

File E190598
Project 4786174489

March 31, 2014

REPORT

On

COMPONENT - MAGNETIC MOTOR CONTROLLERS

Dongguan Sanyou Electrical Appliances Co Ltd
Guangdong China

Copyright © 2014 UL LLC

UL LLC authorizes the above named company to reproduce this Report either in its entirety or the portion of this Report consisting of the Cover Page up to (but not including) the Construction Details descriptive pages.

DESCRIPTION

PRODUCT COVERED:

USR, CNR: Non-industrial use, across the line magnetic motor controllers, Cat. No. SRD or SRDI, followed by -S or -SH, followed by -1, followed by 03 to 48, followed by D, followed by M or B or blank, followed by 1, 2, 3, 4, 5, 6 or blank, followed by -B, -F or Blank, followed by -L, maybe followed by any special codes.

GENERAL:

These devices are open type, magnetically operated, single pole, single-throw (SPST) for 1 Form A relays with normally open contacts, single pole, single-throw (SPST) for 1 Form B relays with normally closed contacts, or single pole, double-throw (SPDT) for 1 Form C relays with normally open and normally closed contacts. These devices are suitable for use in Non-Industrial application use.

RATINGS:

For SRD/SRDI with suffix "2" (Form C) or "Blank" (Form A or B) (Contact Material):

12 A, 125 V ac, resistive, 50,000 cycles, Normally Open & Normally Close, 105°C.

15 A, 125 V ac, resistive, Normally Open, 30,000 cycles, 105°C.

10 A, 250 V ac, resistive, Normally Open, 100,000 cycles, 105°C.

1/3 hp, 250 V ac, 6,000 cycles, Normally Open & Normally Close.

7 A, 250 V ac, general use, 6,000 cycles, Normally Open & Normally Close.

3 A, 125 V ac, general use, 6,000 cycles, Normally Open & Normally Close.

10 A, 28 V dc, general use, 30,000 cycles, 105°C, Normally Open.

6 A, 28 V dc, general use, 100,000 cycles, 105°C, Normally Close.

10 A Normally Open/6 A Normally Close, 250 V ac, general use, 100,000 cycles, 105°C.

10 A Normally Open/ 6 A Normally Close, 125 V ac, general use, 100,000 cycles, 105°C.

*1/3 hp, 250 Vac, 30,000 cycles, Normally Open, 85 °C.

FLA 5A, LRA 10 A, 120 Vac/240 Vac, 90,000 cycles, Normally Open, 40 °C.

Pilot Duty: 240 VA, 240 V ac, 100,000 cycles, 70°C.

TV: TV-3, 120 V ac, Normally Open, 25,000 cycles, 70°C.

TV-5, 120 V ac, Normally Open, 25,000 cycles, 40°C.

For SRD/SRDI with suffix "2" (Form A or B) or "Blank" (Form C) (Contact Material):

12/15 A, 125 Vac, resistive & general use, NO, 30,000 cycles, 105°C
10 A, 250 Vac, resistive & general use, NO, 100,000 cycles, 105°C
10 A, 28 Vdc, resistive & general use, NO, 30,000 cycles, 105°C
1/3 hp, 250 Vac, 30,000 cycles, NO, 40°C
FLA 5A, LRA 10A, 240 Vac/120 Vac, NO, 90,000 cycles, 40°C
TV-3, 120 Vac, Normally Open, 25,000 cycles, 70°C
7 A, 250 Vac, Resistive & General Use, NC, 60,000 cycles, 85 °C.

For SRD/SRDI with suffix "1" or "3" (Contact Material):

12/15 A, 125 Vac, resistive & general use, NO, 30,000 cycles, 105°C
10 A, 250 Vac, resistive & general use, NO, 100,000 cycles, 105°C
10 A, 28 Vdc, resistive & general use, NO, 30,000 cycles, 105°C
1/3 hp, 250 Vac, 30,000 cycles, NO, 40°C
FLA 5A, LRA 10A, 240 Vac/120 Vac, NO, 90,000 cycles, 40°C
TV-3, 120 Vac, Normally Open, 25,000 cycles, 70°C
7 A, 250 Vac, Resistive & General Use, NC, 60,000 cycles, 85 °C.

For SRD/SRDI with suffix "4" (Contact Material):

7A 250Vac, resistive & general use, 50K cycles, NO & NC, 85°C
10A 250Vac, resistive & general use, 50K cycles, NO, 85°C

For SRD/SRDI with suffix "5" (Contact Material):

7A 250 Vac, resistive & general use, 10K cycles, NO & NC, 85
10A 250 Vac, resistive & general use, 10K cycles, NO, 85

For SRD/SRDI with suffix "6" (Form A or C) (Contact Material):

10A 277 Vac, Resistive & General Use, 100,000 cycles, NO, 105 °C.

For SRD/SRDI with suffix "6" (Form C) (Contact Material):

7A 277 Vac, Resistive & General Use, 60,000 cycles, NC, 85 °C.

For SRD/SRDI with suffix "2" (Form A or C), suffix "6" (Form A or C) or "Blank" (Form A or C) (Contact Material):

12A 277/250/125 Vac, Resistive & General Use, 100,000 cycles, NO, 105 °C.

