

Insul-8 Mobile Electrification

◆ Cable & Hose Reels ◆ Conductor Bar ◆ Festoon ◆ Pendants ◆
◆ Radio Controls ◆ Slip Rings ◆

Solutions From A Single Source

Push Button Pendants & Radio Remote Controls



For the Control of:

- Cranes
- Hoists
- Material Handling Equipment
- Lift Tables
- Transfer Cars



www.insul-8.com

About Insul-8 Corporation

About Insul-8 Corporation



Since our inception in 1902, Insul-8 Corporation's parent company, Delachaux S.A., has been a leading international presence in the business of providing mobile electrification. As the Delachaux arm in North and South America, Insul-8 Corporation (formerly sister companies Insul-8 and Industrial Electric Reels, Inc. - a.k.a. IER) carries on this tradition of innovation and excellence. Insul-8 and IER became part of the Delachaux Group in 1975 and officially became one company on December 31, 1996. Each company has its own rich history.

You'll find Insul-8 products in use everywhere from irrigation systems and manufacturing plants in the heartland of the United States to public transportation systems in Malaysia.

Industrial Electric Reels, Inc., began in 1924 with the founding of Industrial Electric Works (IEW), an electrical contractor based in Omaha, Nebraska. After World War II, IEW began the manufacture of electric cable reeling equipment and started IER as an operating division in 1948. IER's first cable reel, the hand rewind Series 102 PORT-O-REEL, was quickly followed by light-duty spring retractable cable reels. IER pioneered the development of cable reeling devices and slip rings. Soon the business expanded to larger, custom built motor driven reels and custom engineered slip rings. IER's reputation spread as a quality manufacturer of reels running the gamut from small commercial duty reels to large custom built reels for the most demanding applications such as container cranes, stacker/reclaimers and bulk material ship loaders and unloaders.

Insul-8 Corporation has been a pioneer in providing safety-covered metal conductor systems for the material handling industry since 1944. Insul-8 was the first company to design and produce a stainless steel capped aluminum conductor and the only manufacturer of such a product for almost 20 years. Today, there are over 20 million meters (nearly 12,500 miles) of Insul-8 contact conductors and tens of thousands of collecting devices throughout the world. Every major port in the United States currently uses Insul-8's aluminum/stainless steel contact conductors on container cranes due to the dependability of the bar under the most severe conditions. Insul-8's festoon systems range from the smallest box-track systems to our most rugged Heavy-Duty Festoon. Insul-8's festoons are known for their safe and efficient operation in which large numbers of conductors can be handled in minimum space.

Insul-8 has been in the business of supplying power from stationary sources to mobile systems for 60 years. Insul-8's cable reels, slip rings, conductor bar, festoon systems, pendants and radio controls are used in a wide variety of applications ranging from material handling and mass transit systems to water treatment plants and performing arts theaters.

As it has been for the last 60 years and always will be, "conducting" business will continue to be our only business.

In December 1997, after a nine month endeavor, Insul-8 Corporation became ISO 9001 certified for the design and manufacture of our entire line of mobile electrification products in both of our U.S.A. plants in Omaha, Nebraska, and Harlan, Iowa.

- ◆ cable and hose reels ◆ conductor bar systems ◆ cable festoon systems ◆
- ◆ slip rings ◆ pendant stations ◆ radio controls ◆

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Specifications may change without notice. All products F.O.B. Omaha, NE, or Harlan, IA, unless otherwise specified.

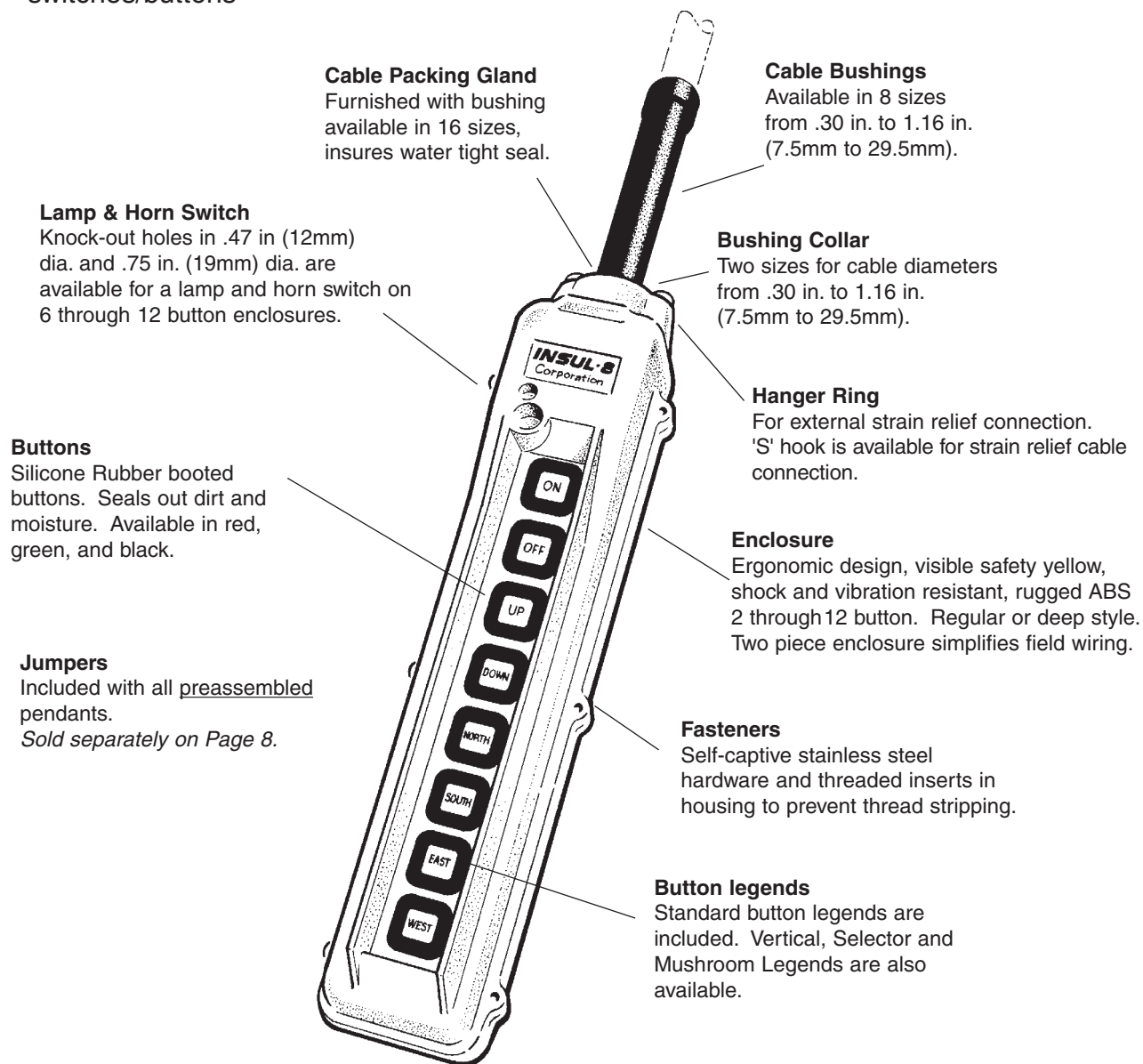
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80 Series Push-Button Pendants

80 Series Features

- Wide variety for easy customization
- Two to twelve buttons or up to 24 buttons in a duplex configuration
- Compact safety yellow enclosure
- High impact ABS enclosures
- One, two, and three speed operators
- Neoprene booted buttons
- Two-piece enclosure simplifies field wiring
- Easy force & positive detent switches/buttons
- 5° F to 160° F (-15° C to 70° C) operation
- UL listed and CSA Approved
- Contacts Rated 5A at 120VAC
- NEMA 4X, Enclosure Rating
- 100 g Shock resistance
- Double insulated 2500V withstand voltage
- Indoor or Outdoor use



80 Series Push-Button Pendants

Complete Standard 80 Series Pendant Stations

All pendant stations include enclosure, operators, cable bushing, "S" hook and button legend sheet. All pendant stations are fully assembled. Contact Insul-8 or your local representative for custom pendant stations. Jumpers included on assembled pendants only.

Part No.	Complete Pendant Stations	Bushing	Part No.	Complete Pendant Stations	Bushing
34212	2 BUTTON - Momentary On/Off (Red, Green)	34411	34237	8 BUTTON - 6 - Two Speed With Momentary On/Off (Red, Green)	34414
34213	2 BUTTON - Maintain On/Off (Red, Green)	34411	34238	8 BUTTON - 6 - Two Speed With Maintained On/Off (Red, Green)	34414
34214	2 BUTTON - All One Speed	34411	34239	8 BUTTON - 6 - Three Speed With Momentary On/Off (Red, Green)	34414
34215	2 BUTTON - All Two Speed	34411	34240	8 BUTTON - 6 - Three Speed With Maintained On/Off (Red, Green)	34414
34216	2 BUTTON - All Three Speed	34411	34241	8 BUTTON - All One Speed	34414
34217	4 BUTTON - 2 - One Speed with Momentary On/Off (Red, Green)	34412	34242	8 BUTTON - All Two Speed	34414
34218	4 BUTTON - 2 - One Speed with Maintained On/Off (Red, Green)	34412	34243	8 BUTTON - All Three Speed	34414
34219	4 BUTTON - 2 - Two Speed with Momentary On/Off (Red, Green)	34412	34244	10 BUTTON - 8 - One Speed With Momentary On/Off (Red, Green)	34415
34220	4 BUTTON - 2 - Two Speed with Maintained On/Off (Red, Green)	34112	34245	10 BUTTON - 8 - One Speed With Maintained On/Off (Red, Green)	34415
34221	4 BUTTON - 2 - Three Speed With Momentary On/Off (Red, Green)	34412	34246	10 BUTTON - 8 - Two Speed With Momentary On/Off (Red, Green)	34415
34222	4 BUTTON - 2 - Three Speed With Maintained On/Off (Red, Green)	34412	34247	10 BUTTON - 8 - Two Speed With Maintained On/Off (Red, Green)	34415
34223	4 BUTTON - All One Speed	34412	34248	10 BUTTON - 8 - Three Speed With Momentary On/Off (Red, Green)	34415
34224	4 BUTTON - All Two Speed	34412	34249	10 BUTTON - 8 - Three Speed With Maintained On/Off (Red, Green)	34415
34225	4 BUTTON - All Three Speed	34412	34250	10 BUTTON - All One Speed	34415
34226	6 BUTTON - 4 - One Speed With Momentary On/Off (Red, Green)	34414	34251	10 BUTTON - All Two Speed	34115
34227	6 BUTTON - 4 - One Speed With Maintained On/Off (Red, Green)	34414	34252	10 BUTTON - All Three Speed	34415
34228	6 BUTTON - 4 - Two Speed With Momentary On/Off (Red, Green)	34414	34253	12 BUTTON - 10 - One Speed With Momentary On/Off	34415
34229	6 BUTTON - 4 - Two Speed With Maintained On/Off (Red, Green)	34414	34254	12 BUTTON - 10 - One Speed With Maintained On/Off	34415
34230	6 BUTTON - 4 - Three Speed With Momentary On/Off (Red, Green)	34414	34255	12 BUTTON - 10 - Two Speed With Momentary On/Off	34415
34231	6 BUTTON - 4 - Three Speed With Maintained On/Off (Red, Green)	34414	34256	12 BUTTON - 10 - Two Speed With Maintained On/Off	34415
34232	6 BUTTON - All One Speed	34414	34257	12 BUTTON - 10 - Three Speed With Momentary On/Off	34415
34233	6 BUTTON - All Two Speed	34414	34258	12 BUTTON - 10 Three Speed with Maintained On/Off	34415
34234	6 BUTTON - All Three Speed	34414	34259	12 BUTTON - All One Speed	34415
34235	8 BUTTON - 6 - One Speed With Momentary On/Off (Red, Green)	34414	34260	12 BUTTON - All Two Speed	34415
34236	8 BUTTON - 6 - One Speed With Maintained On/Off (Red, Green)	34414	34261	12 BUTTON - All Three Speed	34415

