



Digital panel meter with microprocessor based technology 4-digit

PVE4, PTE4, PFE4, PFL4, PWE4, PME4

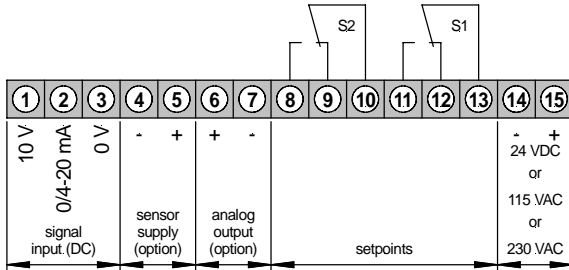
- galvanic insulated
- 2 free scalable setpoints/hysteresis
- optical setpoint indication
- analogue output – galvanic insulated
- sensor supply – galvanic insulated
- min/max memory

Digital panel meter

- Direct voltage
- Alternating voltage
- Resistance
- PT100/PT1000
- Direct current
- Alternating current
- Potentiometer
- Thermocouple
- Shunt
- Frequency
- Pressure (strain gauge)
- Weighing technology



• Direct voltage, direct current (Standard measuring input with tare function see page 22)

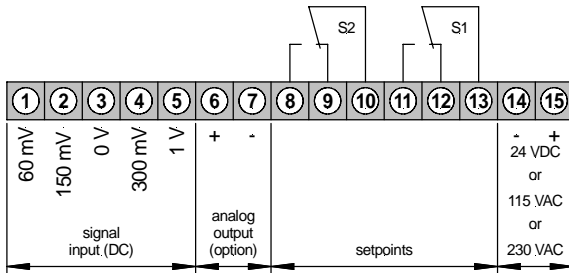


Transmitter connections see page 51!

ORDER NUMBER OF TYPE EUR
(without options)

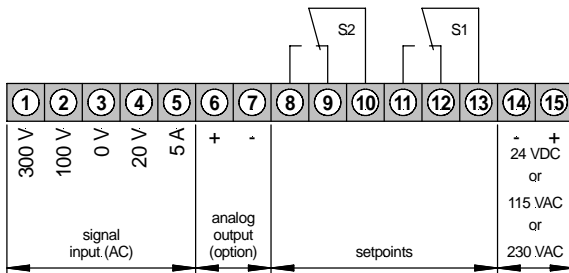
Power supply 230 VAC	PVE 4.001.1522B	241,00
Power supply 115 VAC	PVE 4.001.1422B	252,80
Power supply 24 VDC (galv. insulated)	PVE 4.001.1722B	270,50

• Direct voltage (Shunt)



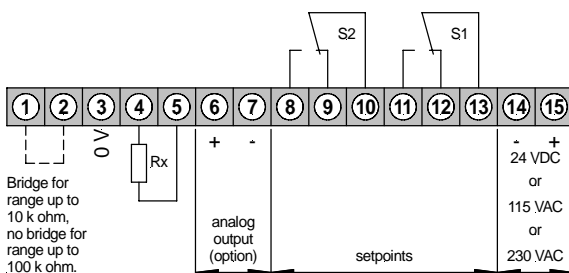
Power supply 230 VAC	PVE 4.002.1522B	258,70
Power supply 115 VAC	PVE 4.002.1422B	270,50
Power supply 24 VDC (galv. insulated)	PVE 4.002.1722B	288,10

• Alternating voltage, alternating current



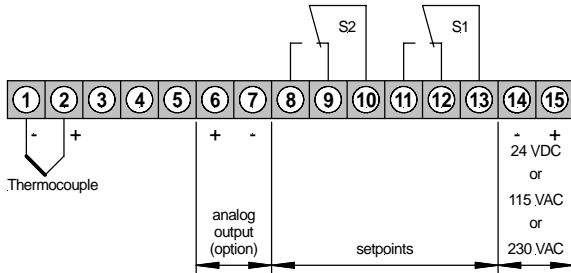
Power supply 230 VAC	Standard	PVE 4.004.1522B	276,40
	True effective value RMS	PVE 4.104.1522B	299,90
Power supply 115 VAC	Standard	PVE 4.004.1422B	288,10
	True effective value RMS	PVE 4.104.1422B	311,70
Power supply 24 VDC (galv. insulated)	Standard	PVE 4.004.1722B	305,70
	True effective value RMS	PVE 4.104.1722B	329,30

• Resistance, potentiometer measurement



Power supply 230 VAC	PVE 4.006.1522B	258,70
Power supply 115 VAC	PVE 4.006.1422B	270,50
Power supply 24 VDC (galv. insulated)	PVE 4.006.1722B	288,10

