

# › GN3 Series

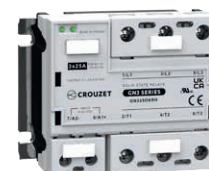
## Classic Solid State Relays

### Panel Mount – Three phase

- › For frequent start/stop operation of Three-Phase Heaters or Motors
- › A market favorite for many years
- › 25 and 50 Amps
- › 3 legs control
- › Output overvoltage protection
- › Zero Cross Turn-On and Instantaneous (Random)
- › cRUus, CE and UKCA Recognized



Zero Cross Version  
(Marking label 26532004  
sold separately)



Instantaneous Version  
(Marking label 26532004  
sold separately)

Product Selection - Zero Cross (Resistive Loads)		
Rated Load Current	25 A	50 A
Output Voltage	24-510 V~	24-510 V~
Control Voltage		
4-32 V $\overline{\text{---}}$	GN325DSZH	GN350DSZH
24-255 V $\overline{\text{~}}$	GN325ASZH	GN350ASZH

Product Selection- Instantaneous (Random) (Inductive Loads)		
Rated Load Current	25 A	50 A
Output Voltage	24-510 V~	24-510 V~
Control Voltage		
4-32 V $\overline{\text{---}}$	GN325DSRH	GN350DSRH

#### Part number system

##### GN3 Triphase

Series  
GN3: GN3 Series

Control Voltage  
A: 24-255 V $\overline{\text{~}}$   
D: 4-32 V $\overline{\text{---}}$

Switching Type  
R: Instantaneous  
Z: Zero Cross

GN3

25

D

S

R

H

Output Current  
25: 25 A  
50: 50 A

Overvoltage  
Protection  
S: Yes

Output Voltage  
H: 24-510 V~

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	1.2 °C/W Thermal Resistance	26532754N
Adapter	For DIN Rail	26532765N
ID Tag	Marking label 16 x 8 x 1 mm	26532004
Thermal Grease	Thermal Grease for Heatsink mounting	26532003
Screws	Screw Mounting Kit	26532002

Output Characteristics <sup>(1)</sup>		
Description	25 A	50 A
Operating Voltage (47-440Hz) [Vrms] <sup>(4)</sup>	24-510 V~	
Load Current, General Use UL508 /AC51 @ 40 °C [Arms] <sup>(5)</sup>	3 x 25 @40°C	3 x 50 @40°C
Load Current, AC-53a @ 480 V~ [Arms] <sup>(5)</sup>	5A <sup>(2)</sup>	12A <sup>(2)</sup>
Minimum Load Current [mArms]	5	
Transient Overvoltage [Vpk]	1200 (1100)	1200 (950)
Maximum Surge Current (50/60 Hz (typ.@ 50 °C, 1 Cycle) [Apk]	320/_ (min) 420 (typ)	700/_ (min) 750 (typ)
Maximum I <sup>2</sup> t for Fusing (50/60 Hz 1/2 cycle) [A <sup>2</sup> sec]	512 (min) 880 (typ)	2450 (min) 2800 (typ)
1 second surge current (Apeak. Ta = 25 °C) 50/60 Hz	96	230
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec]	500	
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	1	
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.375	
Thermal Resistance Junction to Case (Rjc) [°C/W]	0.7	0.4
Minimum Heatsink for rated Current @ 40 °C [°C/W] <sup>(6)</sup> AC-51 AC-53	0.82 5.2	0.26 1.5
Minimum Power Factor (at Maximum load): GN325ASZH / GN350ASZH <sup>(6)</sup> GN325DSZH / GN350DSZH / GN325DSRH / GN350DSRH	0.8 0.5	
HP Ratings at 120V / FLC [Arms] <sup>(2)</sup>	0.75 / 6.4	1.5 / 12
HP Ratings at 240V / FLC [Arms] <sup>(2)</sup>	1 / 4.2	3 / 9.6
HP Ratings at 480V / FLC [Arms] <sup>(2)</sup>	3 / 4.8	7.5 / 11

Input Characteristics <sup>(1)</sup>		
Description	4-32 V <sup>---</sup>	24-255 V~
Control Voltage Range	4-32 V <sup>---</sup>	24-255 V~
Minimum Turn-On Voltage	4 V <sup>---</sup>	24 V~
Must Turn-Off Voltage	1 V <sup>---</sup>	2 V~
Maximum Reverse Voltage	-32 V <sup>---</sup>	N/A
Minimum Input Current [mA]	20 mA	5 mA (AC) 4 mA (DC)
Maximum Input Current [mA]	25 mA	7 mArms
Nominal Input Impedance [Ohms]	Current Regulated	
Maximum Turn-On Time	1/2 Cycle	25 ms
Maximum Turn-Off Time	1/2 Cycle <sup>(3)</sup>	50 ms

