



# GNR SERIES | 22.5MM

DIN RAIL MOUNT SOLID STATE RELAYS



## Features

- Current ratings of 10, 20 and 30 amps
- Output voltage ratings: 24-280 and 48-600 VAC
- Direct Bond Copper (DBC) Substrate
- LED input status indicator
- UL 508 Endurance Rating for Enhanced Reliability
- UL/CSA/TUV Approved, CE Compliant
- Built-in overvoltage protection
- DIN Rail or Panel Mount
- Zero voltage turn-on output

## PRODUCT SELECTION

| Control Voltage | 10A      | 20A      | 30A      |
|-----------------|----------|----------|----------|
| 4-32 VDC        | GNR10DHZ | GNR20DHZ | GNR30DHZ |

## SPECIFICATIONS

### Output <sup>(1)</sup>

| Description                                                                    | GNR10     | GNR20     | GNR30      |
|--------------------------------------------------------------------------------|-----------|-----------|------------|
| Operating Voltage (47-400Hz) [Vrms]                                            | 24-280    | 48-600    | 48-600     |
| Transient Overvoltage [Vpk, t=1 min.]                                          | 600       | 1100      | 1100       |
| Maximum Off-State Leakage Current @ Rated Voltage [mArms]                      | 0.1       | 0.1       | 0.1        |
| Static Off-State dv/dt ( V/μsec, Ta=25°C) <sup>(2)</sup>                       | 500       | 500       | 500        |
| Maximum Load Current [Arms]                                                    | 10        | 20        | 30         |
| Minimum Load Current [Arms]                                                    | 100       | 100       | 100        |
| Maximum Surge Current (50/60 Hz, 1 cycle) [Apk]                                | 190/200   | 286/300   | 716/750    |
| 1 Second Surge Current (Apk Ta=25°C) 50/60 Hz                                  | 65        | 85        | 150        |
| Forward Voltage Drop (Vpk @ max, Ta=25°C)                                      | 1.5       | 1.35      | 1.35       |
| Maximum I <sup>2</sup> t for Fusing (50/60Hz, 1/2 cycle ) [A <sup>2</sup> sec] | 182/166   | 410/374   | 2562/2334  |
| HP Ratings at 120V / FLC [Arms]                                                | -         | 1.2/9.8   | 3/4 / 13.8 |
| HP Ratings at 240V / FLC [Arms]                                                | -         | 1/8       | 2/12       |
| Min/Max stranded wire                                                          | 16/8 AWG  | 16/8 AWG  | 16/8 AWG   |
| Min/Max solid wire                                                             | 16/10 AWG | 16/10 AWG | 16/10 AWG  |

### Input <sup>(1)</sup>

| Description                                | GNRxxDx           |
|--------------------------------------------|-------------------|
| Control Voltage Range <sup>(3)</sup>       | 4.0-32 VDC        |
| Minimum Turn-On Voltage                    | 4.0 VDC           |
| Must Turn-Off Voltage                      | 1.0 VDC           |
| Minimum Input Current (for on-state)       | 6 mA              |
| Maximum Input Current                      | 10 mA             |
| Input Resistance                           | Current Regulated |
| Maximum Turn-Off Time [msec]               | 1/2 Cycle         |
| Maximum Turn-On Time [msec] <sup>(4)</sup> | 1/2 Cycle         |
| Min/Max stranded/solid wire                | 24/16 AWG         |

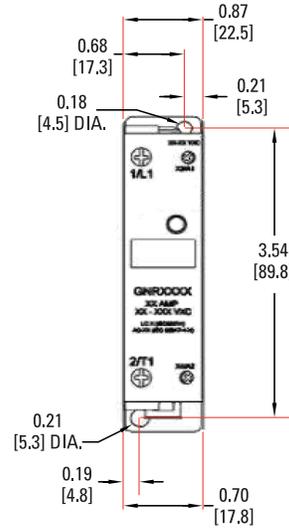
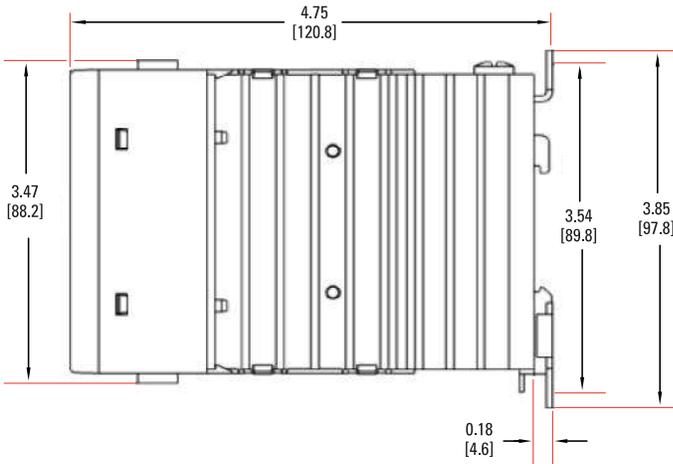
### General <sup>(1)</sup>

