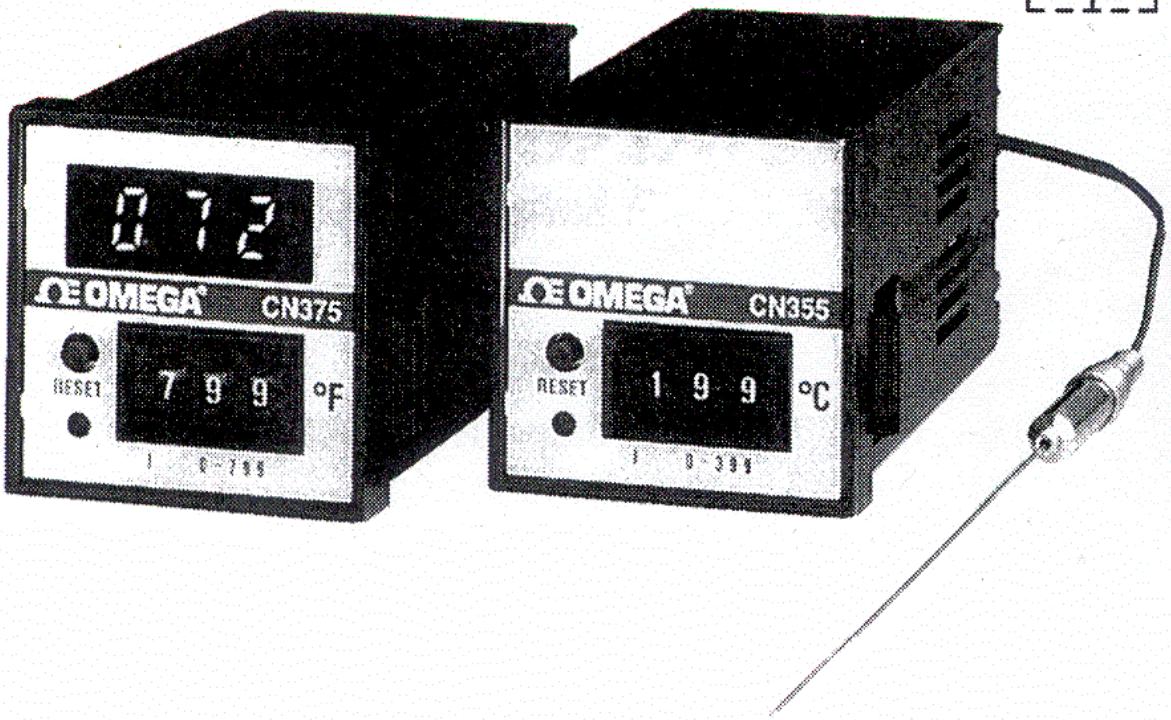

User's Guide

CN350, CN360 & CN370 Series
1/16 DIN Temperature Controllers
CN355 & CN375 Series
1/16 DIN High Limit Controllers
DP370 Series
1/16 DIN Digital Panel Meter