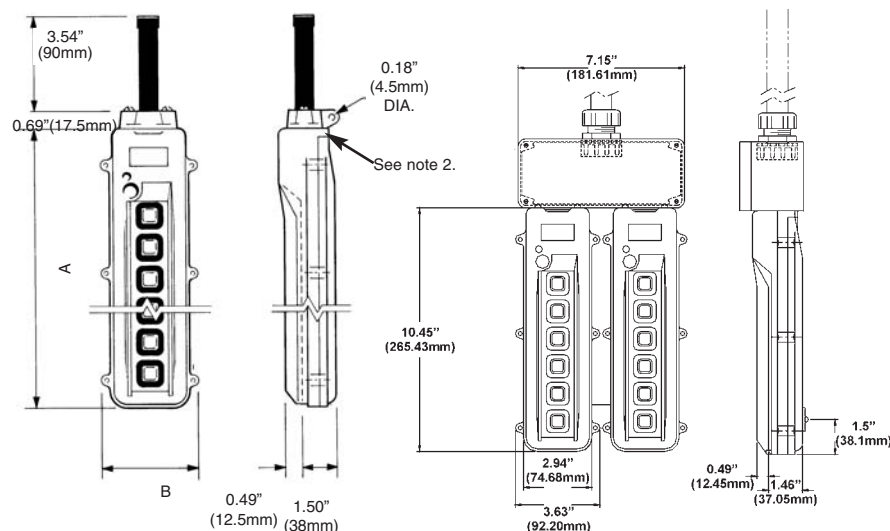
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80 Series Pendant Enclosures

Enclosure Dimensions

Duplex Configuration*



Number of Positions	A Dim.	B Dim.
2	4.49" (114 mm.)	3.07" (78 mm.)
4	7.09" (180 mm.)	3.07" (78 mm.)
6	10.31" (262 mm.)	3.23" (82 mm.)
8	12.68" (322 mm.)	3.23" (82 mm.)
10	15.24" (387 mm.)	3.43" (82 mm.)
12	17.60" (447 mm.)	3.43" (87 mm.)
12-24	Consult Factory	

Duplex Configuration

Note: 1) Deep enclosure depth: 2.0in. (51mm)
 2) Bushing collar can be mounted facing front or rear.

*** For Duplex configurations please consult factory.**

Enclosures

# of Positions	Cable Diameter Range Inches (mm)	Part Number
2	.31 - .83" (8 - 21 mm.)	34274
4	.31 - .83" (8 - 21 mm.)	34275
6	.31 - .83" (8 - 21 mm.)	34276
6	.31 - .83" (8 - 21 mm.) deep enclosure	34277
6	.87 - 1.10" (22 - 28 mm.) large inlet hole	34278
6	.87 - 1.10" (22 - 28 mm.) lg. inlet hole, deep encl.	34279
8	.31 - .83" (8 - 21 mm.)	34280

# of Positions	Cable Diameter Range Inches (mm)	Part Number
8	.31 - .83" (8 - 21 mm.) deep enclosure	34281
8	.87 - 1.10" (22 - 28 mm.) large inlet hole	34282
8	.87 - 1.10" (22 - 28 mm.) lg. inlet hole, deep encl.	34283
10	.87 - 1.10" (22 - 28 mm.) large inlet hole	34286
10	.87 - 1.10" (22 - 28 mm.) lg. inlet hole, deep encl.	34287
12	.87 - 1.10" (22 - 28 mm.) large inlet hole	34290
12	.87 - 1.10" (22 - 28 mm.) lg. inlet hole, deep encl.	34291

Bushings






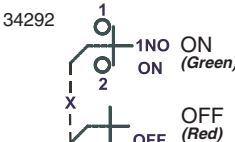
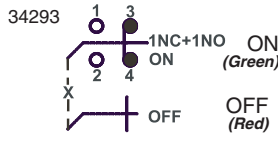

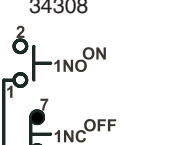
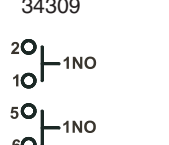
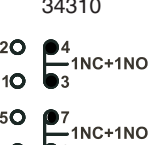

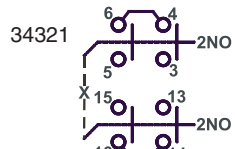
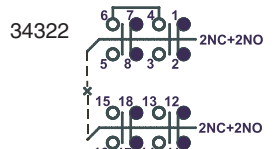

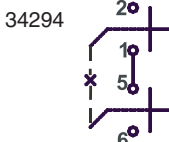
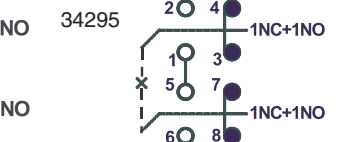




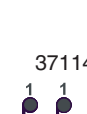
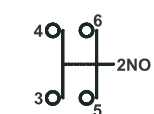
Correctly sized bushings are necessary to seal pendant from moisture entry.

A		B	
Applicable Cable Size		Cable Bushing	
.30 - .41" (7.5 - 10.5 mm.)		34411	
.41 - .53" (10.3 - 13.5 mm.)		34412	
.52 - .65" (13.3 - 16.5 mm.)		34413	
.64 - .77" (16.3 - 19.5 mm.)		34414	
		Diagram A 34274-34276, 34280	
		Diagram B 34277, 34281	

C		D	
Applicable Cable Size		Cable Bushing	
.52 - .65" (13.3 - 16.5 mm.)		39825	
.64 - .77" (16.3 - 19.5 mm.)		39826	
.76 - .89" (19.3 - 22.5 mm.)		34415	
.88 - 1.00" (22.3 - 25.5 mm.)		34416	
1.00 - 1.12" (25.3 - 28.5 mm.)		34417	
1.11 - 1.16" (28.3 - 29.5 mm.)		34418	
		Diagram C 34278, 34282, 34286, 34290	
		Diagram D 34279, 34283, 34287, 34291	

80 Series Switches

Switches

Operation	Appearance	Wires**	Part Number(s)	Contact Arrangement
Pilot light small 12mm. dia. hole Color: Red (Voltage in Parentheses)		1	35293 - (110VAC) 36082 - (220VAC) 36087 - (12VDC) 34315 - (24VDC)	LED light*
Pilot light large 19mm. dia. hole Color: Red (Voltage in Parentheses)		1	34316 - (110VAC) 36083 - (220VAC) 36088 - (12VDC) 36081(24VDC)	Neon Light*
Momentary push button switch for horn 19mm. dia. hole		1	34312	Resistive load* 125VAC 6A 250VAC 3A
Pilot light (Takes up on button space)		1	36042 - (24VDC) 35181 - (12VDC) 34303 - (110VAC) 37581 - (220VAC)	Specify Light Color = Red G = Green W = White A = Amber B = Blue (DC Only)
Maintained ON/OFF		1	34292 34293	 
Momentary non-interlocking		2	34308 34309 34310	  
Dual pole momentary with mechanical interlock		4	34321 34322	 
Momentary single-speed with mechanical interlock		2	34294 34295	 
Momentary single button		1	34305 34306	 
		2	34307 37114 37199	  

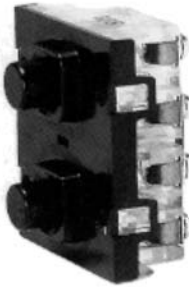
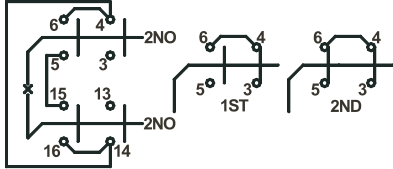
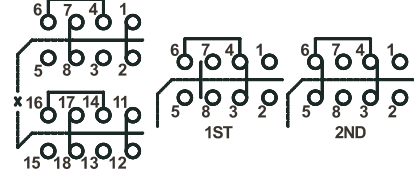

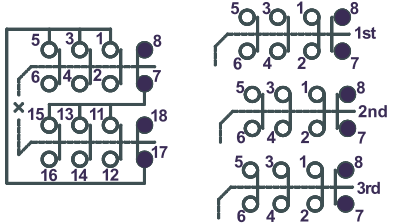

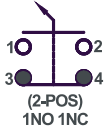
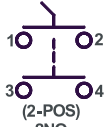
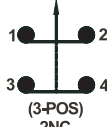
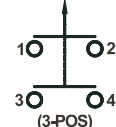

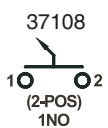
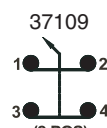
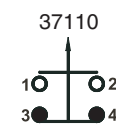

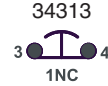
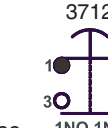
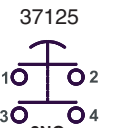
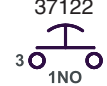

** For reference only, quantity may vary depending on wiring method used.

Don't see what you need? Call us!

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80 Series Switches







Switches

Operation	Appearance	Wires**	Part Number(s)	Contact Arrangement
Momentary 2-speed with mechanical interlock		3	34296 34297 34298	<p>34296</p>  <p>34297</p>  <p>34298 — Same as 34297 but with delayed opening of contacts 7 & 8 "Break- Before - Make" Contact Arrangement</p>
Momentary 3 speed with mechanical & electrical interlock		4	34323	
Maintained multi-position selector switch (2 position and 3 position)		1	37107 37108	<p>34317</p>  <p>34318</p>  <p>34319</p>  <p>34320</p> 
		2	34317 34318 34319 34320 37109 37110	<p>37107</p>  <p>37108</p>  <p>37109</p>  <p>37110</p> 
Push lock twist-release mushroom switch		1	34313 37122	<p>34313</p>  <p>37123</p>  <p>37125</p> 
		2	37123 37124 37125	<p>37122</p>  <p>37124</p> 

** For reference only, quantity may vary depending on wiring method used.

80 Series Switches

Switches

Operation	Appearance	Wires**	Part Number(s)	Contact Arrangement
Alternating Switch		1	34299 34300	34299 34300 37126
		2	37126	
Toggle Switch		1	34301	34301 34302
		2	34302 37127	37127
2 position key switch		1	37112 37115	37112 37115 37116
		2	37116 37117 37118	37117 37118
3 position key switch		2	37119 37120 37121	37119 37120 37121
Variable position resistor		2	34314B - (1K) 34314D - (2K) 34314 - (5K) 34314C - (10K)	C.W.
Blank Plate		1	34304	Blind rubber gasket with metal plate

** For reference only, quantity may vary depending on wiring method used.

Don't see what you need? Call us!

