



Digital panelmeter with microprocessor based technology 4 digits

PVE4, PTE4, PFE4, PFL4, PWE4, PME4

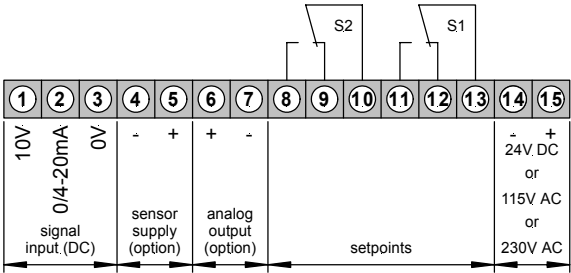
- galvanically insulated
- 2 free scalable setpoints/hysteresis
- optical setpoint indication
- analog output - galvanically insulated
- sensor supply galvanically insulated
- min/max memory

Digital panelmeter

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



• **Direct voltage, direct current**



Transmitter connections see last page

Power supply 230V AC

Power supply 115V AC

Power supply 24V DC (galv. insulated)

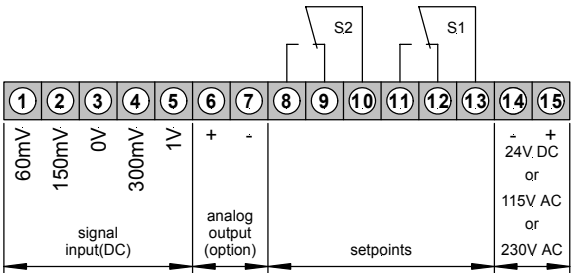
ORDER NUMBER OF TYPE
(without options)

PVE 4.001.1522B

PVE 4.001.1422B

PVE 4.001.1722B

• **Direct voltage (Shunt)**



Power supply 230V AC

Power supply 115V AC

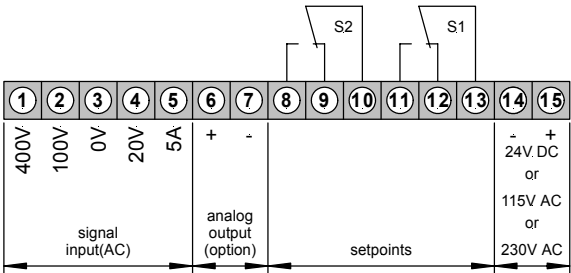
Power supply 24V DC (galv. insulated)

PVE 4.002.1522B

PVE 4.002.1422B

PVE 4.002.1722B

• **Alternating voltage, alternating current**



Power supply 230V AC

Power supply 115V AC

Power supply 24V DC
(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

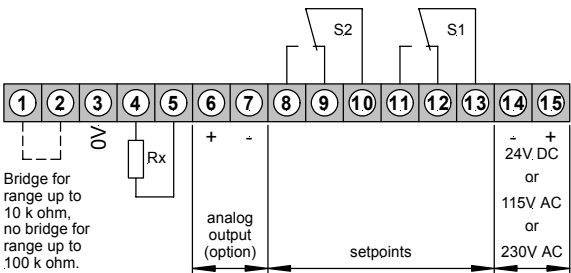
PVE 4.004.1422B

PVE 4.104.1422B

PVE 4.004.1722B

PVE 4.104.1722B

• **Resistance, potentiometer measurement**



Power supply 230V AC

Power supply 115V AC

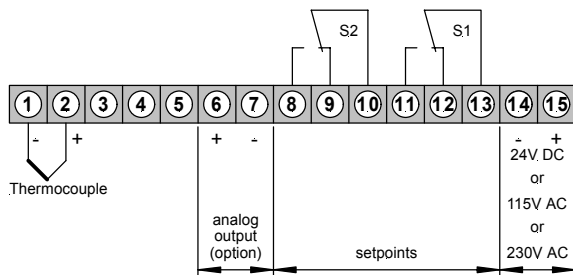
Power supply 24V DC (galv. insulated)

