



Digital panel meter with microprocessor based technology 4-digit

PVE4, PTE4, PFE4, PFL4, PWE4, PME4

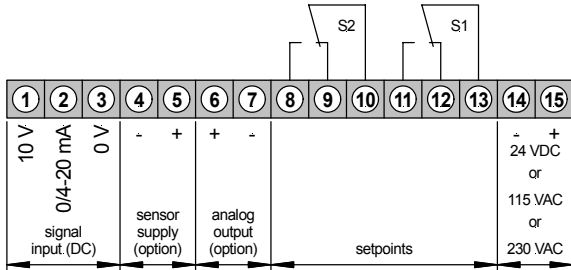
- galvanically insulated
- 2 free scalable setpoints/hysteresis
- optical setpoint indication
- analog output – galvanically insulated
- sensor supply – galvanically insulated
- min/max memory

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 4**



Transmitter connections see page 9

Power supply 230 VAC

Power supply 115 VAC

Power supply 24 VDC (galv. insulated)

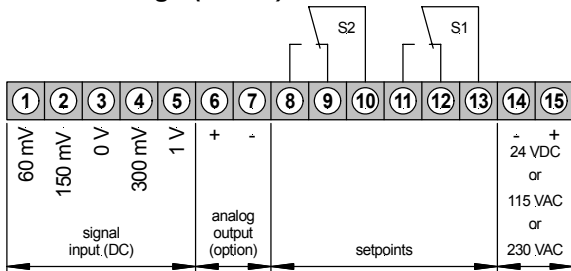
ORDER NUMBER OF TYPE
(without options)

PVE 4.001.1522B

PVE 4.001.1422B

PVE 4.001.1722B

- **Direct voltage (Shunt)**



Power supply 230 VAC

Power supply 115 VAC

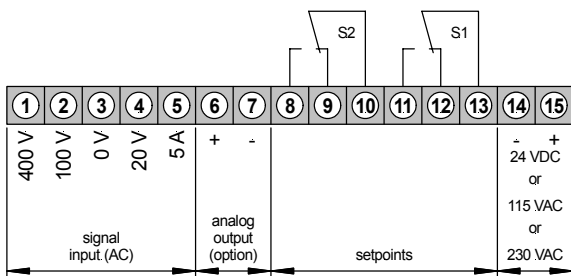
Power supply 24 VDC (galv. insulated)

PVE 4.002.1522B

PVE 4.002.1422B

PVE 4.002.1722B

- **Alternating voltage, alternating current**



Power supply 230 VAC

Power supply 115 VAC

Power supply 24 VDC
(galv. insulated)

Standard

True effective value RMS

Standard

True effective value RMS

Standard

True effective value RMS

PVE 4.004.1522B

PVE 4.104.1522B

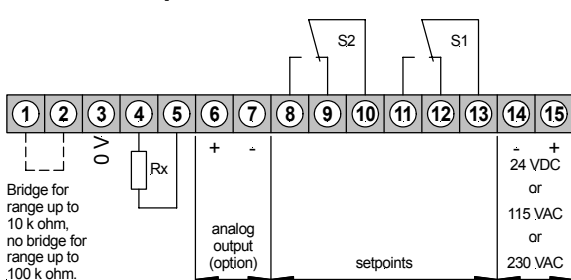
PVE 4.004.1422B

PVE 4.104.1422B

PVE 4.004.1722B

PVE 4.104.1722B

- **Resistance, potentiometer measurement**



Bridge for range up to 10 k ohm, no bridge for range up to 100 k ohm.