• **Thermocouple L, J and K**



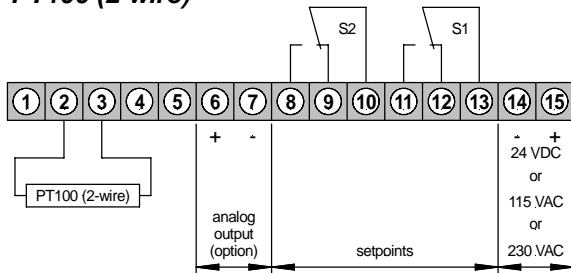
ORDER NUMBER OF TYPE **EUR**
(without options)

Power supply 230 VAC	PTE 4.40x.1522B	261,60
Power supply 115 VAC	PTE 4.40x.1422B	273,10
Power supply 24 VDC (galv. insulated)	PTE 4.40x.1722B	291,10

Version x

Type L (FeCuNi - DIN) -100 up to +900°C
 Type J (FeCuNi - americ.) -200 up to +1200°C
 Type K (NiCrNi) -250 up to +1350°C

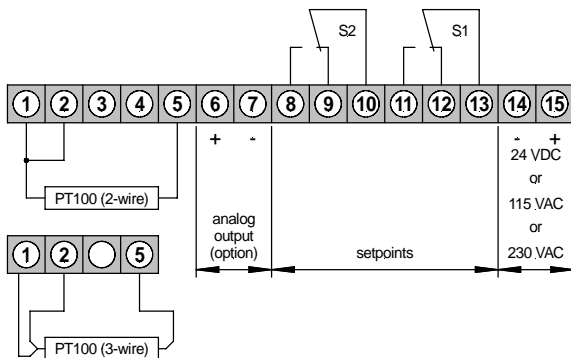
• **PT100 (2 wire)**



2 wire	Power supply 230 VAC	PTE 4.206.1522B (600.0°C)	255,80
2 wire	Power supply 115 VAC	PTE 4.206.1422B (600.0°C)	267,60
2 wire	Power supply 24 VDC (galv. insulated)	PTE 4.206.1722B (600.0°C)	285,20

(Measuring range -200...850°C on request)

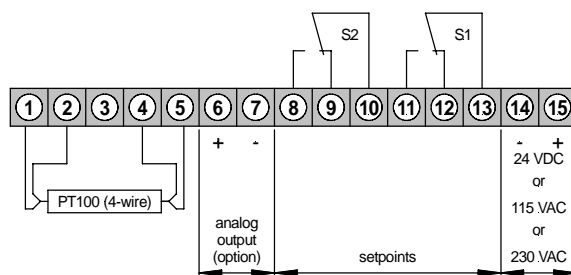
• **PT100 (3+2 wire)**



3+2 wire	Power supply 230 VAC	PTE 4.306.1522B (600.0°C)	273,40
3+2 wire	Power supply 115 VAC	PTE 4.306.1422B (600.0°C)	285,20
3+2 wire	Power supply 24 VDC (galv. insulated)	PTE 4.306.1722B (600.0°C)	302,80

(Measuring range -200...850°C on request)

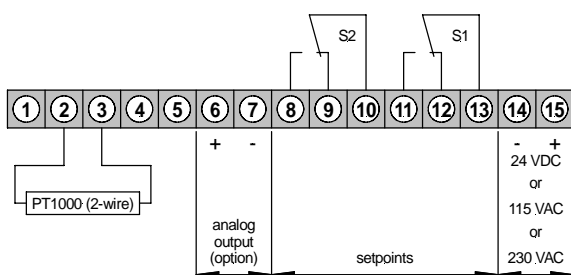
• **PT100 (4 wire)**



4 wire	Power supply 230 VAC	PTE 4.106.1522B (600.0°C)	291,10
4 wire	Power supply 115 VAC	PTE 4.106.1422B (600.0°C)	302,80
4 wire	Power supply 24 VDC (galv. insulated)	PTE 4.106.1722B (600.0°C)	320,50

(Measuring range -200...850°C on request)

