1) Sensing surface, 2) Data carrier, 3) Clear zone

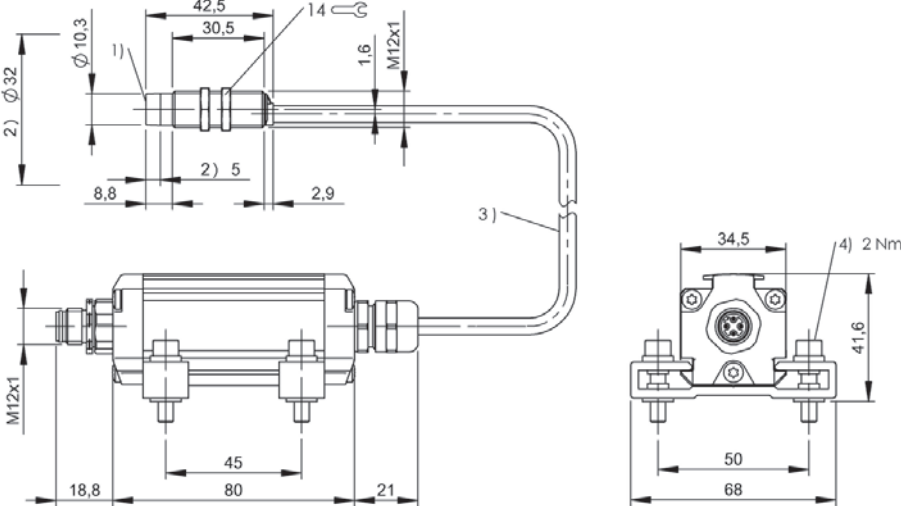


		BIS00UJ BIS VL-306-001-S4
Product Group		LF (125 kHz)
Dimension		Ø 12 x 42.5 mm
Installation		metal-free (clear zone)
Antenna type		round
Connection		M12x1-Male, 4-pole, 0.50 m, PU1
Housing material		Brass, interface aluminum
Interface		—
Operating voltage U _b		—
Storage temperature		-20...85 °C
Ambient temperature		0...70 °C
Protection degree		IP67
Approval/Conformity		CE

Appropriate data carrier

	BIS0034	BIS003E	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing	0-12	0-7	
Working distance for reading	0-12	0-7	0-7
Offset at distance			
	0 ±7	±4	±4
	3 ±7	±4	±4
	7 ±7	±4	±2
	8 ±7		
	10 ±7		
	12 ±7		
	15		
	18		
	20		
	25		
	30		
	35		
	40		

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length see text, 4) Tightening torque

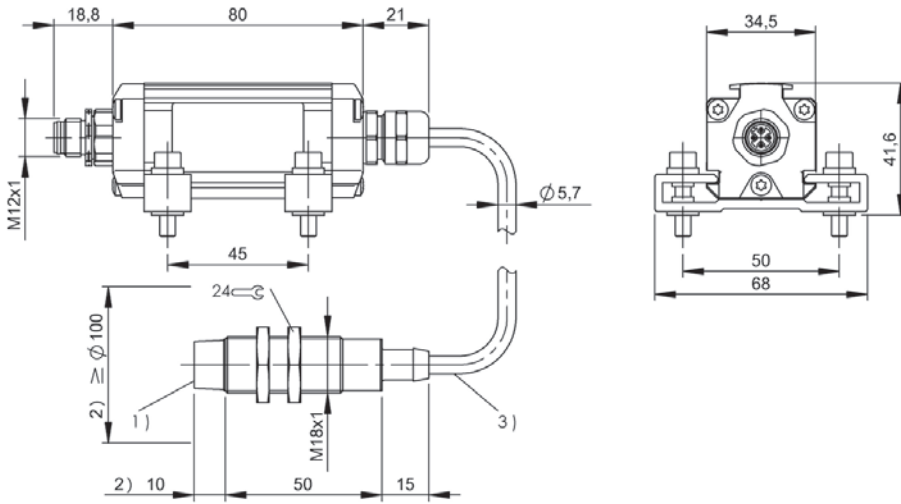


	BIS00UF BIS VL-302-001-S4
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Male, 4-pole, 0.50 m, PVC
Housing material	Brass, interface aluminum
Interface	—
Operating voltage U _b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039			BIS003R BIS0035			BIS003T BIS0038				
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal		
Data carrier distance to metal																	
Data carrier clear zone																	
Working distance for writing	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20								
Working distance for reading	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20	0-25	8-15	8-15	0-30	10-20	10-20		
Offset at distance																	
	0	±10		±12			±15			0	±13		±15				
	3	±10		±12			±15			3	±13		±15				
	7	±10		±12			±15			4	±13		±15				
	8	±10	±6	±6	±12		±15			8	±13	±8	±6	±15			
	10	±10	±5	±5	±12	±10	±8	±15	±15	±10	10	±13	±8	±6	±15	±10	±10
	12	±10	±4	±4	±12	±10	±8	±15	±15	±10	12	±13	±8	±6	±15	±10	±10
	15	±10	±0	±0	±12	±5	±5	±15	±15	±5	15	±13	±0	±0	±15	±10	±8
	18	±10			±12	±0	±0	±15	±10	±0	18	±13			±15	±0	±0
	20	±10			±12	±0	±0	±15	±10	±0	20	±13			±15	±0	±0
	25				±12			±15	±0		25	±13			±15		
	30							±15			30				±15		
	35										35						
	40										40						

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length

BIS003U BIS003C			BIS003W BIS003F		
metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
0-40	10-25	10-20	0-15	4-10	3-8
±20			±6		
±20			±6		±5
±20			±6	±7	±4
±20			±6	±6	±3
±20	±15	±8	±6	±5	
±20	±15	±8	±6		
±20	±15	±6	±6		
±20	±10	±0			
±20	±10	±0			
±20	±0				
±20					
±20					
±20					

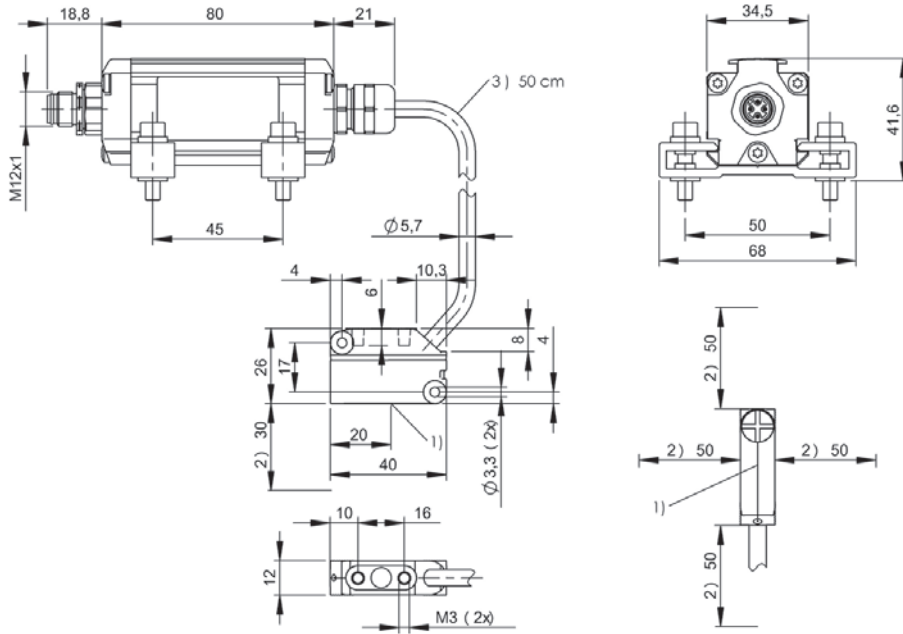


		BIS00UK BIS VL-350-001-S4
Product Group	LF (125 kHz)	
Dimension	12 x 26 x 40 mm	
Installation	metal-free (clear zone)	
Antenna type	Rod	
Connection	M12x1-Male, 4-pole, 0.50 m, PU	
Housing material	ABS, GF16, interface aluminum	
Interface	—	
Operating voltage U _b	—	
Storage temperature	-20...85 °C	
Ambient temperature	0...70 °C	
Protection degree	IP67	
Approval/Conformity	CE	

Appropriate data carrier

Data carrier distance to metal	BIS003N		
	metal-free	on metal	flush in metal
Data carrier clear zone			
Working distance for writing	0-17	0-24	0-24
Working distance for reading	0-17	0-24	0-24
Offset at distance			
	0 ±18	±20	±20
	3 ±18	±20	±20
	7 ±18	±20	±20
	8 ±18	±20	±20
	10 ±18	±20	±20
	12 ±10	±20	±20
	15 ±10	±20	±20
	18	±14	±14
	20	±14	±14
	25	±14	±14

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Cable length

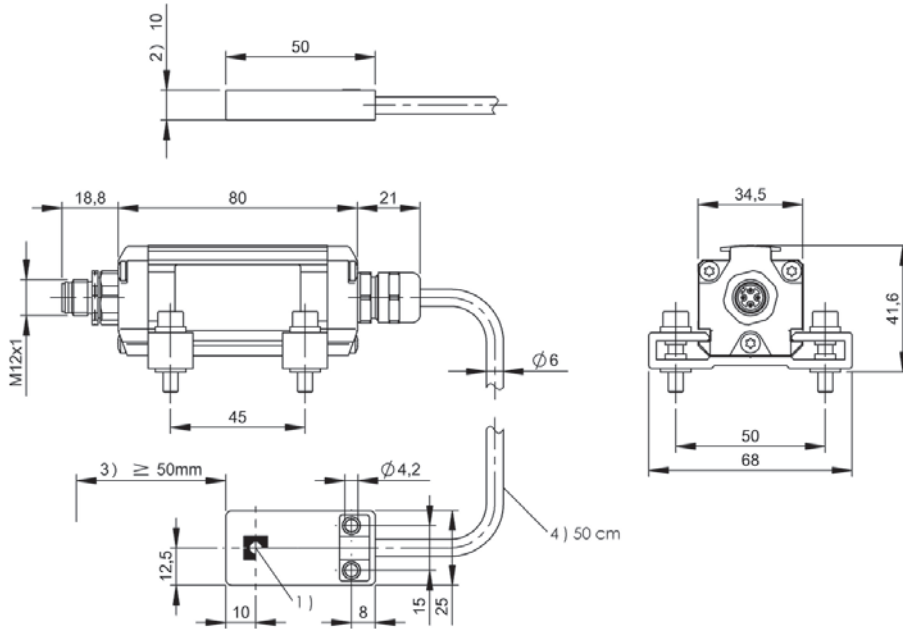


	BIS00UH BIS VL-304-001-S4
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	M12x1-Male, 4-pole, 0.50 m, PU
Housing material	ABS, GF16, interface aluminum
Interface	—
Operating voltage U_b	—
Storage temperature	-20...85 °C
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE

Appropriate data carrier

	BIS0033			BIS0036			BIS0039				BIS003R BIS0035			BIS003T BIS0038			
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal		metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	
Data carrier distance to metal																	
Data carrier clear zone																	
Working distance for writing	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20								
Working distance for reading	0-20	8-15	8-15	0-25	10-20	10-20	0-30	10-25	10-20								
Offset at distance																	
	0	±10		±12			±15				0	±13		±15			
	3	±10		±12			±15				3	±13		±15			
	7	±10		±12			±15				4	±13		±15			
	8	±10	±6	±6	±12		±15				8	±13	±8	±6	±15		
	10	±10	±5	±5	±12	±10	±8	±15	±15	±10	10	±13	±8	±6	±15	±10	±10
	12	±10	±3	±3	±12	±10	±8	±15	±15	±10	12	±13	±8	±6	±15	±10	±10
	15	±10	±0	±0	±12	±5	±5	±15	±15	±5	15	±13	±0	±0	±15	±10	±8
	18	±10			±12	±0	±0	±15	±10	±0	18	±13			±15	±0	±0
	20	±10			±12	±0	±0	±15	±10	±0	20	±13			±15	±0	±0
	25				±12			±15	±0		25	±13			±15		
	30							±15			30				±15		
	35										35						
	40										40						

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Clear zone surrounding, 4) Cable length

BIS003U BIS003C			BIS003W BIS003F		
metal-free	on metal	flush in metal	metal-free	on metal	flush in metal
0-40	10-25	10-20	0-15	4-10	3-8
±20			±6		
±20			±6		±5
±20			±6	±7	±3
±20			±6	±6	±3
±20	±15	±8	±6	±5	
±20	±15	±8	±6		
±20	±15	±6	±6		
±20	±10	±0			
±20	±10	±0			
±20	±0				
±20					
±20					
±20					



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS013U BIS V-6108-048-C002	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	Profinet I/O (IRT), 2 port Switch	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage Ub	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	
Productview	Page 472	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS013W BIS V-6108-048-C102	BIS00T3 BIS V-6102-019-C001	BIS012E BIS V-6102-019-C101
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
Profinet I/O (IRT), 2 port Switch	Profibus DP Slave galvanically isolated	Profibus DP Slave galvanically isolated
LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, B-coded M12x1-Female, 5-pole, B-coded 7/8"-Male, 5-pole
Page 472	Page 472	Page 472



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS0186 BIS V-6107-039-C005	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	Ethernet TCP/IP, USB	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole	
Productview	Page 473	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS018J BIS V-6107-039-C006	BIS0187 BIS V-6107-039-C105	BIS018K BIS V-6107-039-C106
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
Ethernet TCP/IP, USB	Ethernet TCP/IP, USB	Ethernet TCP/IP, USB
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 4-pole	M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole	M12x1-Female, 4-pole, D-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 4-pole
Page 473	Page 473	Page 473



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS012F BIS V-6106-034-C002	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	Ethernet/IP	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U _b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	
Productview	Page 474	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



BIS0122 BIS V-6106-034-C004	BIS014C BIS V-6106-034-C102	BIS0146 BIS V-6106-034-C104
Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
Ethernet/IP	Ethernet/IP	Ethernet/IP
LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)
4	4	4
24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
0...60 °C	0...60 °C	0...60 °C
IP65 with connector	IP65 with connector	IP65 with connector
CE, UL Listed	CE, UL Listed	CE, UL Listed
2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 4-pole	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 4-pole
Page 474	Page 474	Page 474



For read/write heads BIS VM (HF 13.56 MHz), BIS VL (LF 125 kHz) and BIS VU (UHF 860/960 MHz) *	BIS00U9 BIS V-6110-063-C002	
Product Group	Multi-Frequency Processors (BIS V)	
Interface	EtherCAT	
Supported RFID technologies	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	
Number of connectable R/W heads / antennas	4	
Operating voltage U_b	24 V DC LPS Class 2	
Housing material	Zinc, die-cast	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE, UL Listed	
Connection	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	
Productview	Page 475	

* Use adapter **BIS0FCK** to connect read/write heads **BIS C (LF 70/455 kHz)**.



	BIS0147 BIS V-6110-063-C102	BIS010P BIS V-6111-073-C003	BIS014E BIS V-6111-073-C103
	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)	Multi-Frequency Processors (BIS V)
	EtherCAT	CC-Link	CC-Link
	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM), UHF 860/960 MHz (BIS VU)	LF 125 kHz (BIS VL), HF 13.56 MHz (BIS VM)	LF 125 kHz (BIS VL), LF 70/455 kHz (BIS C), HF 13.56 MHz (BIS VM)
	4	4	4
	24 V DC LPS Class 2	24 V DC LPS Class 2	24 V DC LPS Class 2
	Zinc, die-cast	Zinc, die-cast	Zinc, die-cast
	0...60 °C	0...60 °C	0...60 °C
	IP65 with connector	IP65 with connector	IP65 with connector
	CE, UL Listed	CE, UL Listed	CE, UL Listed
	2x M12x1-Female, 4-pole, D-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, A-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole	M12x1-Male, 5-pole, A-coded M12x1-Female, 5-pole, A-coded 7/8"-Male, 5-pole
	Page 475	Page 475	Page 475



For read/write heads BIS L-400-043...	BAE003W BIS Z-EL-002-RS232	
Product Group	LF (125 kHz)	
Interface	RS232	
Supported RFID technologies	LF 125 kHz (BIS L, Easy Loop)	
Number of connectable R/W heads / antennas	16	
Operating voltage U_b	19.2...28.8 VDC	
Housing material	ABS	
Ambient temperature	0...60 °C	
Protection degree	IP65 with connector	
Approval/Conformity	CE	
Connection	Male, 4-pole Male, 5-pole	
Productview	Page 476	



BAE003U BIS Z-EL-001-ETHERNET		
LF (125 kHz)		
Ethernet TCP/IP		
LF 125 kHz (BIS L, Easy Loop)		
16		
19.2...28.8 VDC		
ABS		
0...60 °C		
IP65 with connector		
CE		
Female, 4-pole, D-coded Male, 5-pole		
Page 476		

Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Systems

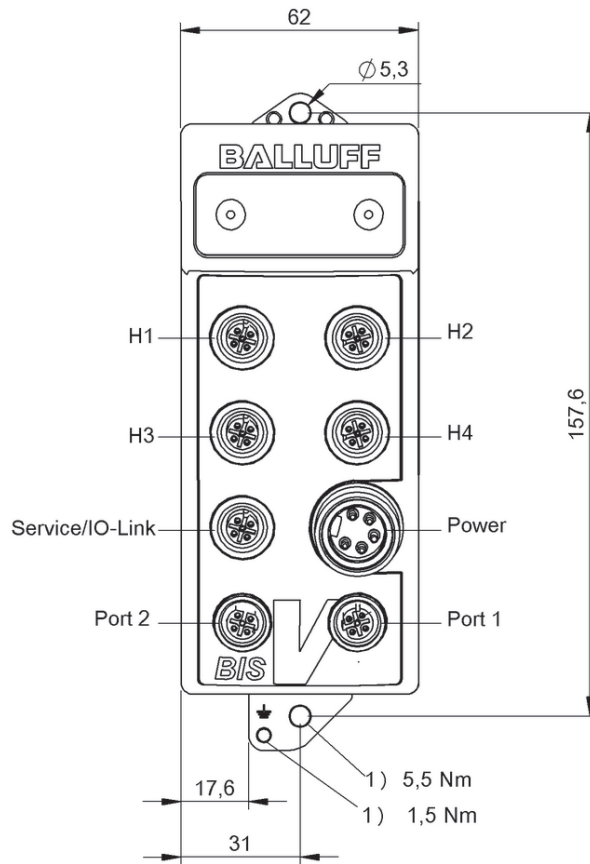
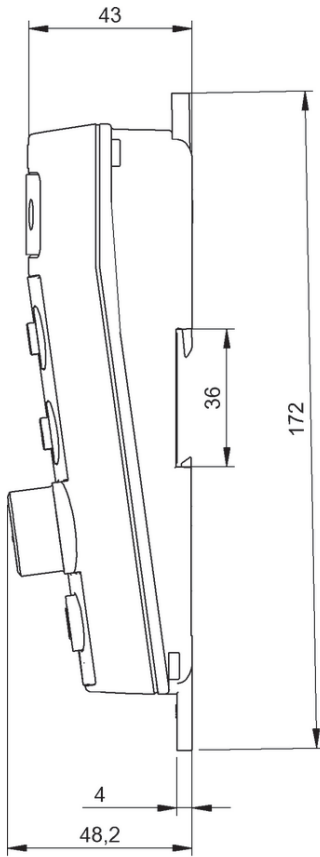
Safety

Industrial Networking

Power Supplies

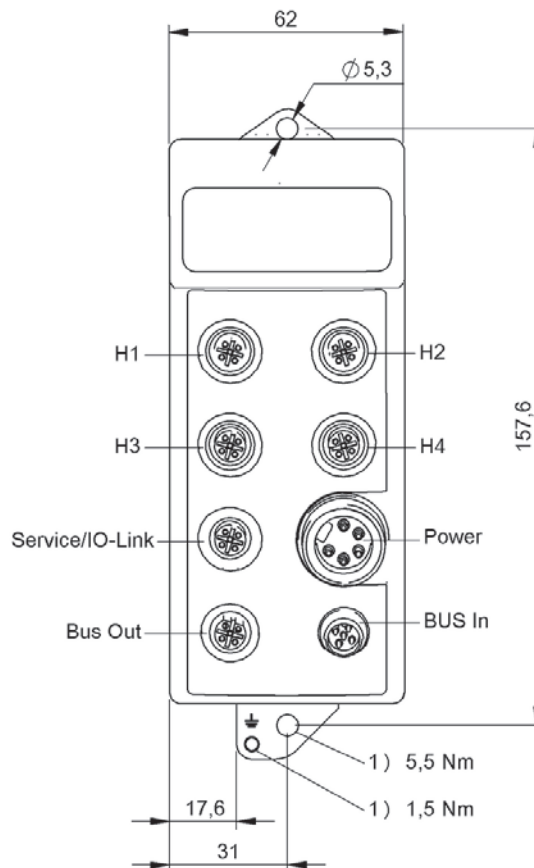
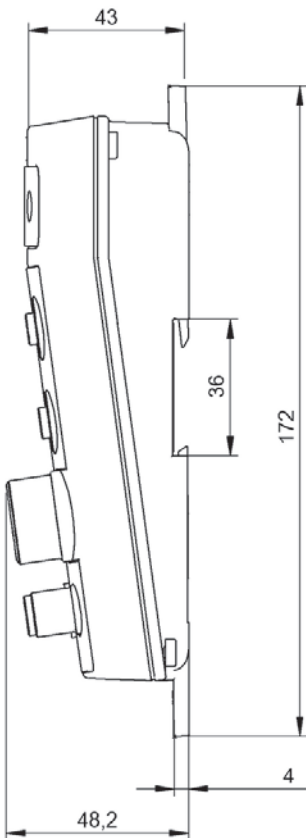
Connectivity

Accessories



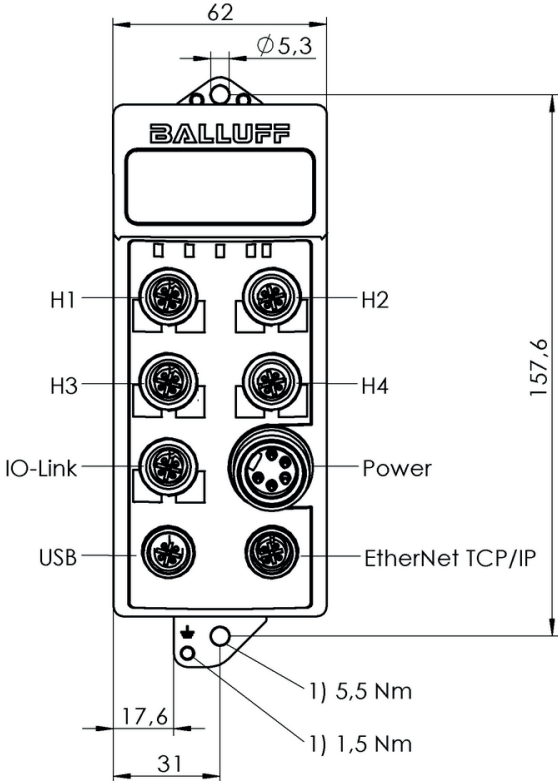
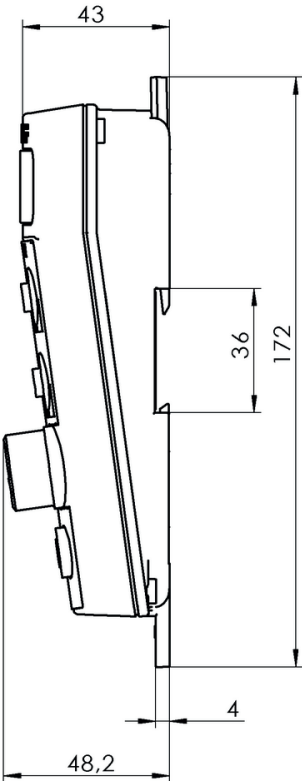
1) Tightening torque

BIS013U, BIS013W



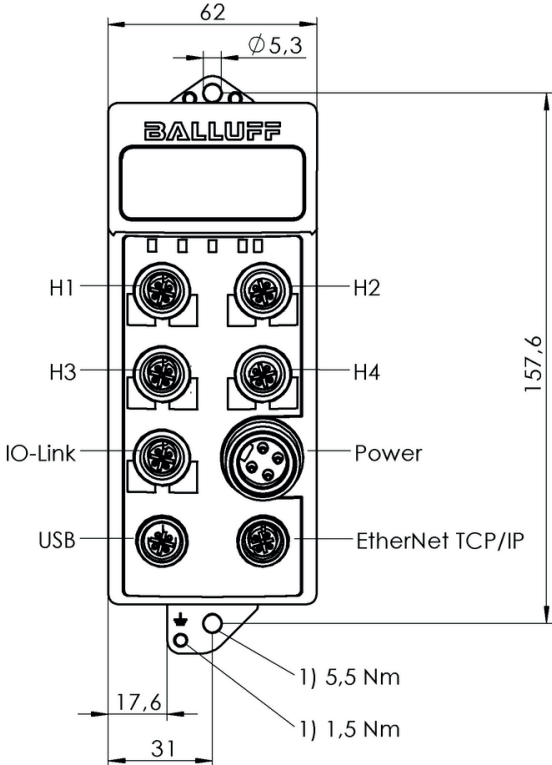
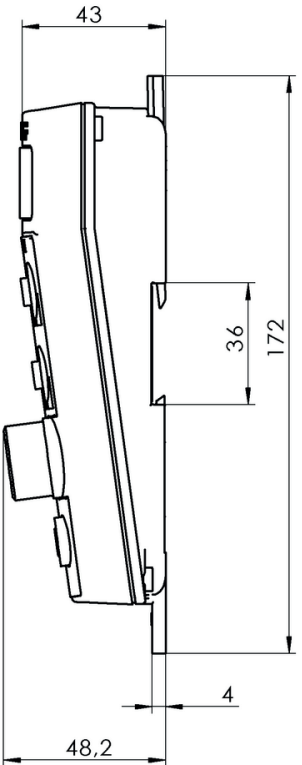
1) Tightening torque

BIS00T3, BIS012E



1) Tightening torque

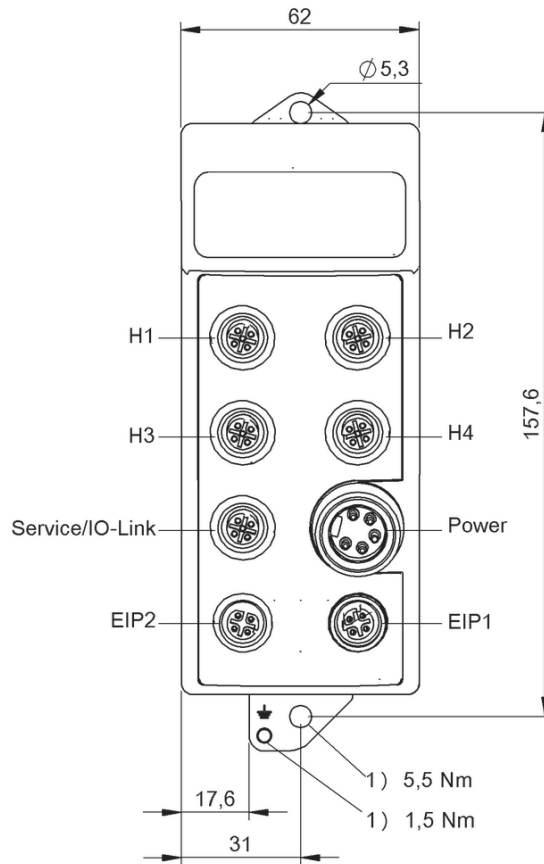
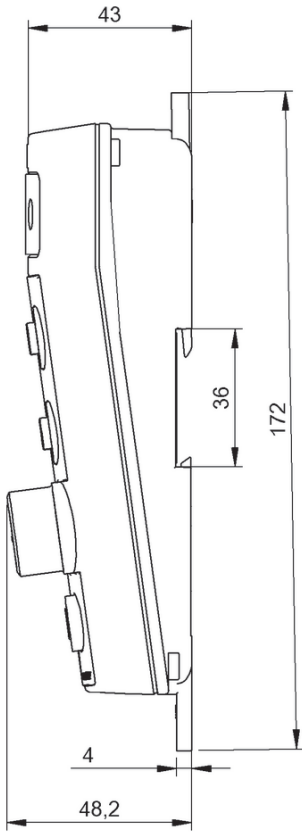
BIS0186, BIS0187



1) Tightening torque

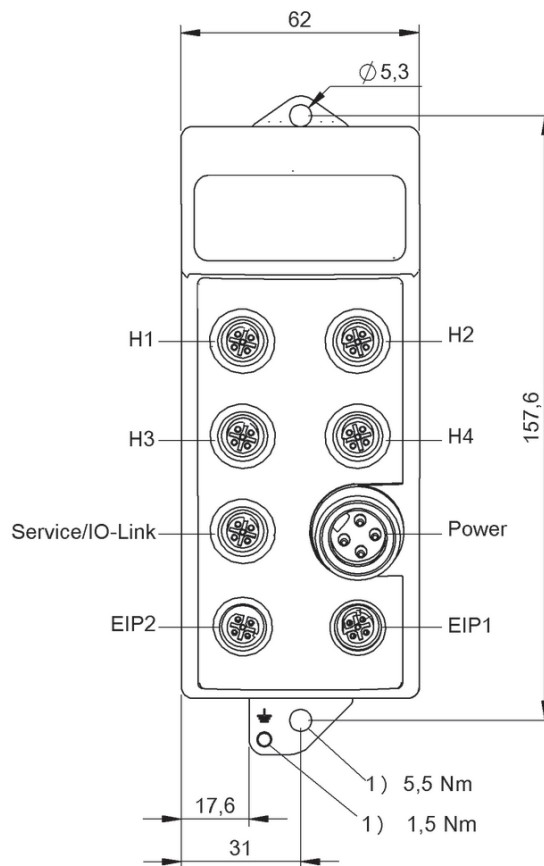
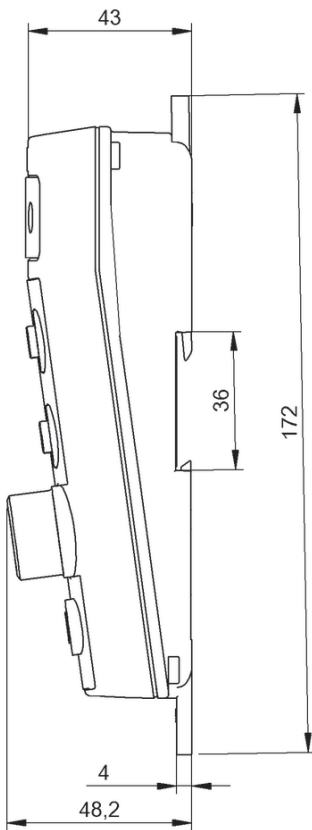
BIS018J, BIS018K