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 230V AC **PTE 4.40x.1522B**
PTE 4.40y.1522B
 Power supply 115V AC **PTE 4.40x.1422B**
PTE 4.40y.1422B
 Power supply 24V DC **PTE 4.40x.1722B**
 (galv. insulated) **PTE 4.40y.1722B**

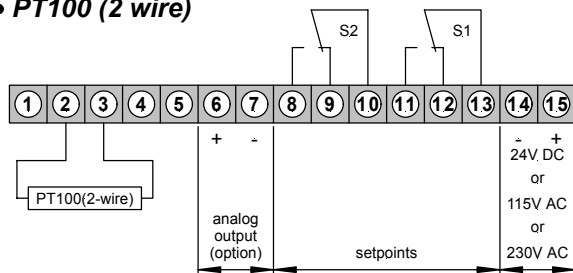
Version x

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

Version y

Typ **S** (Pt10Rh-Pt - DIN) 0 up to +1170°C
 Typ **B** (Pt30Rh-Pt6Rh - DIN) 300 up to +1790°C
 Typ **N** (NiCrSi-NiSi - DIN) 0 up to +1300°C

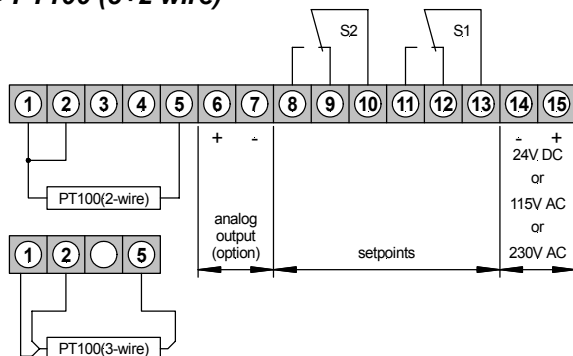
• **PT100 (2 wire)**



2 wire Power supply 230V AC **PTE 4.206.1522B** (600,0°C)
 2 wire Power supply 115V AC **PTE 4.206.1422B** (600,0°C)
 2 wire Power supply 24V DC **PTE 4.206.1722B** (600,0°C)
 (galv. insulated)

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

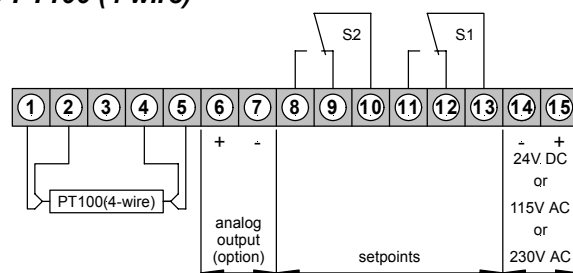
• **PT100 (3+2 wire)**



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

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

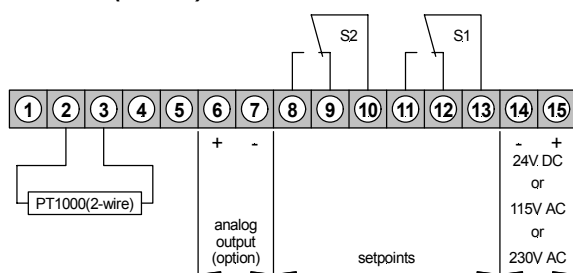
• **PT100 (4 wire)**



4 wire Power supply 230V AC **PTE 4.106.1522B** (600,0°C)
 4 wire Power supply 115V AC **PTE 4.106.1422B** (600,0°C)
 4 wire Power supply 24V DC **PTE 4.106.1722B** (600,0°C)
 (galv. insulated)

