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GN SERIES | AC OUTPUT

PANEL MOUNT SOLID STATE RELAYS



- ### Features
- Current ratings from 10 to 125 Amps
 - Output voltage 24-280 VAC and 48-660 VAC
 - Available with or without IP20 touch-safe cover
 - LED Input Status Indicator
 - UL, CSA and TUV Approved, CE Compliant to EN60950-1
 - Improved SEMS screw and washer
 - Redesigned housing with anti-rotation barriers
 - EMC Compliant to level 3

PRODUCT SELECTION

Control Voltage	10 A	25 A	50 A	75 A	100 A	125 A
3-32 VDC	84134000	84134010	84134020	84134030	84134040	84134080
18-36 VAC	84134002	84134012	84134022	84134032	84134042	84134082
90-280 VAC	84134001	84134011	84134021	84134031	84134041	84134081

SPECIFICATIONS

Output ⁽¹⁾

Description	280 VAC	660 VAC
Operating Voltage (47-440 Hz) [Vrms]	24-280	48-600
Transient Voltage [Vpk] ⁽²⁾	600	1200
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	0.1	0.25
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec]	500	500

Output ⁽¹⁾

Description	10 A	25 A	50 A	75 A	100 A	125 A
Maximum Load Current [Arms] ⁽³⁾	10	25	50	75	100	125
Minimum Load Current [mArms]	50	50	100	100	100	100
Maximum 1 Cycle Surge Current (50/60 Hz) [Apk]	150/175	275/300	710/750	1050/1100	1120/1200	1600/1700
1 Second surge current (Apk. Ta=25°C) 50/60 Hz	50	85	150	225	300	375
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.35	1.35	1.35	1.3	1.3	1.25
Thermal Resistance Junction to Case (Rjc) [°C/W]	0.4	0.4	0.25	0.16	0.16	0.11
Maximum 1/2 Cycle I ² t for Fusing (50/60Hz) [A ² sec]	110/120	380/370	2520/2320	5500/5000	6270/6000	12800/12050
Minimum Heat Sink for Rated Current @ 40°C [°C/W]	5	2	1	0.7	0.5	0.5

Input ⁽¹⁾

Description	8413xxx0	8413xxx2	8413xxx1
Control Voltage Range	3-32 VDC ⁽⁴⁾	18-36 VAC	90-280 VAC ⁽⁵⁾
Maximum Reverse Voltage	-32 VDC	-	-
Minimum Turn-On Voltage	3 VDC ⁽⁴⁾	18 VAC	90 VAC
Must Turn-Off Voltage	1 VDC	4 VAC	10 VAC
Minimum Input Current (for on-state) [mA]	10	13	6
Maximum Input Current [mA]	15	15	10
Nominal Input Impedance [Ohm]	Current Regulated		
Maximum Turn-On Time [µsec]	1/2 Cycle ⁽⁶⁾	20	20
Maximum Turn-Off Time [µsec]	1/2 Cycle	30	30

General ⁽¹⁾

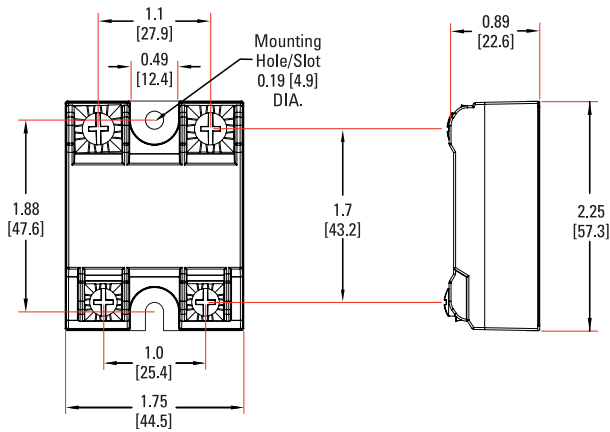
Description	Parameters
Dielectric Strength, Input/Output/Base (50/60 Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10 ⁹ Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range ⁽⁷⁾	-40 to 80 °C
Ambient Storage Temperature Range	-40 to 125 °C
Weight (typical)	2.53 oz (72 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 ⁽⁸⁾	11,641,553 hours (1,328 years)
MTBF (Mean Time Between Failures) at 60°C ambient temperature ⁽⁸⁾	7,210,376 hours (823 years)