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



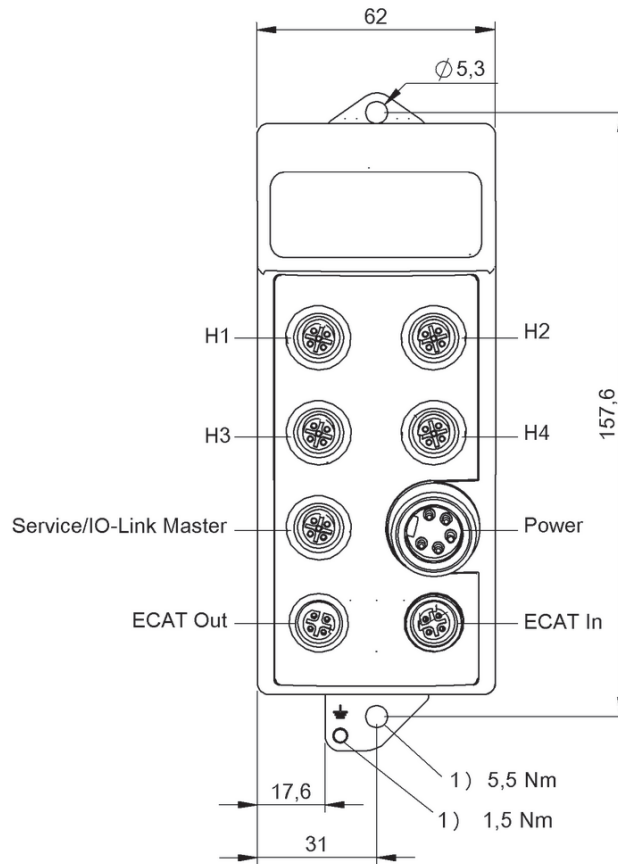
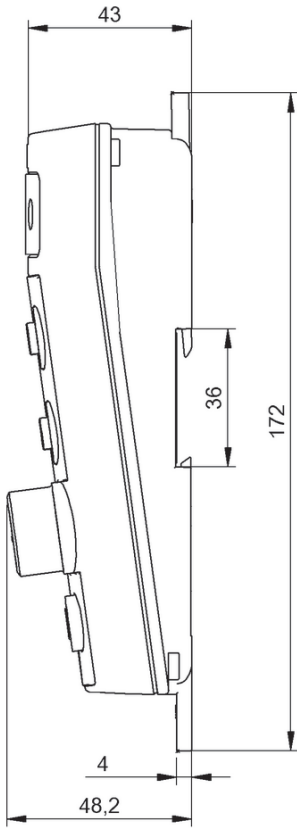
1) Tightening torque

BIS012F, BIS014C



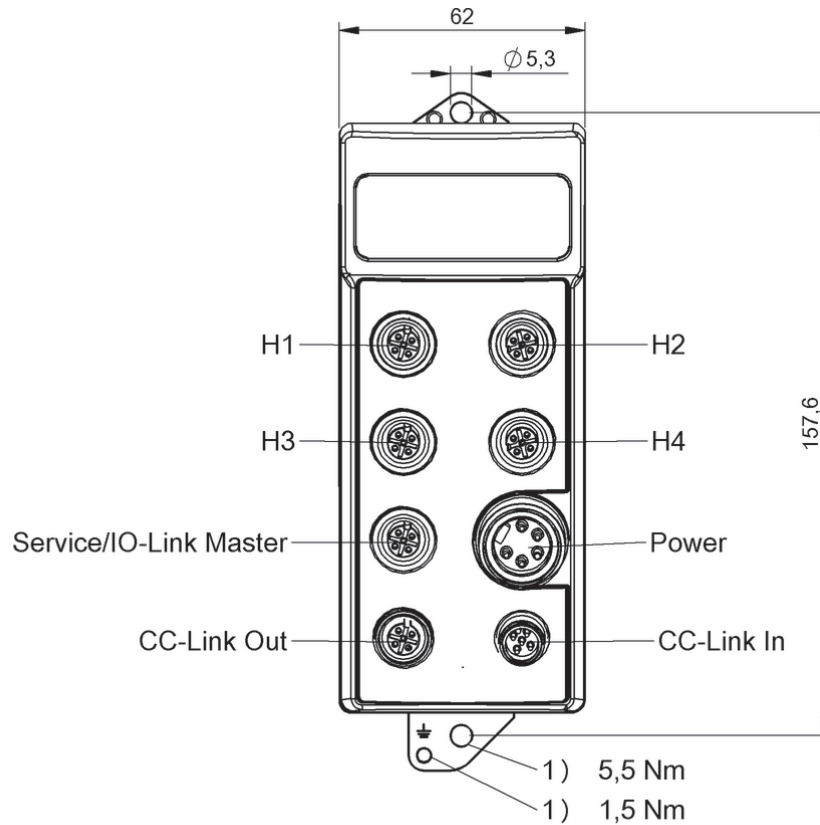
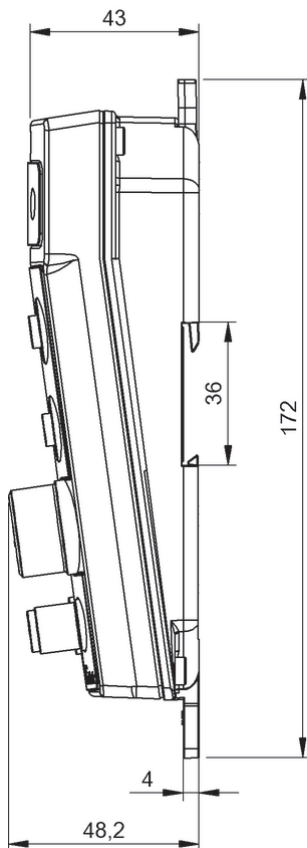
1) Tightening torque

BIS0122, BIS0146



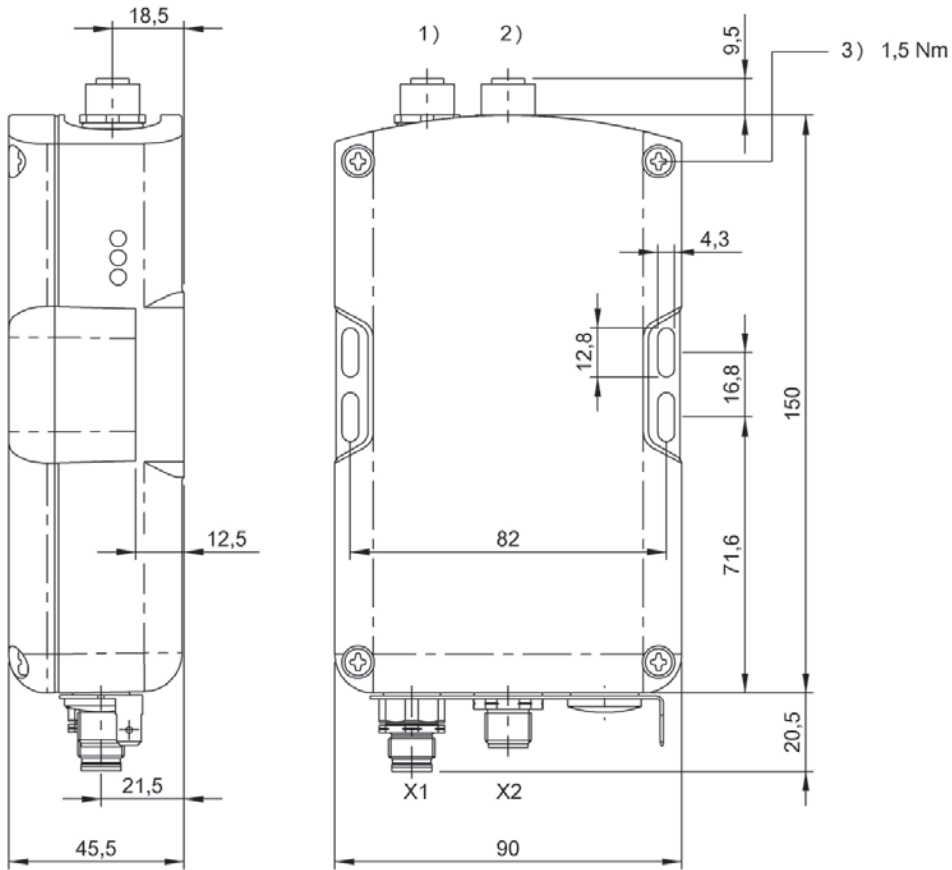
1) Tightening torque

BIS00U9, BIS0147



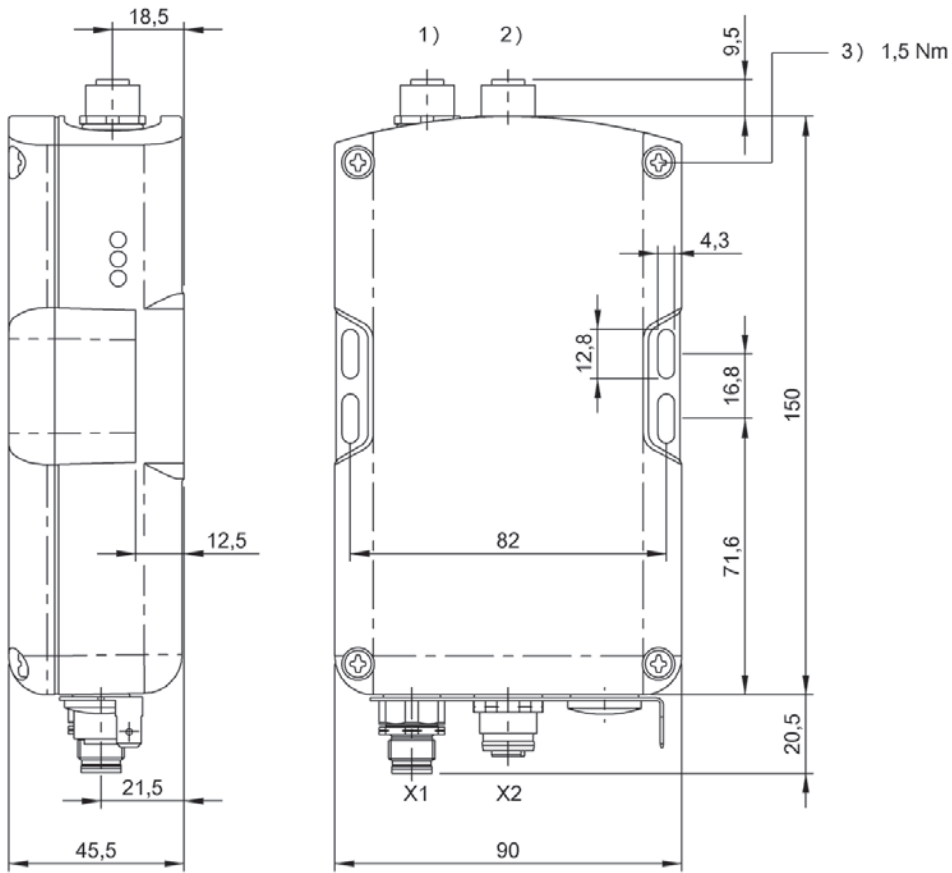
1) Tightening torque

BIS010P, BIS014E



1) Line 1, 2) Line 2, 3) Tightening torque

BAE003W



1) Line 1, 2) Line 2, 3) Tightening torque

BAE003U

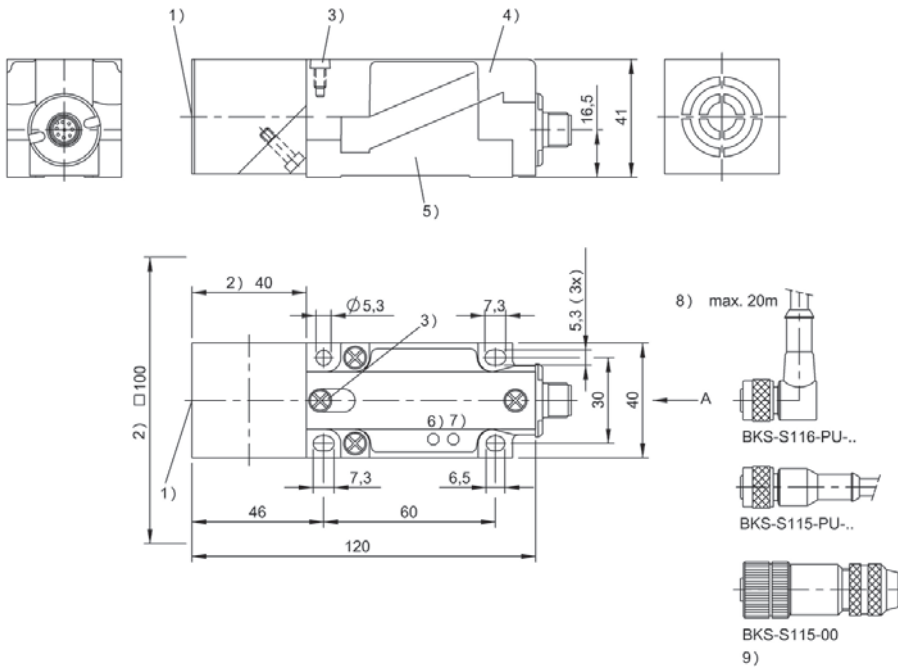


BIS00C5 BIS L-400-035-001-00-S115	
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable

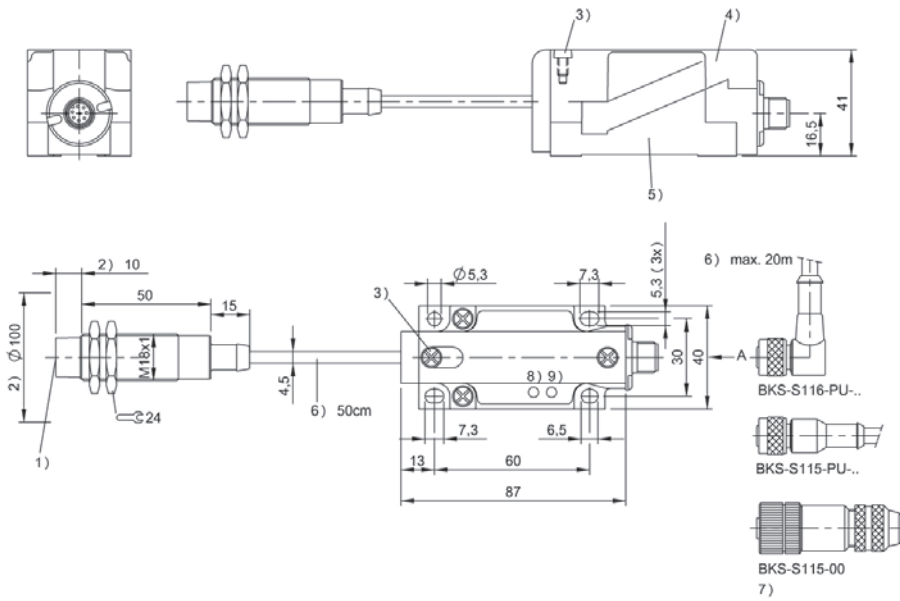


	BIS00C7 BIS L-400-035-002-00-S115
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

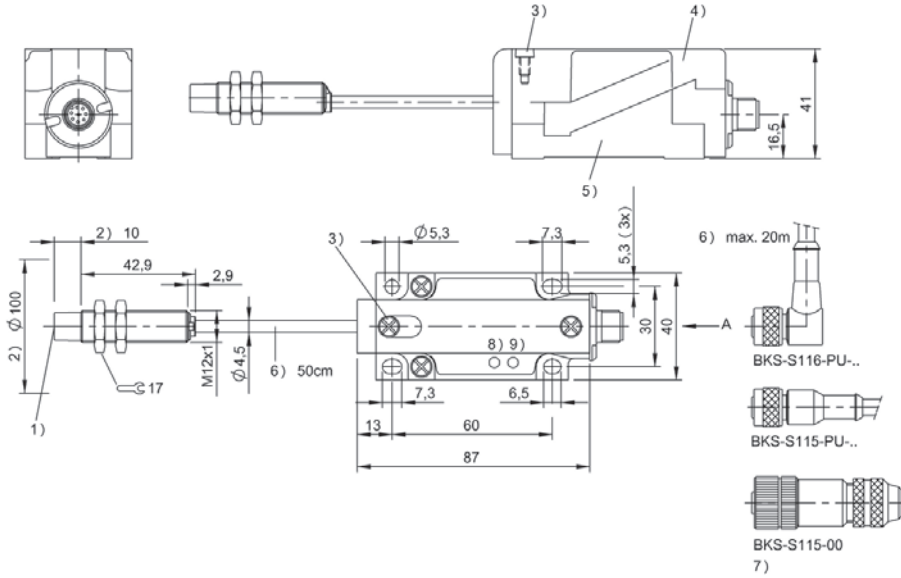


	BIS00C9 BIS L-400-035-003-00-S115
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W	BIS003F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

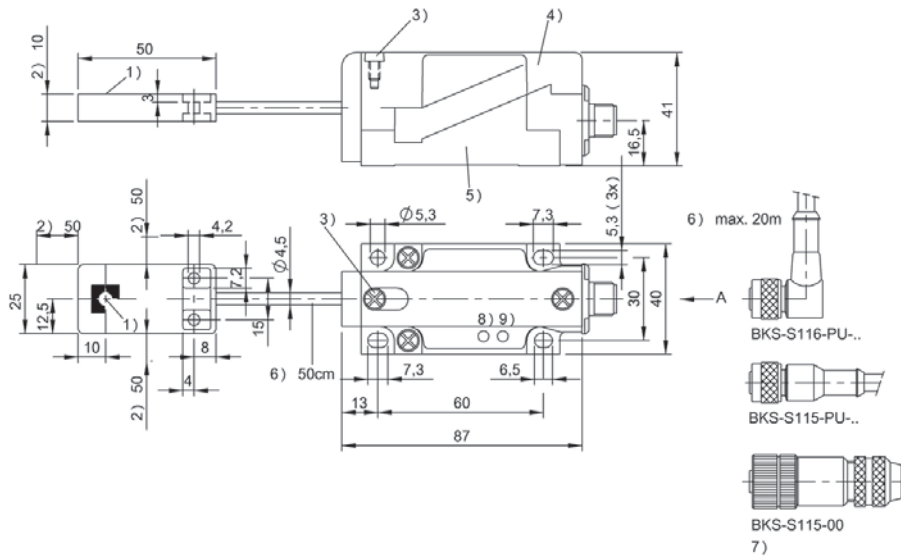


BIS00CC BIS L-400-035-004-00-S115	
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	RS232
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

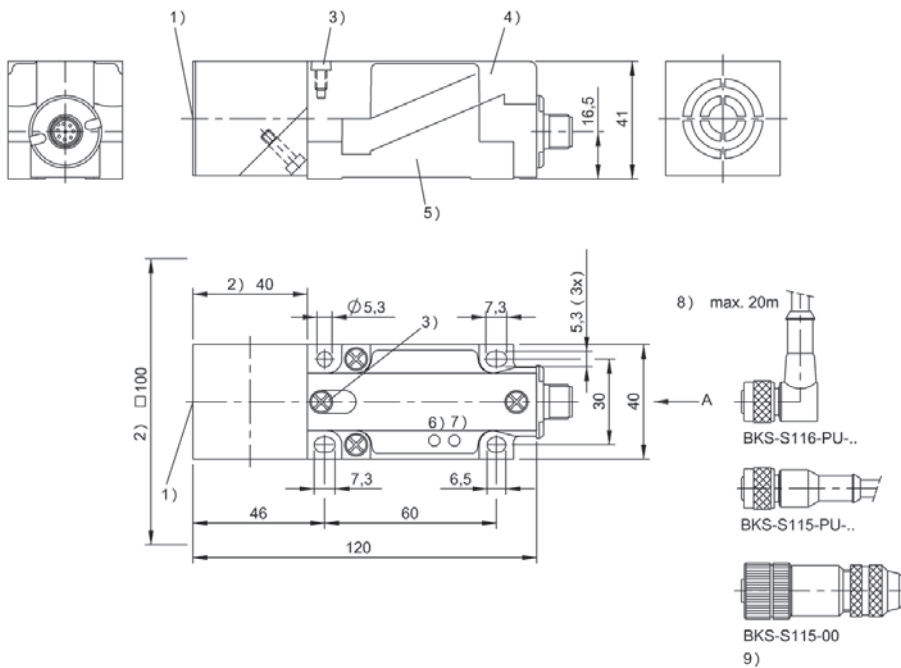


	BIS00C6 BIS L-400-035-001-02-S115
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS422
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
Data carrier distance to metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable



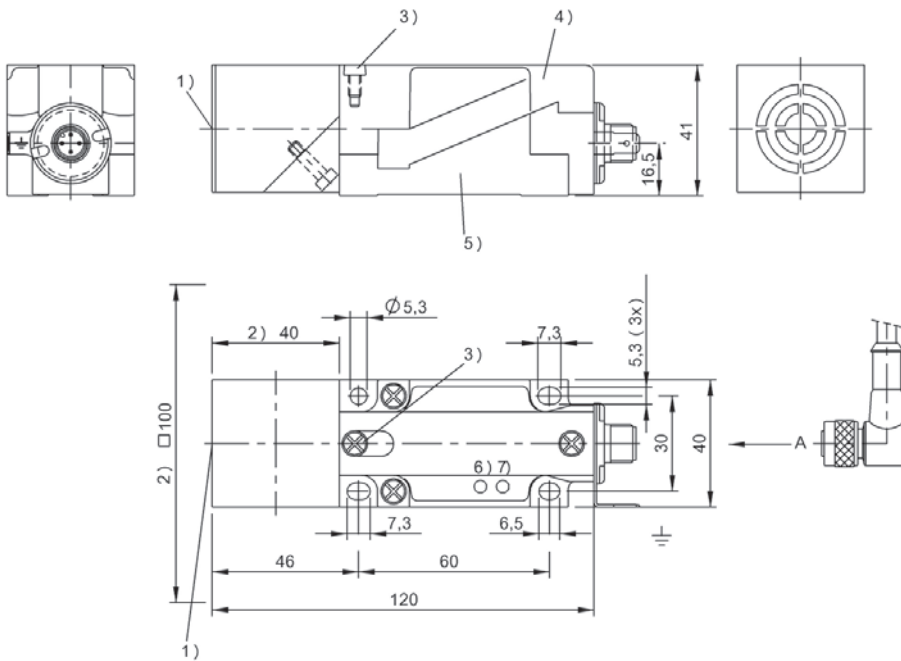
IO-Link, 10 Bytes process data length	BIS00CZ BIS L-409-045-001-07-S4
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin
Housing material	PBT
Interface	IO-Link
Operating voltage U_b	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Nur mit **IO-Link-Master** verwenden

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present



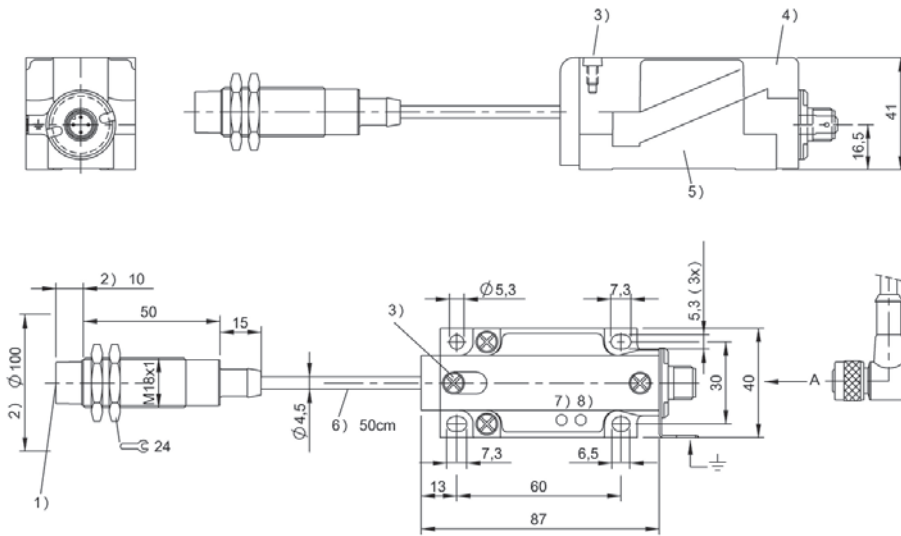
IO-Link, 10 Bytes process data length	BIS00E0 BIS L-409-045-002-07-S4
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	IO-Link
Operating voltage U _b	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present



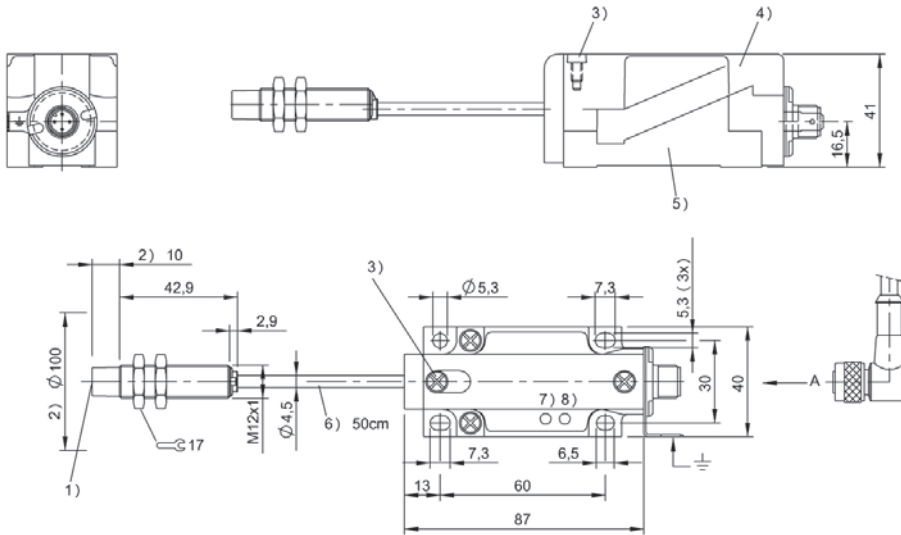
IO-Link, 10 Bytes process data length	BISO0E1 BIS L-409-045-003-07-S4
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	IO-Link
Operating voltage U _b	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BISO03W	BISO03F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present



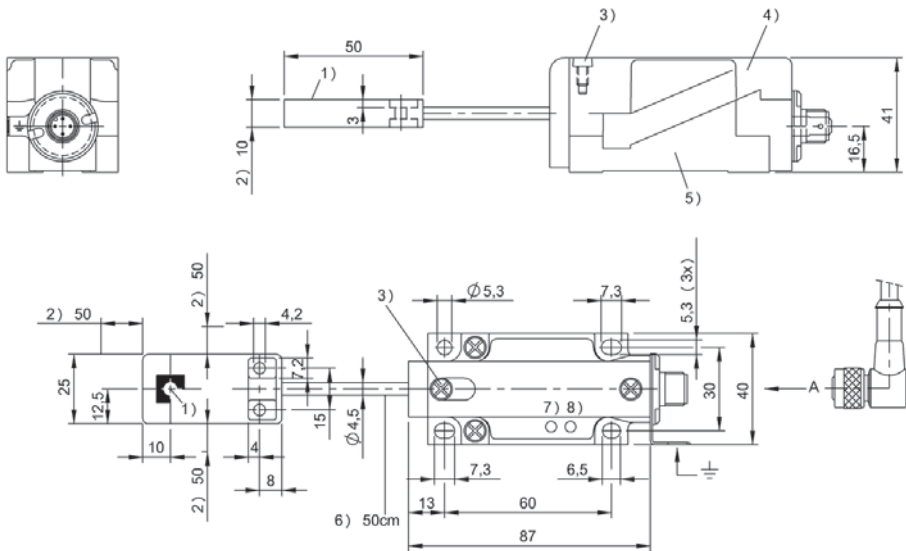
IO-Link, 10 Bytes process data length	BIS00E2 BIS L-409-045-004-07-S4
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 4-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	IO-Link
Operating voltage U_b	18...30 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present



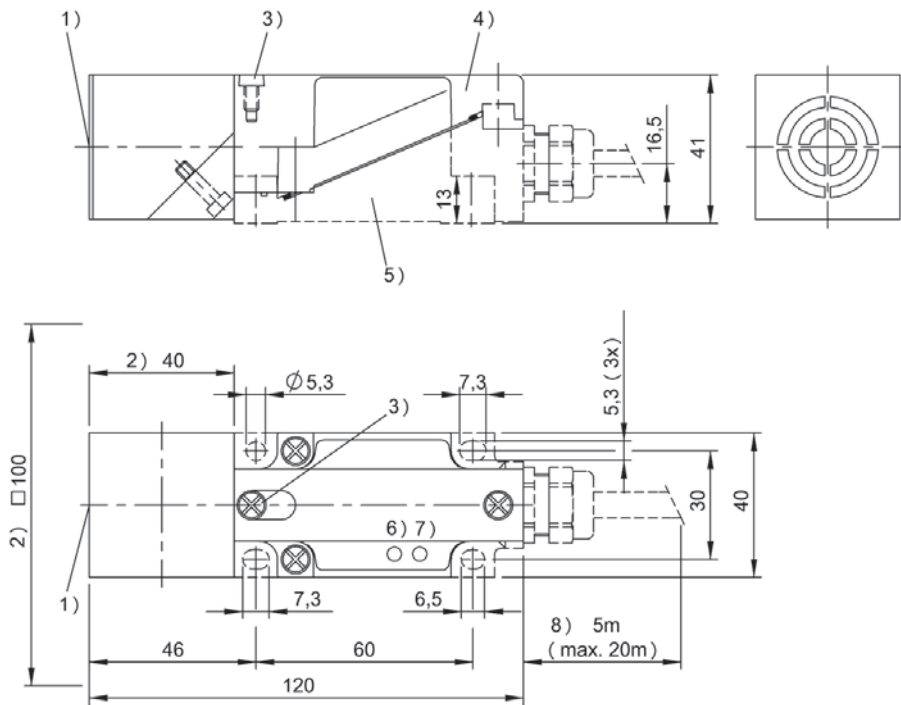
	BIS00CM BIS L-405-033-001-05-MU
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	—
Housing material	PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Use with **IO-Link master** only

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) standard length

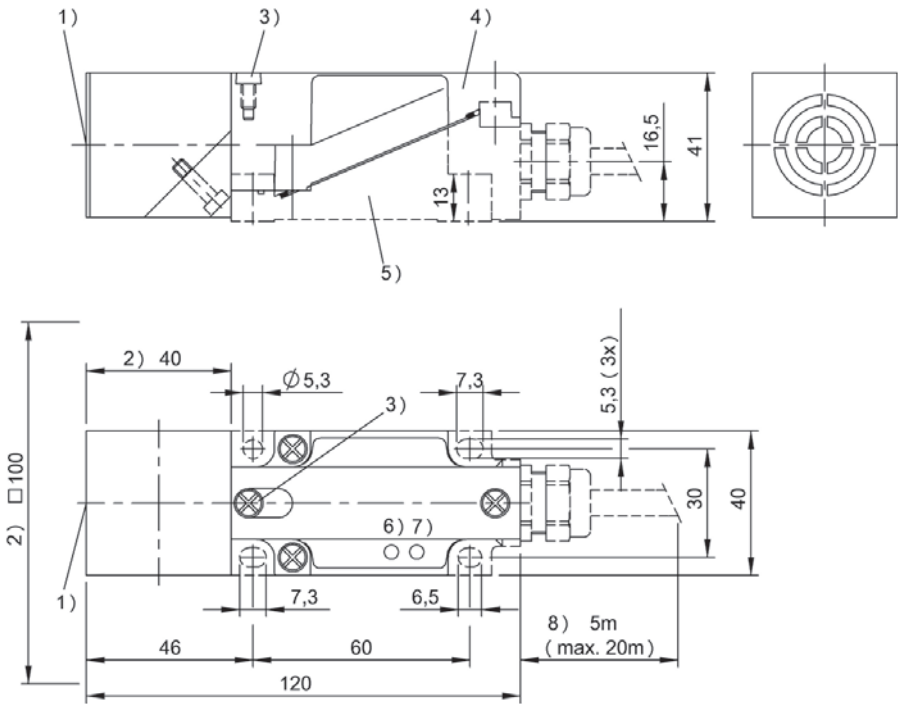


BIS00CT BIS L-405-037-001-05-MU	
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	—
Housing material	PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

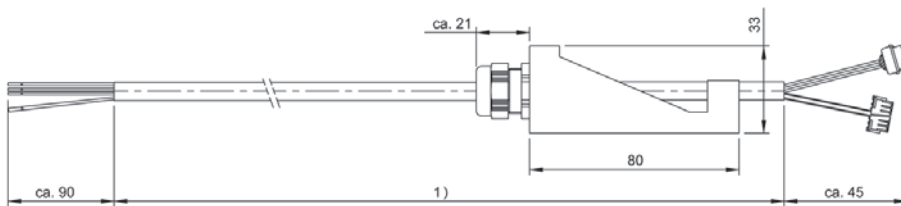
Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) standard length