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

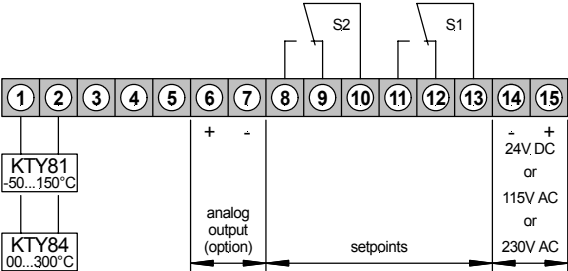
• **PT1000 (2 wire)**



2 wire Power supply 230V AC **PTE 4.606.1522B** (600,0°C)
 2 wire Power supply 115V AC **PTE 4.606.1422B** (600,0°C)
 2 wire Power supply 24V DC **PTE 4.606.1722B** (600,0°C)
 (galv. insulated)

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

• **KTY81**

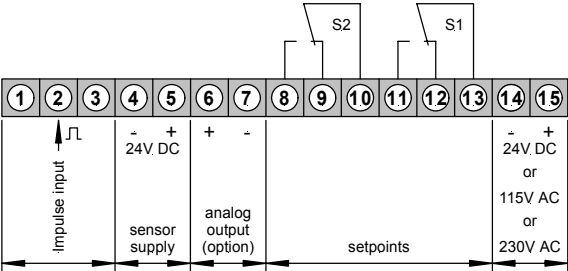


- 50...+150°C Power supply 230V AC
- 50...+150°C Power supply 115V AC
- 50...+150°C Power supply 24V DC (galv. insulated)
- 0...+300°C Power supply 230V AC
- 0...+300°C Power supply 115V AC
- 0...+300°C Power supply 24V DC (galv. insulated)

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 1Hz - 500KHz**

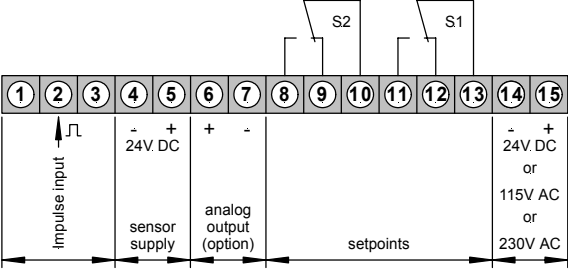


connection diagrams see last page

- Power supply 230V AC
- Power supply 115V AC
- Power supply 24V DC (galv. insulated)

- PFE 4.307.1522B**
- PFE 4.307.1422B**
- PFE 4.307.1722B**

• **Frequency metering 0,001Hz - 9999Hz**



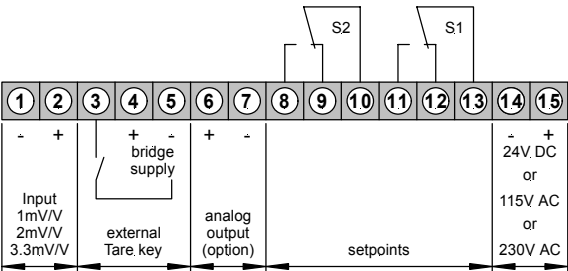
connection diagrams see last page

- Power supply 230V AC
- Power supply 115V AC
- Power supply 24V DC (galv. insulated)

- PFL 4.307.1522B**
- PFL 4.307.1422B**
- PFL 4.307.1722B**

• **Weighing technology**

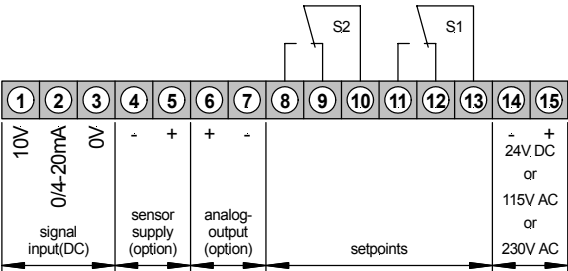
• **Amplifier with tare function (strain gauge)**



- Power supply 230V AC
- Power supply 115V AC
- Power supply 24V DC (galv. insulated)

