DC60 SERIES
PANEL MOUNT



Features

- Ratings from 3A to 7A @ 60 VDC
- Bi-Polar Transistor Output
- UL Approved, CE Compliant to EN60950-1
- Improved SEMS Screw and Washer
- Redesigned Housing with Anti-Rotation Barriers
- AC and DC Control
- Epoxy Free Design

PRODUCT SELECTION

Control Voltage	3A	5A	7A
3.5-32 VDC	DC60S3	DC60S5	DC60S7
90-280 VAC/VDC	DC60SA3	DC60SA5	DC60SA7

SPECIFICATIONS

Output [(2)]

Description	3A	5A	7A
Recommended Operating Voltage [Vdc]	3-48	3-48	3-48
Absolute Maximum Rating [Vdc]	60	60	60
Maximum Off-State Leakage Current @ Rated Voltage [mA]	0.1	0.1	0.1
Maximum Load Current [Adc] [(3)]	3	5	7
Minimum Load Current [mA]	20	20	20
Maximum Surge Current (10 msec) [Adc]	6	10	14
Maximum On-State Voltage Drop @ Rated Current [Vdc]	1	1.2	1.3
Thermal Resistance Junction to Case (Rjc) [°C/W]	2	2	2
Minimum Heat Sink @ Ambient (for max current = °C/W & Ta)	5 @ 60°C	5 @ 60°C	5 @ 40°C

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Input [2]

Description	DC Control	AC Control
Control Voltage Range	3.5-32 VDC	90-280 VAC/VDC
Maximum Reverse Voltage	-32 VDC	—
Minimum Turn-On Voltage [4]	3.5 VDC	90 VAC/VDC
Must Turn-Off Voltage [5]	1 VDC	10 VAC/VDC
Minimum Input Current (For On-State)	2.2 mA	2 mA
Maximum Input Current	25 mA	5.5 mA
Nominal Input Impedance [Ohms]	1500 Ohm	60K
Maximum Turn-On Time [msec] [6]	0.1	10
Maximum Turn-Off Time [msec] [7]	0.3	40

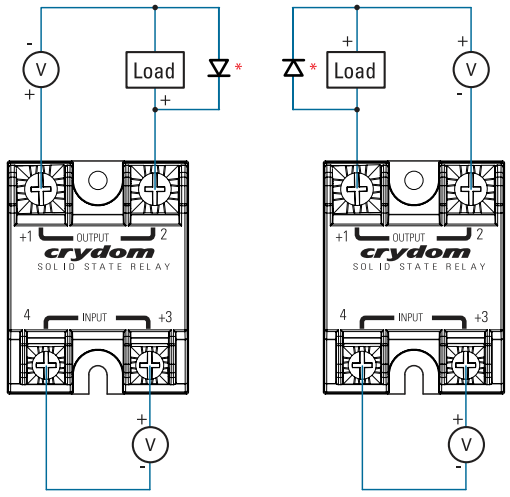
General [2]

Description	Parameters
Dielectric Strength, Input/Output/Base (50/60Hz) [2]	4000 Vrms
Minimum Insulation Resistance (@500 VDC) [2]	10^9 Ohm
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-30 to 80°C
Ambient Storage Temperature Range	-40 to 125°C
Weight (typical)	2.46 oz. (17g)
Housing Material	UL94 V-0
Baseplate Material	Aluminum
Input Terminal Screw Torque Range (in/lb/NM)	13-15 / 1.5-1.7
Load Terminal Screw Torque Range (in/lb/NM)	18-20 / 2-2.2
SSR Mounting Screw Torque Range (in-lb/Nm)	18-20 / 2-2.2
Input/Load Terminal Screw Torque Range (in/lb/NM) [1]	13-15 / 1.5-1.7
Humidity	85% non-condensing
MTBF (Mean Time Between Failures) at 40°C Ambient Temperature [8]	21,395,130 hours (2,441 years)
MTBF (Mean Time Between Failures) at 60°C Ambient Temperature [8]	11,545,504 hours (1,317 years)

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WIRING DIAGRAM

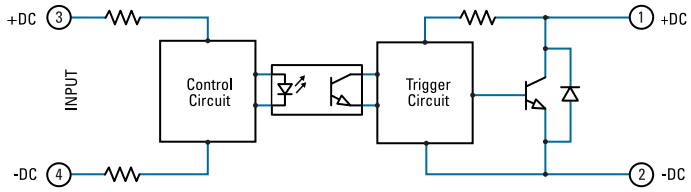
* Inductive loads must be diode suppressed.