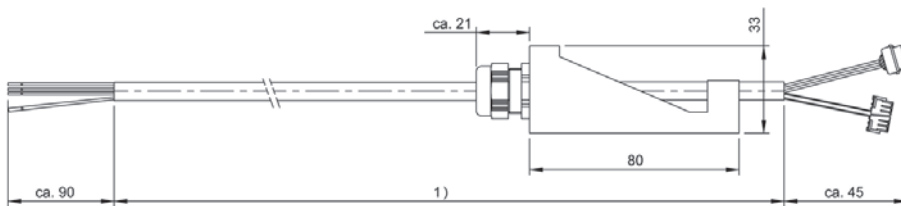
		BCC00R2 BIS L-503-PU1-05
Product Group	LF (125 kHz)	
Dimension	—	
Installation	—	
Antenna type	—	
Connection	Cable with connector housing, 5.00 m, PU	
Housing material	PBT	
Interface	parallel	
Operating voltage U_b	—	
Ambient temperature	—	
Protection degree	IP65	
Approval/Conformity	CE	



1) Cable length see text



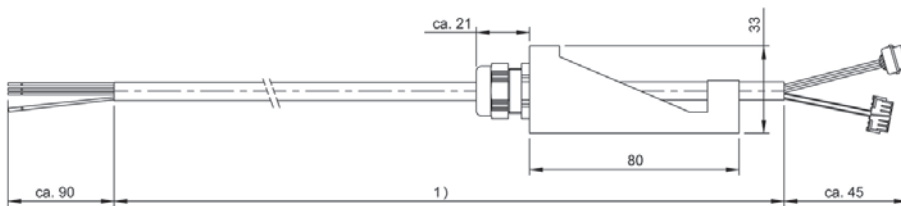
	BCC00R3 BIS L-503-PU1-10
Produktgruppe	LF (125 kHz)
Abmessung	—
Einbau	—
Antennenform	—
Anschluss	Cable with connector housing, 10.00 m, PU
Gehäusematerial	PBT
Schnittstelle	parallel
Betriebsspannung Ub	—
Umgebungstemperatur	—
Schutzart	IP67
Zulassung/Konformität	CE



1) Cable length see text



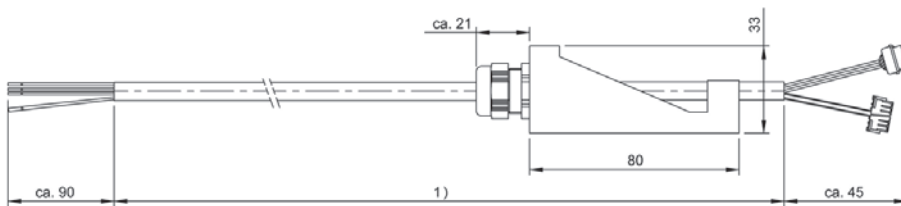
		BCC00R4 BIS L-503-PU1-15
Product Group		LF (125 kHz)
Dimension		—
Installation		—
Antenna type		—
Connection		Cable with connector housing, 15.00 m, PU
Housing material		PBT
Interface		parallel
Operating voltage U_b		—
Ambient temperature		—
Protection degree		IP65
Approval/Conformity		CE



1) Cable length see text



	BCC00R5 BIS L-503-PU1-20
Product Group	LF (125 kHz)
Dimension	—
Installation	—
Antenna type	—
Connection	Cable with connector housing, 20.00 m, PU
Housing material	PBT
Interface	parallel
Operating voltage U_b	—
Ambient temperature	—
Protection degree	IP65
Approval/Conformity	CE



1) Cable length see text

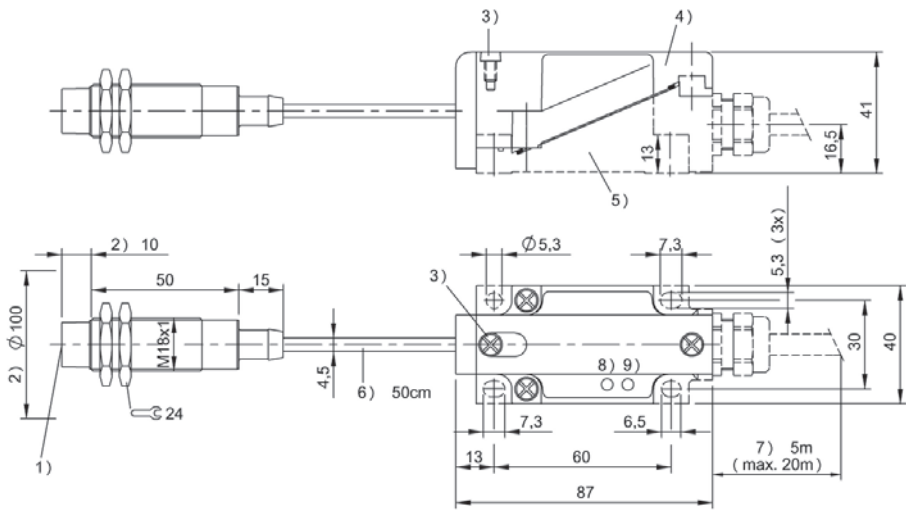


	BIS00CN BIS L-405-033-002-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

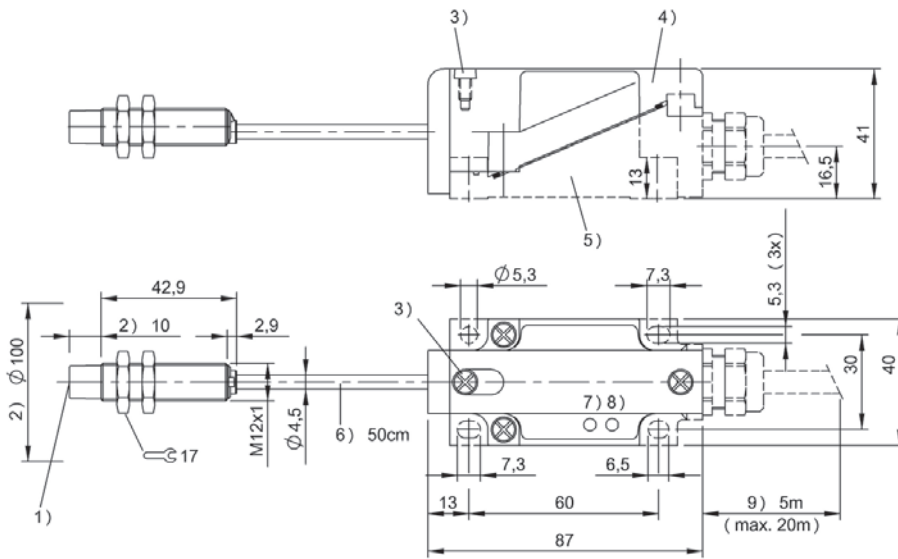


	BIS00CP BIS L-405-033-003-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W	BIS003F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0 ±6	
	3 ±6	
	7 ±4	
	8 ±4	
	10 ±2	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

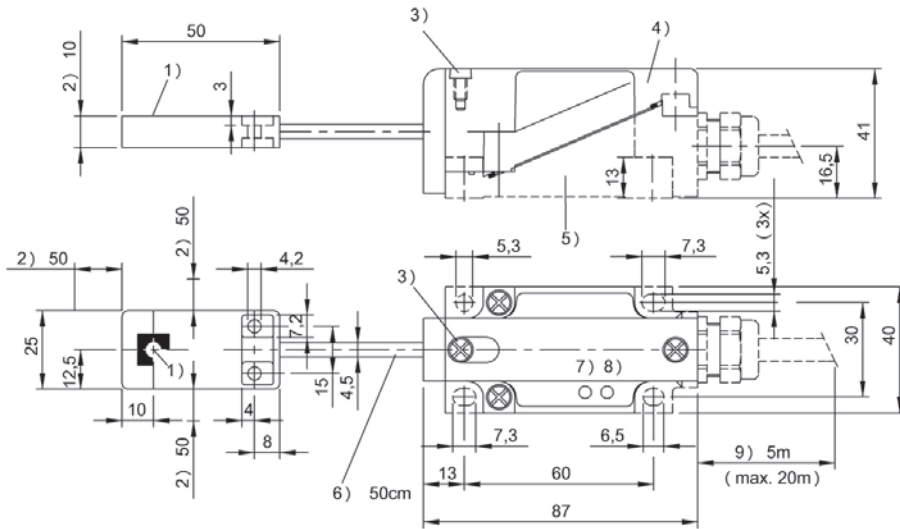


BIS00CR BIS L-405-033-004-05-MU	
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	ABS, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present, 9) standard length

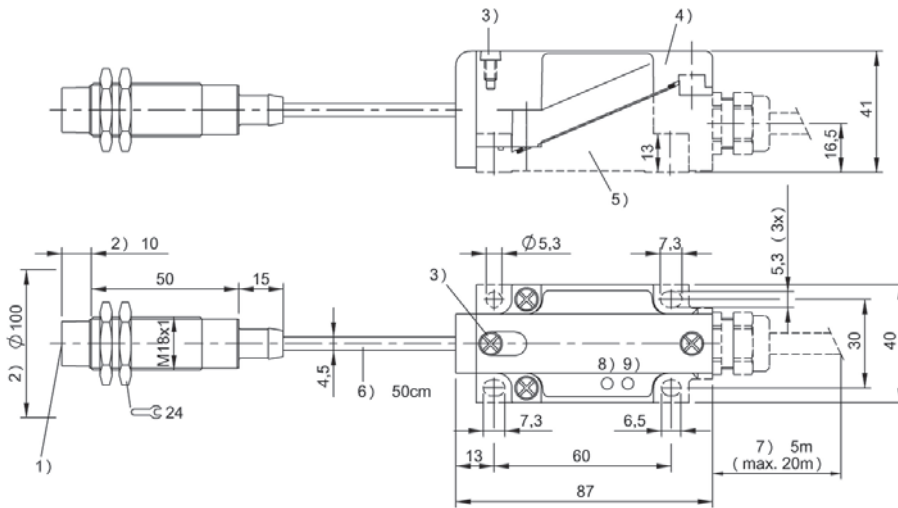


	BIS00CU BIS L-405-037-002-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) standard length, 8) Power, 9) Tag present

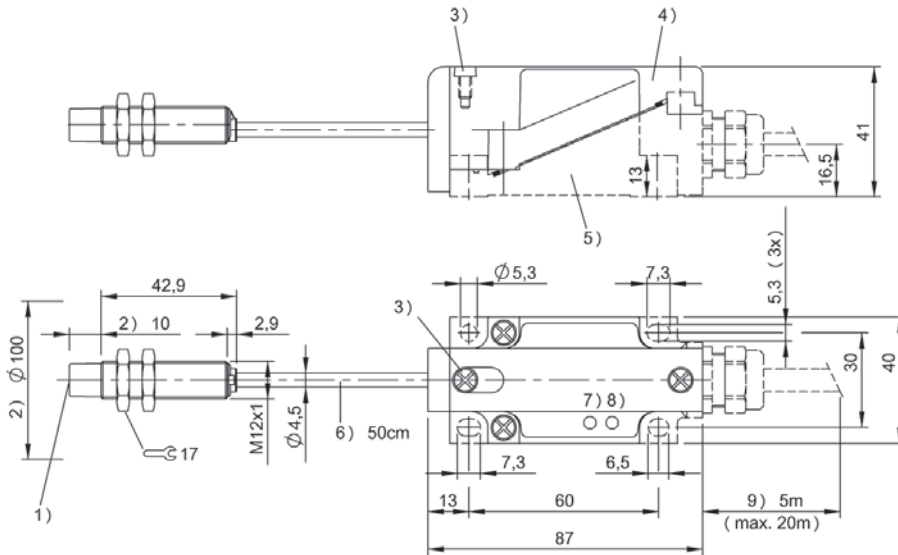


	BIS00CW BIS L-405-037-003-05-MU
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	Brass, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W	BIS003F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present, 9) standard length

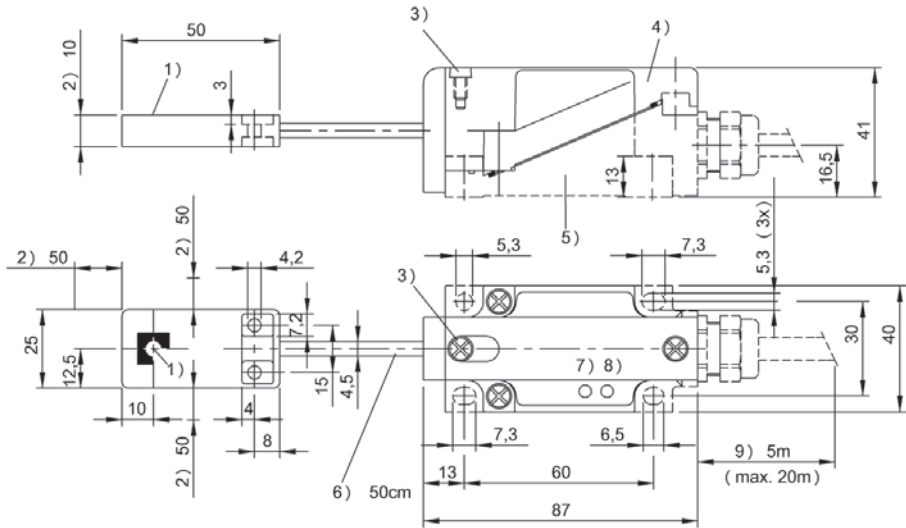


	BIS00CY BIS L-405-037-004-05-MU
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	0.50 m, PU
Housing material	ABS, interface PBT
Interface	parallel
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) Power, 8) Tag present, 9) standard length

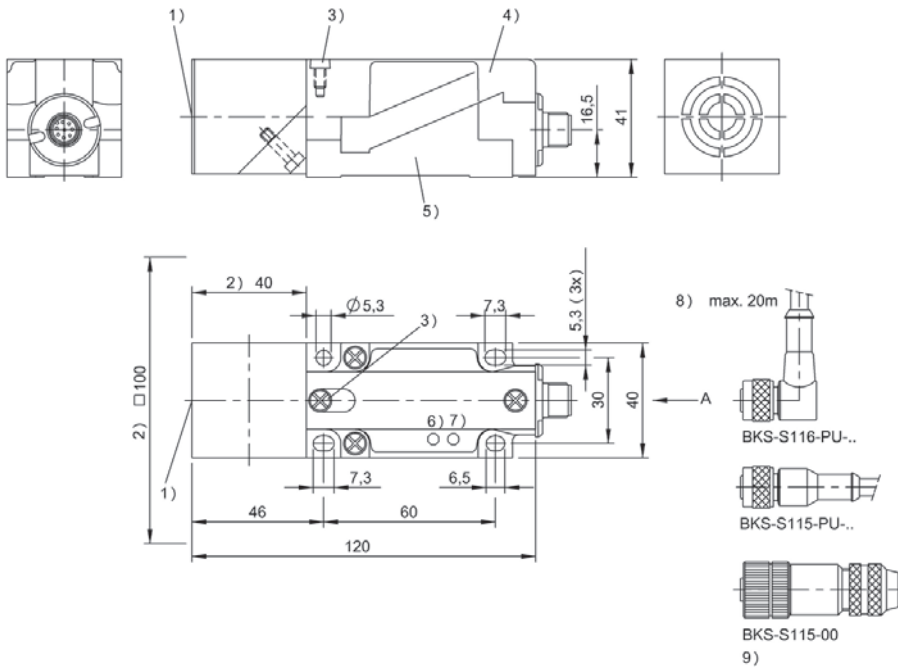


For processor units BAE003W and BAE003U (Easy Loop)	BIS00CH BIS L-400-043-001-02-S115
Product Group	LF (125 kHz)
Dimension	40 x 41 x 120 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin
Housing material	PBT
Interface	RS422 (Easy Loop)
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035			BIS003T BIS0038			BIS003U BIS003C			BIS003W BIS003F	
	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	on metal	flush in metal	metal-free	
Data carrier distance to metal											
Data carrier clear zone											
Working distance for writing											
Working distance for reading	0-30	0-15	5-12	0-40	0-24	0-18	0-55	0-32	0-28	0-20	
Offset at distance											
	0	±15	±10		±20	±12	±10	±30	±20	±18	±10
	3	±15	±10		±20	±12	±10	±30	±20	±18	±10
	5	±15	±10	±10	±20	±12	±10	±30	±20	±18	±10
	8	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	10	±15	±10	±7	±20	±12	±10	±30	±20	±18	±10
	12	±15	±8	±7	±20	±12	±10	±30	±20	±18	±10
	15	±15	±8		±20	±12	±10	±30	±20	±18	±10
	18	±15			±20	±12	±10	±30	±20	±14	
	20	±15			±20	±12		±30	±20	±14	
	24	±15			±20	±10		±30	±20	±12	
	28				±20			±30	±14	±12	
	30				±20			±30	±14		
	32				±20			±30	±14		
	35				±20			±30			
	40							±30			

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Power, 7) Tag present, 8) Cable length, 9) no cable

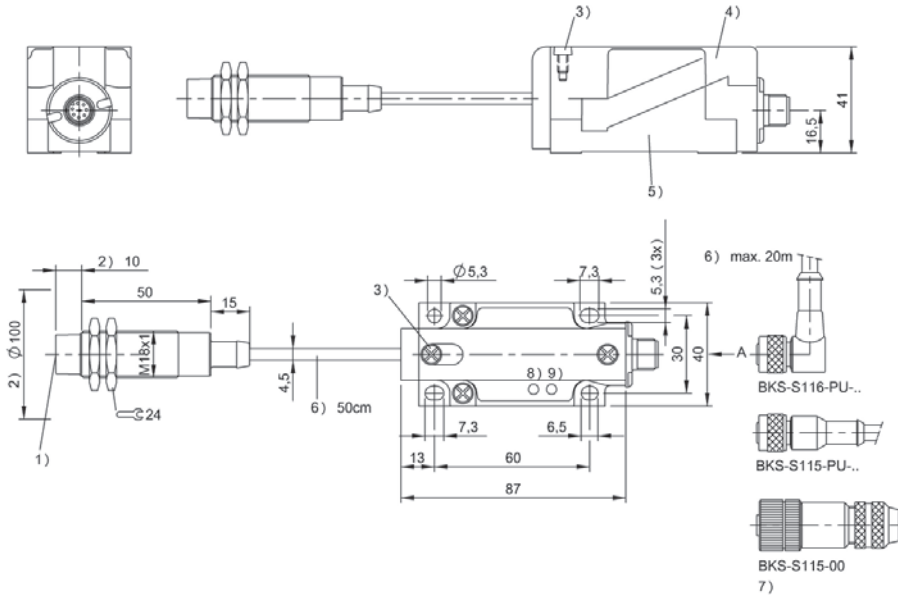


For processor units BAE003W and BAE003U (Easy Loop)	BISO0CJ BIS L-400-043-002-02-S115
Product Group	LF (125 kHz)
Dimension	Ø 18 x 75 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BISO03R BISO035	BISO03T BISO038	BISO03W BISO03F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18	±15	
	20	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

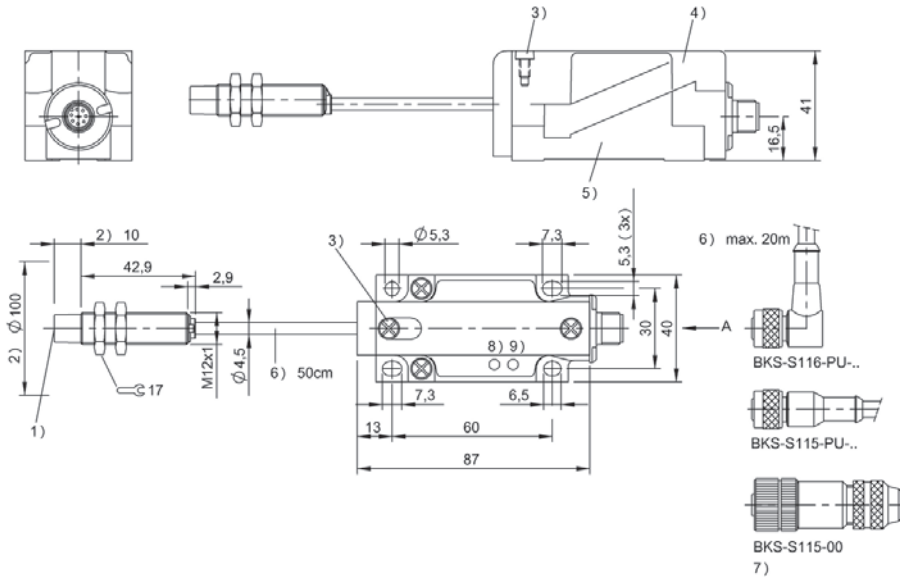


For processor units BAE003W and BAE003U (Easy Loop)	BIS00CK BIS L-400-043-003-02-S115
Product Group	LF (125 kHz)
Dimension	Ø 12 x 53 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	Brass, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003W	BIS003F
Data carrier distance to metal	metal-free	
Data carrier clear zone		
Working distance for writing		
Working distance for reading	0-11	
Offset at distance		
	0	±6
	3	±6
	7	±4
	8	±4
	10	±2

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present

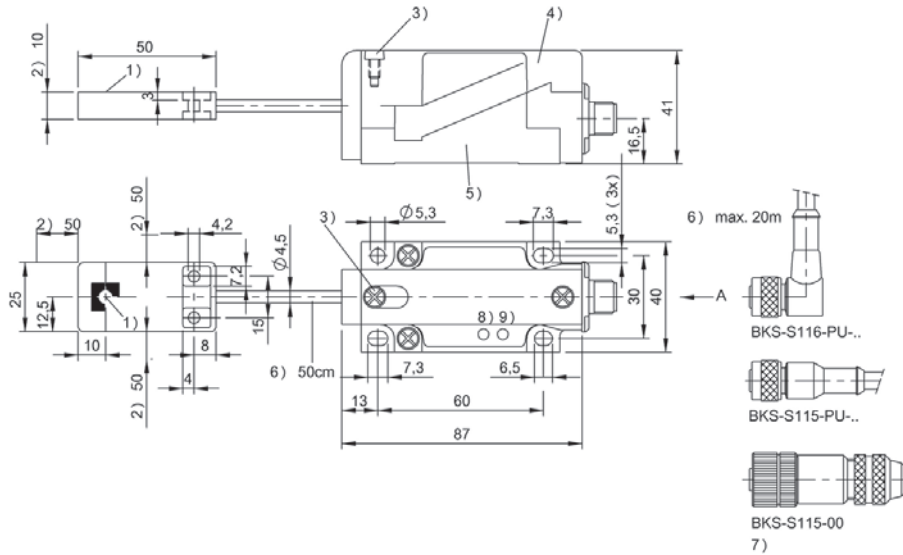


For processor units BAE003W and BAE003U (Easy Loop)	BIS00CL BIS L-400-043-004-02-S115
Product Group	LF (125 kHz)
Dimension	25 x 10 x 50 mm
Installation	metal-free (clear zone)
Antenna type	round
Connection	Connector, M12x1 connector, 8-pin, 0.50 m, PU
Housing material	ABS, interface PBT
Interface	RS422 (Easy Loop)
Operating voltage U_b	19.2...26.4 VDC
Ambient temperature	0...70 °C
Protection degree	IP67
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS

Appropriate data carrier

	BIS003R BIS0035	BIS003T BIS0038	BIS003W BIS003F
Data carrier distance to metal	metal-free	metal-free	metal-free
Data carrier clear zone			
Working distance for writing			
Working distance for reading	0-23	0-27	0-16
Offset at distance			
	0 ±12	±15	±8
	3 ±12	±15	±8
	7 ±12	±15	±8
	8 ±12	±15	±8
	10 ±12	±15	±8
	12 ±12	±15	±4
	15 ±12	±15	±4
	18 ±8	±15	
	20 ±8	±15	
	25	±6	

Dimensions in mm



1) Sensing surface, 2) Clear zone, 3) Locking screw, 4) Module unit, 5) Mounting base, 6) Cable length, 7) no cable, 8) Power, 9) Tag present



	BAE00K4 BIS L-870-1-008-X-001	
Product Group	LF (125 kHz)	
Product name	WLAN	
Dimension	100 x 51 x 265 mm	
Antenna type	round	
Use	for data carriers $\varnothing \geq 20$ mm	
Display	TFT Touchscreen-display (color): 480x640 VGA resolution	
Keypad	52 keys, alphanumeric	
Operating voltage U_b	3.7 V DC rechargeable battery pack	
Storage temperature	-40...60 °C	
Ambient temperature	-10...50 °C	
Protection degree	IP65	
Approval/Conformity	CE	
Productview	Page 526	



BAE00EA	BAE00EJ
BIS L-870-1-008-X-004	BIS L-873-1-008-X-001
LF (125 kHz)	LF (125 kHz)
WLAN + 1D	WLAN
100 x 69 x 265 mm	100 x 51 x 265 mm
round	round
for data carriers $\varnothing \geq 20$ mm	for data carriers $\varnothing < 20$ mm
TFT Touchscreen-display (color): 480x640 VGA resolution	TFT Touchscreen-display (color): 480x640 VGA resolution
52 keys, alphanumeric	52 keys, alphanumeric
3.7 V DC rechargeable battery pack	3.7 V DC rechargeable battery pack
-40...60 °C	-40...60 °C
-10...50 °C	-10...50 °C
IP65	IP65
CE	CE
Page 526	Page 527

Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Systems

Safety

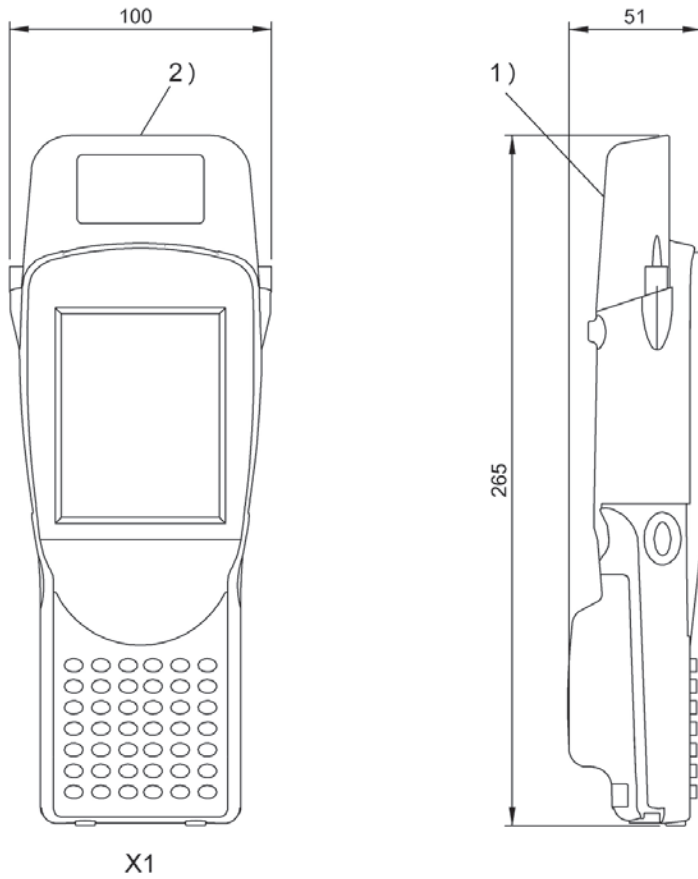
Industrial Networking

Power Supplies

Connectivity

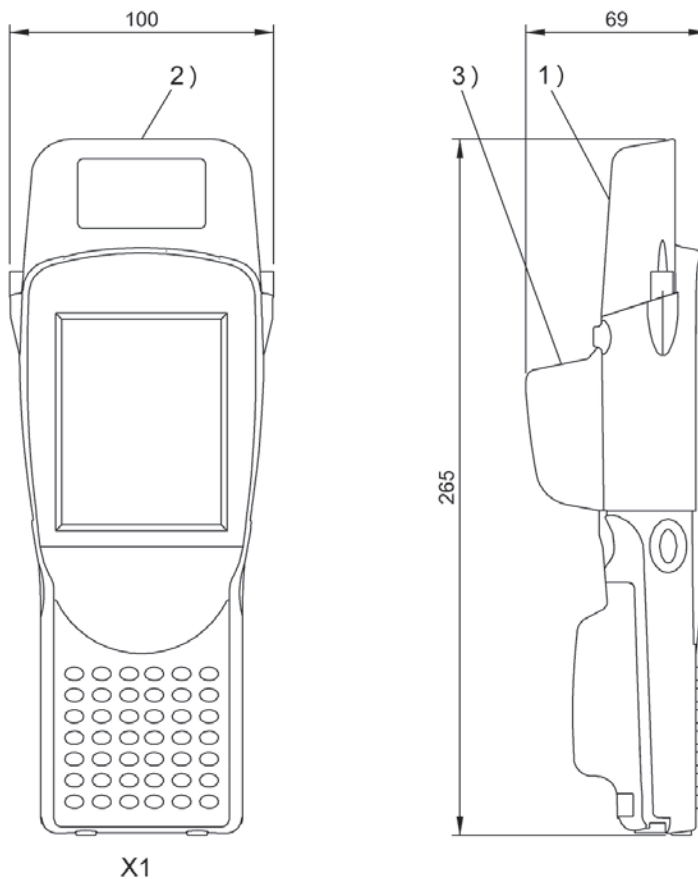
Accessories

526 | RFID | LF (125 kHz)



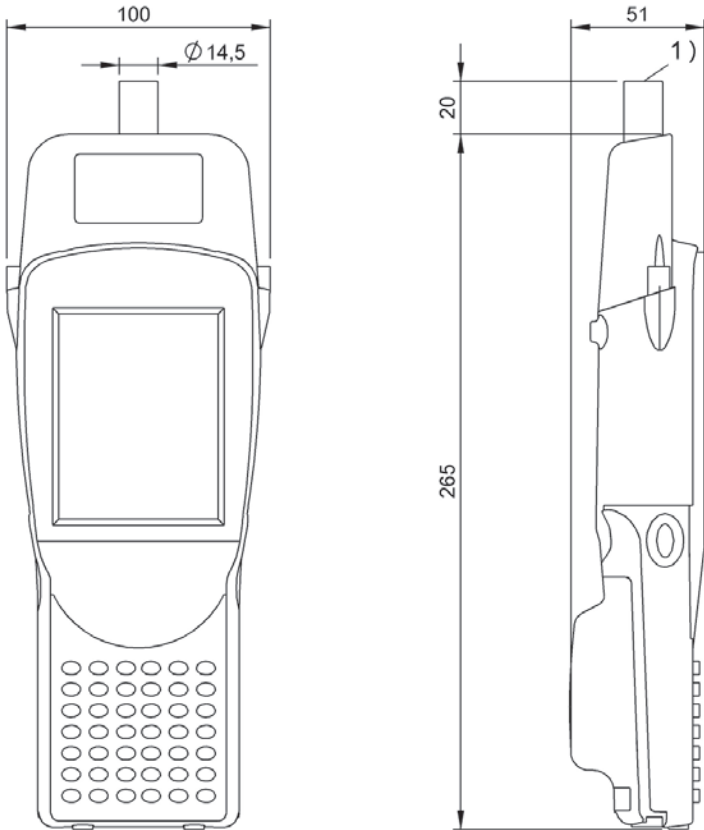
1) Sensing surface, 2) See data for antenna form

BAE00K4



1) Sensing surface, 2) See data for antenna form, 3) Barcode 1D-Scanner

BAE00EA



X1

1) Sensing surface, 2) See data for antenna form

BAE00EJ

RFID

BASICS AND GLOSSARY





ausst. Diese
ell im Nemowoch

Accessories

Connectivity

Power Supplies

Industrial Networking

Safety

Systems

Human Machine
Interfaces

Machine Vision and
Optical Identification

RFID

Sensors

Processor unit	Essential component of an RFID system which is used for signal processing and preparation. Usually used or combined with an integrated interface for connecting to the controller/PC system. It is also referred to as a controller.
Autoclave compatible	Capable of being thermally treated in the pressure area of a gas-tight, closable pressure container. The object is to sterilize materials or cure materials in this pressure container, the so-called autoclave, to vulcanize tires and belts and compress fiber composites. Selected data carriers are suitable for use in autoclaves.
BIS C	Balluff RFID product group which describes low frequency (LF) RFID solutions operating at 70/455 kHz. These products are traditionally used for tool identification (Tool-ID).
BIS L/VL	Balluff RFID product group which describes low frequency (LF) RFID solutions operating at 125 kHz. These are suited for simple identification tasks.
BIS M/VM	Balluff RFID product group which describes high frequency (HF) RFID solutions, operating at 13.56 MHz. It supports ISO standards (e.g. DIN ISO 15693, DIN ISO 14443A) and is suitable for a variety of applications.
BIS U/VU	Balluff RFID product group which describes ultra-high frequency (UHF) system solutions operating at 860 to 960 MHz. Especially suited for applications in which long read distances and multi-tagging are required.
BIS V	Designation for a Balluff RFID processor/controller unit. This version supports read heads/antennas from the product families BIS L, BIS C, BIS M, BIS U and IO-Link.
Flush installation	Specification for sensor/read-write head installation to indicate whether the sensor or read/write head may be embedded in metal up to the active surface. This is a function of its design and ensures flawless operation. The switching distance/range is less than for differently constructed sensors/read-write heads of the same size.
Code present	Message indicating that the data carrier is within the detection range of the read/write head. The data can now be read and written.
CRC Check	Cyclic redundancy check. This is a procedure for determining a check value for data in order to detect errors in transmission or saving.
Data bolt	A threaded body with integrated data carrier which is available in various thread sizes, bolt sizes and materials.

