

# Temperature Controllers and Indicators

## For Plastics Extrusion Applications



### CNP Series



- ✓ Simple to Operate, Preconfigured for Extrusion Applications
- ✓ Universal Input
- ✓ Selectable Controller or Indicator Modes
- ✓ Heat Only or Heat Cool Control Type
- ✓ Process and Loop Alarms
- ✓ Available in 1/16 and 1/8 DIN Formats
- ✓ MODBUS® RS485 Communications
- ✓ Ramping Setpoint

Reduce inventory—single device for heat only, heat/cool control and indicator. Fast configuration—plastic extruder specific settings and default parameters to fit the selected mode. The OMEGA CNP Series extruder temperature controllers are an economic solution to precision temperature control of extruders. With two package sizes and multiple output configurations, the controllers are suitable for twin and single screw extruders, both for heat only die and adapter zones, and heat/cool for barrel zones. The controllers can also be used in an indicator only mode, allowing one instrument to be used for all applications. With three default parameter settings for indicator, heat and heat/cool modes, the OMEGA CNP Series controllers offers the ultimate in flexibility for the control of industrial plastic extruders.

### Specifications

**Device Modes:** PID controller or indicator

**Control Types:** Full PID with pre-tune, self-tune, manual tuning, or on-off control; heat only or heat/cool

**Sensor Input:** Universal input for use with thermocouples, PT100 RTDs, and sensors with linear DC current and voltage outputs

**Auto/Manual Selectable:** From front panel with bumpless transfer

**Control:** Enable control ON/OFF selectable from front keypad

**Output Configurations:** Up to 3 possible outputs for control and alarm(s)

**Alarm 1 and 2 Types:** Process high, process low, SP deviation, band, logical or/and; also 1 loop alarm for process control security; process alarms have adjustable hysteresis

**Human Interface:** 4 button operation, 4 digit 10 mm red upper and 8 mm green lower LED display plus 5 LED indicators



CNP621110020 shown larger than actual size.



CNP821110020 shown smaller than actual size.

**Inputs Supported:** Thermocouple J, K, C, R, S, T, B, L, N and PtRh 20% vs PtRh 40%

**RTD 3 Wire PT100:** 50Ω per lead maximum (balanced)

**DC Linear:** 0 to 20 mA, 4 to 20 mA, 0 to 50 mV, 10 to 50 mV, 0 to 5 V, 1 to 5 V, 0 to 10 V, 2 to 10 V; scalable -1999 to 9999, with adjustable decimal point

**Impedance:** >10Ω for thermocouple and mV ranges, 47Ω for V ranges and 5Ω for mA ranges



**Accuracy:**  $\pm 0.1\%$  of input range  $\pm 1$  LSD (T/C CJC better than  $1^\circ\text{C}$ )

**Sampling:** 4 per second, 14 bit resolution approximately

**Sensor Break Detection:**  $< 2$  seconds (except zero based DC ranges), control O/P's turn off, high alarms activate for T/C and mV ranges, low alarms activate for RTD, mA or V ranges

**Outputs and Operations**

**Control and Alarm Relays:** Contacts SPDT 2 amp resistive at 240 Vac,  $> 500,000$  operations

**Control SSR Driver Outputs:**  $> 10$  Vdc in 500 minimum drive capability

**Triac Outputs:** 0.01 to 1 amp AC, 20 to 280 Vrms, 47 to 63 Hz

**Communications:** 2-wire RS485, 1200 to 19,200 Baud, MODBUS

**Operating and Environmental**

**Temperature and RH:** 0 to  $55^\circ\text{C}$  ( $-20$  to  $80^\circ\text{C}$  storage) [ $32$  to  $131^\circ\text{F}$  ( $-4$  to  $176^\circ\text{F}$ )], 20 to 95% RH non-condensing

**Power Supply:** 100 to 240 V, 50/60 Hz, 7.5 VA, 20 to 48 Vac 7.5 VA/22 to 65 Vdc, 5W

**Front Panel Protection:** IEC IP66 (behind panel protection is IP20)

**Standards:** CE, UL and ULC recognized

**Front Bezel Dimensions:**

$\frac{1}{16}$  DIN: 48 x 48 mm (1.89 X 1.89")

