



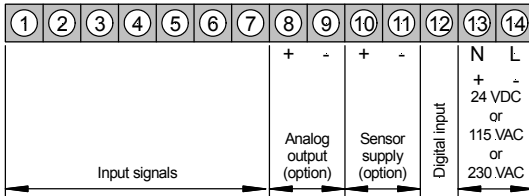
Digital panel meter with microprocessor based technology 5-digit

PU5

- **Universal measuring input** – free configurable
- Measuring inputs: voltage, current, shunt, thermocouple, resistance, resistor thermocouple
- Resolution 24 bit
- Measuring rate up to 50 measuring cycles/s
- Tara key [O] (function optionally)
- Min/max memory
- 30 points linearization
- 4 free scalable setpoints/hysteresis/delay time (option)
- Optical setpoint indication
- Sensor supply (option)
- Analog output (option)
- Serial interfaces RS232/RS485/CANopen (option)
- Protection IP54 standard / IP65 option

Digital panel meter

- Universal panelmeter
- Voltage, current, shunt, thermocouple
- Resistance, resistor thermocouple



Power supply 230 VAC

ORDER NUMBER OF TYPE
(without options)

EUR

PU 5.000X.1540B

295,00

Power supply 115 VAC

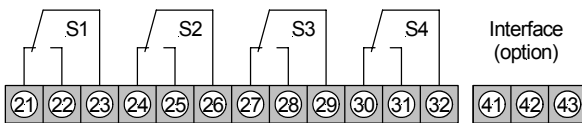
PU 5.000X.1440B

315,00

Power supply 24 VDC (galv. insulated)

PU 5.000X.1740B

325,00



Relay (option)

• Input signals PU5

Sensor	Kl. 1	Kl. 2	Kl. 3	Kl. 4	Kl. 5	Kl. 6	Kl. 7
0...10 V 0...5 V					+ U		- U
-0.5...2.5 V -0.5...1.25 V ± 500 mV ± 300 mV ± 150 mV ± 75 mV ± 35 mV ± 15 mV			+ U	- U			
0/4...20 mA 0...5 mA 0...2 mA						+ I	- I
PTxxx 2-wire	+ Force bridged to term 3	+ Force bridged to term 4	+ Sense	- Sense			
PTxxx 3-wire	+ Force bridged to term 3	- Force	+ Sense	- Sense			
PTxxx 4-wire	+ Force	- Force	+ Sense	- Sense			
Thermocouples			+ Signal	- Signal			
Resistance 2-wire	+ Force bridged to term 3	+ Force bridged to term 4	+ Sense	- Sense			
Resistance 3-wire	+ Force bridged to term 3	- Force	+ Sense	- Sense			
Resistance 4-wire	+ Force	- Force	+ Sense	- Sense			

OPTIONS	PU5...	Additional price
		EUR
LED green	x	
Protection IP65 frontside	x	10,25
Plug in terminal	x	12,25
Sensor supply (The sensor supply is galv. insulated from the measuring input)		
Sensor supply 24 VDC/50 mA (power supply 230/115 VAC)	x	33,00
Sensor supply 10 VDC/20 mA (power supply 230/115 VAC)	x	33,00
Sensor supply 24 VDC/50 mA (power supply 24 VDC galv. insulated)	x	55,00
Sensor supply 10 VDC/20 mA (power supply 24 VDC galv. insulated)	x	55,00
Analog output (The analog output is galv. insulated from the measuring input)		
Analog output 0-10 VDC / 12 bit (power supply 230/115 VAC)	x	85,00
Analog output 0-20 mA/load 500 Ω (power supply 230/115 VAC)	x	85,00
Analog output 4-20 mA/load 500 Ω (power supply 230/115 VAC)	x	85,00
Analog output 0-10 VDC / 12 bit (power supply 24 VDC galv. insulated)	x	105,00
Analog output 0-20 mA/load 500 Ω (power supply 24 VDC galv. insulated)	x	105,00
Analog output 4-20 mA/load 500 Ω (power supply 24 VDC galv. insulated)	x	105,00
Interface RS232 without galv. insulation	x	33,00
Interface RS232 with galv. insulation (power supply 230/115 VAC)	x	55,00
Interface RS485 with galv. insulation (power supply 230/115 VAC)	x	55,00
Interface RS232 with galv. insulation (power supply 24 VDC galv.insulated)	x	75,00
Interface RS485 with galv. insulation (power supply 24 VDC galv.insulated)	x	75,00
2 relays (changing contacts)	x	55,00
4 relays (changing contacts)	x	80,00
Tare function S252 (special software with min/max indication and tare function)	x	20,00
Other supply voltages on demand		
Other sensor volages on demand		
Higher resolution on demand		

