

1/16 DIN Temperature/Process Controllers with Fuzzy Logic

CN78000 Series
Starts at
\$276



- ✓ Dual Display
- ✓ Autotune
- ✓ Universal Input
- ✓ Alarm Functions
- ✓ Fuzzy Logic
- ✓ Loop Break Protection
- ✓ Peak/Valley Indication
- ✓ Percent Output Indication
- ✓ Illuminated Keypad
- ✓ 4 Password Protected Security Levels
- ✓ Optional Isolated PV or SV Retransmission Outputs
- ✓ Optional RS232/RS485 Communications
- ✓ Optional Low-Voltage Power
- ✓ Free Software

The CN78000 Series controllers are fully programmable compact units with a variety of features that include: universal input, self-tune PID, fuzzy logic and dual 4-digit LED displays for process and set point values. User can select from thermocouple, RTD, current or voltage inputs AC SSR, relay, DC pulse, and proportional current outputs. A programmable alarm (optional) can be reset automatically or manually. The front panel is waterproof and corrosion-resistant (UL Type 4-X), making it ideal for sanitary applications. Electronics can be replaced without wiring changes through a removable front panel. Self-diagnostics, nonvolatile



CN78030, \$276.



CN78020, \$276.

Panel Punches Available, Visit omega.com/panelpunches

memory and selectable control modes are all also available and greatly increase productivity. Four security levels are password protected. For optimal PID control, the on/off, P, PI or PID manual-tune control functions can be selected, or the controller will autotune automatically.

The CN78000 offers an excellent array of standard features as well as peak/valley indication, percent output indication, digital input filter, among others.

Specifications

- Selectable Inputs:** Thermocouple, RTD, DC voltage or current
- Display:** Two 4-digit LED displays, 7.62 mm (0.3") H
- Display Resolution:** 1° or 0.1° (sensor dependent) or 1 count
- Accuracy:** ±0.25% of span ±1 least significant digit
- Supply Voltage:** 100 to 240 Vac nominal, 10 to 15%, 50 to 400 Hz single phase; 132 to 240 Vdc, 10 to 20%
- Operating Temperature Range:** -10 to 55°C (14 to 131°F)
- Power Consumption:** 5 Va minimum

Control Output Ratings:

AC SSR: 2.0 A at 240 Vac resistive at 25°C (77°F), de-rates to 1.0 A at 55°C (130°F); minimum load of 100 mA

Relay: SPST, 3 A at 240 Vac resistive, 1.5 A @ 240 Vac inductive

Pilot Duty Rating: 250 VA, 2 A @ 120 Vac, 1 A @ 240 Vac

Alarm Relay: SPST, 3 A @ 240 Vac resistive, 1.5 A @ 240 Vac inductive

Pilot Duty Rating: 240 Va, 2 A @ 120 Vac or 1 A @ 240 Vac

DC Pulse: 15 Vdc at 20 mA.

Proportional Current: 0 to 20 mAdc, scalable, into 600 Ω maximum

Weight: 227 g (8 oz)

Front Panel Rating: Type 4X (IP66)

Serial Communications (Optional): RS232 or RS485



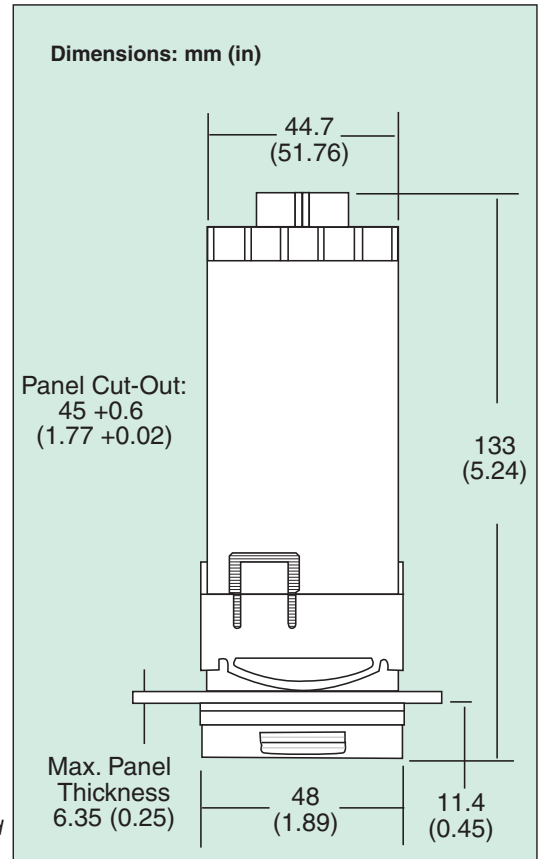
OMEGACARESM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARESM covers parts, labor and equivalent loaners.

