

# › GNA Series

## Essential Solid State Relays

### Panel Mount - AC Output Single Phase

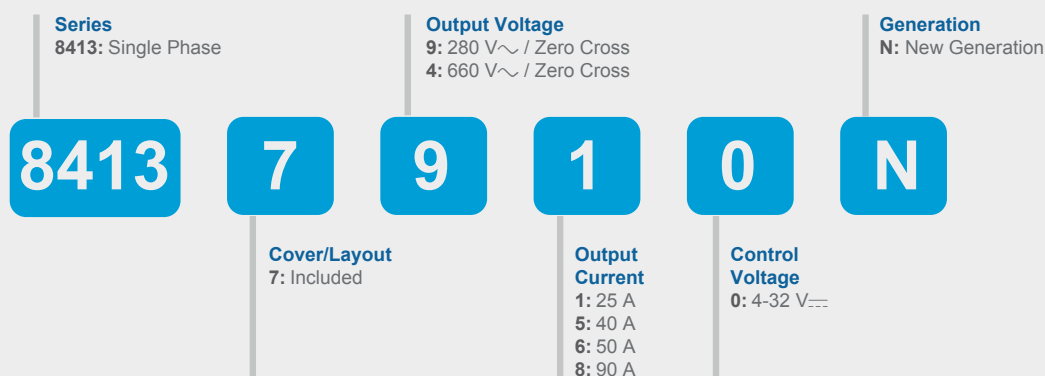
- › Output current of 25, 40, 50 and 90 Amps
- › Output voltage of 24-280 V $\sim$  and 48-660 V $\sim$
- › Control voltage of 4-32 V $\text{---}$
- › Zero cross (resistive loads)
- › Integrated IP20 touch-safe removable covers
- › LED input status indicator
- › Cost-effective solution



Zero Cross  
Version

| Product Selection - Zero Cross (Resistive Loads) |                 |                 |                 |                 |
|--|-----------------|-----------------|-----------------|-----------------|
| Rated Load Current                               | 25A             | 40A             | 50A             | 90A             |
| Output Voltage                                   | 24-280 V $\sim$ | 48-660 V $\sim$ | 48-660 V $\sim$ | 48-660 V $\sim$ |
| Control Voltage                                  |                 |                 |                 |                 |
| 4-32 V $\text{---}$                              | 84137910N       | 84137450N       | 84137460N       | 84137480N       |

## PART NUMBERING SYSTEM



Do you need an adapted or customized solution? Contact us on [www.crouzet.com](http://www.crouzet.com)

#### Description:

Crouzet Solid State Relays are designed to be used in almost any application, offering very long life expectancy and are easy to install, easy to use, robust and multipurpose.

For more information about Crouzet's Solid State relays, please visit [www.crouzet.com](http://www.crouzet.com).

| Accessories    |                                      |             |
|----------------|--------------------------------------|-------------|
| Type           | Description                          | Part-Number |
| Heatsink       | 0.9 °C/W Thermal Resistance          | 26532752N   |
| Heatsink       | 1.1 °C/W Thermal Resistance          | 26532753N   |
| Heatsink       | 1.2 °C/W Thermal Resistance          | 26532754N   |
| Heatsink       | 1.75 °C/W Thermal Resistance         | 26532755N   |
| Heatsink       | 2.2 °C/W Thermal Resistance          | 26532756N   |
| Adapter        | DIN Rail                             | 26532764N   |
| Thermal Pad    | Self-Adhesive Thermal Pad            | 26532722N   |
| Screws         | Screw Mounting Kit                   | 26532001    |
| Thermal Grease | Thermal Grease for Heatsink mounting | 26532003    |

| Output Specifications <sup>(1)</sup>  |                            |                          |                          |                            |
|---|----------------------------|--------------------------|--------------------------|----------------------------|
| Description   | 25A                        | 40A                      | 50A                      | 90A                        |
| Maximum Load Current [Arms] <sup>(3)</sup>  | 25                         | 40                       | 50                       | 90                         |
| Minimum Load Current [mArms]  | 5                          |                          |                          |                            |
| Min / Max Operating Voltage (47-63Hz) [Vrms]  | 24-280 V~                  | 48-660 V~                |                          |                            |
| Transient Voltage [Vpk] <sup>(2)</sup>  | 600                        | 1200                     |                          |                            |
| Maximum Off-State Leakage Current @ Rated Voltage [mArms]                                   | 1                          |                          |                          |                            |
| Minimum Off-State dV/dt @ Maximum Rated Voltage [V/μsec]                                    | 500                        |                          |                          |                            |
| 1 Second Surge Current (Apk. Ta=25 °C) 50/60 Hz   | 100                        | 96                       | 165                      | 347                        |
| Maximum 1 Cycle Surge Current (50/60Hz) [Apeak]<br>Typ @ 50 Hz                              | 270/284 (min)<br>340 (typ) | 320/_ (min)<br>420 (typ) | 530/_ (min)<br>580 (typ) | 1100/_ (min)<br>1200 (typ) |
| Maximum On-State Voltage Drop @ Rated Current [Vpeak]                                       | 1.22                       | 1.23                     | 1.22                     | 1.4                        |
| Thermal Resistance Junction to Case (Rjc) [°C/W]  | 1.7                        | 0.7                      | 0.55                     | 0.3                        |
| Maximum 1/2 Cycle I <sup>2</sup> t for Fusing @ 50 Hz (min. / typical) [A <sup>2</sup> sec] | 487                        | 882                      | 1680                     | 7200                       |
| Minimum Heat Sink for Rated Current @ 40 °C [°C/W]  | 1.3                        | 1.05                     | 0.85                     | 0.33                       |