For SRD/SRDI with suffix "2" (Form A or Form C), suffix "6" (Form A or Form C) or "Blank" (Form A) (Contact Material):

20A 125 Vac, Resistive & General Use, 10,000 cycles, NO, 40°C.
17A 125/250/277 Vac, Resistive & General Use, 30,000 cycles, NO, 85°C.
TV-8, 120 Vac, Normally Open, 25,000 cycles, 40°C.

For SRD/SRDI with suffix "2" (Form A or Form C), suffix "6" (Form A or Form C) or "Blank" (Form A) (Contact Material):

FLA 5 A, LRA 30 A, 120 Vac, 50,000 cycles, Normally Open, 85°C.

Coil:

3-48 V dc inclusive

Ambient Temperature:

Maximum 105°C for relays with Class B and F insulation system.
Maximum 70°C and 85°C for relays with a Class A, B and F insulation system.

NOMENCLATURE

$\frac{SRD}{I}$ $\frac{S}{II}$ $\frac{1}{III}$ $\frac{12}{IV}$ $\frac{D}{V}$ $\frac{M}{VI}$ $\frac{Blank}{VII} -$ $\frac{F}{VIII} -$ $\frac{L}{IX}$ $\frac{XX}{X}$

I. Series designation

SRD or SRDI

II. Protective construction

SH: Sealed type washable
S: Sealed type

III. Number of Poles

1: 1 pole

IV. Coil Voltage

Any Voltage between 3 Vdc and 48 Vdc.

V. Coil Sensitivity

D: Standard coil sensitivity

VI. Contact form

Nil: 1 form C
M: 1 form A
B: 1 form B

VII	Moveable Contact		Stationary Contact	
	Material	Diameter	Material	Diameter
Blank	AgSnO2	Φ2.8 (Form C)	AgSnO2	Φ3.0
		Φ3.0 (Form A or B)		
1	AgCdO	Φ2.8 (Form C)	AgCdO	Φ3.0
		Φ3.0 (Form A or B)		
2	AgSnO2	Φ3.0	AgSnO2	Φ3.0
3	AgCdO	Φ3.0	AgCdO	Φ3.0
4	3 compounds (AgSnO2+Cu+ AgSnO2)	Φ3.0	AgSnO2	Φ3.0
5	Cu plated with La	Φ3.0	Cu plated with La	Φ3.0
6	AgNi	Φ3.0 (Form A or C)	AgNi	Φ3.0

VIII. Insulation System

B: Class 130(B)
F: Class 155(F)
Blank: Standard Type

IX. Temperature type:

L: Low temperature type

X. Special Code

Additional numbers or letters, which don't effect construction.

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE USE):

USR indicates these products were investigated under the Standard for Industrial Control Equipment, UL 508.

CNR indicates these products were investigated under the Standard for Industrial Control Equipment, CSA C22.2 No. 14-13.

Conditions of Acceptability -

Use - For use only in (or with) complete equipment when the acceptability of the combination is determined by UL LLC. The following items should be evaluated to determine the acceptability for use in the end product.

1. The relay terminals are not suitable for field wiring. The relay terminals are to be factory wired only and the suitability of the connection (including spacings between factory connectors) shall be determined for end use application.
2. The Dust Cover has not been evaluated as insulating barrier and should be considered in the end-use application with regards to spacing requirements to uninsulated live parts.
3. Spacing from the exposed live metal parts to the enclosure walls shall be in accordance with the requirements of the overall equipment.
4. The devices rated at an ambient above 90°C, shall be used with a PCB Board rated at minimum 130°C.
5. These devices with pin-type terminal rated TV rating shall be only used with a PCB rated at minimum 105°C. Other type of terminals are not suitable for these devices.
6. For SRD with suffix "1", "2", "3" or "blank" (Contact Material): contact ratings "1/3 hp, 250 Vac, 30,000 cycles, Normally Open, 40 °C; FLA 5A, LRA 10 A, 120 Vac/240 Vac, 90,000 cycles, Normally Open, 40 °C.", and the Endurance test cycle time was the first 1,000 cycles with 0.5s on/0.5s off, and the rest cycles was with 1s on/9s off. The suitability shall be determined for the end use application.
7. For SRD or SRDI with suffix "2" (Form C) or "Blank" (Form A) (Contact Material): contact ratings "1/3 hp, 250 Vac, 30,000 cycles, Normally Open, 85 °C", and the Endurance test cycle time was the first 1,000 cycles with 0.5s on/0.5s off, and the rest cycles was with 1s on/9s off. The suitability shall be determined for the end use application.

8. The spacings of Series SRD or SRDI are not suitable the spacing requirements of UL 508. The minimum measured spacings of Series SRD or SRDI are 2.7 mm through air, 4.1 mm over surface between coil and contact, and they are suitable only for use in non-industrial control application and shall be determined according to end product Standard requirements.
9. **For SRD/SRDI with suffix "2", "6" (Contact Material) (Form A or Form C), or "blank" (Contact Material) (Form A): contact ratings "FLA 5 A, LRA 30 A, 120 Vac, 50,000 cycles, Normally Open, 85°C", and the Endurance test cycle time was the first 1,000 cycles with 0.5s on/0.5s off, and the rest cycles was with 1s on/9s off.**