EL SERIES | AC OUTPUT

PANEL MOUNT SOLID STATE RELAYS

Features

- Ratings of 5A, 10A, 20A and 30A @ 24-280 VAC
- UL Recognized, TUV, CE and RoHS Compliant.
- 5, 12 and 24 VDC control input options
- Zero voltage or instantaneous turn-on outputs
- LED input status indicator
- Thermal Pad Included

PRODUCT SELECTION

Control Voltage	5 A	10 A	20 A	30 A
4-8 VDC	EL240A5-05	EL240A10-05	EL240A20-05	EL240A30-05
10-14 VDC	EL240A5-12	EL240A10-12	EL240A20-12	EL240A30-12
21-27 VDC	EL240A5-24	EL240A10-24	EL240A20-24	EL240A30-24

SPECIFICATIONS

Output [3]

Description	5 A	10 A	20 A	30 A
Operating Voltage (47-63Hz) [Vrms]	24-280	24-280	24-280	24-280
Maximum Load Current [Adc] [4]	5	10	20	30
Minimum Load Current [mArms]	150	150	250	250
Transient Overvoltage [Vpk] [2]	600	600	600	600
Maximum Surge Current (50/60Hz, 1 Cycle) [Apk]	115/120	145/150	240/250	260/280
Maximum I^2t for Fusing (50/60Hz 1/2 cycle) [A^2 sec]	65/60	100/95	285/260	338/326
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/µsec]	500	500	500	500
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	0.1	0.1	0.1	0.1
Thermal Resistance Junction to Case (Rjc) [°C/W]	5.5	3.0	1.7	0.9
Maximum On-State Voltage Drop @ Rated Current [Volts]	1.3	1.3	1.3	1.3
Minimum Power Factor (with Maximum Load) [1]	0.7	0.7	0.7	0.7

Input [3]

Description	EL240Axx-05	EL240Axx-12	EL240Axx-24
Control Voltage Range	4-8 VDC	10-14 VDC	21-27 VDC
Minimum Turn-On Voltage	4 VDC	10 VDC	21 VDC
Must Turn-Off Voltage	1 VDC	1 VDC	1 VDC
Minimum Input Current	6 mA	10 mA	8 mA
Maximum Input Current	21 mA	17.50 mA	19 mA
Maximum Turn-On Time [msec] [5]	1/2 Cycle	1/2 Cycle	1/2 Cycle
Maximum Turn-Off Time [msec]	1/2 Cycle	1/2 Cycle	1/2 Cycle

General [2]

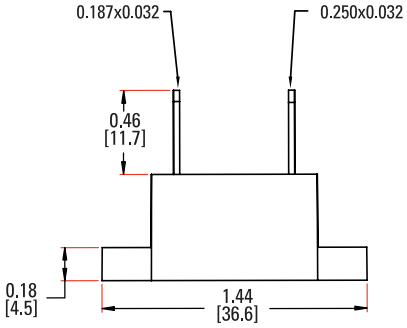
Description	Parameters
Dielectric Strength, Input to Output (50/60Hz)	3750 Vrms
Dielectric Strength, Output to Baseplate (50/60Hz)	2500 Vrms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-30 to 80°C
Ambient Storage Temperature Range	-30 to 125 °C
Weight (typical)	0.5 oz (14.4 g)
Terminals	3/16"x 0.032" input, 1/4"x 0.032" output QC
SSR Mounting Screw Torque Range	9.0-10.0 lb-in (1.0-1.13 Nm)
LED Input Status Indicator	Green
Humidity per IEC60068-2-78	93% non-condensing

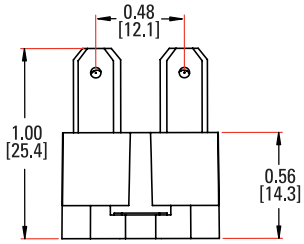
MECHANICAL SPECIFICATIONS

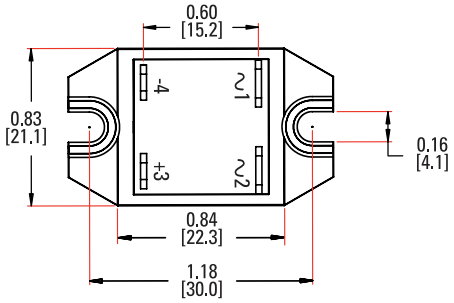
Tolerance: ±0.02 in / 0.5 mm

All dimensions are in: inches [millimeters]