Power supply 230 VAC

Power supply 115 VAC

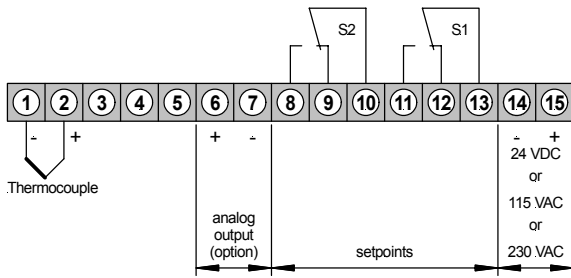
Power supply 24 VDC (galv. insulated)

PVE 4.006.1522B

PVE 4.006.1422B

PVE 4.006.1722B

• **Thermocouple L, J and K (S, B and N)**



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

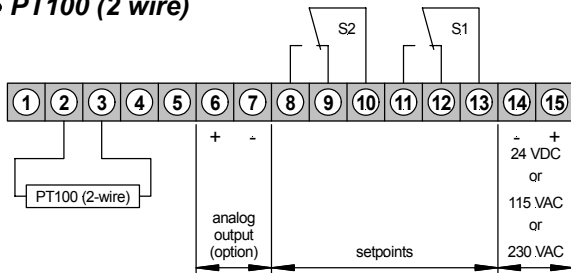
- Power supply 230 VAC **PTE 4.40x.1522B**
PTE 4.40y.1522B
- Power supply 115 VAC **PTE 4.40x.1422B**
PTE 4.40y.1422B
- Power supply 24 VDC **PTE 4.40x.1722B**
PTE 4.40y.1722B
(galv. insulated)

Version x

Version y

- | | | | | | |
|--------------------------|------------|---------|----------------------------|-----------|---------|
| Typ L (FeCuNi - DIN) | -100 up to | +900°C | Typ S (Pt10Rh-Pt - DIN) | 0 up to | +1170°C |
| Typ J (FeCuNi - amerik.) | -200 up to | +1200°C | Typ B (Pt30Rh-Pt6Rh - DIN) | 300 up to | +1790°C |
| Typ K (NiCrNi) | -250 up to | +1350°C | Typ N (NiCrSi-NiSi- DIN) | 0 up to | +1300°C |

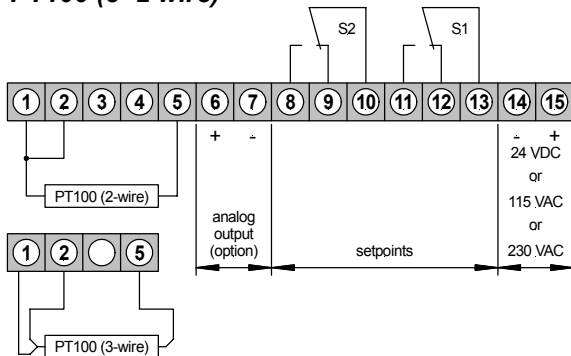
• **PT100 (2 wire)**



- 2 wire Power supply 230 VAC **PTE 4.206.1522B** (600,0°C)
- 2 wire Power supply 115 VAC **PTE 4.206.1422B** (600,0°C)
- 2 wire Power supply 24 VDC **PTE 4.206.1722B** (600,0°C)
(galv. insulated)

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

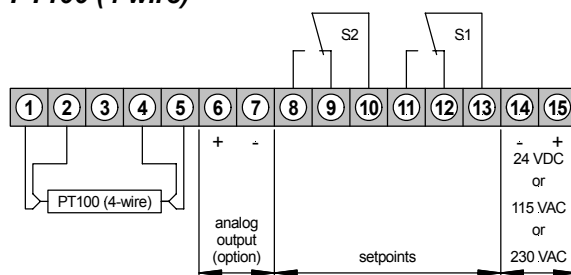
• **PT100 (3+2 wire)**



- 3+2 wire Power supply 230 VAC **PTE 4.306.1522B** (600,0°C)
- 3+2 wire Power supply 115 VAC **PTE 4.306.1422B** (600,0°C)
- 3+2 wire Power supply 24 VDC **PTE 4.306.1722B** (600,0°C)
(galv. insulated)

measuring range -200...850°C on request)