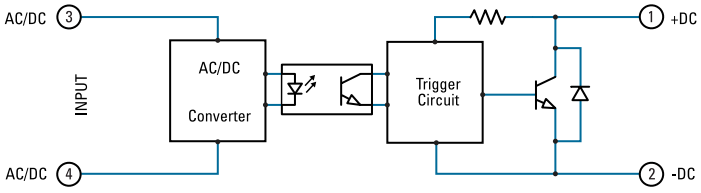
Recommended Wire Sizes		
Terminals	**Wire Size (Solid / Stranded)**	**Wire Pull-Out Strength (lb) [N]**
Input	24 AWG (0.2 mm^2) / 0.2 [minimum]	**10 [44.5]**
	2 x 12 AWG (3.3 mm^2) / 3.3 [maximum]	**90 [400]**
Output	20 AWG (0.5 mm^2) / 0.518 [minimum]	**30 [133]**
	2 x 10 AWG (5.3 mm^2) / 5.3	**110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

EQUIVALENT CIRCUIT BLOCK DIAGRAMS

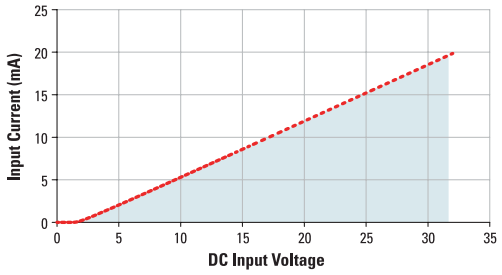
DC60 Series DC Control



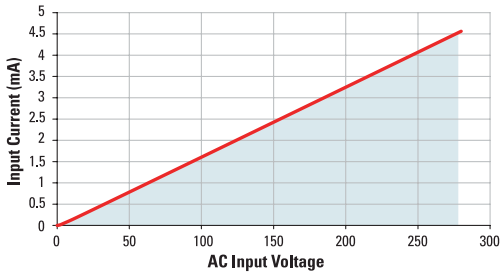
DC60 Series AC Control



Input Current vs Input Voltage
Standard Regulated DC Input



Input Current vs Input Voltage
Standard Regulated AC Input

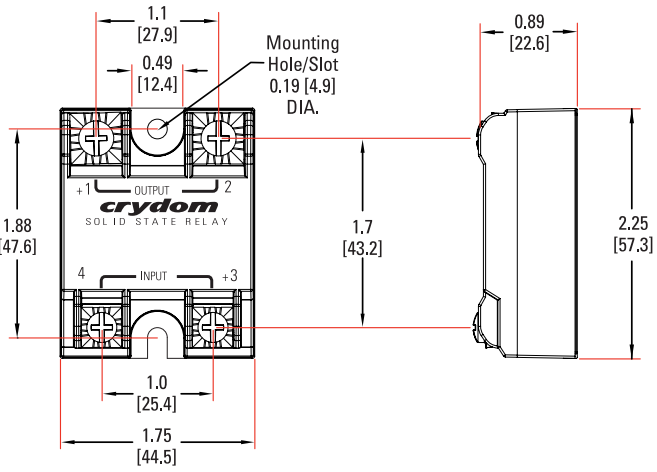


