



Digital panel meter with microprocessor based technology 4-digit

PVE4, PTE4, PFE4, PFL4

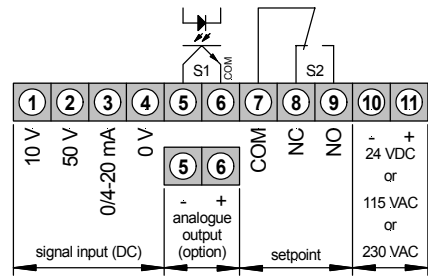
- Galvanically insulated
- 2 free scalable setpoints/hysteresis
- Analogue output galvanically insulated
- Min/max memory

Digital panel meter

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



• Direct voltage, direct current



Power supply 230 VAC

ORDER NUMBER OF TYPE
(without options)

PVE 4.001.6522B

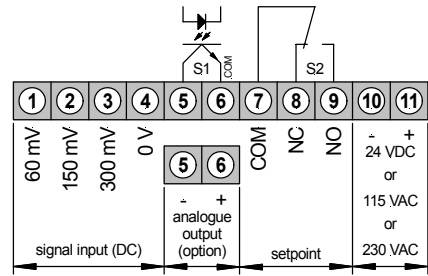
Power supply 115 VAC

PVE 4.001.6422B

Power supply 24 VDC (galv. insulated)

PVE 4.001.6722B

• Direct voltage (Shunt)



Power supply 230 VAC

PVE 4.002.6522B

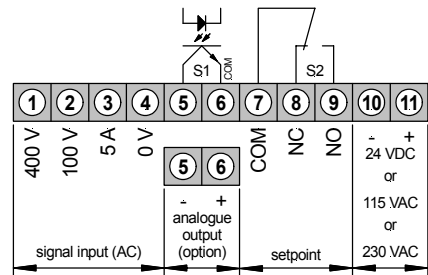
Power supply 115 VAC

PVE 4.002.6422B

Power supply 24 VDC (galv. insulated)

PVE 4.002.6722B

• Alternating voltage, alternating current



Power supply 230 VAC

Standard

PVE 4.004.6522B

True effective value RMS

PVE 4.104.6522B

Power supply 115 VAC

Standard

PVE 4.004.6422B

True effective value RMS

PVE 4.104.6422B

Power supply 24 VDC
(galv. insulated)

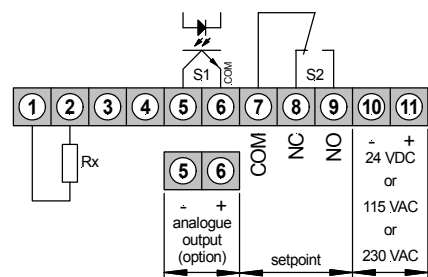
Standard

PVE 4.004.6722B

True effective value RMS

PVE 4.104.6722B

• Resistance, potentiometer



Power supply 230 VAC

Measuring range $\leq 10k\Omega$

PVE 4.506.6522B

Measuring range $\leq 100k\Omega$

PVE 4.606.6522B

Measuring range $\leq 1M\Omega$

PVE 4.706.6522B

Power supply 115 VAC

Measuring range $\leq 10k\Omega$

PVE 4.506.6422B

Measuring range $\leq 100k\Omega$

PVE 4.606.6422B

Measuring range $\leq 1M\Omega$

PVE 4.706.6422B

Power supply 24 VDC
(galv. insulated)

Measuring range $\leq 10k\Omega$

PVE 4.506.6722B

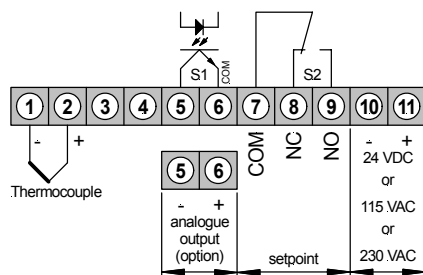
Measuring range $\leq 100k\Omega$

PVE 4.606.6722B

Measuring range $\leq 1M\Omega$

PVE 4.706.6722B

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



ORDER NUMBER OF TYPE
(without options)

