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05/2023

› GN Series

Classic Solid State Relays

Panel Mount - AC Output Single Phase

- › Output current of 10, 25, 50, 75, 100 and 125 Amps
- › Output voltage of 24-280 V~ and 48-660 V~
- › Control voltage of 4-32 V⎓, 18-36 V⎓, 20-265 V~ and 90-260 V~
- › Zero cross or instantaneous (resistive or inductive loads)
- › Integrated IP20 touch-safe removable covers
- › Built-in overvoltage protection (only Zero Cross)
- › LED input status indicator



Zero Cross Version



Instantaneous Version

Product Selection - Zero Cross (Resistive Loads)

Rated Load Current	10A	25A		50A	75A	100A	125A
Output Voltage	24-280 V~	24-280 V~	48-660 V~	48-660 V~	48-660 V~	48-660 V~	48-660 V~
Control Voltage							
4-32 V⎓	**84137000N**	**84137010N**	**84137110N**	**84137120N**	**84137130N**	**84137140N**	**84137180N**
18-36 V⎓		**84137012N**		**84137122N**			
20-265 V~	**84137001N**	**84137011N**	**84137111N**	**84137121N**	**84137131N**	**84137141N**	**84137181N**

Product Selection- Instantaneous (Inductive Loads)

Rated Load Current	25A	50A	75A
Output Voltage	24-280 V~	48-660 V~	48-660 V~
Control Voltage			
4-32 V⎓	**84137210N**	**84137320N**	**84137330N**
90-260 V~	**84137211N**	**84137321N**	

PART NUMBERING SYSTEM

Series
8413: Single Phase

Output Voltage
0: 280 V~ / Zero Cross
1: 660 V~ / Zero Cross
2: 280 V~ / Random
3: 660 V~ / Random

Generation
N: New Generation

8413 **7** **0** **1** **1** **N**

Cover/Layout
7: Included

Output Current
0: 10 A
1: 25 A
2: 50 A
3: 75 A
4: 100 A
8: 125 A

Control Voltage
0: 4-32 V⎓
1: 20-265 V~
2: 18-36 V⎓

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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Accessories		
Type	**Description**	**Part-Number**
Heatsink	0.9 °C/W Thermal Resistance	**26532752N**
Heatsink	1.1 °C/W Thermal Resistance	**26532753N**
Heatsink	1.2 °C/W Thermal Resistance	**26532754N**
Heatsink	1.75 °C/W Thermal Resistance	**26532755N**
Heatsink	2.2 °C/W Thermal Resistance	**26532756N**
Adapter	DIN Rail	**26532764N**
Thermal Pad	Pre-cut Thermal Pad	**26532720N**
Thermal Pad	Self-Adhesive Thermal Pad	**26532722N**
Screws	Screw Mounting Kit	**26532001**
Thermal Grease	Thermal Grease for Heatsink mounting	**26532003**

Output Specifications[1]						
Description	10A	25A	50A	75A	100A	125A
Maximum Load Current [Arms][3]	10	25	50	75	100	125
Minimum Load Current [mArms]	5					
Min / Max Operating Voltage (47-63Hz) [Vrms]	24-280 V~	48-660 V~				
Transient Voltage [Vpeak][2](Random version)	600 (600)	1200 (1600)				
Maximum Off-State Leakage Current @ Rated Voltage [mArms] (Random version)	1 (5)					
Minimum Off-State dV/dt @ Maximum Rated Voltage [V/µsec]	500					
1 Second Surge Current (Apk. Ta=25 °C) 50/60 Hz	45	100	125	230	347	613
Maximum 1 Cycle Surge Current (50/60 Hz) [Apeak] Typ @ 50 Hz	120/126 (min) 160 (typ)	270/284 (min) 340 (typ)	280/_ (min) 500 (typ)	700/_ (min) 750 (typ)	1100/_ (min) 1200 (typ)	2000/_ (min) 2100 (typ)
Maximum On-State Voltage Drop @ Rated Current [Vpeak] (Random version)	1.2	1.23 (1.08)	1.25 (1.37)	1.38 (1.37)	1.34 (1.34)	1.45 1.15
Thermal Resistance Junction to Case (Rjc) [°C/W] (Random version)	2.3	1.7 (0.7)	0.55 (0.7)	0.4 (0.4)	0.3 (0.3)	0.25
Maximum 1/2 Cycle I² t for Fusing @ 50 Hz (min. / typical) [A² sec] (Random version)	78/128	487/600 (512/882)	720/1250 (512/882)	2450/2800 (2450/2500)	6000/7200 (6000/7200)	6000/7200 20000/22000
Minimum Heat Sink for Rated Current @ 40 °C [°C/W] (Random version)	5.3	1.3 (2.6)	2.08 (2.6)	0.84 (0.84)	0.52 (0.52)	0.23 0.29