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

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



- Power supply 230V AC
- Power supply 115V AC
- Power supply 24V DC (galv. insulated)

- PWE 4.001.1522B**
- PWE 4.001.1422B**
- PWE 4.001.1722B**

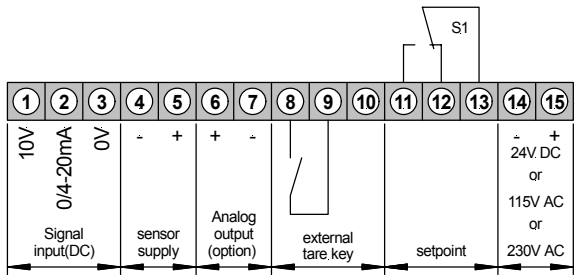


ORDER NUMBER OF TYPE
(without options)

- Power supply 230V AC
- Power supply 115V AC
- Power supply 24V DC (galv. insulated)

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

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



Power supply 230V AC
Power supply 115V AC
Power supply 24V DC
(galv. insulated)

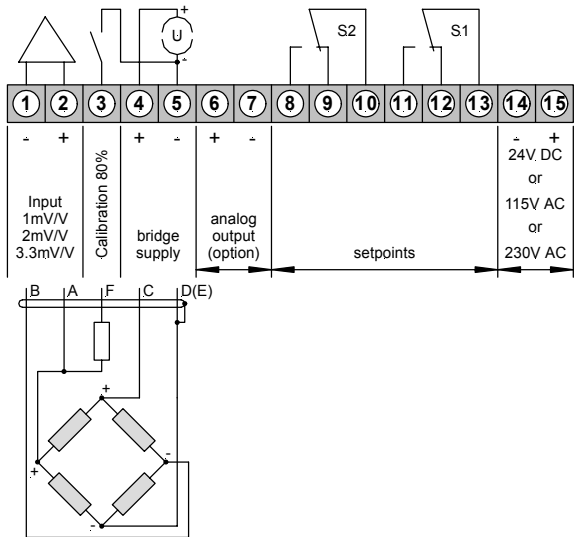
ORDER NUMBER OF TYPE
(without options)