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80 Series Pendant Components

Accessories and Spare Parts

Deep Back Covers

# of Positions	Deep Backs (only)	Part Number
6	For 6 Button Enclosure	36029
8	For 8 Button Enclosure	36030
10	For 10 Button Enclosure	36032
12	For 12 Button Enclosure	36033

Clips, Hangers & Collars

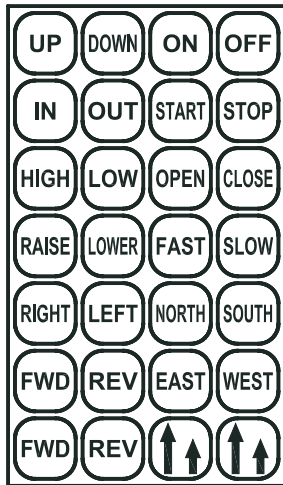
Part No.	Description
	Strain Relief Clamp 
34626 34627	Strain relief clamp for bushings 34411 thru 34416 Strain relief clamp for bushings 34417 & 34418
34332	S hook hanger 
34333	Cable O.D. - .30 - .77" (7.5 - 19.5 mm) Small Bushing Collar 
34334	Cable O.D. - .76 - 1.16" (19.3 - 29.5 mm.) Large Bushing Collar 

Jumpers

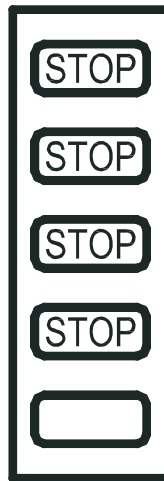
Part No.	Jumper No.	Description
34759	J80-01	Internal use on 34294 & 34295 to connect terminals 1 and 5. External use to connect common between standard back selector, keyed, and mushroom switches.
34760	J80-02	Used to connect between 1-speed, 2-speed, 3-speed and ON/OFF switches.
34761	J80-03	Internal use on all 2-speed switches to connect terminal 6 to 4 and 14 to 16. External use for connecting common between 2-speed switches by connecting terminal 16 and one switch to terminal 6 of adjacent switch.
35538	J80-04	External use of 3-speed switches to connect terminal 18 of two adjacent 3-speed switches. Also used to connect terminal 8 of two adjacent 3-speed switches.
35000	J80-06	External use to connect common of a maintained ON/OFF switch to adjacent 1-speed, 2-speed, or 3-speed switch.
35539	J80-07	External use to connect common between terminal 6 of any 1-speed or 2-speed to terminal 16 of a 3-speed switch.
34992	J80-12	Internal use on 2-speed switches to connect terminal 5 to 15.
35541	J80-13	Internal use on momentary ON/OFF switches to connect terminal 2 to 6.
35554	J80-16	Internal use on 3-speed switches to connect terminals 1, 3, 5 & 17. Also used to connect terminals 7, 11, 13 & 15.

80 Series Pendant Components

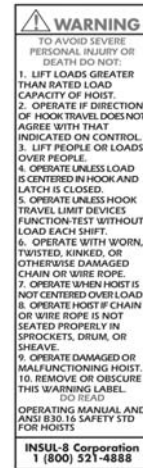
Legend Sheets



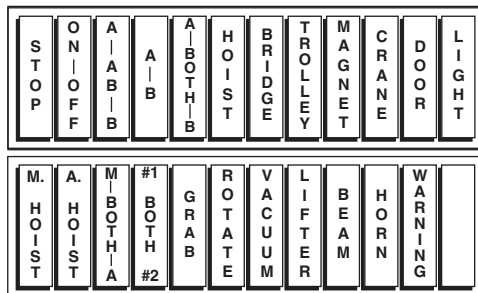
34326
Button
Legends
(For push button marking)
(1) Sheet included with each assembled pendant.



35299
Mushroom Switch
Button Legend

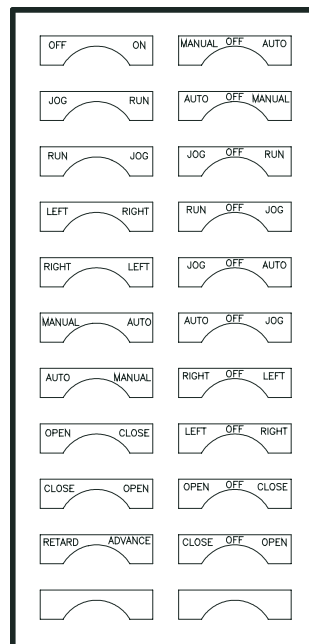


35373
Warning Sticker

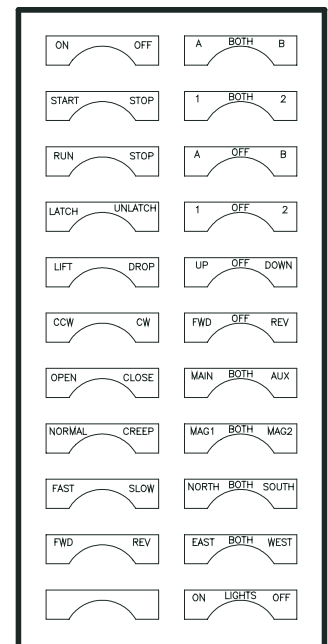


34327

Vertical Legends
(For Case Marking of Deep Back Switches)
Consult (INSUL-8) for vertical legends not shown.



37228
Selector Switch Legend Sheet
(For case marking of selector switches.)



35300
Selector Switch Legend Sheet
(For case marking of selector switches.)

Don't see what you need? Call us!

80 Series Pendant Order Sheet

How to Order an 80 Series Insul-8 Pendant

- 1) Determine the number of switches (button holes) required.
- 2) Select switches (include light inserts if required) See pages 4, 5 & 6 for selection.
- 3) Calculate the number of conductors required. See page 4, 5 & 6 for numbers of wire / switch.
- 4) Determine outer diameter of cable. (See Page 7 for Cable Selection)
- 5) Select appropriate bushing to fit over cable. See page 3. Note: Must be snug to prevent moisture entry.
- 6) Select the appropriate enclosure based on holes required, types of switches and size of bushing, (for example standard or deep enclosure, large or small inlet. See page 3 for selection)
- 7) Select appropriate button legend sheet. See page 8 for selection.
- 8) Add options, ie. strain relief cable, "S" hook, etc.

1) Number of switches

2) Switch inserts

3) Number of conductors.

6) Enclosure selection

of Commons

Standard enclosure

Check box:

☐
A

Cable O.D. 7.5-19.5mm

☐
C

Cable O.D. 19.3-29.5mm

Deep enclosure

Check box:

☐
B

Cable O.D. 7.5-19.5mm

☐
D

Cable O.D. 19.3-29.5mm

4) Cable O.D. =

5) Cable O.D. =

Bushing & cable gland

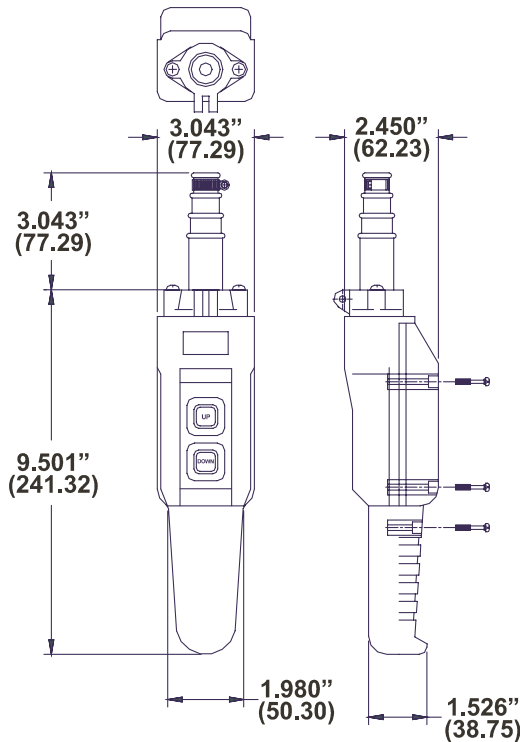
Total:

80 Series Pistol Grip

80 Series Pistol Grip

Features:

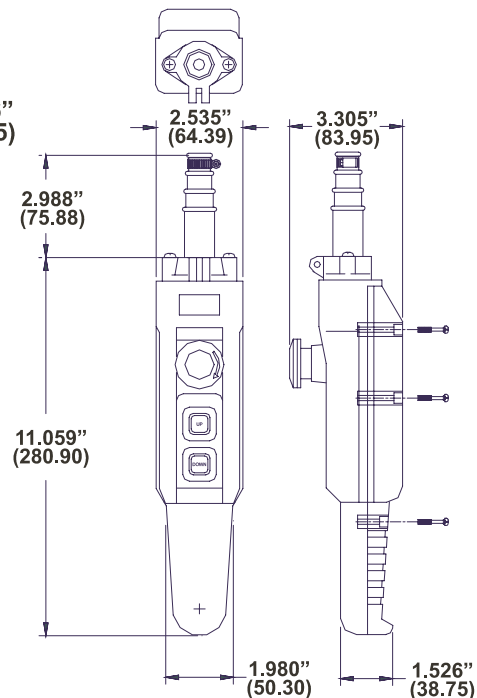
- Compact Design, ergonomically designed with operator's comfort in mind
- Available with 1,2 or 3 speed buttons
- Equipped to anchor either internal or external strain relief cable
- Multi-diameter cable bushing inlet
- High impact ABS resin, safety yellow, NEMA 4 enclosure
- Top hole in COB81.5P unit will also accommodate 2 or 3 position selector switch, key switch or pilot lights.
(Consult factory for additional information.)



