



1/4 DIN Universal/Temperature Process Controller



CN3420 Series
\$415
Basic Unit

- ✓ PID Controller with Autotune—Single Loop, Heat/Cool and Ramp/Soak Are Standard
- ✓ Quick Code, Front Face or PC Configuration—Easy Commissioning and Operation Using Our Optional Windows-Based Software
- ✓ Selectable Control Outputs to Suit Your Application—Analog, Relay or Logic Control Capabilities Are Standard
- ✓ Case Depth Behind Panel Less Than 125 mm (5") — Reduced Installation and Panel Costs
- ✓ Universal Process Input with Integral Transmitter Power Supply
- ✓ NEMA-4X/IP66 Protection and Full Noise + EMC Immunity
- ✓ RS-485/MODBUS Serial Communications — SCADA, PLC and Open Systems Integration

The CN3420 Series Process Controller is a highly versatile, single loop controller in 1/4 DIN format that has been designed to be exceptionally easy to set up and operate.

Universal input and an integral transmitter power supply ensure that the CN3420 has the capability to measure a wide range of process signals such as temperature, pressure, flow and level.

The unit features enhanced performance with analog, logic and relay control outputs, all fitted as standard, and an option to add further I/O capabilities such as



additional relays, remote setpoint, analog retransmission and digital input, as needed to suit your application.

The configuration of the CN3420 is achieved by moving the security switch and entering a simple code from the front panel keys or via our CN34-SW PC configuration package. There are no passwords, no input links, no complications.

With NEMA-4X/IP66 front panel and superior RF immunity standard, the CN3420 has been designed to control reliably in the harshest of today's industrial environments.

Specifications Operation

Display: High intensity 7-segment, 2 x 4-digit red LED display.

Display Range: -999 to +9999

Display Resolution: ±1 digit

Display Height: 12 mm (0.43")

Configuration: User-defined via front panel or PC configurator

Standard Functions

Control Types: Programmable for manual, ON/OFF, time proportioning, current

proportioning and heat/cool control

Setpoints: Local, remote, 4 selectable, fixed value, ramping setpoint

Profile Controller:

Number: 4 ramp/soak segments

Features: Guaranteed ramp/soak, self-seeking setpoint, program repeat

Controls: Run, hold and stop from front panel switches. Run/hold or run/stop from digital input

Alarms:

Number: Two user-defined

Type: High/low process, high/low deviation, loop break alarm

Standard Build

Analog Control

Output/Retransmission:

Analog, configurable in the range of 4 to 20 mA. Max. load: 15 V (750 Ω at 20 mA); Accuracy: 0.25% of span; Dielectric: 500 Vdc from input (not isolated from dc pulse output)

dc Pulse Output:

18 Vdc at 20 mA; Min. load: 400 Ω;

Dielectric: 500 Vdc from input (not isolated from analog control output)

Relay Output: One relay as standard (SPDT); 5 A @ 115/230 Vac

Analog Inputs

Number: One as standard; one optional 4 to 20 mA remote setpoint input

Input Sampling Rate:

250 ms per channel

Type: Universally configurable to provide (Channel 1 only); thermocouple (TC), RTD, millivolt, current, dc voltage

Input Impedance:

mA: 100 Ω
mV, V: >10M Ω

Linearizer Functions:

Programmable for standard inputs:
TC types B, E, J, K, N, R, S, T or
Pt100 RTD

Broken Sensor Protection:

Upscale drive on TC and RTD;
Downscale drive on milliamps
and voltage

Cold Junction Compensation:

Automatic CJC incorporated as
standard; Stability <0.05°C/°C
change in ambient temperature

Input Protection:

Common mode isolation: >120 dB
at 50/60 Hz with 300 Ω imbalance;
Series mode rejection:
>60 dB 50/60 Hz

Transmitter Power Supply:

24 V, 30 mA max.

Relay Output:

SPDT: 5 A @ 115/230 Vac

Digital Input:

Type: Volt-free
Minimum pulse: 250 ms

MODBUS Serial Communications:

Connections: RS-422/485, 2- or 4-wire
Speed: 2.4 k or 9.6 k baud rate
Protocol: MODBUS RTU slave

Remote Setpoint Input: 4 to 20 mA

dc, 100 Ω nominal input impedance.
Preset to process variable
engineering units

Auxiliary Analog Output: Analog,
configurable in the range of 4 to 20 mA.
Max. load: 15 V (750Ω at 20 mA);
Dielectric: 500 Vdc from input

Physical

Size: 96 W x 96 H x 122.5 mm D
(3.78 x 3.78 x 4.82")

Weight: 520 g (1.1 lb) approx.

