

1/16 DIN Temperature Process Controller Including Thermistor Inputs



CN243 Series



- ✓ Dual Display
- ✓ J, K, R, S Thermocouple Inputs
- ✓ Process Inputs
- ✓ RTD and Thermistor Inputs
- ✓ Alarm Functions
- ✓ On/Off or PID control
- ✓ 3 Step Ramp Soak Feature
- ✓ Autotune
- ✓ Digital Input
- ✓ Password Protection
- ✓ 24 to 230 Vac/Vdc
- ✓ Optional RS485
- ✓ Optional Software with Configuration Module
- ✓ Optional Heater Loop Break Alarm

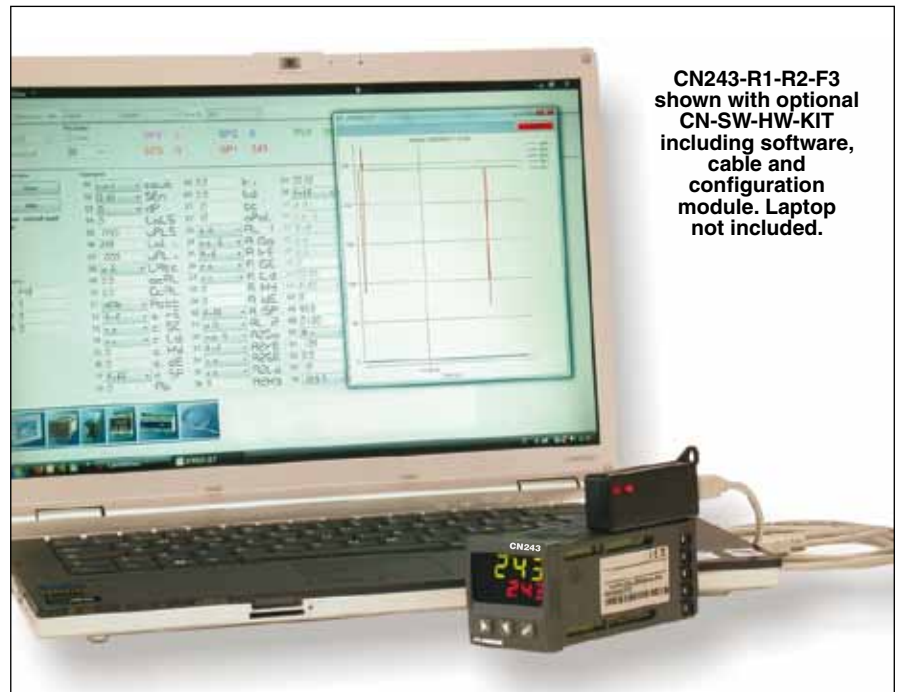
Monitor and control temperature or process applications with precision using the CN243 Series controllers. The CN243 Series provides dual LED displays for local indication of process value and setpoint value. Control methods include on/off, PID, auto-tune and manual-tune. Controller includes a 3-setpoint ramp/soak control feature, alarm functions with optional RS485 communications heater loop break alarm. Analog output can be programmed for either process control or retransmission of process variable. An optional software package CN-SW-HW-KIT includes cable and configuration module for quick configuration of units,



CN243-R1-F2

as well as copying configuration parameters from one unit to another. The configuration module can also be purchased separately and with a built-in battery feature, configuration settings can be downloaded and copied to the

module without power applied to controller. The module can then be plugged into a new unit without power applied and the configuration setting can be transferred for easy set-up for multiple units.



CN243-R1-R2-F3 shown with optional CN-SW-HW-KIT including software, cable and configuration module. Laptop not included.



