

RTD Digital Controllers

- ✓ High Accuracy:
to 0.1% of Span
- ✓ Single and Dual
Setpoint Models
- ✓ 1.0° and 0.1° Models
- ✓ Adjustable
Proportion Band
- ✓ Bright LED Display

4200A Series
\$424
Basic Unit



Shown smaller
than actual size

The OMEGA® 4200A Series is an ideal controller for RTD applications. This quality-built linearized instrument is available in both 1.0° and 0.1° resolution models. Higher accuracies, accuracies 5 to 10 times greater than the typical 1% meter indicating controller, are achieved through a unique linearizing technique.

Bright, easy-to-read LED digits present an unambiguous temperature indication. Accuracy is enhanced through 3-wire lead compensation— a feature allowing the sensor to be up to 1000' from the controller. The standard unit includes adjustable proportional band, manual reset, plus a metal ¼ DIN case with full plug-in construction, allowing front removal of the control unit without disturbing the case and its rear wiring. The series 4200A controllers are available in single or dual setpoint models with relay output as a standard. Triac or 4 to 20 mA optional outputs are offered on the first setpoint at no additional cost. Truly a superior controller at a remarkably low price.

PR-10-2-100-1/4-12-E general purpose RTD Probe, \$63, sold separately. See page C-7.

Option "T" Triac Output

Option "T" replaces the relay output on the first setpoint with a solid state plug-in Triac which yields time-proportional or on-off switching. The Triac is rated at 1 amp continuous and 10 amps in rush for both 120 and 240 Vac service. For higher amperage loads the Triac may be used to drive higher rating solid state relays or mechanical contractors. Specify option "T" after the model number when ordering, no additional charge.

Option "F" (4 to 20 mA Output)

This option is applicable to the first setpoint only and is used to drive proportioning devices such as SCR power controller, motor positioners, or electropneumatic actuators. The 4 to 20 mA dc output signal can be connected to a maximum of 1000 ohm resistance load. This signal is 20 mA at the low temperature end of the proportional band and is decreased linearly through the band to 4 mA at the high temperature end. If the driven device is not isolated (ungrounded) an ungrounded sensor must be used with the Series 4200A which is designed for only one ground in the system. Specify option "F" after the model number when ordering, no additional charge.

in place of the relay. See Options and Specifications for more information.

Model 4202A Dual Setpoint Controller

The first setpoint of the Model 4202A incorporates the same features as the Model 4201A and also can be ordered with the optional Triac or 4 to 20 mA output. The second setpoint may be set at any value within the full span of the controller. It energizes an SPDT internal relay (3 amp resistive 120 Vac) which can be used as either an on-off control, a high-limit alarm, or a low-limit alarm. For an alarm with latching features, an external latching relay and push button to reset are suggested. The second setpoint is set and displayed using the same procedure as for the Model 4201A except the switch is deflected to the left and the left adjustment knob is used.

Model 4201A Single Setpoint Proportional Controller

This versatile digital controller can be operated as a proportional controller with the adjustable bandwidth up to 3% of full span. The setpoint temperature is always available. Simply push the spring-loaded setpoint switch to the right, and the setpoint is digitally displayed. To change the setpoint, with the switch deflected to the right, adjust the knob to the right of the switch until you get the desired reading. The standard Model 4201 has an internal SPDT relay (7 amp resistive at 120 Vac). This model is also available with optional Triac or 4 to 20 mA output



*Specifications

RTD Input

Type: 100 ohm platinum;
alpha = 0.00385 (DIN curve)

Configuration: 3 wire

External Lead Wire Resistance

Effect: 0.1% span up to 10 ohms per lead wire leg

Sensor Break Protection:

Built-in, upscale on open sensor

Calibration Accuracy:

1.0° resolution model:

±0.1% of span ±1 digit

0.1° resolution model:

±0.2% of span ±1 digit

Stability: 0.1% for 30 to 130°F,

0.1% +10% to 15% line voltage

Common Mode Rejection: Max error ±1°C with 240 V, 60 Hz applied as common mode signal between sensor input and chassis ground

