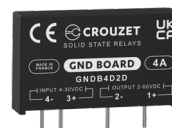


› GND Board Series

SIP Solid State Relays

PCB Mount – DC Output

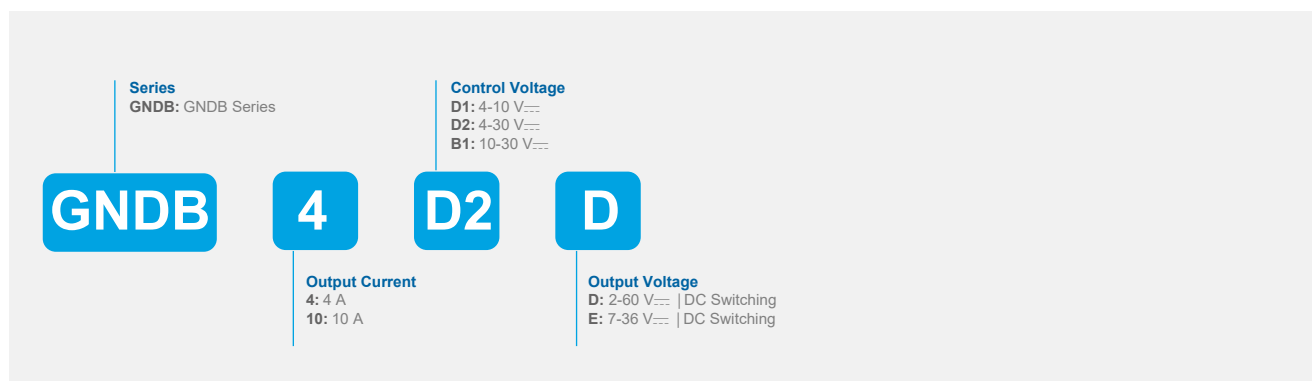
- › Output Current of 4 or 10 Amps
- › Output Voltage of 2-60 V_{DC}, 7-36 V_{DC}
- › Control Voltage of 4-10 V_{DC}, 4-30 V_{DC}, 10-30 V_{DC}
- › Classic SIP package for Printed Circuit Boards
- › DC Switching
- › CE and UKCA Compliance
- › Built-in Output Overvoltage Protection



GNDB4D2D

| Product Selection - DC Switching (DC Loads) | | |
|---|----------------------|----------------------|
| Rated Load Current | 4A ⁽⁹⁾ | 10A |
| Output Voltage | 2-60 V _{DC} | 7-36 V _{DC} |
| Control Voltage | | |
| 4-30 V _{DC} | GNDB4D2D | |
| 4-10 V _{DC} | | GNDB10D1E |
| 10-30 V _{DC} | | GNDB10B1E |

| Part Number System |
|--------------------|
| GND 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⁾ | | |
|--|--|---------------------|
| Description | 4A ⁽⁹⁾ | 10A |
| Minimum Load Current [mA _{rms}] | 5 | 0.1 |
| 1 Second surge current @ Ta=25 °C [A _{peak}] | 10 | N/A |
| Maximum 1 Cycle Surge Current [A _{peak}] | 10 | 100 @t=10ms |
| Maximum On-State Voltage Drop @ Rated Current [V _{peak}] | 1.6 | 0.2 |
| Thermal Resistance Junction to Case (R _{jc}) [°C/W] | 1.66 | 1.36 |
| Minimum Heat Sink for Rated Current @ 40 °C [°C/W] | No heatsink | |
| Operating Voltage [V _{rms}] | 2-60 V _~ | 7-36 V _~ |
| Transient Voltage [V _{peak}] ⁽²⁾ | 60 | |
| Maximum Off-State Leakage Current @ Rated Voltage [mA _{rms}] | 1 | 0.1 |
| Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec] | 200 | N/A |
| Minimum Power Factor | GNDB4D2D: 0.45 but Overvoltage (Varistor/Diode) and free-wheel diode protection required GNDB10D1E: 0.45 but free-wheel diode protection required GNDB10B1E: 0.45 | |

| Input Characteristics ⁽¹⁾ | | | |
|---|---------------------|---------------------|----------------------|
| Control Voltage Range | 4-30 V _~ | 4-10 V _~ | 10-30 V _~ |
| Part Numbers | GNDB4D2D | GNDB10D1E | GNDB10B1E |
| Maximum Reverse Voltage | -30 V _~ | -10 V _~ | -30 V _~ |
| Minimum Turn-On Voltage | 3 V _~ | | 7 V _~ |
| Must Turn-Off Voltage | 1 V _~ | | |
| Minimum Input Current (for on-state) [mA] | 2 | 7 | 6 |
| Maximum Input Current [mA] | 30 | 32 | 30 |
| Nominal Input Impedance [Ohms] | 1000 | 270 | 1000 |
| Maximum Turn-On Time [msec] | 0.2 | 0.01 | |
| Maximum Turn-Off Time [msec] | 0.8 | 0.15 | |