Standard Quick Connect terminals







Pinout

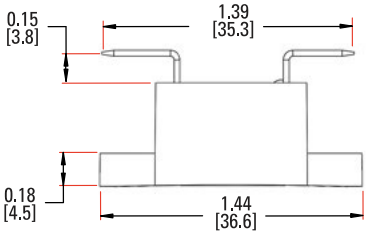
Terminal 1: AC load

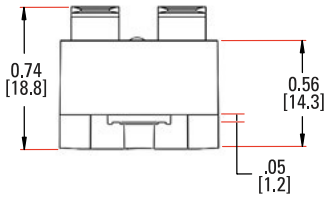
Terminal 2: AC load

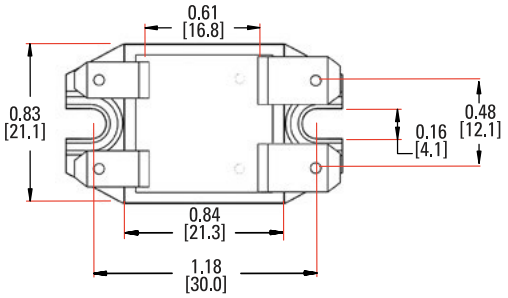
Terminal 3: +DC control

Terminal 4: -DC control

90° bent Quick Connect terminals

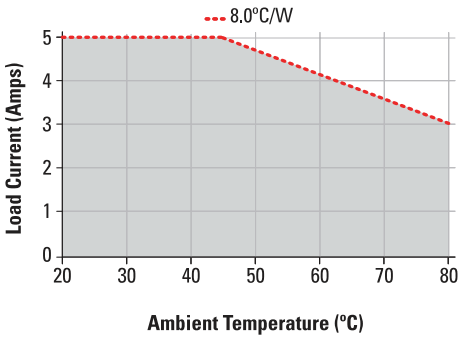




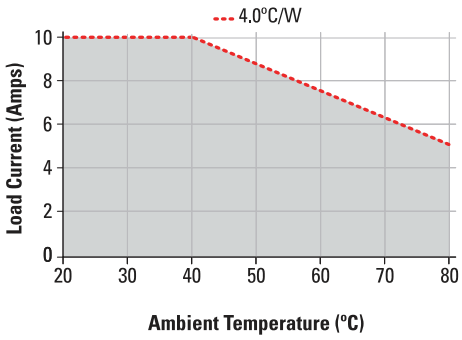


THERMAL DERATE INFORMATION

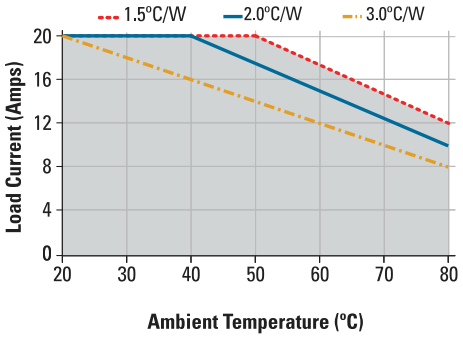
EL240A5x-xxx



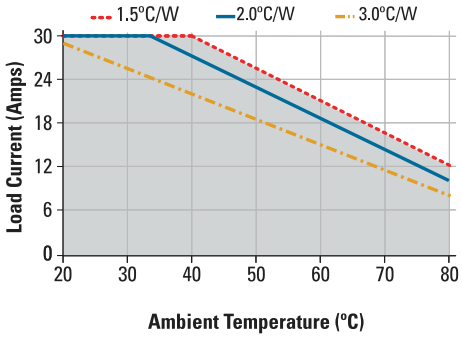
EL240A10x-xxx



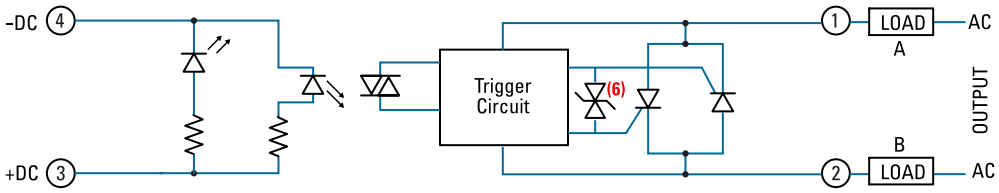
EL240A20x-xxx



EL240A30x-xxx



EQUIVALENT CIRCUIT BLOCK



LOAD CAN BE WIRED IN POSITION A or B

MOUNTING INSTRUCTIONS

Choose one of the two mounting options and follow the instructions.

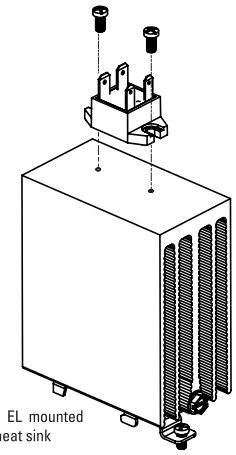


fig. 1 EL mounted on heat sink

Mounting on Heat Sinks

- Select adequate heat sink. (Please refer to thermal derating curves for the specific model)
- Be sure that thermal pad is pre-installed before installing over the heat sink.
- EL mounting slots have a diameter of 0.16 in (4.0 mm). Two screws are needed (not included) to mount the EL onto heat sink (See fig. 1). Recommended screw size is 8-32 (UNC standard) or M4 (metric).
- Before applying full torque tighten down both screws until they contact the baseplate. Then, tighten them to 9.0-10.0 in-lb (1.0-1.13 Nm).
- For optimal thermal performance heat sink fins should be oriented vertically to promote natural convection airflow.