Speed	Part No.
1	COB81PB
2	COB81P
3	COB81PC



Speed	Part No.
1	COB81.5PB
2	COB81.5P
3	COB81.PC

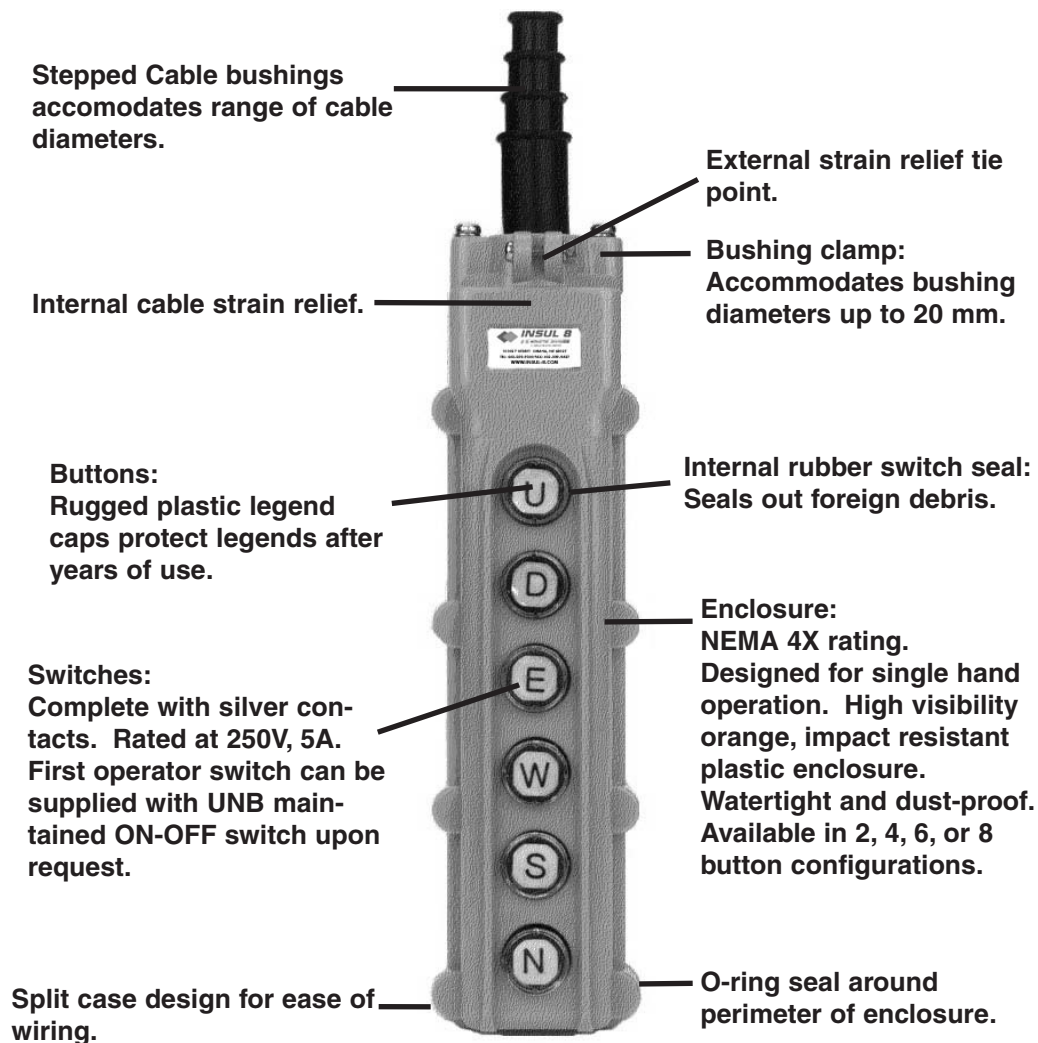


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Page 12

60 Series Pendants

Overview



- ◆ Two to eight buttons
- ◆ Single speed switches
- ◆ Economical
- ◆ Contacts rated 5A at 250VAC
- ◆ Pre-assembled
- ◆ Compact, high visibility orange enclosure
- ◆ NEMA 4X enclosure rating
- ◆ Ultra-long service life
- ◆ -15°C to 70°C operation
- ◆ 100g shock resistance



60 Series Pendants

Complete Pendants

Number of buttons	Part Number	Rating	Standard cable bushing internal diameter (mm)	Terminal
2 (1 pair)	COB 61	24VAC 5A 120VAC 5A 250VAC 5A 500VAC 5A 24VDC 2A 120VDC 0.4A	CBVS (Dia. 8 ~ 16 stepped)	M4 Screw
2 (1 pair)	COB61-B*		CBVS (Dia. 8 ~ 16 stepped)	
4 (2 pair)	COB 62		CBVS (Dia. 8 ~ 16 stepped)	
4 (2 pair)	COB62-B*		CBVS (Dia. 8 ~ 16 stepped)	
6 (3 pair)	COB63		CBVS (Dia. 8 ~ 16 stepped)	
6 (3 pair)	COB63-B*		CBVS (Dia. 8 ~ 16 stepped)	
8 (4 pair)	COB 64		CBVS (Dia. 8 ~ 16 stepped)	

Switches

Part No.	Contact Arrangement	Buttons	Rating	Operation
UNB	1 NO	2	24VAC 5A 120VAC 5A 250VAC 5A 24VDC 2A 120VDC 0.4A	On-Off switch. Push On/push Off operation. This switch is normally mounted in the highest position.
UNC60A	2 NO	2		Single speed switch. Momentary with mechanical interlock with bus connection.
UNC60B	2 NO	2		Single speed switch. Momentary with mechanical interlock, without bus connection.

Cable Bushings

Part No.	Applicable cable diameter in. (mm)	Part No.	Applicable cable diameter in. (mm)
C18	.68 - .72 (17.2 - 18.4)	CBVS	.31 - .62 (8-16 stepped)
Standard bushing CBVS provided unless specified at time of order.			

Don't see what you need? Call us!

Page 14

60 Series Pendants

Switch Configurations

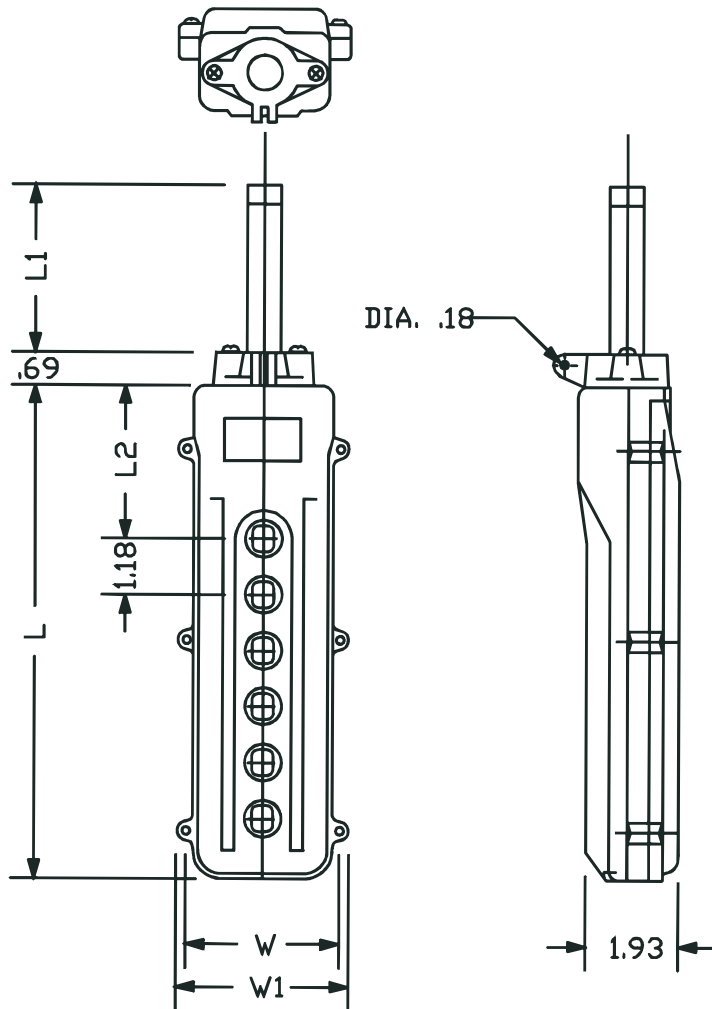
COB61	COB62	COB63	COB64
COB61B	COB62B	COB63B	

All switches are mechanically interlocked.

60 Series Pendants

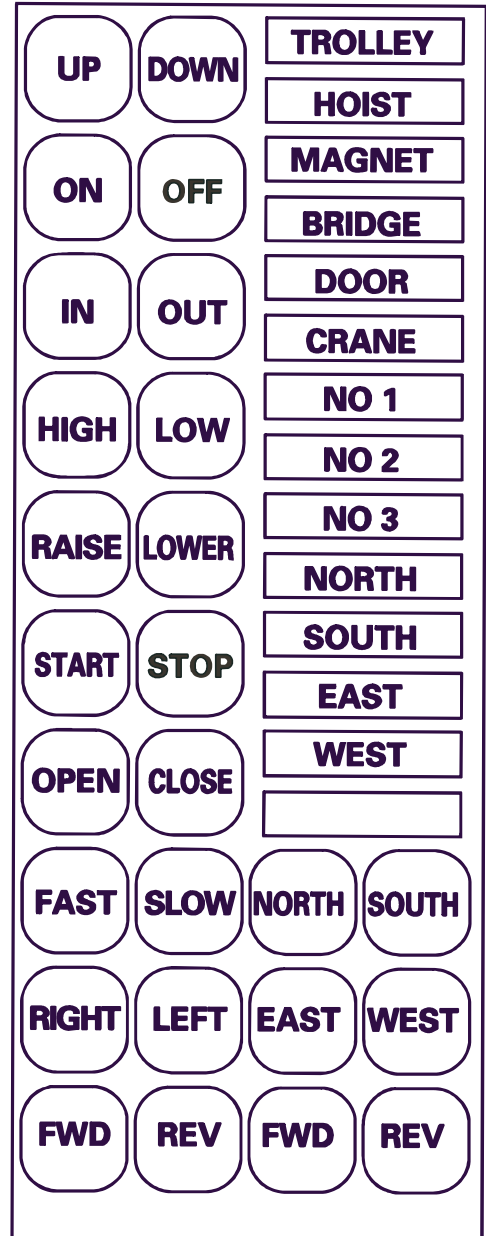
Dimensions & Legends

Legend Sheet Part No. 304COBLS



(COB63 shown. All measurements are in inches.)

Dimensions inches (mm)	COB61	COB62	COB63	COB64	COB66
L	4.15 (105.5)	6.91 (175.5)	9.27 (235.5)	11.83 (300.5)	16.75 (425.5)
L1	4.00 (101.5)	4.41 (112)	4.41 (112)	4.41 (112)	4.41 (112)
L2	2.14 (54.4)	2.5 (63.5)	2.5 (63.5)	2.35 (59.7)	2.35 (59.7)
W	2.36 (60)	2.36 (60)	2.36 (60)	2.56 (65)	2.56 (65)
W1	2.72 (69)	2.72 (69)	2.72 (69)	2.91 (74)	2.91 (74)



Markings shown above are standard. Please contact Insul-8 for markings not shown.

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60 Series Pistol Grip Pendant

Specifications



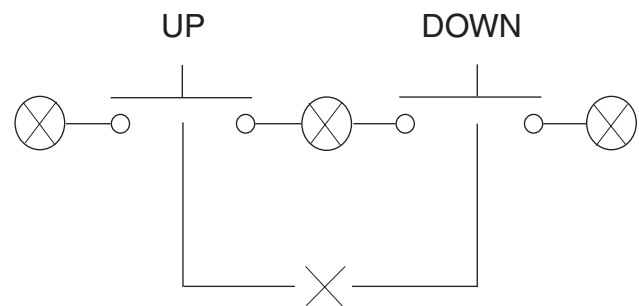
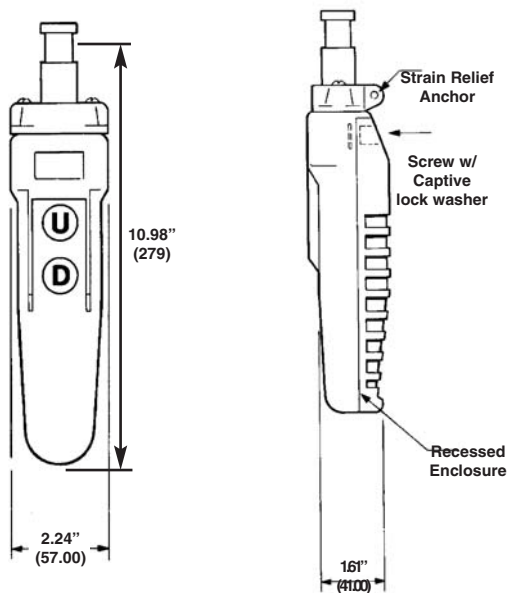
- Ergonomic comfort design
- Weighs only 10 oz.
- Less than 2" wide
- Made of high impact ABS resin
- Highly visible safety yellow enclosure
- Waterproof NEMA 4 rating - indoor use only
- Internal and external strain relief
- Variable dia cable bushing inlet with clamp
- Easy force switches
- Single speed 5A, 125V contact block
- UL listed
- Ambient Temperature: -15°C to +50°C
- Vibration Resistance: 10g from 10-55 Hz
- Switch Life: More than 1 million operations
- Standard UP/Down (Others Available)

Part No: 34211 (HS61P)



File: E193531

Dimensional Information



Mechanically Interlocked

20 Series Pendant

Specifications

Designed for direct control of single phase electric motors up to 1 HP @ 120 VAC or 2 HP @ 230VAC. Since motor current is controlled directly by the pendant switch, extra reversing contactors or costly controls are not required.