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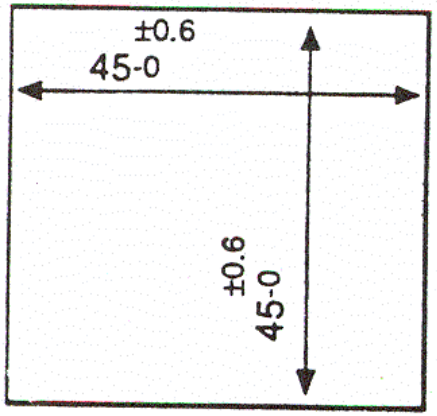
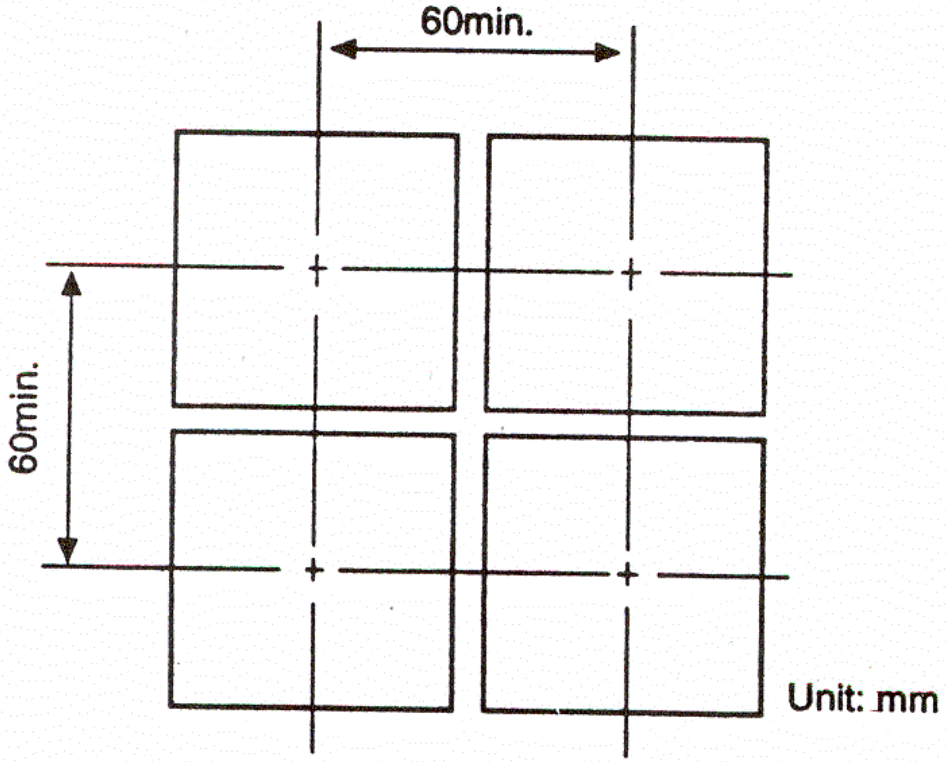
1 PANEL CUTOUT



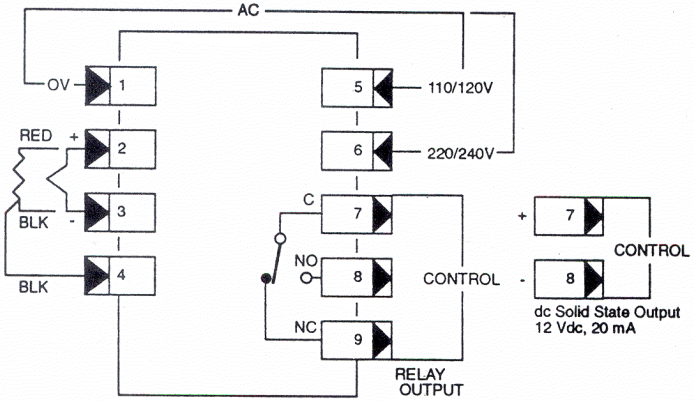


2 INSTALLATION

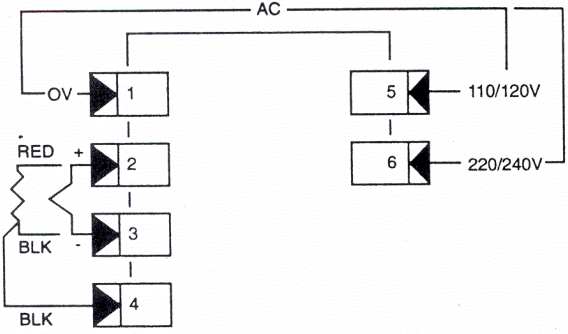
Select a location for the controller that is free from corrosive gases and excessive dust. Avoid direct sunlight, impact and radiant heat from electric ovens.

Prepare a panel cutout of 1.77 x 1.77" (45 x 45 mm) in a panel of 0.04 to 0.14" (1.0 to 3.5 mm) thickness. (Note that the depth of the unit behind the panel is 3.54".) Insert the unit into the panel until it clicks into place.