MECHANICAL SPECIFICATIONS ⁽¹⁾

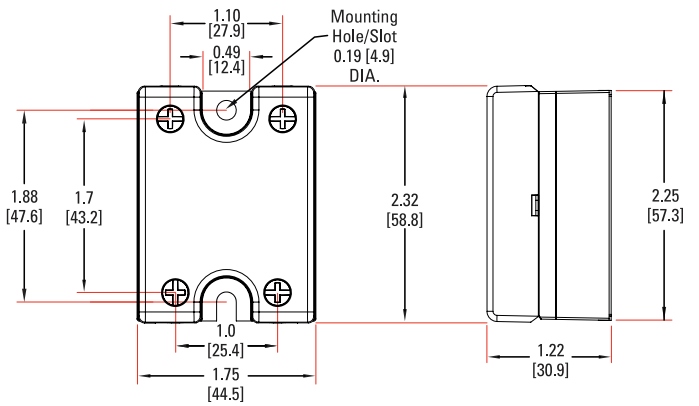
Tolerance: ± 0.02 in / 0.5 mm

All dimensions are in: inches [millimeters]

Screw Termination, IP00

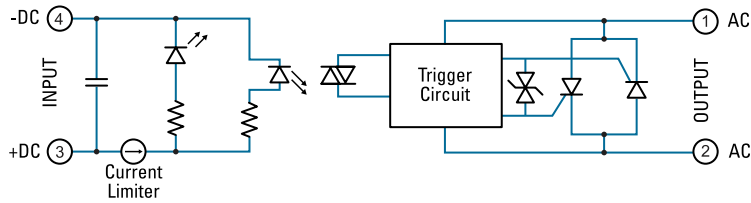


Screw Termination, IP20

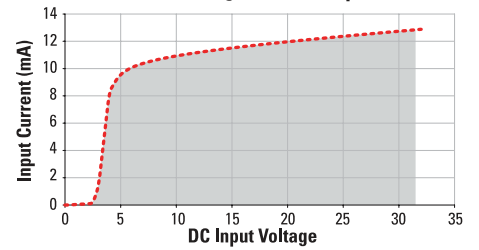


EQUIVALENT CIRCUIT BLOCK DIAGRAMS

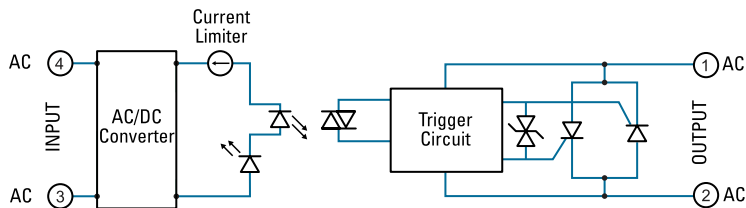
GN Series DC Control



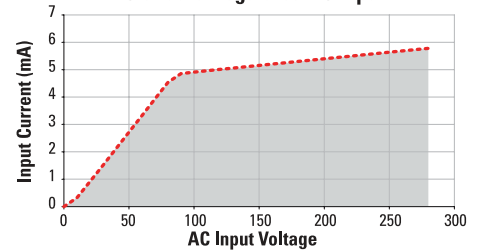
**Input Current vs Input Voltage
Standard Regulated DC Input**



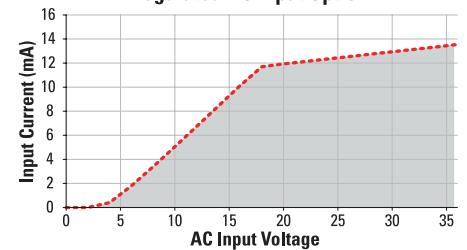
GN Series AC Control



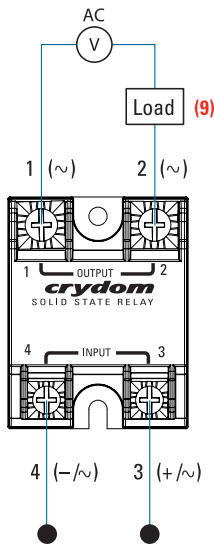
**Input Current vs Input Voltage
Standard Regulated AC Input**