Part No: 35244

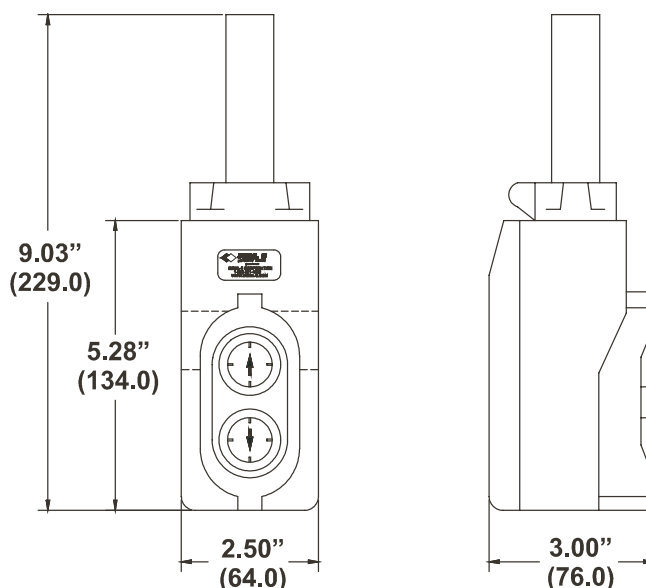
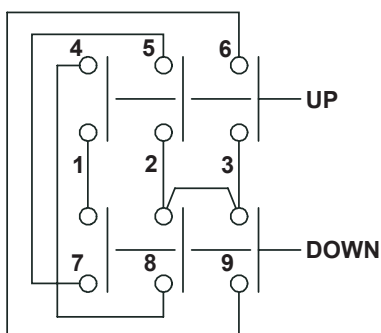


File: E193531



Features:

- ◆ Durable high quality ABS pendant switch housing
- ◆ Highly visible safety orange color
- ◆ NEMA 4/12 water-proof enclosure
- ◆ Split case design for easy installation and wiring
- ◆ Flexible cable boot selection to match size of cable prevents entry of debris
- ◆ Slim compact size suited for one hand operation, insulated for operator safety
- ◆ Direct control ratings for 1HP max. @120 VAC (2HP @220 VAC)
- ◆ Two button switch with a wide range of legend markings
- ◆ Electrical rating 25A resistive, 120 VAC (intermittent duty)
- ◆ Designed to handle either internal and external strain relief cable.



Bushings

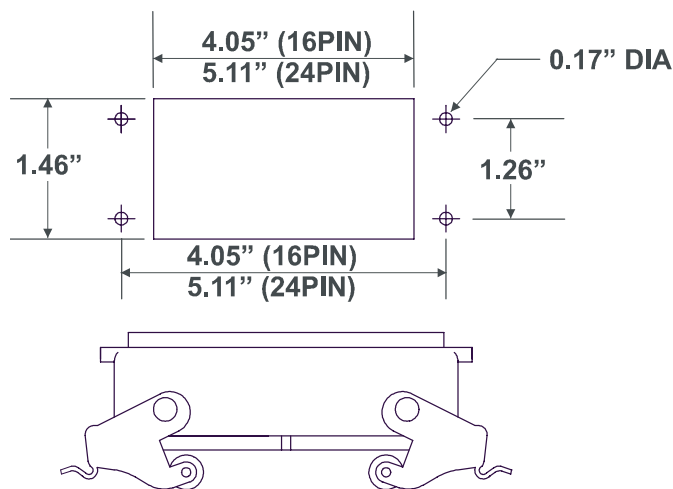
Part No.	Applicable cable diameter in. (mm)	Part No.	Applicable cable diameter in. (mm)
C18	.68 - .72 (17.2 - 18.4)	CBVS	.31 - .62 (8-16 stepped)
Standard bushing CBVS provided unless specified at time of order.			

Don't see what you need? Call us!

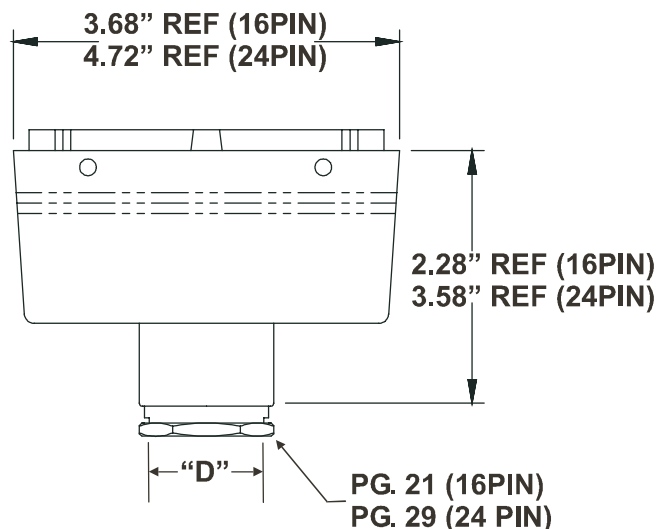
Page 18

Pendant Cable & Accessories

Quick Disconnect



Part No.	Description
37766	Bulkhead Mount Base with 16 Pin Female Insert
37767	Bulkhead Mount Base with 24 Pin Female Insert



Part No.	Description	"D"
41030	Top Entry Hood with 16 Pin Male Insert	0.39 - 0.75" OD
41032	Top Entry Hood with 24 Pin Male Insert	0.70" - 1.06" OD

Cable and Accessories

Pendant Cable With and Without External Strain Relief

- UL & CSA approved
- Yellow jacket
- Excellent resistance to sunlight, oil and water

Temperature Rating
Standard Pendant Cable
 600 volts, -10°C to 90°C
 (14°F to 194°F)



NOTE: Insul-8 can Pre-wire all Pendants shown in this catalog. Consult factory for more information and quote.

Pendant Cable with External Strain Relief Cable
 600 volts, -10°C to 105°C
 (14°F to 221°F)



Standard Pendant Cable				
Part No.	Size AWG	No. of Conductors	Diameter Nominal	Approx. Net Weight lbs./ft.
83092	16	8	0.465" (11.81)	.145
83093	16	12	0.550" (13.97)	.200
83094	16	16	0.605 (15.37)	.255
83095	16	24	0.745" (18.92)	.375
83096	16	30	0.785 (19.94)	.455
83097	16	36	0.885 (22.48)	.540

Standard Pendant Cable				
Part No.	Size AWG	No. of Conductors	Diameter Nominal	Approx. Net Weight lbs./ft.
35398	16	8	0.515" (13.08)	.210
35399	16	12	0.575" (14.61)	.260
35400	16	16	0.630" (16.00)	.330
35401	16	24	0.760" (19.30)	.430

Strain Relief Cable & Hardware Kits.

Part No.	Description
83098	1/8" Dia. Nylon Steel Cable - 480 Lbs. Capacity
83099	Hardware Kit - Includes: (2) Thimbles, (4) U-Clamps and (1) Eye Bolt
36711	Hardware Kit - For Cable with External Strain Relief

Radio Remote Control Family



Protean™

- 4, 6 & 8 Button Configurations
- Single Speed Transmitters
- 300ft. Range, 310 - 320 Mhz



C Series

- 8 Button, Single & 2 Speed Transmitters
- 3 - 4 Motion Crane Control
- 300ft. Range, 410 - 490 Mhz



D Series

- 12 Button, Single & 2 Speed Transmitters
- 5 Motion Crane Control
- 300ft. Range, 410 - 490 Mhz



J Series

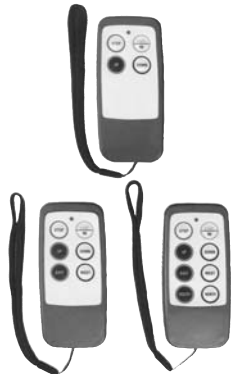
- Dual Joystick 5 Speed Transmitter
- Two A/B Selection Switches
- 8 motion crane control
- 300 ft Range, 410 - 490 Mhz

Don't see what you need? Call us!

Page 20

Protean™ Radio Remote Control

Specifications



Transmitter specifications:

- Very light weight .34lb. (155g) with batteries
- Runs on 2 standard alkaline batteries
- Very low power consumption ensures long battery life
- Includes low power indicator
- Modulation: FM
- Internal antenna
- Jammed button detection
- Shock resistant



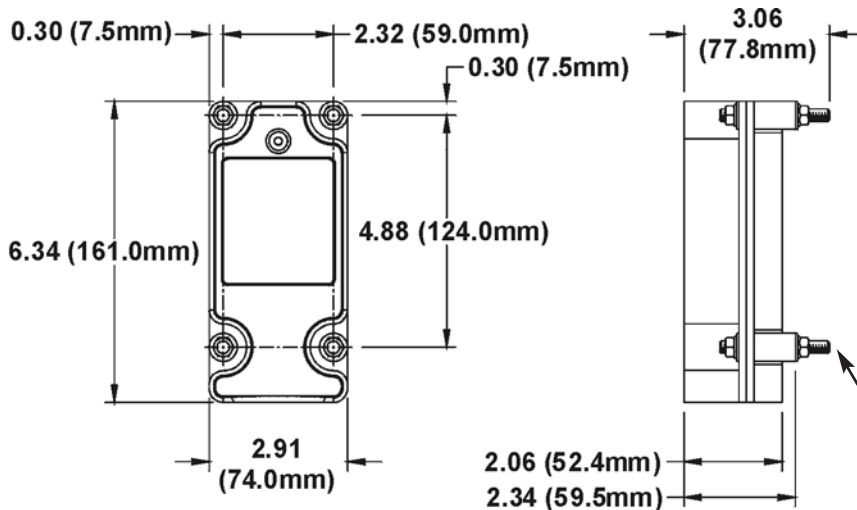
Receiver specifications

- Multiple supply voltages:
DC Type: 12 ~ 24 Volts DC
AC Type: 48/110, 110/220, + 10%
230/380 V AC (110/220 Default)
- Independent common configuration for mixed control voltage applications
- Power-on/mainline contact
- LED display of power and contact closure status
- Sensitivity: Approx. -105 dBm
- Pre-wire 6 ft (1.83 meter) cable
- Control relay rating:
10A @ 125 V AC
5A @ 250 V AC
8A @ 30 V DC
- 4-point shock mount designed for demanding mobile and industrial applications

Part Number	Voltage Type	Transmitter	Description
700PRO4	AC	2 normally open buttons, a start/auxiliary button and stop button	Protean remote with a stop, start/auxiliary, up and down buttons. The radio is suitable for a single motion (2 direction) and also provides a power-on (mainline) connection. The start button also doubles as an additional auxiliary relay.
700PRO4-DC	DC		
700PRO6	AC	4 normally open buttons, a start/auxiliary button and stop button	Protean remote with a stop, start/auxiliary, up and down buttons. The radio is suitable for two motions (4 direction) and also provides a power-on (mainline) connection. The start button also doubles as an additional auxiliary relay.
700PRO6-DC	DC		
700PRO8	AC	6 normally open buttons, a start/auxiliary button and stop button	Protean remote with a stop, start/auxiliary, up and down buttons. The radio is suitable for three motions (6 direction), and also provides a power-on (mainline) connection. The start button also double as an additional auxiliary relay.
700PRO8-DC	DC		