Power supply 230 VAC **PTE 4.40x.6522B**
PTE 4.40y.6522B 217,30
 Power supply 115 VAC **PTE 4.40x.6422B**
PTE 4.40y.6422B 227,50
 Power supply 24 VDC **PTE 4.40x.6722B**
 (galv. insulated) **PTE 4.40y.6722B**

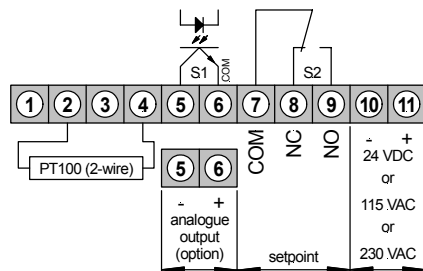
Version x

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)



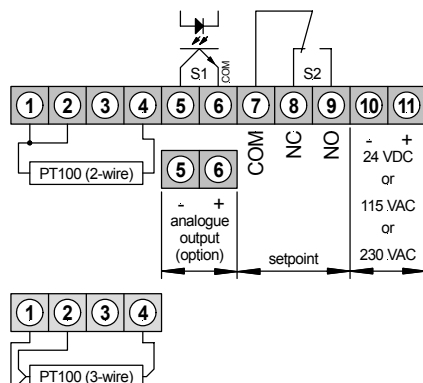
2 wire
 2 wire
 2 wire

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

PTE 4.206.6522B (600,0°C)
PTE 4.206.6422B (600,0°C)
PTE 4.206.6722B (600,0°C)

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

• PT100 (3+2 wire)



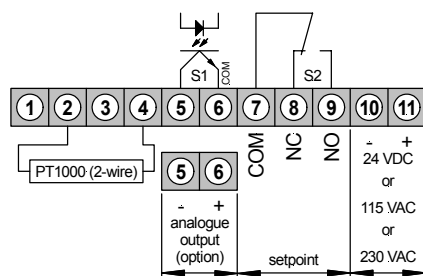
3+2 wire
 3+2 wire
 3+2 wire

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

PTE 4.306.6522B (600,0°C)
PTE 4.306.6422B (600,0°C)
PTE 4.306.6722B (600,0°C)

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

• PT1000 (2 wire)



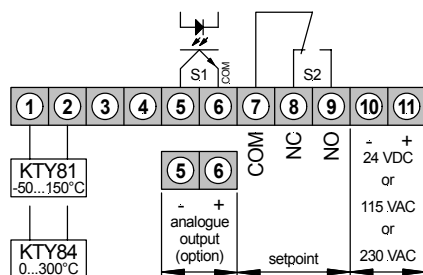
2 wire
 2 wire
 2 wire

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

PTE 4.606.6522B (600,0°C)
PTE 4.606.6422B (600,0°C)
PTE 4.606.6722B (600,0°C)

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

• KTY81

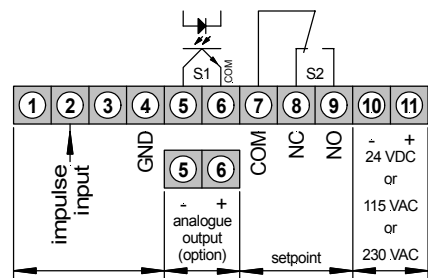


(-50,0...+150,0°C)
 (-50,0...+150,0°C)
 (-50,0...+150,0°C)
 (0,0...+300,0°C)
 (0,0...+300,0°C)
 (0,0...+300,0°C)

