

2800-2021 Field display for temperature sensors and process inputs

- Thermocouples B, C, D, E, G, J, K, L, N, R, S and T
Pt100/1000, Ni100, 0/4..20 mA, 0..5/10 V,
-10..+10 V, potentiometer
- 6-digit LED display, digit height 20 mm
- Sensor selection and scaling via front panel keys
- Galvanically isolated output 0/4..20 mA, 0..10V
- 2 to 4 adjustable alarm relays
- Serial output RS-485 and RS-232
- Linearity for process inputs < 0,007% FS
- Power supply range 85..240 VAC or 12..32 VDC/ 24 VAC
- Case protection rating IP65



The field display 2800-2021 is designed specially for temperature sensors and for common process inputs. The display has large 20-mm-high red LED digits, the readability of which is about 10 metres.

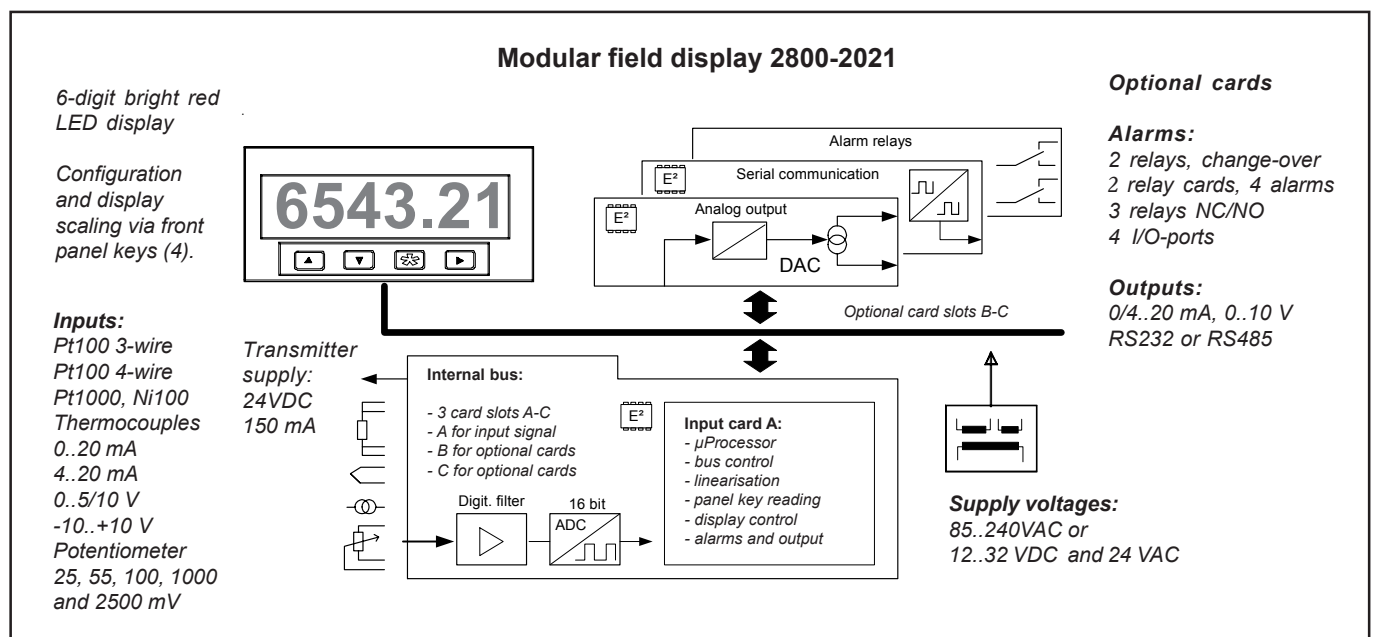
Selection of the sensor type and display scaling is easy via front panel keys. As an option you can choose to have a galvanically isolated output, 2 to 4 alarm relays or the serial output RS-232/485. Alarm limits and hysteresis are freely selectable via front panel keys. The display can be damped by a digital filter if necessary. The number of decimals can be selected. Brightness of the digits is selectable as well.

There are two power supply alternatives: one for line voltage 85..240 VAC and the other 12..32 VDC or 24 VAC, galvanically isolated from input and output. The display provides a voltage supply of 24 V, max. 150 mA for sensors.

Analog conversion is done by a 16-bit AD-converter (resolution 1/64000) and the number of measurements is 15 per second. Separate passwords can be set for access to the configuration menu and alarms. Case protection rating is IP65. The display can be mounted onto a wall with or without the mounting brackets at the corners (removable).

The field display is part of the wide and flexible indicator series 2000 and is easy to modify by changing input cards for different kinds of sensors, such as temperature sensors, pulse sensors, serial inputs etc. The modification does not require any calibration. All the input and output cards of series 2000 are available. Each display type has its own datasheet.

The display is also available as panelmeter, model 2021.