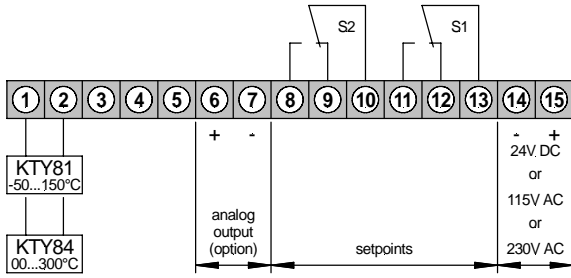
• **PT1000 (2 wire)**



2 wire	Power supply 230 VAC	PTE 4.606.1522B (600.0°C)	255,80
2 wire	Power supply 115 VAC	PTE 4.606.1422B (600.0°C)	267,60
2 wire	Power supply 24 VDC (galv. insulated)	PTE 4.606.1722B (600.0°C)	285,20

(Measuring range -200...850°C on request)

• **KTY81**

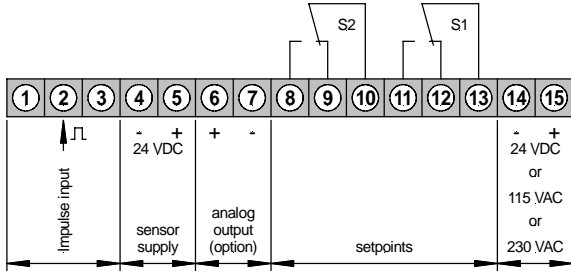


-50.0...+150.0°C Power supply 230 VAC
 -50.0...+150.0°C Power supply 115 VAC
 -50.0...+150.0°C Power supply 24 VDC (galv. insulated)
 0.0...+300.0°C Power supply 230 VAC
 0.0...+300.0°C Power supply 115 VAC
 0.0...+300.0°C Power supply 24 VDC (galv. insulated)

ORDER NUMBER OF TYPE EUR
(without options)

PTE 4.501.1522B	255,80
PTE 4.501.1422B	267,60
PTE 4.501.1722B	285,20
PTE 4.504.1522B	255,80
PTE 4.504.1422B	267,60
PTE 4.504.1722B	285,20

• **Frequency metering 1 Hz – 500 KHz**

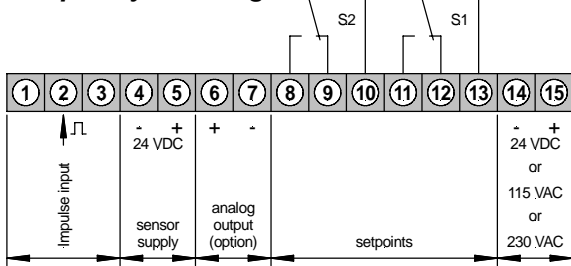


Power supply 230 VAC
 Power supply 115 VAC
 Power supply 24 VDC (galv. insulated)

PFE 4.307.1522B	252,80
PFE 4.307.1422B	264,60
PFE 4.307.1722B	282,20

Connection diagrams see page 51!

• **Frequency metering 0.01 Hz – 9999 Hz**



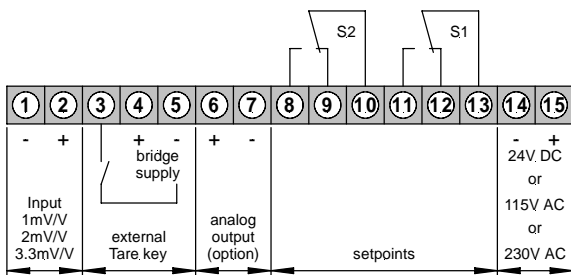
Power supply 230 VAC
 Power supply 115 VAC
 Power supply 24 VDC (galv. insulated)

PFL 4.307.1522B	270,50
PFL 4.307.1422B	282,20
PFL 4.307.1722B	299,90

Connection diagrams see page 51!

• **Weighing technology**

• **Amplifier with tare function (strain gauge)**

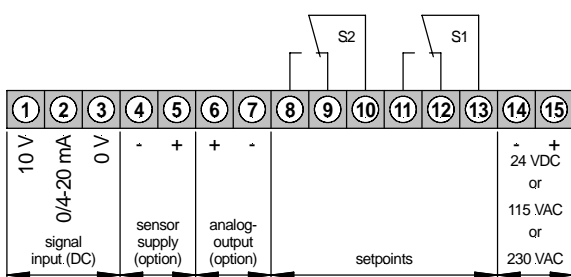


Power supply 230 VAC
 Power supply 115 VAC
 Power supply 24 VDC (galv. insulated)

ORDER NUMBER OF TYPE EUR
(without options)

