



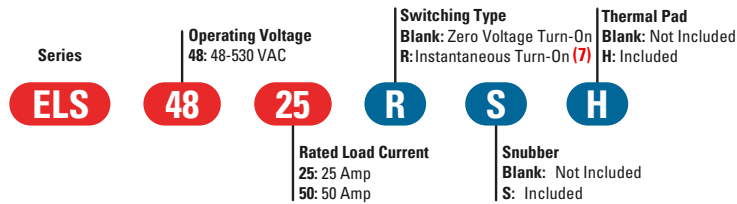
## ELS Series

- Ratings 25A, 50A @ 48-530 VAC
- SCR output for heavy industrial loads
- Direct Bond Copper substrate
- Zero turn-on or instantaneous turn-on outputs
- Improved SEMS screw and washer
- Redesigned housing with anti-rotation barriers
- DC control
- LED input status indicator
- IP20 touch-safe cover
- EMC Compliant to Level 3
- Internal Snubber option

### PRODUCT SELECTION

Control Voltage	25A	50A
4-32 VDC	ELS4825	ELS4850

### AVAILABLE OPTIONS



- Required for valid part number
- For options only and not required for valid part number

### OUTPUT SPECIFICATIONS <sup>(1)</sup>

Description	25A	50A
Operating Voltage (47-440Hz) [Vrms] (2)	48-530	48-530
Transient Overvoltage [Vpk]	800	800
Maximum Off-State Leakage Current @ Rated Voltage [mA <sub>rms</sub> ] (3)	1.0	1.0
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec]	500	500
Maximum Load Current [A <sub>rms</sub> ] (4)	25	50
Minimum Load Current [mA <sub>rms</sub> ]	150	150
Maximum 1 Cycle Surge Current (50/60) [A <sub>pk</sub> ]	239/250	597/625
Maximum On-State Voltage Drop @ Rated Current [Vrms]	1.15	1.15
Thermal Resistance Junction to Case (R <sub>jc</sub> ) [°C/W]	0.8	0.45
Maximum I <sup>2</sup> t for Fusing 50/60Hz (1/2 cycle) [A <sup>2</sup> sec]	285/259	1770/1621
Minimum Power Factor (at Maximum Load)	0.5	0.5

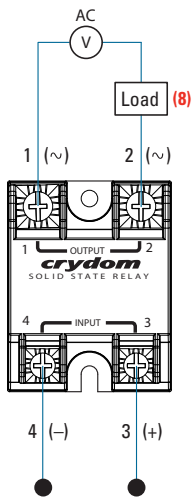
### INPUT SPECIFICATIONS <sup>(1)</sup>

Description	Parameters
Control Voltage Range	4-32 VDC
Minimum Turn-On Voltage (5)	4 VDC
Minimum Turn-Off Voltage	1.0 VDC
Maximum Reverse Voltage	-32 VDC
Typical Input Current	10 mA @ 12 VDC
Nominal Input Impedance	Active Current Limiter
Maximum Turn-On Time [msec] (6)	1/2 Cycle
Maximum Turn-Off Time [msec]	1/2 Cycle

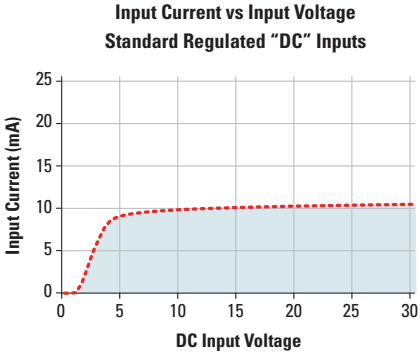
GENERAL SPECIFICATIONS <sup>(1)</sup>

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10 <sup>9</sup> Ohm
Maximum Capacitance, Input/Output	10 pF
Ambient Operating Temperature Range	-40 to 80 °C
Ambient Storage Temperature Range	-40 to 125 °C
Weight (typical)	2.8 oz (81.5 g)
Housing Material	UL94 V-0
Baseplate Material	Aluminum
Input Terminal Screw Torque Range (in-lbs/Nm)	13-15/1.5-1.7
Load Terminal Screw Torque Range (in-lbs/Nm)	18-20/2.0-2.2
SSR Mounting Screw Torque Range (in-lbs/Nm)	18-20/2.0-2.2
Humidity	85% non-condensing
LED Status Indicator (Color)	Yes (green)

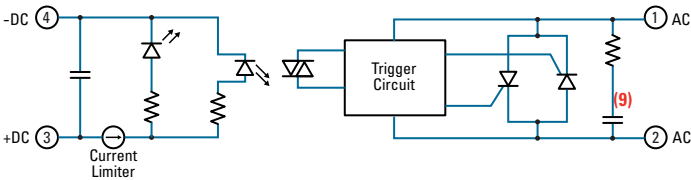
WIRING DIAGRAM



Recommended Wire Sizes		
Terminals	Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lbs)[N]
Input	24 AWG (0.2 mm <sup>2</sup> ) / 0.2 [minimum]	10 [44.5]
	2 x 12 AWG (3.3 mm <sup>2</sup> ) / 3.3 [maximum]	90 [400]
Output	20 AWG (0.5 mm <sup>2</sup> ) / 0.518 [minimum]	30 [133]
	2 x 10 AWG (5.3 mm <sup>2</sup> ) / 5.3	110 [490]
	2 x 8 AWG (8.4 mm <sup>2</sup> ) / 8.4 [maximum]	90 [400]



