

File E43684
Project 02NK52086

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REPORT

on

COMPONENT - TEMPERATURE-INDICATING AND REGULATING EQUIPMENT

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Winona, MN

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DESCRIPTION

PRODUCT COVERED:

*USR, CNR Component - **Thermostat (In-Line Heater Control)**, Models WCSH-0120 and WCSH-0240 may be followed by additional numbers or letters.

GENERAL CHARACTER:

The device is a temperature controller incorporating a mechanical relay to control an external load.

***These solid state thermostats** are intended for use in Listed Heaters. The thermostats are intended to function during normal operation of the application to maintain process temperatures within an anticipated range (between "trip" and reset temperature setpoints). The anticipated application of these thermostats is considered equivalent to that of a Temperature Regulating control investigated in accordance with UL873, The Standard for Temperature-Indicating and -Regulating Equipment.

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These controls do not incorporate a line-to-low voltage transformer. The power supply for these controls feature impedance-limiting components to reduce the working voltage to logic levels. Accordingly, all circuitry is considered line-connected.

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*These controllers were evaluated as Type 1 controls. No calibration tolerance was declared; No calibration verification (Deviation and Drift testing was conducted). These controls have not been evaluated for performing any safety/protective functions.

These devices are provided in a polymeric housing/enclosure. The enclosure is intended to ultimately accept a cord for the sensor and one for the load. Neither cord is supplied as part of the equipment certified by this report.

RATINGS:

Electrical -

***Supply:**

Model	Terminals	Supply Voltage, Vac
WCSH-0120	J4 - J5	100-120
WCSH-0240	J4 - J5	200-240

Sensor (Terminals J1-J2): Thermocouple Input - 5Vdc, non-isolated, line-connected

Output (**Terminal J3**): 10 A resistive, 240 V ac, 100,000 c.

Environmental -

Temperature - Maximum ambient temperature of 70°C.

DESIGNATION SYSTEM:

WCSH	<u>XXXX</u>	<u>XXXX</u>
I	II	III

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I - Basic model number.

II - Voltage Rating

III - Custom options

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

* **USR and CNR indicate the investigation to the appropriate safety standard(s). Refer to the Test Records for the specific standards and edition employed for the investigation.**

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These controls are considered to be INCORPORATED within a product and has been specified by the applicant for installation in:

- a) A Pollution Degree 2 environment - Normally, only nonconductive pollution. However, a temporary conductivity caused by condensation may be expected.
- b) An Installation Category (Overvoltage Category) II rating - Cord and Plug connected equipment application.
- c) Maximum Phase to Ground voltage of the supply source - 240 Vac
- d) Extended Environment/Shipping and Storage: -40°C to 85°C, 10 percent to 85 percent relative humidity.
- e) Protection against electric shock Class: Class II - Double Insulated Equipment Applications.

Use - For use only in products where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability - When installed in the final use equipment, etc., the following are among the considerations to be made:

1. The terminals are not acceptable for field connection. The acceptability of the connections to these terminals, including temperature and secureness, shall be determined in the ultimate application.
2. Reinforced insulation is provided from live circuits to the outer surface of the enclosure.
3. The housing was subjected to Impact testing for hand held portable devices. Additional enclosure evaluation may be necessary as part of the ultimate enclosure in the end use application.
4. These devices shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application.
5. Per the Manufacturer's declaration, this electronic control was investigated as an OPERATING, Type 1 action (non-safety) control, and is not intended to provide any safety or protective functionality.
6. These controls do not incorporate a line-to-low voltage transformer. The power supply for these controls feature impedance-limiting components to reduce the working voltage to logic levels. Accordingly, all circuitry, including the sensor input circuit is considered line-connected. The device connected to the sensor terminals shall be guarded, insulated and enclosed as a line-connected component
7. These controls are intended to accept cords/conductors in the end-use application. Insulation displacement terminals are provided to accept factory installed conductors. The cords/conductors are not considered part of the controls described in this report. Accordingly, no strain relief testing or termination testing was conducted during the investigation of these controls.