3 TERMINAL ARRANGEMENT



Terminal Connections, CN350, CN360, CN370 Series Controllers



Terminal Connections, Model DP371 Miniature Digital Panel Meter

Power

For a power supply of 110/120, connect to terminals 1 and 5

For a power supply of 220/240, connect to terminals 1 and 6

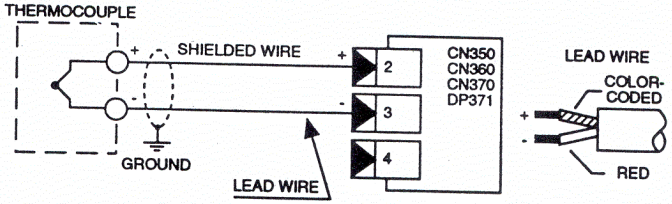
Thermocouple Input

Confirm the type of thermocouple and lead wire. Connect the positive (+) lead (color-coded) to terminal 2 and the negative (-) lead (red) to terminal 3. Ensure that the total resistance is 100 ohms maximum.

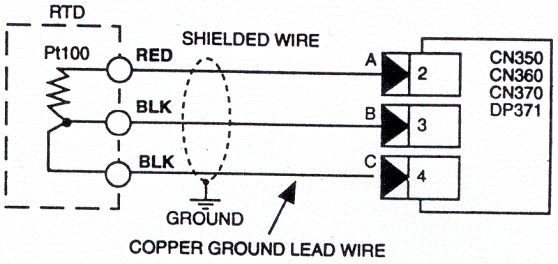
RTD Input

Each of the three lead wires must have a resistance of 2 ohms maximum (approx. 190 ft of 20 gauge Cu wire) and must all be of the same resistance. Since the length of the lead wire will have an effect on unit accuracy, use care in selecting lead length.

Connect the red RTD lead to terminal 2 and the black leads to terminals 3 and 4.



Thermocouple Input Connection

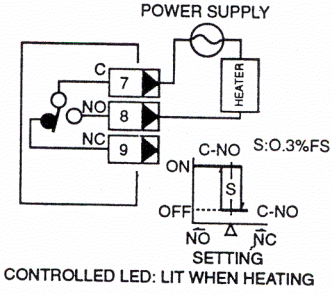


RTD Input Connection

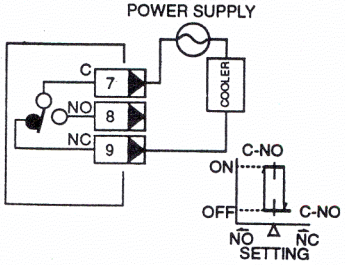
Control Output (CN350/CN360/CN370)

Two types of control outputs are available:

1. A Mechanical Relay (SPDT), 240 Vac, 1 A/ Inductive Load, 2.5 A/Resistive Load;
2. A DC Solid State Voltage Driver, 12 Vdc, 20 mA max-reverse action (N.O.) for heating.

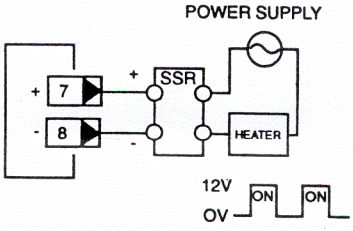


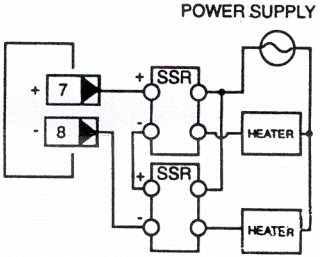
CONTROLLED LED: LIT WHEN HEATING



CONTROLLED LED: UNLIT WHEN COOLING

Mechanical Relay Wiring





Solid State Voltage Wiring

5 DEVIATION DISPLAY

Lit when process value is +1.5%FS of Set value.

Lit when process value is ±1.5%FS of Set value.

Lit when process value is −1.5%FS of Set value.

MANUAL RESET ADJUSTMENT (CN350, CN360, CN370)

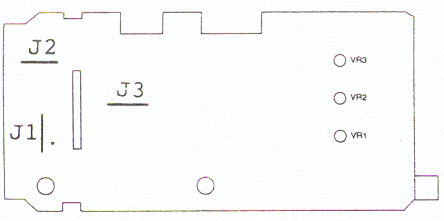
Use the screwdriver adjustment on the front of the unit for manual reset (MR) when using proportional control.