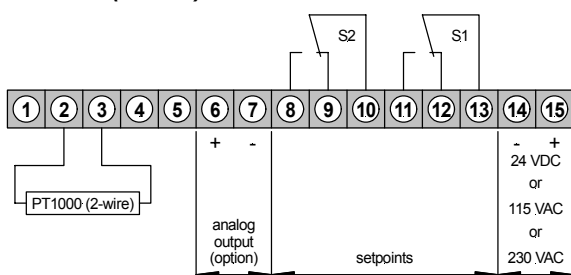
• **PT100 (4 wire)**



- 4 wire Power supply 230 VAC **PTE 4.106.1522B** (600,0°C)
- 4 wire Power supply 115 VAC **PTE 4.106.1422B** (600,0°C)
- 4 wire Power supply 24 VDC **PTE 4.106.1722B** (600,0°C)
(galv. insulated)

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

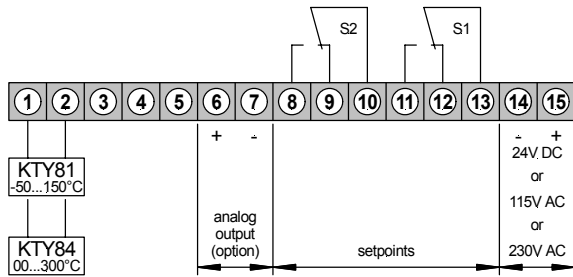
• **PT1000 (2 wire)**



- 2 wire Power supply 230 VAC **PTE 4.606.1522B** (600,0°C)
- 2 wire Power supply 115 VAC **PTE 4.606.1422B** (600,0°C)
- 2 wire Power supply 24 VDC **PTE 4.606.1722B** (600,0°C)
(galv. insulated)

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

• **KTY81**

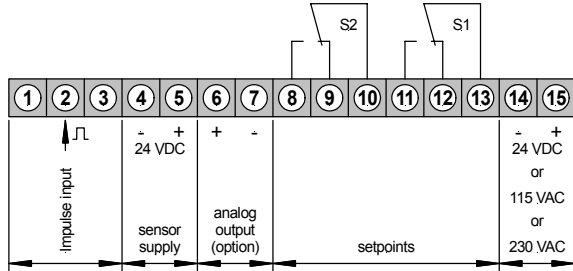


-50,0...+150,0°C Power supply 230 VAC
 -50,0...+150,0°C Power supply 115 VAC
 -50,0...+150,0°C Power supply 24 VDC (galv. insulated)
 0,0...+300,0°C Power supply 230 VAC
 0,0...+300,0°C Power supply 115 VAC
 0,0...+300,0°C Power supply 24 VDC (galv. insulated)

ORDER NUMBER OF TYPE (without options)

