

› GN Board Series

SIP Solid State Relays

PCB Mount – AC Output Single Phase

- › Output Current of 4 Amps
- › Output Voltage of 12-275 V \sim , 12-460 V \sim , 24-600 V \sim
- › Control Voltage of 4-10 V $\overline{\text{DC}}$, 4-30 V $\overline{\text{DC}}$
- › Classic SIP package for Printed Circuit Boards
- › Zero Cross and Special Zero Cross Switching
- › cRUus, CE and UKCA Compliance
- › Built-in Output Overvoltage Protection

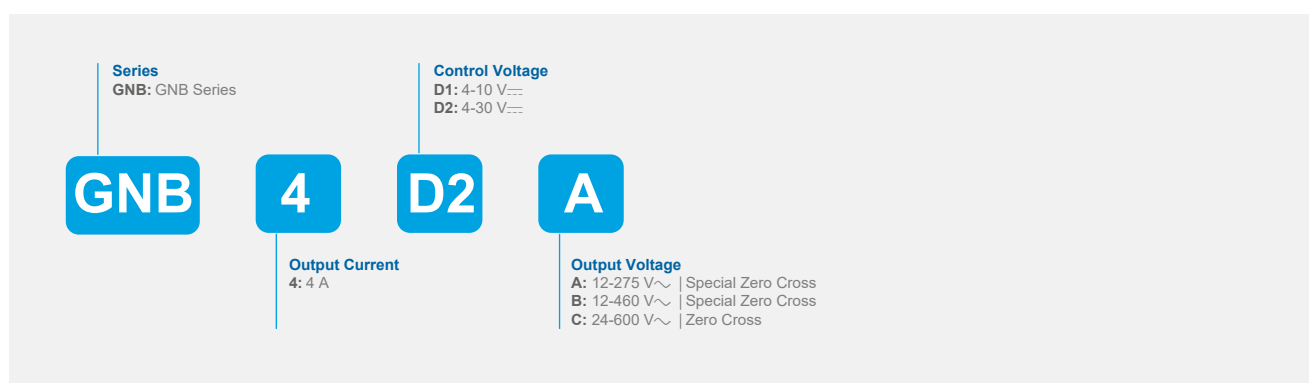


GNB4D1C

| Product Selection - Zero Cross (Resistive Loads) | |
|--|-----------------|
| Rated Load Current | 4A |
| Output Voltage | 24-600 V \sim |
| Control Voltage | |
| 4-10 V $\overline{\text{DC}}$ | GNB4D1C |

| Product Selection - Special Zero Cross (Resistive, Inductive and Capacitive Loads) | | |
|--|-----------------|-----------------|
| Rated Load Current | 4A | |
| Output Voltage | 12-275 V \sim | 12-460 V \sim |
| Control Voltage | | |
| 4-30 V $\overline{\text{DC}}$ | GNB4D2A | GNB4D2B |

| Part Number System |
|--------------------|
| GN Board |



Do you need an adapted or customized solution? Contact us on 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.

| Output Characteristics ⁽¹⁾ | | | |
|--|---|-----------|--|
| Rated Load Current | 4A | | |
| Part Numbers | GNB4D2A | GNB4D2B | GNB4D1C |
| Maximum Load Current @ Ta=30 °C [Arms] | 4A | | |
| Minimum Load Current [mArms] | 1 | | |
| 1 Second surge current @ Ta=25 °C, 50/60 Hz [Apeak] | 18 | | |
| Maximum 1 Cycle Surge Current (50/60 Hz) [Apeak] | 105 | | |
| Maximum On-State Voltage Drop @ Rated Current [Vpeak] | 1.01 | | |
| Thermal Resistance Junction to Case (Rjc) [°C/W] | 1.5 | | |
| Maximum 1/2 Cycle I ² t for Fusing (50/60Hz) [A ² sec] min/typ | 55 | | |
| Minimum Heat Sink for Rated Current @ 40 °C [°C/W] | No heatsink but nominal load current = 3, 5A @40 °C | | |
| Operating Voltage (47-63 Hz) [Vrms] | 12-275 V~ | 12-460 V~ | 24-600 V~ |
| Transient Voltage (Clamping Voltage) [Vpeak] ⁽²⁾ | 600 (430) | 800 (720) | 1200 |
| Maximum Off-State Leakage Current @ Rated Voltage [mArms] | 0.1 | | |
| Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] | 500 | | |
| Minimum Power Factor | 0.45 | | 0.45 with external protection (Varistor) |

