

File E73741
Project 4788232020

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REPORT

on

Component - SWITCHES, INDUSTRIAL CONTROL

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Winona, MN

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DESCRIPTION

PRODUCT COVERED:

USR, CNR Solid State Power controller without cooling fan, Part No. DC followed by 1, 2, 3, 4, 8 or 9; followed by S; followed by 02, 24, or 60, followed by CX, FX, K1, K2 or K3, followed by 0, or S, followed by any three numbers or letters.

Where X equals any number 0 through 9.

GENERAL:

These devices open solid state power controllers intended for controlling electric resistance heating.

RATINGS:

These devices are either single phase or three phase, 1, 2 or 3 pole and rated as shown below:

Command or Control Signal Ratings - 24, 120, or 240 V ac, 50/60 Hz. All other devices are low voltage DC.

Output Ratings - 24 to 48 V ac, 120 to 240 V ac or 277-600 V ac, 50/60 Hz.

Models Without Cooling Fan at 50°C

27.5 A - 1 pole

27.5 A - 2 pole

20 A - 3 pole

Control Mode Rating - 24 V ac
 120 V ac
 240 V ac

These devices may be used in ambient found as part of the derating curves listed below. The split heatsink version is intended for any aluminum enclosure with sidewall mounting sized 9" x 16" 0.6". New derating curve shown below.

Amperage of 3 Phase 3 Leg current (Derated 7.5A every 5°C above 40°C):

At 40°C:	35A
At 45°C:	27.5A
At 50°C:	17.5A

Amperage of 3 Phase 2 Leg current or single Phase (Derated 7.5A every 5°C above 40°C):

At 40°C:	42.5A
At 45°C:	35A
At 50°C:	27.5A

NOMENCLATURE:

<u>DC</u>	<u>X</u>	<u>X</u>	<u>XX</u>	<u>XX</u>	<u>X</u>	<u>X</u>	<u>XX</u>
I	II	III	IV	V	VI	VII	VIII
I -	DC - Basic Designator						
II -	Phase						
	1 - Single Phase - 1 pole						
	2 - Three Phase - 2 pole controlled						
	3 - Three Phase - 3 pole controlled						
	4 - Three Phase - 3 pole controlled (4 wire WYE)						
	8 - Two independently controlled poles						
	9 - Three independently controlled poles						
III -	Cooling and Heatsink options						
	S - Split Heatsink natural convection, enclosure mounting surface provides heatsink surface.						
IV -	Output Voltage						
	02 - 24 to 48 V ac						
	24 - 100 to 240 V ac (Control options C, F or K)						
	60 - 277 to 600 V ac (Control options C, F or K)						
V -	Control Options						
	C0 - 4.5 to 32 V dc (Contactor)						
	F0 - 4 to 20 mA dc (Variable time base)						
	F1 - 12 to 20 mA dc (Variable time base)						
	K1 - 24 V ac (Contactor)						
	K2 - 120 V ac (Contactor)						
	K3 - 240 V ac (Contactor)						

- VI - Alarm Options
 - 0 - No alarm
 - C - Shorted SCR Alarm with transistor output
 - S - Shorted SCR Alarm with triac output

- VII - User Manual Language Options
 - 0 - English Users manual
 - 1 - German Users manual
 - 2 - Spanish Users manual
 - 3 - French Users manual

- VIII - Custom Label options and other non-critical options.
 - 0 - Standard product
 - 01 to 99 or letter AA to ZZ - custom options
 - Custom Overlays
 - Custom soft start phase angle times.

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.

This component has been judged on the basis of the required spacings in the Standard for Industrial Control Equipment, UL 508.

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

1. Mounted in suitable end use enclosure.
2. **Derating is required for an external ambient above 40°C. Derating table shown was based on internal enclosure ambient limit of 65°C. Additional derating may be needed if this exceeds other component limits within enclosure.**
3. During temperature tests, device enclosure is considered the heatsink. Temperature tests were performed with device mounted in aluminum enclosure of dimensions 16 in. by 12 in. by 9 in. on the 0.6" thick side wall.
4. Temperature retesting should be considered based on selected enclosure size.