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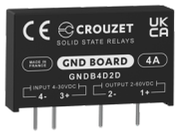
06/2022

› GND Board Series

SIP Solid State Relays

PCB Mount – DC Output

- › Output Current of 4 or 10 Amps
- › Output Voltage of 2-60 V⎓, 7-36 V⎓
- › Control Voltage of 4-10 V⎓, 4-30 V⎓, 10-30 V⎓
- › 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⎓	7-36 V⎓
Control Voltage		
4-30 V⎓	**GNDB4D2D**	
4-10 V⎓		**GNDB10D1E**
10-30 V⎓		**GNDB10B1E**

Part Number System
GND Board

Series
GNDB: GNDB Series

Control Voltage
D1: 4-10 V⎓
D2: 4-30 V⎓
B1: 10-30 V⎓

GNDB | 4 | D2 | D

Output Current
4: 4 A
10: 10 A

Output Voltage
D: 2-60 V⎓ | DC Switching
E: 7-36 V⎓ | DC Switching

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**.

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Output Characteristics [1]		
Description	4A [9]	10A
Minimum Load Current [mArms]	5	0.1
1 Second surge current @ Ta=25 °C [Apeak]	10	N/A
Maximum 1 Cycle Surge Current [Apeak]	10	100 @t=10ms
Maximum On-State Voltage Drop @ Rated Current [Vpeak]	1.6	0.2
Thermal Resistance Junction to Case (Rjc) [°C/W]	1.66	1.36
Minimum Heat Sink for Rated Current @ 40 °C [°C/W]	No heatsink	
Operating Voltage [Vrms]	2-60 V⎓	7-36 V⎓
Transient Voltage [Vpeak] [2]	60	
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	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

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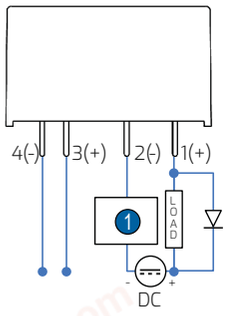
General Notes

(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



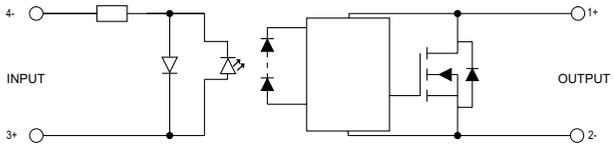
1 *Protection Equipment: Short circuit protection*

GNDB4D2D: it is recommended to add an overvoltage protection

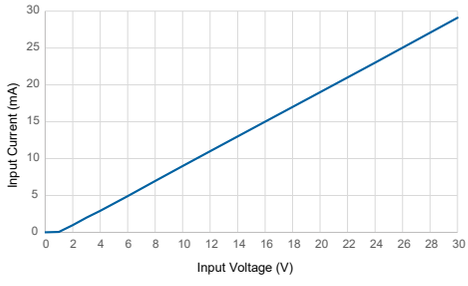
Diagrams

Equivalent Circuit Block

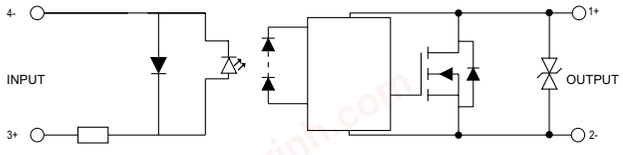
GNDB4D2D, GND Board Series 4-30 V⎓ control; 2-60 V⎓ output - DC switching (DC Loads)



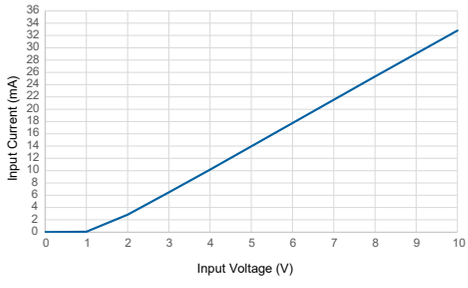
Input Current vs Input Voltage
Standard Regulated DC inputs



GNDB10D1E, GN Board Series 4-10 V⎓ control; 7-36 V⎓ output - DC switching (DC Loads)