**Input Current vs Input Voltage
Regulated AC Input Option E**



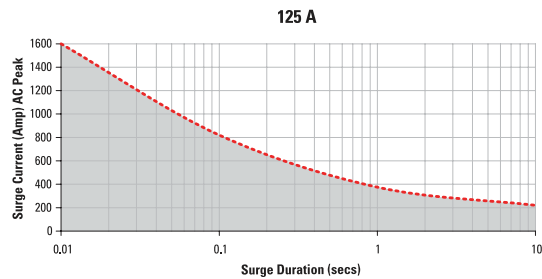
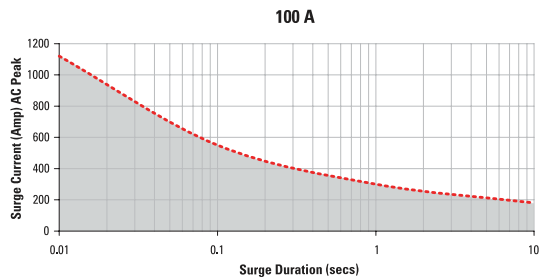
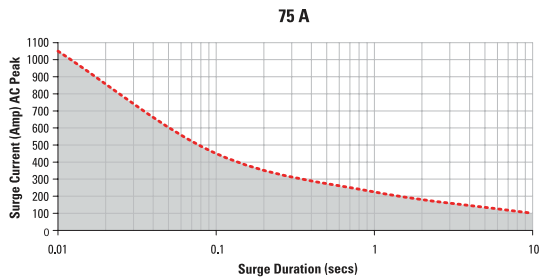
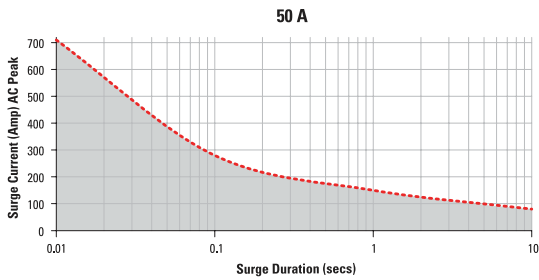
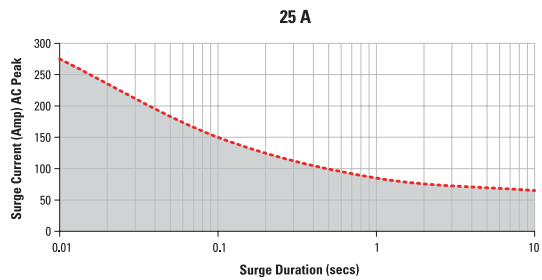
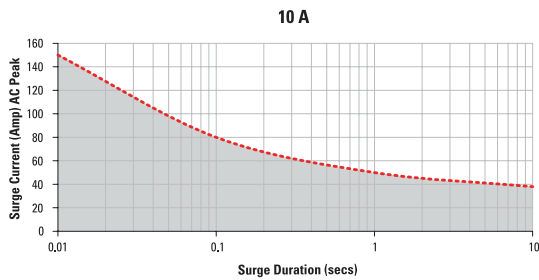
WIRING DIAGRAM