| Input Specifications                 |                                       |
|--------------------------------------|---------------------------------------|
| Description                          | 4-32 V <sub>DC</sub>                  |
| Input Voltage Range                  | 4-32 V <sub>DC</sub> <sup>(1,2)</sup> |
| Maximum Reverse Voltage              | -32 V <sub>DC</sub>                   |
| Minimum Turn-On Voltage              | 3 V <sub>DC</sub> 3.5 V <sub>DC</sub> |
| Must Turn-Off Voltage                | 1 V <sub>DC</sub> 2 V <sub>DC</sub>   |
| Minimum Input Current (for on-state) | 10 mA                                 |
| Maximum Input Current [mA]           | 14 mA                                 |
| Nominal Input Impedance [Ohms]       | Current Limited                       |
| Maximum Turn-On Time [msec]          | 1/2 Cycle <sup>(5)</sup>              |
| Maximum Turn-Off Time [msec]         | 1/2 Cycle <sup>(5)</sup>              |

| General Specifications                                 |                   |           |     |     |
|--|-------------------|-----------|-----|-----|
| Description  | 25A               | 40A       | 50A | 90A |
| Dielectric Strength, Input to Output (50/60 Hz)        | 4000 Vrms         |           |     |     |
| Dielectric Strength, Input/Output to Ground (50/60 Hz) | 2500 Vrms         | 4000 Vrms |     |     |
| Minimum Insulation Resistance (@ 500 V <sub>DC</sub> ) | 10 <sup>9</sup> Ω |           |     |     |
| Maximum Capacitance, Input/Output                      | 0.8 pF            |           |     |     |
| Ambient Operating Temperature Range                    | -40 to 80 °C      |           |     |     |
| Ambient Storage Temperature Range                      | -40 to 100 °C     |           |     |     |

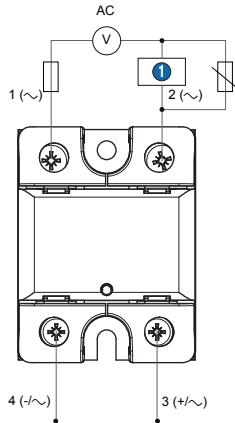
| General Specifications  |                 |     |     |     |
|---|-----------------|-----|-----|-----|
| Description   | 25A             | 40A | 50A | 90A |
| Weight (typical)  | 80 g            |     |     |     |
| Housing Material  | UL94 V-0        |     |     |     |
| Baseplate Material  | Aluminum        |     |     |     |
| Input Terminal Screw Torque Range (in-lb/Nm)  | 11-18 / 1.2-2.0 |     |     |     |
| Load Terminal Screw Torque Range (in-lb/Nm)   | 18-26 / 2-3     |     |     |     |
| SSR Mounting Screw Torque Range (in-lb/Nm)  | 11-16 / 1.2-1.8 |     |     |     |
| Humidity per IEC60068-2-78  | 40-85%          |     |     |     |
| LED Input Status Indicator  | Green           |     |     |     |
| MTBF (Mean Time Between Failures) at 40 °C ambient temperature (years) <sup>(5)</sup> | 72              |     |     |     |
| MTBF (Mean Time Between Failures) at 60 °C ambient temperature (years) <sup>(5)</sup> | 46              |     |     |     |

| General Notes  |
|--|
| <sup>(1)</sup> All parameters at 25 °C unless otherwise specified  |
| <sup>(2)</sup> Output will self trigger between 450-600 Vpk not suitable for capacitive loads                      |
| <sup>(3)</sup> Heat sinking required, see derating curves  |
| <sup>(4)</sup> Increase minimum voltage by 1 V for operations from -20 to -40 °C                                   |
| <sup>(5)</sup> All parameters at 50 % power rating and 100 % duty cycle (contact tech support for detailed report) |

