

File E43684
Project 06NK28065

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REPORT

on

COMPONENT - TEMPERATURE-INDICATING AND
REGULATING EQUIPMENT, ELECTRICAL

Watlow Winona Inc.
Winona, MN

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DESCRIPTION

PRODUCT COVERED:

USR, CNR Component - Operating, Sensing Control (Temperature Control),
Model N3 Series.

GENERAL CHARACTER:

These devices are temperature controllers intended for use in commercial cooking appliances. The input sensor terminals are intended for connection to a thermocouple, RTD or process transducer. These sensors are considered to be SELV, Limited Energy inputs. These controls incorporate DC open collector **outputs, and an alarm sound card (J3)** which are also considered to be SELV, Limited Energy.

These devices are assembled with a user interface that will display cooking settings and allow the user to change cooking programs via tactile switches. In addition, the user interface employs a Vacuum Fluorescent Display (VFD), which is capable of producing voltages up to 100 V dc. The VFD employs a glass screen which prevents the end user from any potential electric shock hazard.

The isolation is achieved through the use of a switch-mode power supply transformer with SELV, Limited Energy outputs.

These devices were not investigated for performing any safety/protective functions.

RATINGS:

(For more information about client declarations for these products refer to the Constructional Data Form, ILL. 1):

Electrical -

INPUTS:

Control Input Item	Input Rating	Terminals
Unit Power	100 - 240 V ac, +10%, -15%, 50/60 Hz	J32, J33 or J50
Flame Sensor	100 - 240 V ac, +10%, -15%, 50/60 Hz	J34, J35
Thermocouple Sensors	SELV, Limited Energy	J7

COMMUNICATION:

Type	Rating	Terminals
RS485 (Motor control accessory board connection)	SELV, Limited Energy (Class 2)	J10
RS232 (Support NAFAM Protocol)	SELV, Limited Energy (Class 2)	J16

OUTPUTS:

Type	Rating	Terminals
Switched DC	SELV, Limited Energy (Class 2)	J20, J22, J11 (A, B), J1, J2, J3, J5, J30

Temperature - Maximum ambient operating temperature 80°C

MODEL NOMENCLATURE:

N3	AA	-	XX	XX	-	X	X	X	X
I	II		III	IV		V	VI	VII	VIII

I Base Model Designation

II Customization - Firmware, overlay, Motor Control Board, Case
XX = Any two numbers or letters

III Application Board Options
02 = A007-2756-0000 Applications Board
03 = A007-2802-0000 Applications Board

IV Unit Power and Output Options - High or Low Voltage, Output types
02 = High voltage unit power

*V **Non Critical Cosmetic Options Any four numbers or letters**

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Sensors

Type J Thermocouple, 0 to 815°C

Type K Thermocouple, -200 to 1370°C

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

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

* USR indicates evaluation to UL 60730-1, Standard for Automatic Electrical Controls for Household and Similar Use, Part 1: General Requirements, and UL 60730-2-9, Particular Requirements for Temperature Sensing Controls.

* CNR indicates investigation to Canadian Standard For Automatic Electrical Controls for Household and Similar Use, Part 1: General Requirements CAN/CSA-E60730-1:02 and CAN/CSA-E60730-2-9:01, Particular Requirements for Temperature Sensing Controls,.

This control is considered INCORPORATED and was specified by the applicant for installation in a Pollution Degree II environment with an Installation Category (Overvoltage Category) II rating.

The units are for use in an extended environment: 0°C to 80°C, 5% to 95% relative humidity. They are not intended for field wiring.

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

1. The system shall be installed in compliance with the enclosure, mounting, spacing and segregation requirements of the ultimate application.
2. The terminals are not acceptable for field connection. The acceptability of connections to these terminals, including temperature and secureness, shall be determined in the ultimate application.
3. The Front Cover (item #18 in the description) has been investigated, in combination with the Metal Bezel (item #19) to provide part of the ultimate electrical enclosure. If any other part of the control is deemed as an ultimate enclosure during the end use investigation, consideration should be made to conduct additional testing.
4. These devices were not investigated for performing any safety/protective functions.