Protean™ Radio Remote Control

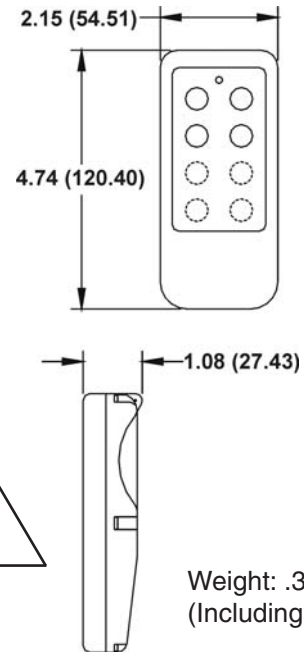
Protean Receiver



Weight: 2.4 lbs.
(Less Cable)

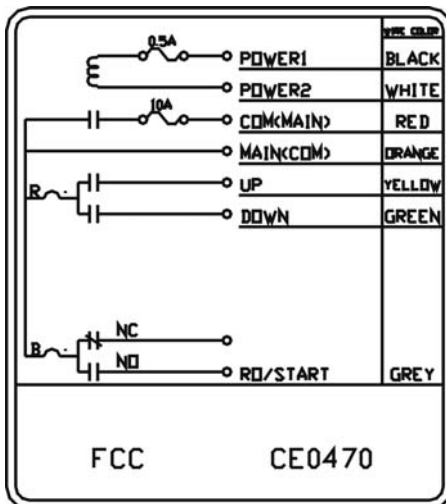
M6 Mounting Screw
Nut and Washers

Protean Transmitter

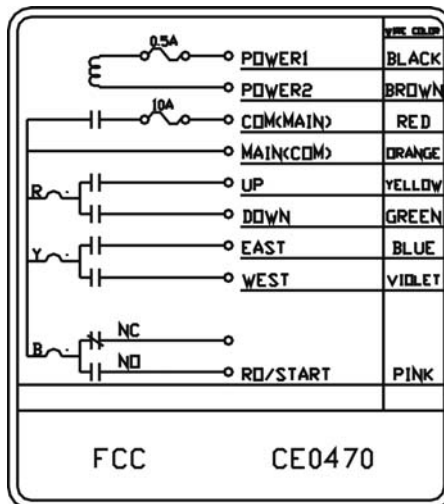


Weight: .34 lbs.
(Including Batteries)

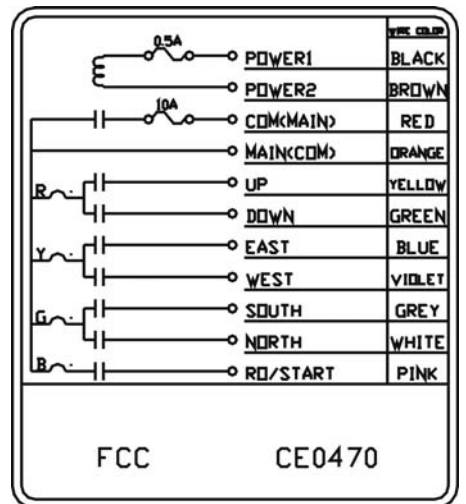
Wiring Diagrams



4-Button Wiring Schematic
(AC Type)



6-Button Wiring Schematic
(AC Type)



8-Button Wiring Schematic
(AC Type)

FCC ID#: NCTSAGA1-L8

Don't see what you need? Call us!

Page 22

C Series Radio Remote Control

Specifications



Transmitter specifications

- 3 stage audible and visual low power warning
- Audible and visual alarm
- Removable magnetic key (waterproof)
- Wide selection of push-button symbols
- Shock resistant to 50G
- 4 digit password protection
- RF output power ≤ 10 mW
- Approximate power consumption: < 32 mA
- Modulation ≤ 2.5 kHz; narrow band F.M.
- Large mushroom E-stop switch
- 4 AA batteries
- Internal antenna
- Programs receiver from ground through RF communication (no need to climb on crane to change frequency or address)

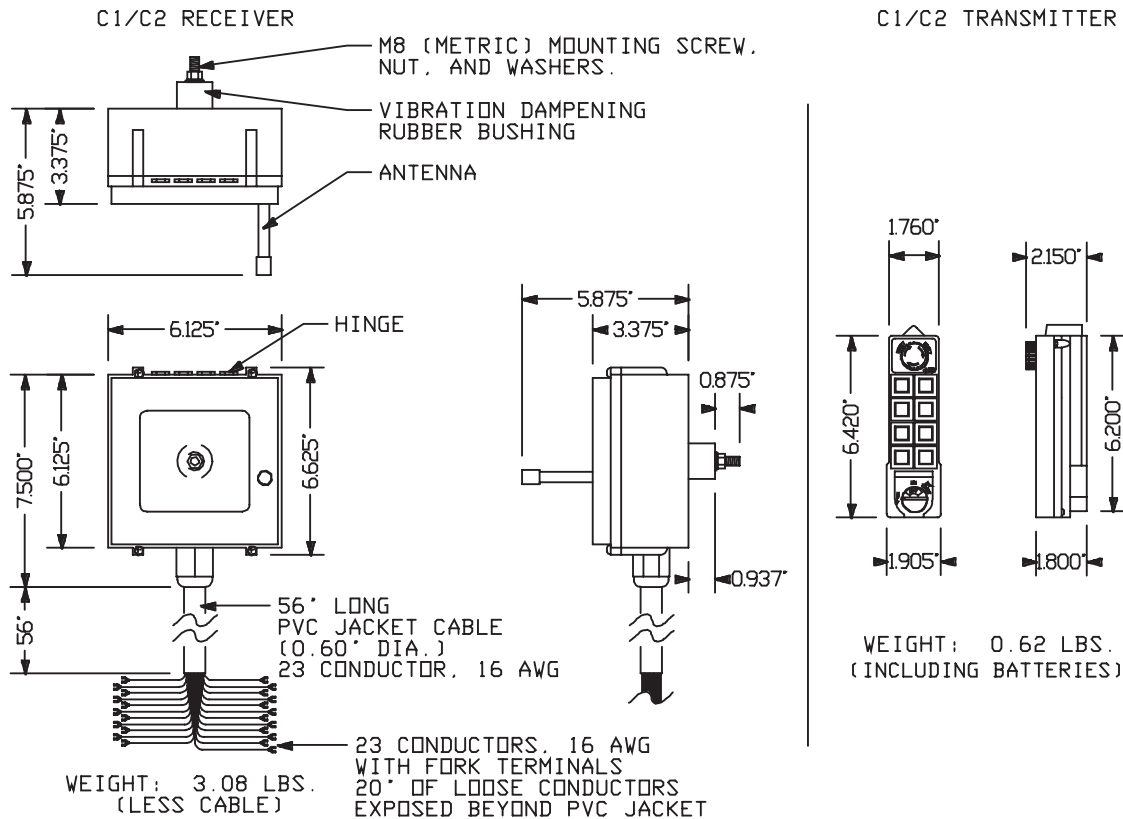
Receiver specifications

- 2 programmable modes alarm and signal LED output display
- Power interruption protection
- Relay's contact failure detection circuit
- Shock resistant mounting provision, impact durability up to 20G
- External integrated antenna
- Enhanced watchdog circuit
- 3 channel superheterodyne
- FDDI (frequency deviation detection indicator) tracing circuit
- Sensitivity: \leq to -110 dBm
- Adjacent channel restrain > 80 dB
- Supply voltage 115/230/380 50/60 Hz $\pm 10\%$

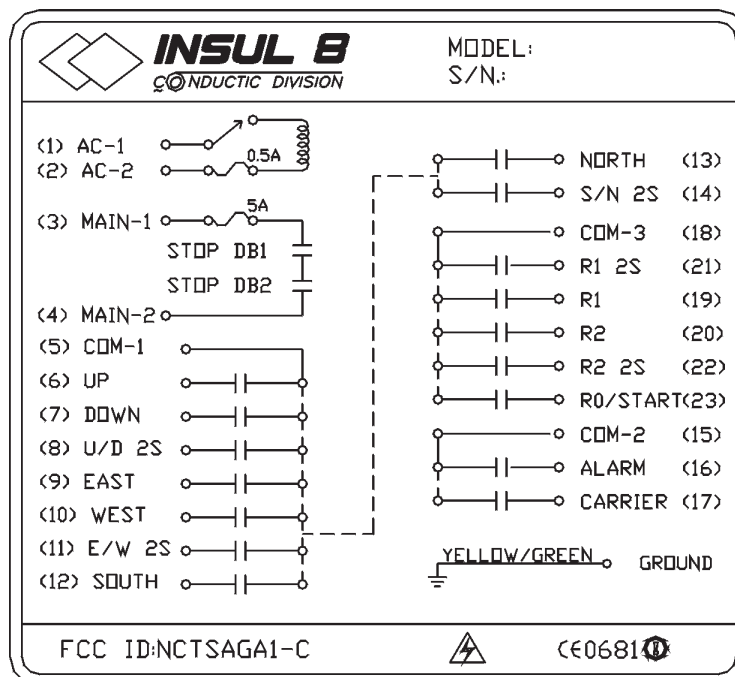
Part Number	Transmitter	Description
700SHHC1	One, single speed 8 Button transmitter with E-stop, key switch and On/Off.	Up to 4 motion single speed control with 0 to 2 programmable aux. outputs, alarm output, mainline output, and light output.
700DHC1	Two, single speed 8 Button transmitters with E-stop, key switch and On/Off.	
700SHHC2	One, dual speed 8 Button transmitter with E-stop, key switch and On/Off	Up to 4 motion two speed control with 0 to 2 programmable aux. outputs, alarm output, mainline output and light output.
700DHC2	Two, dual speed 8 Button transmitters with E-stop, key switch and On/Off.	

C Series Radio Remote Control

Dimensions



Wiring Diagram



Don't see what you need? Call us!

Page 24

D Series Radio Remote Control

Specifications



Transmitter specifications

- 3 stage audible and visual low power warning
- Audible and visual alarm
- Removable key magnetic (waterproof)
- Wide selection of push button symbols
- Shock resistant to 50G
- 4 digit password protection
- RF output power ≤ 10 mW
- Approximate power consumption: < 32 mA
- Modulation ≤ 2.5 kHz; narrow band F.M.
- Large mushroom E-stop switch
- 6 AA batteries
- Programs receiver from ground through RF communication (no need to climb on crane to change frequency or address).