Input Specifications				
Description	4-32 V⎓	18-36 V≂	20-265 V~	90-260 V~
Input Voltage Range	4-32 V⎓ [4]	18-36 V≂	20-265 V~	90-260 V~
Maximum Reverse Voltage	-32 V⎓	N/A		
Minimum Turn-On Voltage	3 V⎓	18 V≂		90 V~
Must Turn-Off Voltage	1 V⎓	5 V≂		5 V~
Minimum Input Current (for on-state)	10 mA	5 mA AC / 4 mA DC		4 mA
Maximum Input Current [mA]	14 mA	10 mA		
Nominal Input Impedance [Ohms]	Current Limited			
Maximum Turn-On Time [msec]	1/2 Cycle[5]			< 0.1
Maximum Turn-Off Time [msec]	1/2 Cycle[5]			

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General Specifications

Description	10A	25A	50A	75A	100A	125A
Dielectric Strength, Input to Output (50/60 Hz)	4000 Vrms					
Dielectric Strength, Input/Output to Ground (50/60 Hz)	2500 Vrms	4000 Vrms				
Minimum Insulation Resistance (@ 500 V⎓)	$10^9\Omega$					
Maximum Capacitance, Input/Output	0.8 pF					
Ambient Operating Temperature Range	-40 to 80 °C					
Ambient Storage Temperature Range	-40 to 100 °C					
Weight (typical)	80 g					
Housing Material	UL94 V-0					
Baseplate Material	Aluminum					
Input Terminal Screw Torque Range (in-lb/Nm)	11-18 /1.2-2.0					
Load Terminal Screw Torque Range (in-lb/Nm)	18-26 / 2-3					
SSR Mounting Screw Torque Range (in-lb/Nm)	11-16 /1.2-1.8					
Humidity per IEC60068-2-78	40-85 %					
LED Input Status Indicator	Green					
MTBF (Mean Time Between Failures) at 40 °C ambient temperature[5](years)	72					
MTBF (Mean Time Between Failures) at 60 °C ambient temperature[5](years)	46					

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

[3] Heat sinking required, see derating curves

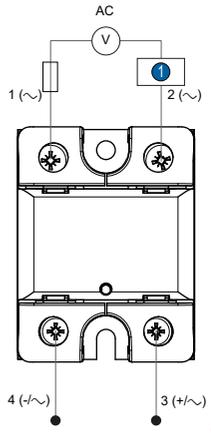
[4] Increase minimum voltage by 1 V for operations from -20 to -40 °C

[5] All parameters at 50 % power rating and 100 % duty cycle (contact tech support for detailed report)

Diagrams

Wiring

GN



Recommended Wire Size

TERMINALS	WIRE SIZE		Terminal Screw Torque (N.m)
	SOLID	STRANDED	
Input	18..14 AWG (0.75..2.5 mm²) 2 x 18..14 AWG (0.75..2.5 mm²)	18..14 AWG (0.75..2.5 mm²) 2 x 18..14 AWG (0.75..2.5 mm²)	1.2 - 2
Output	16..8 AWG (1.5..10 mm²) 2 x 16..8 AWG (1.5..10 mm²)	16..8 AWG (1.5..6 mm²) 2 x 16..10 AWG (1.5..6 mm²)	2 - 3

