

High Performance Temperature/Process Control on an Ethernet-Based Communication Platform

Watlow's new SERIES PD controllers utilize embedded Ethernet technology to provide a convenient, economical means for setting up and viewing key process variables such as temperature, pressure and humidity. Available in single or dual channel versions, the DIN rail mount SERIES PD controllers offer up to four control/alarm outputs, as well as a digital/current transformer input associated with each channel.

Watlow's SERIES PD controllers are ideally suited for a wide range of temperature or process control applications where the operator interface is supported from a remote location. The SERIES PD provides interfacing via embedded firmware which serves dedicated web pages. These pages support key functions including operation, alarm monitoring, configuration and are displayed using standard web browser software. The SERIES PD is also capable of generating e-mail messages for remote alarm notification.

Ethernet-based products are rapidly gaining popularity in industrial applications because they allow an instantaneous exchange of information between processing equipment and the company's management system.

Advanced features of the SERIES PD controllers include internal data logging of key control parameters, smart sensor technology, heater burn out detection and an enhanced control algorithm.

The SERIES PD controller is backed by a three-year warranty from Watlow Winona and is UL® 508, C-UL®, CSA and CE approved.

PRELIMINARY

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Windows® is a registered trademark of the Microsoft Corporation.

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Features and Benefits

Ethernet connectivity

- Convenient, easy to use operator interface
- Simplified process monitoring

DIN rail sub panel mounting

- Quick, economic installation

Watlow INFOSENSE™ sensor technology

- INFOSENSE™ technology improves sensor accuracy by a minimum of 50 percent

Advanced control algorithm

- Tighter process control

Heater burn out detection

- Improved process yields

Internal data logging

- Reduces external hardware demands

Single or dual channel versions

- Application versatility

Virtual or hardware alarms with e-mail delivery

- Remote alarm notification



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WIN-PD-0303

ISO 9001



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Specifications

Power

- 24V \approx (ac/dc), +10/-15 percent, 50/60Hz, \pm 5 percent
- 12VA maximum power consumption
- Data retention upon power failure via nonvolatile memory

Environment

- 0 to 65°C (32 to 149°F) operating temperature
- -40 to 85°C (-40 to 185°F) storage temperature
- 0 to 90 percent RH, non-condensing

Accuracy

- Calibration accuracy and sensor conformity: \pm 0.1 percent of span, \pm 1°C @ the calibrated ambient temperature and rated line voltage
- Calibration ambient temperature = 25°C \pm 3°C (77°F \pm 5°F)
- Accuracy span: 540°C (1000°F) minimum
- Temperature stability: \pm 0.1°C/°C (\pm 0.2°F/°F) rise in ambient maximum

Agency Approvals

- UL[®] 508, C-UL[®], CSA and CE

Controller

- Microprocessor based user-selectable control modes
- Single or dual channel universal inputs
- Current transformer inputs/digital inputs
- Up to four programmable outputs
- Update rates, inputs = 10Hz, outputs = 10Hz

Operator Interface

- Browser based HMI

Wiring Termination

- Touch safe removable terminals
- 14 to 22 AWG

Universal Inputs (Electrically Isolated)

- Thermocouple, grounded or ungrounded sensors
- RTD 2 or 3 wire, platinum, 100 $\text{ }^{\circ}\text{C}$ @ 0°C calibration to DIN curve (0.00385 / $^{\circ}\text{C}$)
- Process 0-20mA @ $<100 \text{ } \Omega$, or 0-10V \approx (dc) @ 10k $\text{ } \Omega$ input impedance (50,000 bits @ full scale)

Digital Inputs

- Contact or dc voltage
- 10K $\text{ } \Omega$ input impedance

Current Transformer Inputs

- 0 to 50mACT input into 100 $\text{ } \Omega$ impedance

Allowable Input Operating Range

Type J:	-200 to 1200°C	or	-340 to 2192°F
Type K:	-270 to 1370°C	or	-454 to 2500°F
Type T:	-270 to 400°C	or	-454 to 750°F
Type N:	-270 to 1300°C	or	-454 to 2372°F
Type E:	-270 to 975°C	or	-454 to 1790°F
Type C:	0 to 2315°C	or	32 to 4200°F
Type D:	0 to 2315°C	or	32 to 4200°F
Type PT111:	0 to 1395°C	or	32 to 2543°F
Type R:	0 to 1760°C	or	32 to 3200°F
Type S:	0 to 1760°C	or	32 to 3200°F
Type B:	0 to 1815°C	or	32 to 3300°F
RTD (DIN):	-200 to 800°C	or	-328 to 1470°F

Process V: 0 to 10V \approx (dc)

Process I: 0 to 20mA

Control/Alarm Outputs (1 - 4)

- User selectable as: on-off, P, PI, PD, PID, heat, cool, alarm action or retransmit with process output type hardware
- Open collector/switched dc
- Open collector 42V \approx (dc) maximum @ 0.5A
- Switched dc 22 to 28V \approx (dc) limited @30mA
- Solid-state relay, Form A, 0.5A @ 24V \approx (ac) minimum, 264V \approx (ac) maximum, opto-isolated, without contact suppression
- User-selectable 0-10V \approx (dc), 1K $\text{ } \Omega$ minimum, scalable, 0-20mA @ 800 $\text{ } \Omega$ maximum, scalable
- Electromechanical relay, Form C, rated 5A @ 120V \approx (ac) or 5A @ 240V \approx (ac) or 5A @ 30V \approx (dc)

Communications

- TCP/IP/Ethernet
- Modbus[™] TCP
- Ethernet RJ 45 connector, 10 base T
- HTTP interface
- DHCP, auto IP or fixed IP address

Dimensions

- Width x height x depth
42 mm x 116 mm x 132 mm (1.64 in. x 4.56 in. x 5.19 in.)
DIN rail or chassis mount, DIN rail spec DIN 5022
35 mm x 7.5 mm (1.38 in. x 0.30 in.)

Ordering Information

To order, complete the model number on the right with the information below.

Control Type	P	D	-	-	A
S = Single channel					
D = Dual channel					
Auxiliary Inputs					
1 = Dual digital inputs					
2 = One CT input and one digital input					
3 = Dual CT inputs (dual channel only)					
Output 1					
C = Switched dc, open collector					
K = SSR, Form A, 0.5A					
F = Universal process					
J = Mechanical relay, Form A, 2A					
Output 2					
A = None					
C = Switched dc, open collector					
K = SSR, Form A, 0.5A					
E = Mechanical relay, Form C, 2A					
Output 3					
A = None					
C = Switched dc, open collector					
K = SSR, Form A, 0.5A					
F = Universal process					
J = Mechanical relay, Form A, 2A					
Output 4					
A = None					
C = Switched dc, open collector					
K = SSR, Form A, 0.5A					
E = Mechanical relay, Form C, 2A					
On Board Data Logging					
0 = None					
1 = 16 megabytes of memory					
Custom Options					
AA = Watlow logo					
BB = No logo					

Your Authorized Watlow Distributor Is:

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