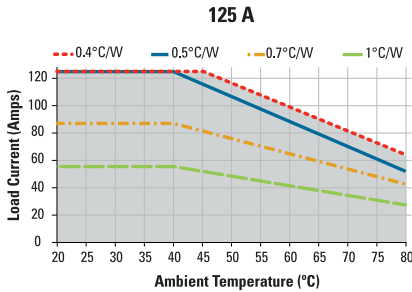
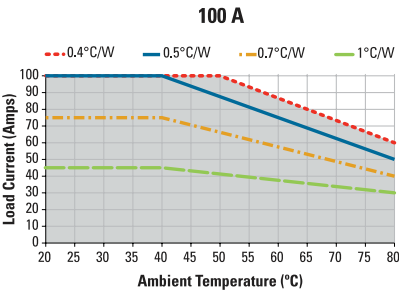
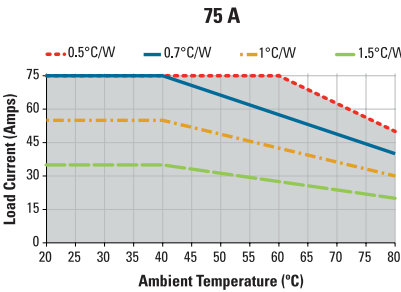
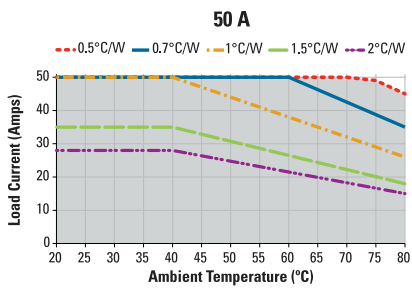
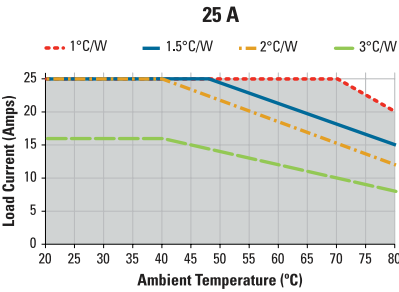
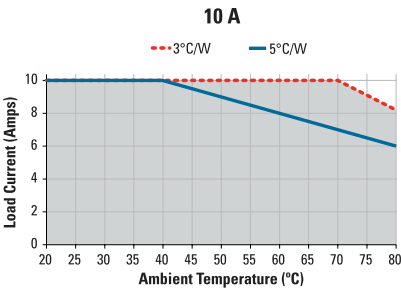
Recommended Wire Sizes		
Terminals	Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lb)[N]
Input	24 AWG (0.2 mm ²) / 0.2 [minimum]	10 [44.5]
	2 x 12 AWG (3.3 mm ²) / 3.3 [maximum]	90 [400]
Output	20 AWG (0.5 mm ²) / 0.518 [minimum]	30 [133]
	2 x 10 AWG (5.3 mm ²) / 5.3	110 [490]
	2 x 8 AWG (8.4 mm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

SURGE CURRENT INFORMATION

--- Single Pulse (10)



THERMAL DERATE INFORMATION



ACCESSORIES

Recommended Accessories					
 Cover	 Hardware Kit	 Heat Sink	 Lug Terminal	 Thermal Pad	
		Part No.	Thermal Resistance [°C/W]		
KS101	HK1 HK4	HS501DR	5.0	TRM1	HSP-1
		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 : 84134010H

	8413	4	0	1	0	H
Series						
8413						
Touch Safe Cover						
4 : Not included (IP00) 7 : Included (IP20)						
Operating Voltage						
0 : 24-280 VAC/Zero Voltage Turn-On 1 : 48-660 VAC/Zero Voltage Turn-On 2 : 24-280 VAC/Instantaneous Turn-On 3 : 48-660 VAC/Instantaneous Turn-On						
Rated Load Current						
0 : 10 Amps 1 : 25 Amps 2 : 50 Amps 3 : 75 Amps 4 : 100 Amps 8 : 125 Amps						
Control Voltage						
0 : 3-32 VDC 1 : 90-280 VAC 2 : 18-36 VAC						
Thermal Pad						
Blank : Not Included H : Included						

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

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

GENERAL NOTES

- (1) All parameters at 25°C unless otherwise specified.
- (2) Output will self trigger between 450-600 Vpk / 900-1200 Vpk for 280 VAC/660 VAC models not suitable for capacitive loads.
- (3) Heat sinking required, see derating curves.
- (4) 14-32 VDC for 48-660 VAC models.
- (5) For ambient temperatures above 40°C the maximum control voltage must not exceed 250 VAC.
- (6) Turn-on time for Instantaneous turn-on versions is 0.1 msec.
- (7) AC models operating range is -20 to 80°C.
- (8) All parameters at 50% power rating and 100% duty cycle (contact Crydom tech support for detailed report).
- (9) Load can be wired to either SSR output terminal 1 or 2.
- (10) For single surge pulse Tc=25°C; Tj=125°C. For AC Output SSRs, AC Rms value of surge current equals the peak value divided by $\sqrt{2}$ (1.414).

For additional information or specific questions, contact Technical Support.

AGENCY APPROVALS & CERTIFICATIONS



EN60950-1: Meets the requirements of sections 1.5: 1.7: 2.9: 2.10.5.3: 4.2: 4.5: 4.7:

Certified according to EN 62314:2006

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

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

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