

Temperature Controller VMU-2

Application / specified usage

- The temperature controller VMU-2 converts the signal from a Pt100 or Pt1000 into a linearized standard signal 0...10 V or 0/4...20 mA, proportional to the temperature.

Features

- Menu guidance using LC display
- Freely selectable measuring range
- Selectable analog output
- 0...10 V or 0/4...20 mA
- Pt100 or Pt1000 can be connected
- 3 or 4-wire-technology
- Sensor monitoring
- Display of the actual value in either °C or °F, as selected
- Connection via pluggable terminal blocks
- Narrow design (22.5mm)
- Universal power supply 24/20...255 V AC/DC

Authorizations



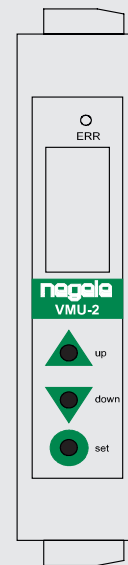
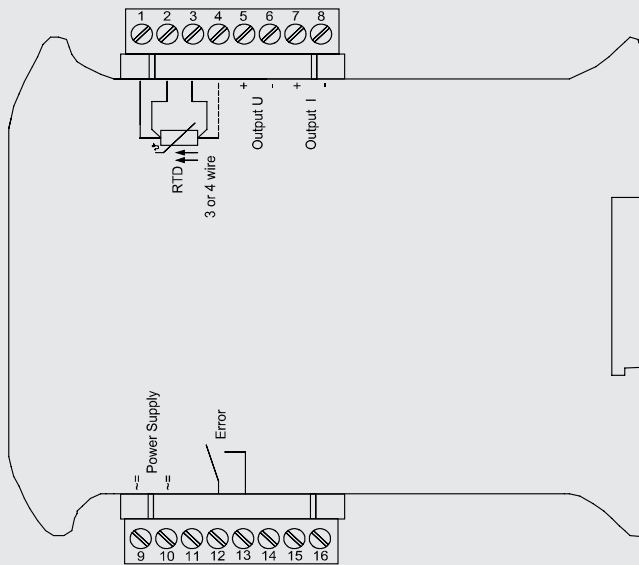
Temperature Controller VMU-2



Technical data

Housing	acc. to DIN norm dimensions	made of ABS for rail mounting acc. to EN 50022 22,5 x 111 x 120 mm (W x H x D)
Protection class		IP20
Ambient	storage temperature operating temperature humidity	-10...+55 °C 0...+55 °C 0...95 %, no bedewing
Terminals		2,5 mm ² , Screw-type terminals pluggable
Input		Pt100 / Pt1000, 3 or 4 wire
Measurement range	range adjustable lowest span	-200...+850 °C / -328...+1562 °F 50 °C / 122 °F
Output	voltage current error message	0...10 V / Load ≥1 kΩ 0 / 4...20 mA / Burden ≤ 500 Ω max 250 V / 3 A AC Change - over contact
Linearity error		≤ ±0,1 % from measurement range
Temperature drift		≤ 0,01 % / K
Display resolution		0,1 °C / °F
Step response 0...99%		< 250 ms
Power supply	AC DC	24...255 V, 48...62 Hz 20...255 V
Power consumption		2,5 W / 4,5 VA
Sensor current		500 μA
Wire compensation		max 100 Ω
Weight		148 g

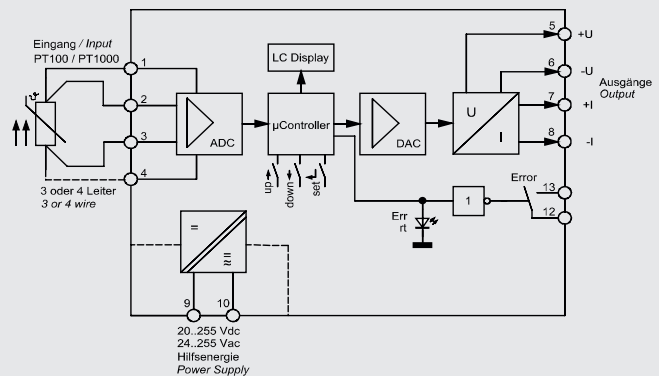
Side- and front view



Adjustment

1. Actuate the "set" button for at least 5 s. The text "press set 5 s for setup" appears. The unit then switches to "SET" mode.
2. Use the "up" and "down" buttons to select the desired parameter.
3. Actuate the "set" button. The unit switches into the setup mode for the selected parameter.
4. Use the "up" and "down" buttons to select the desired value.
5. If the desired value is set, confirm it using the "set" button. The unit switches to the main menu.
6. Repeat points 2 to 5 with all other parameters that are to be changed (see menu listing).
7. Select the menu point "Save and Exit" and confirm using the "set" button. The parameters set will be permanently saved. The unit automatically returns to operation mode.