Series Mode Rejection:

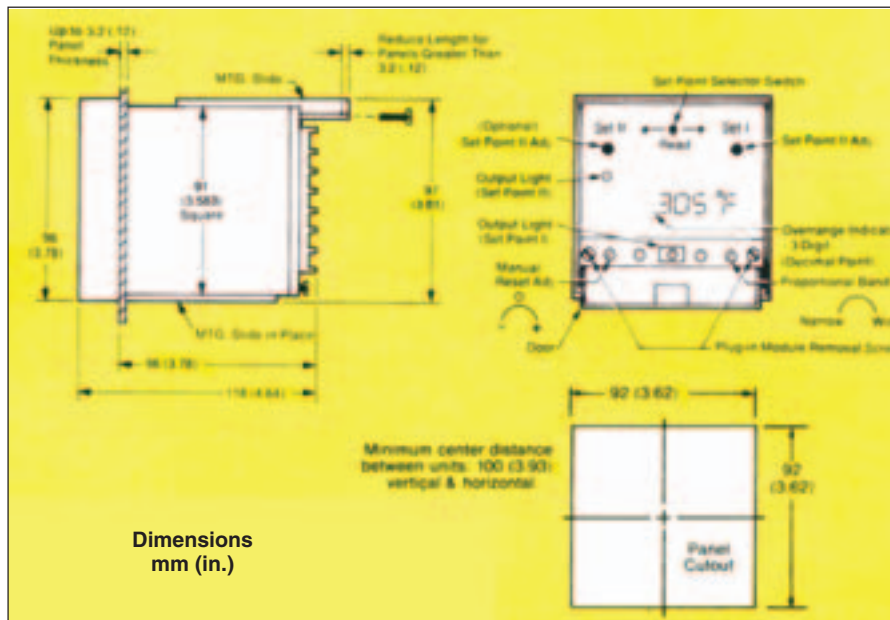
Max error ±1°C with series mode signal of 100 mV PK-to-PK at 60 Hz

Control Output

1st Setpoint (Adjustable Time

Proportional):

Relay (Standard Model): SPDT relay 7 amps resistive at 120 Vac, 5 amps resistive at 240 Vac



Option "T" (Triac): Solid state plug-in triac rated 1 amp holding and 10 amps in-rush

Option "F" (current proportional): 4 to 20 mA (dc) into 1000 ohm max

2nd Setpoint:

Relay (on-off only): SPDT, rated 3 amps at 120 Vac

Adjustments

Proportional Band (gain): 0 to 3% of span, or on-off; selectable

Manual Reset (offset): Adjustable

Cycle Time: Automatically adjusts with load requirement to give least wear with minimum ripple (10 sec. minimum total time)

Display and Indications

Temperature: Filtered LED, 3 or 3½ digits, 2 readings per second update; readability is 1.0° or 0.1° (°F or °C), depending on model

Setpoint: By spring loaded switch, first or second setpoint is displayed in place of temperature; setpoint adjusted by 25 turn pot.; 1.0° or 0.1° setability

Outputs: LED indication for both first and second setpoints; LED are "on" when output drive signal present; "On-off" indication on relay and triac model; proportional intensity for option "F."

Temperature Overrange:

Red LED indication

Setpoint

Resolution: 1.0° or 0.1° (°F or °C), depending on model

Repeatability: ±0.1% to ±0.2% of span

Adjustment: By 25 turn pot.; see "Setpoint" under "Display and Indication" section.

Power: 120/240 Vac (+10%, -15%, 50/60 Hz). Power consumption less than 5 watts

Environmental & Physical

Operating Temperature: -1 to 54°C (30 to 130°F)

Weight: 1 kg (2 lb)

¼ DIN Case: Metal, full plug-in with screw terminal on rear. Adjustable brackets for panel mounting; panel cutout is 92 x 92 mm (3.622 x 3.622")

MOST POPULAR MODELS HIGHLIGHTED!