PWE 4.20x.1542B	295,20
PWE 4.20x.1442B	306,90
PWE 4.20x.1742B	342,20

• **Direct voltage, direct current, with tare function**

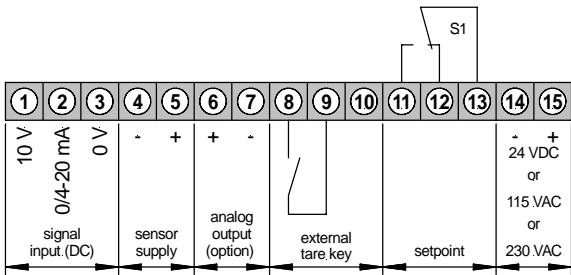


Power supply 230 VAC
 Power supply 115 VAC
 Power supply 24 VDC (galv. insulated)

PWE 4.001.1522B	276,40
PWE 4.001.1422B	288,10
PWE 4.001.1722B	305,70



• **Direct voltage, direct current with tare function and external key**



Power supply 230 VAC
 Power supply 115 VAC
 Power supply 24 VDC (galv. insulated)

ORDER NUMBER OF TYPE (without options)

EUR

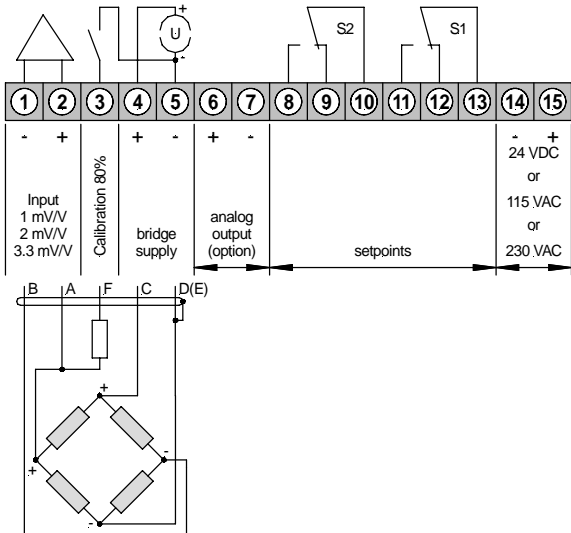
PWE 4.301.1521BT
PWE 4.301.1421BT
PWE 4.301.1721BT

288,10
 299,90
 335,20

• **Pressure technology**



• **Amplifier with calibration (strain gauge)**



Power supply 230 VAC
 Power supply 115 VAC
 Power supply 24 VDC (galv. insulated)

ORDER NUMBER OF TYPE (without options)

EUR

PME 4.20x.1542B
PME 4.20x.1442B
PME 4.20x.1742B

306,90
 319,30
 354,00

OPTIONS PVE, PTE

	PVE 4.001... Direct voltage	PVE 4.002... Shunt	PVE 4.004... Alternating voltage	PVE4.006... Resistance	PTE 4.40x... Thermocouple	PTE 4.x06.../4.50x... PT100/0, KTY81	Additional price
	EUR						
Green LED	X	X	X	X	X	X	
Protection IP54 at the front	X	X	X	X	X	X	7,10
Protection IP65 at the front	X	X	X	X	X	X	11,80
Plug-in terminal	X	X	X	X		X	16,50
Sensor supply 24 VDC/50 mA (supply voltage 230/115 VAC)	X						28,20
Sensor supply 10 VDC/20 mA (supply voltage 230/115 VAC)	X						28,20
Sensor supply 24 VDC/50 mA (supply voltage 24 VDC galvanic insulated)	X						41,20
Sensor supply 10 VDC/20 mA (supply voltage 24 VDC galvanic insulated)	X						41,20
<i>The sensor supply is galvanic insulated from the measuring input!</i>							
Analog output 0-10 VDC/12 Bit (supply voltage 230/115 VAC)	X	X	X	X	X	X	70,60
Analog output 0-20 mA/load 500 Ω/12 Bit (supply voltage 230/115 VAC)	X	X	X	X	X	X	88,20
Analog output 4-20 mA/load 500 Ω/12 Bit (supply voltage 230/115 VAC)	X	X	X	X	X	X	88,20
Analog output 0-10 VDC/12 Bit (supply voltage 24 VDC galvanic insulated)	X	X	X	X	X	X	111,70
Analog output 0-20 mA/load 500 Ω/12 Bit (supply voltage 24 VDC galvanic insulated)	X	X	X	X	X	X	117,60
Analog output 4-20 mA/load 500 Ω/12 Bit (supply voltage 24 VDC galvanic insulated)	X	X	X	X	X	X	117,60
<i>The analog output is galvanic insulated from the measuring input!</i>							
Measuring input 0-1 mA (S191)	X						17,70
Measuring range 1 A on demand (S108)!			X				
Dimension strips selectable	X	X	X	X	X	X	
Other power supplies on demand!	X	X	X	X	X	X	