Electrical

Voltage:

85 to 265 Vac (50/60 Hz), 24 Vdc

Power Consumption: <6 VA

Power Interruption Protection:

<60 ms/<3 cycles, no effect
<60 ms/>3 cycles, instrument returns
to operation after a controlled reset

Environmental

Operating Limits:

0 to 55°C (32 to 131°F);
5 to 95% RH non-condensing

Temperature Stability:

<0.02% of reading or 2 μV/°C (1 μV/°F)

Front Face:

NEMA-4X (IP66), rear IP20

EMC

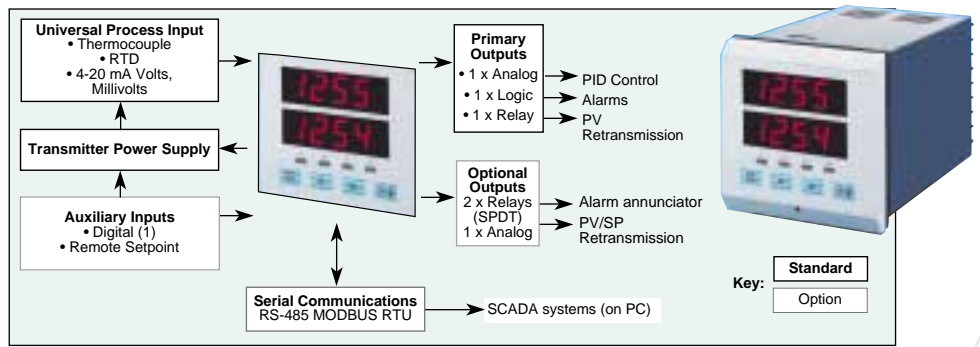
Emissions:

Meets requirements of EN50081-2

Immunity:

Meets requirements of EN50082-2

Electrical Safety: EN61010-1



Universal Input Types and Ranges

Input Type	Range	Accuracy (% of reading)
B Pt-30%Rh/Pt-6%Rh	-18 to 1800°C 0 to 3270°F	0.25% or ±2°C/3.6°F (above 200°C/392°F)
E CHROMECA®-Constantan	-100 to 900°C -148 to 1652°F	0.25% or ±0.5°C/0.9°F
J Iron-Constantan	-100 to 900°C -148 to 1652°F	0.25% or ±0.5°C/0.9°F
K CHROMECA®-ALOMEGA®	-100 to 1300°C -148 to 2372°F	0.25% or ±0.5°C/0.9°F
N OMEGA-P®-OMEGA-N®	-200 to 1300°C -328 to 2372°F	0.25% or ±0.5°C/0.9°F
R Pt-13%Rh/Pt	-18 to 1700°C	0.25% or ±1.0°C
S Pt-10%Rh/Pt	0 to 3092°F	(above 200°C/392°F)
T Copper-Constantan	-250 to 300°C -418 to 572°F	0.25% or ±0.5°C/0.9°F
RTD Pt100	-200 to 600°C -325 to 1110°F	0.25% or ±0.5°C/0.9°F
Linear Inputs		
Current	0 to 20 mA	0.25% or ±2 μA
	4 to 20 mA	0.25% or ±2 μA
Voltage	0 to 5 Vdc	0.25% or ±200 μA
	1 to 5 Vdc	0.25% or ±200 μA
mV	0 to 50 mV	0.25% or ±20 μA
Square Root Input		
Current	4 to 20 mA	0.25% or ±2 μA

Notes: Performance accuracy is not guaranteed below 400°C (752°F) for types B, R and S thermocouples. RTD, 3-wire platinum, 100 ohm with range of 0 to 400 ohm.
Minimum span below zero: Type T: 70°C (126°F), Type N: 105°C (189°F)

To Order (Specify Model Number) IN STOCK FOR FAST DELIVERY!

Model No.	Price	Description
CN3420	\$415	¼ DIN process controller
CN3421	550	¼ DIN process controller with one digital input, remote setpoint, retransmission
CN3422	465	¼ DIN process controller with one alarm
CN3423	540	¼ DIN process controller with one alarm, one digital input, remote setpoint, RS-485 digital communications
CN3424	510	¼ DIN process controller with two alarms, one digital input and remote setpoint

Standard Features include: Universal Process Input, Relay, dc Pulse, Analog Outputs, and Transmitter Power Supply
OMEGACARE™ extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order.

Ordering Example: CN3424-24Vdc, ¼ DIN process controller with two alarms, one digital input, remote setpoint, and optional low voltage power supply, \$510 + 25 = **\$535**.
OCW-1 OMEGACARE™ extends standard 3-year warranty to a total of 4 years (\$53), \$535 + 53 = **\$588**

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

Optional Power Supply

Ordering Suffix	Price	Description
-24VDC	\$25	24 Vdc power

Accessories

Model No.	Price	Description
CN34-SW	\$150	Software package

For Additional Controllers and Indicators, See Section M





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• Flow and Level

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• 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