Model No.	Price	Sensor Type	Range	Resolution	Accuracy ±1 Digit	Number of Setpoints
4201APF1 4201APC1	\$424	100 ohm Platinum RTD $\alpha = 0.00385$ ohm/ohms/°C	0 to 999°F 0 to 600°C	1°F 1°C	±0.1% of Span	Single
4202APF1 4202APC1	459		0 to 999°F 0 to 600°C	1°F 1°C		Dual
4201APF2 4201APC2	424		-199.9 to 199.9°F -199.9 to 199.9°C	1°F 1°C	±0.2% of Span	Single
4202APF2 4202APC2	459		-199.9 to 199.9°F -199.9 to 199.9°C	1°F 1°C		Dual

* Specifications and configurations subject to change as advances in technology allow. **Ordering Example:** 4202APF1, RTD digital controller, \$459. OCW-3 OMEGACARESM extends standard 2-year warranty to a total of 5 years (\$114), \$459 + 114 = \$573.

Accessory

Model No.	Price	Description
GE-1315	\$39	Reference Book: Instrument Loop Diagrams





UNITED STATES

www.omega.com

1-800-TC-OMEGA
Stamford, CT.

CANADA

www.omega.ca

Laval(Quebec)
1-800-TC-OMEGA

GERMANY

www.omega.de

Deckenpfronn, Germany
0800-8266342

UNITED KINGDOM

www.omega.co.uk

Manchester, England
0800-488-488

FRANCE

www.omega.fr

Guyancourt, France
088-466-342

CZECH REPUBLIC

www.omegaeng.cz

Karviná, Czech Republic
596-311-899

BENELUX

www.omega.nl

Amstelveen, NL
0800-099-33-44



More than 100,000 Products Available!

• Temperature

Calibrators, Connectors, General Test and Measurement Instruments, Glass Bulb Thermometers, Handheld Instruments for Temperature Measurement, Ice Point References, Indicating Labels, Crayons, Cements and Lacquers, Infrared Temperature Measurement Instruments, Recorders Relative Humidity Measurement Instruments, RTD Probes, Elements and Assemblies, Temperature & Process Meters, Timers and Counters, Temperature and Process Controllers and Power Switching Devices, Thermistor Elements, Probes and Assemblies, Thermocouples Thermowells and Head and Well Assemblies, Transmitters, Wire

• Flow and Level

Air Velocity Indicators, Doppler Flowmeters, Level Measurement, Magnetic Flowmeters, Mass Flowmeters, Pitot Tubes, Pumps, Rotameters, Turbine and Paddle Wheel Flowmeters, Ultrasonic Flowmeters, Valves, Variable Area Flowmeters, Vortex Shedding Flowmeters

• pH and Conductivity

Conductivity Instrumentation, Dissolved Oxygen Instrumentation, Environmental Instrumentation, pH Electrodes and Instruments, Water and Soil Analysis Instrumentation

• Data Acquisition

Auto-Dialers and Alarm Monitoring Systems, Communication Products and Converters, Data Acquisition and Analysis Software, Data Loggers Plug-in Cards, Signal Conditioners, USB, RS232, RS485 and Parallel Port Data Acquisition Systems, Wireless Transmitters and Receivers

• Pressure, Strain and Force

Displacement Transducers, Dynamic Measurement Force Sensors, Instrumentation for Pressure and Strain Measurements, Load Cells, Pressure Gauges, Pressure Reference Section, Pressure Switches, Pressure Transducers, Proximity Transducers, Regulators, Strain Gages, Torque Transducers, Valves

• Heaters

Band Heaters, Cartridge Heaters, Circulation Heaters, Comfort Heaters, Controllers, Meters and Switching Devices, Flexible Heaters, General Test and Measurement Instruments, Heater Hook-up Wire, Heating Cable Systems, Immersion Heaters, Process Air and Duct, Heaters, Radiant Heaters, Strip Heaters, Tubular Heaters