PWE 4.301.1521BT
PWE 4.301.1421BT
PWE 4.301.1721BT

• **Pressure technology**



• *Amplifier with calibration (strain gauge)*



Power supply 230V AC
Power supply 115V AC
Power supply 24V DC
(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/Q, KTY81	
LED green	X	X	X	X	X	X	
Bicolour LED red/green – change of display colour is depending on setpoint S1 (S1-relay: energized → red, not energized → green)	X						
Protection IP 54 frontside	X	X	X	X	X	X	
Protection IP 65 frontside	X	X	X	X	X	X	
Plug in terminal	X	X	X	X		X	
Sensor supply 24VDC/50mA (supply voltage 230/115VAC)	X						
Sensor supply 10VDC/20mA (supply voltage 230/115VAC)	X						
Sensor supply 24VDC/50mA (supply voltage 24VDC galv. insulated)	X						
Sensor supply 10VDC/20mA (supply voltage 24VDC galv. insulated)	X						
<i>The sensor supply is galv. insulated from the measuring input !</i>							
Analog output 0-10VDC/12Bit (supply voltage 230/115VAC)	X	X	X	X	X	X	
Analog output 0-20mA/load 500Ω/12Bit (supply voltage 230/115VAC)	X	X	X	X	X	X	
Analog output 4-20mA/load 500Ω/12Bit (supply voltage 230/115VAC)	X	X	X	X	X	X	
Analog output 0-10VDC/12Bit (supply voltage 24VDC galv. insulated)	X	X	X	X	X	X	
Analog output 0-20mA/load 500Ω/12Bit (supply voltage 24VDC galv. insulated)	X	X	X	X	X	X	
Analog output 4-20mA/load 500Ω/12Bit (supply voltage 24VDC galv. insulated)	X	X	X	X	X	X	
<i>The analog output is galv. insulated from the measuring input !</i>							
Measuring input 0-1mA (S191)	X						
Measuring range 1A 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 high of 25mm (Dimension 170mm x 130mm) GADE53	X	X	X	X	X	X	
Fastening set for base mounted housing GADE53 (1 Angle, case throats, screws) GH008-ZA01	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	PWE 4.20x... DMS amplifier	
LED green	X	X	X	X	X	X	
Protection IP 54	X	X		X	X		
Protection IP65	X	X		X	X		
Plug in terminal with protection IP40	X	X		X	X		
Plug in terminal with protection IP54	X	X		X	X		
Plug in terminal with protection IP65	X	X	X	X	X	X	
Sensor supply 24VDC/50mA (supply voltage 230/115VAC)				X			
Sensor supply 10VDC/20mA (supply voltage 230/115VAC)	X	X		X			
Sensor supply 10VDC/20mA (supply voltage 230/115VAC)	X	X			X		
Sensor supply 24VDC/50mA (supply voltage 24VDC galv. insulated)				X			
Sensor supply 10VDC/20mA (supply voltage 24VDC galv. insulated)	X	X		X			
Sensor supply 10VDC/20mA (supply voltage 24VDC galv. insulated)	X	X			X		
<i>The sensor supply is galv. insulated from the measuring input !</i>							
Analog output 0-10VDC/12Bit (supply voltage 230/115VAC)	X	X	X	X	X	X	
Analog output 0-20mA/load 500Ω/12Bit (supply voltage 230/115VAC)	X	X	X	X	X	X	
Analog output 4-20mA/load 500Ω/12Bit (supply voltage 230/115VAC)	X	X	X	X	X	X	
Analog output 0-10VDC/12Bit (supply voltage 24VDC galv. insulated)	X	X	X	X	X	X	
Analog output 0-20mA/load 500Ω/12Bit (supply voltage 24VDC galv. insulated)	X	X	X	X	X	X	
Analog output 4-20mA/load 500Ω/12Bit (supply voltage 24VDC galv. insulated)	X	X	X	X	X	X	
<i>The analog output is galv. insulated from the measuring input !</i>							
TTL input	X	X					
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 high of 25mm (Dimension 170mm x 130mm) GADE53	X	X	X	X	X	X	
Fastening set for base mounted housing GADE53 (1 Angle, case throats, screws) GH008-ZA01	X	X	X	X	X	X	