EQUIVALENT CIRCUIT BLOCK DIAGRAM

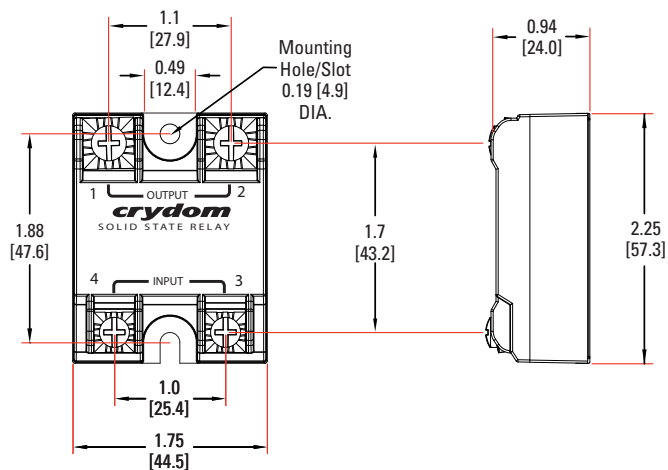


## MECHANICAL SPECIFICATIONS <sup>(1)</sup>

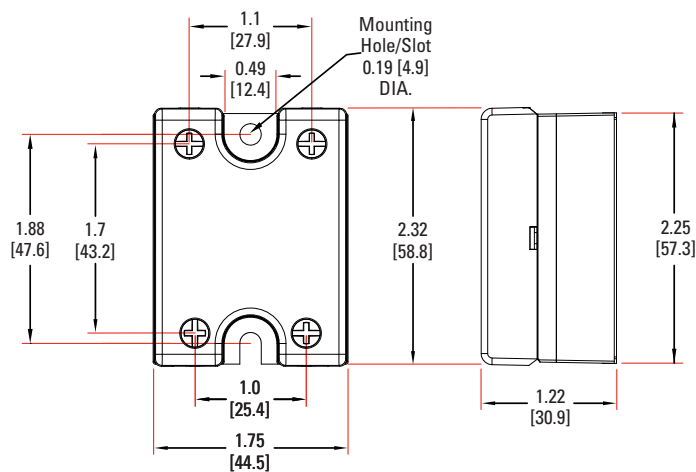
Tolerances:  $\pm 0.02$  in / 0.5 mm

All dimensions are in: inches [millimeters]

### Screw Termination



### Screw Termination, IP20

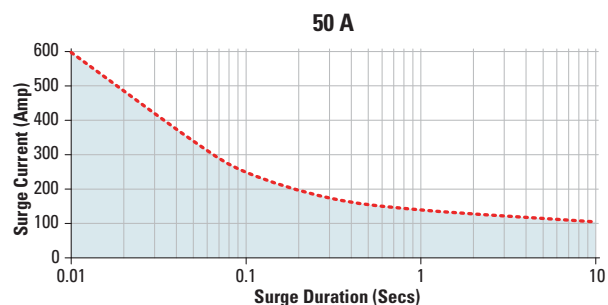
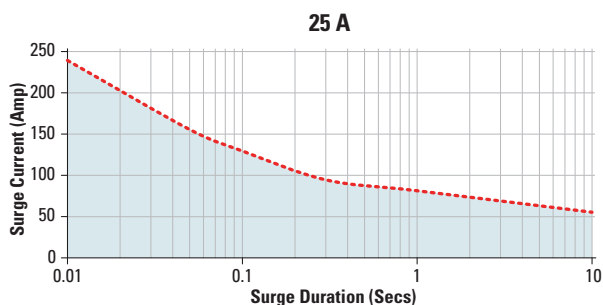


## GENERAL NOTES

- (1) All parameters at 25°C unless otherwise specified.
- (2) For "S" option, operating voltage frequency is 47-63Hz.
- (3) For parts with option "S" maximum leakage current is 10mA.
- (4) Heat sinking required, see derating curves.
- (5) Increase minimum voltage by 1V for operations from -20 to -40°C.
- (6) Turn-on time for instantaneous turn-on version ("R" option) is 0.1ms.
- (7) Instantaneous turn-on version is not recommended for capacitive loads. Use zero turn-on only.
- (8) Load can be wired to either SSR output terminal 1 or 2.
- (9) Elective Internal Snubber, "S" option.

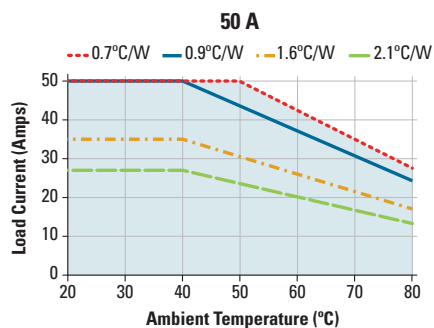
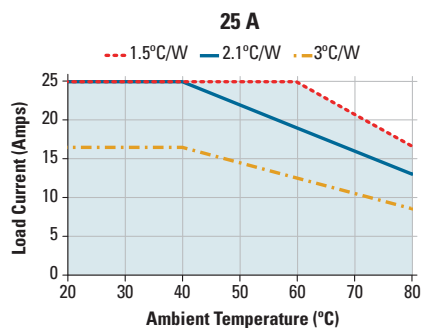
For additional information or specific questions, contact Crydom Technical Support.

## SURGE CURRENT INFORMATION



Non repetitive peak surge current at Tj initial 40°C.

## THERMAL DERATE INFORMATION



## AGENCY APPROVALS

Designed in accordance with the requirements of IEC 62314  
 IEC 61000-4-2 : Electrostatic Discharge – Level 3  
 IEC 61000-4-4 : Electrically Fast Transients – Level 3  
 IEC 61000-4-5 : Electrical Surges – Level 3