Technical data

Housing

Dimensions	96 x 48 x 134 mm (BxHxT) including screw terminal 96 x 48 x 148 mm (BxHxT) including plug in terminal
Assembly cut out	92.0 ^{+0,8} x 45.0 ^{+0,6} mm
Fastening	snap in screw element
Wall thickness	0...50 mm
Material	PC/ABS-blend, black, UL94V-0
Protection	standard IP54 (front), IP00 (rear side)
Weight	approx. 450 g
Connection	screw- /plug-in terminal; wire cross section up to 2.5 mm ²

Display

Character height	14 mm
Segment colour	red
Display range	-9999...99999
Setpoints	one LED per setpoint
Overflow	horizontal bars at top
Underflow	horizontal bars at the bottom

Input

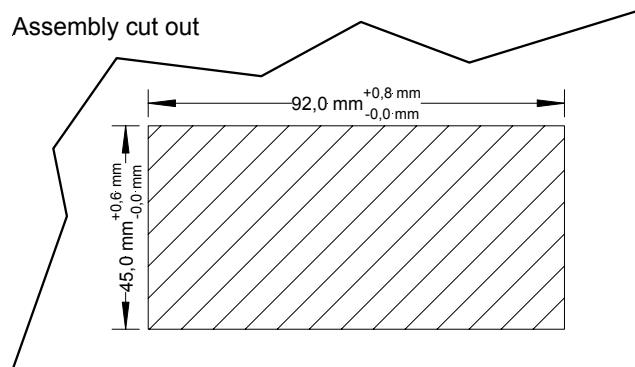
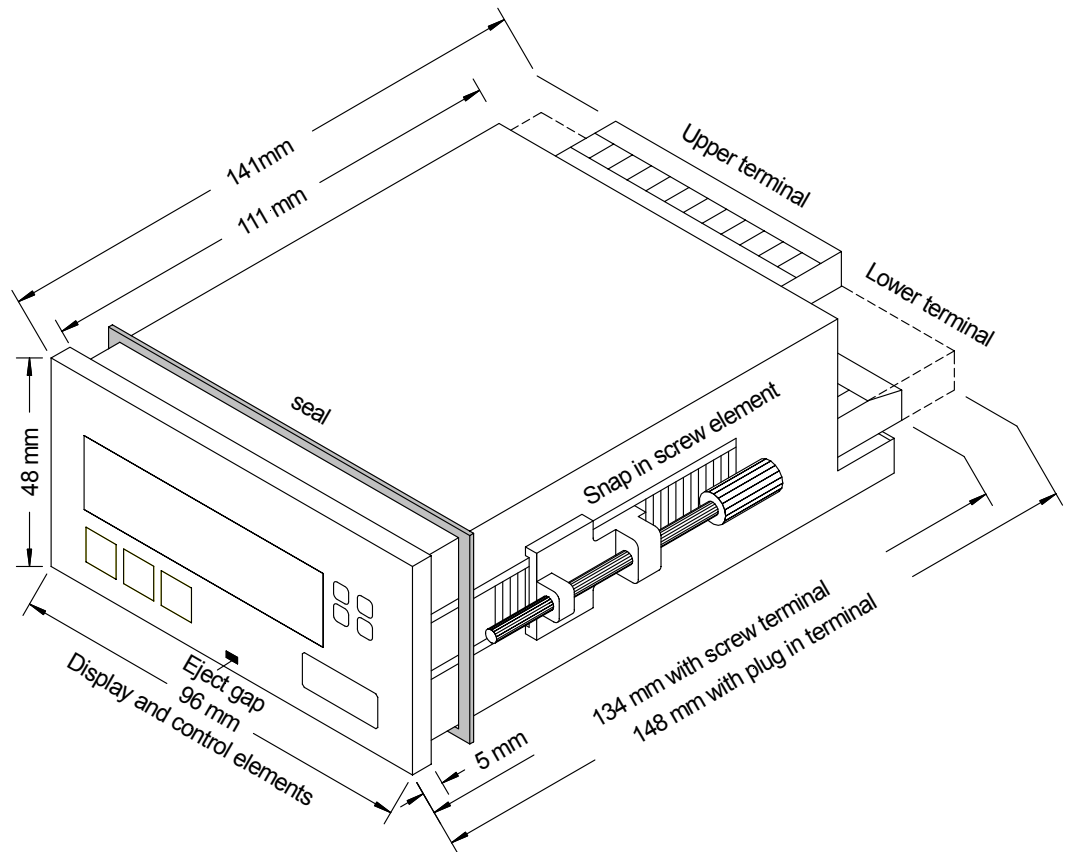
Measuring range / Input resistance / Measuring error at measuring time = 1 s	Measuring range	R _i	Measuring error T _U = 20...40°C [%] MB	Digit	
Measuring range /	-1...10 V	150 kΩ	0.01	± 1	
Input resistance /	-1...5 V	150 kΩ	0.02	± 1	
Measuring error at measuring time = 1 s	0/4...20 mA	50 Ω	0.02	± 1	
	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	
	PTxxxx (2/3/4-wire)	1 MΩ	0.04	± 1	
	-200.0 – 850.0°C				
	Thermocouple				
type L (-200...900°C)	1 MΩ	0.06 ± 1K			
type J (-210...1200°C)	1 MΩ	0.05 ± 1K			
type K (-250...1271°C)	1 MΩ	0.05 ± 1K			
type B (100...1810°C)	1 MΩ	0.10 ± 1K			