OPTIONS PFE, PFL, PME, PWE

	PFE 4.307... Frequency	PFL 4.307... Frequency	PWE 4.20x... DMS amplifier	PWE 4.001... with tare function	PWE 4.301... Tare and ext.key	PME 4.20x... DMS amplifier	Additional price
	EUR						
Green LED	X	X	X	X	X	X	
Protection IP 54	X	X		X	X		7,10
Protection IP65	X	X		X	X		11,80
Plug-in terminal	X	X	X	X	X	X	16,50
Sensor supply 24 VDC/50 mA (supply voltage 230/115 VAC)				X			28,20
Sensor supply 10 VDC/20 mA (supply voltage 230/115 VAC)	X	X		X			28,20
Sensor supply 10 VDC/20 mA (supply voltage 230/115 VAC)	X	X			X		11,80
Sensor supply 24 VDC/50 mA (supply voltage 24 VDC galvanic insulated)				X			41,20
Sensor supply 10 VDC/20 mA (supply voltage 24 VDC galvanic insulated)	X	X		X			41,20
Sensor supply 10 VDC/20 mA (supply voltage 24 VDC galvanic insulated)	X	X			X		11,80
<i>The sensor supply is galvanic insulated from the measuring input!</i>							
Analog output 0-10 VDC/12 Bit (supply voltage 230/115 VAC)	X	X	X	X	X	X	70,60
Analog output 0-20 mA/load 500 Ω/12 Bit (supply voltage 230/115 VAC)	X	X	X	X	X	X	88,20
Analog output 4-20 mA/load 500 Ω/12 Bit (supply voltage 230/115 VAC)	X	X	X	X	X	X	88,20
Analog output 0-10 VDC/12 Bit (supply voltage 24 VDC galvanic insulated)	X	X	X	X	X	X	111,70
Analog output 0-20 mA/load 500 Ω/12 Bit (supply voltage 24 VDC galvanic insulated)	X	X	X	X	X	X	117,60
Analog output 4-20 mA/load 500 Ω/12 Bit (supply voltage 24 VDC galvanic insulated)	X	X	X	X	X	X	117,60
<i>The analog output is galvanic insulated from the measuring input!</i>							
TTL input	X	X					5,90
Other power supplies on demand!	X	X	X	X	X	X	
Dimension strips selectable	X	X	X	X	X	X	

Technical data

for all units of the PVE4, PTE4, PFE4, PFL4, PWE4, PME4 range,
if not indicated otherwise

Dimension	Housing Assembly cut out Fastening Housing material Protective system	W 96 x H 48 x D 134 mm, including screw terminal (D = 148 mm, including plug-in terminal) 92.0 ^{+0.8} x 45.0 ^{+0.6} mm special quick plastic clamp proper to fix in wall thickness up to 50 mm PC/ABS-blend, colour black, UL94V-0 at the front IP40 connection IP00
	Weight Connection	max. 0.45 kg at the rear side via terminals up to 2.5 mm ²
Input		
PVE4.001.... PWE4.001....		
Direct voltage, current	Measuring range Input resistance	0-10 V, 0-20 mA - 4-20 mA – all ranges selectable via connection terminal Ri with 10 V = ~100 kΩ 20 mA = ~100 Ω
PVE4.002.... Direct voltage (Shunt)	Measuring range Input resistance	0-60 mV, 150 mV, 300 mV, 1 V All ranges selectable via connection terminal Ri with 60 mV = ~15 kΩ 300 mV = ~75 kΩ 150 mV = ~39 kΩ 1 V = ~220 kΩ
PVE4.004.... Alternating voltage, alternating current	Measuring range Input resistance	20 V, 100 V, 300 V, 5 A – optional 1 A All ranges selectable via connection terminal Ri with 20 V = ~200 kΩ 1 A = ~276 mΩ 100 V = ~1 MΩ 5 A = ~56 mΩ 300 V = ~4 MΩ
PVE4.006.... Resistance	Measuring range	≤10 kΩ; ≤100 kΩ All ranges selectable via connection terminal
PTE4.x06.... PT100	Sensor Measuring range Resolution Sensor current Linearization	2-wire, 3-wire, 4-wire -99.9 up to + 6000°C 0.1°C approx. 1 mA according to DIN IEC 751
PT1000	Sensor Measuring range Sensor current Linearization	2-wire -99.9 up to + 600.0°C approx. 0.1 mA according to DIN IEC 751
PTE4.40x.... Thermocouple	L FeCuNi (DIN) J FeCuNi (americ.) K NiCrNi	-100 up to + 900°C -200 up to + 1200°C -250 up to + 1350°C
PTE4.501.... PTE4.504	KTY81-1 KTY84-1	2 wire (-50.0 up to +150.0°C) 2 wire (0.0 up to 300.0°C)
PFE4.307.... Frequency	Signal Input resistance Input frequency	Impulse input, Namur, 3-wire Initiator Ri with 10 V = ≥ 2 kΩ High/low level ⇒ 10 V / < 6 V 1 Hz up to 500 kHz
PFL4.307.... Frequency	Signal Input resistance Input frequency	Impulse input, Namur, 3-wire Initiator Ri with 10 V = ≥ 2 kΩ High/low level ⇒ 10 V / < 6 V 0.01 Hz up to 9999 Hz
PWE4.20x.... PME4.20x.... DMS rectifier	Sensor sensitivity	1 mV/V – 2 mV/V – 3 mV/V
Output For all versions	Relay outputs (Switching cycle) Analogue output	charge 230 VAC / 5 A – 30 VDC / 2 A, with ohm resistive burden 0.5 * 10 ⁵ at max. contact rate 5 * 10 ⁶ mechanically Separation appropriate to DIN EN 50178/ Specification appropriate to DIN EN60255 0-10 VDC (12 Bit) 0-20 mA (12 Bit) load max. 500 Ω 4-20 mA (12 Bit) load max. 500 Ω The analogue output is galvanic insulated from the measuring input!

