GN SERIES | DC OUTPUT

PANEL MOUNT SOLID STATE RELAYS

Features

- Current ratings of 10, 15 and 30 Amps
- Output voltage of 3-60, 1-50, 1-100 and 1-200 VDC
- Transistor and MOSFET output options available
- Available with or without IP20 touch-safe cover
- LED Input Status Indicator
- UL Approved, CE Compliant to EN60950-1
- Improved SEMS screw and washer
- Redesigned housing with anti-rotation barriers

PRODUCT SELECTION

Control Voltage	10 A	15 A	30 A
3-32 VDC	84134750		
3.5-32 VDC	84134850	84134860	84134870

SPECIFICATIONS

Output [1]

Description	8413x750	8413x850	8413x860	8413x870
Recommended Operating Voltage [Vdc]	3-48	1-150	1-72	1-36
Absolute Maximum Rating [Vdc]	60	200	100	50
Maximum Off-State Leakage Current @ Rated Voltage [mA]	1	0.1	0.1	0.1
Maximum Load Current [Adc] [2]	10	10	15	30
Minimum Load Current [mA]	100	0.1	0.1	0.1
Maximum On-State Voltage Drop @ Rated Current [Vdc]	1.4	2.1	0.8	0.8

Maximum On-State Resistance [RDS-ON] [Ohm]	N/A	0.21	0.05	0.03
Maximum Surge Current [Adc] (10 msec)	15	50	50	72
Thermal Resistance Junction to Case (Rjc) [°C/W]	2	1.25	2.1	1.5
Minimum Heat Sink for Rated Current @ 40°C [°C/W]	5	1.5	2	2
Maximum Pulse Width Modulation Frequency [Hz] [3]	1500	2000	2500	1200

Input [1]

Description	**8413x750**	**8413x8xx**
Control Voltage Range	3-32 VDC	3.5-32 VDC
Maximum Reverse Voltage	-32 VDC	-32 VDC
Minimum Turn-On Voltage	3 VDC	3.5 VDC [4]
Must Turn-Off Voltage]	1 VDC	1 VDC
Minimum Input Current (for on-state)	9 mA	11 mA
Maximum Input Current [mA]	14.5 mA	15 mA
Nominal Input Impedance [Ohm]	Current Regulated	
Maximum Turn-On Time [µsec]	100	75
Maximum Turn-Off Time [µsec]	200	50

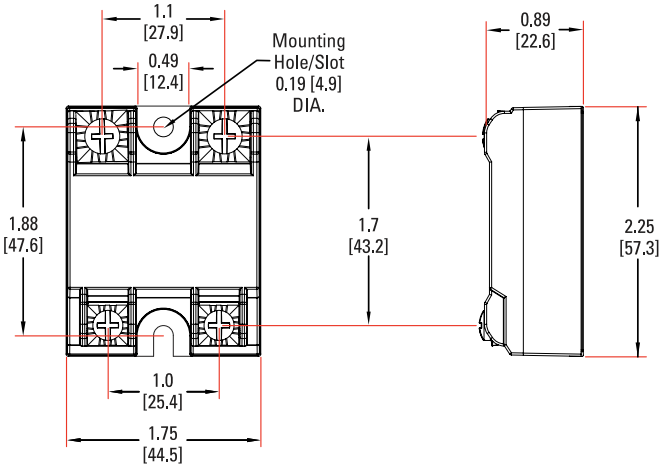
General [1]

Description	**Parameters**
Dielectric Strength, Input to Output (50/60 Hz)	3700 Vrms
Dielectric Strength, Input/Output to Ground (50/60 Hz)	2500 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10^9 Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range [5]	-40 to 100 °C
Ambient Storage Temperature Range	-40 to 100 °C
Weight (typical)	2.46 oz (70 g)
Housing Material	UL94 V-0
Baseplate Material	Aluminum
Input Terminal Screw Torque Range (lb-in/Nm)	13-15 /1.5-1.7
Load Terminal Screw Torque Range (lb-in/Nm)	18-20 / 2-2.2
SSR Mounting Screw Torque Range (lb-in/Nm)	18-20 / 2-2.2
Humidity per IEC60068-2-78	93% non-condensing
LED Input Status Indicator	Green
MTBF (Mean Time Between Failures) at 40°C ambient temperature [6]	11,641,553 hours (1,328 years)
MTBF (Mean Time Between Failures) at 60°C ambient temperature [6]	7,210,376 hours (823 years)