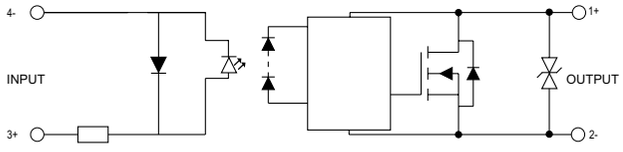


Input Current vs Input Voltage
Standard Regulated DC inputs

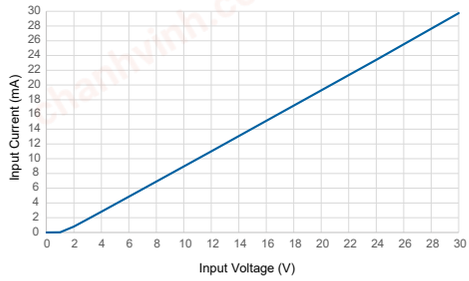


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GNDB10B1E, GN Board Series 10-30 V⎓ control; 7-36 V⎓ output - DC switching (DC Loads)



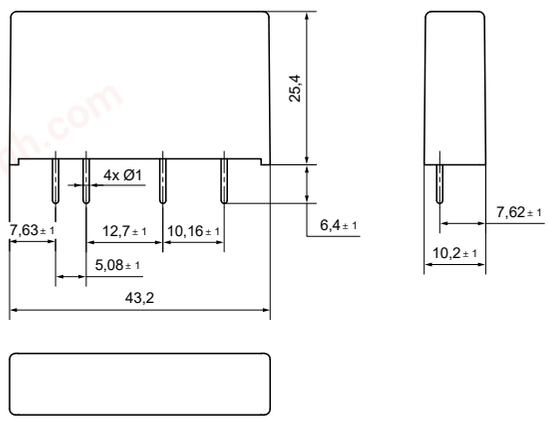
Input Current vs Input Voltage
Standard Regulated DC inputs



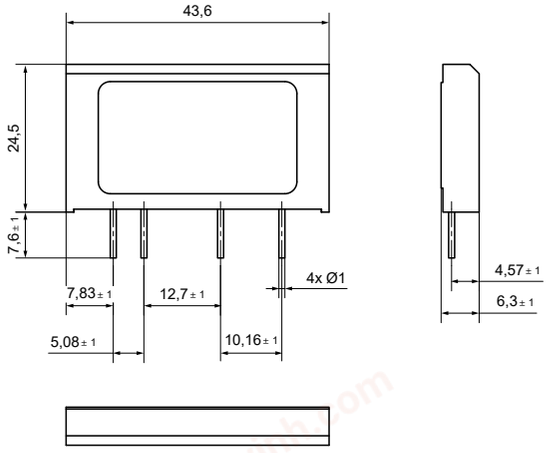
Diagrams

Dimensions (mm)

GNDB4D2D



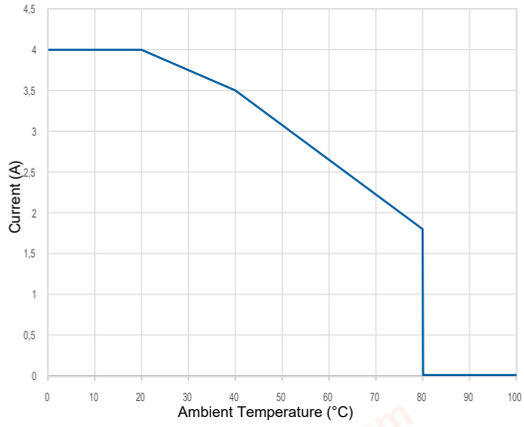
GNDB10D1E - GNDB10B1E



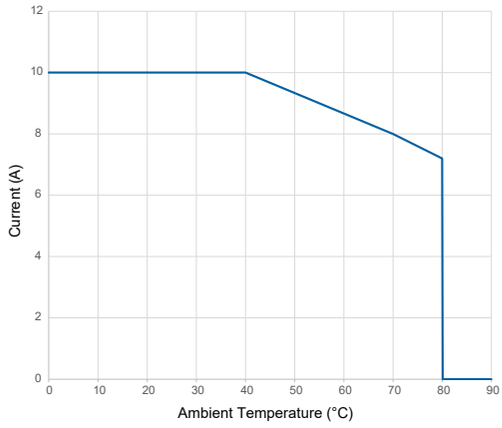
Curves

Thermal Derating Curves

GNDB4D2D



GNDB10D1E - GNDB10B1E



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Standards & Electromagnetic Compatibility Specfification
EN61000-4-4 Immunity to fast transients / bursts
EN61000-4-5 Immunity to surges

Standards

Warning:

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