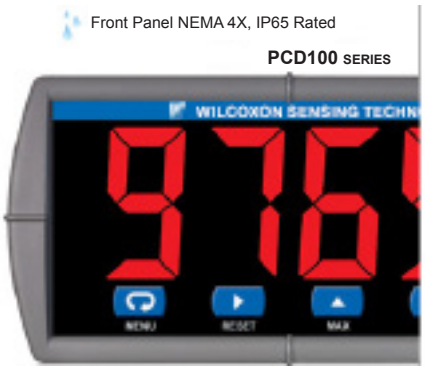
Process and temperature meters

PCD100 series

The PCD100 digital panel meters are one of the most versatile on the market, and are used in a wide variety of process and temperature applications. The PCD100 can be field programmed to accept common process voltage (1-5V, ±10V) and current (0-20 mA, 4-20 mA) inputs, 100 Ω RTDs, and the four most common thermocouples. One of the PCD100's most useful features is its ability to provide 24 VDC to power the transmitter's 4-20 mA signal. There are two power options: 85-265 VAC or 12-36 VDC. The meter can be programmed via front panel or remotely.



The display is four full digits, meaning it can display numbers up to 9999, an advantage over most digital panel meters. The PCD100 can display type K thermocouples to 2300°F and 4-20 mA signals up to 9,999.

The meter is supplied with two alarm points that include front panel red LEDs to indicate alarm conditions, making it particularly useful for alarm applications that require visual-only indication.

Key features

- NEMA 4X, IP65 front panel
- 4-20 mA, ±10V, TC & RTD field-selectable inputs
- Options for 2 relays, isolated 4-20 mA output, and 24 VDC transmitter power supplies
- Includes PC-based programming and monitoring software
- External contacts for remote button operation

Certifications

CE

Ordering information		
85-265 VAC	**12-36 VDC**	**Options installed**
PCD100-265-B-N-0	PCD100-24-B-N-0	none
PCD100-265-B-N-200		24 VDC transmitter supply
PCD100-265-B-2R-0	PCD100-24-B-2R-0	2 relays
PCD100-265-B-2R-200		2 relays + 24 VDC transmitter supply
PCD100-265-B-420-0	PCD100-24-B-420-0	4-20 mA output
PCD100-265-B-420-200		4-20 mA output + 24 VDC transmitter supply
PCD100-265-B-420-240		4-20 mA output + dual 24 VDC transmitter supplies
	PCD100-24-B-2R420-0	2 relays + 4-20 mA output
PCD100-265-B-2R420-200		2 relays + 4-20 mA output + 24 VDC transmitter supply

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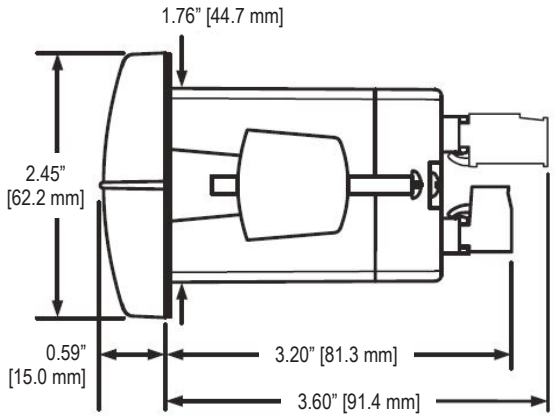
99388 Rev.A 08/20