Data coupler RFID	Data transmitter which uses induction to send data over a short air gap, thereby eliminating a double mechanical interface.
Data screw	Data carrier which is integrated into a threaded body. The threaded body is available in various thread sizes, screw sizes and materials. Also referred to as databolt.
Data carrier	Electronic data storage device as part of an RFID system for data of any kind. Can be read or programmed by computers, peripherals or automation equipment. Also referred to as a tag. For use in industrial applications there are data carriers in various forms (round, rectangular, special form factors), made of various materials and with different antenna technologies.
Data carrier chip	Memory chip in a data carrier which defines the memory capacity and memory structure.
DIN ISO 14443	International series of standards for non-contact chip cards. These are used in identification systems and access control, but also for payment applications such as credit cards, public transportation tickets etc. Operates at a frequency of 13.56 MHz.
DIN ISO 15693	International series of standards for non-contact chip cards, access control and payment applications. Operates at a frequency of 13.56 MHz and is the prevailing standard in automation.
Adapter ring	Mechanical spacer inserted between the image sensor and lens so that the flange focal distance and thereby the minimum and maximum working distance and the focus range are changed. By this means a standard lens can be used to achieve higher magnifications.
Docking station	Device for connecting portable devices such as an RFID handheld device to a fixed power source. Also called a docking station.
Dynamic read mode	Operating mode of an RFID solution: The processor unit accepts the read/write request from the control system and stores the information regardless of whether there is a data carrier in the active range of the read/write head. As soon as a data carrier enters the active range of the read/write head, the job is executed. This is also known simply as dynamic mode.
Easy loop ID	BIS L system approach with the ability to connect up to 16 read heads to a higher level system through a single processor unit.
Easy Tool-ID	Workaround for machine tools that do not have an integrated tool ID function. Consists of a tool stand with integrated read/write head, a processor unit, a microcontroller and the power supply.

E-Kanban	A system which uses various technologies for controlling the use of components and materials in the manufacturing process. In the electronic version, so-called E-Kanban, RFID data carriers and barcodes replace conventional kanban instruments such as cards. The result is a faster information flow.
Ferrite antenna	Rod shaped inductive antenna for receiving RFID signals. It is built into the data carrier as well as the read/write head and has a polarizing and directional characteristic. When the end of a ferrite bar is pointed at the transmitter, the receiving field strength and thereby the read distance between data carrier and read/write head is reduced. The data carrier and read/write head must therefore be calibrated to each other.
Clear zone (RFID)	Area within which a data carrier is mounted in metallic surroundings to achieve a prescribed read/write distance.
Mounting bracket	Mechanical accessory for mounting read/write heads, data couplers and processor units. May include clamps, mounting plates, mounting bases.
Handheld RFID reader/writer Handheld programmer, Handy programmer	Device for portable writing and reading data carriers. Available for the various technologies LF (low frequency), HF (high frequency), UHF (ultra-high frequency). Ideal for use in harsh environments. Data is transmitted over optional WLAN, Bluetooth or a wired USB connection.
HF	High frequency of 13.56 MHz. Especially suited for use of RFID technology at close range up to 400 mm. The energy transmission of this high-frequency identification system is by means of a magnetic field using inductive coupling.
High memory	Data carriers with a memory capacity > 8K. The performance specifications from applications in automation also require high speed data transmission. Both can be achieved using selected components.
High-speed data carrier	RFID memory which was developed for applications in which it must provide the data to the controller system time-optimized. In combination with the associated read heads two to three times the read speed can be achieved compared with applications compliant with the DIN ISO 15693 standard.
High-temperature tag	RFID data carrier for temperature-resistant use in industrial environments at temperatures up to 220 °C (storage temperature).
High-temperature data carrier	RFID data carrier for temperature-resistant use in industrial environments at temperatures up to 220 °C (storage temperature).
Hollow taper shank (HSK)	Tool holder used in machine tools. Integration into the tool is extremely simple thanks to the standardized size for installation in hollow shank tapers HSK in accordance with DIN 68871-A and steep tapers SK in accordance with ISO/DIS 12164-1.

HSK	Switching hysteresis when target is backed off
Adhesive label	Self-adhesive RFID data carrier
Clamp	Mechanical accessory for mounting read/write heads, data couplers and processor units. Includes mounting brackets, mounting plates, and mounting bases.
Configuration file (GSD, GSDML, EDS, ...)	File (driver file) for incorporating fieldbus components into the controller. The file contains the fieldbus-specific settings.
Charger, charging cradle	Accessory for the handheld programmer, the handy programmer, and the handheld device.
Read head	The part of an RFID system that supplies the data carrier with power and reads the data stored on it. The read head then passes the data to a processor unit which further processes the data.
LF	Low frequency (70 kHz or 125 KHz). The power in LF identification systems is transmitted via a magnetic field by means of inductive coupling. Appropriate for use in difficult conditions such as metal surroundings.
Air interface	Air gap between the data carrier and (read/)write head through which the data and energy are transmitted.
Metal-free installation	Installation/mounting specification, generally defines an installation situation needed for proper function without the use of metallic materials in order to achieve defined data sheet values.
Mifare	World's most often used contactless chip card technology. Complies with ISO-Standards ISO 7816 and ISO 14443A.
Mold ID	System solution for automated managing of injection molding tools in the plastics industry.
Mounting bracket/base/plate	Mechanical accessory for mounting read/write heads, data couplers and processor units. Examples are clamping holders or mounting brackets.
NFC	Near field communication: An international transmission standard based on RFID for contactless exchange of data using electromagnetic induction and loosely coupled coils over short distances of a few centimeters and a data transfer rate of maximum 424 kBit/s.

Non-flush mounting	Specification for installing sensors or read/write heads which do not have a metal housing surrounding their sensing face. These can be recognized by their "caps". This design ensure flawless sensor function. The switching distance/range and permissible offset are greater than for flush mount sensors or read/write heads of the same size.																									
Pistol grip	Accessory for the handheld programmer, the handy programmer, and the handheld device.																									
Process data buffer	In processor units connecting multiple read/write heads the process data buffer is divided into read/write head-specific areas. Process data is the data which is obtained from a technical process by means of a read/write head. The process data represents the current status.																									
Checksum	Information written to the data carrier as 2 bytes. 2 bytes per block are lost. A detailed listing is contained in the manual for the processor unit.																									
RFID	Radio frequency identification: Communication technology for non-contact and automatic identification of objects (including merchandise, goods, people, animals using radio waves).																									
Reader chip	Memory chip in a data carrier which defines the memory capacity and memory structure.																									
RFID data carriers	Electronic data storage medium as part of an RFID system. It can be read and, in specific configurations, also written. Also called a transponder.																									
	<table border="1"> <thead> <tr> <th>Switching distance</th> <th>Size</th> <th>Switching distance</th> </tr> </thead> <tbody> <tr> <td>Standard-switching distance according to EN 60947-5-2</td> <td></td> <td></td> </tr> <tr> <td rowspan="3">2x switching distance compared to standard</td> <td>Ø 3 mm*</td> <td>1 mm flush</td> </tr> <tr> <td>Ø 4 mm/M5*</td> <td>1.5 mm flush</td> </tr> <tr> <td>Ø 6.5 mm...M30</td> <td>1.5...2-x</td> </tr> <tr> <td rowspan="4">3x switching distance compared to standard</td> <td>Ø 3 mm*</td> <td>3 mm non-flush</td> </tr> <tr> <td>Ø 4 mm/M5*</td> <td>5 mm non-flush</td> </tr> <tr> <td>Ø 6.5 mm...M12</td> <td>2.2...3-x</td> </tr> <tr> <td>M18...M30</td> <td>depending on version</td> </tr> <tr> <td>4x switching distance compared to standard</td> <td></td> <td></td> </tr> </tbody> </table>	Switching distance	Size	Switching distance	Standard-switching distance according to EN 60947-5-2			2x switching distance compared to standard	Ø 3 mm*	1 mm flush	Ø 4 mm/M5*	1.5 mm flush	Ø 6.5 mm...M30	1.5...2-x	3x switching distance compared to standard	Ø 3 mm*	3 mm non-flush	Ø 4 mm/M5*	5 mm non-flush	Ø 6.5 mm...M12	2.2...3-x	M18...M30	depending on version	4x switching distance compared to standard		
Switching distance	Size	Switching distance																								
Standard-switching distance according to EN 60947-5-2																										
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	M18...M30	depending on version																								
4x switching distance compared to standard																										
	*Information for switching distance in mm. The switching distances of these sensors are not standardized.																									
Round antenna	Device for receiving RFID signals. In contrast to the bar/ferrite antenna it has no polarizing or directional effect. The electrostatic lobe is distributed evenly around the antenna. The round antenna is used both in data carriers and in the read/write head. Therefore these need to be tuned to each other.																									
Read/write head	Part of an RFID system that supplies the data carrier with power and reads the data stored on it and stores new data. The read head then passes the data to a processor unit which further processes the data.																									

Read/write time data carrier	Time a data carrier requires for detecting/transmitting data. Comprised of: Data carrier detection + read/write time of the data blocks taken together. The read/write time varies with the data carrier type (FRAM, EEPROM) and the transmission standard.
Service interface	Connection point for various devices. For service purposes it sends device-specific setting data and is not suitable or standardized as a process interface.
Simultaneous operation	Multiple read/write heads are read by a processor unit (controller) simultaneously.
SK	International abbreviation for taper shank, a standardized tool holder in the main spindle of a machine tool. It is used for fast attachment and precise holding of the tool.
Slow tag detection	Data carrier detection whereby the antenna on the read/write head is switched on for detection only every 200 ms.
Rod antenna	Rod shaped inductive antenna for receiving RFID signals (ferrite antenna). It is built into the data carrier as well as the read/write head and has a polarizing and directional characteristic. When the end of a ferrite bar is pointed at the transmitter, the receiving field strength and thereby the read distance between data carrier and read/write head is reduced. The data carrier and read/write head must therefore be calibrated to each other
Static read mode	Mode of operation of an RFID system. The data carrier remains in place in front of the read/write head. This enables a greater read/write distance than in dynamic mode.
Taper	Standardized form of a tool holder for clamping various tools in the main spindle of a machine tool. The taper is standardized in DIN ISO 7388 Part 1. The main field of application is in milling machines.
Subnet 16	Special solution approach for systematic wiring and for operating multiple read/write heads with a gateway component.
Tag	Electronic data storage device used as part of an RFID system for data of any kind. Can be read or programmed by computers, peripherals or automation equipment. For use in industrial applications there are data carriers in various forms (round, rectangular, special form factors), made of various materials and with different antenna technologies. Also referred to as a data carrier.
Tool ID	Identification of tools and tool data for automated detection, traceability of tool data in the area of machine tools. Data carriers and read/write heads are generally installed in metallic surroundings. The requirements for read distance and installation conditions are generally high.

UID	Unique identifier for RFID data carriers. Each number is assigned only once.
UHF	Ultra high frequency (865 to 960 MHz). The power transmission in UHF identification systems takes place by means of electromagnetic waves as in the classic radio systems. Appropriate for use over larger distances (several meters).
Offset	Positioning tolerance between the read/write head and the data carrier
Workpiece identification	Identification of workpieces, semi- and finished products or workpiece carriers. The requirements vary depending on the materials used. Compared with tool identification the requirements for read distance are generally low to moderate. "Dynamic reading" operating mode is often used.
Tool identification	Identification of tools and tool data for automated detection, traceability of tool data in the area of machine tools. Data carriers and read/write heads are generally installed in metallic surroundings. The requirements for read distance and installation conditions are generally high.

RFID SYSTEMS HF (13.56 MHZ) BIS M
 RFID SYSTEMS LF (70/455 KHZ) BIS C
 RFID SYSTEMS LF (125 KHZ) BIS L

Mounting

Flush in steel

The sensing surface can be mounted on the surface of steel so that it is even with adjacent areas.

Non-flush on steel

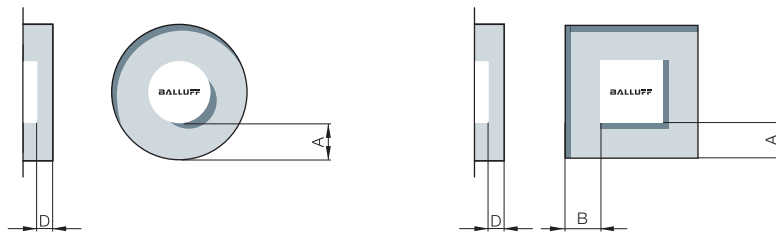
The sensing surface must not be in contact or surrounded by steel.

Non-metal

The entire clear zone must remain free of any type of metal.

Mounting in steel

To reach the specified read/write distance, the data carrier in the metallic environment must be mounted within a certain metal-free clear zone.



Round data carriers

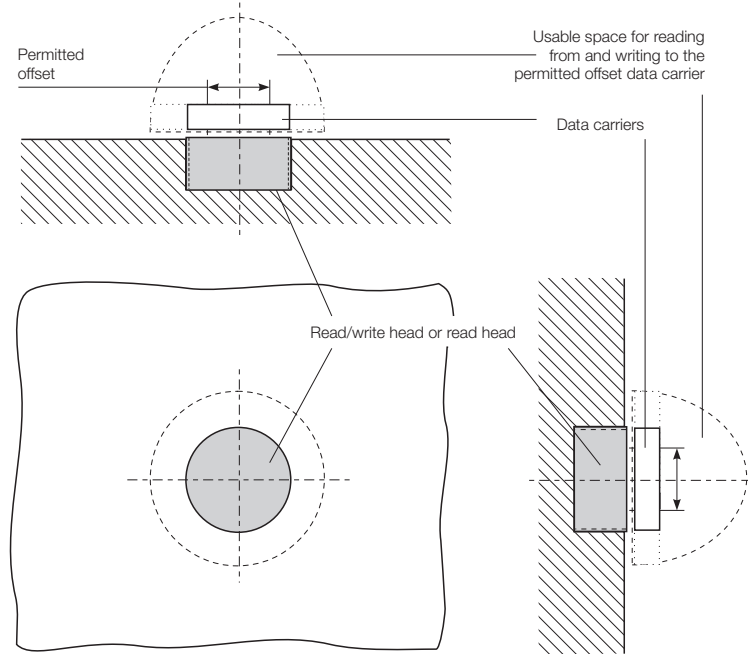
Block-style data carriers

For further information see data sheets of read/write heads on www.balluff.com

Spatial arrangement of read/write head or read head and data carrier

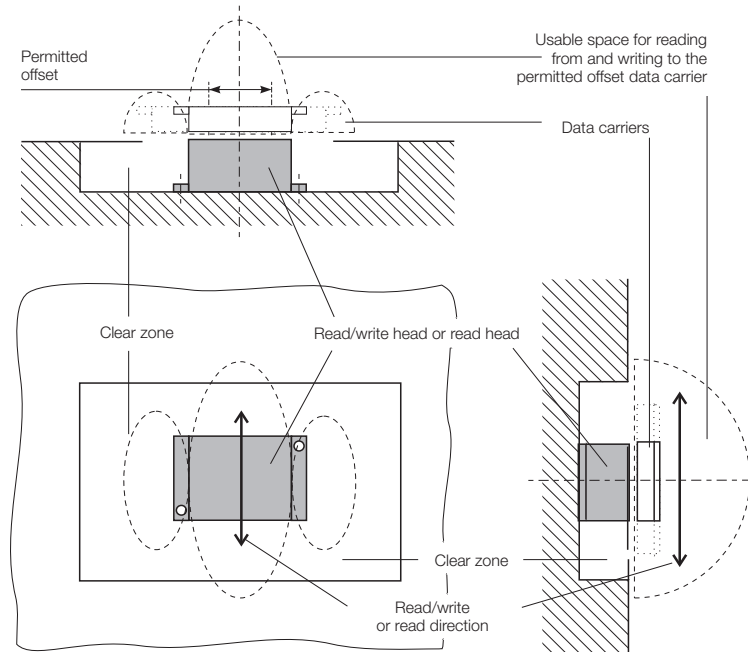
The key to reliable data exchange between the read/write head or read head and the data carrier is maintaining sufficient dwell time of the data carrier within a specified spatial distance from the read/write head or read head.

For a static read/write or read operation, the data carrier comes to a complete stop in front of the read/write or read head; This enables a larger distance between the two.



Spatial arrangement of read/write heads or read head and data carrier for non-directional read/write heads or read heads and non-flush mounting (round antenna).

For dynamic operation the data carrier is read or programmed on the fly as it moves past the read/write head or read head. The shorter distance is necessary in order to achieve as large a read/write path or read path as possible. Each read/write head or read head has certain data carriers which can be used with it (the pairing is based on physical size and antenna field configuration).



Spatial arrangement of read/write heads or read head and data carrier for directional read/write heads or read heads and non-flush mounting (rod antenna).

RFID SYSTEMS HF (13.56 MHz) BIS M

Read times BIS M-1xx-0x
and BIS M-1xx-20

EEPROM – data carrier with 16 byte blocks		FRAM – data carrier with 16 byte blocks	
Bytes	Read time	Bytes	Read time
0 to 15	20 ms	0 to 15	30 ms
For each additional started 16 bytes add additional	10 ms	For each additional started 16 bytes add additional	15 ms

Read times for BIS M-1xx-1x
and BIS VM-3xx-401-S4

FRAM – data carrier with 64 byte blocks	
Bytes	Read time
0 to 63	14 ms
For each additional started 64 bytes add additional	6 ms

Write times BIS M-1xx-0x
and BIS M-1xx-20

EEPROM – data carrier with 16 byte blocks		FRAM – data carrier with 16 byte blocks	
Bytes	Read time	Bytes	Read time
0 to 15	40 ms	0 to 15	60 ms
For each additional started 16 bytes add additional	30 ms	For each additional started 16 bytes add additional	40 ms

Write times for BIS M-1xx-1x
and BIS VM-3xx-401-S4

FRAM – data carrier with 64 byte blocks	
Bytes	Read time
0 to 63	30 ms
For each additional started 64 bytes add additional	15 ms

Write/read cycles

Data carriers	Memory type	Write cycles	Read cycles	Data retention time
112 bytes	EEPROM	100000	Unlimited	10 years
160 bytes	EEPROM	100000	Unlimited	10 years
736 bytes	EEPROM	100000	Unlimited	10 years
752 bytes	EEPROM	100000	Unlimited	10 years
992 bytes	EEPROM	100000	Unlimited	10 years
2,000 bytes	FRAM	Unlimited	Unlimited	10 years
8,192 bytes	FRAM	Unlimited	Unlimited	10 years
32,768 bytes	FRAM	Unlimited	Unlimited	10 years
65,536 bytes	FRAM	Unlimited	Unlimited	10 years
131,072 bytes	FRAM	Unlimited	Unlimited	10 years

Minimum distance between two data carriers

	BIS M-122-01/L, BIS M-122-02/L	BIS M-110-02/L	BIS M-101-01/A, BIS M-111-02/A	BIS M-102-01/L, BIS M-112-02/L	BIS M-105-01/A, BIS M-105-02/A	BIS M-108-02/A	BIS M-120-01/L	BIS M-151-02/A, BIS M-150-02/A
BIS M-300		>100	>100	>150	>100	>100		
BIS M-301		>200	>200	>200	>100	>200	>250	
BIS M-302, BIS VM-307	>100	>100	>100	>100	>100	>100		
BIS M-304	>100	>100	>100	>100	>100	>100		
BIS M-400-007-001-00-S115		>100	>100	>150	>100	>100		
BIS M-401-007-001-00-S115		>200	>200	>200	>100	>200	>250	
BIS M-400-007-002-00-S115	>100	>100	>100	>100	>100	>100		
BIS M-351, BIS VM-351								>250
BIS M-451-007-001-00-S115								>250

Dimensions in mm

Minimum distance between two read/write heads

BIS M-300	200
BIS M-301	600
BIS M-351/BIS VM-351	600
BIS M-302/BIS VM-307	100
BIS M-304	100
BIS M-400-007-001-00-S115	200
BIS M-401-007-001-00-S115	600
BIS M-451-007-001-00-S115	600
BIS M-400-007-002-00-S115	100
BIS M-410-007-002-00-S115	200
BIS M-411-007-002-00-S115	300
BIS VM-305-001-S4	100
BIS VM-341-401-S4	600
BIS VM-343-401-S4	50
BIS VM-344-401-S4	200
BIS VM-345-401-S4	200
BIS VM-346-401-S4	50
BIS VM-348-401-S4	50
BIS VM-352-001-S4	100
BIS VM-355-401-S4	200

Dimensions in mm

Installation in aluminum

With clear zone, static operation

When installing components in aluminum, provide clear zones for trouble-free operation. In static operation, the depth of the clear zone in aluminum of at least 10 mm must be observed, Figure 1. Clear zone dimension A corresponds to the diameter of the larger communication partner (data carrier or read/write head) plus the maximum possible offset (see information for read/write head), Figure 2. In combination with the read/write heads BIS C-318, 327, 328, 350, 351 and 355, dimension B and C is calculated over the length and width of the larger communication partner (data carrier or read/write head) plus the maximum possible offset (see information for read/write head), Figure 3.

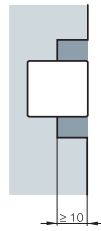


Fig. 1

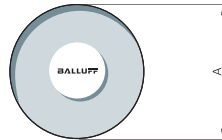


Fig. 2

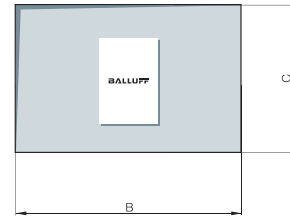


Fig. 3

With clear zone, dynamic operation

In dynamic operation, the depth of the clear zone in aluminum also has to be at least 10 mm, Figure 1. Clear zone dimension A corresponds to twice the diameter of the larger communication partner and the equivalent of the diameter of the smaller communication partner. Clear zone dimension C corresponds to the diameter of the larger communication partner plus the corresponding maximum offset (see information for read/write head), Figure 4. In combination with the read/write heads BIS C-318, 327, 328, 350, 351 and 355, dimension B is calculated from twice the read/write distance (see information about read/write heads) plus the width of the data carrier. Clear zone dimension C corresponds to the read/write head length plus the corresponding maximum offset (see specification for read/write head), Figure 5.

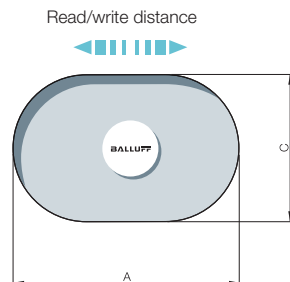


Fig. 4

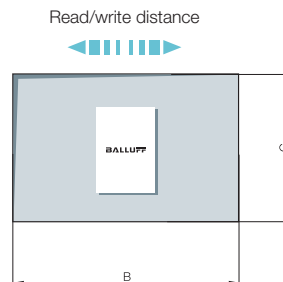


Fig. 5

Read/write cycles

Data carriers	Memory type	Coding	Write cycles up to 30 °C	Write cycles up to 70 °C	Read cycles	Memory organization
511 bytes	EEPROM	-04	1000000	500000	Unlimited	32-byte blocks
1023 bytes	EEPROM	-05	1000000	500000	Unlimited	32-byte blocks
2047 bytes	EEPROM	-11	1000000	500000	Unlimited	64-byte blocks
8 kbytes	FRAM	-32	Unlimited	Unlimited	Unlimited	64-byte blocks

Read times in static mode

For double read and compare:

Data carrier with 32 bytes per block		Data carrier with 64 bytes per block	
Bytes	Read time	Bytes	Read time
From 0 to 31	110 ms	From 0 to 63	220 ms
For each additional started 32 bytes add additional	120 ms	For each additional started 64 bytes add additional	230 ms
From 0 to 255	= 950 ms	From 0 to 2047	= 7350 ms

Write times in static mode

Includes checking and comparing:

Data carrier with 32 bytes per block		Data carrier with 64 bytes per block	
Bytes	Write time [ms]	Bytes	Write time [ms]
From 0 up to 31	110 + n × 10	From 0 up to 63	220 + n × 10
≥ 32	y × 120 + n × 10		y × 230 + n × 10
From 0 up to 255	= max. 3510	From 0 up to 2047	= max. 27830

n = Number of contiguous bytes to write

y = Number of blocks to process

Read times in dynamic operation

Read times within the 1st block for double read and compare:

Data carrier with 32 bytes per block		Data carrier with 64 bytes per block	
Bytes	Read time	Bytes	Read time
From 0 up to 3	14 ms	From 0 up to 3	14 ms
For all additional bytes	3.5 ms	For all additional bytes	3.5 ms
From 0 up to 31	112 ms	From 0 up to 64	224 ms

The times indicated apply after the data carrier has been detected. If the tag has not been recognized, an additional 30 ms must be added to allow for creating the energy field necessary to recognize the data carrier.

Memory organization

Memory size up to 1023 bytes = 32 bytes per block

Memory size 2047 bytes and larger = 64 bytes per block

Maximum speed

To calculate the permitted speed in which the data carrier and head move relative to each other, the static distance values are used.

The permissible speed is:

$$V_{\text{max.perm.}} = \frac{\text{Path}}{\text{Time}} = \frac{2 \times |\text{offset value}|}{\text{Processing time}}$$

The offset value is dependent on the read/write distance actually used in the system.

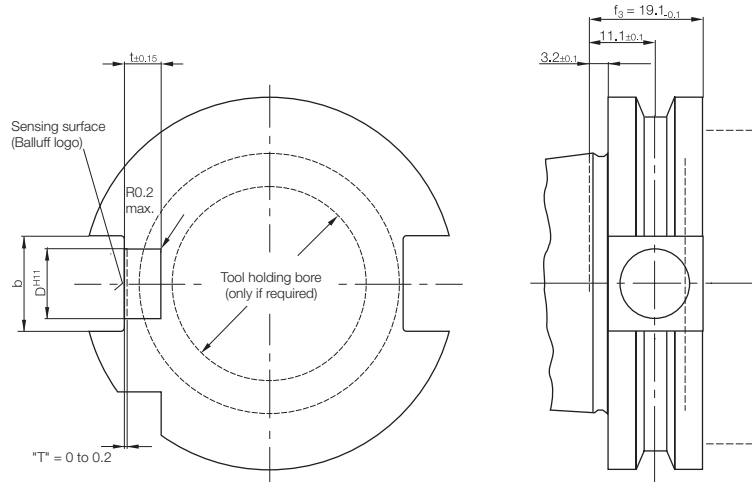
$$\text{Processing time} = \text{Data carrier response time} + \text{Read/write time of first block to be read} + n^1 \times \text{Read/write time for additional started blocks}$$

n¹ = number of started blocks

Installation in taper SK

Data Carriers	BIS C-122			BIS C-103			BIS C-105		
Taper DIN 69871-A	D ^{H11}	t ±0.15	rpm _{max}	DH11	t ±0.15	rpm _{max}	D ^{H11}	t ± 0.15	rpm _{max}
No. 30	10	4.65	90000	12	8.15	68000	12	6.15	68000
No. 40	10	4.65	75000	12	8.15	54000	12	6.15	54000
No. 45	10	4.65	66000	12	8.15	43000	12	6.15	43000
No. 50	10	4.65	59000	12	8.15	33000	12	6.15	33000

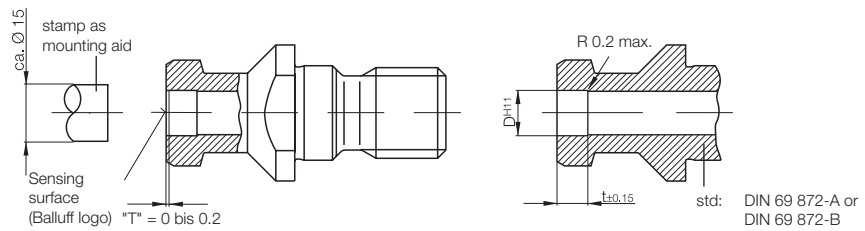
Dimensions in mm



Installation in retention knob

Data Carriers	BIS C-122		BIS C-103		BIS C-105	
Taper DIN 69871-A	D ^{H11}	t ±0.15	D ^{H11}	t ±0.15	D ^{H11}	t ±0.15
No. 30						
No. 40	10	4.65				
No. 45	10	4.65	12	8.15	12	6.15
No. 50	10	4.65	12	8.15	12	6.15

Dimensions in mm



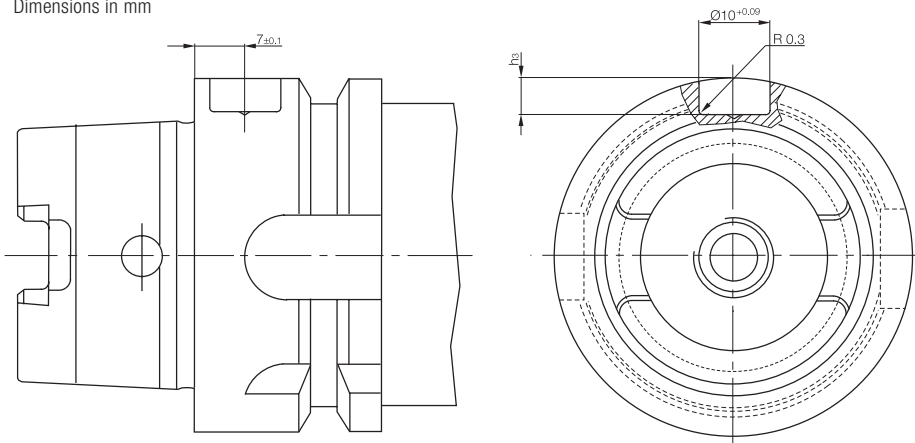
Installation:

1. Degrease gluing surfaces.
2. Apply a bead of glue approximately 3 mm wide around the perimeter of the data carrier housing (recommended glue e.g. LOCTITE Hysol 1C or UHU-Plus endfest 300), observe manufacturer's processing instructions
3. Press in data carrier housing manually, observe dimension "T"
4. Remove excess glue
5. Allow to cure

Installation in hollow shank taper HST

Data Carriers	BIS C-122	
HST Form A ISO/DIN 12164-1	$h_{3+0,20}$	rpm _{max}
32	5.4	96000
49	5.2	80000
50	5.1	75000
63	5	65000
80	4.9	57000
100	4.9	48000

Dimensions in mm



Mechanical strength

Data carriers and read/write heads BIS C-1xx, BIS C-3xx	
Shock load	100 g/6 ms per EN 60068-2-27 and 100 g/2 ms per EN 60068-2-29
Vibration	20 g, 10...2000 Hz per EN 60068-2-6

Values apply to data carriers BIS C-1xx and read/write heads BIS C-3xx except for the non-potted read/write heads BIS C-350, BIS C-351, BIS C-352 and BIS C-355.