For the random (instantaneous) models, external overvoltage protection is recommended: TVS Diode

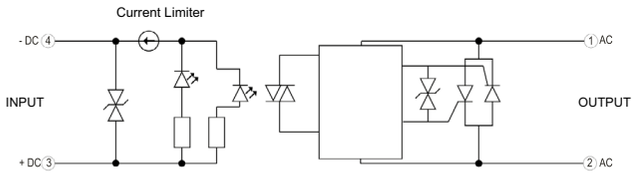
1 *Load*

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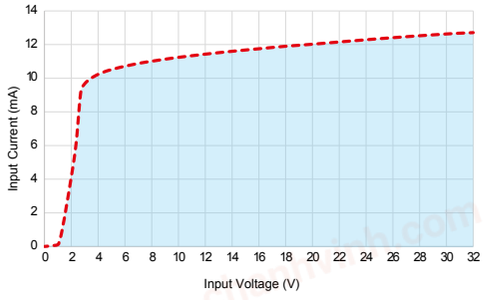
Diagrams

Equivalent Circuit Block

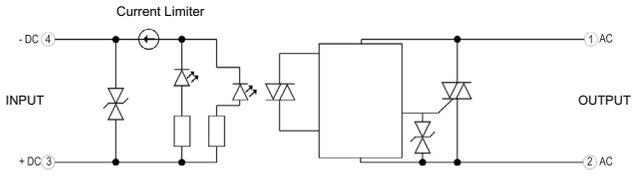
GN Series 4-32 V⎓ control (Thyristors) - All out 660 V∿



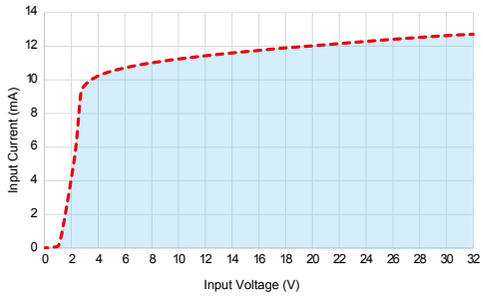
Input current vs Input Voltage
Standard Regulated DC inputs



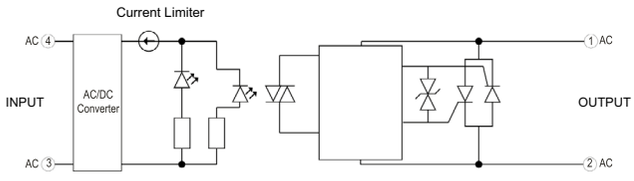
GN Series 4-32 V⎓ control (Triac) - 10 A /25 A (280 V∿)



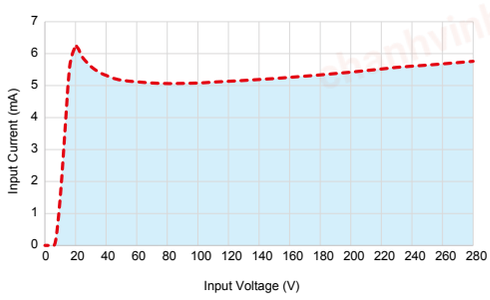
Input current vs Input Voltage
Standard Regulated DC inputs



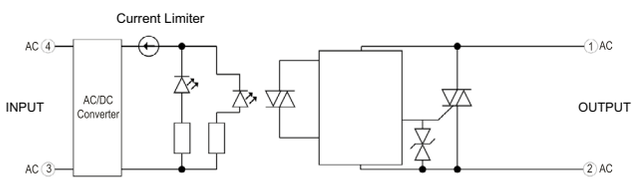
GN Series 18-36 V≂ control



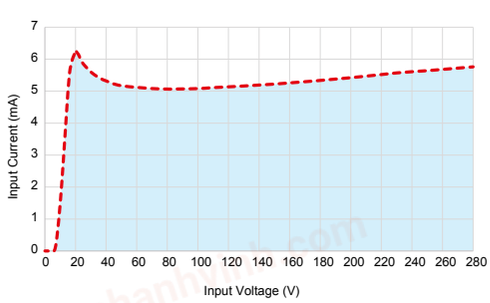
Input current vs Input Voltage
Standard Regulated AC/DC inputs