Technical data

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

Dimension	Housing Assembly cut out Fastening Housing material Protective system Weight Connection	B96 x H48 x T134 including screw terminal (T=148 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 50mm PC/ABS-Blend, colour black, UL94V-0 At the front IP40 Connection IP00 Max. 0,45kg At the rear side via terminals up to 2,5mm ²
Input		
PVE4.001.... PWE4.001....		
Direct voltage, current	Measuring range Input resistance	0-10V, 0-20mA - 4-20mA – all ranges selectable via connection terminal Ri with 10V = ~100kΩ 20mA = ~100Ω
PVE4.002.... Direct voltage (Shunt)	Measuring range Input resistance	0-60mV, 150mV, 300mV, 1V All ranges selectable via connection terminal Ri with 60mV = ~15kΩ 300mV = ~75kΩ 150mV = ~39kΩ 1V = ~220kΩ
PVE4.004.... Alternating voltage, alternating current	Measuring range Input resistance	20V, 100V, 400V, 5A - optional 1A All ranges selectable via connection terminal Ri with 20V = ~200kΩ 1A = ~276mΩ 100V = ~1MΩ 5A = ~56mΩ 400V = ~4MΩ
PVE4.006.... Resistance	Measuring range	≤10kΩ; ≤100kΩ 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 + 600,0°C 0,1°C Approx. 1mA According to DIN IEC 751
PT1000	Sensor Measuring range Sensor current Linearization	2-wire -99,9 up to + 600,0°C Appr. 0,1mA According to DIN IEC 751
PTE4.40x.... Thermocouple	<u>L</u> FeCuNi (DIN) <u>J</u> FeCuNi (americ.) <u>K</u> NiCrNi <u>S</u> Pt10Rh-Pt - DIN	-100 up to + 900°C -200 up to + 1200°C -250 up to + 1350°C 0 up to +1170°C
PTE4.40y.... Thermoelement	<u>B</u> Pt30Rh-Pt6Rh - DIN <u>N</u> NiCrSi-NiSi- DIN	300 up to +1790°C 0 up to +1300°C
PTE4.501.... PTE4.504	KTY81-1 KTY84-1	2 wire (-50 up to +150°C) 2 wire (0 up to 300°C)
PFE4.307.... Frequency	Signal Input resistance Input frequency	Impulse input, Namur, 3-wire Initiator Ri with 10V = ≥ 2kΩ High/low level ⇒10V/<6V 1Hz up to 500kHz
PFL4.307.... Frequency	Signal Input resistance Input frequency	Impulse input, Namur, 3-wire Initiator Ri with 10V = ≥ 2kΩ High/low level ⇒10V/<6V 0,001Hz up to 9999Hz
PWE4.20x.... PME4.20x.... DMS rectifier	Sensor sensitivity	1mV/V - 2mV/V - 3mV/V
Output		
For all versions	Relay outputs	230VAC/5A - 30VDC/2A Separation appropriate to DIN EN 50178/ Specification appropriate to DIN EN60255
	Analog output	0-10VDC (12Bit) 0-20mA (12Bit) load max. 500Ω 4-20mA (12Bit) load max. 500Ω The analog output is galv. insulated from the measuring input !

