

# › 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

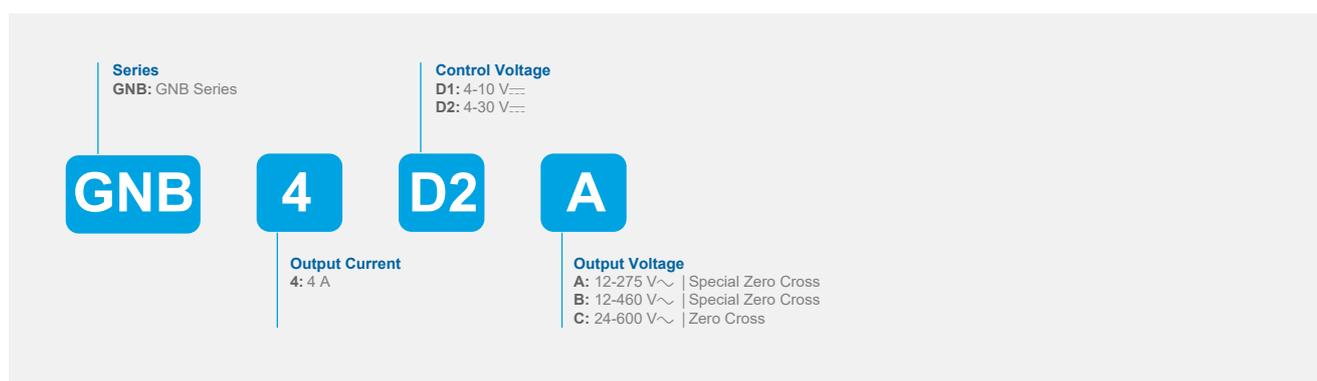


GNB4D1C

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

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 $\overline{\text{DC}}$	<b>GNB4D2A</b>	<b>GNB4D2B</b>

Part Number System
GN Board



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).

Output Characteristics <sup>(1)</sup>			
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 <sup>2</sup> t for Fusing (50/60Hz) [A <sup>2</sup> 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] <sup>(2)</sup>	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 <sup>(1)</sup>			
Control Voltage Range	4-30 V <sup>---</sup>		4-10 V <sup>---</sup>
Part Numbers	GNB4D2A	GNB4D2B	GNB4D1C
Maximum Reverse Voltage	-6 V <sup>---</sup>	-5 V <sup>---</sup>	-10 V <sup>---</sup>
Minimum Turn-On Voltage	4 V <sup>---</sup>		3.7 V <sup>---</sup>
Must Turn-Off Voltage	0.8 V <sup>---</sup>		
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		

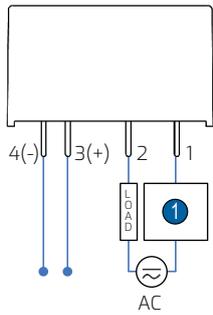
General Characteristics			
Rated Load Current	4A		
Part Numbers	GNB4D2A	GNB4D2B	GNB4D1C
Dielectric Strength, Input to Output (50/60 Hz) [V]	4000		
Dielectric Strength, Input/Output to Ground (50/60 Hz) [V]	N/A		
Minimum Insulation Resistance (@ 500 V <sup>---</sup> ) [Ohms]	10 <sup>9</sup>		
Maximum Capacitance, Input/Output [pF]	8		
Ambient Operating Temperature Range [°C] <sup>(7)</sup>	-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] <sup>(8)</sup>	140		131
MTBF (Mean Time Between Failures) at 60 °C ambient temperature [years] <sup>(8)</sup>	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

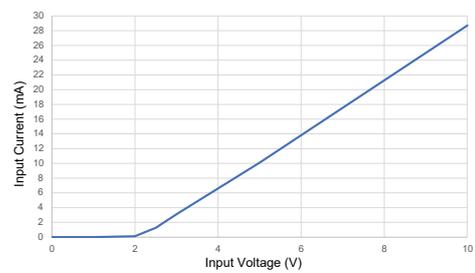
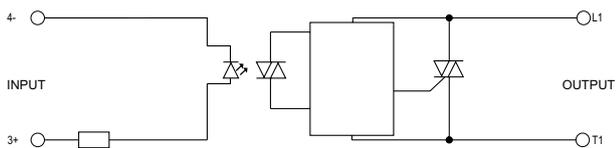
GNB4D1C: it is recommended to add an overvoltage protection

## Diagrams

### Equivalent Circuit Block

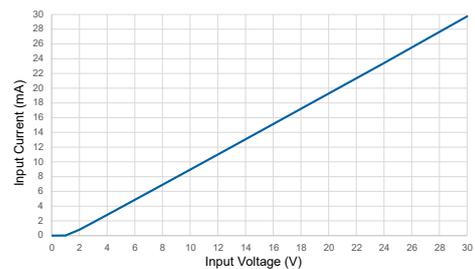
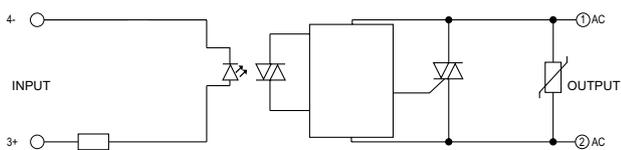
GNB4D1C, GN Board Series 4-10 V $\overline{\text{---}}$  control; 24-600 V $\sim$  output - Zero Cross

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

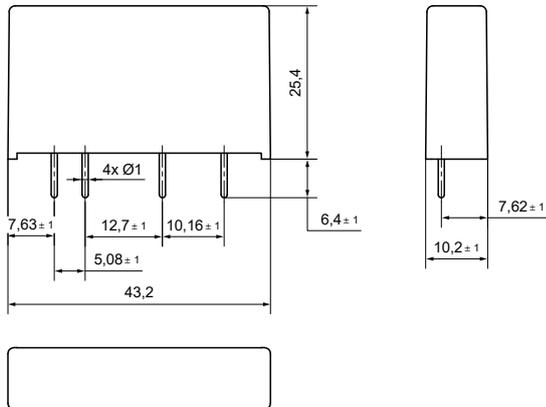
Input Current vs Input Voltage  
Standard Regulated DC inputs



Diagrams

Dimensions (mm)

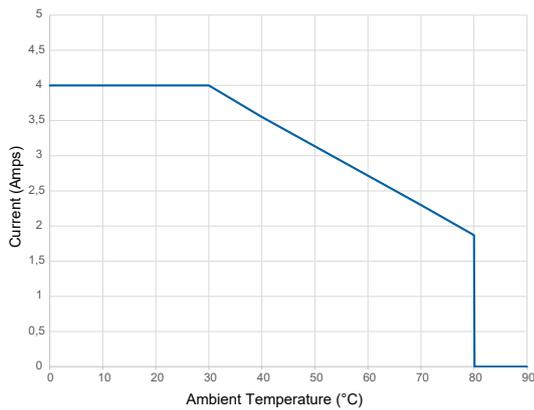
GN Board Series



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:

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