Technical data

Input	Measuring range	R _i	Measuring error T _U = 20...40°C [%] MB	Digit
	type S (0...1767°C)	1 MΩ	0.06 ± 1K	
	type N (-250...1300°C)	1 MΩ	0.06 ± 1K	
	type E (-260...1000°C)	1 MΩ	0.06 ± 1K	
	type R (0...1767°C)	1 MΩ	0.07 ± 1K	
	type T (-240...400°C)	1 MΩ	0.07 ± 1K	
	resistance 100 Ω	1 MΩ	0.04	± 1
	2-/3-/4-wire resistance 1 kΩ	1 MΩ	0.04	± 1
	2-/3-/4-wire resistance 10 kΩ	1 MΩ	0.04	± 1
Temperature drift with T _U < 20°C resp. > 40°C	2-/3-/4-wire all measuring inputs	50 ppm/K		
Measuring time	current, voltage	0.02...10.00 s		
	PTxxxx 2/4-wire	0.04...10.00 s		
	PTxxxx 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			
The maximum permitted value on the input clips is 120% of the nominal value.				
Output				
Relays	Change over contact			
	230 VAC 5A resp. 30 VDC 2 A (cos φ=1)			
	Separation in accordance with DIN EN 50178			
	Specifications in accordance with DIN EN 60255			
Analog output (galv. separated)	0...10 V (12-bit) load ≥ 1 kΩ			
	0...20 mA (12-bit) load ≤500 Ω			
	4...20 mA (12-bit) load ≤500 Ω			
Error	0.1 % within range T _U = 20...40°C, outside 50 ppm/K			
Internal resistance	100 Ω			
Sensor supply (galv. separated)	10 VDC 20 mA			
	24 VDC 50 mA			
Interface				
Protocol	Manufacturer specific ASCII			
RS232	9600 baud, no parity, 8 databits, 1 stopbit			
Lead length	max. 3 m			
RS485	9600 baud, no parity, 8 databits, 1 stopbit			
Lead length	max. 1000 m			
Mains unit				
Power supply (galv. separated)	230 VAC / 50/60 Hz / ±10 % and 115 VAC / 50/60 Hz / ±10 %			
	24 VDC / ±10 %			
Power consumption	max. 8 VA			
Memory				
Data life	Parameter memory EEPROM			
	>100 years			
Ambient conditions				
Working temperature	0...60 °C			
Storing temperature	-20...80 °C			
Climatic resistance	rel. humidity ≤75 % in the annual mean without formation of condensation			
EMV				
CE-sign	DIN 61326			
	Conformity to 89/336/EWG			
Safety standard				
	DIN 61010			