| Description                                           | Parameters                   |
|-------------------------------------------------------|------------------------------|
| Ambient Operating Temperature Range <sup>(3)</sup>    | -20 to 80°C                  |
| Ambient Storage Temperature Range                     | -40 to 100 °C                |
| Dielectric Strength, Input to Output (50/60Hz)        | 4000 Vrms                    |
| Dielectric Strength, Input/Output to Ground (50/60Hz) | 2500 Vrms                    |
| Maximum Capacitance, Input/Output                     | 8 pF                         |
| Housing Material                                      | UL 94V0 (self extinguishing) |
| Input Status Indicator                                | Green LED                    |
| Weight (typical)                                      | 7.94 oz (225g)               |

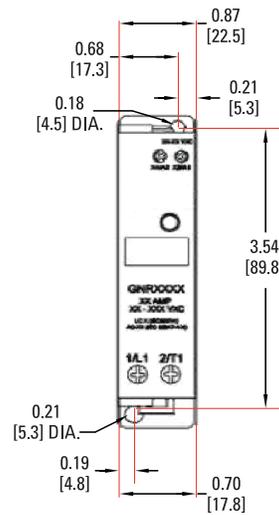
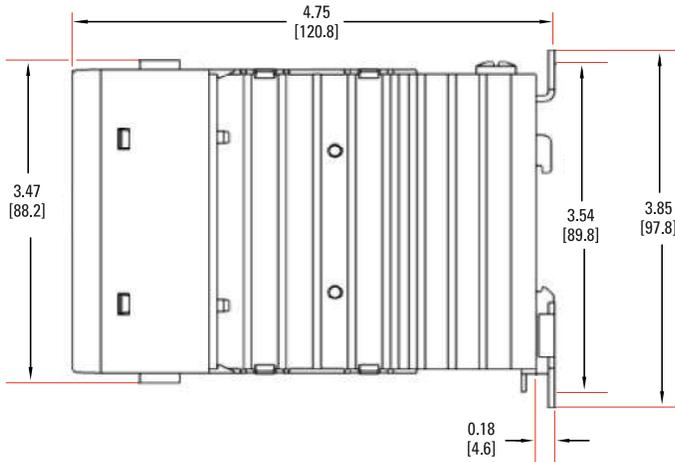
# MECHANICAL SPECIFICATIONS (1)

Tolerance:  $\pm 0.02$  in / 0.5 mm  
 All dimensions are in: inches [millimeters]