Receiver specifications

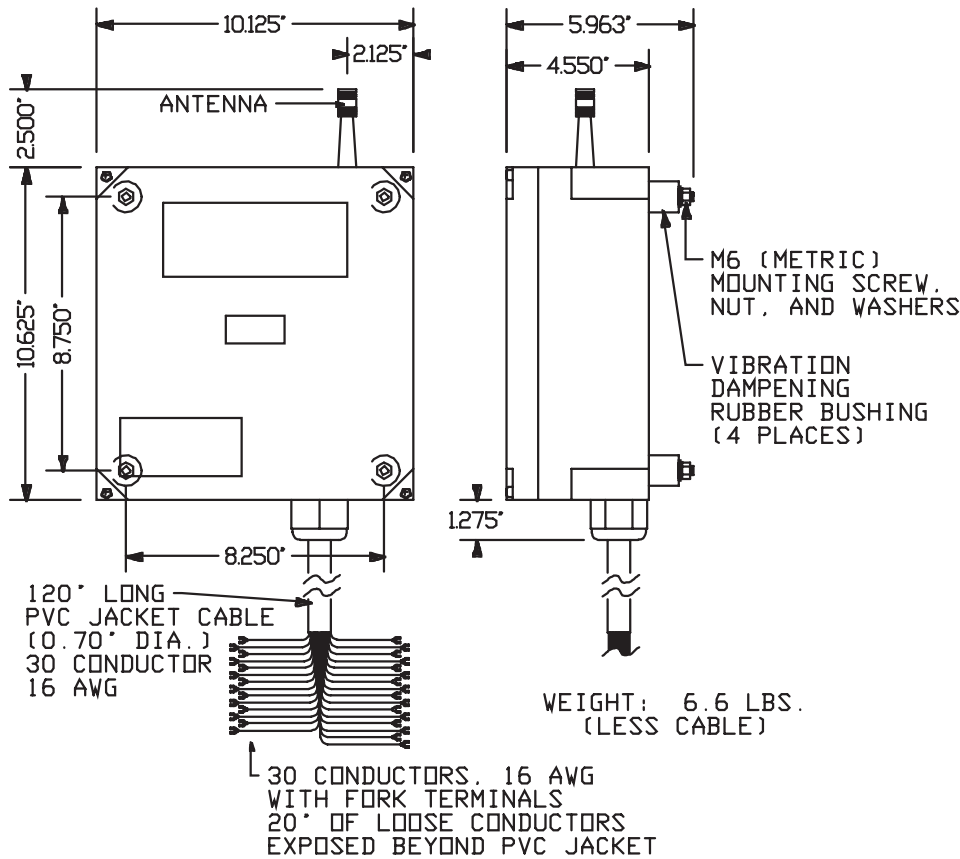
- 2 programmable modes alarm and signal LED output display
- Power interruption protection
- Relay's contact failure detection circuit
- Shock resistant mounting provision, impact durability up to 20G
- External integrated antenna
- Enhanced watchdog circuit
- 3 channel superheterodyne
- FDDI (frequency deviation detection indicator) tracing circuit
- Sensitivity: ≤ -110 dBm
- Adjacent channel restrain > 80 dB
- Supply voltage 115/230/380 50/60 Hz $\pm 10\%$

Part Number	Transmitter	Description
700SHHD1	One, single speed 12 Button transmitter with E-stop, key switch and On/Off.	Up to 5 motion single speed control with 2 to 7 programmable aux. outputs, alarm output, A/B outputs, mainline output, and light output.
700DHHD1	Two, single speed 12 Button transmitters with E-stop, key switch and On/Off.	Kit includes: (6) batteries, strap and legend sheet for each transmitter, spare key, spare fuse kit, and instruction manual.
700SHHD2	One, dual speed 12 Button transmitter with E-stop, key switch and On/Off	Up to 5 motion two speed control with 2 to 7 programmable aux. outputs, alarm output, A/B outputs, mainline output and light output.
700DHHD2	Two, dual speed 12 Button transmitters with E-stop, key switch and On/Off.	Kit includes: (6) batteries, strap and legend sheet for each transmitter, spare key, spare fuse kit, and instruction manual.

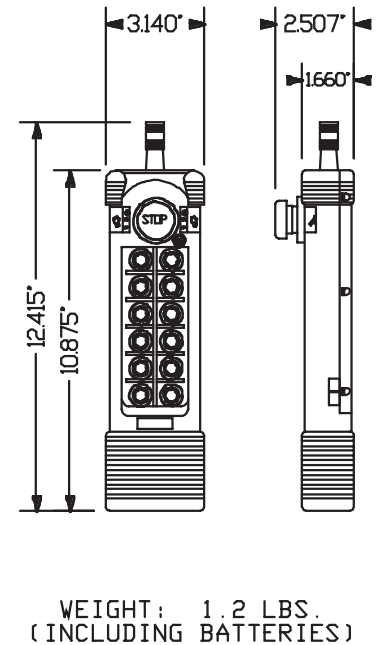
D Series Radio Remote Control

Dimensions

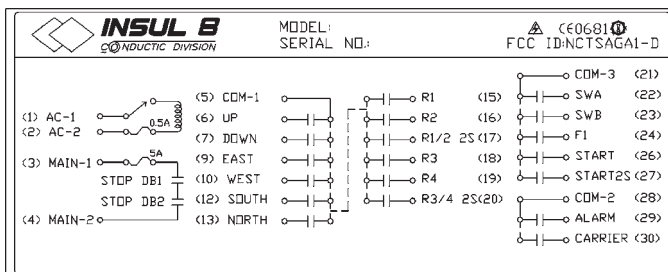
D1/D2 RECEIVER



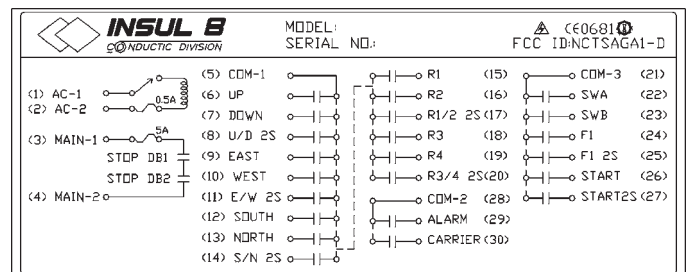
D1/D2 TRANSMITTER



Wiring Diagrams



D1 Series



D2 Series

Don't see what you need? **Call us!**

Page 26

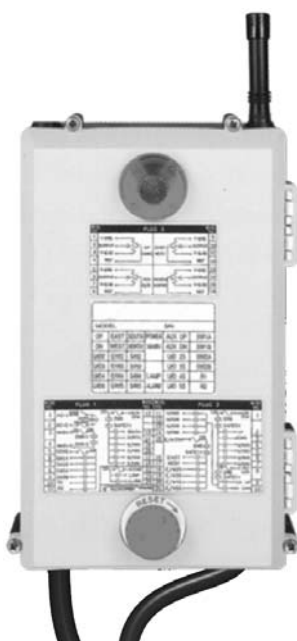
J Series Radio Remote Control

Specifications



Transmitter specifications

- 3 stage audible and visual low power warning
- Audible and visual alarm
- Removable magnetic key (waterproof)
- Wide selection of push-button symbols
- Shock resistant to 50G
- 4 digit password protection
- RF output power ≤ 10 mW
- Approximate power consumption: < 32 mA
- Modulation ≤ 2.5 KHz; narrow band F.M.
- Large mushroom E-stop switch
- 4 AA batteries
- Internal antenna
- Programs receiver from ground through RF communication (no need to climb on crane to change frequency or address)
- Two dual axis joysticks
- A-Both-B selector



Receiver specifications

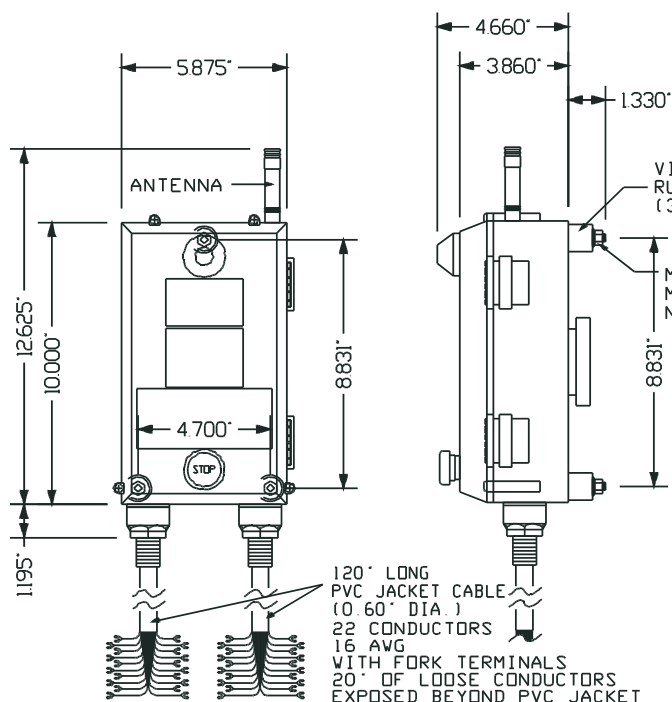
- 2 programmable modes alarm and signal LED output display
- Power interruption protection
- Relay's contact failure detection circuit
- Shock resistant mounting provision, impact durability up to 20G
- External integrated antenna
- Enhanced watchdog circuit
- 3 channel superheterodyne
- FDDI (frequency deviation detection indicator) tracing circuit
- Sensitivity: \leq to -110 dBm
- Adjacent channel restrain > 80 dB
- Supply voltage 115/230/380 50/60 Hz $\pm 10\%$
- Signal alarm, light and E-stop button included on front cover

Part Number	Transmitter	Description
700SBMJ5	One dual joystick, 5 speed controls with E-stop, key switch, 2 selectors, and 2 push-buttons.	Up to 8 motions through use of A-Both-B switches. 2 programmable aux. outputs, mainline output, and light output.
700DBMJ5	Two, dual joystick, 5 speed controls with E-stop, key switch, 2 selectors, and 2 push-buttons.	Kit includes: (4) batteries, strap and legend sheet for each transmitter, spare key, spare fuse kit, and instruction manual.

J Series Radio Remote Control

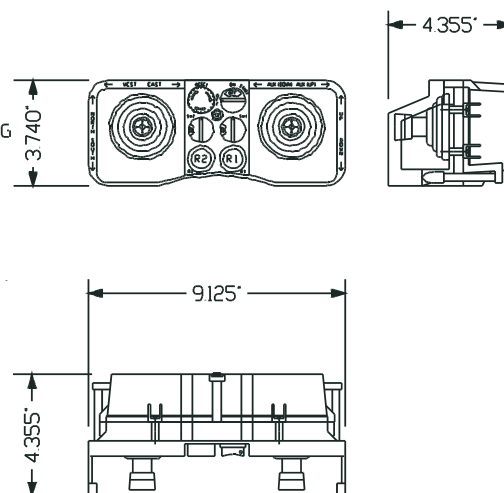
Dimensions

J5 RECEIVER



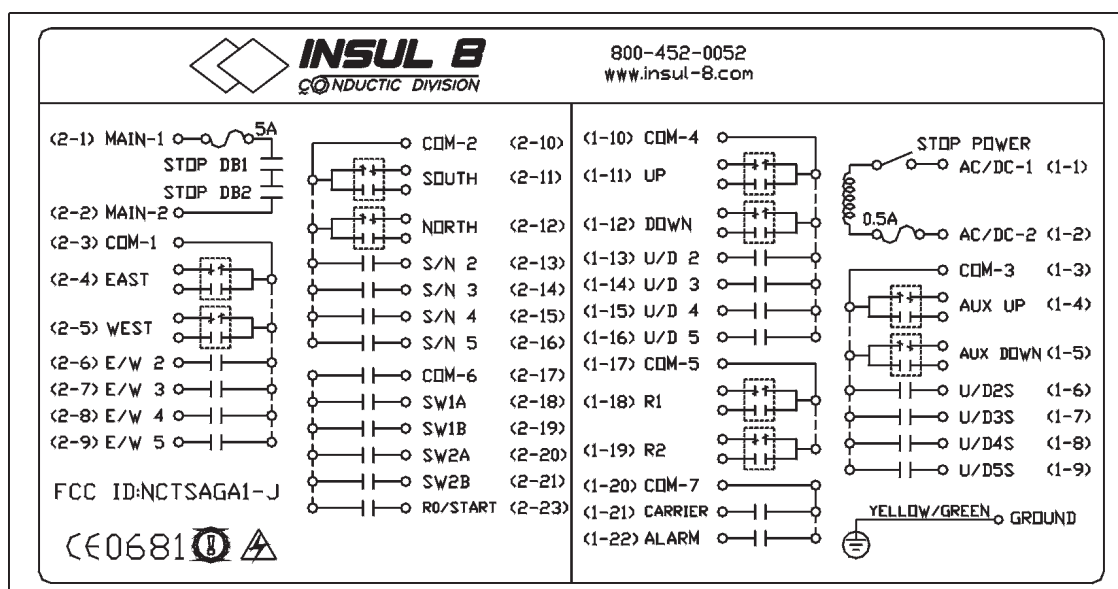
WEIGHT: 4.2 LBS
(LESS CABLE)

