

Type SMU-XX



Advanced features:

- ▶ Universal power supply 24 VAC/DC - 230 VAC/ 250 VDC
- ▶ Universal Input
- ▶ Power Output
- ▶ Galvanic separation of all In-/Outputs/auxiliary power
- ▶ Universal Input for RTD (Pt100 etc), TC Potentiometer, Lin. R, mA und V
- ▶ 2-wire sensor supply
- ▶ 2 relay-output and analogue-output (mA, V)
- ▶ Programmable per optionally frontdisplay
- ▶ 5 years guarantee

Application

- ▶ Conversion of linear resistance variation to a Standard analogue current / voltage signal
- ▶ Electronic linear measuring of temperatur with RTD or TC
- ▶ Power supply and signal isolator for 2-wire transmitters
- ▶ Process control with 2 potential-free Relay-contacts can be modified to suit any application
- ▶ Galvanic separation and amplification of analogue signals
- ▶ The SMU-XX is designed according to strict safety Requirements and is thus suitable for application in SIL 2 installations.

Technical characteristics

- ▶ When the SMU-XX is used with the SMU-PM, all operational parameters can be modified to suit any application.
- ▶ A green / red front LED indicates normal operation and malfunction. The yellow LED indicates activated Output-relays.
- ▶ Continous check of vital stored data for safety reasons.
- ▶ 2,3 kVAC galvanic separation of all in- /outputs/ auxiliary power
- ▶ All operational parameters can be moved with the optional frontdisplay SMU-PM from one SMU-XX to another.

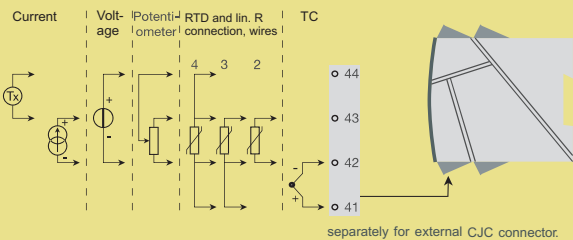
Mounting / Installation

- ▶ Vertical or horizontal mounting on a terminal bus. Because the assemblies can be placed side by side, it is possible to mount 42 devices per metre.

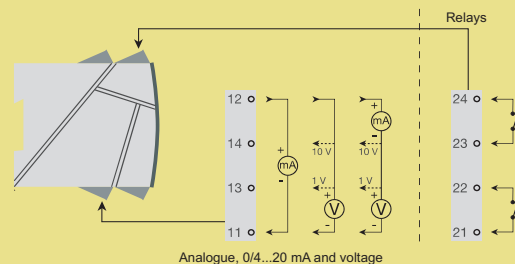


Applications

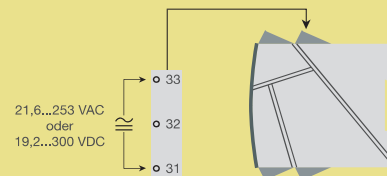
Input signals:



Output signals:



Supply:



Order Code: SMU-

Type	2 relays		analogue output
SMU-XX	without	: A	without : A
	with	: B	with : B

SMU-PM display / parametrization module



Application

- Communications interface for modification of operational parameters in SMU-XX
- Can be moved from one SMU-XX to another and download the configuration of the first transmitter to subsequent transmitters
- Fixed display for visualisation of process data and status.

Technical characteristics:

- LCD display with 4 lines; Line 1 (H=5.57mm) shows units, line 3 (H=3.33 mm) shows analogue output or TAG no. And line 4 shows communication and relay status.
- Programming access can be blocked by assigning a password. The password is saved in the transmitter in order to ensure a high degree of protection against unauthorised modifications to the configuration.

Mounting / installation:

- Click the SMU-PM onto the front of SMU-XX.