| Input Characteristics ⁽¹⁾ | | | |
|---|-----------|---------|-----------|
| Control Voltage Range | 4-30 V--- | | 4-10 V--- |
| Part Numbers | GNB4D2A | GNB4D2B | GNB4D1C |
| Maximum Reverse Voltage | -6 V--- | -5 V--- | -10 V--- |
| Minimum Turn-On Voltage | 4 V--- | | 3.7 V--- |
| Must Turn-Off Voltage | 0.8 V--- | | |
| Minimum Input Current (for on-state) [mA] | 3 | | 5 |
| Maximum Input Current [mA] | 30 | | 29 |
| Nominal Input Impedance [Ohms] | 1000 | | 270 |
| Maximum Turn-On Time [msec] | 10 | | |
| Maximum Turn-Off Time [msec] | 10 | | |

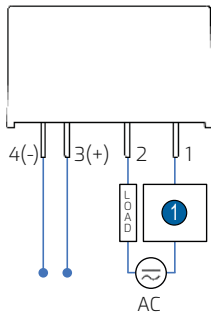
| General Characteristics | | | |
|---|-----------------|---------|---------|
| Rated Load Current | 4A | | |
| Part Numbers | GNB4D2A | GNB4D2B | GNB4D1C |
| Dielectric Strength, Input to Output (50/60 Hz) [V] | 4000 | | |
| Dielectric Strength, Input/Output to Ground (50/60 Hz) [V] | N/A | | |
| Minimum Insulation Resistance (@ 500 V---) [Ohms] | 10 ⁹ | | |
| Maximum Capacitance, Input/Output [pF] | 8 | | |
| Ambient Operating Temperature Range [°C] ⁽⁷⁾ | -40 --> 80 °C | | |
| Ambient Storage Temperature Range [°C] | -40 --> 100 °C | | |
| Weight (typical) [g] | 20g | | |
| Housing Material | UL94 V-0 | | |
| Humidity per IEC60068-2-78 [%] | 40-85 % | | |
| LED Input Status Indicator | No LED | | |
| MTBF (Mean Time Between Failures) at 40 °C ambient temperature [years] ⁽⁸⁾ | 140 | | 131 |
| MTBF (Mean Time Between Failures) at 60 °C ambient temperature [years] ⁽⁸⁾ | 119 | | 108 |
| MTTFd [years] | 219 | | 172 |

| General Notes | |
|---------------|---|
| (1) | All parameters at 25 °C unless otherwise specified |
| (2) | Output will self trigger between 450-600 Vpk not suitable for capacitive loads |
| (7) | AC models operating range is -20 to 80 °C |
| (8) | All parameters at 50 % power rating and 100 % duty cycle (contact tech support for detailed report) |

Diagrams

Wiring

GN Board Series



1 Protection Equipment: Short circuit protection

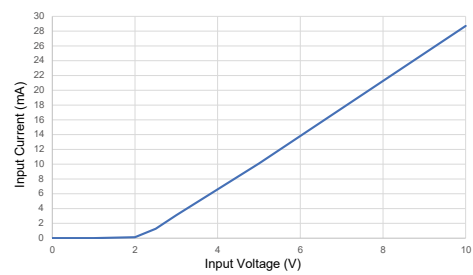
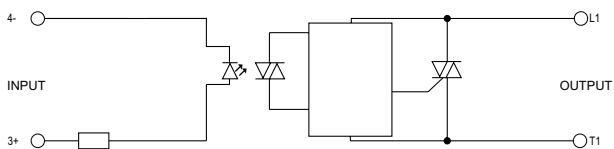
GNB4D1C: it is recommended to add an overvoltage protection