J5 TRANSMITTER



WEIGHT: 1.9 LBS.
(INCLUDING BATTERIES)

Wiring Diagram



Don't see what you need? *Call us!*

Page 28

Radio Remote Control Quotation Sheet

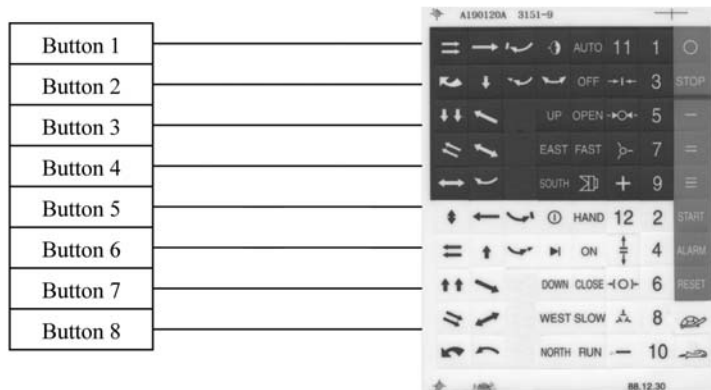
C Series

Date:	Prepared By:
Company (Distributor) Name:	
Customer (End User) Name:	
Address:	
Job Description:	
Quote/Job Number:	

Select Model: C1 ____ C2 ____ Write button function on lines provided:



Select Button Stickers:
(Write button description on lines provided)



- **Select Power-On Operation:**
☐ Any Pushbutton Power-On Mode
☐ Start Key Power-On Mode
☐ E.U. Standard Power-On Mode
☐ Software Power-On Mode

• **Operating Frequency (if req'd):** _____

• **Channel (if req'd):** _____

• **Password (if req'd):** _____

• **Special Instructions & Options:** _____

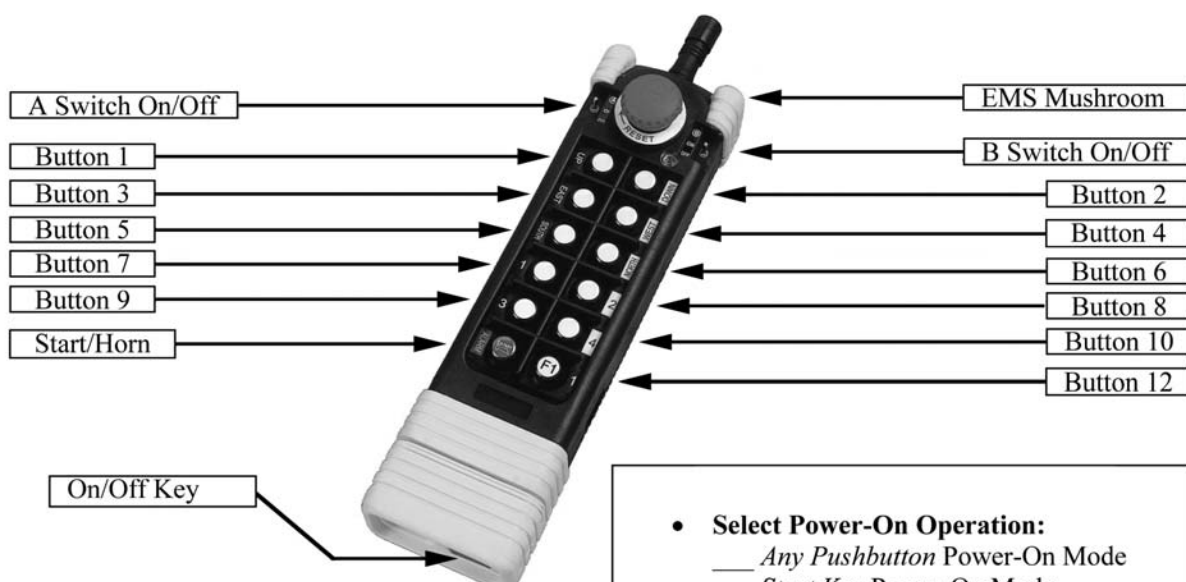
Please confirm the setup of this transmitter. It shall be built/programmed to these specifications.
Confirmation: _____

Radio Remote Control Quotation Sheet

D Series

Date:	Prepared By:
Company (Distributor) Name:	
Customer (End User) Name:	
Address:	
Job Description:	
Quote/Job Number:	

Select Model: D1 ____ D2 ____ Write button function next to button descriptions:



Select Button Stickers:

Button 1	1	3	5	7	9	2	4	6	8	10
Button 2	11	12	13	14	15	16	17	18	19	20
Button 3	21	22	23	24	25	26	27	28	29	30
Button 4	31	32	33	34	35	36	37	38	39	40
Button 5	41	42	43	44	45	46	47	48	49	50
Button 6	51	52	53	54	55	56	57	58	59	60
Button 7	61	62	63	64	65	66	67	68	69	70
Button 8	71	72	73	74	75	76	77	78	79	80
Button 9	81	82	83	84	85	86	87	88	89	90
Button 10	91	92	93	94	95	96	97	98	99	100
Start/Horn	101	102	103	104	105	106	107	108	109	110
Button 12	111	112	113	114	115	116	117	118	119	120

- **Select Power-On Operation:**
 - ___ Any Pushbutton Power-On Mode
 - ___ Start Key Power-On Mode
 - ___ E.U. Standard Power-On Mode
 - ___ Software Power-On Mode

• **Operating Frequency (if req'd):** _____

• **Channel (if req'd):** _____

• **Password (if req'd):** _____

• **Special Instructions & Options:** _____

Please confirm the setup of this transmitter. It shall be built/programmed to these specifications.
Confirmation: _____

Don't see what you need? Call us!

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Radio Remote Control Accessories

Safety, Reliability & Warranty

Safety

The wireless technology incorporates the latest advancements in RF and microprocessor design. Such features as watchdog error circuitry, output relay monitoring, FDDI (frequency deviation deflection indicator), and programmable password protection all insure safe wireless operation of your equipment. Most of all, wireless technology removes the operator from harms way. The operator can choose the safest and most convenient operating position, thus greatly reducing the risk of injury.

Reliability

Extensive use of SMT technology and advanced digital technology reduces the part count and simplifies design. Single board transmitter and receiver designs reduce interconnections and enhance reliability. All circuitry is shock-proof mounted within a rigid glass filled nylon enclosure for long service life.

Support

All products are backed by Insul-8's years of experience in the material handling market. All items are stocked and shipped from one of our 2 U.S. factories. Our team of qualified engineers are ready to provide you prompt professional service whenever and wherever you need it.

Accessories

Part No.	Item	Description
700DIROP3	Signal Alarm (<i>C, D & J Series</i>)	Externally mounted warning horn and light, operates from 12VDC power supply, 100db min. at 4 inches.
700DIROP4-4	NiCad Battery Charger (<i>C & J Series</i>)	Microprocessor controlled, keeps up to 4 batteries at full charge without overcharging, Requires 110/1/60 supply.
700DIROP4-6	NiCad Battery Charger (<i>D Series</i>)	Microprocessor controlled, keeps up to 6 batteries at full charge without overcharging, Requires 110/1/60 supply.
700DIROP5	Copy Memory Module (<i>C, D & J Series</i>)	Allows uploading of current transmitter and receiver settings for later download to duplicate transmitter or receiver.
700DIROP8	AA NiCad Battery (<i>C, D & J Series</i>)	1.5V. rechargeable 700mAH
700DIROP10	AA Alkaline Batter (<i>C, D & J Series</i>)	1.5V., 1500mAH
700DIROP21	Demonstration Kit (<i>C & D Series</i>)	Combination C2 and D2 Series Demo Case
700DIROP22	Radio Pendant Transfer Switch	2-pole, Radio-off Pendant switch with legend
701P0004	Additional Transmitter (<i>Protean - AC Type</i>)	4 Button Transmitter
701P0040	Additional Receiver (<i>Protean</i>)	4 Button Receiver
701P0006	Additional Transmitter (<i>Protean - AC Type</i>)	6 Button Transmitter
701P0060	Additional Receiver (<i>Protean</i>)	6 Button Receiver
701P0008	Additional Transmitter (<i>Protean - AC Type</i>)	8 Button Transmitter
701P0080	Additional Receiver (<i>Protean</i>)	8 Button Receiver

Notes

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Notes

Notes

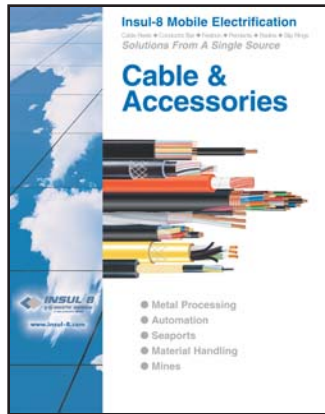
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Notes

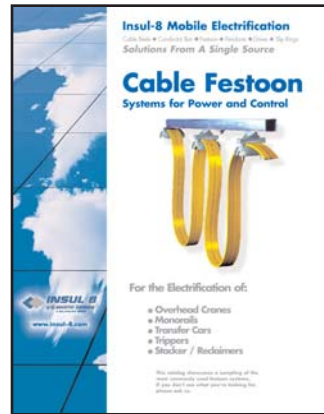
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SPRING DRIVEN
REELS



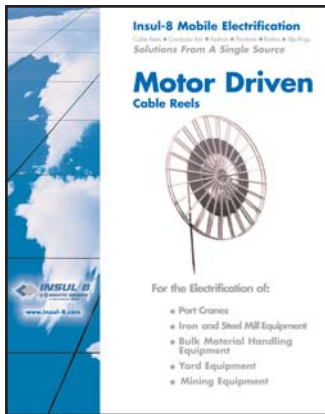
CABLE &
ACCESSORIES



FESTOON



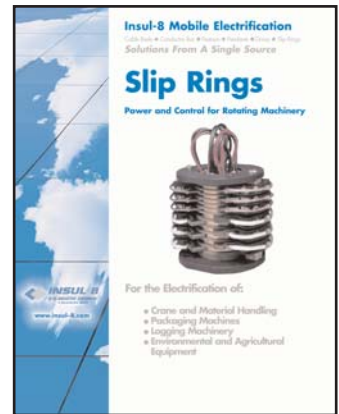
CONDUCTOR BAR



MOTOR DRIVEN
REELS



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