GN Series 20-265 V∿ control

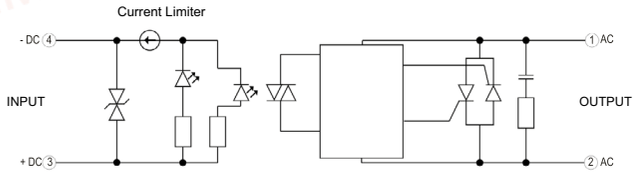


Input current vs Input Voltage
Standard Regulated AC inputs

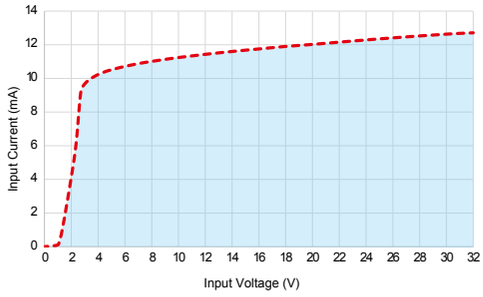


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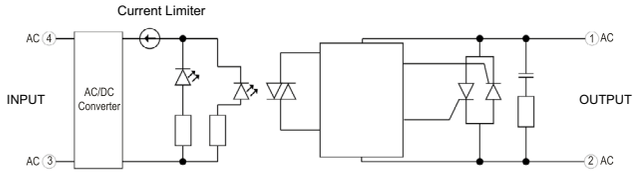
GN Series 4-32 V⎓ control instantaneous



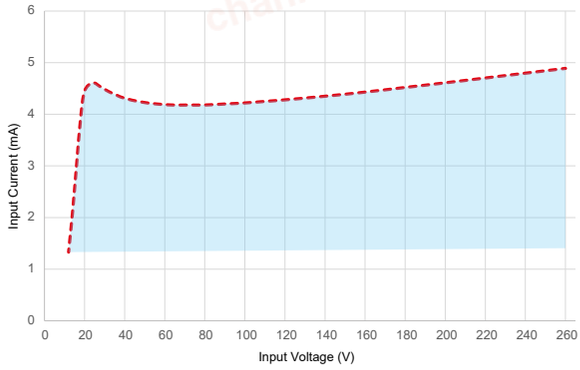
Input current vs Input Voltage
Standard Regulated DC inputs



GN Series 90-260 V⏦ control instantaneous



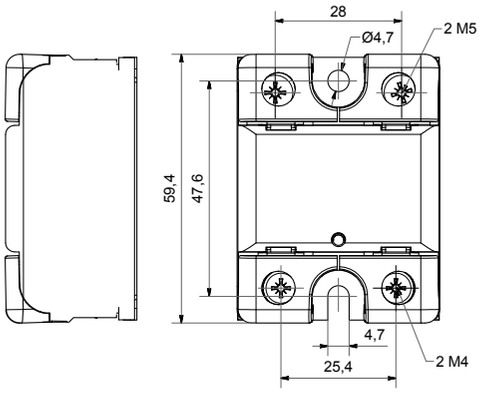
Input current vs Input Voltage
Standard Regulated AC inputs



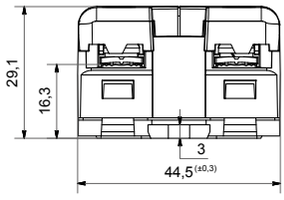
Diagrams

Dimensions (mm)