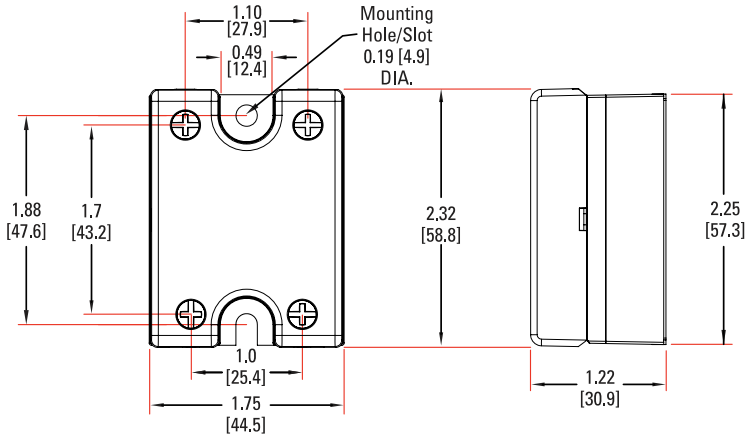
MECHANICAL SPECIFICATIONS (1)

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

Screw Termination, IP00

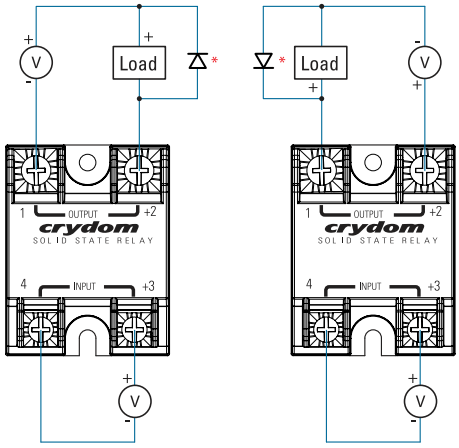


Screw Termination, IP20



WIRING DIAGRAM

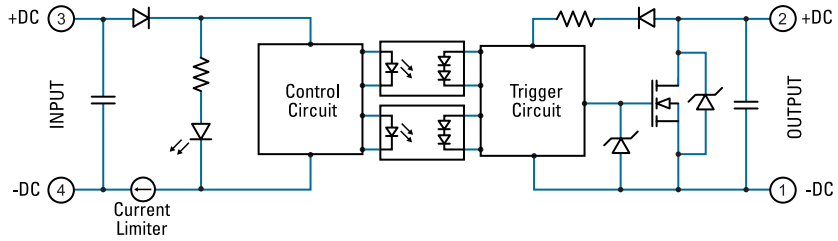
* Inductive loads must be diode suppresed.

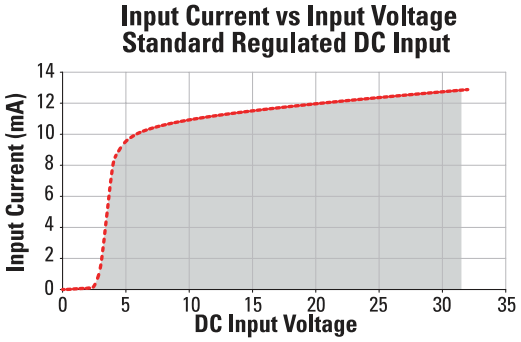


Recommended Wire Sizes

Terminals	Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lb)[N]
Input	24 AWG (0.2 mm²) / 0.2 [minimum]	10 [44.5]
	2 x 12 AWG (3.3 mm²) / 3.3 [maximum]	90 [400]
Output	20 AWG (0.5 mm²) / 0.518 [minimum]	30 [133]
	2 x 10 AWG (5.3 mm²) / 5.3	110 [490]
	2 x 8 AWG (8.4 mm²) / 8.4 [maximum]	90 [400]

