Digital panel meter with microprocessor based technology 4-digit (5-digit on demand)

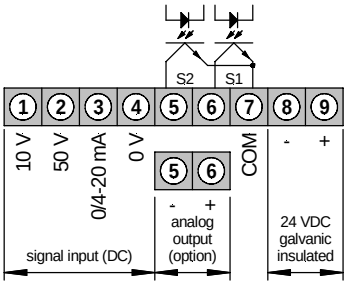
PVE4, PTE4, PFE4, PFL4

- galvanic insulated
- 2 scalable setpoints / hysteresis
- analogue output
- min/max memory

Digital panel meter

- Direct voltage
- Shunt
- Potentiometer
- Thermocouple
- Direct current
- Resistance
- PT100/PT1000
- Frequency

• *Direct voltage, direct current*

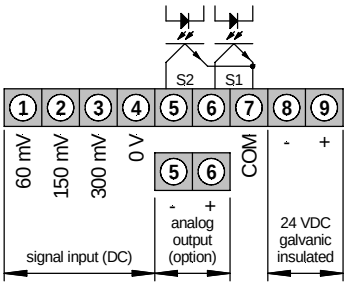


Transmitter connection see page 16

Power supply 24 VDC
galvanic insulated

ORDER NUMBER OF TYPE (without options) **PVE 4.001.7782B** **EUR 211,70**

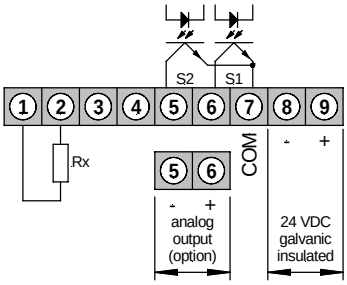
• *Direct voltage (Shunt)*



Power supply 24 VDC
galvanic insulated

PVE 4.002.7782B **223,50**

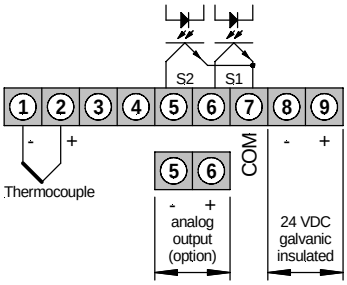
• *Resistance, potentiometer*



Power supply 24 VDC
galvanic insulated

Measuring range	≤10KΩ	**PVE 4.506.7782B**	**229,30**
Measuring range	≤100KΩ	**PVE 4.606.7782B**	**229,30**
Measuring range	≤1MΩ	**PVE 4.706.7782B**	**229,30**

• *Thermocouple L, J or K*



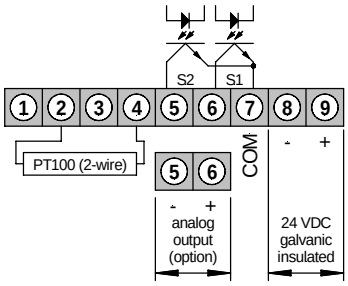
Power supply 24 VDC
galvanic insulated

PTE 4.40x.7782B **229,30**

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

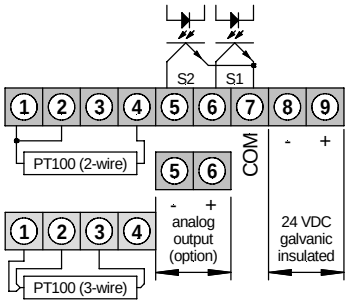
- ***PT100 (2-wire)***



		ORDER NUMBER OF TYPE (without option)	EUR
2 wire	Power supply 24 VDC galvanic insulated	**PTE 4.206.7782B** (600.0°C)	**223,50**

Measuring range –200...850°C on request

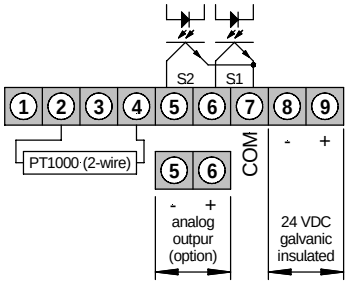
- ***PT100 (3+2-wire)***



3+2 wire	Power supply 24 VDC galvanic insulated	**PTE 4.306.7782B** (600.0°C)	**247,00**