Diagrams

Equivalent Circuit Block

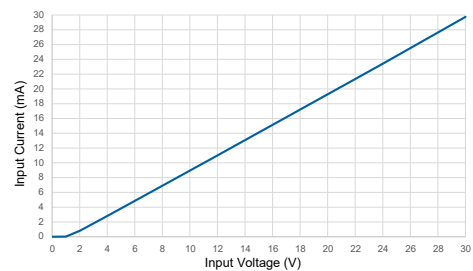
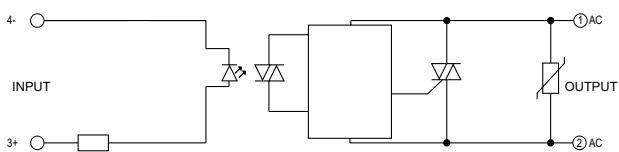
GNB4D1C, GN Board Series 4-10 V $\overline{\text{---}}$ control; 24-600 V \sim output - Zero Cross

Input Current vs Input Voltage
Standard Regulated DC inputs



GNB4D2A / GNB4D2B, GN Board Series 4-30 V $\overline{\text{---}}$ control; 12-275 V \sim /12-460 V \sim output - Special Zero Cross

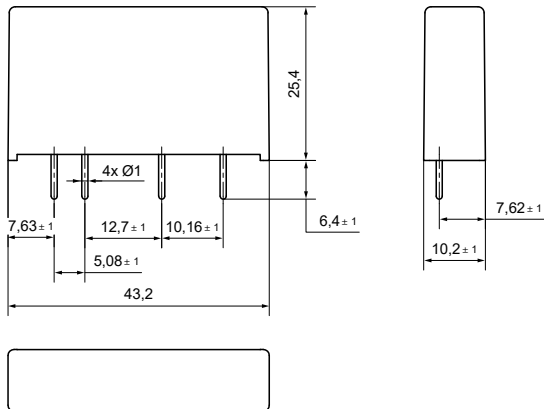
Input Current vs Input Voltage
Standard Regulated DC inputs



Diagrams

Dimensions (mm)

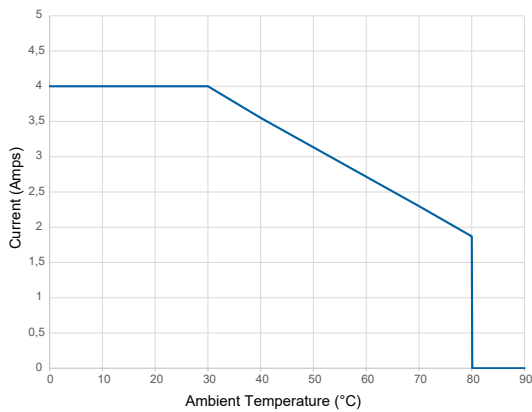
GN Board Series



Curves

Thermal Derating Curves

GN Board Series



Standards & Electromagnetic Compatibility Specification

EN61000-4-4 Immunity to fast transients / bursts

EN61000-4-5 Immunity to surges

Standards



Warning:

The product information contained in this catalogue is given purely as information and does not constitute a representation, warranty or any form of contractual commitment. Crouzet and its subsidiaries reserve the right to modify their products without notice. It is imperative that we should be consulted over any particular use or application of our products and it is the responsibility of the buyer to establish, particularly through all the appropriate tests, that the product is suitable for the use or application. Under no circumstances will our warranty apply, nor shall we be held responsible for any application (such as any modification, addition, deletion, use in conjunction with other electrical or electronic components, circuits or assemblies, or any other unsuitable material or substance) which has not been expressly agreed by us prior to the sale of our products.