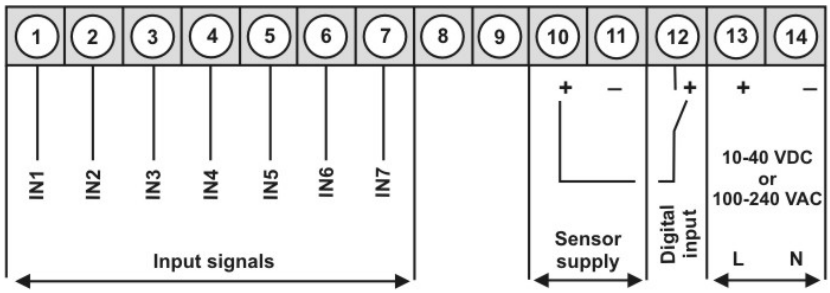

# PU5 – 5-digit digital panel meter in 96x48 mm (BxH)
# Universal measuring inputs:
Pt100, current, voltage, shunt, thermocouple, resistance

- red display of -9999…99999 digits
- installation depth: 120 mm without plug-in screw terminal
- digit height 14 mm
- 24 bit transducer resolution
- with up to 50 measurements
- display adjustment via factory settings or directly via sensor signal
- min/max-memory with adjustable permanent display
- 30 additional adjustable supporting points
- permanent wire breakage monitoring
- display flashing at threshold value exceedance/undercut
- volume measurement (Totaliser)
- zero-key for the triggering of Hold, Tara
- flexible alarm system with adjustable delay times
- galv. isolated digital input for the triggering of Hold, Tara
- sensor supply
- programming interlock via access code
- protection class IP65 at the front
- plug-in screw terminal
- optional: 2 or 4 relay outputs
- optional: independently scalable analog output
- optional: interface RS232 or RS485
- accessories: PC-based configuration software PM-TOOL incl. USB-adapter

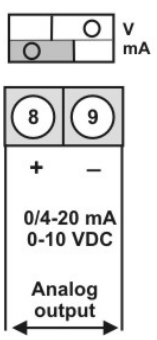
**ORDER NUMBER OF TYPEEUR**
(without options)

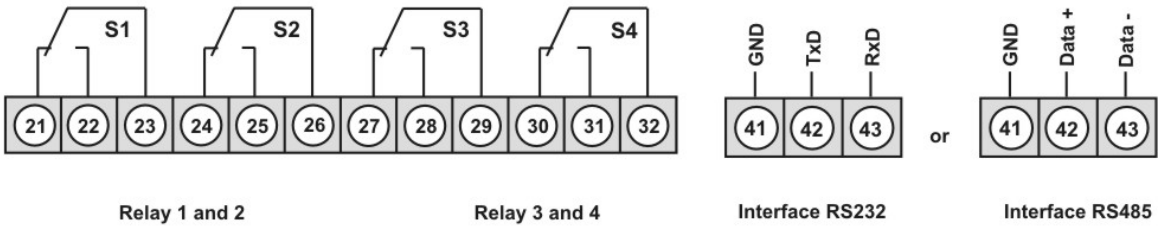
- **Universal measuring input: Pt100, voltage, current, shunt, thermocouple, resistance**

| | | |
|---|---|---|
| Power supply 100-240 VAC / DC ±10% | **PU5.030X.1S70D** | **338.90** |
| Power supply 10-40 VDC galv. isolated / 18-30 VAC | **PU5.030X.1W70D** | **349.50** |




Options:




- **Product key options**

| P | U | 5. | 0 | 3 | 0 | X. | 1 | S | 7 | 0 | D |
|---|---|---|---|---|---|---|---|---|---|---|---|
| P | U | 5. | 0 | 3 | 0 | X. | 1 | W | 7 | 0 | D |

| | | EUR |
|---|---|---|
| D | Dimension/physical unit, customer-specific settings | 20.00 |
| 2 | 2 relay outputs | 53.00 |
| 4 | 4 relay outputs | 68.80 |
| X | Analog output 0-10 VDC, 0/4-20 mA | 127.10 |
| 3 | Interface RS232 with galvanic isolation | 63.50 |
| 4 | Interface RS485 with galvanic isolation | 63.50 |

On demand state dimension unit on order, e.g. min.

- **Parameterisation software**

| | ORDER NUMBER | EUR |
|---|---|---|
| PC based configuration software PM-Tool for a simple adjustment of standard devices, incl. USB-adapter. Programming happens via an interface on the back. | **PM-TOOL-MUSB4** | **94.30** |

## • Technical data

**Housing**

| | |
|---|---|
| Dimensions | B96xH48xD120 mm (including screw terminal = 139 mm) |
| Panel cut-out | 92.0 $^{+0.8}$ x 45.0$^{+0.6}$ mm |
| Fixing | screw element for wall thicknesses of up to 15 mm |
| Housing material | PC polycarbonate, black |
| Sealing material | EPDM, 65 Shore, black |
| Protection class | standard IP65 (front), IP00 (back) |
| Weight | approx. 350 g |
| Connection | plug-in terminal; wire cross-section up to 2.5 mm$^2$ |