PTE 4.501.1522B
PTE 4.501.1422B
PTE 4.501.1722B
PTE 4.504.1522B
PTE 4.504.1422B
PTE 4.504.1722B

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

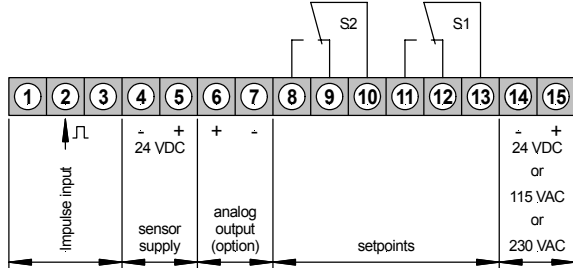


connection diagrams see page 9

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

PFE 4.307.1522B
PFE 4.307.1422B
PFE 4.307.1722B

• **Frequency metering 0.001 Hz – 9999 Hz**



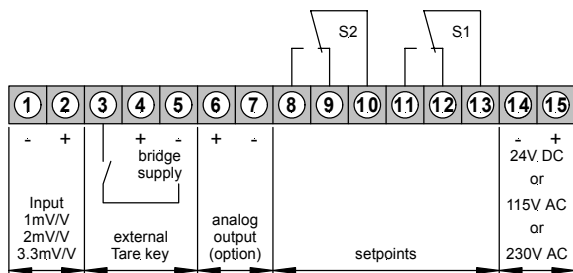
connection diagrams see page 9

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

PFL 4.307.1522B
PFL 4.307.1422B
PFL 4.307.1722B

• **Weighing technology**

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

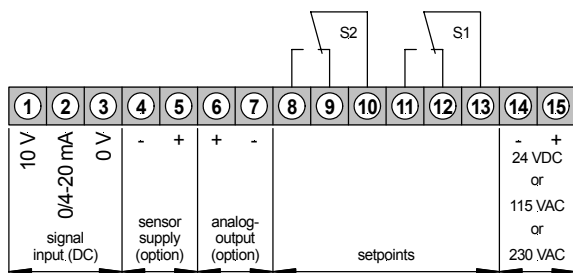


Power supply 230 VAC
 Power supply 115 VAC
 Power supply 24 VDC (galv. insulated)

ORDER NUMBER OF TYPE (without options)

PWE 4.20x.1592B
PWE 4.20x.1492B
PWE 4.20x.1792B

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

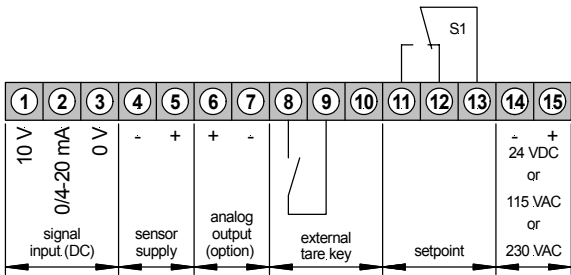


Power supply 230 VAC
 Power supply 115 VAC
 Power supply 24 VDC (galv. insulated)

PWE 4.001.1522B
PWE 4.001.1422B
PWE 4.001.1722B



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



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

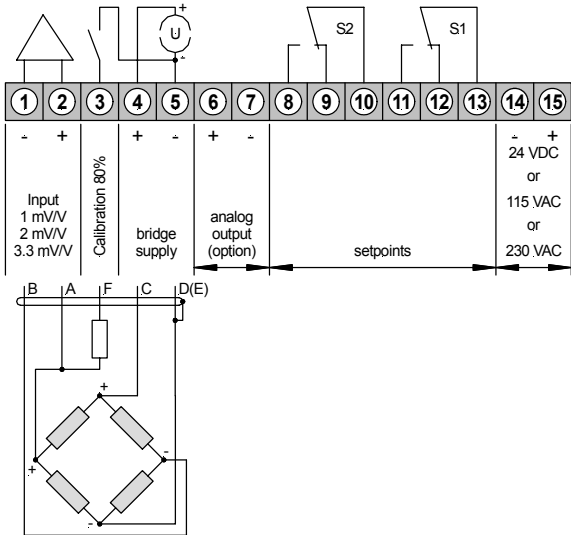
ORDER NUMBER OF TYPE (without options)

PWE 4.301.1521BT
PWE 4.301.1421BT
PWE 4.301.1721BT

• **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)

PME 4.20x.1592B
PME 4.20x.1492B
PME 4.20x.1792B

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						
LED green	x	x	x	x	x	x	
Protection IP 54 at the front	x	x	x	x	x	x	6,15
Protection IP 65 at the front	x	x	x	x	x	x	10,25
Plug in terminal	x	x	x	x		x	14,30
Sensor supply 24 VDC/50 mA (supply voltage 230/115 VAC)	x						24,55
Sensor supply 10 VDC/20 mA (supply voltage 230/115 VAC)	x						24,55
Sensor supply 24 VDC/50 mA (supply voltage 24 VDC galv. insulated)	x						35,80
Sensor supply 10 VDC/20 mA (supply voltage 24 VDC galv. insulated)	x						35,80
<i>The sensor supply is galv. insulated from the measuring input !</i>							
Analog output 0-10 VDC/12 Bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	61,35
Analog output 0-20 mA/load 500 Ω/12 Bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	76,70
Analog output 4-20 mA/load 500 Ω/12 Bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	76,70
Analog output 0-10 VDC/12 Bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	97,15
Analog output 0-20 mA/load 500 Ω/12 Bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	102,25
Analog output 4-20 mA/load 500 Ω/12 Bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	102,25
<i>The analog output is galv. insulated from the measuring input !</i>							
Measuring input 0-1 mA (S191)	x						15,35
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	
Base mounted housing with character height of 25 mm (Dimension 170 mm x 130 mm)	GADE53	x	x	x	x	x	271,00
Fastening set for base mounted housing GADE53 (1 angle, case throats, screws)	GH008-ZA01	x	x	x	x	x	63,90