Specifications

Front Panel Bezel: 48 x 48 mm (1.89 x 1.89")

Panel Depth: 125 mm (4.9")

Supply Voltage: 24 to 230 Vac/Vdc $\pm 15\%$, 50/60 Hz

Power Consumption: 5 W

Display: Two 4-digit, 10 mm (0.4") green (SV), 8 mm (0.3") red (PV)

Accuracy: $\pm 0.5^\circ\text{C}$ temperature, 0.2% reading

Resolution: $1^\circ/0.1^\circ$ 10 μV process

A/D Conversion: Sigma-delta

Reading Rate: Programmable

Digital Filter: Programmable

Operating Conditions:

Temperature: 0 to 45°C (32 to 113°F)

Humidity: 35 to 95 RH%

Material:

Enclosure: Noryl UL94V1, self-extinguishing

Front Panel: PC ABS UL94V0, self-extinguishing

Weight: 165 g (3.95 oz)

Front Panel: IP65 (with gasket), box IP30, terminal blocks IP20

Inputs:

Thermocouple: J, K, R, S

RTD: Pt100, Pt500, Pt1000, Ni100

Thermistor: PTC1K, NTC10K (B 3435K), NTC 2252 Ω

Process: 4 to 20 mA, 0 to 10V, 0 to 40 mV, potentiometer 0 to 6/160 K Ω

Sampling Time: 4,1 ms (frequency 242 Hz)

Input Table

Input Type	Range
K	-260 to 1360°C (-436 to 2480°F)
R/S	-40 to 1760°C (-40 to 3200°F)
J	-200 to 1200°C (-328 to 2192°F)
Pt100 Ω RTD	-200 to 600°C (-328 to 1112°F)
Ni 100 Ω RTD	-60 to 180°C (-76 to 356°F)
Pt 500 Ω RTD	-100 to 600°C (-148 to 1112°F)
Pt 1000 Ω RTD	-100 to 600°C (-148 to 1112°F)
NTC 10 K Ω Thermistor	-40 to 125°C (-40 to 257°F)
NTC 2252 Ω Thermistor	-40 to 150°C (-40 to 302°F)
PTC 1 K Ω Thermistor	-50 to 150°C (-50 to 302°F)
0 to 10 Volt	-999 to 9999
0 to 20 mA	-999 to 9999
4 to 20 mA	-999 to 9999
0 to 40 mV	-999 to 9999
Potentiometer	Maximum 6 K Ω
Potentiometer	Maximum 150 K Ω

1 Digital Input: Up to 4 setpoint selections, hold, run, tuning launch, start/stop cycle

Outputs:

2 or 3 Relays: 5 A to 250 Vac (resistive)

DC Pulse: 12 Vdc, 30 mA

Analog: Programmable for 4 to 20 mA, 0 to 10 Vdc, control or retransmission

Serial Communication:

RS485 MODBUS[®] RTU

Control Algorithms: On/off with hysteresis, P, PI, PID, PD, time proportional

Tuning: Manual or autotune

Data Protection: Lock of command/alarm setpoint, access to parameters by password

Alarm Modes: Absolute/threshold, band, high/low deviation; alarm with optional manual reset

Soft-Start: Rising gradient expressed as $^\circ\text{C}$ or $^\circ\text{F}/\text{hour}$

Programmer Function: Start/stop, 3 steps pre-programmed cycle

Timer Function: Controller function + single/double timer

To Order

Model No.	Description
CN243-R1-F2	Controller, relay/relay or relay/dc pulse or analog output (selectable for output 2)
CN243-R1-R2-F3	Controller, relay/relay/dc pulse or analog output (selectable for output 3), RS485, heater loop break
CN243-R1-R2-R3-F4-C4	Controller, relay/relay/relay/dc pulse or analog output (selectable for output 4), heater loop break

Accessories (Field Installable)

Model No.	Description
CN-SW-HW-KIT	Software, cable and configuration module kit
CN-CONFIG-MODULE	Configuration memory plug in module
CNQUENCHARC	Noise suppression kit, 110 to 230 Vac

Comes complete with operator's manual.

Ordering Example: CN243-R1-R2-F3, controller with 2 relays, 1 dc pulse or analog output (selectable), heater loop break alarm.