**Display**

| | |
|---|---|
| Display | 5-digit |
| Digit height | 14 mm |
| Segment colour | Red (Standard) |
| Display range | -9999...99999 |
| Limit values | one LED per switching point |
| Overflow | horizontal bars at the top |
| Underflow | horizontal bars at the bottom |

| **Input** | **Measuring range** | **$R_I$** | **Measuring error $T_U$= 20...40°C [%] Measuring range** | **Digit** |
|---|---|---|---|---|
| **Voltage/Current** | –1...10 V | 150 kΩ | 0.01 | ± 1 |
| Measuring range/input resistance/ | –1...5 V | 150 kΩ | 0.02 | ± 1 |
| Measuring error at | 0/4...20 mA | 50 Ω | 0.02 | ± 1 |
| measuring time = 1 second | 0...5 mA | 50 Ω | 0.02 | ± 1 |
| | 0...2 mA | 50 Ω | 0.02 | ± 1 |
| | –500...2500 mV | 1 MΩ | 0.03 | ± 1 |
| | –500...1250 mV | 1 MΩ | 0.03 | ± 1 |
| | ± 500 mV | 1 MΩ | 0.03 | ± 1 |
| | ± 300 mV | 1 MΩ | 0.03 | ± 1 |
| | ± 150 mV | 1 MΩ | 0.03 | ± 1 |
| | ± 75 mV | 1 MΩ | 0.04 | ± 1 |
| | ± 35 mV | 1 MΩ | 0.06 | ± 1 |
| | ± 15 mV | 1 MΩ | 0.06 | ± 1 |
| **Pt100 (2-/3-/4-wire)** | -200.0°C…850.0°C | 1 MΩ | 0.04 | ± 1 |
| Measuring range/input resistance/ Meas. error at meas. time = 1 second Pt100: 3-/4-wire output resistance max. 10 Ω | | | | |
| **Thermocouple** | Type L (-200°C...900°C) | 1 MΩ | 0.06 | ±1K |
| Measuring range/input resistance/ | Type J (-210°C...1200°C) | 1 MΩ | 0.05 | ±1K |
| Meas. error at meas. time = 1 second | Type K (-250°C...1271°C) | 1 MΩ | 0.05 | ±1K |
| | Type B (100°C...1810°C) | 1 MΩ | 0.10 | ±1K |
| | Type S (0°C...1767°C) | 1 MΩ | 0.06 | ±1K |
| | Type N (-250°C...1300°C) | 1 MΩ | 0.06 | ±1K |
| | Type E (-260°C...1000°C) | 1 MΩ | 0.06 | ±1K |
| | Type R (0°C...1767°C) | 1 MΩ | 0.07 | ±1K |
| | Type T (-240°C...400°C) | 1 MΩ | 0.07 | ±1K |
| **Resistance** | 100 Ω | 1 MΩ | 0.04 | ± 1 |
| Measuring range/input resistance/ | 1 kΩ | 1 MΩ | 0.04 | ± 1 |
| Meas. error at meas. time = 1 second | 10 kΩ | 1 MΩ | 0.04 | ± 1 |