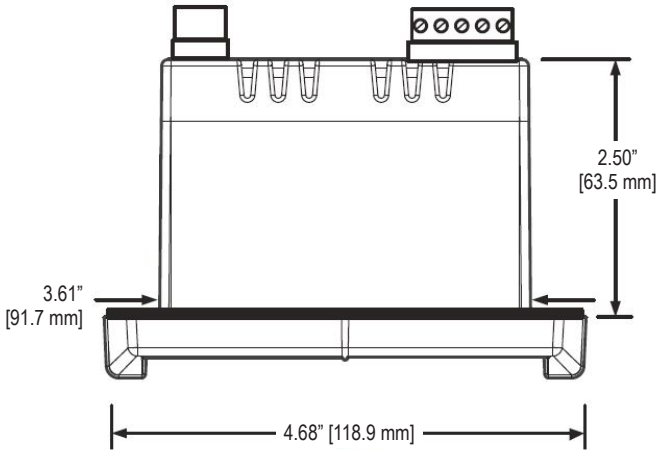
Process and temperature meters

PCD100 series

DIMENSIONS



Side view



Top view

SPECIFICATIONS

GENERAL	
Display	1.2" (30.5 mm) height, 4 digits, red LED
Display intensity	Eight levels, user-selectable
Front panel	NEMA 4X, IP65 (panel gasket provided)
Programming methods	Four front panel buttons, cloning with Copy feature, PC with MeterView software, Modbus registers
Power options	85-265 VAC, 50/60 Hz; 90-265 VDC, 20 W max or 12-36 VDC; 12-24 VAC, 6 W max
Required fuse	UL recognized, 5 A max, slow-blow; up to 6 meters may share one fuse
Isolation	4 kV input/output-to-power line; 500 V input-to-output or output to 24 VDC supplies; -2R420 models only: 100 V output-to-24 VDC supply
Temperature range	Operating: -40° to 65°C Storage: -40° to 85°C
Relative humidity	0 to 90% non-condensing
Connections	Power & signal: removable screw terminal blocks accept 12 to 22 AWG Serial: RJ11 header, standard on all meters
Enclosure	1/8 DIN, high impact plastic, 94V-0, color: gray
Weight	269 grams (9.5 oz) (including options)

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Process and temperature meters

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SPECIFICATIONS

PROCESS INPUTS	
Inputs	0-20 mA, 4-20 mA, 1-5 V, ±10V
Transmitter supply **P1** **P1 & P2**	Isolated, one or two transmitter supplies 24 VDC ±10% @ 200 mA max (-200 models) 24 VDC ±10% @ 200 mA and 40 mA max (-240 models)
Accuracy	±0.05% FS ±1 count; square root: ±0.1% FS ±2 counts
Function	linear or square root
Calibration range	user programmable over entire range of meter
Input impedance	Voltage range: >1 MΩ Current range: 50-100 Ω, varies with resettable fuse impedance
Input overload	protected by automatically resettable fuse
Temperature drift	see table 1
TEMPERATURE INPUTS	
Inputs	Factory-calibrated, field selectable, type J, K, T, or E (see table 2)
Resolution	1°; type T TC & RTD: 1° or 0.1°
Cold junction reference	automatic
Temperature drift	±2°C maximum
Offset adjustment	programmable to ±19.9° (allows user to apply an offset value to the temperature being displayed)
Input impedance	>100 kΩ
RELAYS	
Rating	2 Form C (SPDT); rated 3 A @ 30 VDC or 3 A @ 250 VAC resistive load; 1/14 HP (=50 watts) @ 125/250 VAC for inductive loads
Relay operation	
Time delay	0 to 199 seconds, on and off delays; programmable

Table 1: Temperature drift

Input	0 to 65°C ambient	-40 to 0°C ambient
Current	±0.20% FS (50 PPM/°C)	±0.80% FS
Voltage	±0.02% FS (1.7 PPM/°C)	±0.06% FS

Table 2: Temperature input types

Type	Range	Acc. (0 to 65°C)	Acc. (-40 to 0°C)	Resolution
J	-58° to 1382°F -50°C to 750°C	±2°F ±1°C	±5°F ±3°C	1°
K	-58° to 2300°F -50°C to 1260°C	±2°F ±1°C	±4°F ±2°C	1°
T	-292° to 700°F -180°C to 371°C	±2°F ±1°C	±13°F ±7°C	1° or 0.1°
E	-58° to 1700°F -50°C to 927°C	±2°F ±1°C	±11°F ±6°C	1°
RTD	-328° to 1382°F -200°C to 750°C	±1°F ±1°C	±5°F ±3°C	1° or 0.1°

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SPECIFICATIONS

SERIAL COMMUNICATIONS	
Protocol	Modbus RTU
Meter address	PDC protocol: 0 to 99 Modbus protocol: 1 to 247
Baud rate	300 to 19,200 bps
Transmit time delay	Programmable, 0 to 199 ms
Data	8 bit (1 start bit, 1 stop bit)
Parity	None (1 or 2 stop bits), even, or odd
Turn around delay	< 2 ms (fixed)
ISOLATED 4-20 mA TRANSMITTER OUTPUT	
Scaling range	1.00 to 23.00 mA; reverse scaling allowed
Accuracy	±0.1% FS ±0.004 mA
Temperature drift[1]	50 PPM/°C
Isolation	500 V input-to-output or output-to-24 VDC supplies; 4 kV output-to-power line; 100 V output-to-24 VDC supply (model PCD100-265-B-2R420-200 only)
External power	35 VDC maximum
Output loop resistance	see table 3
EXTERNAL BUTTON CONTACTS	
Number	Four
Function	Remote operation of front-panel buttons
Open state	+5 VDC open contact on button input terminals
Closed state	Closed contact button input terminal to common/ground, active low 0 to 0.4 VDC

Notes: [1] Analog output drift is separate from input drift.

Table 3: Output loop resistance

Power supply	Minimum	Maximum
24 VDC	10 Ω	700 Ω
35 VDC (external)	100Ω	1200 Ω

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