Processor units and non-potted read/write heads BIS C-6xxx, BIS C-350, BIS C-351, BIS C-352, BIS C-355	
Shock load	15 g/11 ms per EN 60068-2-27 and 15 g/6 ms per EN 60068-2-29
Vibration	5 g, 10...150 Hz per EN 60068-2-6

RFID SYSTEMS LF (125 KHZ) BIS L

**easy loop®
communication module**

easy loop® provides compact read heads and a communication module for simple connection to the controller at minimal cost for extending BIS L systems. Prefabricated cable and connectors for fast, proper connections. No need to configure addresses.

Install the BIS L simply by connecting up to eight read heads on each of two lines with the easy loop® interface. One cable is all you need for the simple installation of BIS L, a separate power supply is not necessary. All processor units function independently to allow dynamic operation: Data is transferred reliably when the data carrier passes by.

Read times BIS L-1xx

Serial number detection typically 110 ms*

Data carrier with 4 byte blocks	
Bytes	Read time
From 0 to 3	180 ms
For each additional started 4 bytes add additional	90 ms

Read times BIS L-1xx

Serial number detection = reading data carriers = typically 100 ms*

Write times BIS L-1xx

Data carrier with 4 byte blocks	
Bytes	Write time
From 0 to 3	305 ms
For each additional started 4 bytes add additional	215 ms

*Only applies to the parameter type and output of the serial number.

All information is provided as general values. Deviations are possible depending on the application and combination of read/write head and data carrier.

Minimum distance between two data carriers

	BIS L-100-01/L	BIS L-101-01/L	BIS L-102-01/L	BIS L-103-05/L	BIS L-200-03/L	BIS L-100-05/L-RO	BIS L-201-03/L	BIS L-101-05/L-RO	BIS L-202-03/L	BIS L-102-05/L-RO	BIS L-203-03/L	BIS L-103-05/L-RO	BIS L-150-05/A
BIS VL-300-001-S4	250	300	400	250	250	250	300	300	400	400	250	250	
BIS VL-301-001-S4	300	400	500	350	350	350	400	400	500	500	350	350	
BIS VL-302-001-S4	300	400	500	350	350	350	400	400	500	500	350	350	
BIS VL-304-001-S4	150	200	200	180	180	180	200	200	250	250	180	180	
BIS VL-306-001-S4	80			50							50		
BIS VL-350-001-S4													50

Dimensions in mm

Minimum distance between two read/write heads

BIS VL-300-001-S4	400
BIS VL-301-001-S4	800
BIS VL-302-001-S4	200
BIS VL-304-001-S4	200
BIS VL-306-001-S4	100
BIS VL-350-001-S4	100

Dimensions in mm



Image processing devices for reliable detection and recording

MACHINE VISION AND OPTICAL IDENTIFICATION.

 *innovating automation*



The demands on modern production equipment are high: they must be extremely productive and flexible – while achieving maximum quality. Our Balluff Vision Solutions are designed precisely to meet these requirements. They reliably detect error, verify quality and are suitable for reliable reading and verification of codes. They scan objects, 1D and 2D barcodes, and plain text.

The sensors are extremely flexible – for parts checking in assembly or parts tracking in production. Their standardized interface means the devices are simple to integrate and easy to use.

Your Balluff solutions

- Machine vision
- Optical identification

MACHINE VISION AND OPTICAL IDENTIFICATION



552 MACHINE VISION

- 554 SmartCamera
- 558 Industrial cameras
- 564 BVS-E Universal vision sensor
- 568 BVS-E Advanced vision sensor
- 572 BVS E Infrared vision sensor
- 576 BVS-E Standard vision sensor



580 OPTICAL IDENTIFICATION

- 582 SmartCamera Identification
- 586 Handheld-Code-Reader BVS HS-P
- 590 Code-Reader BVS E Identification



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BASICS AND
GLOSSARY



Quality assurance with
industrial grade image processing

MACHINE VISION



Machine Vision from Balluff ensures quality and flexibility in modern production facilities. Through the use of industrial image processing our machine vision products provide reliable defect detection and, thereby, ensure exact quality control. All functions of the sensors can be flexibly combined.

The most important benefits

- High cost-effectiveness and potential for cost reduction
- Less scrap thanks to early defect detection
- High system uptime when changing batches



	BVS002F BVS SC-C1280Z00-30-000	
Application	Object inspection, Analyze color, Range, Object detection, Positioning, Barcode-, 2D-, OCR identification	
Image resolution	1280 x 1024 pixels	
Sensor type Vision	CMOS 1/1,8" color global shutter	
Housing material	Aluminum	
Dimension	62 x 55 x 110 mm	
Switching output	2x IO configurable	
Interface	LAN (Gigabit Ethernet), Profinet/EtherNet/IP, IO-Link	
Operating voltage U_b	19.2...28.8 VDC	
Ambient temperature	0...55 °C	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Protection degree	IP67 with protection tube	
Productview	Page 556	



	BVS002C BVS SC-M1280Z00-07-000	BVS002A BVS SC-M1280Z00-30-000	BVS0033 BVS SC-M1280Z00-30-020
	Object inspection, Range, Object detection, Positioning, Barcode-, 2D-, OCR identification	Object inspection, Range, Object detection, Positioning, Barcode-, 2D-, OCR identification	Object inspection, Range, Object detection, Positioning, Barcode-, 2D-, OCR identification, HDevelop script import
	1280 x 1024 pixels	1280 x 1024 pixels	1280 x 1024 pixels
	CMOS 1/1.8" monochrome global shutter	CMOS 1/1.8" monochrome global shutter	CMOS 1/1.8" monochrome global shutter
	Aluminum	Aluminum	Aluminum
	62 x 55 x 110 mm	62 x 55 x 110 mm	62 x 55 x 110 mm
	8x IO configurable	2x IO configurable	2x IO configurable
	LAN (Gigabit Ethernet)	LAN (Gigabit Ethernet), Profinet/EtherNet/IP, IO-Link	LAN (Gigabit Ethernet), Profinet/EtherNet/IP, IO-Link
	19.2...28.8 VDC	19.2...28.8 VDC	19.2...28.8 VDC
	0...55 °C	0...55 °C	0...55 °C
	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS	CE, UL-FILE E227256, Vol.X1, BIS
	IP67 with protection tube	IP67 with protection tube	IP67 with protection tube
	Page 556	Page 556	Page 556

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Systems

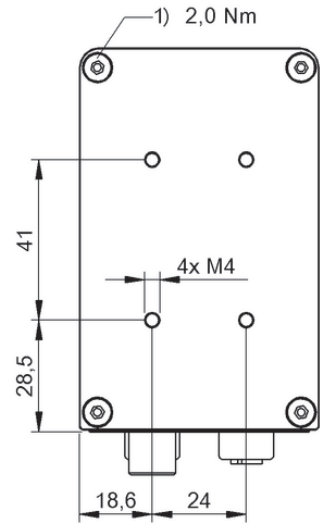
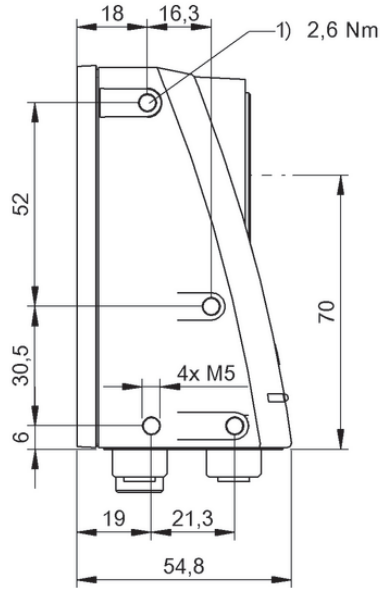
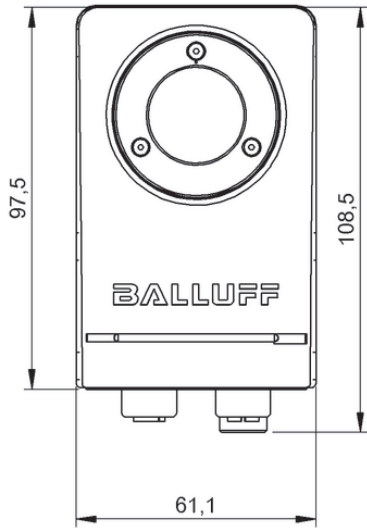
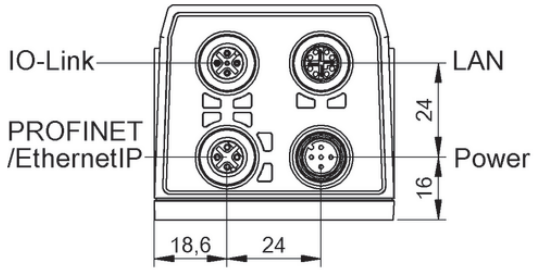
Safety

Industrial Networking

Power Supplies

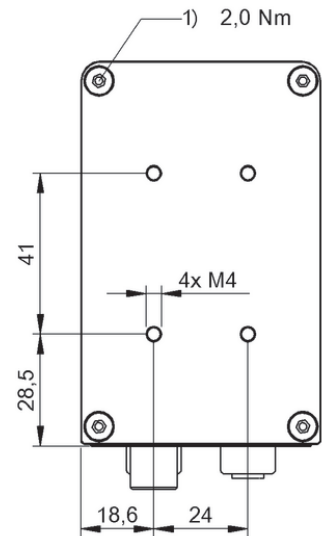
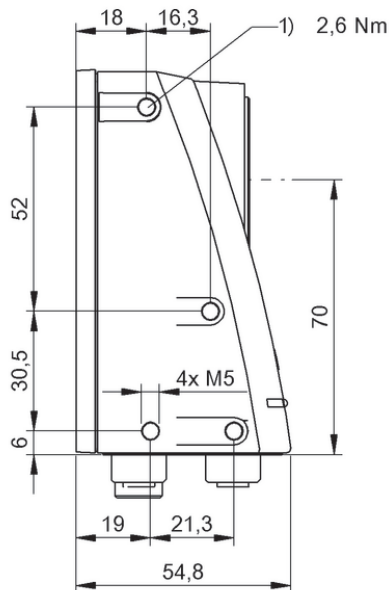
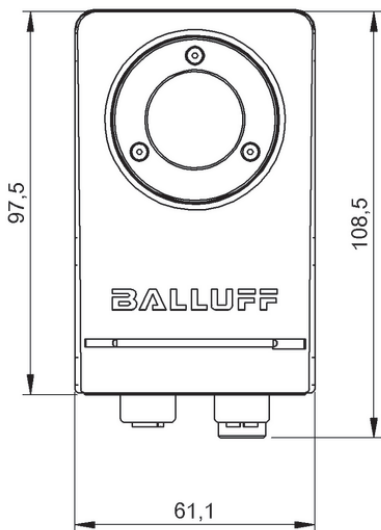
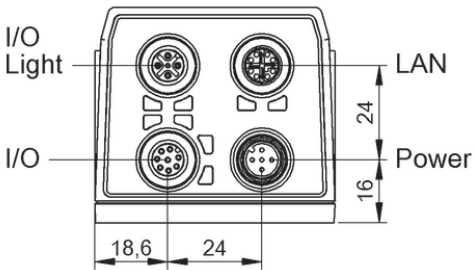
Connectivity

Accessories



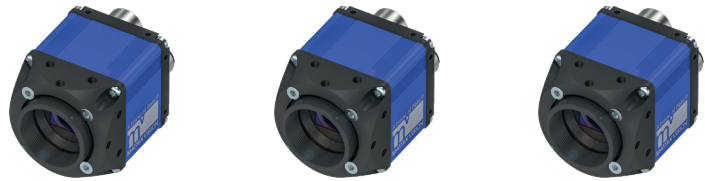
1) Tightening torque

BVS002F, BVS002A

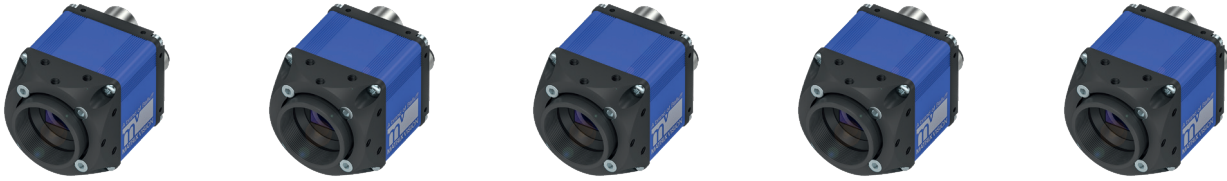


1) Tightening torque

BVS002C



	BVS003C BVS CA-GX0-0016ZC-111C41-XAS2	BVS003A BVS CA-GX0-0016ZG-112C41-XAS2	BVS0035 BVS CA-GX0-0124AC-111C41-XAS2	
Version	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	
Interface	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	
Lens mount	C-Mount	C-Mount	C-Mount	
Dimension	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	
Sensor type Vision	1/2.9" global shutter CMOS	1/2.9" global shutter CMOS	1.1" global shutter CMOS	
Sensor chip	Sony IMX273	Sony IMX273	Sony IMX304	
Image resolution	1.6 MP (1456 x 1088 pixels)	1.6 MP (1456 x 1088 pixels)	12.4 MP (4112 x 3008 pixels)	
Housing material	Aluminum	Aluminum	Aluminum	
Image formats	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	
Operating voltage Ub	11...25 VDC PoE	11...25 VDC PoE	11...25 VDC PoE	
Ambient temperature	0...45 °C	0...45 °C	0...45 °C	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	
Protection degree	IP67	IP67	IP67	
Productview	Page 562	Page 562	Page 562	



	BVS0034 BVS CA-GX0-0124AG-112C41-XAS2	BVS0039 BVS CA-GX0-0032AC-111C41-XAS2	BVS0038 BVS CA-GX0-0032AG-112C41-XAS2	BVS0037 BVS CA-GX0-0051AC-111C41-XAS2	BVS0036 BVS CA-GX0-0051AG-112C41-XAS2
	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera	GigE Vision industrial camera
	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE	Gigabit Ethernet, PoE
	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm	40 x 40 x 68.7 mm
	1.1" global shutter CMOS	1/1.8" global shutter CMOS	1/1.8" global shutter CMOS	2/3" global shutter CMOS	2/3" global shutter CMOS
	Sony IMX304	Sony IMX265	Sony IMX265	Sony IMX264	Sony IMX264
	12.4 MP (4112 x 3008 pixels)	3.2 MP (2064 x 1544 pixels)	3.2 MP (2064 x 1544 pixels)	5.1 MP (2464 x 2056 pixels)	5.1 MP (2464 x 2056 pixels)
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, BayerRG12Packed, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12Packed, Mono12p
	11...25 VDC PoE	11...25 VDC PoE	11...25 VDC PoE	11...25 VDC PoE	11...25 VDC PoE
	0...45 °C	0...45 °C	0...45 °C	0...45 °C	0...45 °C
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	IP67	IP67	IP67	IP67	IP67
	Page 562	Page 562	Page 562	Page 562	Page 562

Sensors

RFID

Machine Vision and Optical Identification

Human Machine Interfaces

Systems

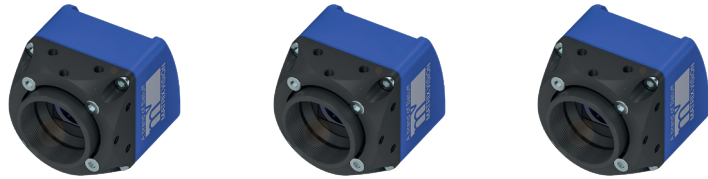
Safety

Industrial Networking

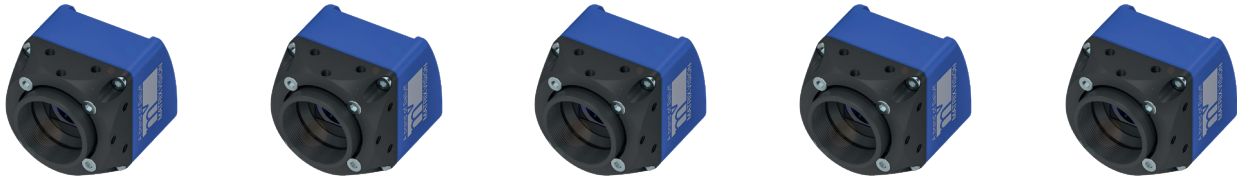
Power Supplies

Connectivity

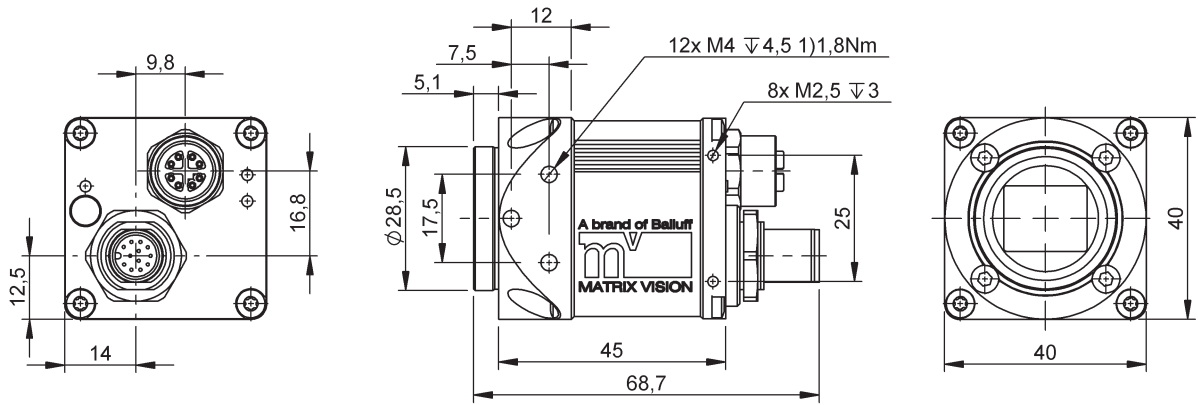
Accessories



	BVS003N BVS CA-SF2-0016ZC-111121-XAS2	BVS003M BVS CA-SF2-0016ZG-112121-XAS2	BVS003F BVS CA-SF2-0124AC-111121-XAS2	
Version	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera	
Interface	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0	
Lens mount	C-Mount	C-Mount	C-Mount	
Dimension	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	
Sensor type Vision	1/2.9" global shutter CMOS	1/2.9" global shutter CMOS	1.1" global shutter CMOS	
Sensor chip	Sony IMX273	Sony IMX273	Sony IMX304	
Image resolution	1.6 MP (1456 x 1088 pixels)	1.6 MP (1456 x 1088 pixels)	12.4 MP (4112 x 3008 pixels)	
Housing material	Aluminum	Aluminum	Aluminum	
Image formats	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8_UYV, YUV411_8_UYVYYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8_UYV, YUV411_8_UYVYYY, BayerRG12p	
Operating voltage Ub	11...25 VDC	11...25 VDC	11...25 VDC	
Ambient temperature	0...45 °C	0...45 °C	0...45 °C	
Approval/Conformity	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	
Protection degree	IP30	IP30	IP30	
Productview	Page 562	Page 562	Page 562	

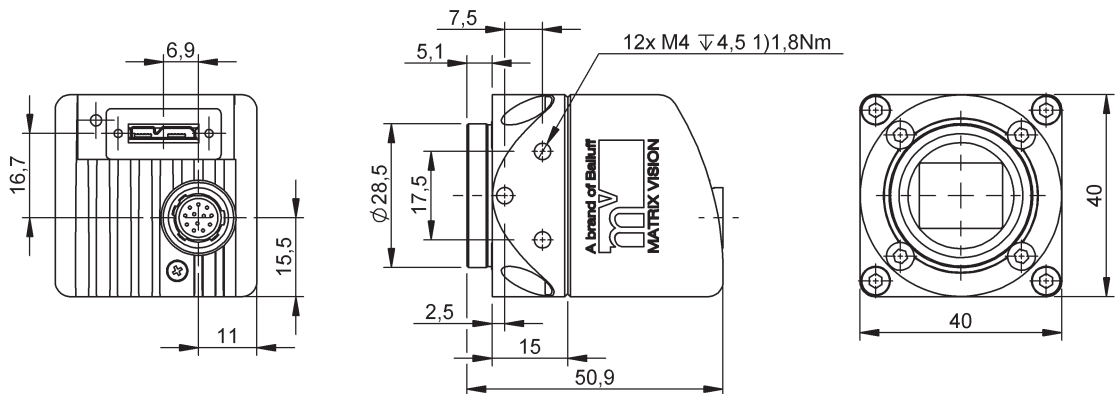


	BVS003E BVS CA-SF2-0124AG-112121-XAS2	BVS003L BVS CA-SF2-0032AC-111121-XAS2	BVS003K BVS CA-SF2-0032AG-112121-XAS2	BVS003J BVS CA-SF2-0051AC-111121-XAS2	BVS003H BVS CA-SF2-0051AG-112121-XAS2
	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera	USB3 Vision industrial camera
	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0	USB 2.0 / 3.0
	C-Mount	C-Mount	C-Mount	C-Mount	C-Mount
	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm	40 x 40 x 50.9 mm
	1.1" global shutter CMOS	1/1.8" global shutter CMOS	1/1.8" global shutter CMOS	2/3" global shutter CMOS	2/3" global shutter CMOS
	Sony IMX304	Sony IMX265	Sony IMX265	Sony IMX264	Sony IMX264
	12.4 MP (4112 x 3008 pixels)	3.2 MP (2064 x 1544 pixels)	3.2 MP (2064 x 1544 pixels)	5.1 MP (2464 x 2056 pixels)	5.1 MP (2464 x 2056 pixels)
	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGR8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8_UYVY, YUV422_8_UYV8_UYV, YUV411_8_UYVYYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p	BayerRG8, BayerRG10, BayerRG12, BayerRG16, RGB8Packed, BGR8Packed, BGR8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed, RGB8, BGR8, BGRa8, RGB10p32, YUV422_8_UYVY, YUV422_8_UYVY, YUV422_8_UYV8_UYV, YUV411_8_UYVYYY, BayerRG12p	Mono8, Mono10, Mono12, Mono14, Mono16, Mono12p
	11...25 VDC	11...25 VDC	11...25 VDC	11...25 VDC	11...25 VDC
	0...45 °C	0...45 °C	0...45 °C	0...45 °C	0...45 °C
	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE	CE, EAC, WEEE
	IP30	IP30	IP30	IP30	IP30
	Page 562	Page 562	Page 562	Page 562	Page 562



1) Tightening torque

BVS003C, BVS003A, BVS0035, BVS0034, BVS0039, BVS0038, BVS0037, BVS0036

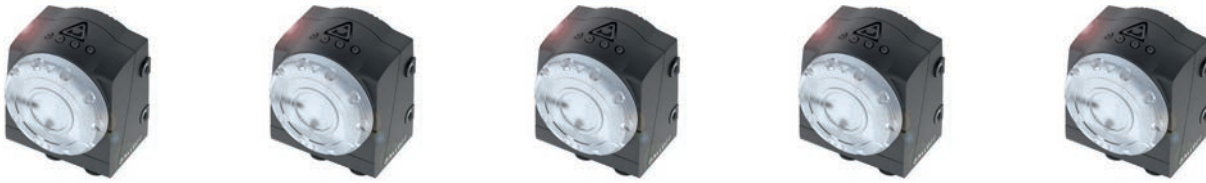


1) Tightening torque

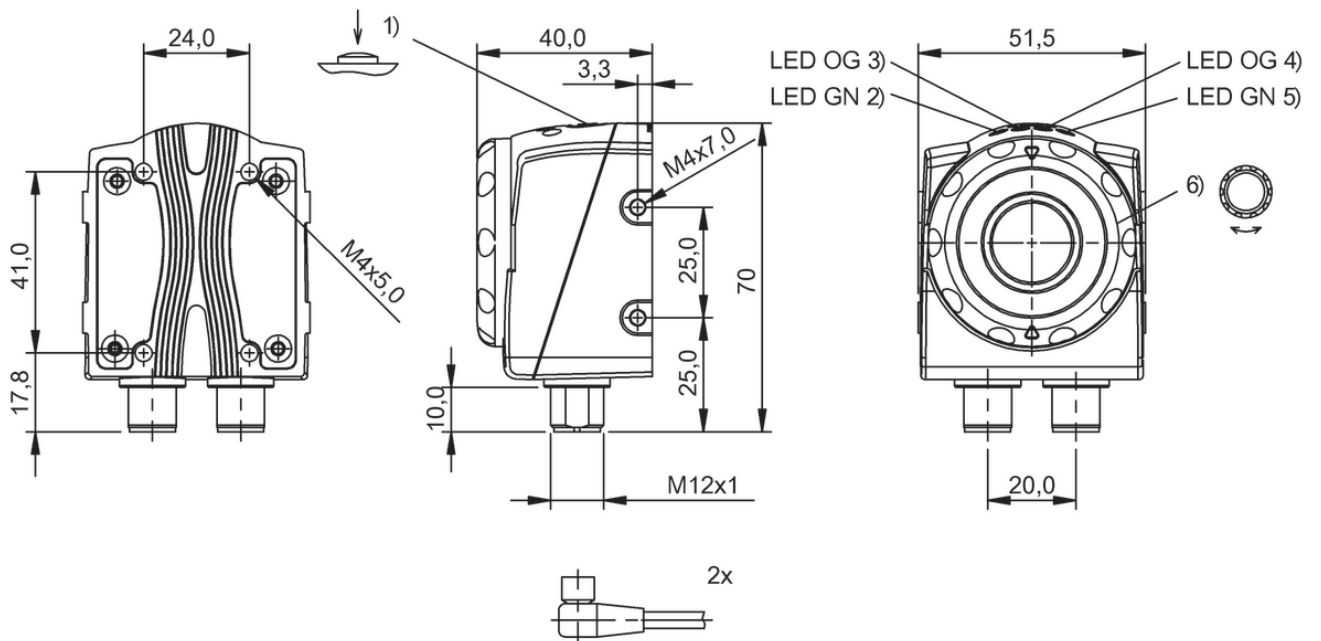
BVS003N, BVS003M, BVS003F, BVS003E, BVS003L, BVS003K, BVS003J, BVS003H



	BVS001F BVS UR-3-105-E	BVS001H BVS UR-3-101-E	BVS001J BVS UR-3-103-E	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Detection rate typ.	3...40 Hz	3...40 Hz	3...40 Hz	
Application	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage U _b	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	CE, cULus	CE, cULus	CE, cULus	
Protection degree	IP54	IP54	IP54	
Productview	Page 566	Page 566	Page 566	



	BVS001K BVS UR-3-107-E	BVS001L BVS UR-3-005-E	BVS001M BVS UR-3-001-E	BVS001N BVS UR-3-003-E	BVS001P BVS UR-3-007-E
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3...40 Hz	3...40 Hz	3...40 Hz	3...40 Hz	3...40 Hz
	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification	360° detection, Barcode-, 2D-, OCR identification
	230...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm
	55 x 42 mm ... 240 x 180 mm	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm
	16.0 mm	6.0 mm	8.0 mm	12.0 mm	16.0 mm
	Infrared	LED, red light	LED, red light	LED, red light	LED, red light
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)
	RS232 (9.6...115.2 kBaud)	RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	CE, cULus	CE, cULus	CE, cULus	CE, cULus	CE, cULus
	IP54	IP54	IP54	IP54	IP54
	Page 566	Page 566	Page 566	Page 566	Page 566

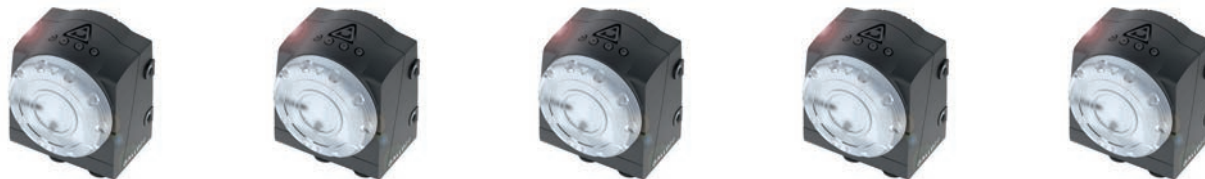


1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

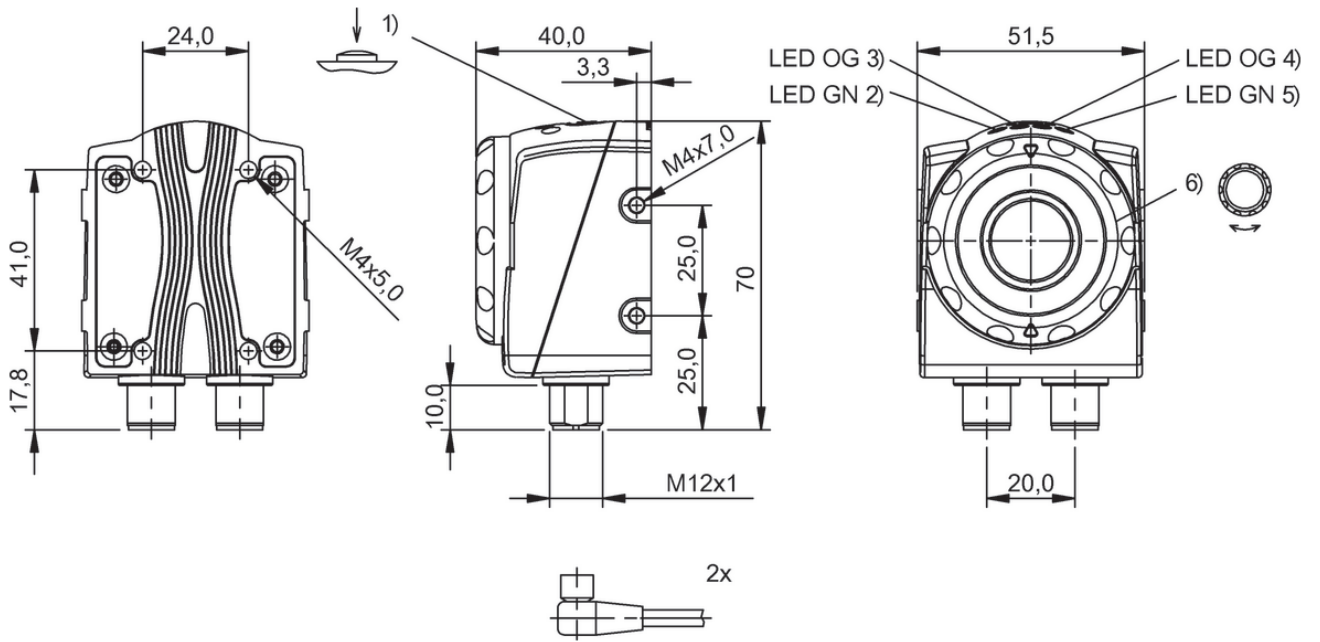
BVS001F, BVS001H, BVS001J, BVS001K, BVS001L, BVS001M, BVS001N, BVS001P



	BVS0016 BVS 0I-3-155-E	BVS0015 BVS 0I-3-151-E	BVS0017 BVS 0I-3-153-E	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Detection rate typ.	3...50 Hz	3...50 Hz	3...50 Hz	
Application	360° detection	360° detection	360° detection	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage U_b	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	cULus, CE	cULus, CE	cULus, CE	
Protection degree	IP54	IP54	IP54	
Productview	Page 570	Page 570	Page 570	



	BVS0018 BVS 0I-3-157-E	BVS000L BVS 0I-3-055-E	BVS000J BVS 0I-3-051-E	BVS000K BVS 0I-3-053-E	BVS000W BVS 0I-3-057-E
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3...50 Hz	3...40 Hz	3...40 Hz	3...40 Hz	3...40 Hz
	360° detection	360° detection	360° detection	360° detection	360° detection
	180...1000 mm	50...1000 mm	50...1000 mm	50...1000 mm	180...1000 mm
	43 x 32 mm ... 240 x 180 mm	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm
	16.0 mm	6.0 mm	8.0 mm	12.0 mm	16.0 mm
	Infrared	LED, red light	LED, red light	LED, red light	LED, red light
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)
	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C
	cULus, CE	cULus, CE	cULus, CE	cULus, CE	CE, cULus
	IP54	IP54	IP54	IP54	IP54
	Page 570	Page 570	Page 570	Page 570	Page 570