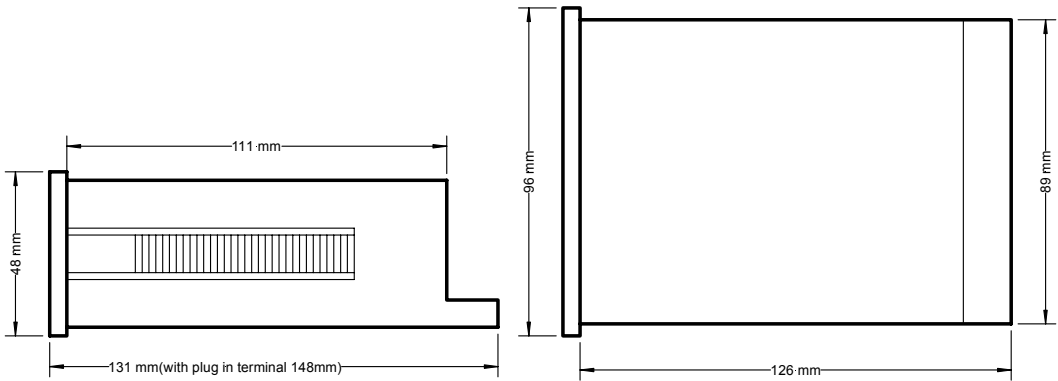
Technical data

Output	Sensor supply	(galv. insulated from the measuring input)
PVE4.001.... PWE4.001.... PWE4.301.... PFE4.307.... PFL4.307....		24VDC/50mA - 10VDC/20mA (other sensor supplies/performances on demand)
PWE4.20x.... PME4.20x....	Bridge supply	10VDC/50mA 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 1A range +/-0,5% of measuring value, +/-0,07% of final value, +/-1 digit 5A 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 40HZ up to 1000Hz
PVE4.1x4....		Voltage range: +/-0,5%, of measuring value +/-0,07%, of final value +/-1 digit, crestfactor 3 1A range +/-0,5%, of measuring value +/-0,07%, of final value +/-1 digit, crestfactor 3 5A 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 40HZ up to 1000Hz
PTE4.40x.... PTE4.40y....	Measuring fault	1°C, +/-1digit
	Measuring fault	Typ S 2°C +/-1 digit Typ B 300...800°C 25°C +/-3 digit 801...1790°C 3°C +/-2 digit Typ N 6°C +/-1 digit
PTE4.x06.... PTE4.606....	Measuring fault	1°C, +/-1digit
	Measuring fault	$R_L \leq 10\Omega = \pm 2K$ $R_L > 10\Omega \leq 20\Omega = \pm 3K$
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	~ 100ppm/K ~ 100ppm/K ~ 100ppm/K ~ 150ppm/K ~ 200ppm/K (I) / ~ 100ppm/K (U) ~ 100ppm/K ~ 100ppm/K ~ 100ppm/K ~ 100ppm/K ~ 100ppm/K ~ 100ppm/K ~ 40ppm/K ~ 40ppm/K ~ 100ppm/K ~ 100ppm/K
Power unit	Supply voltage	230/115VAC +/-10% (50-60Hz), 24VDC (+/-10%) galv. insulated
	Power consumption	Max. 5VA
Indication	Display	LED with 7 segments, 14mm high, red (optionally green) 4 digit = indication 9999
PTE4.x06....	Dimension	Konfigurable 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

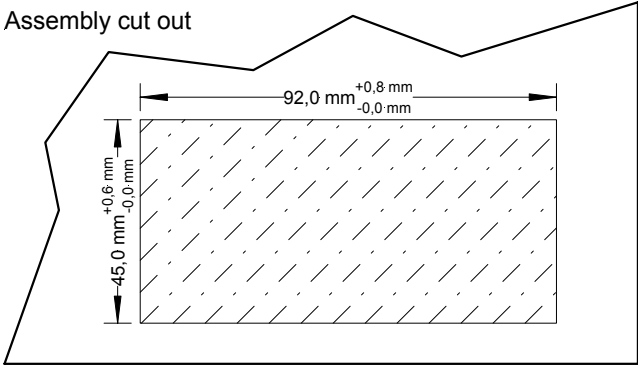
Technical data

For all versions	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:



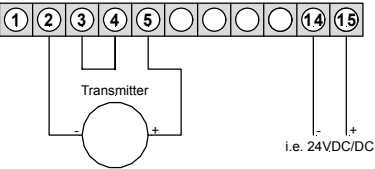
Assembly cut out



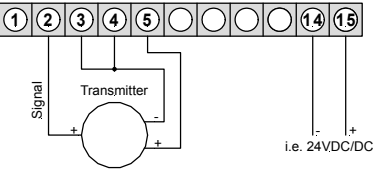
Connection diagrams

PVE instruments voltage resp. current input

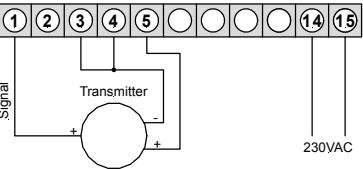
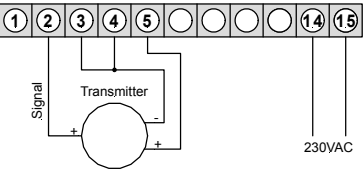
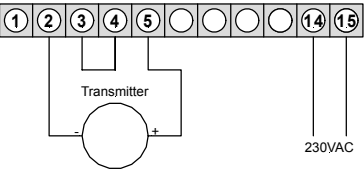
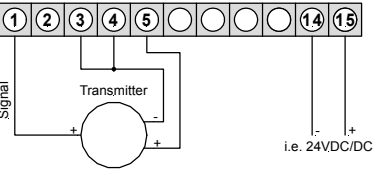
2-wire: 4-20mA