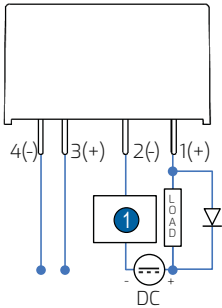
| General Characteristics | | |
|---|-------------------|-------------------|
| Description | 4A ⁽⁹⁾ | 10A |
| Dielectric Strength, Input to Output (50/60 Hz) [V] | 2500 | |
| Dielectric Strength, Input/Output to Ground (50/60 Hz) [V] | N/A | 2500 |
| Minimum Insulation Resistance (@ 500 V _~) [Ohms] | 10 ⁹ | |
| Maximum Capacitance, Input/Output [pF] | 8 | |
| Ambient Operating Temperature Range [°C] ⁽⁷⁾ | -40 to 80 | |
| Ambient Storage Temperature Range [°C] | -40 to 100 | |
| Weight (typical) [g] | 20.5 | 15 |
| Housing Material | UL94 V-0 | |
| Baseplate Material | N/A | Ceramic Substrate |
| Input Terminal Screw Torque Range [in-lb/Nm] | N/A | |
| Load Terminal Screw Torque Range [in-lb/Nm] | N/A | |
| SSR Mounting Screw Torque Range [in-lb/Nm] | N/A | |
| 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⁾ | 69 | 42 |
| MTBF (Mean Time Between Failures) at 60 °C ambient temperature [years] ⁽⁸⁾ | 50 | 28 |
| MTTFd [years] | 313 | 138 |

| 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) |
| (9) | 4 A at 20°C; 3.5 A at 40°C |

Diagrams

Wiring

GND Board Series



1 Protection Equipment: Short circuit protection

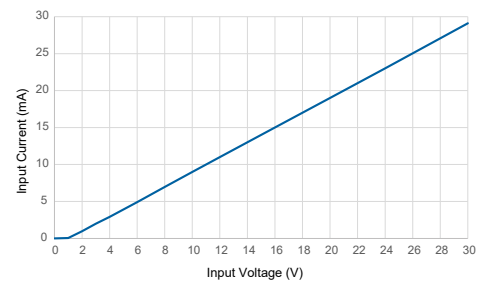
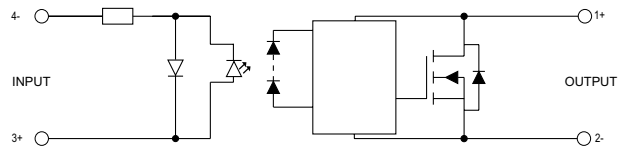
GND B4D2D: it is recommended to add an overvoltage protection

Diagrams

Equivalent Circuit Block

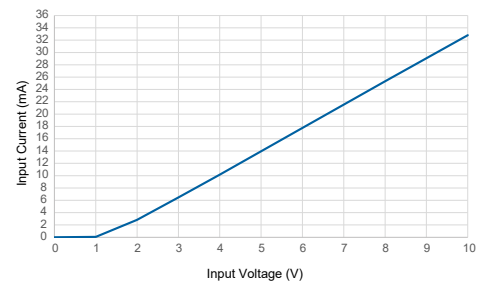
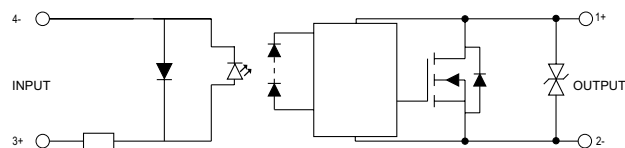
GND B4D2D, GND Board Series 4-30 V $\overline{\text{DC}}$ control; 2-60 V $\overline{\text{DC}}$ output - DC switching (DC Loads)