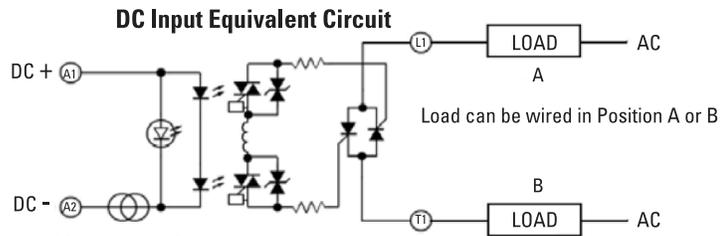
## Contactors Configuration



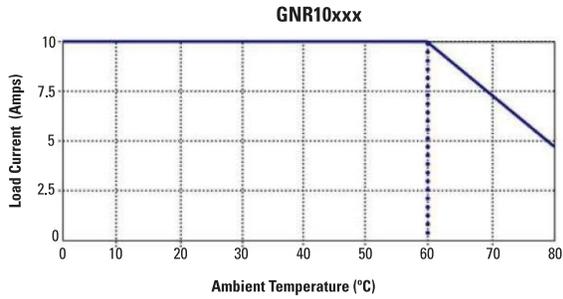
## Relay Configuration



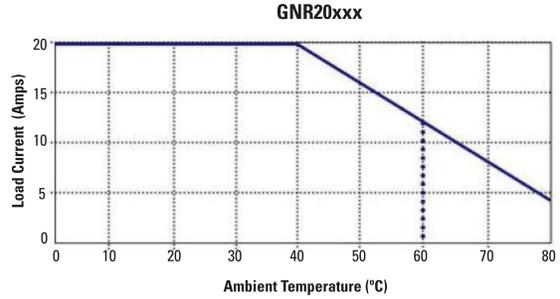
# WIRING DIAGRAM



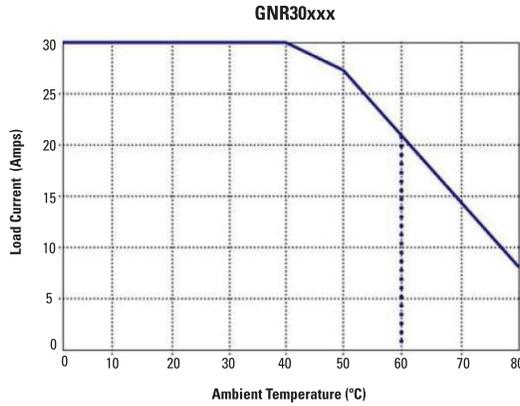
# THERMAL DERATE INFORMATION



\*GNR10A Series rated to 60°C max ambient



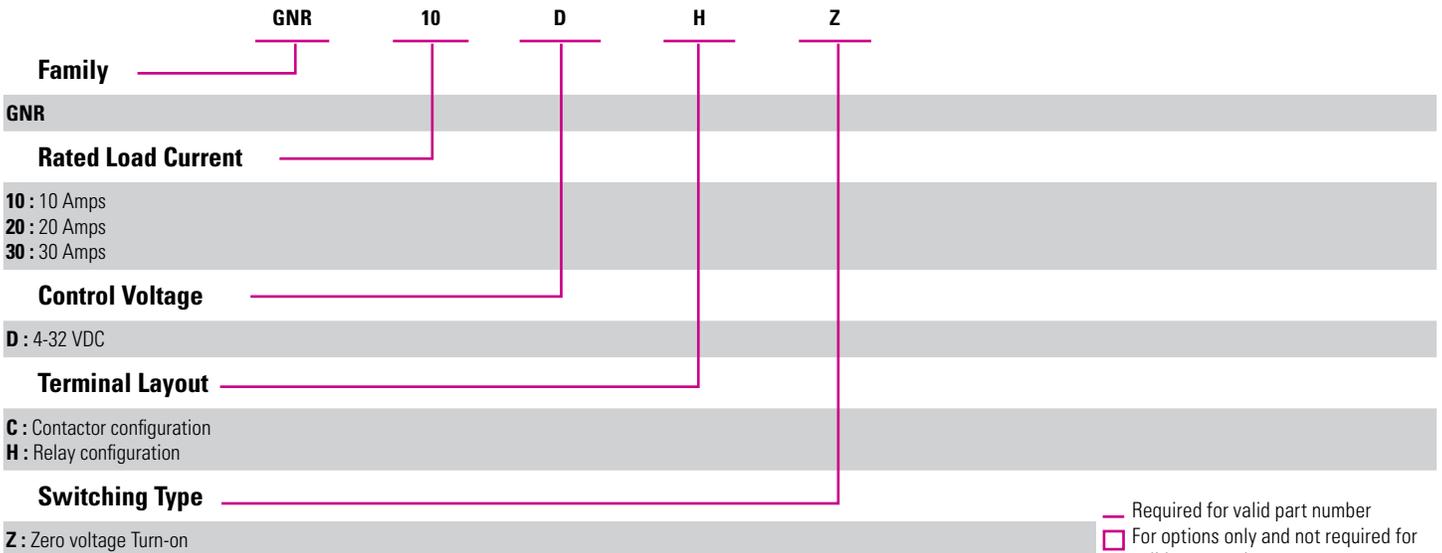
\*GNR20A Series rated to 60°C max ambient



\*GNR30A Series rated to 60°C max ambient

# ORDERING OPTIONS

Example: GNR10DHZ



## GENERAL NOTES

- (1) All parameters at 25°C unless otherwise specified.
- (2) Off-State dv/dt test method per EIA/NARM standard RS-443, paragraph 13.11.1
- (3) For 180-280 VAC Control. Maximum Ambient operating temperatures is 60°C.
- (4) TUV Certification according to EN 60950-1/A1:2010

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

## AGENCY APPROVALS & CERTIFICATIONS



### EMC Compatibility

Designed in accordance with the requirements of IEC 62314

IEC 62314

IEC 60068-2-6 35mm/10-55Hz

IEC 60068-2-27 15G / 11ms

IEC 61000-4-2 Level 3 Electrostatic Discharge

IEC 61000-4-3 Level 3 Radiated Electromagnetic Noise

IEC 61000-4-4 Level 3 Immunity to Electrically Fast Transients

IEC 61000-4-5 Level 3 Immunity to Electrical Surges

IEC 61000-4-6 Level 3 Conducted Electromagnetic Noise

CISPR 11 Class A Conducted and Radiated Noise for Industrial Environments

## 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