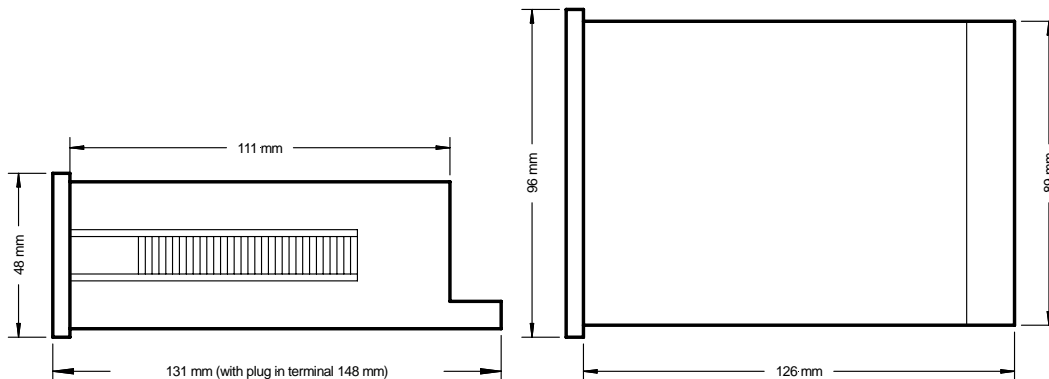
Technical data

Output	Sensor supply	(galvanic insulated from the measuring input)
PVE4.001.... PWE4.001.... PWE4.301.... PFE4.307.... PFL4.307....		24 VDC/50 mA – 10 VDC/20 mA (other sensor supplies/performances on demand)
PWE4.20x.... PME4.20x....	Bridge supply	10 VDC/50 mA stabilized
Accuracy		
<i>For all versions</i>	Resolution	-999 up to 9999 digit
PTE4.x06.... PTE4.40x.... PTE4.501.... PTE4.504.... PFE4.307.... PFL4.307....		0.1°C 1°C 0.1°C 0.1°C 0 up to 9999 digit 0 up to 9999 digit
<i>For all versions</i>	Measuring fault	+/-0.2% of measuring range, +/-1 digit
PVE4.0x4....	Measuring fault Measuring principle (input) Frequency range	+/-1.0% of final value, +/-1 digit precision rectifier – (effective value with sine waveform only) Nominal precision 40 HZ up to 100 Hz
PVE4.1x4....	Measuring fault Measuring principle (input) Frequency range	+/-0.7%, of final value +/-1 digit, crestfactor 3 True effective value RMS Nominal precision 40 HZ up to 1000 Hz
PTE4.40x.... PTE4.x06.... PTE4.606....	Measuring fault Measuring fault Measuring fault	1°C, +/-1digit 1°C, +/-1digit $R_L \leq 10 \Omega = +/-2K$ $R_L > 10 \Omega \leq 20 \Omega = +/-3K$
PTE4.501.... PTE4.504.... PFE4.307.... PFL4.307....	Measuring fault Measuring fault Measuring fault Measuring fault	1°C, +/- 10 digit (-20...100°C)/<-20°C max. 6°C +/- 10 digit/>100°C max. 2°C +/-10 digit +/-4°C, +/- 5 digit (0...200°C), +/-7°C, +/- 5 digit (>200°C) +/-0.04% of the input frequency +/-0.04% of the input frequency
PVE4.001.... PWE4.001.... PWE4.301.... PVE4.002.... PVE4.004.... PVE4.006.... PTE4.40x.... PTE4.x06.... PTE4.501.... PTE4.504.... PFE4.307.... PFL4.307.... PWE4.20x.... PME4.20x....	Temp. drift	~ 100 ppm/K ~ 100 ppm/K ~ 100 ppm/K ~ 150 ppm/K ~ 200 ppm/K (I) / ~ 100 ppm/K (U) ~ 100 ppm/K ~ 100 ppm/K ~ 100 ppm/K ~ 100 ppm/K ~ 100 ppm/K ~ 40 ppm/K ~ 40 ppm/K ~ 100 ppm/K ~ 100 ppm/K
Power unit	Supply voltage Power consumption	230/115 VAC +/-10% (50-60 Hz), 24 VDC (+/-10%) galvanic insulated max. 5 VA
Indication	Display	LED with 7 segments, 14 mm high, red 4-digit = indication 9999
PTE4.x06....	Dimension	configurable in °C or °F
<i>For all versions</i>	Overflow	Indication of 4 transversal bars
PWE4.20x.... PME4.20x....	Line break	Indication of 4 transversal bars