Inputs

Input Types	Range
K Thermocouple	-129 to 1371°C (-200 to 2500°F)
J Thermocouple	-73 to 871°C (-100 to 1600°F)
T Thermocouple	-212 to 398°C (-350 to 750°F)
E Thermocouple	-73 to 982°C (-100 to 1800°F)
N Thermocouple	-73 to 1300°C (-100 to 2372°F)
R Thermocouple	-17 to 1760°C (0 to 3200°F)
S Thermocouple	-17 to 1760°C (0 to 3200°F)
B Thermocouple	24 to 1820°C (75 to 3308°F)
L (J DIN) Thermocouple	-73 to 871°C (-100 to 1600°F)
C Thermocouple	-17 to 2320°C (0 to 4208°F)
Pt100 RTD (0.00385)	-200 to 875°C (-328 to 1607°F)
Pt100 RTD (0.00392)	-200 to 875°C (-328 to 1607°F)
RTD, 120 Ω Nickel (0.00628)	-80 to 320°C (-112 to 608°F)
RTD, Pt1000 (0.00385)	-200 to 875°C (-328 to 1607°F)
0 to 20 mA*, 4 to 20 mA*	-1999 to 9999
0 to 10 Vdc*, -10 to 10 Vdc*, -10 to 10 mVdc*	-1999 to 9999

Note: All thermocouple and RTD inputs can be set for 0.1° display. If temperature goes above 999.9° or below -199.9°, the display will return to whole-degree resolution.

* **Process Input Types:** The 0 to 20 mAdc, 4 to 20 mAdc, 0 to 10 Vdc, 2 to 10 Vdc, and -10 to 10 mVdc inputs are fully scalable from a minimum of 100 counts span placed anywhere within the range of -1999 to 9999. Decimal point position is adjustable from the zero place (9999), tenths (999.9), hundredths (99.99) or thousandths (9.999).



MOST POPULAR MODELS HIGHLIGHTED!

To Order (Specify Model Number)

Model Number	Price	Description
CN78030	\$276	Single output, relay
CN78130	299	Single output, relay and alarm
CN78133	323	Dual output, relay/relay and alarm
CN78020	276	Single output, DC pulse
CN78110	299	Single output, AC SSR and alarm
CN78111	323	Dual output, AC SSR/AC SSR and alarm
CN78050	316	Single output, 4 to 20 mA

Options

Ordering Suffix	Additional Price	Description
-C4*	\$99	RS485 communications**
-C2*	99	RS232 communications**
-PV1*	79	0 to 20 mA isolated retransmission output
-PV2*	79	0 to 10 Vdc isolated retransmission output
-LV	65	12 to 24 Vdc/Vac power

* Only 1 option can be ordered. ** Free CN7-A software download available on omega.com/cn78000

Accessories (Field Installable)

Model No.	Price	Description
CNQUENCHARC	\$10	Noise suppression RC snubber (2 leads), 110 to 230 Vac
CN7-485-USB-1	99	RS485 to USB mini-node converter

Comes complete with operator's manual.

Ordering Examples: CN78133-PV1, dual output controller, relay/relay and alarm, 0 to 20 mA isolated retransmission output, \$323 + 79 = \$402.

CN78030, single output controller, relay, \$276.

OCW-3, OMEGACARESM extends standard 1-year warranty to a total of 4 years (\$69), \$276 + 69 = \$345.

Recommended Reference Book: Controller Tuning, PID, GE-2117, \$25. Visit omega.com/bobi for Additional Books.



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• 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

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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