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

PTE 4.501.6522B
PTE 4.501.6422B
PTE 4.501.6722B
PTE 4.504.6522B
PTE 4.504.6422B
PTE 4.504.6722B

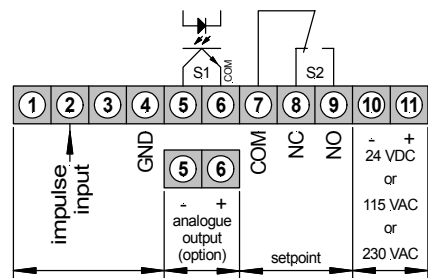
• Frequency measuring 1 Hz – 500 KHz



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

PFE 4.007.6522B
PFE 4.007.6422B
PFE 4.007.6722B

• Frequency measuring 0.001 Hz – 9.999 Hz



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

PFL 4.007.6522B
PFL 4.007.6422B
PFL 4.007.6722B

OPTIONS PVE, PTE, PFE, PFL	PVE 4.001.... Direct voltage	PVE 4.002.... Shunt	PVE 4.004.... Alternating voltage	PVE 4.006.... Resistance	PTE 4.40x.... Thermocouple	PTE 4.x0x../4 50x... PT100/0, KTY81	PFE, PFL 4.307.... Frequency	Additional price
	EUR							
LED green	x	x	x	x	x	x	x	
Protection IP54 at the front	x	x	x	x	x	x	x	6,15
Protection IP65 at the front	x	x	x	x	x	x	x	10,25
Plug in terminal	x	x	x	x		x	x	9,20
With analog output there is no setpoint S1!								
Analogue output 0-10 VDC/12 bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	x	61,35
Analogue output 0-20 mA/load 500 Ω/12bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	x	66,45
Analogue output 4-20 mA/load 500 Ω/12bit (supply voltage 230/115 VAC)	x	x	x	x	x	x	x	66,45
Analogue output 0-10 VDC/12 bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	x	97,15
Analogue output 0-20 mA/load 500 Ω/12 bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	x	102,25
Analogue output 4-20 mA/load 500 Ω/12 bit (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	x	102,25
The analogue output is galv. insulated from the measuring input !								
Dimension strips selectable (max. 7 signs)	x	x	x	x	x	x	x	
Measuring range 1A on demand (S108)			x					
Other power supplies on demand	x	x	x	x	x	x	x	

Technical data

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

Dimensions	Housing Assembly cut out Fastening Housing material Protective system	B72 x H36 x T97 mm, including screw terminal (T=115 mm, including plug in terminal) 68.0 ^{+0.7} x 33.0 ^{+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	approx. 0.2 kg at the rear via terminals up to 2.5 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 50 V = ~500 kΩ 20 mA = ~100 Ω

Technical data

Input

PVE4.002....
Direct voltage
(Shunt)

Measuring range	0-60 mV, 150 mV, 300 mV All ranges selectable via connection terminal
Input resistance	Ri with 60 mV = ~15 kΩ 300 mV = ~75 kΩ 150 mV = ~39 kΩ

PVE4.004....
Alternating voltage,
alternating current

Measuring range	100 V, 400 V, 5 A – optional 1 A All ranges selectable via connection terminal.
Input resistance	Ri with 100 V = ~1 MΩ 1 A = ~276 mΩ 400 V = ~4 MΩ 5 A = ~56 mΩ

PVE4.006....
Resistance

Measuring range	≤10 kΩ; ≤100 kΩ; ≤1 MΩ;
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PTE4.x06....
PT100

Sensor	2-wire, 3-wire
Measuring range	-99.9 up to + 600.0°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

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

PTE4.40y....
Thermocouple

<u>S</u> Pt10Rh-Pt - DIN	0 up to +1170°C
<u>B</u> Pt30Rh-Pt6Rh - DIN	300 up to +1790°C
<u>N</u> NiCrSi-NiSi- DIN	0 up to +1300°C

PTE4.501....
PTE4.504....

KTY81-1	2 wire (-50,0 up to +150,0°C)
KTY81-4	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 500 kHz

PFL4.007....
Frequency

Signal	Impulse input, Namur, 3-Leiter pick up
Input resistance	Ri with 10 V = ≥ 2 kΩ High/low level ⇒ 10 V / < 6 V
Input frequency	0.001Hz up to 9999 Hz

Output

For all versions

Relay outputs	230 VAC / 2 A – 120 VDC / 0.5 A
Open Collector	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

The analog output is galv. insulated from the measuring input!

Accuracy

For all versions

Resolution	-999 up to 9999 digit
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PTE4.x06....
PTE4.40x....
PTE4.40y....
PTE4.501....
PTE4.504....
PFE4.307....