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	PWE 4.20x... DMS amplifier	Additional price
	EUR						
LED green	x	x	x	x	x	x	
Protection IP 54	x	x		x	x		6,15
Protection IP65	x	x		x	x		10,25
Plug in terminal	x	x		x	x		14,30
Sensor supply 24 VDC/50 mA (supply voltage 230/115 VAC)				x			24,55
Sensor supply 10 VDC/20 mA (supply voltage 230/115 VAC)	x	x		x			24,55
Sensor supply 10 VDC/20 mA (supply voltage 230/115 VAC)	x	x			x		10,25
Sensor supply 24 VDC/50 mA (supply voltage 24 VDC galv. insulated)				x			35,80
Sensor supply 10 VDC/20 mA (supply voltage 24 VDC galv. insulated)	x	x		x			35,80
Sensor supply 10 VDC/20 mA (supply voltage 24 VDC galv. insulated)	x	x			x		10,25
<i>The sensor supply is galv. insulated from the measuring input !</i>							
Analog output 0-10 VDC/12 Bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	61,35
Analog output 0-20 mA/load 500 Ω/12 Bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	76,70
Analog output 4-20 mA/load 500 Ω/12 Bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	76,70
Analog output 0-10 VDC/12 Bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	97,15
Analog output 0-20 mA/load 500 Ω/12 Bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	102,25
Analog output 4-20 mA/load 500 Ω/12 Bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	102,25
<i>The analog output is galv. insulated from the measuring input !</i>							
TTL input	x	x					5,10
Other power supplies on demand	x	x	x	x	x	x	
Dimension strips selectable	x	x	x	x	x	x	
Base mounted housing with character height of 25 mm (Dimension 170 mm x 130 mm)	GADE53	x	x	x	x	x	271,00
Fastening set for base mounted housing GADE53 (1 angle, case throats, screws)	GH008-ZA01	x	x	x	x	x	63,90