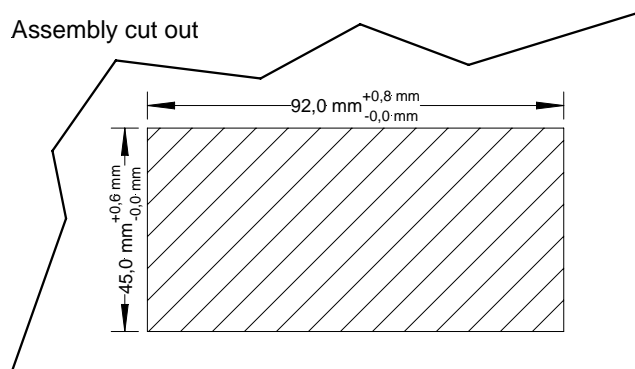
Technical data

<i>For all versions</i>	Indication time	From 0.1 up to 10 seconds adjustable
PTE4.x06...	Indication time	From 0.2 up to 10 seconds adjustable
PTE4.40x....	Indication time	From 0.2 up to 10 seconds adjustable
PTE4.50x....	Indication time	From 0.2 up to 10 seconds adjustable
PWE4.20x....	Indication time	From 0.2 up to 10 seconds adjustable
Ambient conditions	Working temperature	0 up to +60°C
	Storing temperature	-20 up to +80°C

Housing:



Assembly cut out



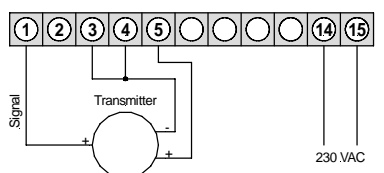
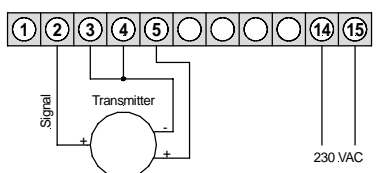
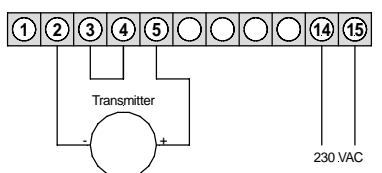
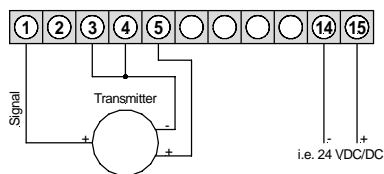
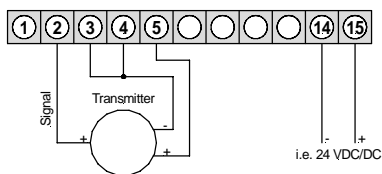
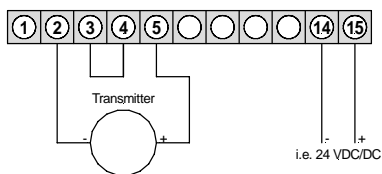
Connection diagrams

