



Universal Temperature/ Process Limit Controllers



¼ DIN

CN1622 Series
\$335
Basic Unit

Features

- ✓ Dual Four-Digit Red LED Display
- ✓ Universal Sensor Input: Thermocouple, 3-Wire RTD or dc Linear (mA, mV or V)
- ✓ Latching Limit Relay Output
- ✓ Modular Outputs
- ✓ 90 to 264 Vac Power Supply
- ✓ Simple Configuration with Password Protection
- ✓ NEMA-4 Type/IP65 Sealed Front Panel

Optional Features

- ✓ Low Voltage Power Supply: 20 to 50 Vac/22 to 65 Vdc
- ✓ Configuration Software
- ✓ Remote Reset
- ✓ Analog Retransmission
- ✓ Transducer Power Supply
- ✓ Alarm Outputs
- ✓ RS-485 Communications

The CN1612 and CN1622 are a new line of limit controllers designed to provide a programmable safety cut out and optional alarm for use in a wide variety of applications with process controllers.

The CN1612 and CN1622 both provide a latched relay output which is activated when process parameters



¼ DIN

CN1612 Series
\$320
Basic Unit

Shown actual size

either exceed or fall below the desired value, providing a fail safe shutoff which has to be manually reset before the process can continue.

The instrument can be configured to be either a high limit unit where the relay will de-energize when the process variable is above the limit setpoint, or a low limit where the relay will drop out when the PV falls below the setpoint.

LED indication shows when limits have been exceeded and when the relay is latched out.

It offers a full range of universal sensor input options, versatile configuration and a front panel sealed to NEMA-4/IP65 standards.

The CN1612 and CN1622 both provide a valuable safety control element in most applications and systems.



**CN1612 Series
Back View**

Specifications

Input

Thermocouple types:

J, K, T, R, S, B, L and N

RTD: (3-wire)

100 ohm (.00385 ohm/ohm/°C)

Volts: 0 to 5 V dc, 1 to 5 Vdc,
0 to 10 V dc and 2 to 10 V dc

Millivolts:

0 to 50 mVdc and 10 to 50 mVdc

Milliamps:

0 to 20 mA dc and 4 to 20 mA dc

Sensor Fault Detection:

Displays "LL" or "HH" for thermocouple or RTD inputs and sensor break, "SnSr."
Limit outputs set to OFF (0% power); alarms operate as if the process variable has gone over-range (TC) and under-range (RTD & V, mV, mA)

Remote Reset: (Optional) Voltage free contact, closure required to reset

Limit Output Relay:

SPDT 5 A Resistive at 120/240 Vac

Alarm Output Relay:

2 A Resistive at 120/240 Vac

Retransmit Output:

0 to 20 mA dc into 500 Ω max.
4 to 20 mA dc into 500 Ω max.
0 to 10 V dc 500 Ω min.
0 to 5 V dc 500 Ω min.

Digital Display:

Four 7-segment LED's
¼ DIN:
Top: 13 mm (.53"),
Bottom: 10 mm (.38")

⅛ DIN:

Top: 9 mm (.36"),
Bottom: 7 mm (.28")

Status Indicators:

Individual LED indicators for OUT, Exceed, ALM, and when in Setup

Maximum/Minimum Hold

Feature tracks and saves maximum and minimum process variable

Time Exceed

Feature that measures the amount of time that the limit is exceeded

Alarms

Maximum Number: Two "soft" alarms

Maximum # Outputs: Up to 2 outputs can be used for alarm purposes

Combination of Alarms:

Logical "ORing" and "ANDing" of alarms to an individual hardware output is available

Alarm Adjustment

Process Alarm: ± Input Span

Performance

Measurement Accuracy:

±0.25% of span, ±1 LSD at 20°C

Note: Reduced performance with Type "B" thermocouple between 100 and 600°C (212 to 1112°F)

Ambient Temperature Error:

0.01% of span/°C change in ambient

Linearization Accuracy (TC and RTD): Better than ±0.2°C any point, any 0.1°C range (± 0.05°C typical).
Better than ± 0.5°C any point, any 1°C range

Cold Junction Compensation:

Better than ± 0.7°C/±1.3°F

Scan Rate: 4 per second

Noise Rejection

Common mode:
>120 dB at 50/60 Hz giving negligible effect at up to 264 Vac, 50/60 Hz

Series Mode: >500% of span (50/60 Hz) causes negligible effect

Line Voltage:

90 to 264 Vac, 50/60 Hz (standard),
20 to 50 Vac, 50/60 Hz or
22 to 65 Vdc (optional)



**Companion Limit Controller:
CN1602 Series ⅛ DIN
available in this section**

Operating Temperature:

0 to 55°C (32 to 130°F)

Storage Temperature:

-20 to 80°C (-4 to 176°F)