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

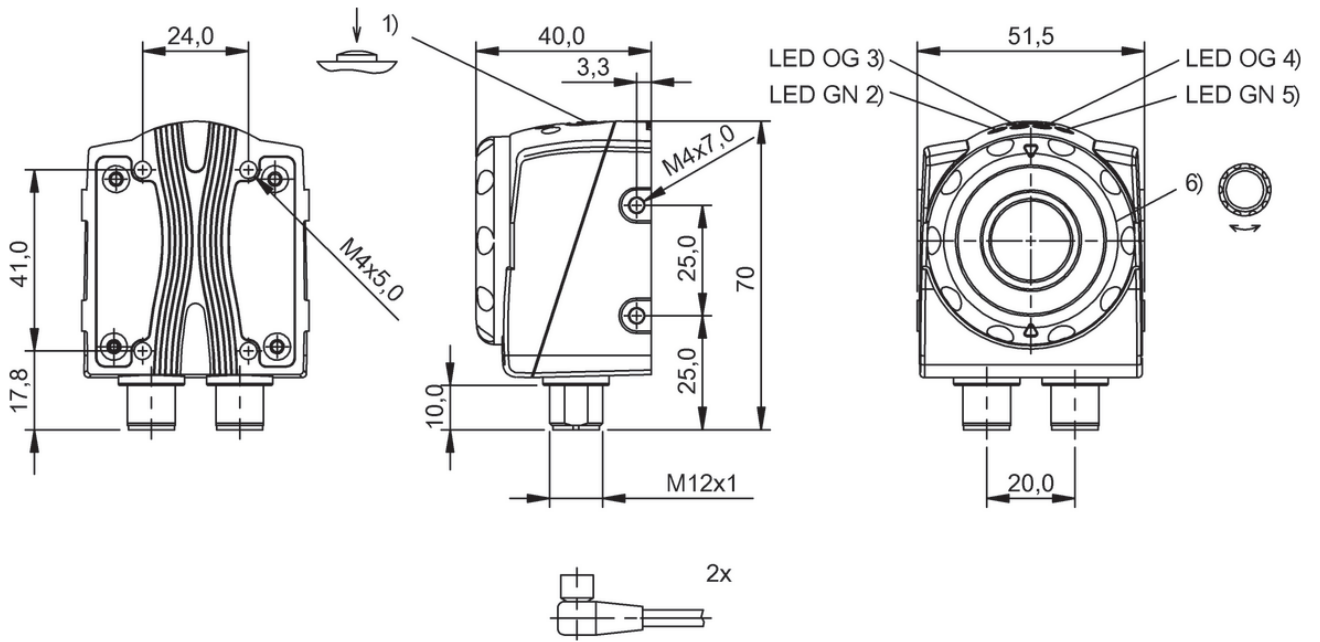
BVS0016, BVS0015, BVS0017, BVS0018, BVS000L, BVS000J, BVS000K, BVS000W



	BVS0013 BVS 0I-3-105-E	
Sensor type Vision	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	
Detection rate typ.	3...15 Hz	
Range	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	
Focal length	6.0 mm	
Light type	Infrared	
Housing material	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	
Operating voltage U _b	22...26 VDC	
Ambient temperature	-10...55 °C	
Approval/Conformity	CE, cULus	
Protection degree	IP54	
Productview	Page 574	



	BVS0014 BVS 0I-3-101-E	BVS0012 BVS 0I-3-103-E
	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3...15 Hz	3...15 Hz
	50...1000 mm	50...1000 mm
	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm
	8.0 mm	12.0 mm
	Infrared	Infrared
	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)
	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C
	cULus, CE	cULus, CE
	IP54	IP54
	Page 574	Page 574



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

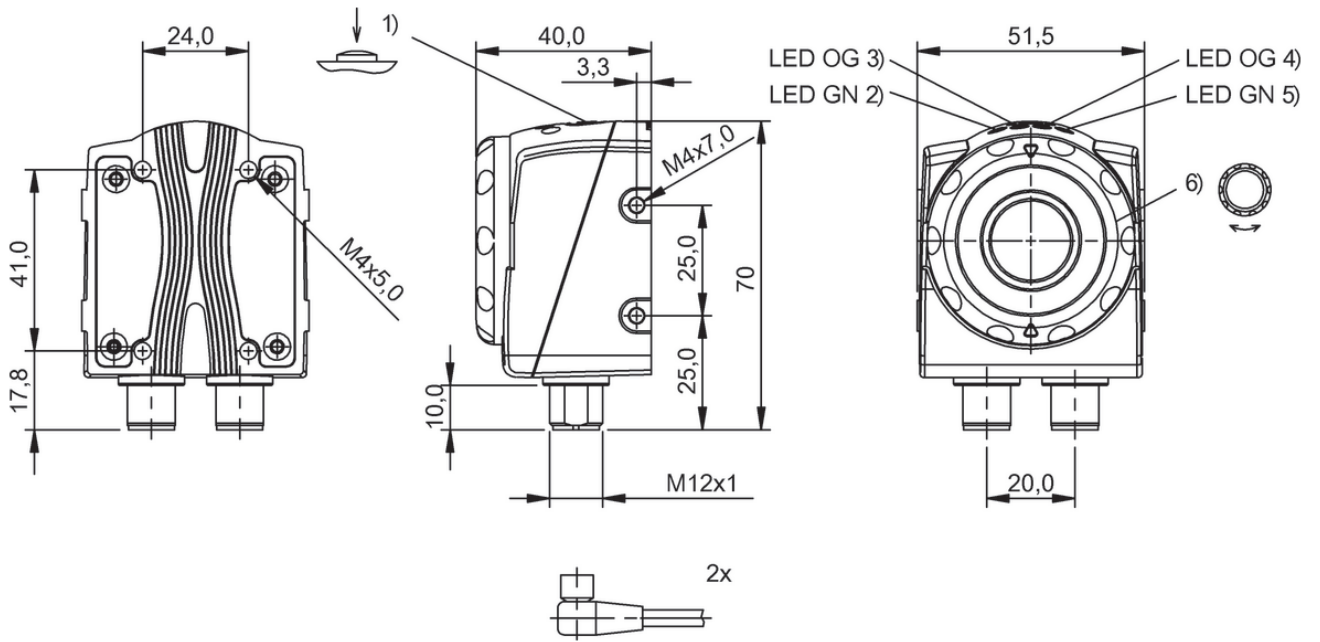
BVS0013, BVS0014, BVS0012



	BVS000E BVS 0I-3-005-E	
Sensor type Vision	CMOS image sensor black-white	
Image resolution	VGA 640 x 480 pixels	
Detection rate typ.	3...15 Hz	
Range	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	
Focal length	6.0 mm	
Light type	LED, red light	
Housing material	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T	
Connection 1	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	
Operating voltage U _b	22...26 VDC	
Ambient temperature	-10...55 °C	
Approval/Conformity	cULus, CE	
Protection degree	IP54	
Productview	Page 578	



	BVS0003 BVS 0I-3-001-E	BVS0005 BVS 0I-3-003-E
	CMOS image sensor black-white	CMOS image sensor black-white
	VGA 640 x 480 pixels	VGA 640 x 480 pixels
	3...15 Hz	3...15 Hz
	50...1000 mm	50...1000 mm
	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm
	8.0 mm	12.0 mm
	LED, red light	LED, red light
	Aluminum, die-cast ABS	Aluminum, die-cast ABS
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm
	3x PNP normally open (NO)	3x PNP normally open (NO)
	Ethernet 10/100 Base T	Ethernet 10/100 Base T
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded
	22...26 VDC	22...26 VDC
	-10...55 °C	-10...55 °C
	cULus, CE	cULus, CE
	IP54	IP54
	Page 578	Page 578



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS000E, BVS0003, BVS0005



Secure identification and decoding of objects

OPTICAL IDENTIFICATION



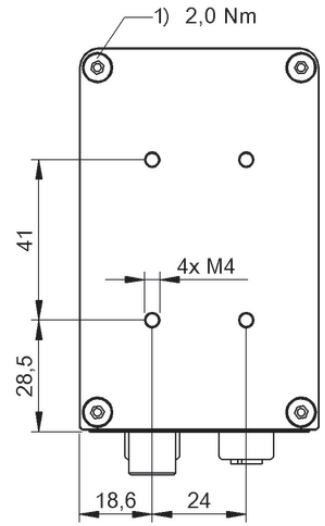
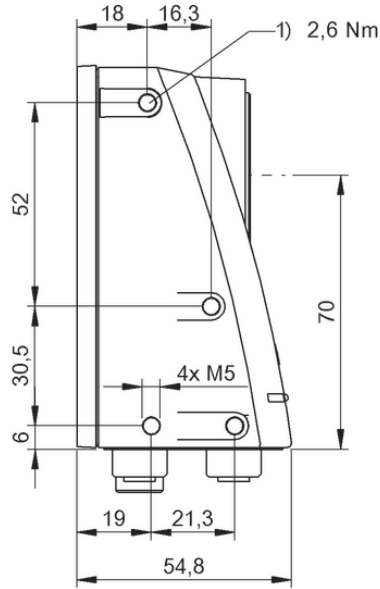
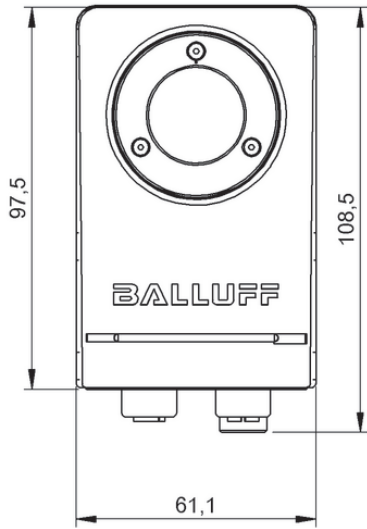
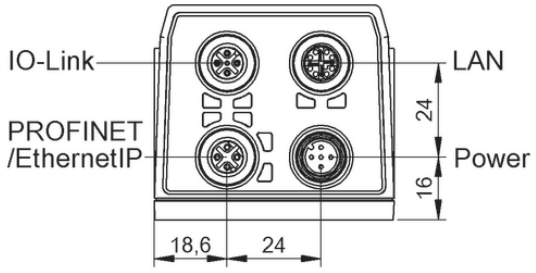
Optical identification via 1D and 2D barcodes is an established way to identify components and objects and precisely manage systems and processes. Our broad range of offerings in this area includes stationary barcode readers, mobile handheld readers and accessories for standard and industrial grade applications.

The most important benefits

- Reliable traceability of products and assembly
- Application areas: control supply processes (e.g., Kanban system), production control, optical tool identification
- Simple startup



	BVS0029 BVS SC-M1280Z00-30-010	
Barcodes	GS1 Databar, GS1-128, UPC-A, UPC-E, EAN-8, EAN-13, 2/5 Industrial, 2/5 Interleaved, Codabar, Code 128, Code 39, Code 93, MSI, UPC-A, UPC-E	
2D codes	Aztec Code, Data Matrix ECC 200, GS1 Aztec Code, GS1 Data Matrix, GS1 QR Code, Micro QR Code, PDF 417, QR code	
Application	Barcode-, 2D-, OCR identification	
Image resolution	1280 x 1024 pixels	
Sensor type Vision	CMOS 1/1.8" monochrome global shutter	
Housing material	Aluminum	
Dimension	62 x 55 x 110 mm	
Switching output	2x IO configurable	
Interface	LAN (Gigabit Ethernet), Profinet / EtherNet/IP, IO-Link	
Operating voltage U _b	19.2...28.8 VDC	
Ambient temperature	0...55 °C	
Approval/Conformity	CE, UL-FILE E227256, Vol.X1, BIS	
Protection degree	IP67 with protection tube	
Productview	Page 584	



1) Tightening torque

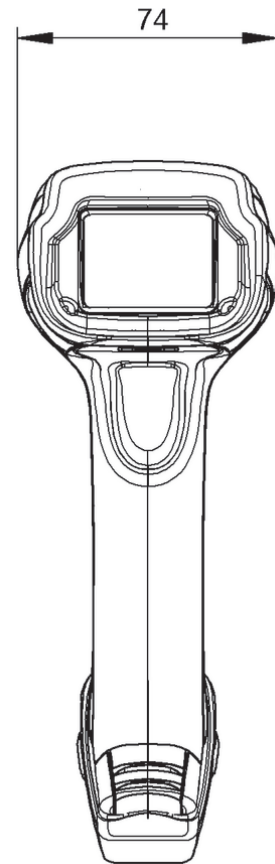
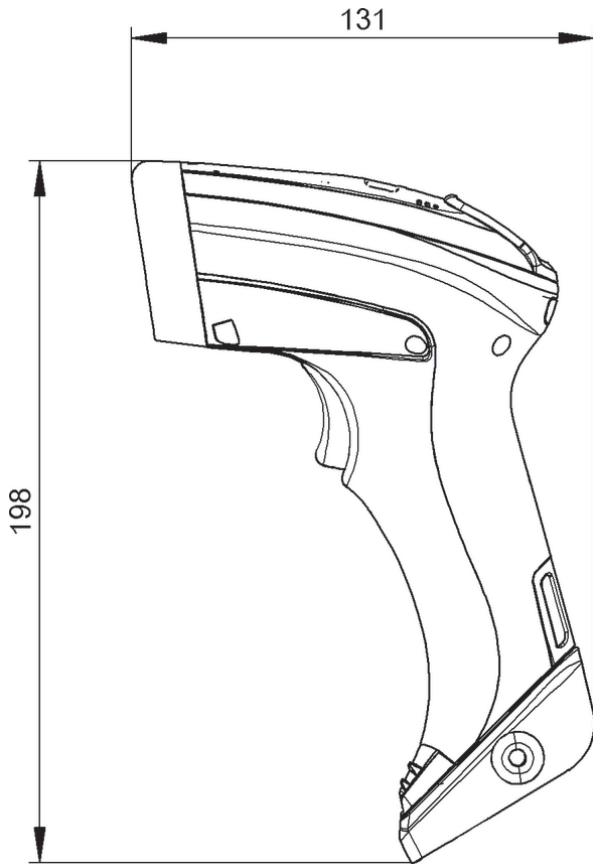
BVS0029



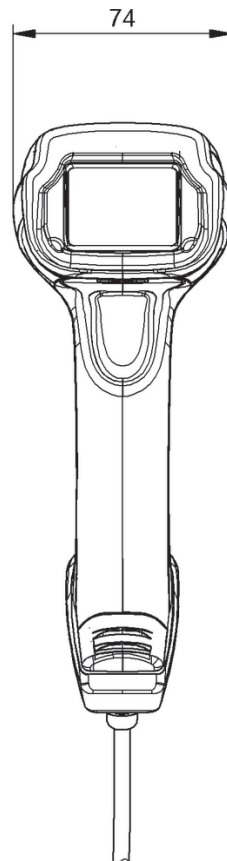
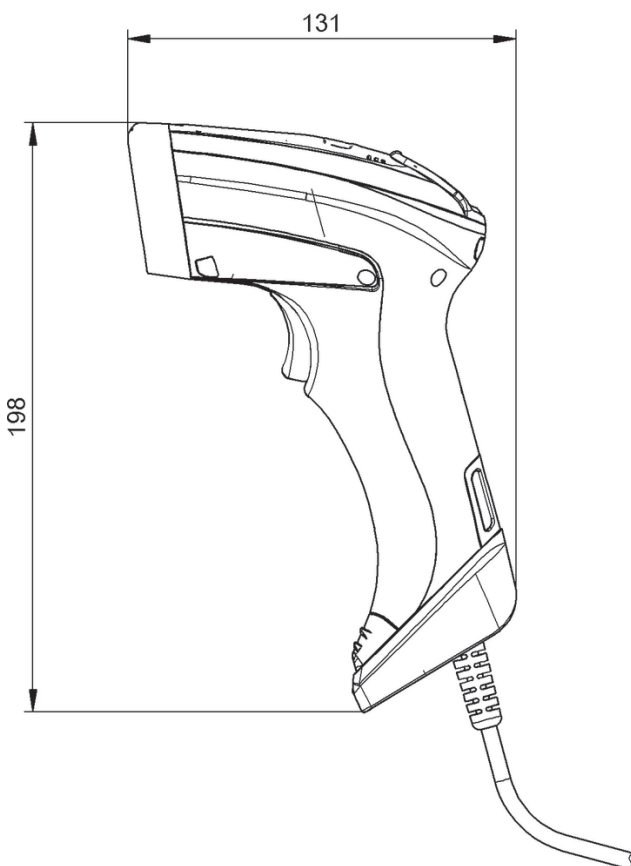
	BVS001Z BVS HS-PB-DPW-MZ-01	
Drop protection	≥ 50 drops, 2.0 m on concrete	
Barcodes	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	
2D codes	Aztec Code, China Han Xin Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	
Stacked codes	Micro PDF417, Macro PDF, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, PDF417, GS1 DataBar Stacked Omnidir, GS1 DataBar Composites, EAN/JAN Composites, UPC A/E Composites	
Read distance	Datamatrix: 2...10.5 cm at 10 mil, Datamatrix: 2.6...5.2 cm at 4 mil, Code 39: 1.2...9.0 cm at 5 mil, Code 39: 2.5...7.8 cm at 2.5 mil	
Light type illumination	LED White light	
Interface	Bluetooth 2.0 (2.4 GHz)	
Protection degree	IP65	
Productview	Page 588	



BVS001Y BVS HS-PB-HDW-MZ-01	BVS001T BVS HS-PC-DPW-MA-01	BVS001U BVS HS-PC-HDW-MA-01
≥ 50 drops, 2.0 m on concrete	≥ 50 drops, 2.0 m on concrete	≥ 50 drops, 2.0 m on concrete
GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5	GS1 Databar linear codes UPC/EAN (A, E, 13, 8) UPC/EAN with P2/ P5 Addons UPC/ EAN Coupons ISBN Code128 EAN128 ISBT128 Code39 Code39 Full ASCII Code39 CIP Code 32 Codabar Interleaved 2 of 5 IATA Industrial 2 of 5 standard 2 of 5 Code11 MSI Plessey Code 93 Follet 2/5
Aztec Code, China Han Xin Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	Aztec Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code	Aztec Code, China Sensible Code, Data Matrix, Maxicode, Micro QR Code, QR code
GS1 DataBar Expanded Stacked, GS1 DataBar Stacked Omnidir, GS1 DataBar Stacked, Macro PDF, GS1 DataBar Composites, EAN/JAN Composites, Micro PDF417, UPC A/E Composites, PDF417	PDF417, Macro PDF, GS1 DataBar Stacked Omnidir, GS1 DataBar Composites, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, Micro PDF417, UPC A/E Composites, EAN/JAN Composites	Micro PDF417, GS1 DataBar Composites, Macro PDF, GS1 DataBar Stacked, GS1 DataBar Expanded Stacked, GS1 DataBar Stacked Omnidir, PDF417
Datamatrix: 2...20 cm at 10 mil, Datamatrix: 2...6 cm at 4 mil, Code 39: 3...110 cm at 40 mil, Code 39: 2...6 cm at 2.5 mil	Datamatrix: 2...10.5 cm at 10 mil, Code 39: 2.5...7.8 cm at 2.5 mil, Code 39: 1.2...9.0 cm at 5 mil, Datamatrix: 2.6...5.2 cm at 4 mil	Code 39: 2...6 cm at 2.5 mil, Code 39: 3...110 cm at 40 mil, Datamatrix: 2...6 cm at 4 mil, Datamatrix: 2...20 cm at 10 mil
LED White light	LED White light	LED White light
Bluetooth 2.0 (2.4 GHz)	RS232/ USB	RS232/ USB
IP65	IP65	IP65
Page 588	Page 588	Page 588



BVS001Z, BVS001Y



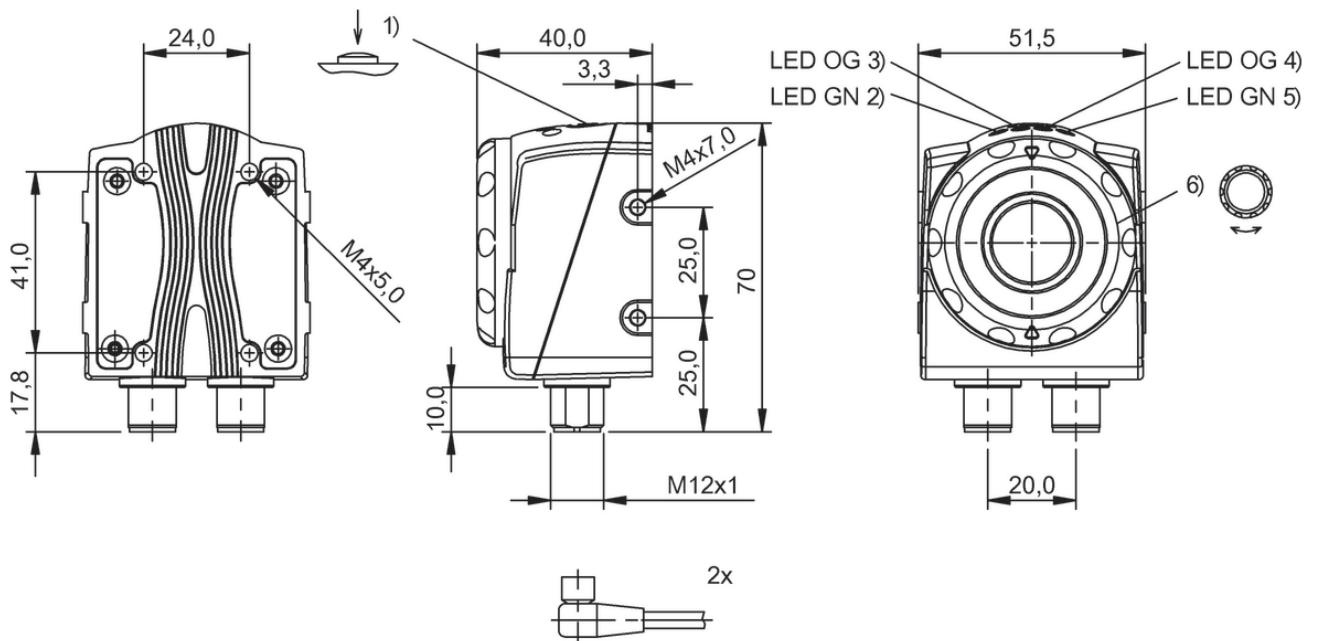
BVS001T, BVS001U



	BVS001C BVS ID-3-105-E	BVS0019 BVS ID-3-101-E	BVS001A BVS ID-3-103-E	
Barcodes	Interleaved 2-of-5, Code 39, Code 128, Pharmacode, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharmacode, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharmacode, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	
2D codes	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	
Stacked codes	PDF417	PDF417	PDF417	
Application	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	
Image resolution	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
Sensor type Vision	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
Range	50...1000 mm	50...1000 mm	50...1000 mm	
Field of view	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	
Focal length	6.0 mm	8.0 mm	12.0 mm	
Light type	Infrared	Infrared	Infrared	
Housing material	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
Dimension	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
Switching output	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
Interface	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	
Connection 1	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
Connection 2	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
Operating voltage Ub	22...26 VDC	22...26 VDC	22...26 VDC	
Ambient temperature	-10...55 °C	-10...55 °C	-10...55 °C	
Approval/Conformity	cULus, CE	cULus, CE	cULus, CE	
Protection degree	IP54	IP54	IP54	
Productview	Page 592	Page 592	Page 592	



	BVS001R BVS ID-3-005-E	BVS0001 BVS ID-3-001-E	BVS000T BVS ID-3-003-E	BVS000Y BVS ID-3-007-E	
	Interleaved 2-of-5, Code 39, Code 128, Pharmaco- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharma- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharma- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	Interleaved 2-of-5, Code 39, Code 128, Pharma- code, Codabar, EAN 8, EAN 13, UPC-E, UPC-A	
	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	Data Matrix ECC 200, QR code, Mini QR	
	PDF417	PDF417	PDF417	PDF417	
	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	Multi-Code-Reading, Verifying character strings	
	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	VGA 640 x 480 pixels	
	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	CMOS image sensor black-white	
	50...1000 mm	50...1000 mm	50...1000 mm	150...1000 mm	
	34 x 25 mm ... 676 x 507 mm	24 x 18 mm ... 480 x 360 mm	16 x 12 mm ... 320 x 240 mm	43 x 32 mm ... 240 x 180 mm	
	6.0 mm	8.0 mm	12.0 mm	16.0 mm	
	LED, red light	LED, red light	LED, red light	LED, red light	
	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	Aluminum, die-cast ABS	
	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	51.5 x 70 x 40 mm	
	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	3x PNP normally open (NO)	
	RS232 (9.6...115.2 kBaud), RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	Ethernet 10/100 Base T, RS232 (9.6...115.2 kBaud)	
	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	M12x1-Male, 8-pole, A-coded	
	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	M12x1-Male, 4-pole, D-coded	
	22...26 VDC	22...26 VDC	22...26 VDC	22...26 VDC	
	-10...55 °C	-10...55 °C	-10...55 °C	-10...55 °C	
	CE, cULus	cULus, CE	CE, cULus	CE, cULus	
	IP54	IP54	IP54	IP54	
	Page 592	Page 592	Page 592	Page 592	



1) Teach-in reference image, 2) Operating voltage, 3) Output 1 active, 4) Output 2 active, 5) Connection with PC, 6) Focus

BVS001C, BVS0019, BVS001A, BVS001R, BVS0001, BVS000T, BVS000Y

Machine Vision and Optical Identification

BASICS AND GLOSSARY



Technisches Glossar

Geben Sie ein Begriff ein.

A B C D E F G H I K L M N O P R S T U V W X Z

Begriff

Absolut

Abstandssensor mit Analogausgang

Absolutdruck

ADA

Aktive Fläche

Alarmausgang

Definition

Charakteristik eines magnetkodierten Messsystems, bei dem der Messwert der aktuellen Position sofort nach dem Einschalten verfügbar ist. Jeder Position, z. B. einer Messstrecke, ist ein absolut codiertes digitales Signal oder ein Analogwert zugeordnet. Eine Referenzpunktzahl ist nicht notwendig.

Sensor, der ein kontinuierlich veränderndes Ausgangssignal erzeugt, das vom Abstand zwischen aktiver Fläche und dem Bedingungsmerkmal abhängt.

Druck gegenüber Druck Null (Vakuum). Der Wertebereich des Absolutdrucks ist immer positiv.

Automatisierungsinitiative Deutscher Automobilisten

Aktiv messender Bereich und somit nach außen empfindliche Elektrode/Platte des Elektrodensystems. Sie ist in der Regel etwas kleiner als die Fläche der Abdeckscheibe.

> nähere Informationen

"Vorsicht/Funktion am Empfänger, die bei Funktionsstörungen ein Warnsignal können durch Verschmutzung oder mechanische Dejustierung verursacht sein. Der Alarmausgang ist aktiviert, wenn das Empfänger-Signal für eine definierte Zeit fehlt."



ausst. Diese
ell im Nennbereich

Accessories

Connectivity

Power Supplies

Industrial Networking

Safety

Systems

Human Machine
Interfaces

**Machine Vision and
Optical Identification**

RFID

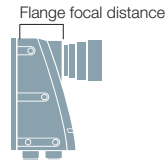
Sensors

Working distance

Working distance describes the distance between camera and sharply focused object in the image. Any given lens has a minimum and maximum working distance. Objects placed closer to the camera than the minimum working distance or farther than the maximum working distance can no longer be brought to focus in the image.

Flange focal distance

Distance between the lens and the image sensor in a camera.



Resolution (image processing)

Number of image points (pixels) on an image sensor.

Evaluation region

Image area which is evaluated by a camera or vision sensor.

Image processing

Technology which deals with image capture and evaluation.

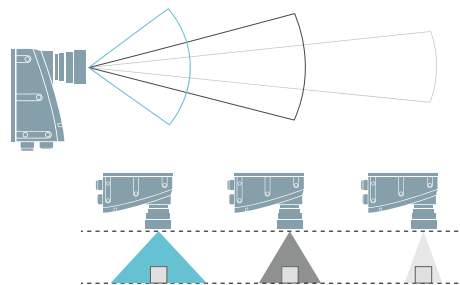
Aperture

Opening in a camera through which the light enters. Closing the aperture causes a darker image. The wider the aperture opening, the lighter the image.



Focal length

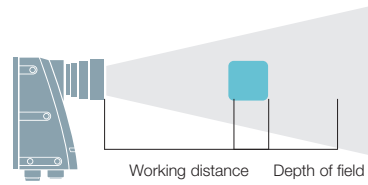
Distance between an optical lens and the focal point in millimeters. This distance together with the reading distance/working distance defines the reading field/field of view of a camera or visual sensor.



Focus	The clear and sharply defined condition of an image.
Maximum frame rate	Expressed in frames per second, the maximum possible number of images which a camera can capture
Inspection	Sequence of a test protocol in the environment of use.
Inspection program	Test protocol which is stored in image processing systems. The inspection program includes, for example, a learned reference image, the tools which test one or more evaluation areas in the digital image of an object, and the functions associated with the digital outputs.
Readable code	Type of barcode which a camera/vision sensor can read and evaluate.
Reading distance (optical identification)	Maximum distance at which the camera/vision sensor/code reader can reliably read a code of a certain size.
Lens	Optical system that forms an image on an image sensor from the rays of light passing through it. We distinguish lenses by their construction (C-mount, S-mount, liquid lens) and focal length (6 mm, 8 mm etc.).
Pixel	Smallest element of a digital image generated by an image sensor. The larger the number of pixels, the finer and sharper the image resolution.
Pixel size	The physical size of a pixel on an image sensor expressed in micrometers.
PEO (power over Ethernet)	Standardized procedure by which cameras are powered over a network cable.

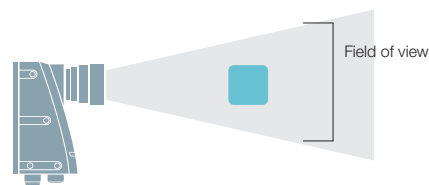
Depth of field

Area in front of and behind the working distance in which an object is still sharply represented. It is dependent on the focal length of the lens, the current working distance, and the set f-stop.



Field of view

Size of the image surface within which an image-processing device can undertake and process an image or event. The size is dependent upon the focal length of the lens and the working/reading distance.



Trigger

Initiator of an event such as an inspection in a camera/vision sensor.