Measuring range –200...850°C on request

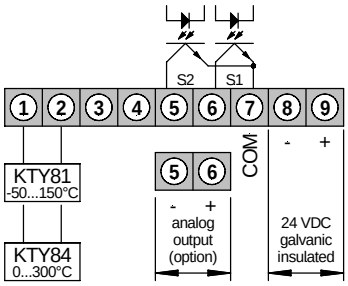
- ***PT1000 (2-wire)***



2 wire	Power supply 24 VDC galvanic insulated	**PTE 4.606.7782B** (600.0°C)	**223,50**

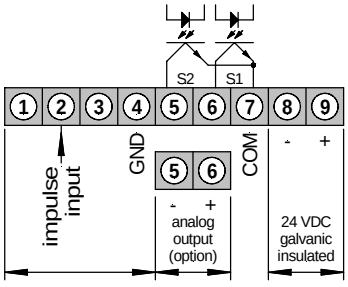
Measuring range –200...850°C on request

- ***KTY81***



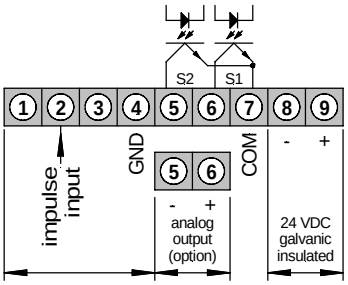
-50.0...+150.0°C	Power supply 24 VDC galvanic insulated	**PTE 4.501.7782B**	**223,50**
0.0...+300.0°C	Power supply 24 VDC galvanic insulated	**PTE 4.504.7782B**	**223,50**

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



	Power supply 24 VDC galvanic insulated	**PFE 4.007.7782B**	**194,10**

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



Power supply 24 VDC galvanic insulated **PFL 4.007.7782B** **211,70**

OPTIONS PVE, PTE, PFE,PFL	PVE 4.001.... Direct current	PVE 4.002.... Shunt	PVE4.006.... Resistance	PTE 4.40x.... Thermocouple	PTE 4.x06../4.50x...	PFE, PFL 4.007....	Additional price EUR
Green LED	x	x	x	x	x	x	
Foil keyboard with protection IP54 (plug-in terminal)	x	x	x	x	x	x	7,10
Foil keyboard with protection IP65 (plug-in terminal)	x	x	x	x	x	x	11,80
With analog output setpoints S1 and S2 are not available!							
Analog output 0-10 VDC/12 bit	x	x	x	x	x	x	105,90
Analog output 0-20 mA/load 500 Ω/12 bit	x	x	x	x	x	x	105,90
Analog output 4-20 mA/load 500 Ω/12 bit	x	x	x	x	x	x	105,90
Setpoints as open emitter	x	x	x	x	x	x	5,90

Technical data

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

Dimension	Housing	W 48 x H 24 x D 91 mm (D = 101 mm, including plug-in terminal)
	Assembly cut out	$45.0^{+0.6}$ x $22.2^{+0.3}$ mm
	Fastening	special quick plastic clamp proper to fix in wall thickness up to 50 mm
	Housing material	PC/ABS-plastic blend, colour black, UL94V-0
	Protective system	at the front IP40 connection IP00
	Weight	approx. 75 g
	Connection	at the rear via terminals up to 1.5 mm^2
Input		
PVE4.001.... Direct voltage, Direct current	Measuring range	0-10 V, 0-50 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 50 V = ~500 kΩ
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
PVE4.006.... Resistance	Measuring range	≤10 kΩ; ≤100 kΩ; ≤1 MΩ;
PTE4.x06.... PT100	Sensor	2-wire, 3-wire
	Measuring range	-99.9 up to +600.0°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