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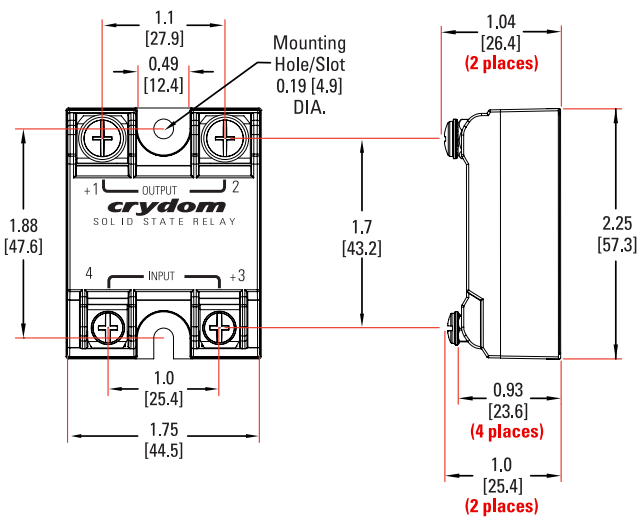
MECHANICAL SPECIFICATIONS (1)

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

Screw Termination



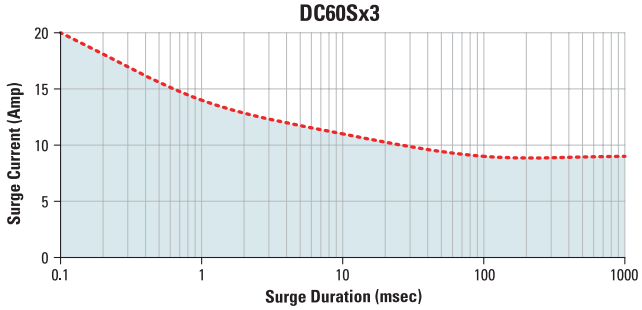
Hex Standoff Termination ("K" Option)(1)



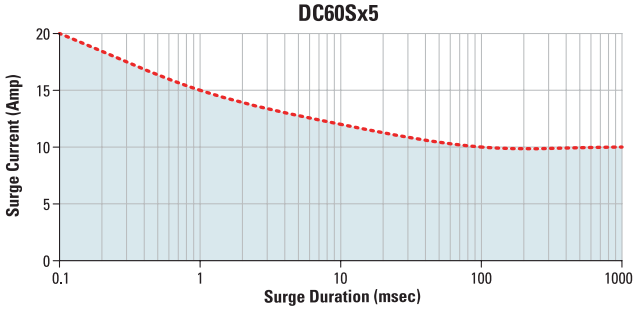
SURGE CURRENT INFORMATION

Single Pulse (9)

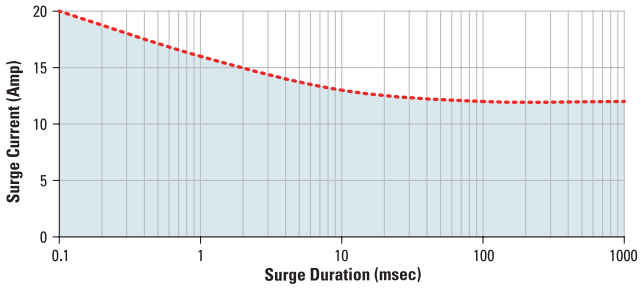
DC60Sx3



DC60Sx5



DC60Sx7

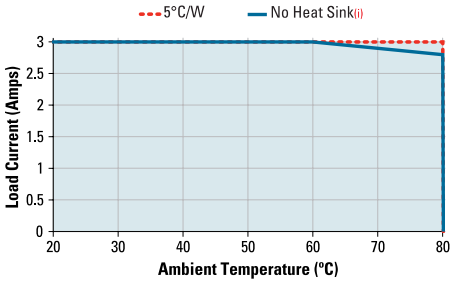


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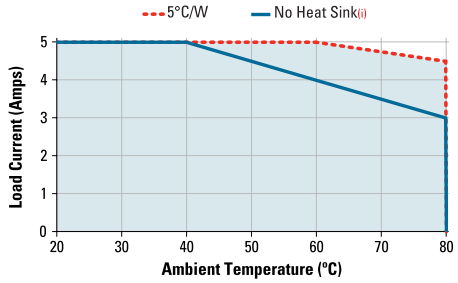
THERMAL DERATE INFORMATION

(i) SSR metal base plate acting as heat sink, it must be exposed to free ambient air.