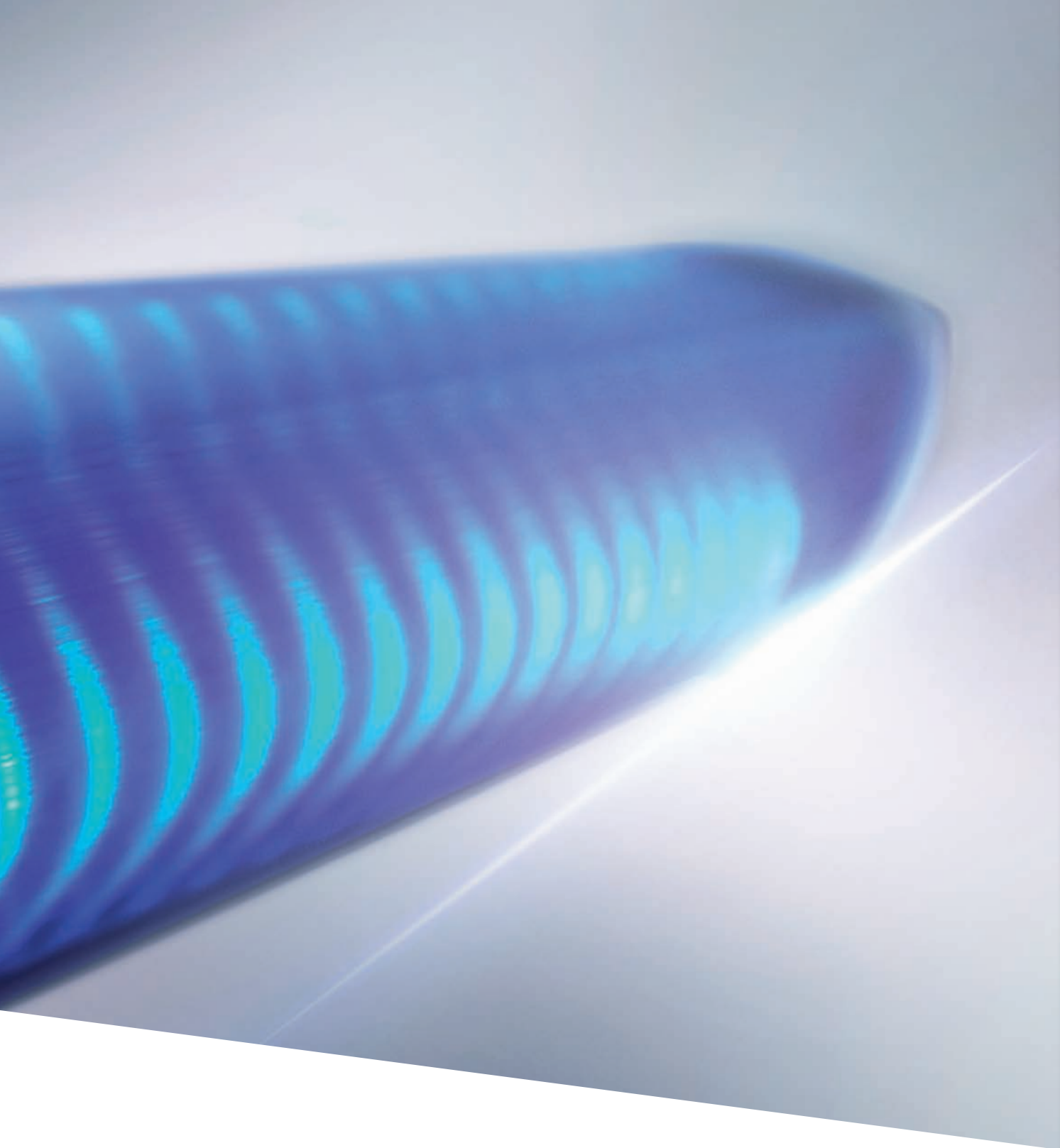
Distortion

Optical effects of lenses which can have different reactions on the processing. Two common types of distortion are pincushion and barrel distortion.

All the information you need at a glance

HUMAN MACHINE INTERFACES

 *innovating automation*



With our signaling and display devices, you know at all times what/where things stand with production and exactly where a tool is located. You can reliably monitor the state of machines and systems and display the sensor output signals.

Your Balluff solutions

- Signaling and display devices
- Monitors
- Displays



Capture operating status with displays and SmartLight

SIGNALING AND DISPLAY DEVICES



Our displays and the SmartLight LED stack light display physical variables. They allow you to know the operating status of your machine at a glance. The displays give you the choice between analog, SSI and pulse inputs. The SmartLight visualizes progressions and trends, with the special advantage that you can correlate different colors and modes without any mechanical modifications. Through the IO-Link interface, it is easy to install and configure.

The most important benefits

- Flexible
- Easy to install
- Displays for analog, SSI or pulse input signal
- SmartLight with IO-Link and individually correlated colors and modes

SmartLight – LED stack lights	604
Displays	612
Industrial Controller	618



	BNI007T BNI IOL-800-000-Z036	BNI0087 BNI IOL-800-000-Z037	BNI007F BNI IOL-801-000-Z036	
Principle of operation	Indicator light	Indicator light with sound module	Indicator light	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	
Segments, number max.	1	1	3	
Predefined colors	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	
Function indicator	Runlight Mode, Segment Mode, Flexi-Mode	Runlight Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	
Volume max.	—	95 dB/m	—	
Setting	Function indicator	Function indicator, Volume	Function indicator	
Additional function	—	—	—	
Range	—	—	—	
Dimension	60 x 60 x 117 mm	60 x 60 x 138.5 mm	60 x 60 x 213 mm	
Housing material	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	
Mounting	Screws M18	Screws M18	Screws M18	
Ambient temperature	-5...50 °C	-5...50 °C	-5...50 °C	
Protection degree	IP65	IP30	IP65	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	5 ms	5 ms	5 ms	
Process data in	—	—	—	
Process data out	1 bytes	1 bytes	2 bytes	
Productview	Page 608	Page 608	Page 609	



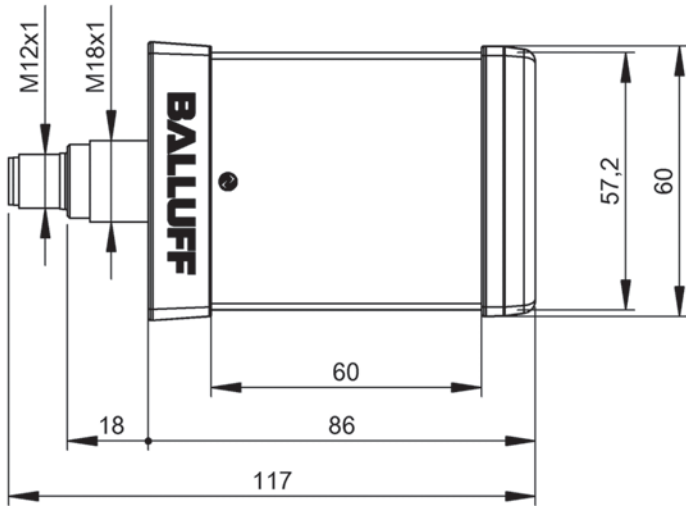
	BNI0088 BNI IOL-801-102-Z036	BNI0086 BNI IOL-801-000-Z037	BNI008A BNI IOL-801-102-Z037	BNI0072 BNI IOL-802-000-Z036	BNI0082 BNI IOL-802-102-Z036
	Indicator light	Indicator light with sound module	Indicator light with sound module	Indicator light	Indicator light
	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1
	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC
	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin
	3	3	3	5	5
	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable
	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode
	—	95 dB/m	95 dB/m	—	—
	Function indicator	Function indicator, Volume	Function indicator, Volume	Function indicator	Function indicator
	Expanded process data	—	Expanded process data	—	Expanded process data
	—	—	—	—	—
	60 x 60 x 213 mm	60 x 60 x 234.5 mm	60 x 60 x 234.5 mm	60 x 60 x 309 mm	60 x 60 x 309 mm
	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc
	Screws M18	Screws M18	Screws M18	Screws M18	Screws M18
	-5...50 °C	-5...50 °C	-5...50 °C	-5...50 °C	-5...50 °C
	IP65	IP30	IP30	IP65	IP65
	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)
	7.2 ms	5 ms	7.2 ms	5 ms	7.2 ms
	1 bytes	—	1 bytes	—	1 bytes
	8 bytes	3 bytes	8 bytes	3 bytes	8 bytes
	Page 609	Page 609	Page 609	Page 610	Page 610



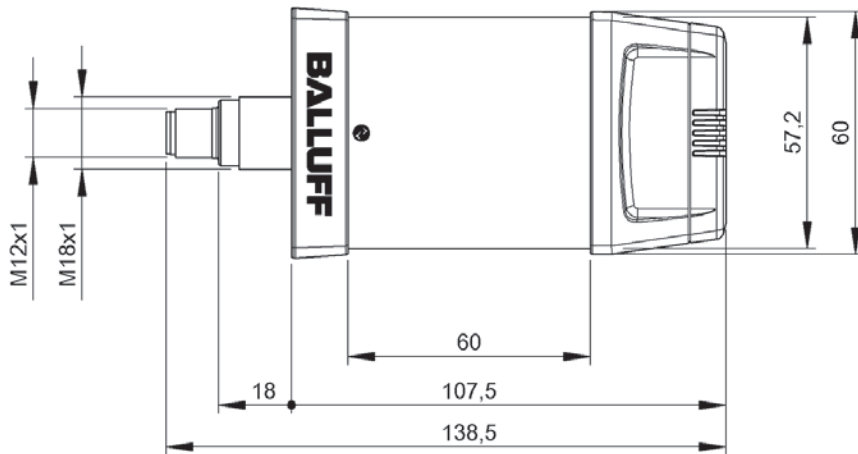
	BNI0083 BNI IOL-802-000-Z037	BNI0085 BNI IOL-802-102-Z037	BNI00CZ BNI IOL-803-102-R036	
Principle of operation	Indicator light with sound module	Indicator light with sound module	Indicator light	
Interface	IO-Link 1.1	IO-Link 1.1	IO-Link 1.1	
Operating voltage U_b	18...30.2 VDC	18...30.2 VDC	18...30.2 VDC	
Connection	M12x1 connector, 4-pin	M12x1 connector, 4-pin	M12x1 connector, 4-pin	
Segments, number max.	5	5	6	
Predefined colors	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	Yellow, white, Green, Blue, Red, Orange, configurable	
Function indicator	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Flexi-Mode	Runlight Mode, Level Mode, Segment Mode, Color circle mode	
Volume max.	95 dB/m	95 dB/m	—	
Setting	Function indicator, Volume	Function indicator, Volume	Function indicator	
Additional function	—	Expanded process data	Daisy chain (2x devices per IO-Link port)	
Range	—	—	—	
Dimension	60 x 60 x 330.5 mm	60 x 60 x 330.5 mm	61.8 x 62.4 x 57.5 mm	
Housing material	PC, Transparent Die-cast zinc	PC, Transparent Die-cast zinc	PC, Transparent PPS	
Mounting	Screws M18	Screws M18	Screws M22	
Ambient temperature	-5...50 °C	-5...50 °C	-5...55 °C	
Protection degree	IP30	IP30	IP65	
Transfer rate	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	COM2 (38.4 kBaud)	
Process data cycle min.	5 ms	7.2 ms	8.4 ms	
Process data in	—	1 bytes	2 bytes	
Process data out	3 bytes	8 bytes	8 bytes	
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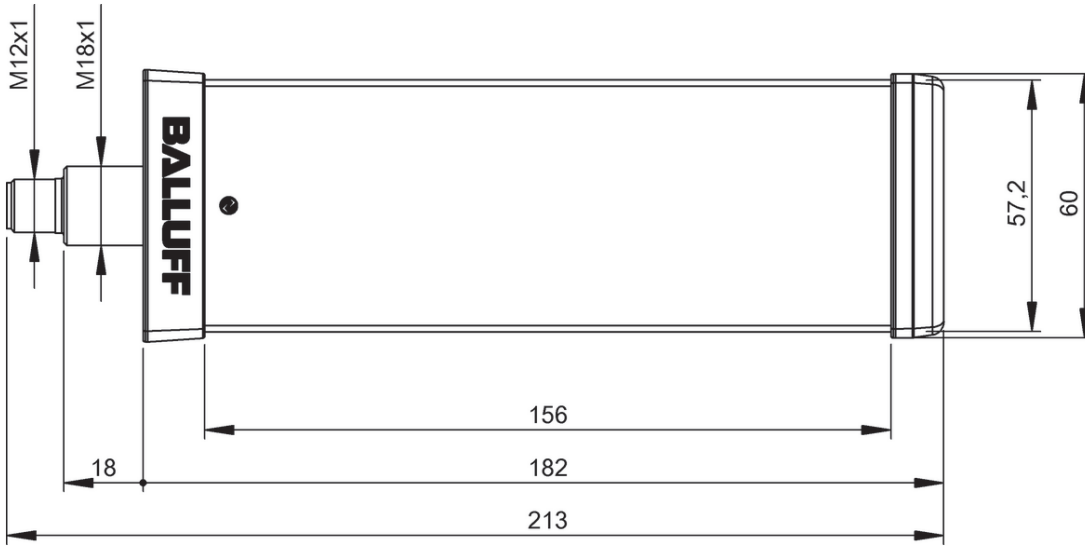
BNI00E0 BNI IOL-803-103-R036				
Indicator light with optical sensor				
IO-Link 1.1				
18...30.2 VDC				
M12x1 connector, 4-pin				
6				
Yellow, white, Green, Blue, Red, Orange, configurable				
Runlight Mode, Level Mode, Segment Mode, Color circle mode				
—				
Function indicator				
Daisy chain (2x devices per IO-Link port)				
100 mm Adjustable				
61.8 x 62.4 x 57.5 mm				
PC, Transparent PPS				
Screws M22				
-5...55 °C				
IP65				
COM2 (38.4 kBaud)				
8.4 ms				
2 bytes				
8 bytes				
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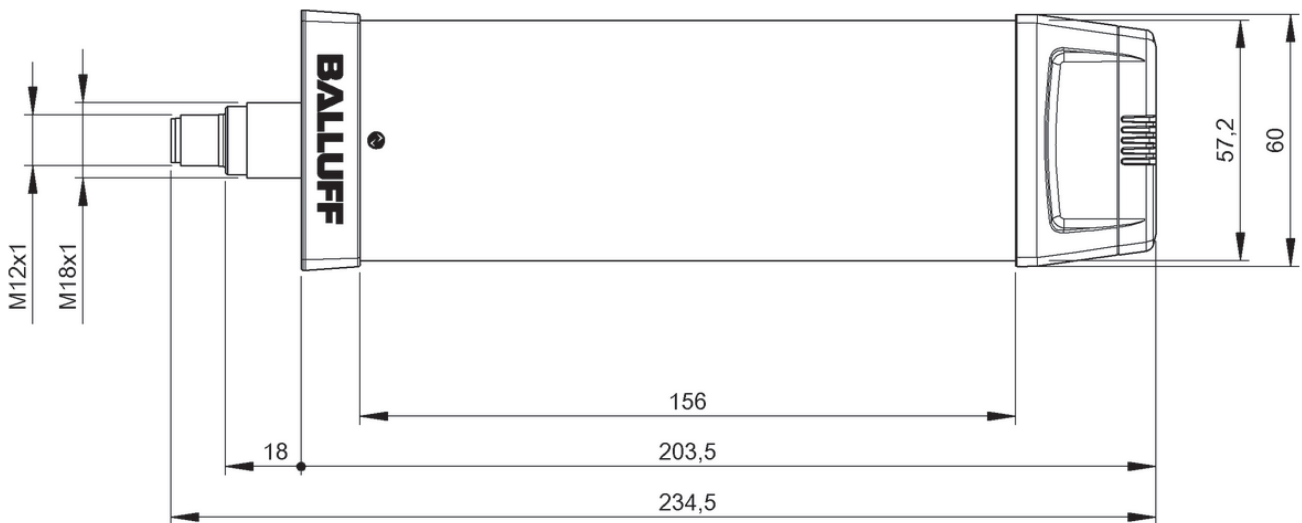
BNI007T



BNI0087

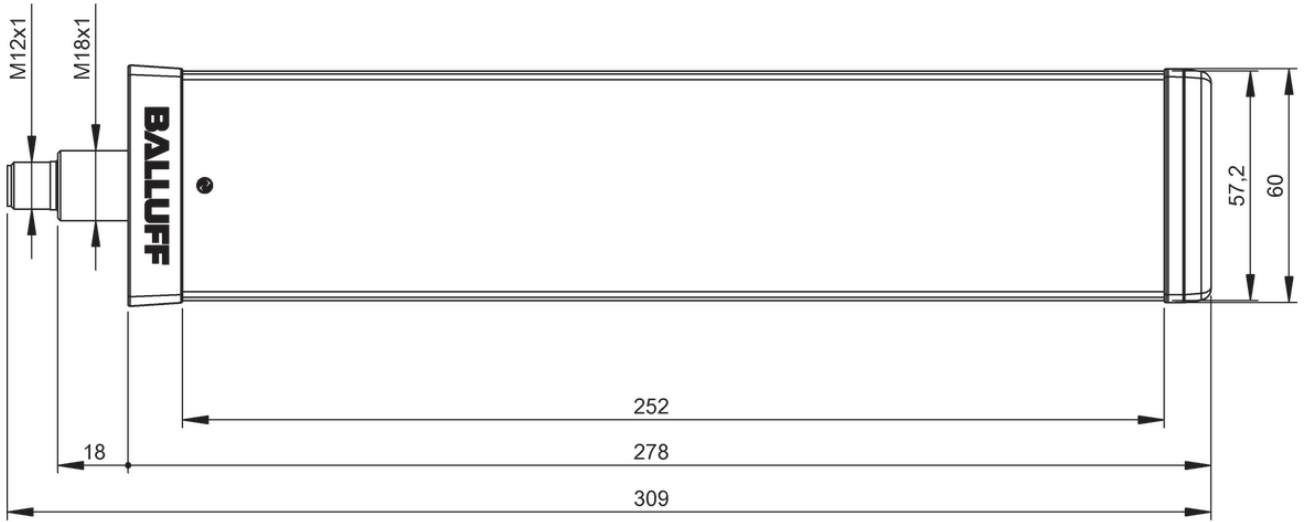


BNI007F, BNI0088

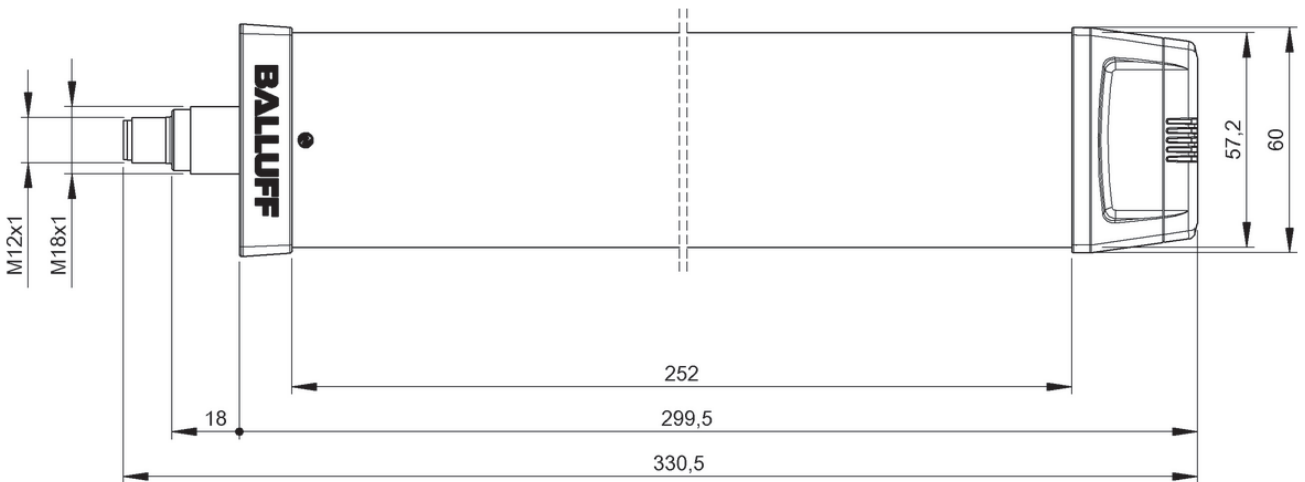


BNI0086, BNI008A

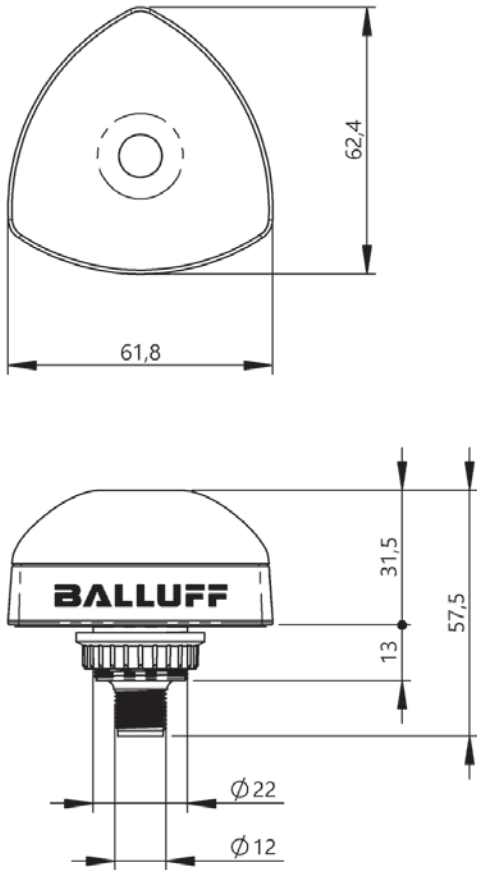
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BNI0072, BNI0082



BNI0083, BNI0085



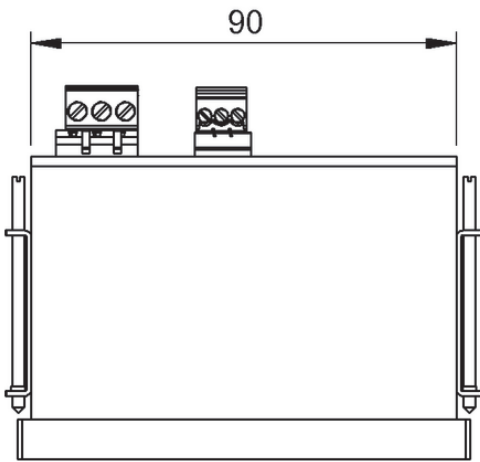
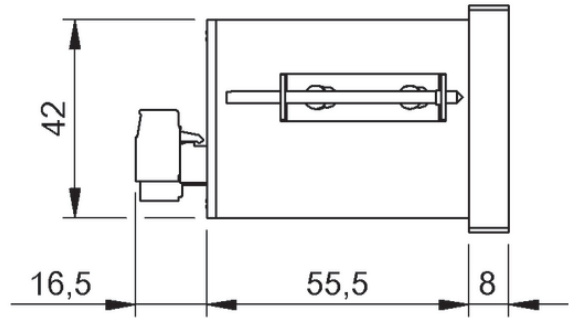
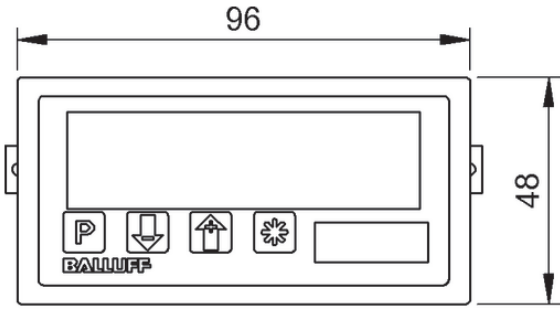
BNI00CZ, BNI00EO



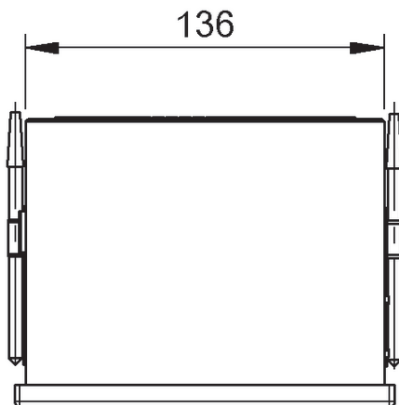
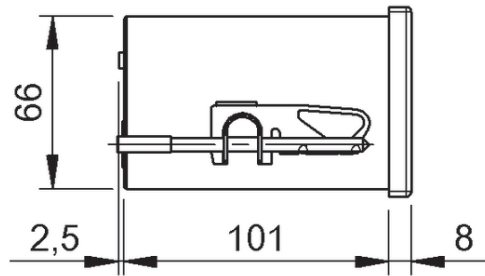
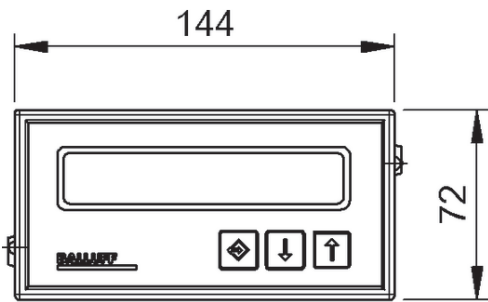
	BAE006K BDD-UM 3023	BAE0067 BDD-AM 10-1-P	BAE0069 BDD-AM 10-1-SSD	
Function	Analog value display	display module	display module	
Display	4 characters, red, LED 7-segment	7 1/2 characters, red, LED 7-segment	7 1/2 characters, red, LED 7-segment	
Dimension	72 x 48 x 96 mm	112 x 72 x 144 mm	112 x 72 x 144 mm	
Principle of operation	Display unit	Display unit	Display unit	
Rated input voltage	18...36 V DC	10...32 V DC	10...32 V DC	
Inputs, number	1	2	2	
Analog inputs	Analog, voltage/ Analog, current (0...10 V/ 0...20 mA/4...20 mA)	—	—	
Interface port 01	—	Digital pulse	SSI	
Interface, note Port 01	—	—	—	
Resolution	≤ 12 bits	—	—	
Cycle time min.	200 ms	—	—	
Digital outputs	—	2x Relay	2x Relay	
Analog output	Analog, voltage/Analog, current	—	—	
Rated output voltage DC	—	24 V	24 V	
Output current max.	—	2 A	2 A	
Encoder supply	—	5 V/24 V, max 300 mA	5 V/24 V, max 300 mA	
Housing material primary	Plastic	Plastic	Plastic	
Ambient temperature	0...60 °C	0...50 °C	0...50 °C	
IP rating of housing front	IP54	IP64	IP64	
Approval/Conformity	CE	CE	CE	
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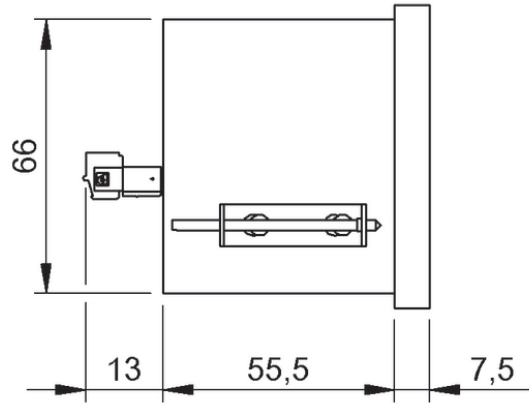
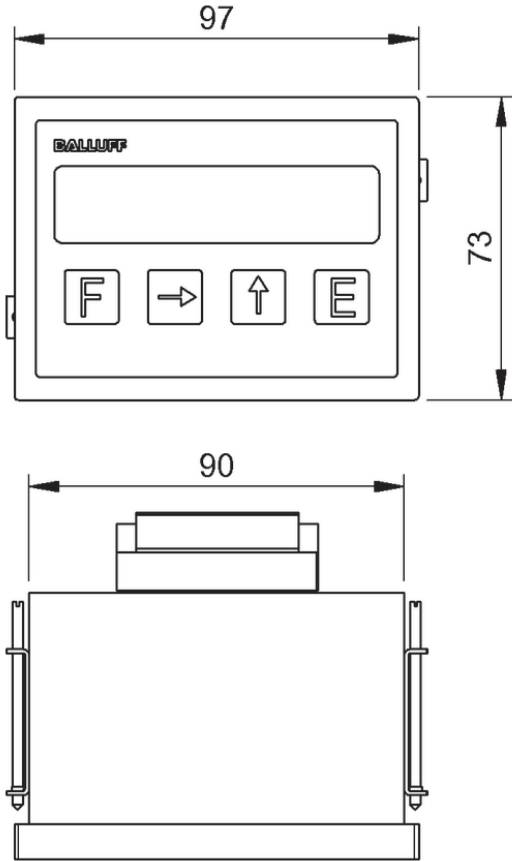
BAE004H BDD 610-R3Q3-0-51-N-00	BAE004J BDD 610-R3Q3-0-53-N-00	BAE004K BDD 611-R3Q4-0-52-N-00	BAE00EH BAE PD-VS-002-E	
Single-axis counter	Single-axis counter	Single-axis counter	Data transfer to/from PC, Manage user profiles, Manage sensor data, Find sensors in the network, Manage inspections, Ch- ange inspections, display inspections	
6 characters, red, LED 7-segment	6 characters, red, LED 7-segment	6 characters, red, LED 7-segment	Software menus- LCD sensor images - LCD inspections - LCD sensor data - LCD Output 1 active - LED orange Output 2 active - LED orange supply voltage - LED green connection with LAN - LED green sensor search - LED green system menu - LED green setup menu - LED green monitor mode - LED green	
76 x 73 x 97 mm	76 x 73 x 97 mm	76 x 73 x 97 mm	96 x 104 x 42.5 mm	
Display unit	Display unit	Display unit	Programming Device	
24 V DC ± 10 %	24 V DC ± 10 %	24 V DC ± 10 %	24 V DC ± 10 %	
2	2	4	—	
—	—	—	—	
—	—	—	Ethernet 10/100 Base T	
A, B	A, B	A, \bar{A} , B, \bar{B} , Z, \bar{Z} , A, B, Z	Ethernet Rx+/Ethernet Rx-	
—	—	—	—	
—	10 μ s	250 ns	—	
—	2x PNP	2x PNP	—	
—	—	—	—	
—	24 V	24 V	—	
—	600 mA	450 mA	—	
24 V, max 500 mA	24 V, max 500 mA	5 V/24 V, max 150 mA	—	
Plastic	Plastic	Plastic	ABS	
0...40 °C	0...40 °C	0...40 °C	-10...55 °C	
IP42	IP42	IP42	IP40	
CE	CE	CE	CE	
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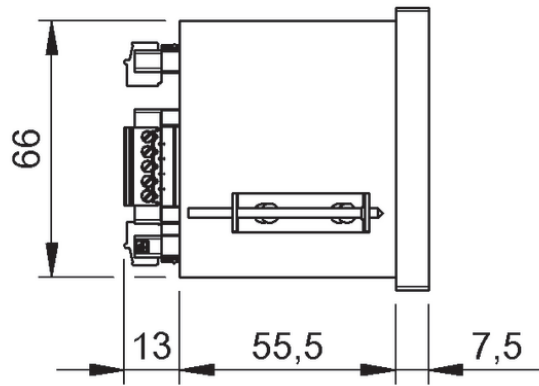
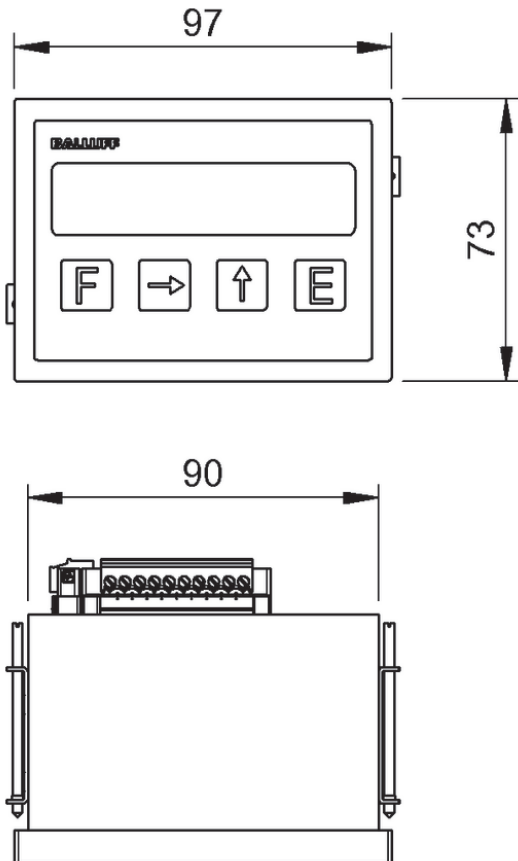
BAE006K



BAE0067, BAE0069

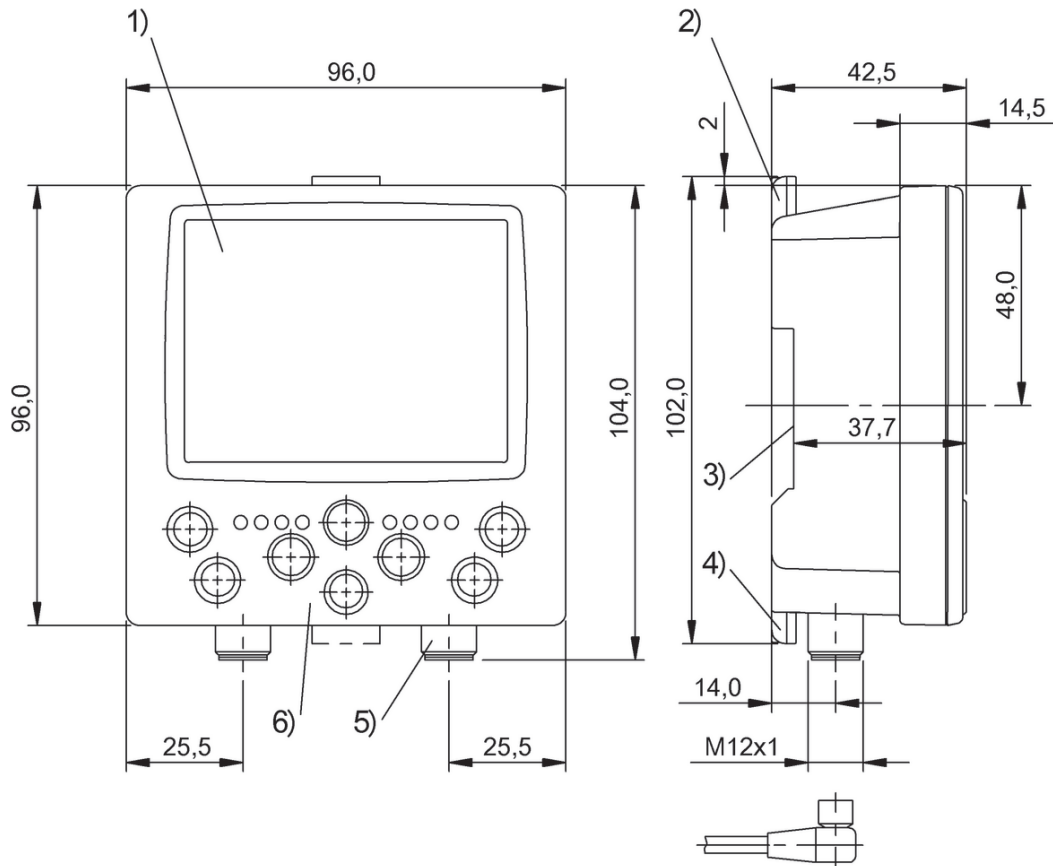


BAE004H, BAE004J



BAE004K

Do you need more details? Our Product Finder at www.balluff.com provides you with product-specific information, including technical drawings, data sheets, user guides and more for each individual product. All items are available for download.