Humidity:

20 to 95% non-condensing

Dimensions:

⅛ DIN: 48 x 96 x 110 mm deep
(1.89 x 3.78 x 4.33")

¼ DIN: 96 x 96 x 110 mm deep
(3.78 x 3.78 x 4.33")

Panel Cutout Dimensions:

⅛ DIN: 45 x 92 mm (1.8 x 3.6")

¼ DIN: 92 x 92 mm (3.6 x 3.6")

Weight:

⅛ DIN: 226.8 g (8 oz)

¼ DIN: 453.6 g (16 oz)

Front Panel Sealing:

NEMA-4/IP65

Power Consumption: 4 Watts

Agency Approvals

UL Recognized: UL certified for use in Canada

FM: File 120694.MMO

Digital Communications

Type:

RS-485 serial communication port

Character Format:

MODBUS RTU PROTOCOL

Bit Rate: User configurable to

1200, 2400, 4800, 9600

Address:

User configurable 1 to 32

**For Additional Controllers
and Indicators, See Section M**

Universal Input Types and Ranges

Input Type	Range °C	Range °F
J Iron-Constantan	0 to 450°C 0 to 761°C 0.0 to 205.4°C	32 to 842°F 32 to 1402°F 32.0 to 401.7°F
K CHROME [®] GA [®] -ALOMEGA [®]	0 to 760°C 0 to 1373°C	32 to 1400°F 32 to 2503°F
T Copper Constantan	-200 to 262°C 0.0 to 260.6°C	-328 to 504°F 32.0 to 501.1°F
L Iron-Constantan (J DIN)	0 to 450°C 0 to 762°C 0.0 to 205.7°C	32 to 842°F 32 to 1404°F 32.0 to 402.3°F
R Pt-13%Rh/Pt	0 to 1650°C	32 to 3002°F
S Pt-10%Rh/Pt	0 to 1649°C	32 to 3000°F
B Pt-30%Rh/Pt-6%Rh	100 to 1824°C	212 to 3315°F
N OMEGA-P [®] -OMEGA-N [®]	0 to 1399°C	32 to 2550°F
RTD Pt, 385 100Ω	-200 to 206°C	-328 to 403°F
	0 to 300°C	32 to 572°F
	0 to 800°C	32 to 1471°F
	-100.9 to 573.3°C	-149.7 to 999.1°F
	-101.0 to 100.0°C	-149.8 to 212.0°F
	0.0 to 100.9°C	32.0 to 213.6°F
Process Voltage	0 to 50 mV, 10 to 50 mV, 0 to 5 V, 1 to 5 V, 0 to 10 V, 1 to 10 V, 2 to 10 V	
Process Current	0 to 20 mA, 4 to 20 mA	



IN STOCK FOR FAST DELIVERY!

To Order (Specify Model Number)

Model Number	Price	Description
CN1612-R1	\$320	1/8 DIN limit controller, single 5 amp output
CN1622-R1	335	1/4 DIN limit controller, single 5 amp output

Note: The single output modules are standard. To order two or three outputs, specify output suffixes from the **Output Options** table

OMEGACARESM extended warranty program is available for models when placing an order. Add suffixes for second and third outputs from the output options boxes

Ordering Example: CN1622-R1-R2-F3-C4-LV, 1/4 DIN process limit controller, dual relay output, analog retransmission, RS-485 communications and low voltage power, \$335 + 26 + 47 + 62 + 15 = **\$485**

GEQSS-14G-12, \$30
Low Noise
Thermocouple Probes,
see Section A.



Output Options: (Field Installable)

Output 2 Suffix	Price	Description
-R2	\$26	Alarm relay
-TPS2*	60	Trans. power supply
Output 3 Suffix	Price	Description
-R3	\$26	Alarm relay
-F3	47	Analog retransmission
-TPS3*	60	Trans. power supply

Note: *Only one Transmitter Power Supply can be ordered per unit.

Additional Options: (Only 1 option available per unit)

Ordering Suffix	Add'l Price	Description
-C4	\$62	RS-485 communications
-RR	26	Remote reset

Optional Power Supply

Ordering Suffix	Add'l Price	Description
-LV	\$15	20 to 50 Vac / 22 to 65 Vdc

Optional Plug-In Boards and Accessories (Field Installable)

Model Number	Price	Description
BD1600-R*	\$26	2 A relay output
BD1600-F*	47	Analog output
BD1600-TPS*	60	24 Vdc Transmitter power supply
BD1600-C4	62	RS-485 communications
CN1600-SOFT**	105	Software & cable for the configuration port

*BD1600 modules are for Outputs 2 and 3 only. **For configuration only, not used with RS-485 communications.



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• Flow and Level

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• pH and Conductivity

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• Data Acquisition

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• 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