## Diagrams

### Wiring

GNA



| TERMINALS | WIRE SIZE                                   |   | Terminal Screw Torque (N.m) |
|-----------|---|---|-----------------------------|
|           | SOLID                                       | STRANDED                                    |                             |
| Input     | 18..14 AWG (0.75..2.5 mm <sup>2</sup> )     | 18..14 AWG (0.75..2.5 mm <sup>2</sup> )     | 1.2 - 2                     |
|           | 2 x 18..14 AWG (0.75..2.5 mm <sup>2</sup> ) | 2 x 18..14 AWG (0.75..2.5 mm <sup>2</sup> ) |                             |
| Output    | 16..8 AWG (1.5..10 mm <sup>2</sup> )        | 16..8 AWG (1.5..6 mm <sup>2</sup> )         | 2 - 3                       |
|           | 2 x 16..8 AWG (1.5..10 mm <sup>2</sup> )    | 2 x 16..10 AWG (1.5..6 mm <sup>2</sup> )    |                             |

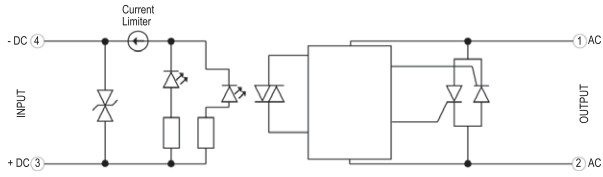
Recommended overvoltage external protection: TVS Diode

1 Load

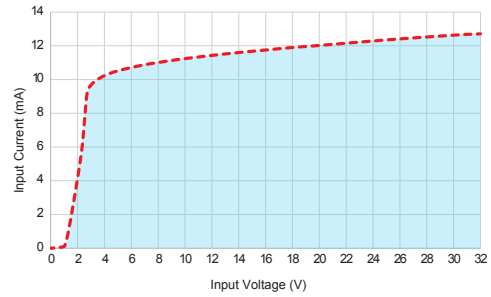
Diagrams

Equivalent Circuit Block

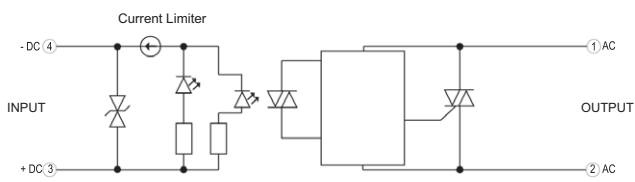
GNA Series DC control / Thyristor 40 A / 50 A / 90 A



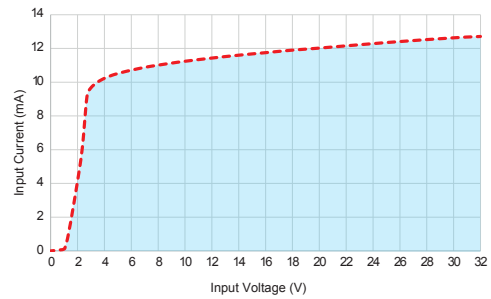
Input current vs Input Voltage  
Standard Regulated DC inputs



GNA Series DC control / Triac 25 A



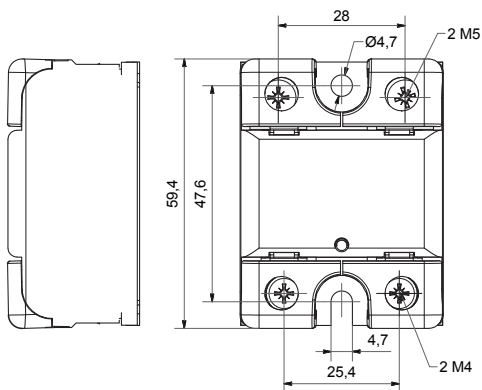
Input current vs Input Voltage  
Standard Regulated DC inputs



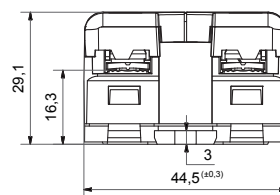
Diagrams

Dimensions (mm)