1) Color screen 3.5", 2) Latch, 3) For DIN rail 35mm, 4) Latch, 5) Connection BVS/LAN, 6) Display and control panel

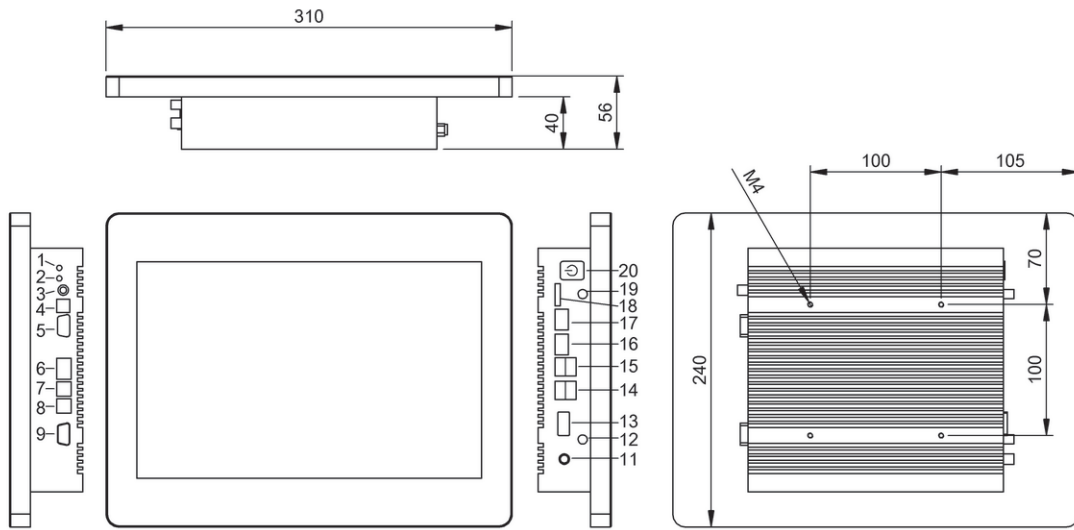
BAE00EH



	BAE00WC BAE PD-VS-011-01	
Short description	Touchpanel PC	
Supported operating systems	Windows 10 (32/64 bit)	
CPU	—	
Working memory	—	
Hard drive	—	
Dimension	310 x 56 x 240 mm	
Mounting	VESA 100 mm	
Display	12.1"	
Ambient temperature	10...40 °C	
Approval/Conformity	CE	
Productview	Page 620	

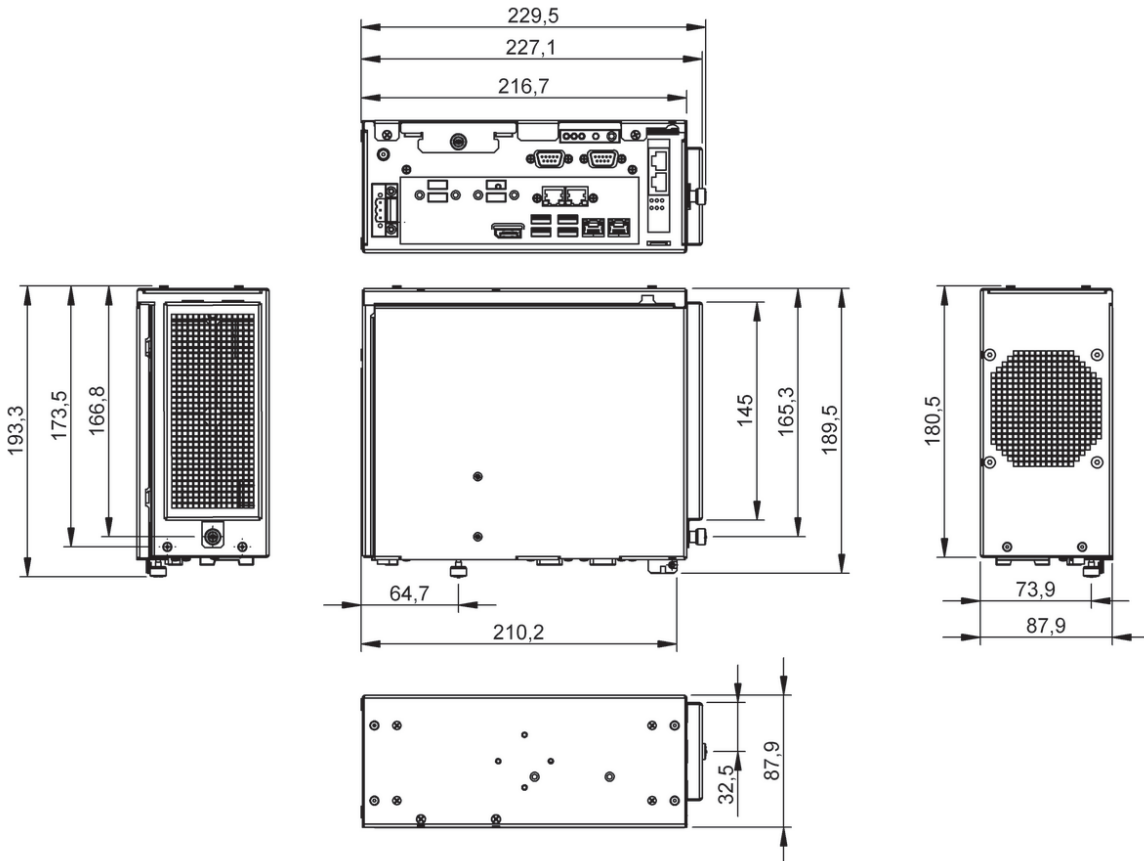


BAE0103 BAE PD-VS-014-05	
SmartVision Controller	
—	
Intel® Core i7-6700TE	
16 GB DDR4	
256 GB 2.5" SATA SSD	
191 x 88 x 216 mm	
Wall and DIN rail mount	
—	
10...50 °C	
CE, EAC	
Page 620	



- | | | | |
|-------------------|-------------------------|----------------------------|----------------------------|
| 1 Mic-In | 6 GPIO | 11 Power Connector 8-36VDC | 16 10/100/1000Mbit network |
| 2 Ear-Out | 7 RS485/COM4 switchable | 12 WIFI Connector | 17 10/100/1000Mbit network |
| 3 S/PDIF | 8 RS485/COM3 switchable | 13 COM1, RS232/RS485 | 18 HDMI connector |
| 4 TOS Link S/PDIF | 9 COM2 | 14 2x USB 2.0 | 19 WIFI Connector |
| 5 VGA | | 15 2x USB 3.0 | 20 On/Off Button |

BAE00WC



BAE0103



More than the sum of the components

SYSTEMS.



innovating automation



We offer an unmatched variety of data carriers, read/write heads and processor units, which can be combined in a closed system according to your specific requirements. Each of these autonomous systems can be individually retrofitted and used regardless of location or manufacturer – and above all economically!

Your Balluff solutions

- Mold ID 624
- Easy Tool ID 626

Sensors

RFID

Machine Vision and
Optical Identification

Human Machine
Interfaces

Systems

Safety

Industrial Networking

Power Supplies

Connectivity

Accessories

Transparency in tool handling

MOLD ID

Optimize the use of your injection molds. It pays for itself. Because with traceability and better utilization you increase equipment productivity and economy. With Mold ID each tool is uniquely and unambiguously identified. Because all relevant data, such as drawing number, last maintenance or service life, is saved to the mold and can be retrieved at any time. Incorrect associations or missing tools become a thing of the past. And since production cycles are also counted, tools can be maintained based on condition instead of arbitrary intervals. This is good for extending their useful life and promoting more reliable operation.

Behind Mold ID is an autonomous system which can be put together for each individual customer, consisting of a shot counter, RFID and Smartlight. All machines can be upgraded individually, without requiring support from the manufacturer and regardless of the location.

Another plus: You can access the Mold ID system from anywhere in the world using a standard web browser, smartphone or tablet PC. An app with functions protected by configurable passwords enables access to the data directly on the mold by using Near Field Communication (NFC).

The most important benefits

- Availability of all data directly on the tool via RFID
- Worldwide access to the Mold ID system using a standard web browser
- Balluff apps for secure access to the mold
- Automatic documentation
- Can be extended for localization

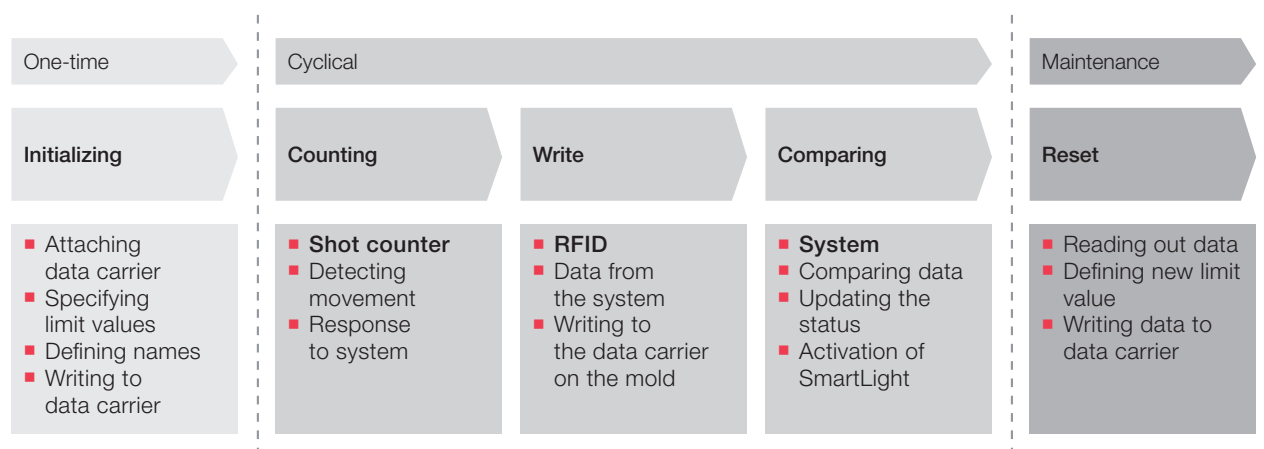


MOLD ID

	BN100CE
Description	Mold ID unit
Degree of protection	IP67
Approval, conformity	CE, UL
Dimension	68 × 42.9 × 226 mm
Ambient temperature	-5...+50 °C
Housing material	PPS

Application description

The functions of Mold ID can be divided into various phases. Examples of these phases are shown below.



Initializing

- Attaching data carriers:** The data carriers are attached to the mold taking into account the installation instructions. Adhesive or screw-on designs can be selected to match the mold (size, accessibility, machining options, etc.).
- Specifying limits:** Specify your limits for the respective mold. This requires defining two values:
 - Number of shots until the next instance of maintenance (red lamp)
 - Number when to issue a warning (yellow lamp)
- Defining names:** A unique name can be assigned to the mold, for example, the mold or drawing number supplemented by one number. This enables molds of the same design to be differentiated from one another.
- Writing to data carriers:** The data carrier is written with the previously defined limit values. Additionally, the shot counter for the mold is initially set to "0". This value can no longer be reset.

Data carrier contents

- System name
- Mold name
- Shot counter current, total and maximum
- Warning 1 and 2
- Next and last maintenance
- Last change
- Cycle time min., max. and total
- Status (blocked, repair, maintenance and released)
- Storage location

Cyclical

- Counting:** Each production cycle (shot) is detected by the sensor installed on the machine. The number of edges that belong to a shot can be configured with the software. The counted edges are reported back to the system.
- Writing:** The system records the data and writes the information directly to the data carrier on the mold. This ensures that no information is lost when the mold leaves the machine. Then the data carrier contains the actual values – not estimated planned values from the ERP system.
- Comparing:** The system monitors limit values and visualizes the status via an IO-Link SmartLight. If the shot counter is within the defined values, the lamp lights up green. The system switches over to a special display mode if the value for the "Warning" is reached. The lower part of the lamp remains green. The upper part is incrementally filled with yellow. If the maximum value is achieved, the lamp turns red.

Maintenance

- Resetting:** If the mold reaches the previously defined limit, maintenance or repairs are performed on it according to the schedule. Before it can be used again, the limit values have to be adjusted and written back to the data carrier. The counter for all parts produced with this tool cannot be tampered with. The limit values for warning and maximum can be individually defined.

Reliably acquire and transmit tool data using RFID

EASY TOOL ID

Simple entry into automatic tool management

Easy Tool ID is the economical entry-level solution in tool management. The simplified installation and configuration allows any machine tool to be easily retrofitted with just a USB port (keyboard extension). RFID technology is used to write the data from the presetter (required) to the tool and then transmit the data to the machine tool using the Easy Tool ID system. Manual entry is eliminated. Setup times and the risk of incorrect entries are significantly reduced.

The system consists of a tool stand with integrated read/write head, a processor unit, a microcontroller and the power supply.

The most important benefits

- Shortened setup times
- Reduces error rate: no manual entry of the tool data
- Plug-and-work: only a USB port is needed
- Configuration can be adapted to the input screens of the machine tool
- Economical entry solution for reliable tool management

EASY TOOL ID



	BSG0015
system	Tool identification
Approvals	CE
RFID technology	BIS C (70 kHz/455 kHz)
Input voltage	100...240 V AC
Connection to HMI	USB A
Dimension	1046.5 × 170 × 130 mm
Approval	CE
Material	Aluminum
Interfaces	Button for initiating the read procedure

ACCESSORIES



	BSG001E	BSG0018	BSG001J
Description	Tool holder HSK63	Tool holder SK50	Tool holder Capto CC6

Other tool holders available on request.

PLUG CONNECTOR



	BCC0AJ0		
Description	7/8" female, 3-pin, 5 m PUR cable, 3 × 1.5 mm ² , IP68		

Alphanumeric index

SORTED BY
ORDERING CODE

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BVS003L	BVS CA-SF2-0032AC-111121-XAS2	561			
BVS003K	BVS CA-SF2-0032AG-112121-XAS2	561			
BVS003J	BVS CA-SF2-0051AC-111121-XAS2	561			
BVS003H	BVS CA-SF2-0051AG-112121-XAS2	561			
BVS003F	BVS CA-SF2-0124AC-111121-XAS2	561			
BVS003E	BVS CA-SF2-0124AG-112121-XAS2	561			
BVS001F	BVS UR-3-105-E	565			
BVS001H	BVS UR-3-101-E	565			
BVS001J	BVS UR-3-103-E	565			
BVS001K	BVS UR-3-107-E	565			
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BVS001N	BVS UR-3-003-E	565			
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BVS001Z	BVS HS-PB-DPW-MZ-01	587			
BVS001Y	BVS HS-PB-HDW-MZ-01	587			
BVS001T	BVS HS-PC-DPW-MA-01	587			
BVS001U	BVS HS-PC-HDW-MA-01	587			
BVS001C	BVS ID-3-105-E	591			
BVS0019	BVS ID-3-101-E	591			
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BVS000T	BVS ID-3-003-E	591			
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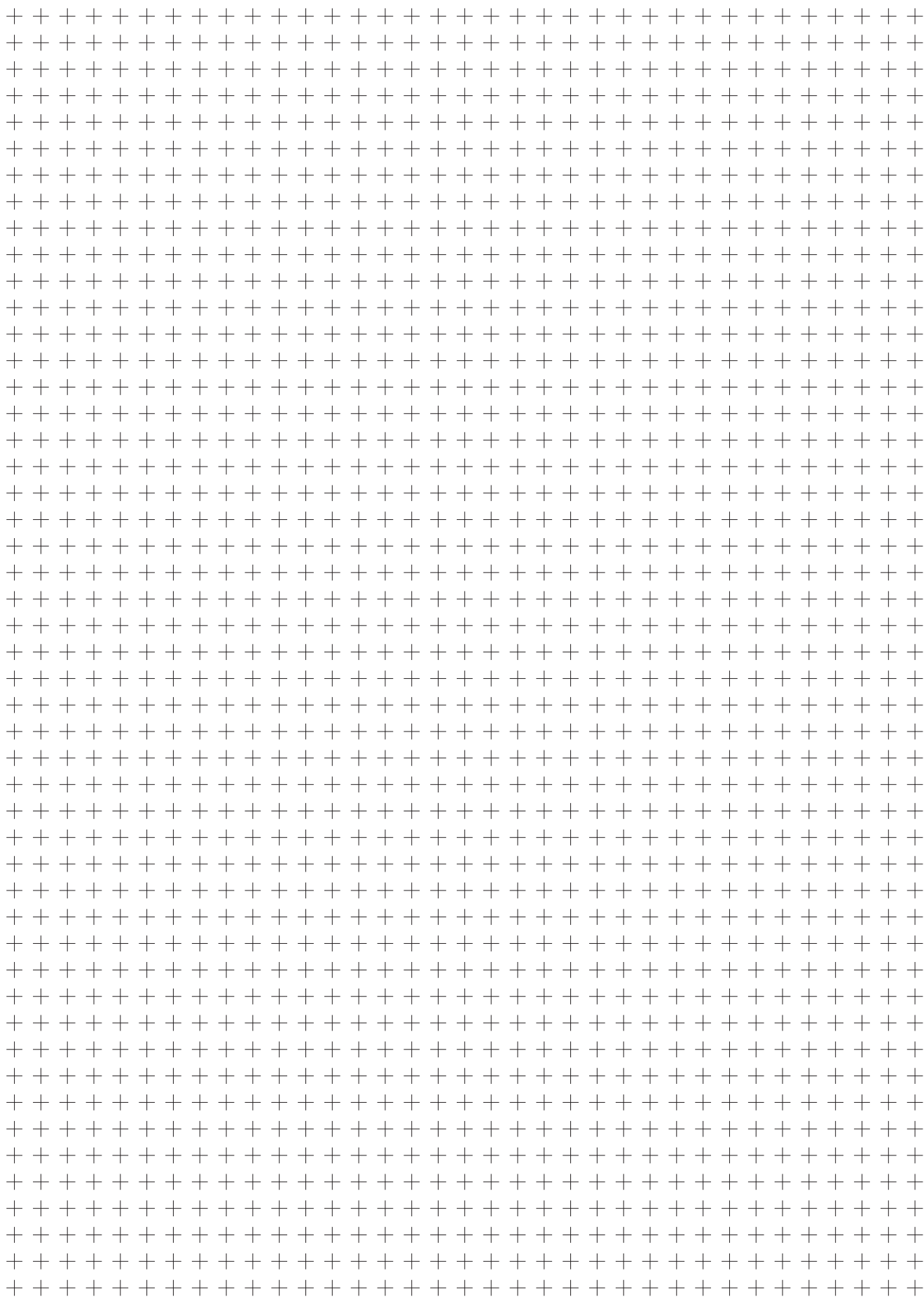
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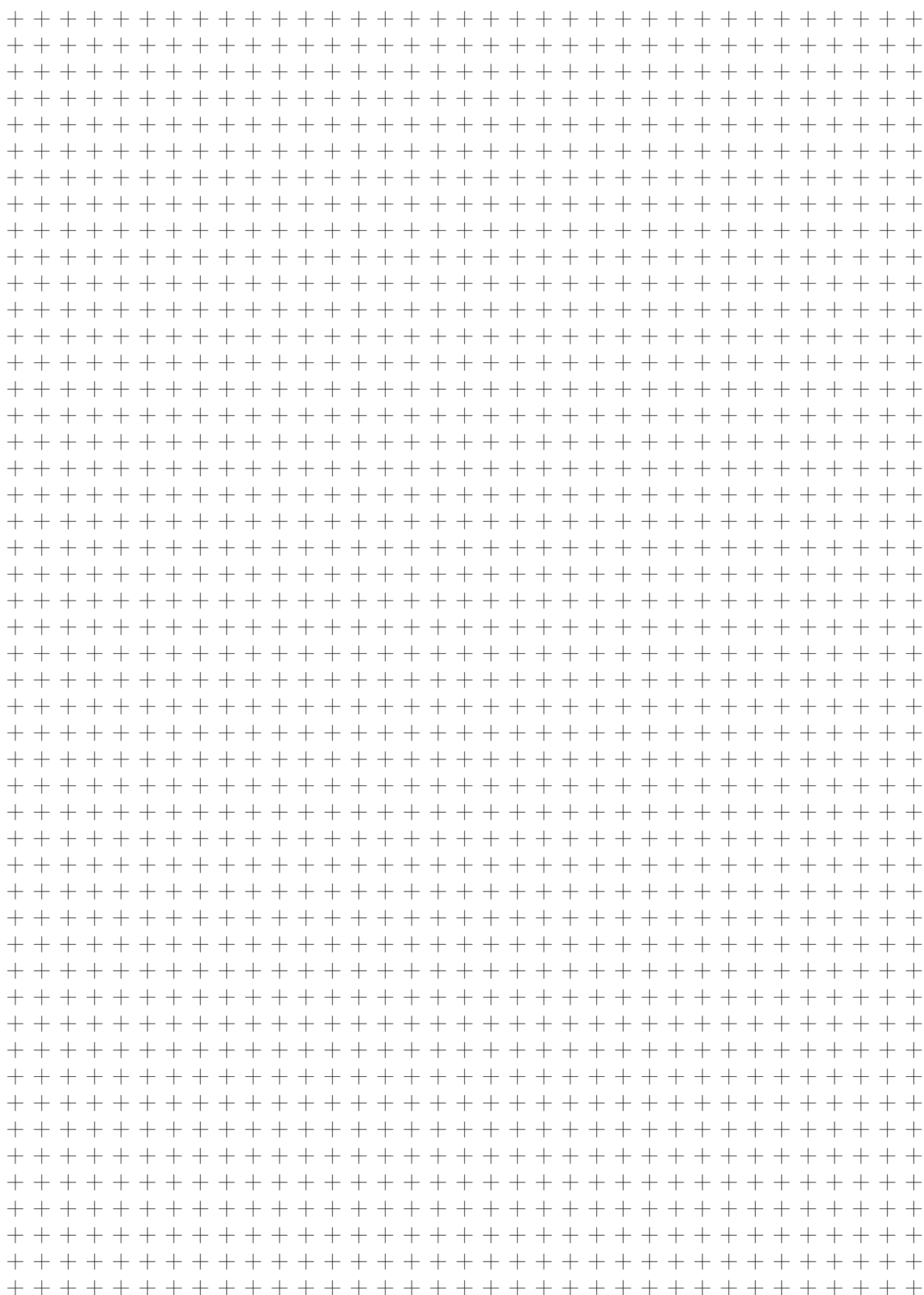
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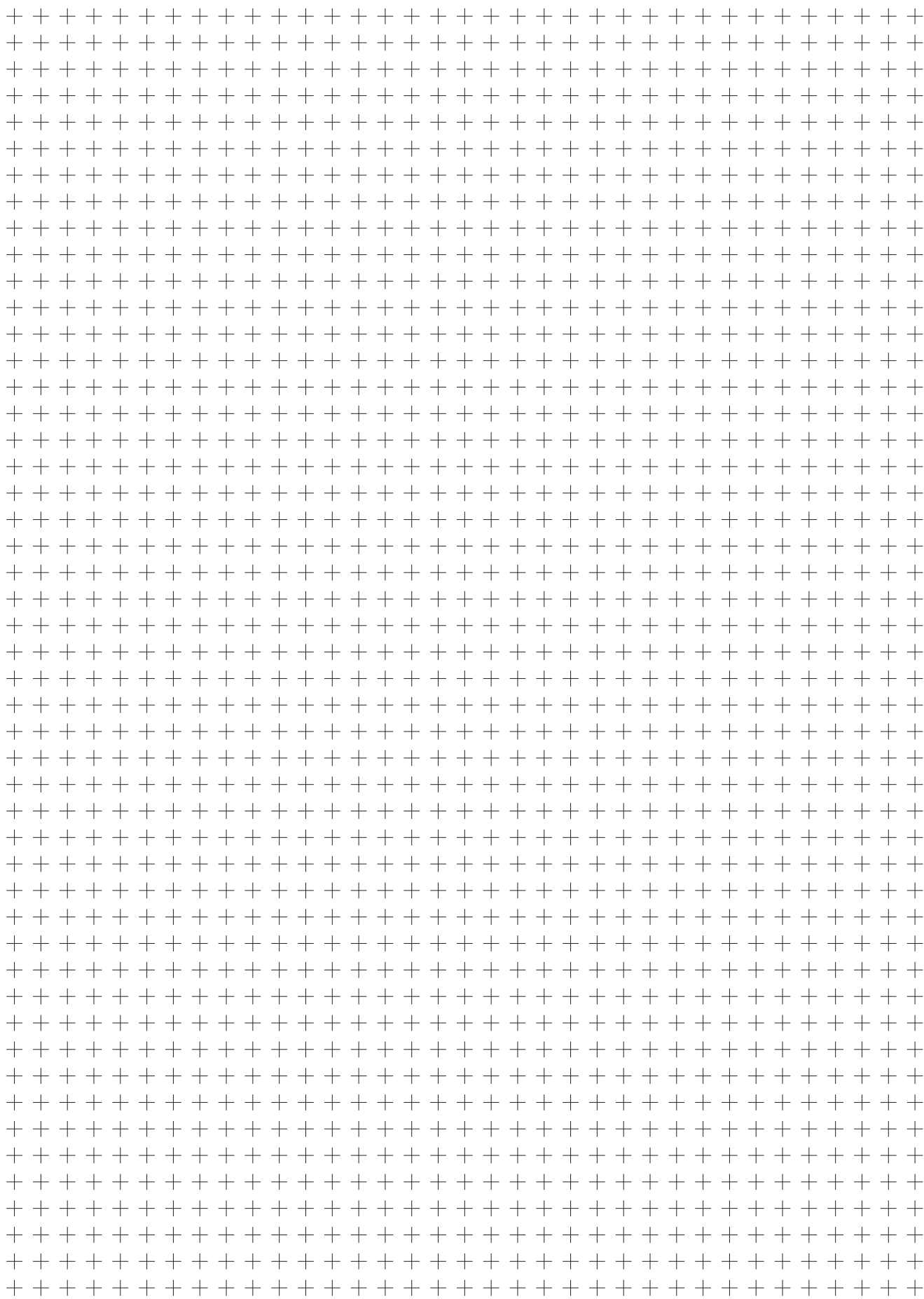
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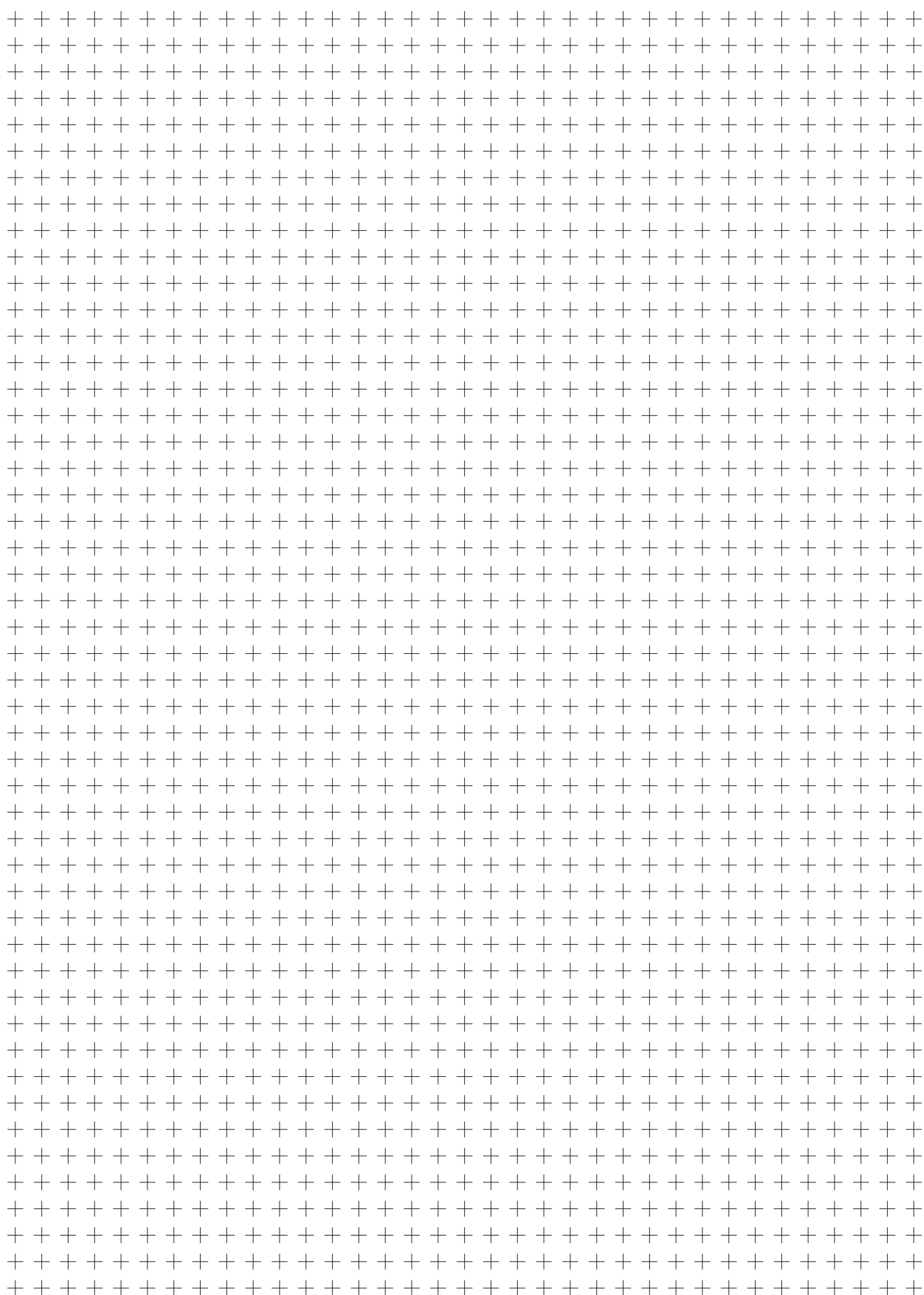
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