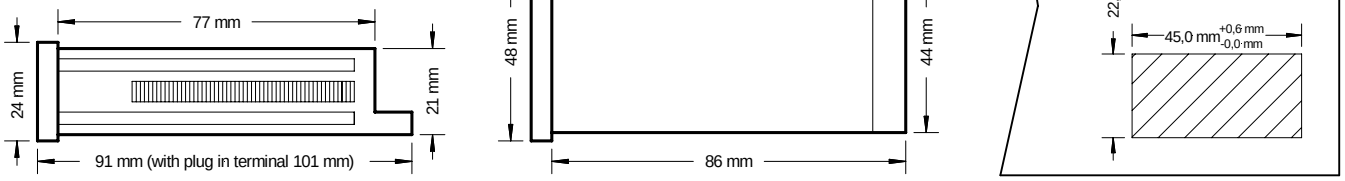
Technical data

Input		
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
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)
PFE4.007....		
Frequency	Signal	Impulse input, Namur, 3-wire pick up
	Input resistance	Ri with: 10 V = ≥ 2 kΩ
		High/low level ⇒10 V / < 6 V
	Input frequency	1 Hz up to 500k Hz
PFL4.007....		
Frequency	Signal	Impulse input, Namur, 3-wire pick up
	Input resistance	Ri with: 10 V = ≥ 2 kΩ
		High/low level ⇒10 V / < 6 V
	Input frequency	0.01 Hz up to 9999 Hz
Output		
For all versions	Open collector (2 outputs) Open emitter (option)	Supply by customers (U_B = 5-35 V / I_{max} = 100 mA with $U_{CE\ sat}$)
	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
Accuracy		
For all versions	Resolution	-999 up to 9999 digit
PTE4.x06....		0.1°C
PTE4.40x....		1°C
PTE4.501....		0.1°C
PTE4.504....		0.1°C
PFE4.007....		0 up to 9999 digit
PFL4.007....		
For all versions	Measuring fault	+/-0.2% of measuring range, +/-1digit
PTE4.40x....	Measuring fault	1°C, +/-1 digit
PTE4.x06....	Measuring fault	1°C, +/-1 digit
PTE4.606....	Measuring fault	$R_L \leq 10\ \Omega$ = +/-2K
		$R_L > 10\ \Omega \leq 20\ \Omega$ = +/-3K
PTE4.501....	Measuring fault	1°C, +/-8 digit (-10....140°C)/<-10°C max. 5°C +/-8 digit/>140°C max 5°C +/-8 digit
PTE4.504....	Measuring fault	+/-4°C, +/- 5 digit (0....200°C), +/-7°C, +/- 5 digit (>200°C)
PFE4.007....	Measuring fault	+/-0.04% of the input frequency
PFL4.007....		
Accuracy		
PVE4.001....	Temp. drift	~ 100 ppm/K
PVE4.002....		~ 150 ppm/K
PVE4.006....		~ 100 ppm/K
PTE4.40x....		~ 100 ppm/K
PTE4.x06....		~ 100 ppm/K
PTE4.501....		~ 100 ppm/K
PTE4.504....		~ 100 ppm/K
PFE4.007....		~ 40 ppm/K
PFL4.007....		~ 40 ppm/K
For all versions	Measuring principle	Voltage/frequency converter
PFE4.007....	Measuring principle	Frequency/pulse width measuring
PFL4.007....		
Power unit	Supply voltage	24 VDC (+/-10%) galvanic insulated
	Power consumption	max. 2 VA

Technical data

Indication	Display	LED with 7 segments, 10 mm high, red 4-digit = Indication 9999
PTE4.x06....	Dimension	configurable for °C and °F
For all versions	Overflow	indication of 4 transversal bars
	Time of indication	adjustable from 0.1 up to 10 seconds
PTE4.x06....	Time of indication	adjustable from 0.2 up to 10 seconds
PTE4.40x....	Time of indication	adjustable from 0.2 up to 10 seconds
PTE4.40y....	Time of indication	adjustable from 0.2 up to 10 seconds
PTE4.50x....	Time of indication	adjustable from 0.2 up to 10 seconds
Ambient conditions	Working temperature	0 up to +60°C
	Storing temperature	-20 up to +80°C

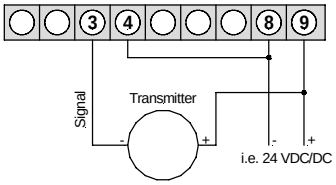
Housing:



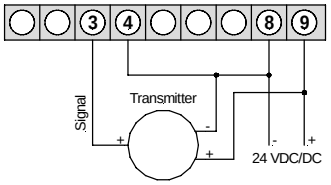
Connection diagrams

PVE instruments with voltage and current input

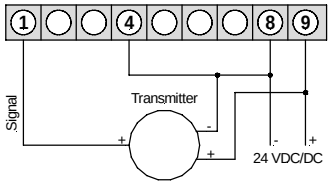
2-wire: 4-20 mA



3-wire: 0-20 mA

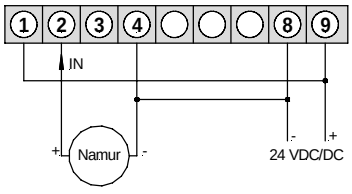


3-wire: 0-10 V/ 0-5 V
0-1 V/ 1-6 V

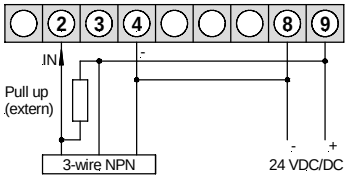


PFE, PFL.... instruments with frequency resp. impulse input

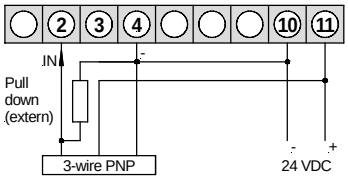
Namur



3-wire NPN



3-wire PNP



Ordering code PVE, PTE, PFE, PFL

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

P	V	E	4	0	0	1	7	7	8	2	B

Basic model

Voltage metering V
Temperature metering T
Frequency metering F

Frequency range
Standard index E
Frequency (0.01 Hz – 9999 Hz) L

Number of digits
4 digits 4

Sensor supply
no sensor supply 0

Temperature device
PT100 2-wire 2
PT100 3-wire 3
PT1000 2-wire 6
Thermocouple 4
KTY 5

Resistance
Measuring range up to 10 kΩ 5
Measuring range up to 100 kΩ 6
Measuring range up to 1 MΩ 7

Outputs
no output 0
0-10 V 1
0-20 mA 2
4-20 mA 3

Internal index

Setpoints (standard)
2 2 open collector outputs
9 2 open emitter outputs

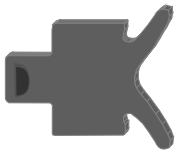
Mechanical options
7 Plug-in terminal, foil keyboard, IP65
8 Plug-in terminal, foil keyboard, IP40
9 Plug-in terminal, foil keyboard, IP54

Power supply
7 24 VDC (galvanic insulated)

Size of housing
7 48x24

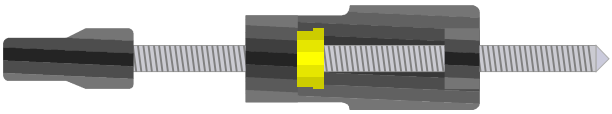
Measuring input
1 Direct voltage, direct current
2 Direct voltage, shunt measuring
6 Resistance
7 Frequency
6 Range PT100 (600.0°C) – PTE device
Thermocouple (PTE device)
x Type L, J, K
1 KTY81-1xx (PTE device) –50 to +150°C
4 KTY84-1xx (PTE device) 0 to 300°C

Fastening clips



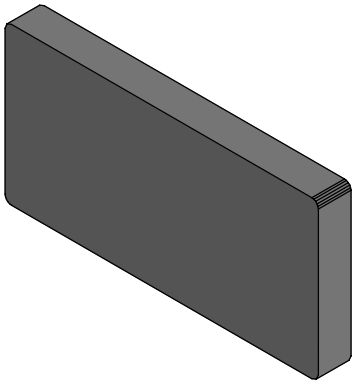
ORDER NUMBER OF TYPE	EUR
ZU-KK2	0,50

Fixing screws



ZU-KS2	2,00

Blind covers with fastening clamps



GH020-08	4,90

Dimension strips

MONTWILL digital panel meter are equipped with an insertable dimension strip. The table below shows the available dimension strips which are attached to every panel meter. (free of charge)

% rH	01	U/min	07	kV	13	mg/l	19	min^{-1}	25
l/min	02	mA	08	l	14	kg	20	1/min	26
l/s	03	A	09	uS/cm	15	°C	21	t	27
bar	04	kW	10	m	16	pH	22		
mbar	05	mV	11	%	17	m^3/h	23		
m/min	06	V	12	% rel F	18	m^3	24		

(For substitute deliveries)

GH020-48-xx	0,75