GN front view



GN side view

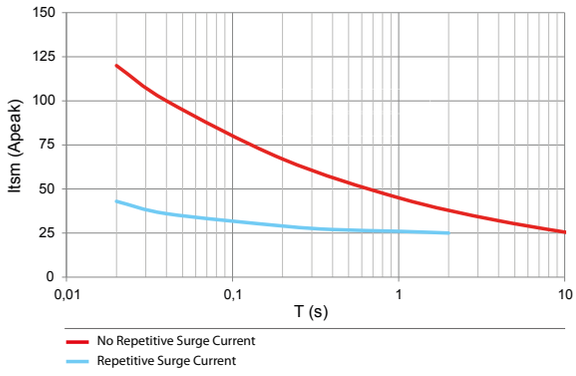


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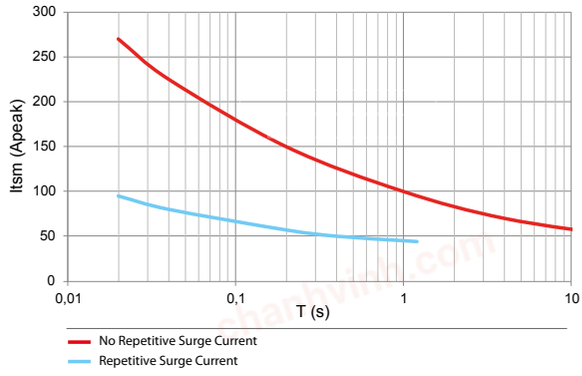
Curves