GNA front view



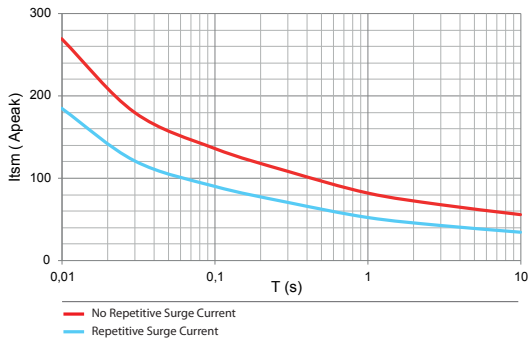
GNA side view



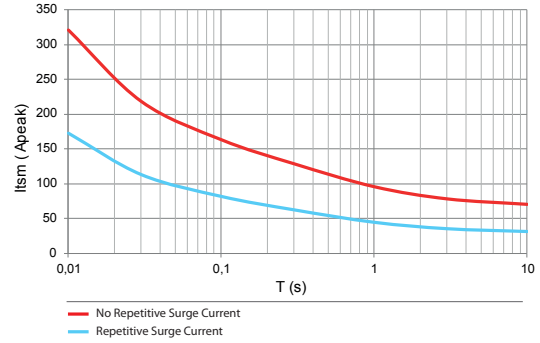
Curves

Surge Current Information

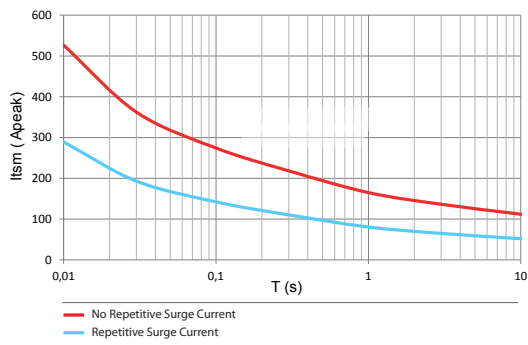
GNA - 25 A



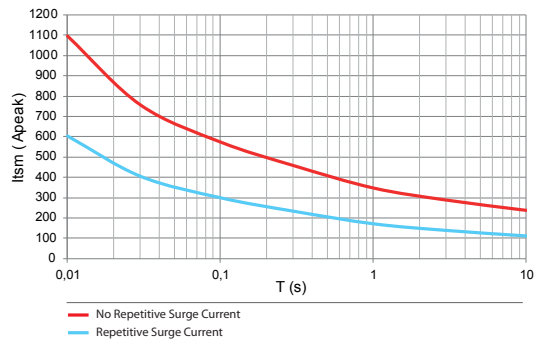
GNA - 40 A



GNA - 50 A



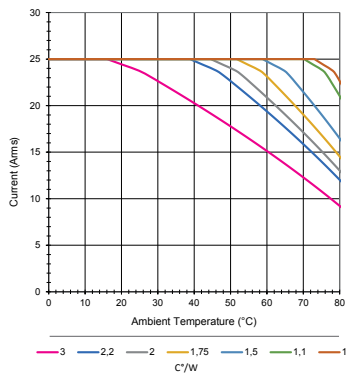
GNA - 90 A



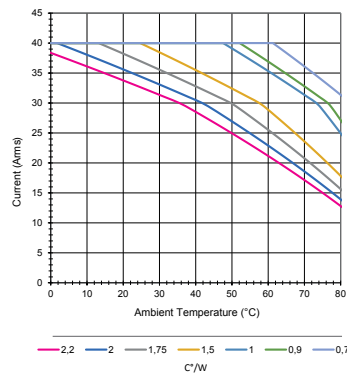
Curves

Thermal Derating Curves

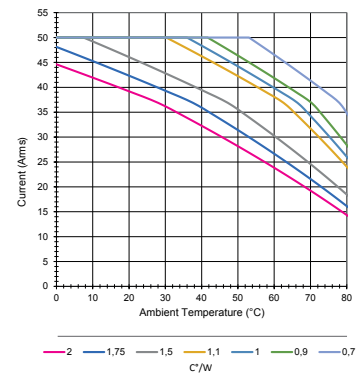
GNA - 25 A



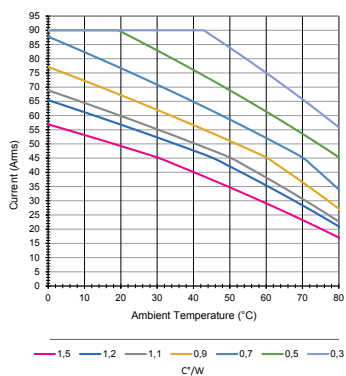
GNA - 40 A



GNA - 50 A



GNA - 90 A



**Standards Specifications**

|                                    |              |
|------------------------------------|--------------|
| IEC/EN61000-4-4 (bursts)           | 2 kv crit B  |
| IEC/EN61000-4-5 (surge)            | 2 kv crit B  |
| VIBRATION resistance IEC 60068-2-6 | 10 g         |
| SHOCK resistance IEC 60068-2-27    | 50 G (11 ms) |



\* VDE ONLY 84137450N / 84137460N / 84137480N

**Warning:**

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