Mounting on Panels

- Locate the panel section on which the EL will be mounted. Panel mount surface must provide adequate heat sinking capability, uncoated, clean, flat (0.004 in/in recommended) and preferably aluminum.
- Be sure that thermal pad is pre-installed before install over the heatsink.
- EL mounting slots have a diameter of 0.16 in (4.0 mm). Two screws are needed (not included) to mount the EL onto panel. Choose screw length considering the mounting surface hole depth and that the SSR flange thickness is 0.125 in (3.2 mm).
- Before applying full torque tighten down both screws until they contact the baseplate. Then, tighten them to 10 in-lb (1.13 Nm).

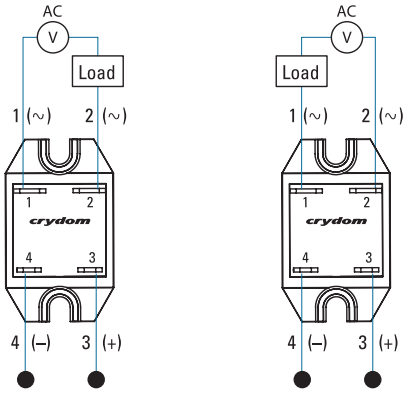
Transient Protection

Transients are common on AC power lines, and in extreme cases, may pose a risk for the proper operation and reliability of the SSR and its load. The load which the SSR controls may also generate transients itself. Therefore, inclusion of transient protection for the SSR is highly recommended. Internal transient protection is standard in certain Crydom SSR models, and optionally available in others. The user may also install transient protection external to the SSR for additional protection. Contact Crydom technical support for additional information on use of transient protection for AC output SSRs.

Important Considerations

Be sure to use input and output voltages within operating ranges. LED indicates only input status. It does not represent output status.

WIRING DIAGRAMS



ORDERING OPTIONS

Example : EL240A30R-05NP

EL	240A	30	R	–	05	N	P

Family

EL

Output Voltage

240A : 24-280 VAC

Rated Load Current

5 : 5 Amps
10 : 10 Amps
20 : 20 Amps
30 : 30 Amps

Switching Type

Blank : Zero Voltage Turn-On
R : Instantaneous Turn-On

Control Voltage

05 : 4-8 VDC
12 : 10-14 VDC
24 : 21-27 VDC

Termination

Blank : Standard Quick Connect
N : 90° bent Quick Connect (30 Amps only)

Overvoltage Protection

Blank : Not Included
P : Included (Only for 30 Amps, Zero Voltage models) **(1)(2)**

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

GENERAL NOTES

(1) For option P minimum power factor (at maximum load) is 0.9
(2) In models with built-in overvoltage protection (“P” option), the output will self trigger between 450-600Vpk, not suitable for capacitive loads.
(3) All parameters at 25°C unless otherwise specified.
(4) When mounted to the proper size heat sink (see derating curves).
(5) Turn-on time for Instantaneous turn-on versions is 0.02 msec
(6) Elective Overvoltage Protection, “P” option.

AGENCY APPROVALS & CERTIFICATIONS

c UL us E116950 (Except P option)

Certification in accordance with:

United States Standard for Industrial Control Equipment - UL 508 and
Canadian Standard Association for Industrial Control Equipment – C22.2 No. 14.

TUV SUD according to IEC 60335-1 and EN 62314:2006

Vibration and Shock Resistance:
IEC 61373 : Category 1, Class B.

Electromagnetic Compatibility				
Generic Standard	**Immunity Tests**	**Test Specification Level**		**Performance**
IEC 61000-6-2 Immunity for Industrial Environments	Electrostatic Discharge IEC 61000-4-2	8kV air discharge		Criterion A
		6kV contact discharge		Criterion A
	Fast transients (burst) IEC 61000-4-4	Output	5kHz	Criterion B
		Input	5kHz	Criterion B
	Surge IEC 61000-4-5	Output	1kV Line to Line	Criterion B
			2kV Line to Earth	Criterion B

WARNINGS

DANGER

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.

Mailing Address: Sensata Technologies, Inc., 529 Pleasant Street, Attleboro, MA 02703, USA.

Rev:12/10/18 ECN 20395 FDE-07-01 Rev. B

CONTACT US

Americas
+1 (877) 502 5500
sales.crydom@sensata.com
Europe, Middle East & Africa
+44 (1202) 416170
ssr-info.eu@sensata.com
Asia Pacific
sales.isasia@list.sensata.com
China +86 (21) 2306 1500
Japan +81 (45) 277 7117
Korea +82 (31) 601 2004
India +91 (80) 67920890
Rest of Asia +886 (2) 27602006 ext 2808

www.sensata.com