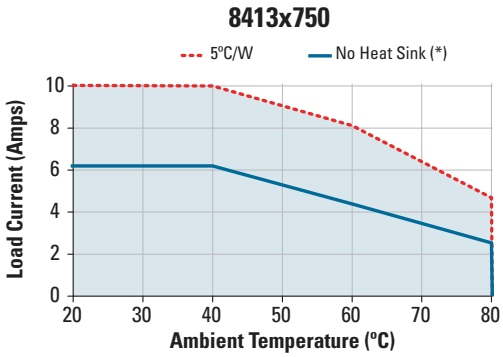
EQUIVALENT CIRCUIT BLOCK DIAGRAMS

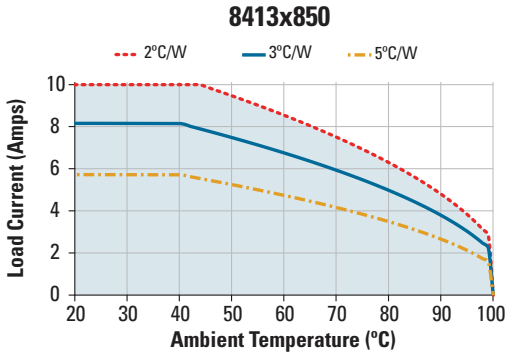


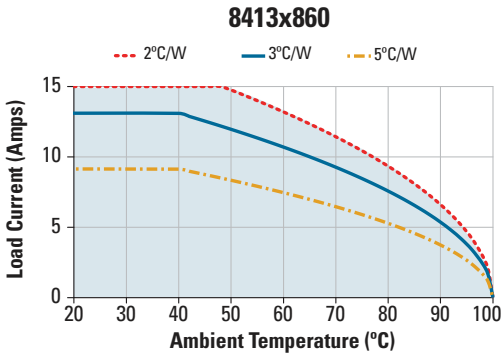


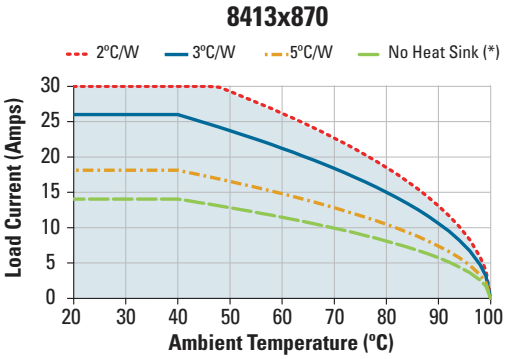
THERMAL DERATE INFORMATION

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

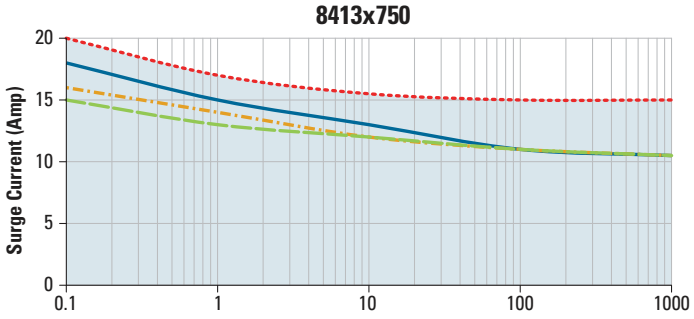


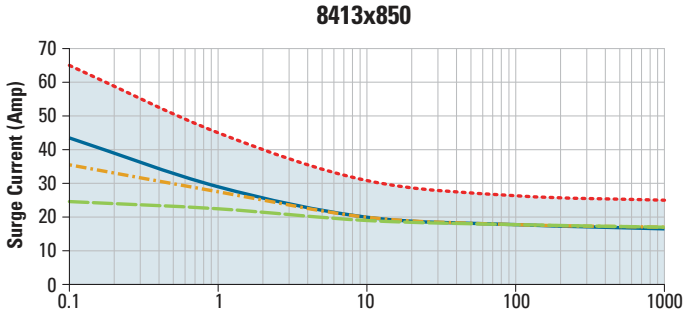






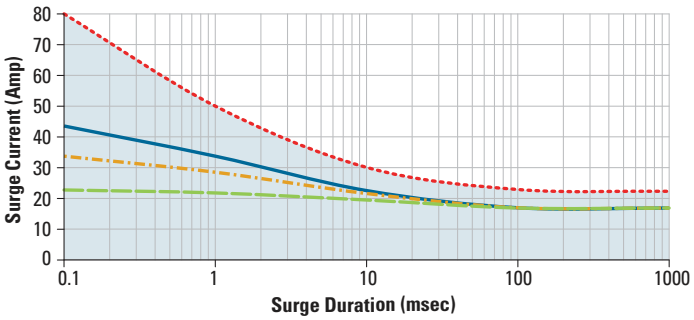
SURGE CURRENT INFORMATION





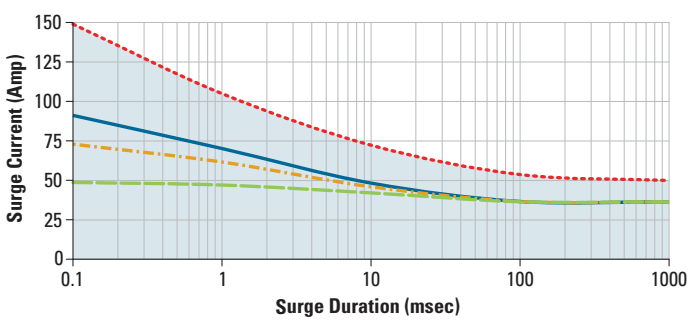
Surge Duration (msec)

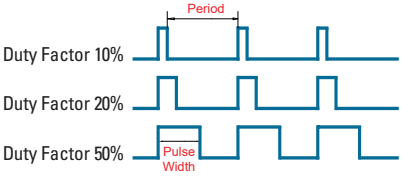
8413x860



Surge Duration (msec)

8413x870





For Pulse Width Modulation applications select the curve according duty factor and pulse duration as following.

$$\text{Duty Factor} = \frac{\text{Pulse Width}}{\text{Period}} \times 100\ (\%)$$

(i) for Single Surge Pulse Tc=40°C ;Tj 175°C
(ii) for Repetitive Surge Pulse Tc=40°C ;Tj 130°C

ACCESSORIES

Recommended Accessories

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

ORDERING OPTIONS

Example : 84134750H

8413	4	7	5	0	H

Series

8413

Touch Safe Cover

4 : Not included (IP00)
7 : Included (IP20)

Output Type

7 : Transistor
8 : MOSFET

Rated Voltage & Load Current

5 : 3-60 VDC, 10 Amps (with output type 7 only)
1-200 VDC, 10 Amps (with output type 8 only)
6 : 1-100 VDC, 15 Amps (with output type 8 only)
7 : 1-50 VDC, 30 Amps (with output type 8 only)

Control Voltage

0 : 3.5-32 VDC

Thermal Pad

Blank : Not Included
H : Included

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) Heat sinking required, see derating curves.
(3) 8 VDC Minimum control voltage. Resistive loads only. Consider switching losses; at maximum frequency reduce to 75% output current.
(4) Increase minimum voltage by 1V for operations from -20 to -40°C.
(5) Maximum ambient temperature for 8413x750 is 80°C, decrease maximun control voltage 1.35V/°C above 80°C ambient temperature.
(6) All parameters at 50% power rating and 100% duty cycle.

For additional information or specific questions, contact Technical Support.

AGENCY APPROVALS & CERTIFICATIONS

E46203

EN60950-1: Meets the requirements of sections1.5: 1,7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7:

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.

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

Rev:12/11/24 ECN 20395 FDE-07-01 Rev. B

CONTACT US

Americas
+1(800) 350 2727
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