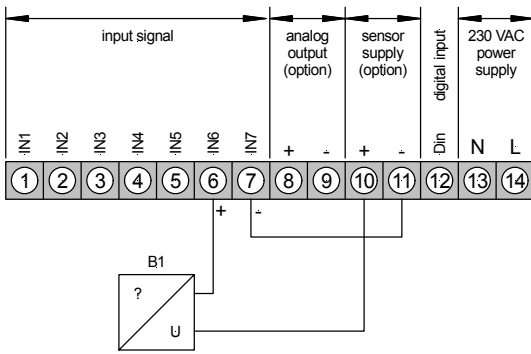
Technical data

Housing:

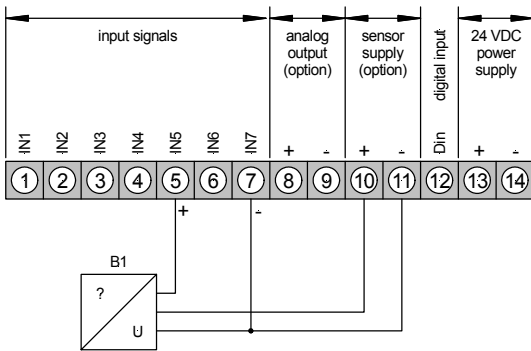


Connecting examples

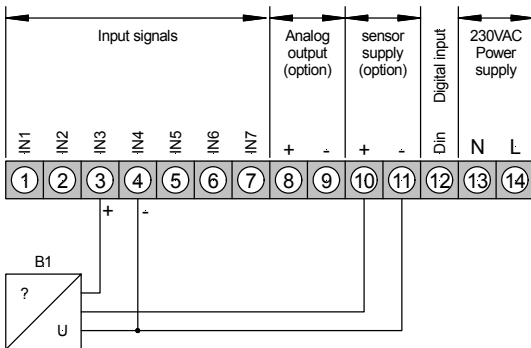
Measurement of a current signal from a 2-line transmitter using the sensor supply; supply voltage 230 VAC



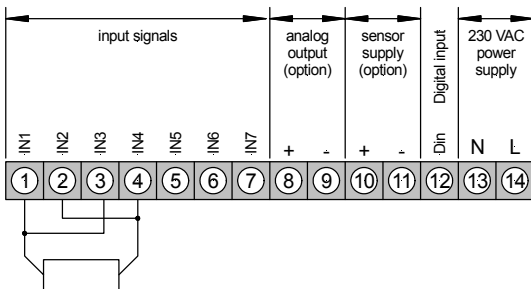
Measurement of a voltage signal (5 V or 10 V) from a 3-wire transmitter using the sensor supply; supply voltage 24 VDC



Measurement of a voltage signal ($\leq 2,5$ V) from a 3-wire transmitter using the sensor supply; supply voltage 230 VAC

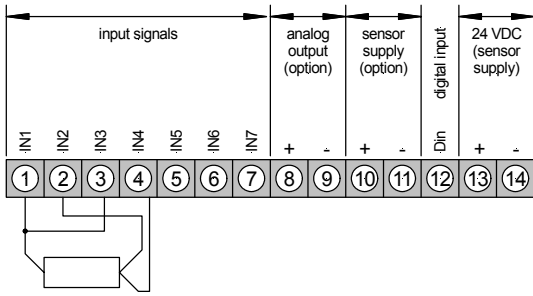


Measurement of a resistance thermometer (e.g. PT100) or resistance in the 2-wire technology; supply voltage 230 VAC

