

Digital Controllers

4000A Series



4001AJF shown
smaller than
actual size.



- ✓ J or K Thermocouple
- ✓ Accuracy: $\pm 0.5\%$ FS
- ✓ 1° Resolution
- ✓ Adjustable Proportional Band
- ✓ Single and Dual Setpoint Models
- ✓ Relay, Triac, or 4 to 20 mA Output
- ✓ $\frac{1}{4}$ DIN Metal Case
- ✓ Full Plug-In Construction

controller distinguishes itself by features, construction, and operation one would expect to find only in controllers costing much, much more. Bright, easy-to-read LED digits yield an unambiguous temperature indication which is not achievable with an analog controller. The standard unit includes adjustable proportional band, manual reset, plus a metal case with full plug-in construction, allowing front removal of the entire control unit without disturbing the case and its rear wiring. Series 4000A controllers are available in single and dual setpoint models with relay outputs as a standard. Triac, DC pulse or 4 to 20 mA optional outputs are offered on the first point at no additional cost. Models 4001A and 4002A lend themselves to a broad spectrum of control applications: single point control, dual setpoint control, and single point control with either high- or low-limit alarm. Truly a quality-built controller at a remarkably low price.

Specifications

Thermocouple Input

Thermocouples: Types J and K

Maximu Thermocouple Lead

Resistance: 100 Ω for rated accuracy

Cold-Junction Compensation:

Automatic—electric

Thermocouple Break Protection:

Built-in, upscale on open sensor

Calibration Accuracy:

Type J: $\pm 0.4\%$ of span over 10 to 90% of range

Type K: $\pm 0.5\%$ of span over 10 to 90% of range

Common Mode Rejection: Maximum error $+1^\circ$ with series mode signal of 100 mV peak-to-peak at 60 Hz

Control Output

1st Setpoint:

Relay (Standard Model):

SPDT relay

7 A resistive @ 120 Vac,

5 A resistive @ 240 Vac

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

Option "F" (Current Proportional):

4 to 20 mA dc into 1000 Ω maximum

Option "DC" (DC Pulse): 20 Vdc

2nd Setpoint:

Relay (On/Off Only): SPDT, rated 3 A @ 120 Vac

Adjustments

Proportional Band (gain): Up to 5% of span, or on/off; selectable

Manual Reset (off-set): Adjustable

Cycle Time: Automatically adjusts with load requirement to give least wear with minimum ripple (selectable minimum total time: 0.5, 1, 1.5, 5, 10, 15 sec)

Display and Indications

Temperature: Filtered LED, 3 or $3\frac{1}{2}$ digits, 2 readings per second update; readability is 1°C for 1°F

Setpoint: By spring loaded switch, first or second setpoint is displayed in place of temperature; setpoint adjusted by 25 turn potentiometer; 1°F or $^\circ\text{C}$ 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°C or 1°F

Repeatability: $\pm 0.1\%$ to $\pm 0.2\%$ of span

Adjustment: By 25 turn potentiometer; see "setpoint" under "display and indicators" section

Power: 120/240 Vac (10%, -15%, 50/60 Hz); power consumption $< 5\text{ W}$

Environmental and Physical

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

Weight: 24 oz (2 lb)

$\frac{1}{4}$ 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")

Model Number	Sensor Type	Material Type	Range	Resolution	No. of Setpoints
4001AJF 4001AJC	J	Iron/ Constantan (Iron vs. Copper-Ni)	0 to 999°F 0 to 500°C	1°F 1°C	Single
4002AJF 4002AJC			0 to 999°F 0 to 500°C	1°F 1°C	Dual
4001AKF 4001AKC	K	CHROMEGA® ALOMEGA® (Ni/Chromium vs. Ni/Al)	0 to 1999°F 0 to 999°C	1°F 1°C	Single
4002AKF 4002AKC			0 to 1999°F 0 to 999°C	1°F 1°C	Dual

Output Options (No Additional Cost)

Order Suffix	Option Type (First Output Only)
-T	Triac
-F	4 to 20 mA
-DC	DC pulse