Technical specifications:

Process input: 0/4..20 mA, 0..5/10 V, -10..+10 V
 Display scaling on whole display range
 Input resistance current input 50 ohm, voltage input >1 Mohm
 Accuracy 0.02% FS
 Linearity 0.007% FS
 Transmitter supply 24 VDC, max. 150 mA
RTD-sensors: Pt100 3- and 4-wire, (Pt1000, Ni100)
 Measuring range -200..+700 °C (Pt100)
 Measuring current 0.3 mA
 Accuracy 0.05 % FS
 Linearity error < 0.07°C (-200..+700 °C)
Thermocouples: types specified below
 Accuracy 0.1 % FS
 Cold junction error 0.05°C /°C
 Line resistance effect <10kohm, no effect

| Type | Range | Linearisation error: |
|--------|-----------------|--------------------------------------|
| E | -100.... 900°C | <0.2°C -50.... 900°C |
| J | -150.... 900°C | <0.2°C -50... 900°C |
| K | -150.... 1350°C | <0.4°C -40... 1300°C |
| L | -100.... 900°C | <0.4°C -50... 900°C |
| T | -150... 400°C | <0.2°C -150... 400°C |
| N | 0.... 1300°C | <0.2°C 0.... 1300°C |
| R | 0.... 1700°C | <0.3°C 400.... 1700°C (<1°C < 300°C) |
| S | 0.... 1700°C | <0.3°C 300.... 1700°C (<1°C < 300°C) |
| C (W5) | 0.... 2200°C | <0.3°C 400.... 2200°C (<0.4°C<400°C) |
| D (W3) | 0.... 2200°C | <0.3°C 500.... 2200°C (<1°C < 500°C) |
| B | 400... 1700°C | <0.3°C 400.... 1700°C |
| G (W) | 1000... 2200°C | <0.4°C 1000...1700°C (<3°C >1700°C) |

mV-inputs: 25, 55, 100, 1000 and 2500 mV
 max. value scaleable
 Accuracy 0.01% FS, 0.02% < 100 mV
 Input resistance <10 kohm, no effect
Potentiometer input: 0.8 kohm, 2-wire connection

Output (option): 0/4..20 mA, max. load 700 ohm or 0..10V
 linearity 0.03 % FS, output freely scaleable
Alarms(option): 2, 3 or 4 alarms, relays max. 240 V, 2 A
 selectable hysteresis 0..100%, automatic or manual reset, reversible function available for relays and signal lights;
 4 I/O-ports, max. 60 VDC, 100 mA
Serial output (option): RS-232 and RS-485
 serial output only for measurement reading

General:
 Display 6-digit bright red LED, digit height 20 mm, brightness selectable
 Input filter digital, freely adjustable
 A/D-converter 16 bit (1/64 000), unipolar or bipolar
 Temp. effect 0.0004%/°C with voltage inputs
 Operating temp. -20..+55 °C
 Front panel signal lights: Alarms 1..4, min. and max. value
 Power 85..240 VAC or 12..32 VDC/ 24VAC
 Case material polycarbonate, colour light grey
 Case protection IP65
 Weight 600 g

How to order: 2800-2021-OUT-REL2-24VDC

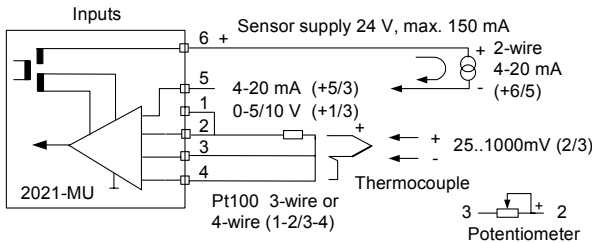
Type
 Output card
 Alarm card
 Power supply:
 85..240VAC
 or 12..32VDC / 24VAC



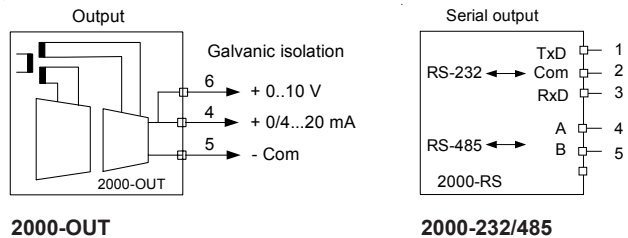
Optional cards (2 options possible at a time):

Output card 2000-OUT
 Alarm card, 2 relays 2000-REL2
 Alarm card, 3 relays 2000-REL3
 I/O card (4 I/O-lines) 2000-I/O
 Serial output card RS-232/485 2000-RS
 (When ordering a field display, the "2000" of the cards is left out.)

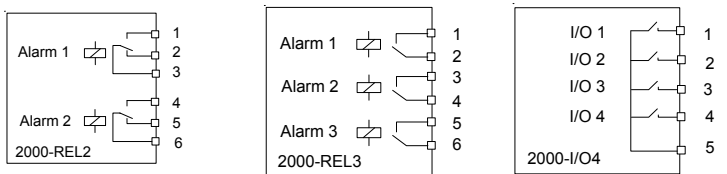
Input and output cards



Output cards for slot B (or C)



Alarm cards for slot C (or B)



2000-REL2

- 2 relays
- Change over contacts max. 230 VAC/ 2 A

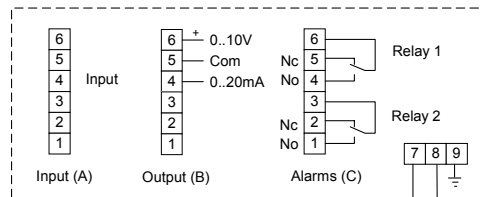
2000-REL3

- 3 relays
- Change over contacts
- max. 230 VAC, 2 A

2000-I/O4

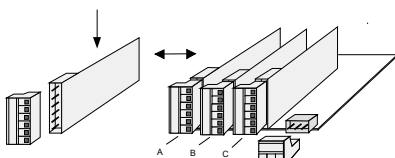
- 4 I/O-ports
- 60 V, 100 mA
- Selectable direction
- Common ground

Typical combination



Slot A is for sensor input and slots B and C for optional cards.
 Power supply 85..240 VAC or 12..32 VDC / 24 VAC (no polarity)

Changing optional cards is fast and simple without any tools



Dimensions

Wall mounting brackets at the corners of the case - easily removable.

Glands: 3 xPG11