Technical data

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

Dimension	Housing	B96 x H48 x T134 mm, including screw terminal (T=148 mm, including plug in terminal)
	Assembly cut out	92.0 ^{+0.8} x 45.0 ^{+0.6} mm
	Fastening	special quick plastic clamp proper to fix in wall thickness up to 50 mm
	Housing material	PC/ABS-blend, colour black, UL94V-0
	Protective system	at the front IP40 connection IP00
	Weight	nax. 0.45 kg
	Connection	at the rear side via terminals up to 2.5 mm ²
Input		
PVE4.001.... PWE4.001....	Direct voltage, current	Measuring range 0-10 V, 0-20 mA - 4-20 mA – all ranges selectable via connection terminal Input resistance Ri with 10 V = ~100 kΩ 20 mA = ~100 Ω
PVE4.002....	Direct voltage (Shunt)	Measuring range 0-60 mV, 150 mV, 300 mV, 1 V All ranges selectable via connection terminal
	Input resistance	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 20 V, 100 V, 400 V, 5 A – optional 1 A All ranges selectable via connection terminal
	Input resistance	Ri with 20 V = ~200 kΩ 1 A = ~276 mΩ 100 V = ~1 MΩ 5 A = ~56 mΩ 400 V = ~4 MΩ
PVE4.006....	Resistance	Measuring range ≤10 kΩ; ≤100 kΩ All ranges selectable via connection terminal
PTE4.x06.... PT100	Sensor	2-wire, 3-wire, 4-wire
	Measuring range	-99.9 up to + 6000°C
	Resolution	0.1°C
	Sensor current	approx. 1 mA
	Linearization	according to DIN IEC 751
PT1000	Sensor	2-wire
	Measuring range	-99.9 up to + 600.0°C
	Sensor current	approx. 0.1 mA
	Linearization	according to DIN IEC 751
PTE4.40x....	Thermocouple	L FeCuNi (DIN) -100 up to + 900°C J FeCuNi (americ.) -200 up to + 1200°C K NiCrNi -250 up to + 1350°C S Pt10Rh-Pt - DIN 0 up to +1170°C B Pt30Rh-Pt6Rh - DIN 300 up to +1790°C N NiCrSi-NiSi- DIN 0 up to +1300°C
PTE4.40y....	Thermoelement	
PTE4.501....	KTY81-1	2 wire (-50,0 up to +150,0°C)
PTE4.504	KTY84-1	2 wire (0,0 up to 300,0°C)
PFE4.307....	Frequency	Signal Impulse input, Namur, 3-wire Initiator Input resistance Ri with 10 V = ≥ 2 kΩ High/low level ⇒ 10 V / < 6 V Input frequency 1 Hz up to 500 kHz
PFL4.307....	Frequency	Signal Impulse input, Namur, 3-wire Initiator Input resistance Ri with 10 V = ≥ 2 kΩ High/low level ⇒ 10 V / < 6 V Input frequency 0.001 Hz up to 9999 Hz
PWE4.20x.... PME4.20x....	DMS rectifier	Sensor sensitivity 1 mV/V – 2 mV/V – 3 mV/V
Output		
<i>For all versions</i>	Relay outputs	230 VAC/5 A – 30 VDC/2 A Separation appropriate to DIN EN 50178/ Specification appropriate to DIN EN60255
	Analog output	0-10 VDC (12 Bit) 0-20 mA (12 Bit) load max. 500 Ω 4-20 mA (12 Bit) load max. 500 Ω The analog output is galv. insulated from the measuring input!

