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# Compact Temperature Controllers
## Dual 20 Amp Relays

**CN3910A Series**

**$360**

**Basic Unit**

- **ON/OFF or Proportional Control**
- **Standard Dual 20 Amp Mechanical Relay Heating Output**
- **Optional Pulsed dc Solid State Relay Output**
- **Compact ¼ DIN Design, 64 mm (2.5") Depth Behind Panel**
- **J and K Thermocouple Input**
- **Rugged Stainless Steel Case**




**Shown with KMTSS-125G-6 ($24) Sold Separately in Section A**

**Shown slightly larger than actual size**

CN3910A Series Controllers offer the ultimate in applications flexibility and control features in an attractive, compact design that both OEM's and users will find cost effective. The CN3910A is housed in a rugged, noncorrosive stainless steel ¼ DIN package that requires less than 64 mm (2.5") behind the mounting surface. To add to its application possibilities, the CN3910A with barrier strip wiring terminals is UL listed.

The CN3910A controller operates in either ON/OFF or Proportional control modes, selectable by a simple front panel adjustment. All control settings are easily made with screwdriver adjustments that are conveniently concealed behind a front door flap. The setpoint is adjustable to within one degree and is displayed by pressing the "READ SET PT" pushbutton. In the ON/OFF mode, deadband is 2.5°F, or can be field changed to 10°F. In the Proportional control mode, the proportional band can be adjusted from 0.5 to 10.0% of span. Manual reset (trim) is adjustable ±50% of span. The CN3910A is available with either two 20 amp mechanical relay outputs (standard) or solid state relay output (optional).

The mechanical relay output is recommended for ON/OFF applications with long cycle times, and can be used to drive contactors, single-phase loads up to 40 amps, or 3-phase, 2-leg loads.

The solid state relay drive output is recommended for applications requiring proportional control. When coupled with an OMEGA® pulsed dc input solid state relay, this output gives precise, solid state control. Cycle time is adjustable from 1 to 30 seconds for the relay drive output.

The CN3910A controller is configurable for both 120 and 230 Volt, 50/60 Hz models. These units are available with either type J or type K thermocouple inputs. Power and sensor input connections are made to screw terminals on a rear panel barrier strip.

## Specifications

### Control Mode (Field Selectable)

**ON/OFF or Proportional:**
Selectable by adjustment of potentiometer

### Control Adjustment

### Control Setpoint:

**Controller Range:**
0 to 500°C (0 to 999°F)
**DeadBand:**
2.5°F, field changeable to 10°F
**Proportional Band:**
-15 to 40°C (5 to 104°F), adjustable
**Manual Reset:**
Adjustable over 100% of the proportional band
**Output Cycle Time:**
SSR Drive output model,
1 to 30 seconds, adjustable.
Relay output models,
15 to 60 seconds, adjustable
**Control Action:** Reverse acting (heating)
**Set Point Accuracy:** ±0.1% span

### Control Outputs

**(1) Mechanical Relays (standard):**
Two, normally-open, SPST, at 120 or 240 Vac, each rated at 20 amps. Recommended for on/off applications with long cycle times.
**(2) Solid State Relay Drive (optional):**
Transistor output of 20 Vdc at 40 mA dc. Recommended for proportional control applications.
**Control Output Indication:**
Yellow LED "LOAD"