Surge Current Information

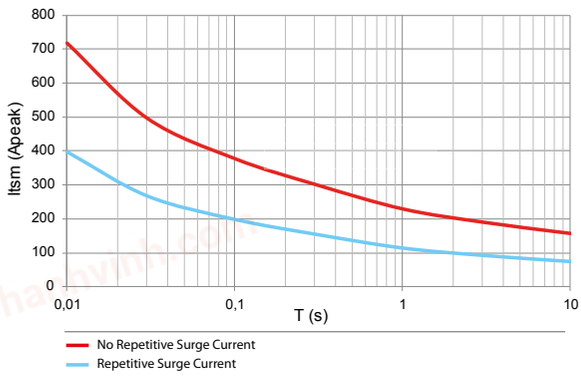
GN - 10 A



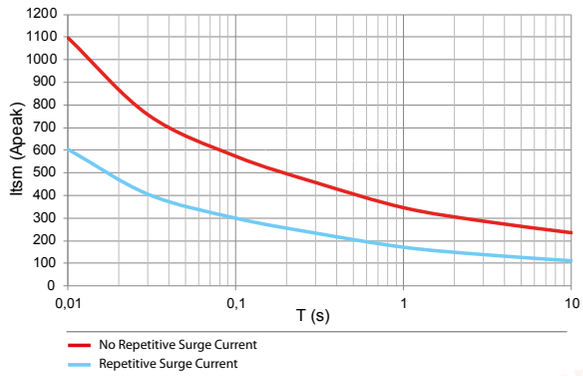
GN - 25 A



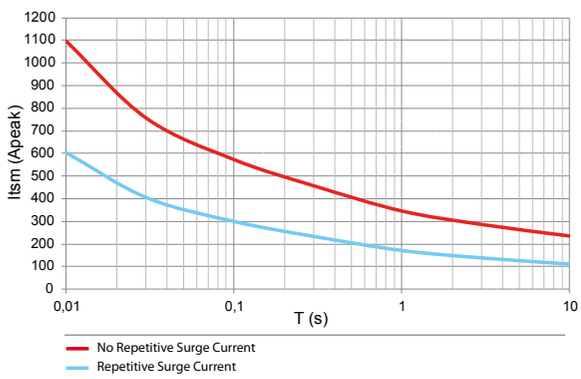
GN - 50 A



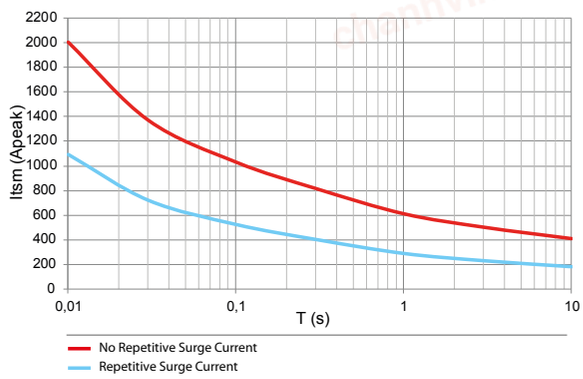
GN - 75 A



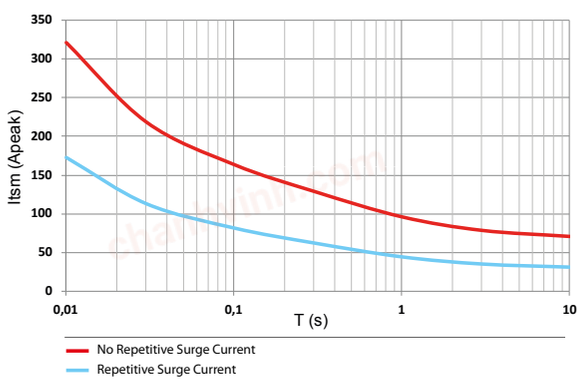
GN - 100 A



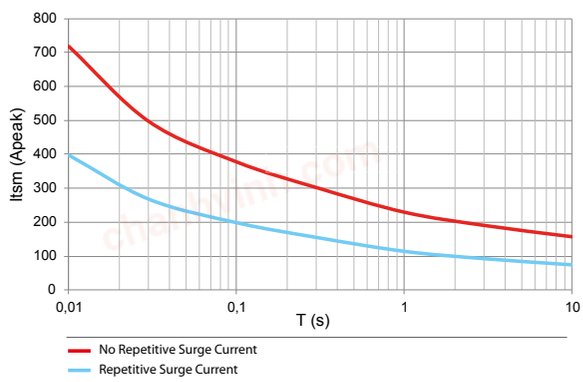
GN - 125 A



GN - 25 A Instantaneous

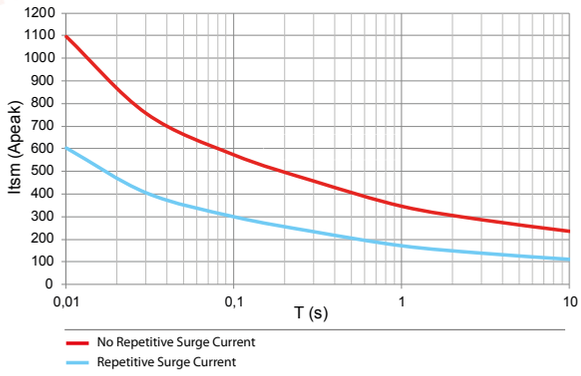


GN - 50 A Instantaneous



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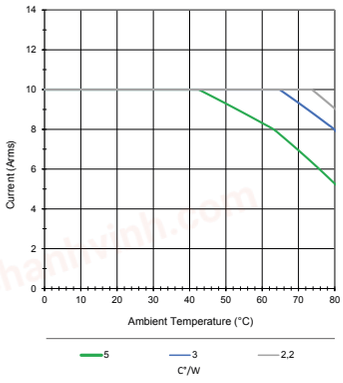
GN - 75 A Instantaneous



