| MCS SERIES

SOFT START/SOFT STOP SOLID STATE RELAY

Features

- Microcontroller based soft start/soft stop SSR
- Ratings from 25 A to 90 A @ 48-530 VAC
- Low-voltage, current or potentiometer control
- Output status indicator
- Adjustable ramp rates
- For use with a wide range of resistive loads

PRODUCT SELECTION

Line Voltage	25 A	50 A	90 A
120 VAC	MCST1225	MCST1250	MCST1290
240 VAC	MCST2425	MCST2450	MCST2490
480 VAC	MCST4825	MCST4850	MCST4890

SPECIFICATIONS

Output (voltage)

Description	120 VAC	240 VAC	480 VAC
Operating Voltage (47-63Hz) [Vrms]	48-140	180-280	300-530
Transient Overvoltage [Vpk]	400	600	1200
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	5	7	12
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/µsec]	200	200	200

Output (current)

Description	25A	50A	90A
Maximum Load Current [Arms]	25	50	90
Minimum Load Current [mArms]	150	150	150
Maximum Surge Current (16.6 msec) [Apk]	250	625	1200
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.6	1.6	1.6
Thermal Resistance Junction to Case (Rjc) [°C/W]	1.02	0.63	0.28
Maximum I^2t for Fusing (8.3 msec) [A^2sec]	260	1620	6000

Input [(1)]

Description	DC Control
DC Voltage Supply Range (VDC) [P1]	8-32
Input Current Range [mA] [P1]	28-30
Nominal Input Impedance [Ohm] [P3]	30K
Control Must Operate Voltage "On"[VDC][P3]	5-32
Control Must Release Voltage "Off" [VDC][P3]	0-4
Control Input Current [mA][P3]	0-2.6
PLV Range Option A [VDC][P4]	0.5-5
PLV Range Option B [VDC][P4]	1.25-7
PLV Range Option C [VDC][P4]	2-10
PLV Range Option D [VDC][P4]	4-20
Nominal Input Impedance Option A,B,C [Ohm][P4]	20K
Nominal Input Impedance Option D [Ohm][P4]	220

Output Status Functions

Conditions	
Initial Logic Supply	Flash Once
Load Voltage Missing/Load Open (w/control disabled)	Flash Once Intermittenly
Load Voltage Missing/Load Open (w/control enabled)	Off
Ramp Time (Soft Start upon P3 Enabled)	Off to Bright
Ramp Time (Soft Start upon P3 Disabled)	Bright to Off
Output ON (Normally Steady Operation)	On

General

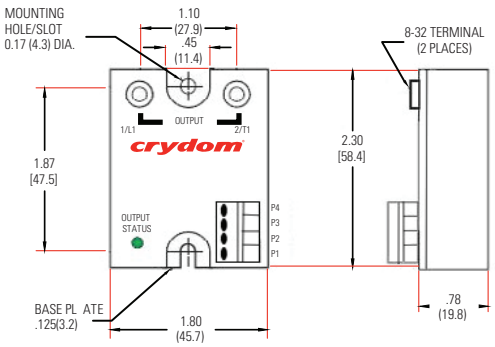
Description	Parameters
Minimum Power Factor (with Maximum Load)	0.5
Dielectric Strength, Input/Output/Base (50/60 Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10^9 Ohms
Maximum Capacitance, Input/Output	10 pF
Ambient Operating Temperature Range	-20 to 80˚C
Ambient Storage Temperature Range	-40 to 125˚C

Weight (typical)	3.0 oz (86.5g)
Encapsulation	Thermally Conductive Epoxy
Terminals-Power	Screws and Saddle Clamps Furnished, Unmounted
Terminals-Control	Barrier Strip Screw Terminals
Max. Terminal (Power) Screw Torque	20 lb-in (8-32 screws, dry without grease)

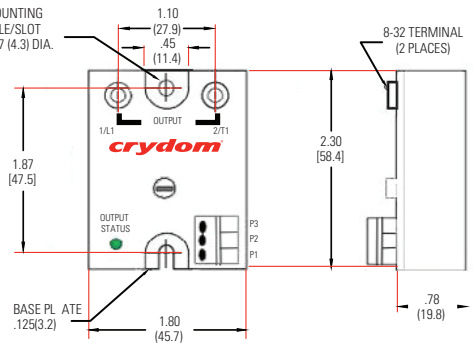
MECHANICAL SPECIFICATIONS

Tolerances: ±0.02 in / 0.5 mm
All dimensions are in inches [millimeters]

Analog Input OPTIONS: A, B, C, D

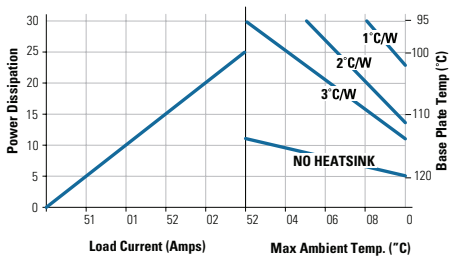


Analog Input OPTIONS: E (Internal Potentiometer)