The controller is designed so that the proportioning band is centered at the setpoint within 50% "ON" and 50% "OFF" time (50% power). Because the heater is never exactly sized for the system, the process temperature will not stabilize at the setpoint but at some other temperature within the proportional band. This difference between temperature and desired setpoint is called "offset" or "droop".

This offset is normal with single mode proportional controllers and can be corrected by adjusting the manual reset potentiometer. If there is stable temperature lower than the set temperature, turn the potentiometer clockwise (+ direction) and wait until the process stabilizes. If there is a temperature higher than the set temperature, turn the potentiometer counterclockwise (- direction) and wait until the process stabilizes. Make these adjustments in small increments. On processes with a large thermal mass, the time between a manual reset adjustment and stabilization at the new temperature may be minutes.

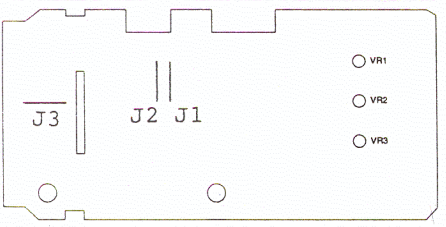
CONVERTING THE CONTROLLERS TO ON/OFF OPERATION (CN350, CN360, CN370)

The CN350, CN360 and CN370 Series Controllers can be changed from Time Proportional to ON/OFF operation by changing three internal jumpers. To access these jumpers, the unit must be removed from the case. To remove the unit from the case, press the catch on the bottom of the unit and slide the unit from the case. The three jumpers (J1, J2 and J3) are on the outside of the input board, which is on the right side when facing the unit. Cut these jumpers to convert to ON/OFF.



Jumper Position for Thermocouple Input

To convert to ON/OFF control, cut/remove J1, J2, and J3 from the outside (solder side) of the board.



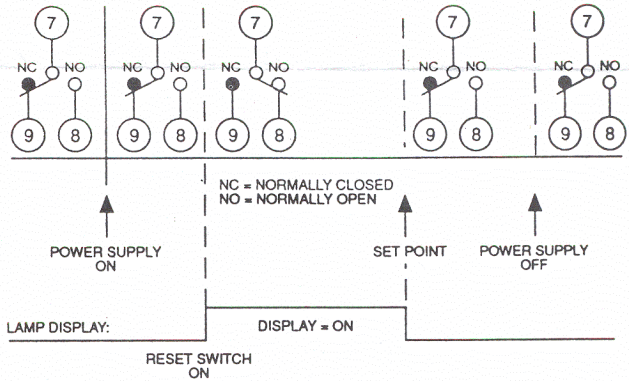
Jumper Position for RTD Input

To convert to ON/OFF control, cut/remove J1, J2, and J3 from the outside (solder side) of the board.

7 HIGH LIMIT CONTROLLER (CN355/CN375)

These controllers have a normally energized SPDT latching output relay which becomes de-energized whenever the process variable (PV) exceeds a selected setpoint value. To provide reliable alarm action, the relay in this controller is energized during normal controller operation. When wiring to the relay, be sure to keep this in mind. Use the reset pushbutton on the front panel of the controller to reset the latching output relay.

High Limit Latching Relay Configuration (CN355, CN375)



Typical Wiring for CN355/CN375

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Servicing North America:

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FAX: (203) 359-7700
e-mail: info@omega.com

Canada:
976 Bergar
Laval (Quebec) H7L 5A1
Tel: (514) 856-6928
FAX: (514) 856-6886
e-mail: info@omega.ca

For immediate technical or application assistance:

USA and Canada:
Sales Service: 1-800-826-6342 / 1-800-TC-OMEGA℠
Customer Service: 1-800-622-2378 / 1-800-622-BEST℠
Engineering Service: 1-800-872-9436 / 1-800-USA-WHEN℠
TELEX: 996404 EASYLINK: 62968934 CABLE: OMEGA

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If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

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RETURN REQUESTS/INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.
The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchse Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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