0.1°C
1°C
1°C
0.1°C
0.1°C
0 up to 9999 digit

For all versions

Measuring fault	+/-0.2% of measuring range, +/-1 digit
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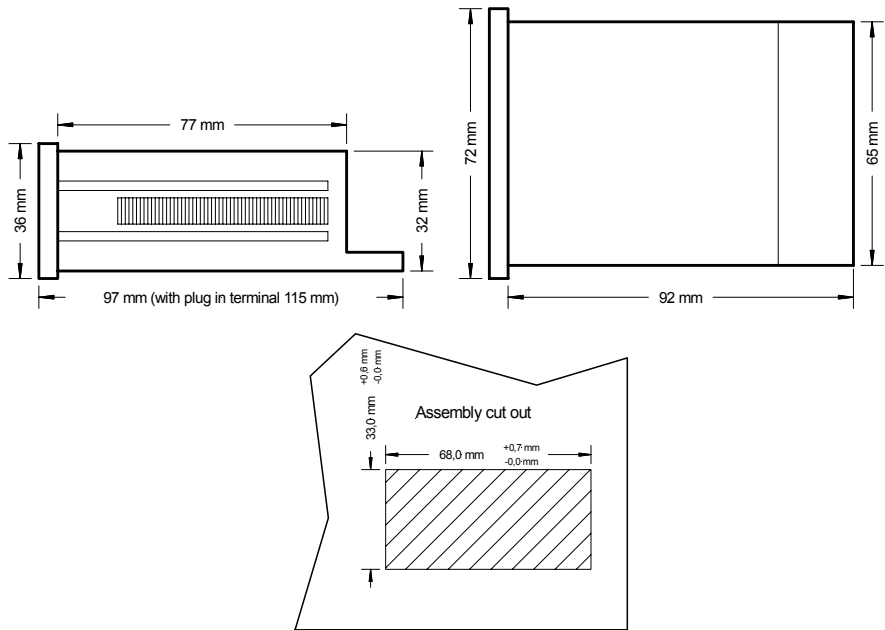
PVE4.0x4....

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
measuring principle(input)	Via rectifier – effective value with sine waveform only
Frequency range	Nominal precision 40 HZ up to 1000 Hz

Technical data

Accuracy		
PVE4.1x4....		Voltage range: $\pm 0.5\%$, of measuring value $\pm 0.07\%$, of final value ± 1 digit, crest factor 3 1 A range $\pm 0.5\%$, of measuring value $\pm 0.07\%$, of final value ± 1 digit, crest factor 3 5 A range $\pm 1\%$, of measuring value $\pm 0.07\%$, of final value ± 1 digit, crest factor 3
	<i>measuring principle (input)</i>	True effective value RMS
	Frequency range	Nominal precision 40 Hz up to 1000 Hz
PTE4.40x....	Measuring fault	1°C, ± 1 digit
PTE4.40y....	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....	Measuring fault	1°C, ± 1 digit
PTE4.606....	Measuring fault	$R_L \leq 10 \Omega = \pm 2 K$ $R_L > 10 \Omega \leq 20 \Omega = \pm 3 K$
PTE4.501....	Measuring fault	1°C, ± 8 digit (-10...140°C)/ $< -10^\circ C$ max. 5°C ± 8 digit/ $> 140^\circ C$ max 5°C ± 8 digit
PTE4.504....	Measuring fault	$\pm 4^\circ C$, ± 5 digit (0...200°C), $\pm 7^\circ C$, ± 5 digit ($> 200^\circ C$)
PFE4.307....	Measuring fault	$\pm 0.04\%$ of input frequency
Accuracy		
PVE4.001....	Temp. drift	~ 100 ppm/K
PVE4.002....		~ 150 ppm/K
PVE4.004....		$I \sim 200$ ppm/K / $U \sim 100$ ppm/K
PVE4.006....		~ 100 ppm/K
PTE4.40x....		~ 100 ppm/K
PTE4.40y....		~ 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	230/115 VAC $\pm 10\%$ (50-60 Hz), 24 VDC ($\pm 10\%$) galv. insulated
	Power consumption	max. 3 VA
Indication		
	Display	LED with 7 segments, 14mm high, red 4-digit = indication 9999
PTE4.x06....	Dimension	configurable for °C and °F
For all versions	Overflow	indication of 4 transversal bars
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
Ambient conditions		
	Working temperature	0 up to +60°C
	Storing temperature	-20 up to +80°C