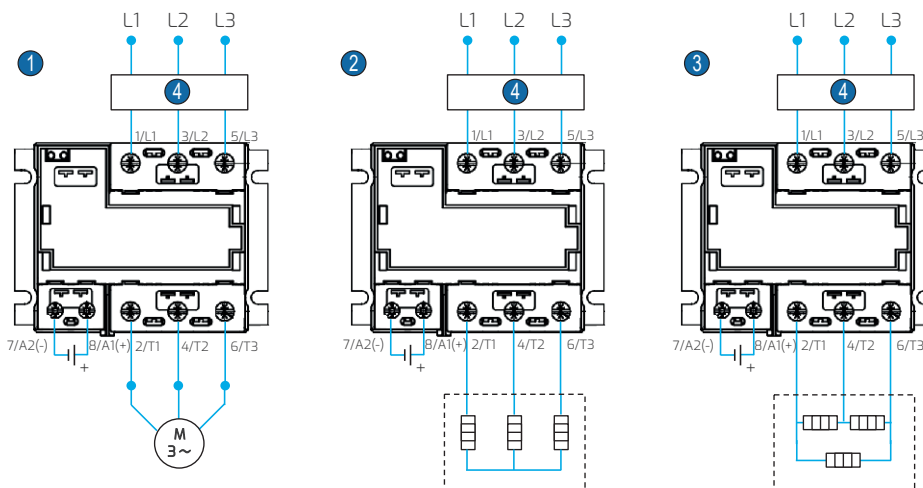
General Characteristics		
Description	25 A	50 A
Dielectric Strength 50/60 Hz (Vrms)	4000 (Input-Output-Case)	
Minimum Insulation Resistance (@ 500 V $\overline{DC}$ )	10 $^9$ $\Omega$	
Maximum Capacitance, Input/Output	0.8 pF	
Ambient Operating Temperature Range	-40 °C to 80 °C	
Ambient Storage Temperature Range	-40 °C to 100 °C	
Housing Material	UL94 V-0	
Basplate Material	Aluminium	
Terminals	Screw Type	
Control wiring Screw Torque (in-lb/Nm)	11-18/ 1.2-2	
Power wiring screws Torque (in-lb/Nm)	18-26/ 2-3	
Humidity	85 % non-condensing	
Input Status Indicator	LED Green	
Weight (g)	200	
MTBF (Mean Time Before Failure)	63	

General Notes
<sup>(1)</sup> All parameters at 25 °C unless otherwise
<sup>(2)</sup> Only for Instantaneous (Random) Version
<sup>(3)</sup> For Instantaneous (Random) = <0.1
<sup>(4)</sup> For Instantaneous (Random) version, 63 hz max.
<sup>(5)</sup> Heatsink required, see derating curves
<sup>(6)</sup> 0.5 with external RC filter

## Diagrams

### Wiring

GN3



- 1** Wiring to control a 3-phase motor
- 2** Wiring to control heaters connected in star
- 3** Wiring to control heaters connected in delta
- 4** Protection Equipment

Recommended Wire Size

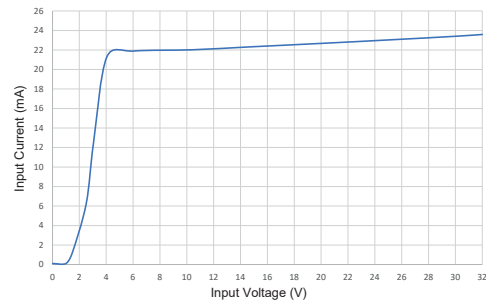
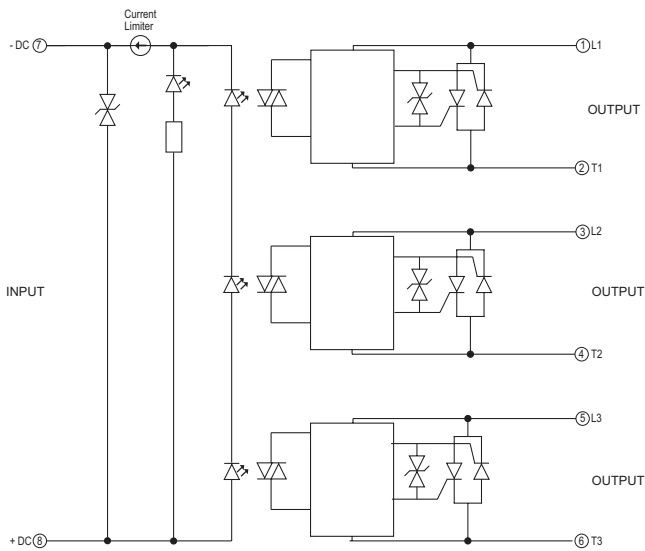
TERMINALS	WIRE SIZE		Terminal Screw Torque (N.m)
	SOLID	STRANDED	
<b>Input</b>	18..14 AWG (0.75..2.5 mm <sup>2</sup> ) 2 x 18..14 AWG (0.75..2.5 mm <sup>2</sup> )	18..14 AWG (0.75..2.5 mm <sup>2</sup> ) 2 x 18..14 AWG (0.75..2.5 mm <sup>2</sup> )	1.2 - 2
<b>Output</b>	8..16 AWG (1.5..10 mm <sup>2</sup>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