Block diagram



Functionality test

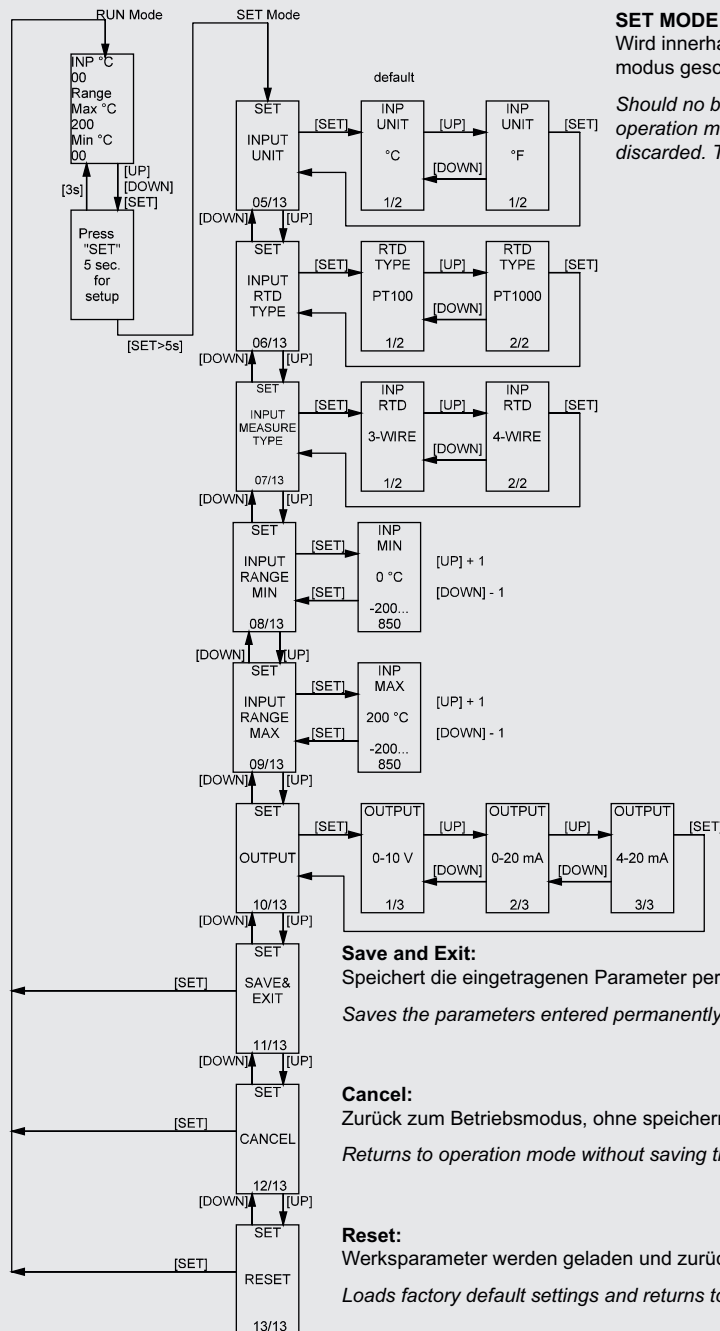
1. Connect temperature sensor or simulator at input (KL 1 to 4). In doing so, take heed of the 3-wire or 4-wire connection (in accordance with the software configuration).
2. Connect the auxiliary power supply (KL 9/10).
3. Set unit parameters (e.g. start of measurement range to 0 °C and end of measurement range to 100 °C) as described above via the menu.
4. Check the function of the analog outputs by slowly increasing or decreasing the input signal within the set limits.
5. Check the sensor monitoring system by disconnecting the sensor. (Red LED lights and the relay releases after approx. 3 to 4 seconds.)
6. Reconnect the sensor. Briefly actuate one of the buttons. The error message disappears after approx. 3 s.

Advice



Measured values are not recorded nor are switch outputs changed while the module is in "SET" mode. Should no further buttons be actuated within approx. 30 s, the unit returns automatically to operation mode and any alterations made to the parameters up to this point are discarded. The same occurs when the "SET" mode is exited using the menu point "cancel". The unit then operates with the last previously saved values. Exiting the "SET" mode via the menu point "Reset" restores the parameters to their factory default values.

Menu structure listing



Parameter			
Name	Function	Adjustment	Factory settings
Input range min	Input measurement min	-200...+850 °C -328...+1562 °F	0 °C
Input range max	Input measurement max	-200...+850 °C -328...+1562 °F	200 °C
Input unit Input RTD type Input measure type	Temperature unit Sensor type Connection type	°C / °F Pt100 / Pt1000 3-Wire / 4-Wire	°C Pt100 4-Wire
Output	Output type	0...10 V / 0/4...20 mA	0...10 V
Save & Exit	Save and exit		
Cancel	Exit without saving		
Reset	Load factory settings		

Reference note:



At temperatures above 50 °C the display contrast becomes much worse to the point of illegibility. This has no effect on the functioning of the unit. The display is not damaged by temperatures within the specified operating temperature range of the unit. The display will return to legibility once the temperature returns to below 50 °C.

Advice



- For installation and adjustment please pay attention to additional informations given in the data sheet enclosed with the device.

Conventional usage



- Not suitable for applications in explosive areas.
- Not suitable for applications in security-relevant equipments (SIL).

Transport / storage



- No outdoor storage
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage temperature -10...+55 °C
- Relative humidity maximum 95 %

Reshipment



- Use suitable transport packaging only to avoid damage of the equipment!

Standards and guidelines



- You have to comply with applicable regulations and directives.

Disposal



- This instrument is not subject to the WEEE directive 2002/96/EC and the respective national laws.
- Pass the instrument directly on to a specialised recycling company and do not use the municipal collecting points.

Advice to EMC



- The device agrees to following standards: EMC directive 2004/108/EC.
- You have to guarantee the EMC directives for the entire equipment.

Order code

VMU-2

Temperature range

0...200 (temperature range 0... 200 °C)

special (temperature range acc. to customer preference, please specify in plain text)

VMU-2 / 0...200