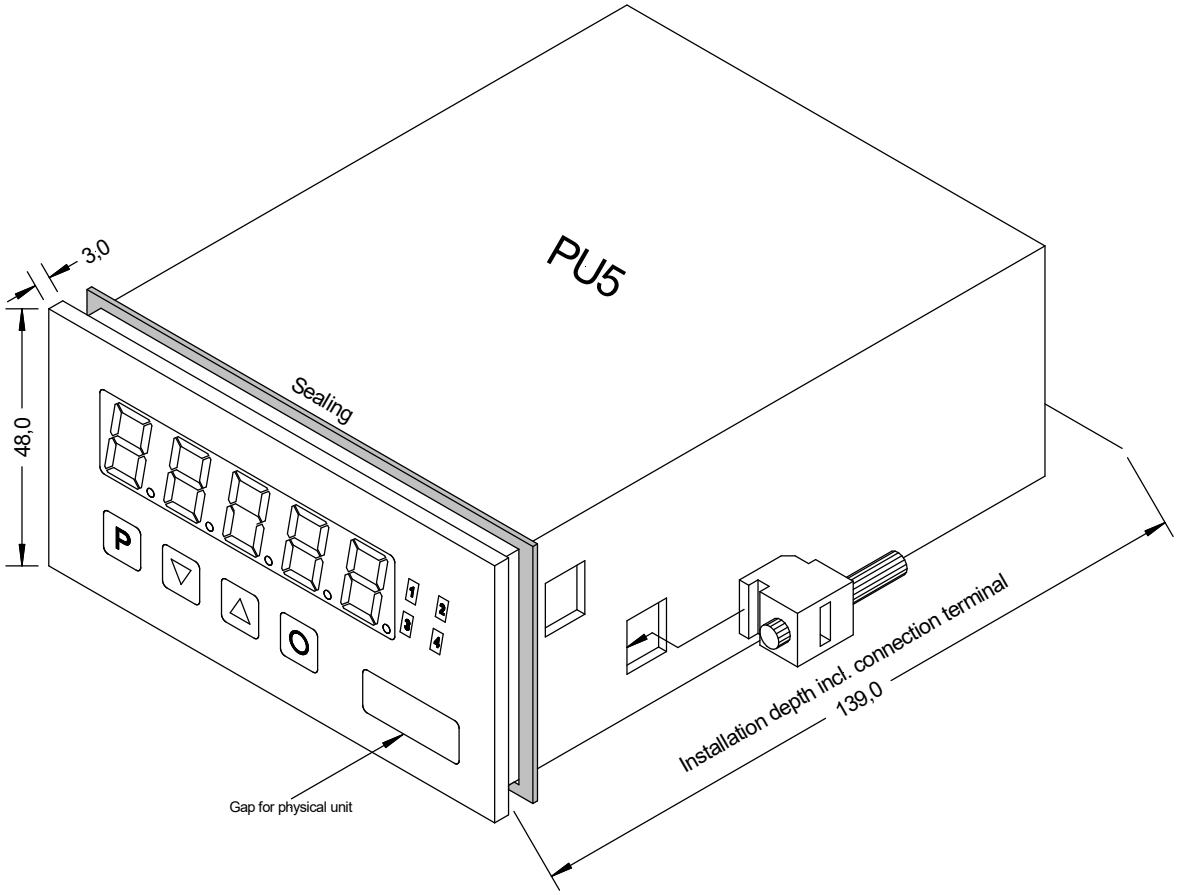
| | | |
|---|---|---|
| **Drift of temperature** | **all measuring inputs** | **50 ppm/K at $T_U$ < 20°C respectively > 40°C** |
| Measuring time | Current, voltage | 0.02...10.00 s |
| | Pt100 2-/4-wire | 0.04...10.00 s |
| | Pt100 3-wire | 0.06...10.00 s |
| | Thermocouple | 0.04...10.00 s |
| | Resistance 2-/4-wire | 0.04...10.00 s |
| | Resistance 3-wire | 0.06...10.00 s |
| **Measuring principle** | Sigma/Delta | |
| **Resolution** | 24 bit | |
| **Totaliser timing error** | max. 0.1% of totaliser value at an integration time of >1 min | |

**Digital input**

| | |
|---|---|
| Input galv. isolated | <2.4 V OFF; >10 V ON; max. 30 VDC, $R_i$ ~ 5 kΩ |

| | | |
|---|---|---|
| **Output** | Relays | with change-over contact 250 V / 5 AAC, 30 V / 5 ADC |
| | Switching cycles | 30 * $10^3$ at 5 AAC, 5 ADC ohm resistive burden, 10 * $10^6$ mechanically |
| | | Separation in accordance with DIN EN50178 / Specifications in accordance with DIN EN 60255 |
| | Analog output | 0-10 VDC / burden ≥ 10 kΩ, 0/4-20 mA / burden ≤ 500 Ω, 16 bit |
| | Sensor supply | 24 VDC / 50 mA |
| **Interface** | Protocol | manufacturer's specifics ASCII |
| | RS232 | 9.600 Baud, no parity, 8 DataBit, 1 StopBit, wire length max. 3 m |
| | RS485 | 9.600 Baud, no parity, 8 DataBit, 1 StopBit, wire length max. 1000 m |
| **Power pack** | Supply | 100-240 VAC 50/60 Hz, DC ±10% (max. 15 VA) |
| | | 10-40 VDC, galvanic isolated, 18-30 VAC 50/60 Hz (max. 15 VA) |
| **Memory** | EEPROM | Data life ≥ 100 years at 25°C |
| **Ambient conditions** | Working temperature | 0 to +60°C |
| | Storing temperature | -20 to +80°C |
| | Climatic density | relative humidity <75% on years average without dew |
| **CE-sign** | Conformity to directive 2014/30/EU | |
| **EMV** | EN 61326, EN 55011 | |
| **Safety standard** | according to low voltage directive 2014/35/EU; EN 61010; EN 60664-1 | |

**Housing:**



## • Ordering code

| | P | U | 5. | 0 | 3 | 0 | X. | 1 | S | 7 | 0 | D | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

**Processor device**

Multi-function input [U]

**Number of digits**

5 digits [5]

**Interface**

no interface [0]
RS232 (galv. isolated) [3]
RS485 (galv. isolated) [4]

**Sensor supply**

24 V / 50 mA [3]

**Outputs**

no output [0]
0-10 V, 0-20 mA, 4-20 mA [X]

**Version**

[D] Version D

**Switching points**

[0] no switching point
[2] 2 relay outputs
[4] 4 relay outputs

**Mechanical options**

[7] IP65, foil keyboard, plug-in terminal

**Power supply**

[S] 100-240 VAC
[W] 10-40 VDC

**Size of housing**

[1] 96x48 mm (BxH)

**Measuring input**

[X] Multi-function input
Current, Pt100, Resistance, Shunt, Thermocouple, Voltage