Diagrams

Equivalent Circuit Block

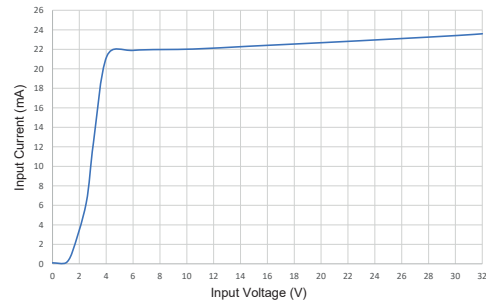
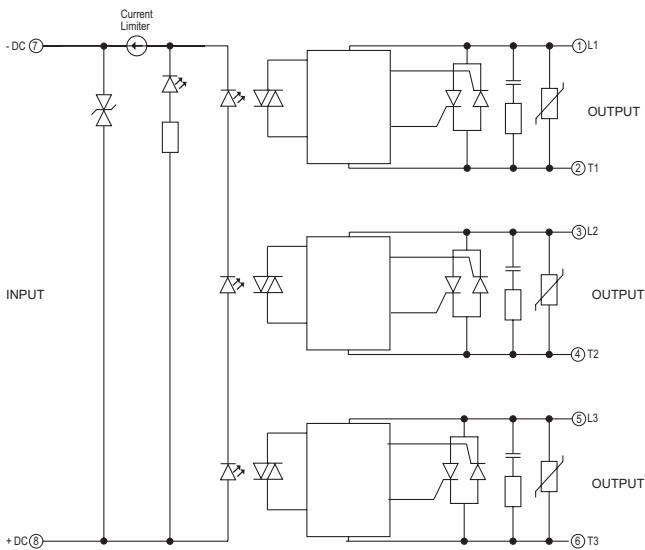
GN3 Series 4-32 V<sub>DC</sub> control Thyristors - 24-510 V<sub>~</sub> - Zero Cross - GN325DSZH, GN350DSZH

Input current vs Input Voltage  
Standard Regulated DC inputs



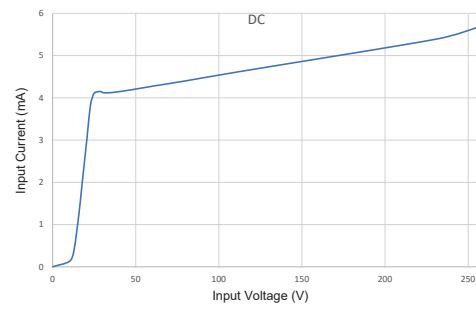
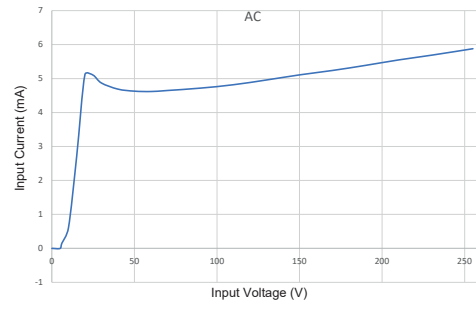
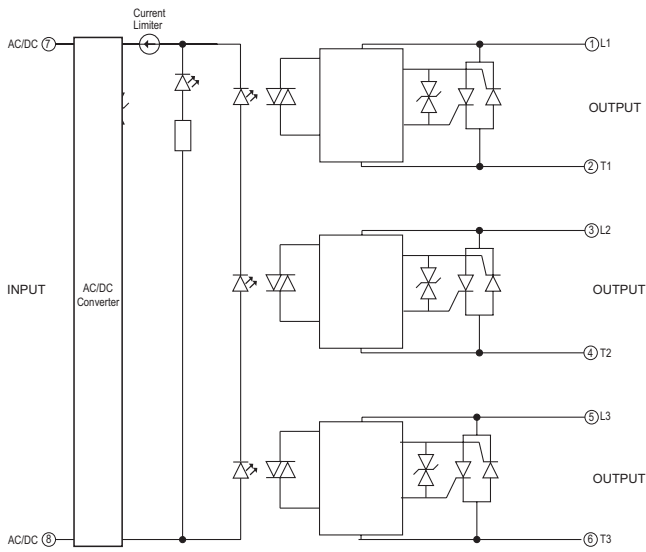
GN3 Series 4-32 V<sub>DC</sub> control Thyristors - 24-510 V<sub>~</sub> - Instantaneous - GN325DSRH, GN350DSRH