## Input Specifications

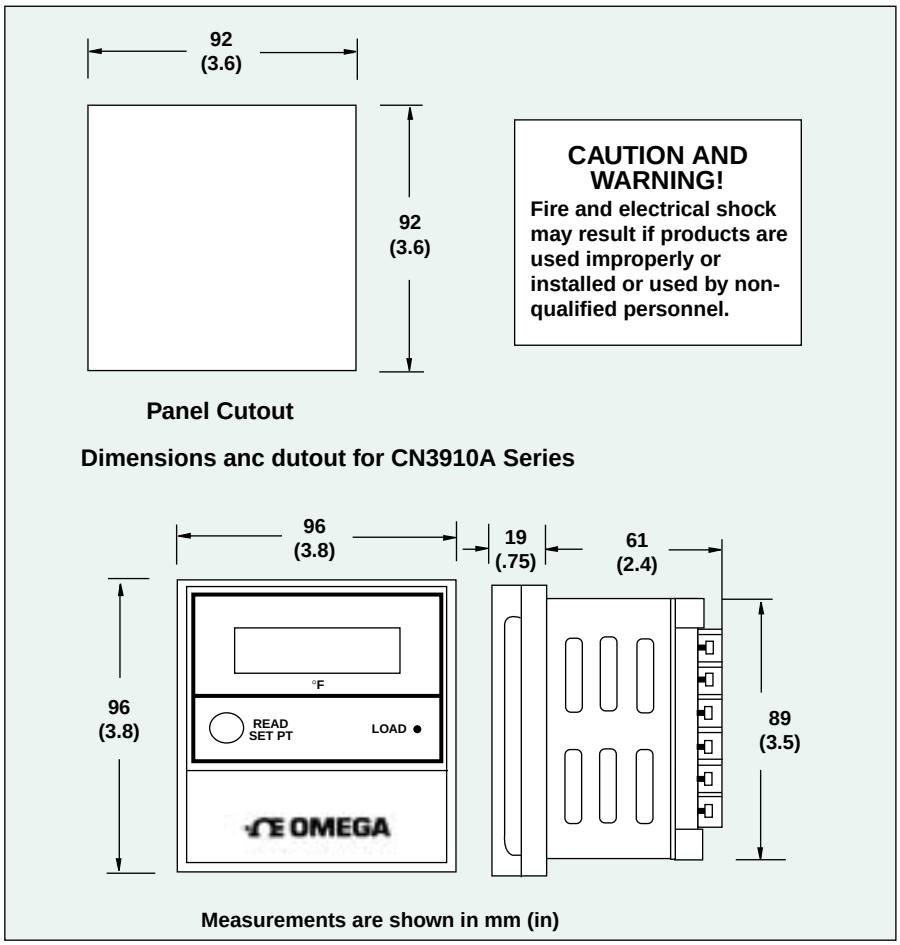
**Type J Thermocouple:**
0 to 500°C (0 to 999°F)
**Type K Thermocouple:**
0 to 11100°C (0 to1999°F)
**Input Loop Resistance:** 150 ohms
**Cold Junction Compensation:**
Automatic, typically less than 0.1°C/°C over 10 to 50°C (0.1°F/1°F over, 50 to 120°F)
**Open Sensor Indication:**
Red LED lamp
**Temperature Indication:**
3½ digit, 7-segment red LED's
**Accuracy of Indication:**
±0.5% of span or ±0.85% of reading (whichever is greater) over mid 80% of span (may field calibrate for specific setpoint accuracy of ±2°F)
**Resolution:** 1°F
**Repeatability:** ±0.1% of span
**Out of Range Indication:**
Red LED lamp

### Noise Rejection

**CMR:** Less than 2°F with 230 Vac, 60 Hz applied from sensor input to instrument case
**Series Mode:** Less than 2°F with 100 mV, peak to peak series mode noise

### General

**Instrument Power:**
120 or 230 Vac, +10%,-15%, 50/60 Hz, 10 VA nominal power consumption




**Influence of Line Voltage Variation:**
Maximum change of ±1°F for +10% nominal line voltage
**Operating Environment:**
30 to 130°F with relative humidity less than 95% non-condensing
**Dimensions:**
**Cutout:** 92 H x 92 W x 66 mm D (3.6 x 3.6 x 2.6")
**Depth Behind Panel:** 66 mm (2.6")
**Projection at Front of Panel:**
20 mm (0.8")
**Mounting:**
Two mounting brackets provided to secure controller in panel cutout
**Connections:**
Barrier strip with screw terminals

***Options***

*(1) Standard control output is two normally open SPST mechanical relays. This output is recommended for on/off applications with long cycle times. Solid state relay drive output is optional and is recommended for proportional control applications. Add suffix **"/S"** to model number to order optional solid state relay output and **subtract $30** from the price.*

*(2) To order a spare mechanical relay for the CN3910A series controllers, order model number **T90N1D12-24**, **$15**.*

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**To Order** *(Specify Model Number)*

| Model No. | Price | Input Type | Range |
|---|---|---|---|
| CN3910AJF | $360 | J | 0 to 999°F |
| CN3910AJC | 360 | | 0 to 500°C |
| CN3910AKF | 360 | K | 0 to 1999°F |
| CN3910AKC | 360 | | 0 to 1100°C |

*Comes with complete operator's manual. 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: CN3910AJF/S,** controller with type J thermocouple input, °F display, solid state relay output, powered by either 120 Vac or 230 Vac, screw terminal selectable. $360 - 30 = **$330. OCW-1** OMEGACARE℠ extends standard 1-year warranty to a total of 2 years ($33), $330 + 33 = **$363.***

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

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