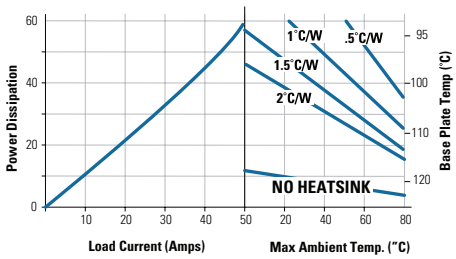


THERMAL DERATE INFORMATION

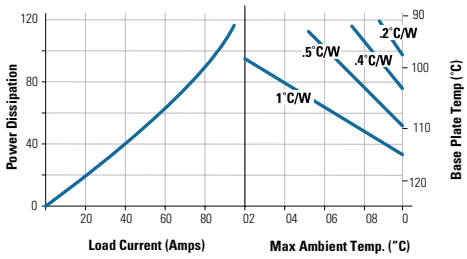
25A



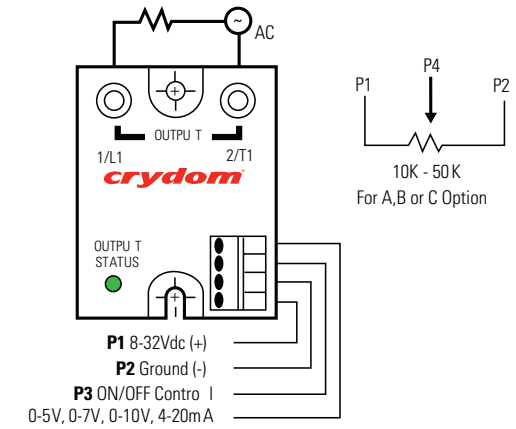
50A



90A

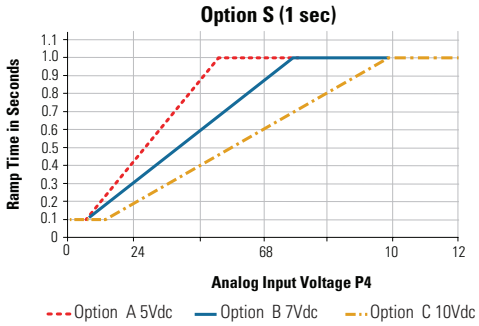


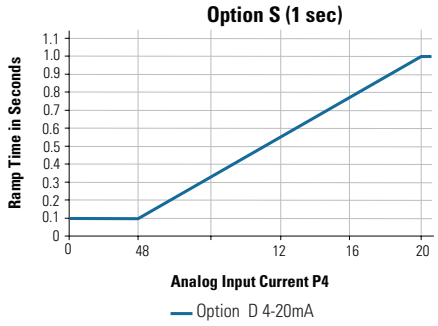
WIRING DIAGRAM

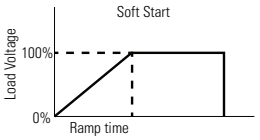


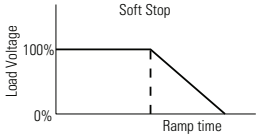
Note: P2 is also 4-20mA return

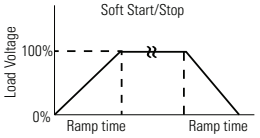
RAMP TIME IN SECONDS

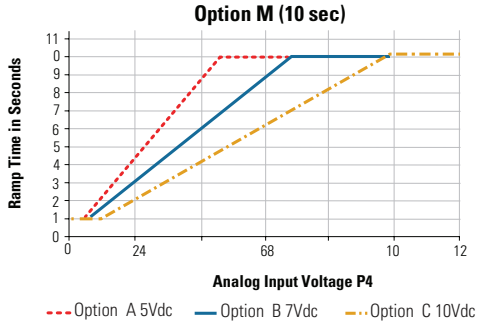


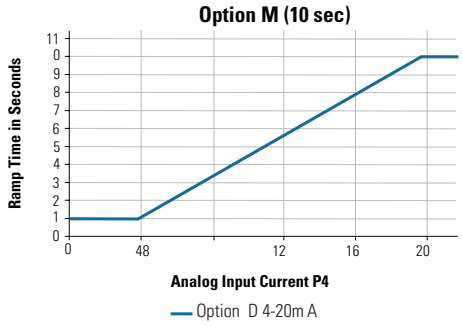












ORDERING OPTIONS

Example : MCST2425CS

MC	ST	24	25	C	S

Series

MC

Product Type

ST: Soft Start
SP: Soft Stop
SS: Soft Start/Soft Stop

Operating Voltage

12: 90-140 Vrms
24: 180-280 Vrms
48: 300-530 Vrms

Rated Load Current

25: 25 Amps
50: 50 Amps
90: 90 Amps

Analog Input

A: 0-5 VDC
B: 0-7 VDC
C: 0-10 VDC
D: 4-20 mA
E: Internal Potentiometer

Ramp Time On/Off

S: 100 msec - 1 sec
M: 1 sec - 10 sec

— Required for valid part number
☐ For options only and not required for valid part number

NOTE: Not all combinations are available.
Consult factory for information on the availability of a specific part number.

GENERAL NOTES

[1] All parameters at 25°C unless otherwise specified.
[2] Voltages are reference to GND (Ground = 0 VDC) P2

AGENCY APPROVALS & CERTIFICATIONS

c UL us E116949 CE RoHS 50

WARNINGS

RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE
- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH
- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

Failure to follow these instructions will result in death or serious injury.

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