PVE instruments with voltage / current input

2-wire: 4-20 mA

3-wire: 0-20 mA

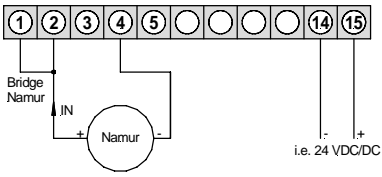
3-wire: 0-10 V / 0-5 V
0-1 V / 1-6 V



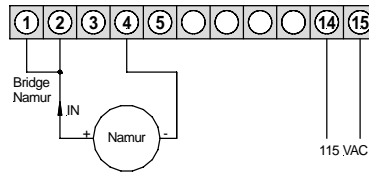
Connection diagrams

PFE and PFL instruments with frequency / impulse input

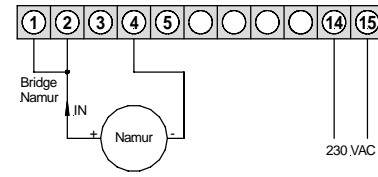
Namur



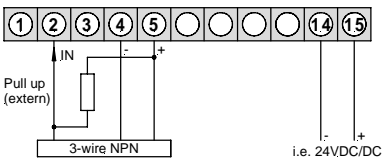
Namur



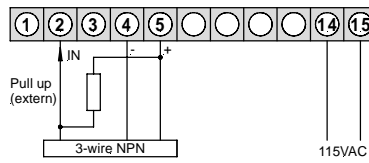
Namur



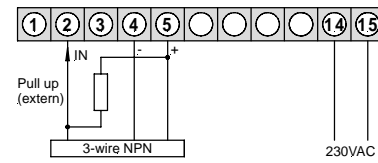
3-wire NPN



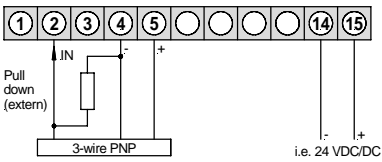
3-wire NPN



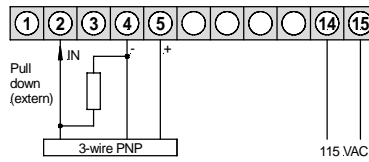
3-wire NPN



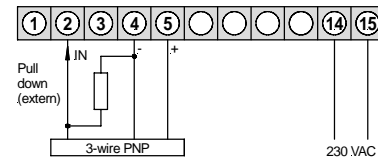
3-wire PNP



3-wire PNP



3-wire PNP



Ordering code PVE4, PTE4, PWE4, PME4, PFE4, PFL4, PVE5

Digital panel meter with microprocessor based technology and 2 setpoints (standard)

P V E 4 0 0 1 1 5 2 2 B

Basic model		Internal index	
Voltage metering	V	Setpoints (standard)	
Temperature metering	T	2	2 relay outputs
Weighing applications	W	1	1 relay output (only PWE4.301....)
Strain gauge	M	Mechanical options	
Frequency	F	1	Foil keyboard, protection IP65
		2	Foil keyboard, protection IP40
		4	Foil keyboard, protection IP54
		7	Plug-in terminal, foil keyboard, IP65
		8	Plug-in terminal, foil keyboard, IP40
		9	Plug-in terminal, foil keyboard, IP54
Frequency range		Power supply	
Standard index	E	4	115 VAC
Frequency (0.01 Hz – 9999 Hz)	L	5	230 VAC
		7	24 VDC (galvanic insulated)
Number of digits		Size of housing	
4 digits	4	1	96x48
5 digits	5	Measuring input	
Sensor supply		1	Direct voltage, direct current
No sensor supply	0	2	Direct voltage, shunt measuring
10 VDC/20 mA	2	4	Alternating voltage, current
24 VDC/50 mA	3	6	Resistance
		7	Frequency
Temperature device		6	Range PT100 (600.0°C) – PTE device
PT100 - 2 wire	2	1	KTY81-1xx (PTE device) –50 to 150°C
PT100 - 3 wire	3	4	KTY84-1xx (PTE device) 0 to 300°C
PT100 - 4 wire	1		Thermocouple (PTE device)
PT1000 - 2 wire	6	x	Type L, J, K
Thermocouple	4		Weighing application (Type PWE)
KTY	5	x	1 mV/V – 2 mV/V – 3.3 mV/V
			Strain gauge (type PME)
Alternating voltage, current		x	1 mV/V – 2 mV/V – 3.3 mV/V
Standard	0		
True effective RMS	1		
Outputs			
no output	0		
0-10 V	1		
0-20 mA	2		
4-20 mA	3		