3-wire: 0-20mA

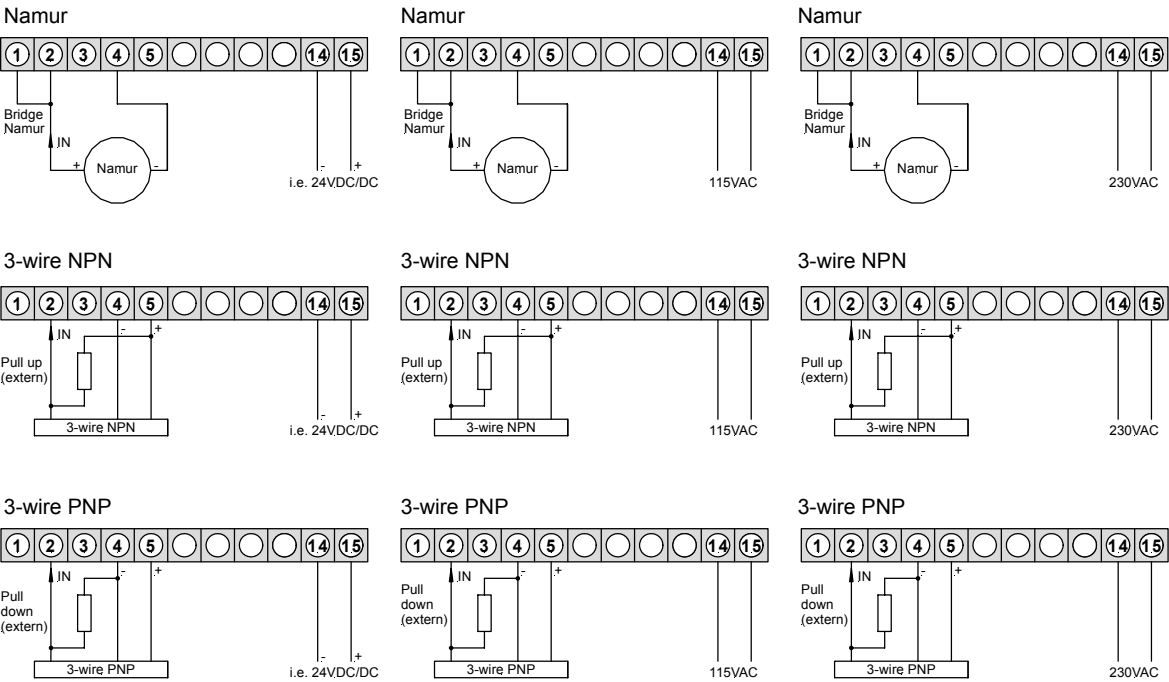


3-wire: 0-10V/0-5V
0-1V/1-6V



Connection diagrams

PFE and PFL instruments with frequency resp. impulse input



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

Digital panelmeter 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 Temperature metering Weighing applications Strain gauge Frequency	Setpoints (standard) 2 2 relay outputs
Frequency range Standard index Frequency (0,001Hz – 9999Hz)	Mechanical options 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
Number of digits 4 digits 5 digits	Power supply 4 115VAC 5 230VAC 7 24VDC(galv. insulated)
Sensor supply No sensor supply 10VDC/20mA 24VDC/50mA	Size of housing 1 96x48
Temperature device PT100-2 wire PT100-3 wire PT100-4 wire PT1000-2 wire Thermocouple KTY	Measuring input 1 Direct voltage, direct current 2 Direct voltage, shunt measuring 4 Alternating voltage, current 6 Resistance 7 Frequency 6 Range PT100 (600,0°C) – PTE device 1 KTY81-1xx (PTE device) –50 to 150°C 4 KTY84-1xx (PTE device) 0 to 300°C Thermocouple (PTE device) x Type L,J,K y Type S,B,N Weighing application (Type PWE) x 1mV/V – 2mV/V – 3.3mV/V Strain gauge (Type PME) x 1mV/V – 2mV/V – 3.3mV/V
Wechselspannung, strom Standard True effective RMS	
Outputs No output 0-10V 0-20mA 4-20mA	