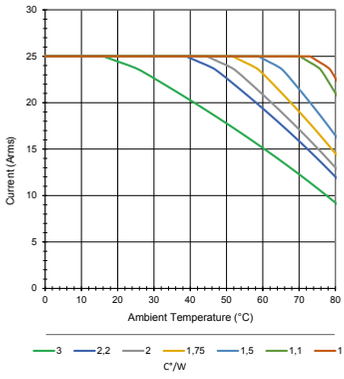
Curves

Thermal Derating Curves

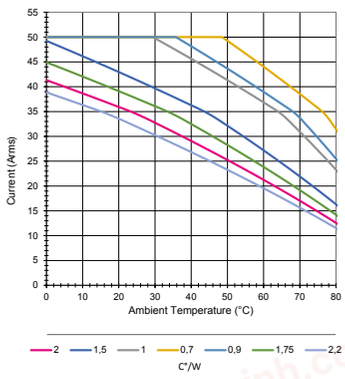
GN - 10 A



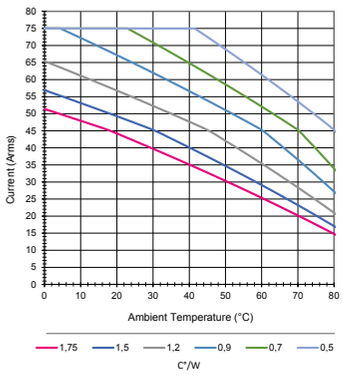
GN - 25 A



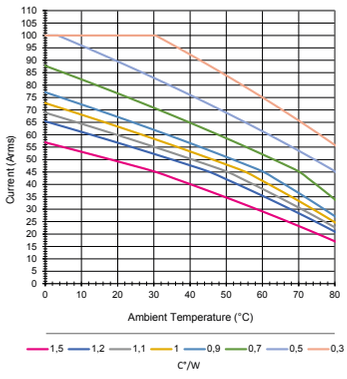
GN - 50 A



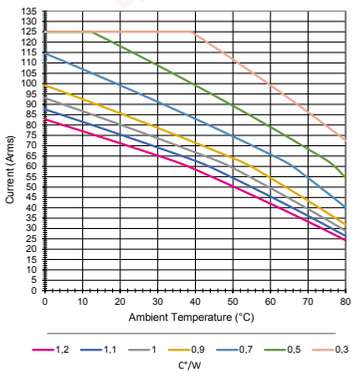
GN - 75 A



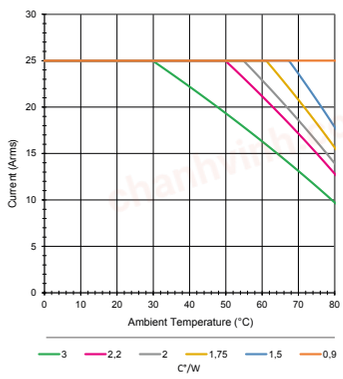
GN - 100 A



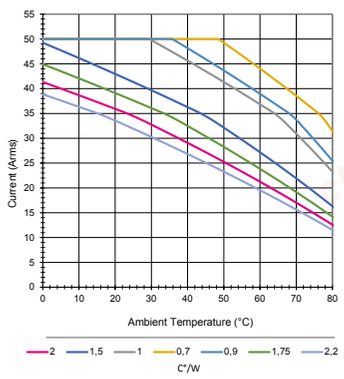
GN - 125 A



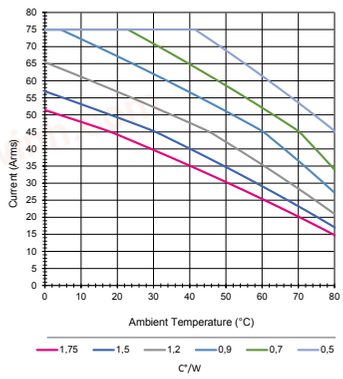
GN - 25 A Instantaneous



GN - 50 A Instantaneous



GN - 75 A Instantaneous



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Standards Specifications

ZERO CROSS

IEC/EN61000-4-4 (bursts)	2 kv crit B
IEC/EN61000-4-5 (surge)	2 kv crit B
VIBRATION resistance IEC 60068-2-6	10 g
SHOCK resistance IEC 60068-2-27	50 G (11 ms)

RANDOM

IEC/EN61000-4-4 (bursts)	4 kv crit A
IEC/EN61000-4-5 (surge)	4 kv crit A
VIBRATION resistance IEC 60068-2-6	10 g
SHOCK resistance IEC 60068-2-27	50 G (11 ms)

c US ES16951 VDE REG 10102* CE

* VDE ONLY 84137000N / 84137110N / 84137120N / 84137130N / 84137140N / 84137180N / 84137210N / 84137211N / 84137320N / 84137321N / 84137330N

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