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 analouge-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

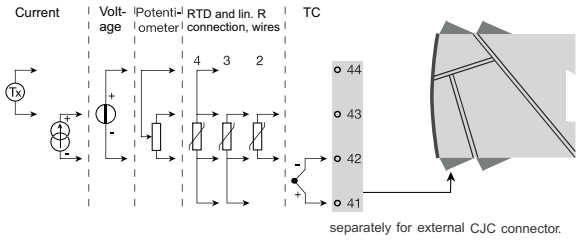
- When the SMU-XX is used with the SMU-PM, all operational parameters can be modified to suit any application.
- A green / red front LED indicates normal operation and malfunction. The yellow LED indicates activated Output-relays.
- Continous check of vital stored data for safety reasons.
- 2,3 kVAC 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.

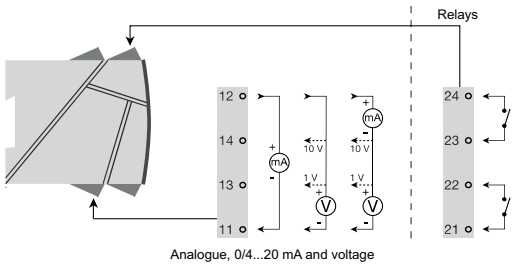
Applications

Input signals:



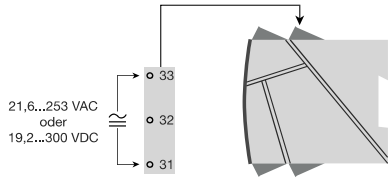
separately for external CJC connector.

Output signals:



Analogue, 0/4...20 mA and voltage

Supply:



Universal measuring transmitter

Order Code: SMU-□□

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

SMU-PM display / parametrization module

Application

- Communications interface for modification of operational lparamegerts 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 acces can be blocked by assigning a password. The password is saved in the transmitter in order to ensure a high degree of protrection 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
or19.2...300VDC
Max.consumption ..... ≤2.5W
Fuse.....400mASB/250VAC
Isolation voltage,test /operation 2.3kVAC/250VAC
Communications interface Programmingfront4501
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%ofspan	≤±0.01%ofspan/°C

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

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

Auxiliarysupplies:
2-wiresupply(terminal44...43) .....25...16VDC/0...20mA
Max.wiresize .....1x2.5mm ²strandedwire
Screwterminaltorque 0.5Nm
Relativehumidity .....<95%RH(non-cond.)
Dimen.,withoutdisplayfront(HxBxD).109x23.5x104mm
Dimensions,w.displayfront(HxBxD).109x23.5x116mm
Protection degree IP20
Weight.....170g/185gwith4501

RTD, linear resistance and potentiometer input:

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

InputforRTDtypes:
Pt10, Pt20, Pt50, Pt100, Pt200, PT250, Pt300, Pt400, Pt500, Pt1000
Ni50,Ni100,Ni120,Ni1000
Cableresistance perwire(max.),RTD. 50 Ω
Sensorcurrent,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 ..... µ0 A

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

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

Current output:
Signalrange(span) ..... 0...20mA
Programmable signal ranges ..... 0/4...20and20...4/0mA
Load(max.) 20mA/800Ω/16VDC
Load stability ..... ≤0.01% of span /100Ω
Sensor error detection 0/3.5/23mA/none
NAMURNE43Upscale/Downscale 23mA/3.5mA
Current limit ..... ≤28mA

Voltage output:
Signalrange ..... 0...10VDC
Programmable signal ranges ..... 0/0.2...1; 0/1...5 ;0/2...10; 1...0.2/0;5...1/0; 10...2/0 V
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/ACor1A/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