Temperature Controller
With “Sensitive Touch” Keypad

- Easy Programming
- Input for Thermocouple, RTD and Thermistor
- Resolution 0.1°C with Automatic Scale Change (Auto-Ranging)
- “Sensitive Touch” Keypad
- Switching Power Supply 100 to 240 Vac
- On/Off or PID Control with Autotuning
- Programmable Password Protection
- Soft Start or Start Up Delay
- Automatic or Stand-By Mode
- Compressor Protection Time
- Direct Access to Set-Point

Monitor and control temperature with precision using the CN38S Series controllers. The CN38S Series offers an innovative solution for programming through an ergonomic keypad which uses the technology “Sensitive Touch”. This sensor keyboard guarantees complete protection from dust and liquids in every critical environmental situation. Providing on/off control or PID control with Autotune, this controller is the solution for many applications. The CN38S series offers a soft start feature. This function makes it possible to eliminate thermal shock and mechanical stress (due to dilatation) that a system undergoes during start up. In other cases the aim is that of slowing down the increase in temperature in such a way that this can spread itself out evenly inside the material, especially when the machine is equipped with ‘stirrers’ that cannot be started up at room temperature. The CN38S also offers a compressor protection time feature, where some actuators, compressors, and pumps cannot be turned off or turned back on too quickly for their constructive characteristics. To protect the working life of the device it therefore becomes essential to be able to activate a timer that guarantees the minimum time between the switching off of the machine and the following start up.

Specifications
Power Supply: 12 Vac/Vdc, 24 Vac/Vdc, 100 to 230 Vac/Vdc (±10%)
Power Consumption: Maximum 6VA
Device Class: Class II
Nominal Pulse Voltage: 2.5 KV
Category of Overvoltage: II
Isolation: Reinforced isolation between low voltage (input and output relay) and frontal parts; reinforced isolation between low voltage and very low voltage parts (inputs, static outputs)
Thermocouple Input
Type: J, K programmable
Resolution: 0.1°C with automatic scale change
Unit of Measurement: °C or °F programmable
Cold Junction: Automatic compensation 0 to 50°C
Cold Junction Accuracy: 0.1°C/°C @ 25°C after a warm-up (instrument switch-on) of 20 minutes
Calibration: According to EN 60584-1

Burn-Out: At the end of scale
Thermocouple Type Range:
J: -40 to 999°C (-40 to 999°F)
K: -40 to 999°C (-40 to 999°F)
RTD
Type: Pt 100 and Pt 1000, 2-wire
Resolution: 0.1°C with automatic scale change
Unit of Measurement: °C or °F programmable
Burn-Out: At the end of scale
RTD Range:
-50.0 to 99.9°C (-58.0 to 99.9°F)
Thermistor Input
Type:
PTC: 990 Ω @ 25°C
NCT: 10 kΩ @ 25°C
Unit of Measurement: °C or °F programmable
Model Range:
PTC: -50 to 150°C (-67 to 302°F), -50.0 to 99.9°C (-67.0 to 99.9°)
NCT: -50 to 110°C (-58 to 230°F), -50.0 to 99.9°C (-58.0 to 99.9°F)

Outputs
Output: 1 and 2
Function: Control output
Output Action: Direct/reverse, programmable
Contact: SPDT
Contact Load:
Out 1 - 8 A/250 Vac on resistive load - 3 A/250V
Relay Electric Life: 100,000 operations
DC Pulse:
Isolation: Output NOT isolated as regard the very low voltage parts
Logic State:
1: 12V ±20% @ 1 mA, 10V ±20% @ 20 mA
0: <0.5V
Mounting: Flush in panel
Dimensions: 78 x 35 mm (3.07 x 1.38"), depth 64 mm (2.52")
Panel Cut-Out: 71 (2.8") x 29 (1.14")

**Display:** 3-digit single display, red, 12 mm (0.47"")
**Weight:** 180 g (6.3 oz) approximately
**Screw Terminals:** 11 screw terminals (screw M3 for cables 0.25... 2.5 mm² or AWG 22... AWG 14)
**Protection Degree:**
  - **Front Protection:** IP 65 (with gasket) according to EN60070-1 for indoor use
  - **Screw Terminal:** IP20

**Operating Temperature:** 0 to 50°C (32 to 122°F)
**Operating Humidity:** < 95 RH% without condensation
**Storage Temperature:** -25 to 60°C (-13 to 140°F)
**Overall Accuracy:** ±(0.5% span ±1 digit @25 °C)
**Sampling Rate:** 1 s
**Display Updating Time:** 1 s

### To Order

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CN38S-TC-R1-R2</td>
<td>Type J/K, thermocouple input, relay/relay</td>
</tr>
<tr>
<td>CN38S-TC-DC1-DC2</td>
<td>Type J/K, thermocouple input, dc pulse/dc pulse</td>
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<td>RTD, relay/relay</td>
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<td>CN38S-TH-R1-R2</td>
<td>Thermistor, relay/relay</td>
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<tr>
<td>CN38S-TH-DC1-DC2</td>
<td>Thermistor, dc pulse/dc pulse</td>
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#### Low Voltage Models

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<tr>
<td>CN38S-TC-R1-R2-12V</td>
<td>Type J/K, thermocouple input, relay/relay, 12V</td>
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<td>Thermistor, DC pulse/relay, 12V</td>
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### Accessory (Field Installable)

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<tr>
<td>CNQUENCHARC</td>
<td>Noise suppression kit, 110 to 230 Vac</td>
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Comes complete with operator’s manual.
*Ordering Example: CN38S-TC-R1-R2-12V, controller with thermocouple input, 2 relay outputs, low voltage 12V.*