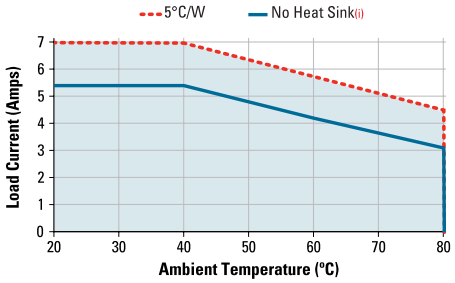
DC60Sx3



DC60Sx5



DC60Sx7



ORDERING OPTIONS

Example : DC60SA3KH-B

Not all part number combinations are available.
Contact Sensata Technical Support for information on the availability of a specific part number.

DC60	-	SA	-	3	-	K	-	H	-	-B
Family		Control Voltage		Rated Load Current		Termination		Thermal Pad		Output Type

Family

DC60

Control Voltage

S: 3.5-32 VDC
SA: 90-280 VAC/DC

Rated Load Current

3: 3 Amps
5: 5 Amps
7: 7 Amps

Termination

Blank: Screws & clamps
K: Installed standoffs with screws for PC Board mounting (1)

Thermal Pad

Blank: Not Included
H: Included

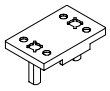
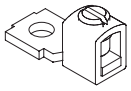
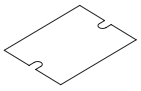
Output Type

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

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ACCESSORIES

New Accessories! Protective Cover and Hardware Kits			
Protective Cover Part Number KS101		**Hardware Kit** Part Number HK4	
	Clear plastic cover compatible with all new S1 designs. Safety covers provide added protection from electric shock when installing or checking equipment.		Bag with 2 square brass accessories and 2 screw 8-32 x 5/8 for output. Used to mount TMR1 lug terminals.

Recommended Accessories					
					
Cover	**Hardware Kit**	**Heat Sink Part No.**	**Thermal Resistance [°C/W]**	**Lug Terminal**	**Thermal Pad**
KS101	HK1 HK4	HS501DR HS301 / HS301DR HS251 HS201 / HS201DR HS202 / HS202DR HS172 HS151 / HS151DR HS122 / HS122DR HS103 / HS103DR HS101 HS073 HS072 HS053 HS033 HS023	5.0 3.0 2.5 2.0 2.0 1.7 1.5 1.2 1.0 1.0 0.7 0.7 0.5 0.36 0.25	TRM1 TRM6	HSP-1 HSP-2

GENERAL NOTES

[1] Option "K" is designed and tested for use with printed circuit boards or ring/fork terminals having a thickness between 0.031 and 0.093 inches (0.79 to 2.36 mm).
[2] All parameters at 25°C unless otherwise specified.
[3] Heat sinking required, see derating curves.
[4] Maximum turn-on voltage for -B, DC control is 1 VDC.
[5] Must turn-off voltage for -B, DC control is 3.5 VDC.
[6] Turn-on time for -B version is 300µsec.
[7] Turn-off time for -B version is 100µsec.
[8] All parameters at 50% power rating and 100% duty cycle (contact Sensata tech support for detailed report).
[9] For single surge pulse Tc=25°C; Tj=150°C.

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

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AGENCY APPROVALS & CERTIFICATIONS

- EN60950-1: Meets the requirements of sections1.5: 1,7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7:
- 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
- Vibration Resistance: IEC 60068-2-6 : Amplitude Range 10-55 Hz, Displacement 0.75mm
- Shock Resistance: IEC 60068-2-27 : Peak Acceleration 15g, Duration11msec

c UL us E116950 CE RoHS

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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