Input Current vs Input Voltage
Standard Regulated DC inputs



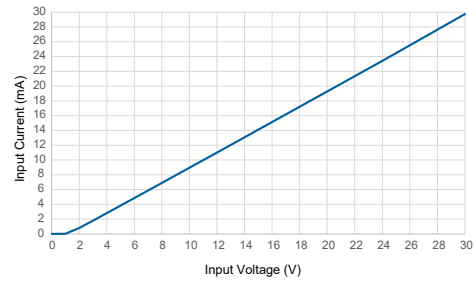
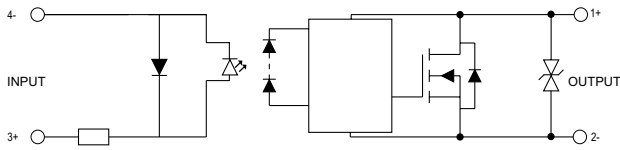
GND B10D1E, GN Board Series 4-10 V $\overline{\text{DC}}$ control; 7-36 V $\overline{\text{DC}}$ output - DC switching (DC Loads)

Input Current vs Input Voltage
Standard Regulated DC inputs



GNDB10B1E, GN Board Series 10-30 V_{DC} control; 7-36 V_{DC} output - DC switching (DC Loads)

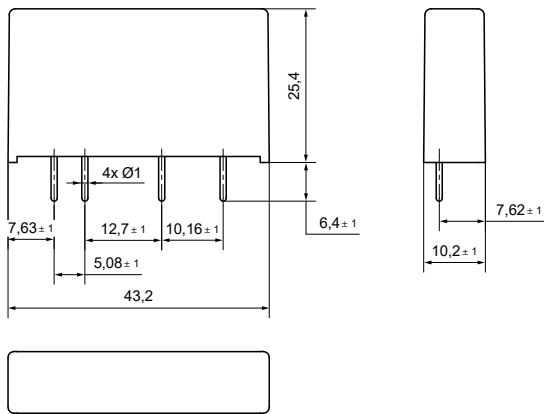
Input Current vs Input Voltage
Standard Regulated DC inputs



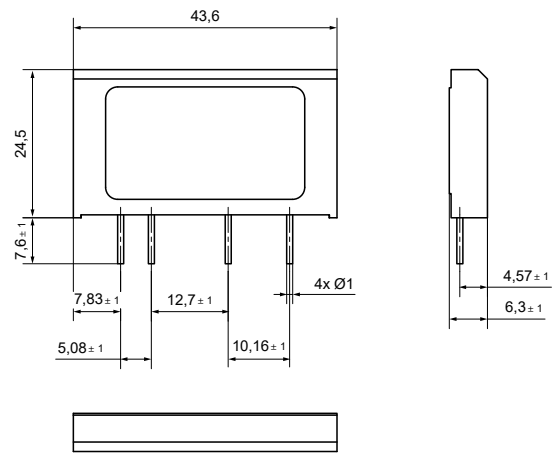
Diagrams

Dimensions (mm)

GNDB4D2D



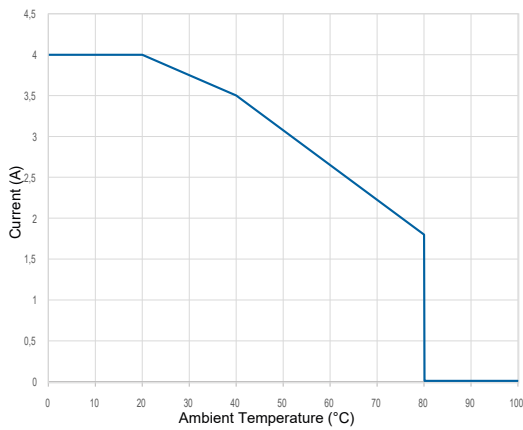
GNDB10D1E - GNDB10B1E



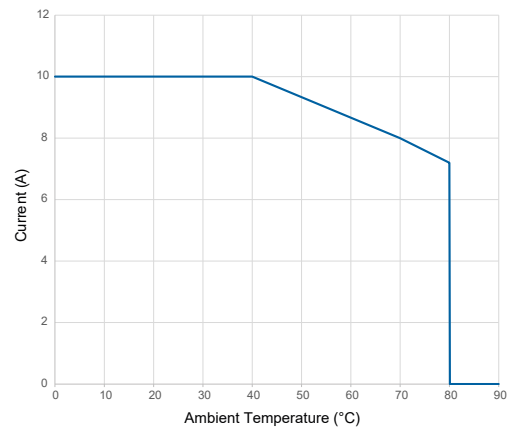
Curves

Thermal Derating Curves

GNDB4D2D



GNDB10D1E - GNDB10B1E



Standards & Electromagnetic Compatibility Specification

EN61000-4-4 Immunity to fast transients / bursts

EN61000-4-5 Immunity to surges

Standards

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