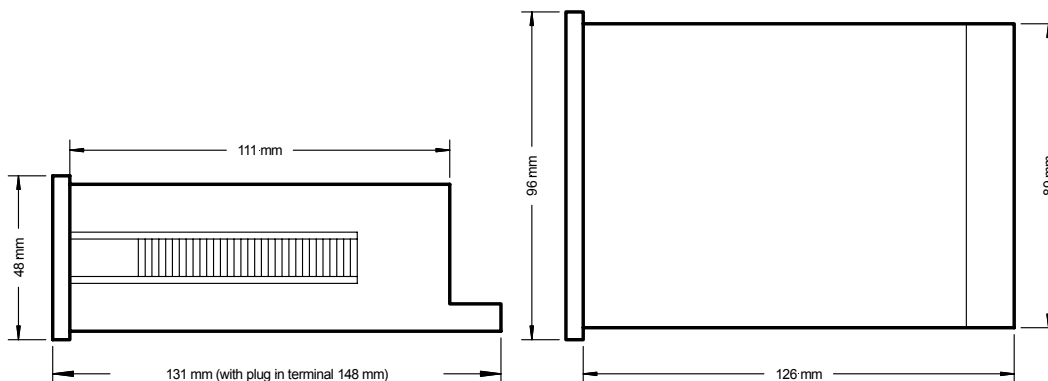
Technical data

Output	Sensor supply	(galv. 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.... PTE4.40y.... PTE4.501.... PTE4.504.... PFE4.307.... PFL4.307....		0.1°C 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	Voltage range: +/-0.5% of measuring value, +/-0.07% of final value, +/-1 digit 1 A range +/-0.5% of measuring value, +/-0.07% of final value, +/-1 digit 5 A range +/-1% of measuring value, +/-0.07% of final value, +/-1 digit
	<i>measuring principle(input)</i>	Via rectifier – (effective value with sine waveform only)
	Frequency range	Nominal precision 40 HZ up to 1000 Hz
PVE4.1x4....	Measuring fault	Voltage range: +/-0.5%, of measuring value +/-0.07%, of final value +/-1 digit, crestfactor 3 1 A range +/-0.5%, of measuring value +/-0.07%, of final value +/-1 digit, crestfactor 3 5 A range +/-1%, of measuring value +/-0.07%, of final value +/-1 digit, crestfactor 3
	<i>measuring principle(input)</i>	True effective value RMS
	Frequency range	Nominal precision 40 HZ up to 1000 Hz
PTE4.40x.... PTE4.40y....	Measuring fault	1°C, +/-1digit
	Measuring fault	Type S 2°C +/-1 digit Type B 300...800°C 25°C +/-3 digit 801...1790°C 3°C +/-2 digit Type N 6°C +/-1 digit
PTE4.x06.... PTE4.606....	Measuring fault	1°C, +/-1digit
	Measuring fault	$R_L \leq 10 \Omega = +/-2K$ $R_L > 10 \Omega \leq 20 \Omega = +/-3K$
PTE4.501.... PTE4.504.... PFE4.307.... PFL4.307....	Measuring fault	1°C, +/- 10 digit (-20....100°C)/<-20°C max. 6°C +/- 10 digit/>100°C max. 2°C +/-10 digit
	Measuring fault	+/-4°C, +/- 5 digit (0....200°C), +/-7°C, +/- 5 digit (>200°C)
	Measuring fault	+/-0.04% of the input frequency
	Measuring fault	+/-0.04% of the input frequency
PVE4.001.... PWE4.001.... PWE4.301.... PVE4.002.... PVE4.004.... PVE4.006.... PTE4.40x.... 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	230/115 VAC +/-10% (50-60 Hz), 24 VDC (+/-10%) galv. insulated
	Power consumption	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

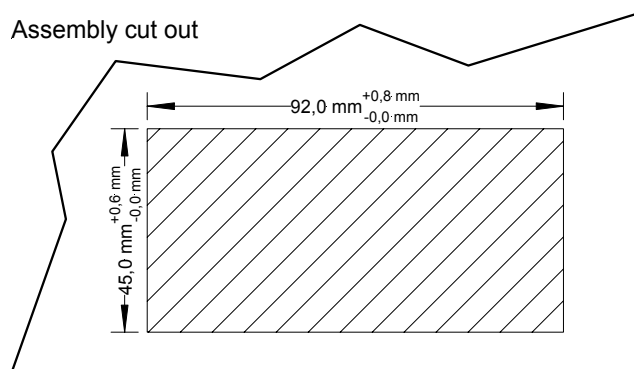
Technical data

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

Housing:



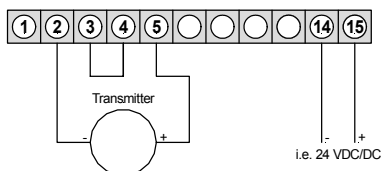
Assembly cut out



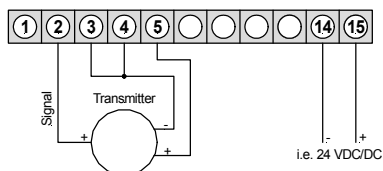
Connection diagrams

PVE instruments voltage resp. current input

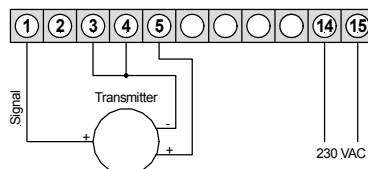
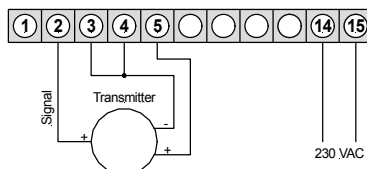
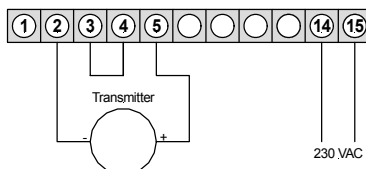
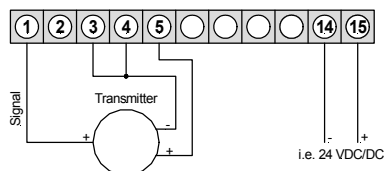
2-wire: 4-20 mA



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 resp. impulse input