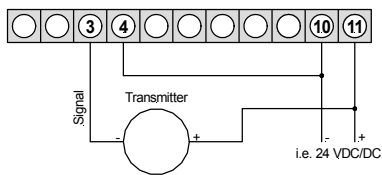
Housing:



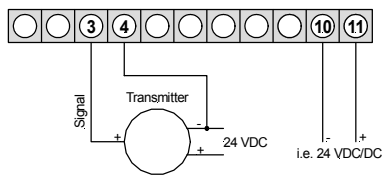
Connection diagrams

PVE instruments with current resp. voltage input

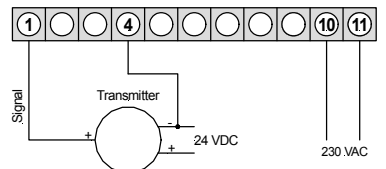
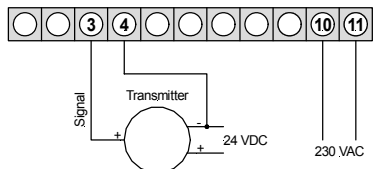
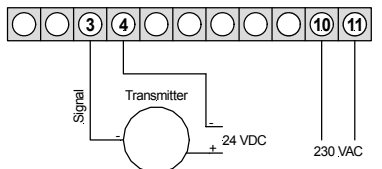
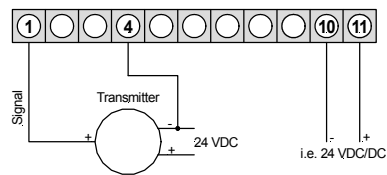
2-wire: 4-20 mA



3-wire: 0-20 mA

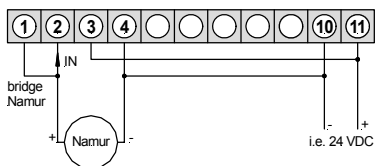


3-wire: 0-10 V / 0-5 V
0-1 V / 1-6 V

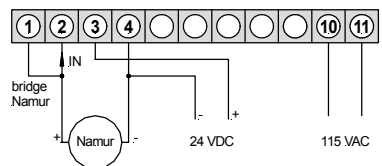


PFE, PFL.... instruments with frequency and impulse input

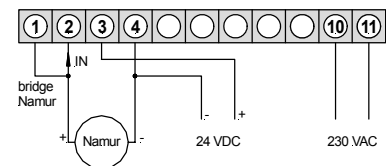
Namur



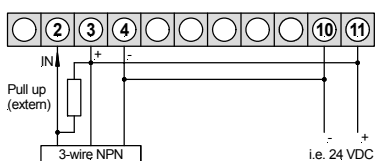
Namur



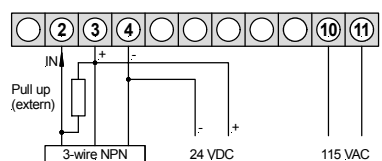
Namur



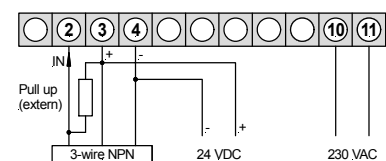
3-wire NPN



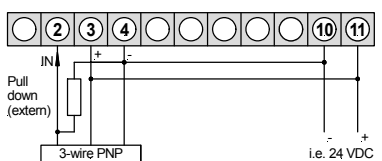
3-wire NPN



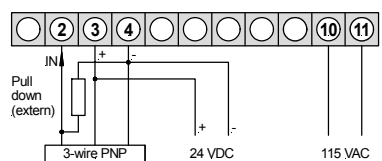
3-wire NPN



3-wire PNP



3-wire PNP



3-wire PNP