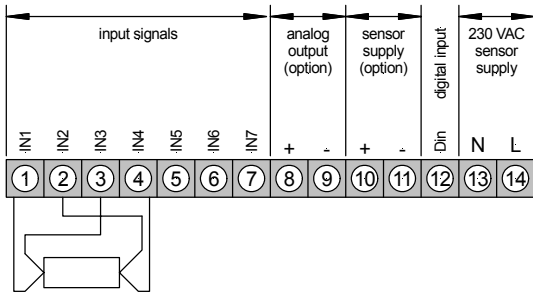


Connecting examples

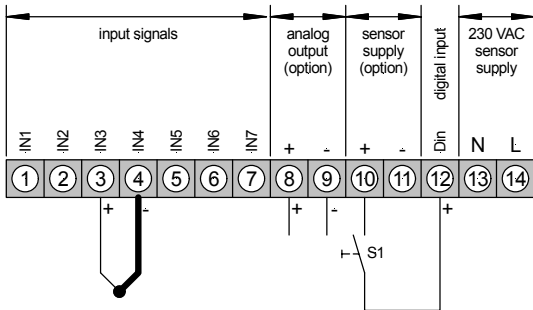
Measurement of a resistance thermometer (i.e. PT100) or resistance in the 3-wire technology; supply voltage 24 VDC



Measurement of a resistance thermometer (i.e. PT100) or resistance in the 4-wire technology; supply voltage 230 VAC

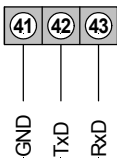


Measurement of a thermocouple; connection of the analog output; connection of the digital input to the sensor supply; supply voltage 230 VAC

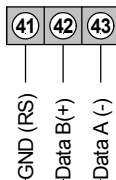


Terminal assignment for interface

RS232



RS485



Ordering code PU5, PZ5

Digital panel meter with microprocessor

P U 5 0 0 0 X 1 5 4 0 B

Basic model (processor)		Internal index	
Base		Setpoints	
Universal measuring device	<input type="checkbox"/> U	<input type="checkbox"/> 0	No setpoint
2 inputs	<input type="checkbox"/> Z	<input type="checkbox"/> 2	2 relay outputs
		<input type="checkbox"/> 4	4 relay outputs
Number of digits		Mechanical options	
5 digits	<input type="checkbox"/> 5	<input type="checkbox"/> 1	IP65, foil keyboard, screw terminal
		<input type="checkbox"/> 4	IP54, foil keyboard, screw terminal
Interface		<input type="checkbox"/> 7	IP65, foil keyboard, plug in terminal
No interface	<input type="checkbox"/> 0	<input type="checkbox"/> 9	IP54, foil keyboard, plug in terminal
CAN (galv. insulated)	<input type="checkbox"/> 1		
RS232	<input type="checkbox"/> 2	Power supply	
RS232 (galv. insulated)	<input type="checkbox"/> 3	<input type="checkbox"/> 4	115 VAC
RS485 (galv. insulated)	<input type="checkbox"/> 4	<input type="checkbox"/> 5	230 VAC
RS485	<input type="checkbox"/> 5	<input type="checkbox"/> 7	24 VDC (galv. insulated)
Sensor supply		Size of housing	
No sensor supply	<input type="checkbox"/> 0	<input type="checkbox"/> 1	96x48
10 V/20 mA	<input type="checkbox"/> 2		
24 V/50 mA	<input type="checkbox"/> 3	Measuring input	
Outputs		<input type="checkbox"/> X	Universal input
No output	<input type="checkbox"/> 0	<input type="checkbox"/> 1	Direct voltage, direct current
0-10 V	<input type="checkbox"/> 1		
0-20 mA	<input type="checkbox"/> 2		
4-20 mA	<input type="checkbox"/> 3		