

Reliable Control and Application Flexibility in a Compact Package



Features and Benefits

Accurate PID control with auto-tune

- Improves process yield

INFOSENSE™ sensor technology

- Thermal sensing technology improves accuracy by a minimum of 50 percent

Optional countdown timer

- Enhances process control capability

User defined menu system

- Simplifies control operation
- Reduces operator errors

Serial communications

- Connectivity with WATVIEW (Human Machine Interface) HMI software

Ramp to set point

- Controls temperature rise

Variable burst fire

- Provides tighter control
- Prolongs heater life

Agency approvals

- UL®, C-uL®, CE NEMA 4X/IP65, CSA and NSF

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Your Authorized Watlow Distributor Is:



WATLOW

1241 Bundy Boulevard
Winona, Minnesota 55987-5580 USA
Phone: 507-454-5300
Fax: 507-452-4507
Internet: www.watlow.com
e-mail: info@watlow.com

WIN-SD31-1004

ISO 9001



Registered Company
Winona, Minnesota USA

To be automatically connected to the nearest North American Technical and Sales Office call:

1-800-WATLOW2

International Technical and Sales Offices: Australia, +61 (39) 335-6449 • China, +86 (21) 6277-2138 • France, +33 (01) 3073-2425 • Germany, +49 (0) 7253-9400-0 • Italy, +39 (02) 458-8841 • Japan, +81 (03) 5403-4688 • Korea, +82 (02) 575-9804 • Malaysia, +60 (4) 641-5977 • Mexico, +52 (442) 217-6235 • Singapore, +65 6778-5488 • Spain, +34 916 759 192 • Sweden, +46 31 7014959 • Taiwan, +886 (0) 7-288-5168 • Sweden, +46 31 7014959 • United Kingdom, +44 (0) 115-964-0777



Specifications

Line Voltage/Power

- 100 to 240V~(ac), +10/-15 percent; (85-264V~[ac]) 50/60Hz, ±5 percent
- 24V~(ac/dc), +10/-15 percent; 50/60Hz, ±5 percent
- 10VA maximum power consumption
- Data retention upon power failure via nonvolatile memory

Environment

- -18 to 65°C (0 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: ±0.1 percent of span, ±1°C @ the calibrated ambient temperature and rated line voltage
- Calibration ambient temperature = 25°C ±3°C (77°F ±5°F)
- Accuracy span: 540°C (1000°F) minimum
- Temperature stability: ±0.1°C/°C (±0.2°F/°F) rise in ambient maximum

Agency Approvals

- UL® 3121, C-UL®, CSA, CE, IP65/NEMA 4X
- NSF for Type J, K, T and E thermocouples

Controller

- Microprocessor based user-selectable control modes
- Single universal input, up to three outputs
- Control sampling rates: Input = 6.5Hz, Display = 10Hz, Outputs = 6.5Hz

Operator Interface

- Single 4 digit, 7 segment LED displays
- "Set" infinity and up down keys
- Isolated EIA-485 Modbus™ serial communications, 9600, 19.2K or 38.4K baud rates

Wiring Termination -Touch Safe Terminals

- Input power and control outputs 12 to 22 AWG
- Sensor inputs and process outputs 20 to 28 AWG

Universal Input

- Thermocouple, grounded or ungrounded sensors
- RTD 2- or 3-wire, platinum, 100 @ 0°C calibration to DIN-curve (0.00385 / °C)
- Process, 0-20mA @ 100 , or 0-10V~(dc) @ 20k input impedance; Scalable
- Inverse scaling
- >20M input impedance
- Maximum of 20 source resistance

Allowable Operating Range

Type J:	0 to 815°C	or	32 to 1500°F
Type K:	-200 to 1370°C	or	-328 to 2500°F
Type T:	-200 to 400°C	or	-328 to 750°F
Type N:	0 to 1300°C	or	32 to 2372°F
Type E:	-200 to 800°C	or	-328 to 1470°F
Type C:	0 to 2315°C	or	32 to 4200°F
Type D:	0 to 2315°C	or	32 to 4200°F
Type PTII:	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 1816°C	or	32 to 3300°F
RTD (DIN):	-200 to 800°C	or	-328 to 1472°F
Process:	-1999 to 9999 units		

Control Outputs

Outputs 1 or 2

- User selectable for heat/cool as on-off, P, PI, PD, PID or Alarm action
- Electromechanical relay. Form A, rated 2A @ 120V~(ac), 2A @ 240V~(ac) or 2A @ 30V~(dc)
- Switched dc non-isolated minimum turn on voltage of 6V~(dc) into a minimum 500 load with a maximum on voltage of not greater than 12V~(dc) into an infinite load. Maximum switched dc power supply current available for up to two outputs is 60mA
- Solid-state relay, Form A, 0.5A @ 24V~(ac) minimum, 264V~(ac) maximum, opto-isolated, without contact suppression
- Process output (Non Isolated) User-selectable 0-10V~(dc), 0-5V~(dc), 1-5V~(dc) @ 1K minimum, 0-20mA, 4-20mA @ 800 maximum
- Open collector 42V~(dc) @ 250mA maximum
- EIA-485 serial communications with Modbus™ protocol (output 2 only)
- 9600, 19.2K or 38.4 baud rates

Communications

- Modbus™ EIA-485
- WATVIEW

Dimensions

- ½ DIN size
- 97.8 mm (3.85 in.) behind panel maximum
- Width 52.6 mm (2.07 in.)
- Height 29.7 mm (1.17 in.)

Ordering Information

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

S D 3 1 - A - A

Single channel control with universal input and single display operator interface

Power Supply _____

H = 100 to 240V~(ac/dc)
L = 24 to 28V~(ac/dc)

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
J = Mechanical relay, Form A, 2A
U = EIA-484 Modbus™ communications

Control Options _____

A = Standard controller
T = Standard controller with timer

Display Colors and Custom Options _____

OR = Red display
OG = Green display