Input current vs Input Voltage  
Standard Regulated DC inputs



GN3 Series 24-255 V $\sim$  control Thyristors - 24-510 V $\sim$  - Zero Cross - GN325ASZH, GN350ASZH

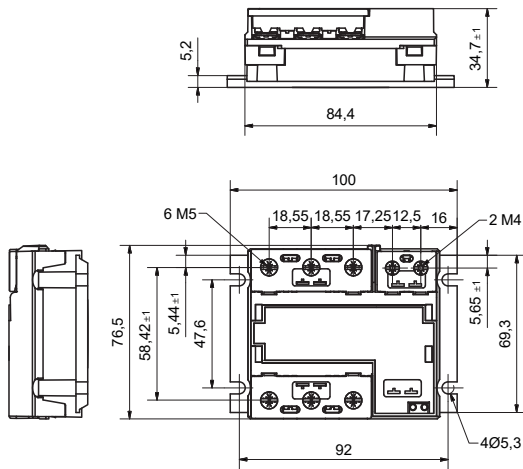
Input current vs Input Voltage  
Standard Regulated DC inputs



Diagrams

Dimensions (mm)

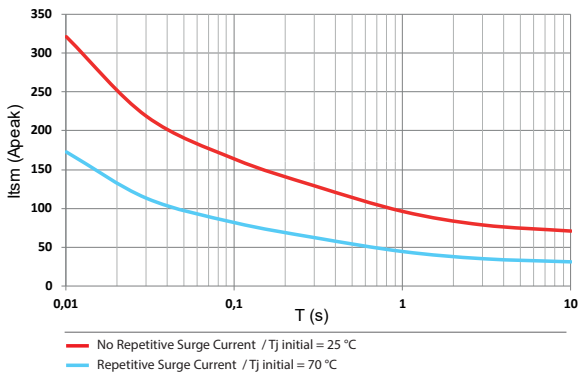
GN3



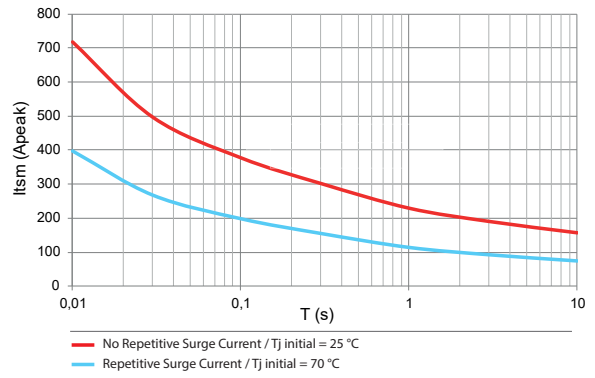
Curves

Surge Current Information

GN3 - 25 A



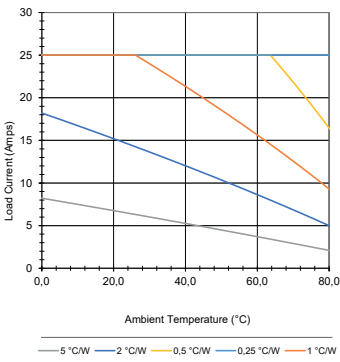
GN3 - 50 A



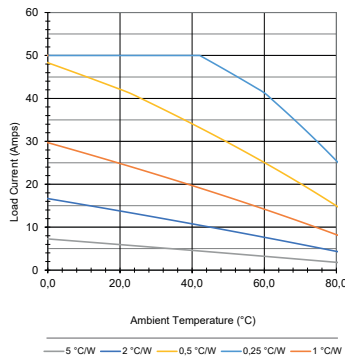
Curves

Thermal Derating Curves

GN3 - 25 A



GN3 - 50 A



Accessories

Heatsink

0.9 °C/W Thermal Resistance - 26532752N



1.2 °C/W Thermal Resistance - 26532754N



## Accessories

## Others

ID Tag - **26532004**Thermal Grease for Heatsink mounting -  
**26532003**Assembly kit 3-phases - **26532002**

## Standards &amp; Electromagnetic Compatibility Specification

IEC 60068-2-6 Vibration 35mm / Amplitude 10-55Hz

IEC 60068-2-27 Shock resistance 15G / 11ms

IEC 61000-4-2: Electrostatic Discharge immunity test 8kV air discharge Criterion A Level 3

IEC 1000-4-3: Radiated Electromagnetic Noise - Level 3

IEC 61000-4-4: Electrical fast transient/burst immunity test 1kV Line to Line Criterion B Level 3

IEC 61000-4-5: Surge immunity test 1kV Line to Line Criterion B Level 3

## Standards



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