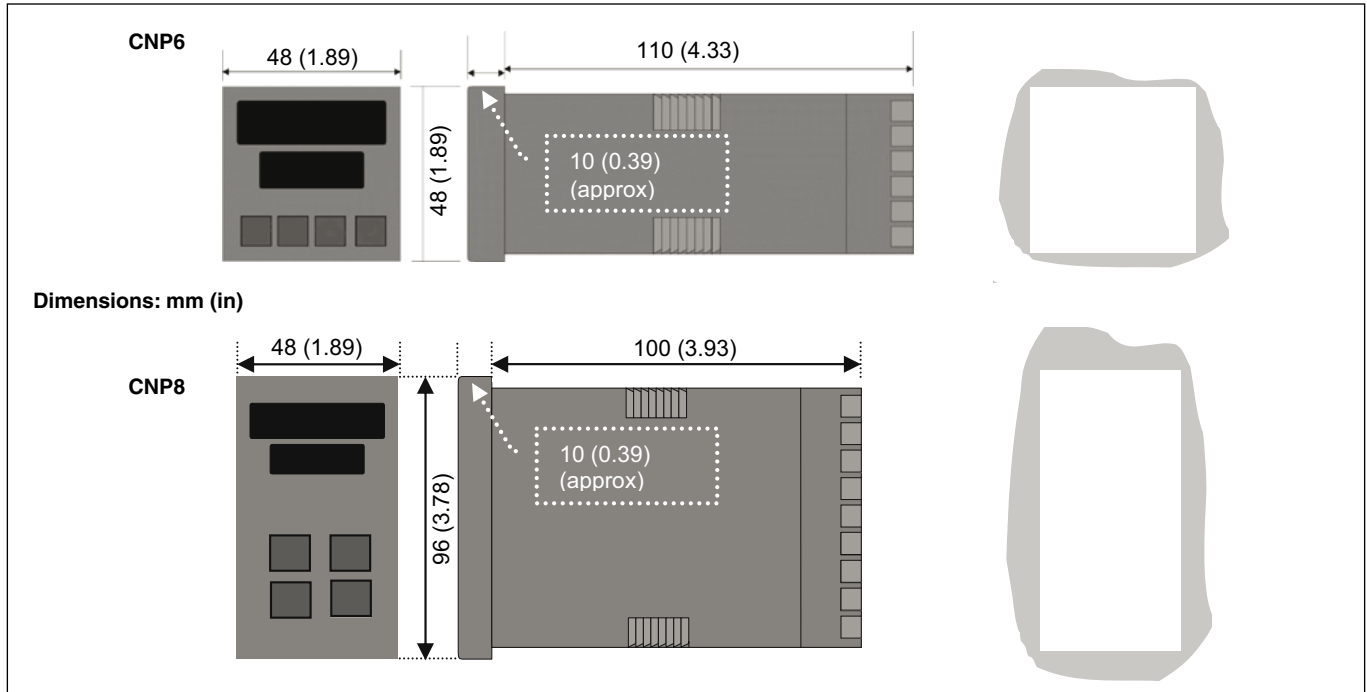
$\frac{1}{8}$  DIN: 96 x 48 mm (3.78 X 1.89")

**Depth Behind Panel:**

$\frac{1}{16}$  DIN: 110 mm (4.33")

$\frac{1}{8}$  DIN: 100 mm (3.93")

**Weight:** 0.21 kg (7.4 oz)



To Order	
Model	Description
CNP621110020	$\frac{1}{16}$ DIN, universal input, 3 SPDT 2A relay outputs, 100 to 240 Vac powered
CNP621110220	$\frac{1}{16}$ DIN, universal input, 3 SPDT 2A relays, 24 to 48 Vac or Vdc powered
CNP622110020	$\frac{1}{16}$ DIN, universal input, 1 DC pulse, 2 SPDT 2A relay outputs, 100 to 240 Vac powered
CNP622110220	$\frac{1}{16}$ DIN, universal input, 1 DC pulse, 2 SPDT 2A relay outputs, 24 to 48 Vac or Vdc powered
CNP622211020	$\frac{1}{16}$ DIN, universal input, 2 DC pulse, 1 SPDT 2A relay outputs, RS485 communications, 100 to 240 Vac powered
CNP821110020	$\frac{1}{8}$ DIN, universal input, 3 SPDT 2A relay outputs, 100 to 240 Vac powered
CNP821110220	$\frac{1}{8}$ DIN, universal input, 3 SPDT 2A relays, 24 to 48 Vac or Vdc powered
CNP822111020	$\frac{1}{8}$ DIN, universal input, 1 DC pulse, 2 SPDT 2A relay outputs, RS485 communications, 100 to 240 Vac powered
CNP822111220	$\frac{1}{8}$ DIN, universal input, 1 DC pulse, 2 SPDT 2A relay outputs, RS485 communications, 24 to 48 Vac or Vdc powered
CNP823111020	$\frac{1}{8}$ DIN, universal input, 1 triac, 2 SPDT 2A relay outputs, RS485 communications, 100 to 240 Vac powered

Comes complete with operator's manual.