Electrical specifications:

Specifications range:

-20°C to +60°C

Common specifications:

Supply voltage, universal 21.6...253 VAC, 50...60 Hz
 or 19.2...300VDC
 Max. consumption ≤2.5W
 Fuse 400mASB/250VAC
 Isolation voltage, test / operation 2.3kVAC/250VAC
 Communications interface Programming front 4501
 Signal/noise ratio Min. 60dB(0...100kHz)
 Response time(0...90%, 100...10%):
 Temperature input ≤ 1s
 mA/Vinput ≤ 400ms
 Calibration temperature 20...28°C
 Accuracy, the greater of the general and basic values:

General values		
Input type	Absolute accuracy	Temperature coefficient
All	≤±0.1% of span	≤±0.01% of span/°C

Basic values		
Input type	Basic accuracy	Temperature coefficient
mA	≤±4µA	≤±0.4µA/°C
Volt	≤±20µV	≤±2µV/°C
Pt100	≤±0.2°C	≤±0.01°C/°C
Linear resistance	≤±0.1Ω	≤±0.01Ω/°C
Potentiometer	≤±0.1Ω	≤±0.01Ω/°C
TC type: E, J, K, L, N, T, U	≤±1°C	≤±0.05°C/°C
TC type: R, S, W3, W5, LR	≤±2°C	≤±0.2°C/°C
TC type: B 85...400°C	≤±4.5°C	≤±0.45°C/°C
TC type: B 400...1820°C	≤±2°C	≤±0.2°C/°C

EMC immunity influence <±0.5% of span
 Extended EMC immunity:
 NAMURNE 21, A criterion, burst <±1% of span

Auxiliary supplies:
 2-wire supply (terminal 44...43) 25...16VDC/0...20mA
 Max. wire size 1x2.5mm² stranded wire
 Screw terminal torque 0.5Nm
 Relative humidity <95%RH (non-cond.)
 Dimen., without display front (HxBxD). 109x23.5x104mm
 Dimensions, w. display front (HxBxD). 109x23.5x116mm
 Protection degree IP20
 Weight 170g/185g with 4501

RTD, linear resistance and potentiometer input:

Input type	Min. value	Max. value	Standard
Pt100	-200°C	+850°C	IEC60751
Ni100	-60°C	+250°C	DIN43760
Lin.R	0 Ω	10000 Ω	-
Potentiometer	10 Ω	100kΩ	-

Input for RTD types:

Pt10, Pt20, Pt50, Pt100, Pt200, Pt250, Pt300, Pt400, Pt500, Pt1000
 Ni50, Ni100, Ni120, Ni1000

Cable resistance per wire (max.), RTD. 50 Ω
 Sensor current, RTD Nom. 0.2mA

Effect of sensor cable resistance (3-/4-wire), RTD <0.002Ω/Ω
 Sensor error detection, RTD Yes
 Short circuit detection, RTD < 15 Ω

TC input:

Thermocouple type B, E, J, K, L, N, R, S, T, U, W3, W5, LR

Cold junction compensation (CJC)

CJC via ext. sensor in connector (based on ambient temperature) < ±1.0°C ±0.0°C/°C
 CJC via internal sensor (based on temp. inside enclosure) < ±2.0°C ±0.2°C/°C

Sensor error detection, all TC types .. Yes
 Sensor error current:
 when detecting Nom. 2µA
 else µA

Current input:
 Measurement range 0...20mA
 Programmable measurement ranges 0...20 and 4...20mA
 Input resistance Nom. 20Ω+PTC50Ω

Voltage input:
 Measurement range 0...12VDC
 Programmable measurement ranges. 0/0.2...1; 0/1...5; 0/2...10V
 Input resistance Nom. 10MΩ

Current output:
 Signal range (span) 0...20mA
 Programmable signal ranges 0/4...20 and 20...4/0mA
 Load (max.) 20mA/800Ω/16VDC
 Load stability ≤0.01% of span /100Ω
 Sensor error detection 0/3.5/23mA/none
 NAMURNE43 Upscale/Downscale 23mA/3.5mA
 Current limit ≤28mA

Voltage output:
 Signal range 0...10VDC
 Programmable signal ranges 0/0.2...1; 0/1...5; 0/2...10; 1...0.2/0; 5...1/0; 10...2/0V
 Load (min.) 500kΩ

Relay outputs:
 Relay functions Setpoint, Window, Sensor error, Latch, Power and Off
 Hysteresis, in%/display counts 0.1...25%/1...2999
 On and Off delay 0...3600s
 Max. voltage 250VRMS
 Max. current 2A/AC or 1A/DC
 Max. AC power 500VA
 Sensor error detection Break/Make/Hold

Observed authority requirements: Standard:
 EMC 2004/108/EC EN61326-1
 LVD 2006/95/EC EN61010-1
 FM 3600, 3611, 3810 and ISA82.02.01

UL, Standard for Safety