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11/2020

› GNR+ Series

Performance Solid State Relays

DIN Rail - AC Output Single Phase

- › Output current of 30, 32 and 45 Amps
- › Output voltage of 25-500 V~
- › Control voltage of 4-32 V⎓ and 180-280 V~
- › Special zero cross (resistive, inductive and capacitive loads)
- › Integrated IP20 touch-safe removable covers
- › High immunity levels & built-in overvoltage protection
- › LED input status indicator



Multi Loads
Version 22.5 mm



Multi Loads
Version 45 mm

Product Selection - Special Zero Cross (Resistive, Capacitive, Inductive)[3]			
Rated Load Current	30A	32A	45A
Operating Voltage	24-500 V~	24-500 V~	24-500 V~
Control Voltage			
4-32 V⎓	**GNR30DCZP**	**GNR32DCZP**	**GNR45DCZP**
180-280 V~	**GNR30ACZP**		

PART NUMBERING SYSTEM

Series
GNR: Single Phase

Control Voltage
DC: 4-32 V⎓
AC: 180-280 V~

GNR 30 DC Z P

Output Current
30: 30 A
32: 32 A
45: 45 A

Type
R: Random
Z: Zero Cross

Output Voltage
P: 500 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**
Label	Label for SSR identification	**26532004**

Output Specifications[1]			
Description	30A	32A	45A
Maximum Load Current [Arms])	30	32	45
Minimum Load Current [mArms]	5		
Operating Voltage	24-500 V~		
Transient Voltage [Vpk][2]	1200 (950)		
Maximum Off-State Leakage Current @ Rated Voltage [mArms]	1		
Minimum Off-State dV/dt @ Maximum Rated Voltage [V/µsec]	500		
1 Second Surge Current (Apk. Ta=25 °C) 50/60 Hz	165	347	165
Maximum 1 Cycle Surge Current (50/60 Hz) [Apeak] Typ @ 50 Hz	530/_ (min) 580 (typ)	1100/_ (min) 1200 (typ)	530/_ (min) 580 (typ)
Maximum On-State Voltage Drop @ Rated Current [Vpeak]	1.08	1.14	1.19
Thermal Resistance Junction to Case (Rjc) [°C/W]	0.55	0.4	0.55
Maximum 1/2 Cycle I^2t for Fusing @ 50 Hz (min./typical) [A^2 sec]	1404/1680	6000/7200	1404/1680
Minimum Heat Sink for Rated Current @ 40 °C [°C/W]	N/A (SSR with heatsink)		

Input Specifications		
Description	4-32 V⎓	180-280 V~
Control Voltage Range	4-32 V⎓	180-280 V~
Maximum Reverse Voltage	-32 V⎓	N/A (no polarity)
Minimum Turn-On Voltage	3.5 V⎓	180 V~
Must Turn-Off Voltage	2 V⎓	5 V~
Minimum Input Current (for on-state)	10 mA	4 mA
Maximum Input Current [mA]	14 mA	8 mA
Nominal Input Impedance [Ohms]	Current Limited	39 KΩ
Maximum Turn-On Time [msec]	1/2 Cycle[5]	
Maximum Turn-Off Time [msec]	1/2 Cycle[5]	

General Specifications			
Description	30A	32A	45A
Dielectric Strength, Input to Output (50/60 Hz)	4000 Vrms		
Dielectric Strength, Input/Output to Ground (50/60 Hz)	4000 Vrms		
Minimum Insulation Resistance (@ 500 V⎓)	$10^9\Omega$		
Maximum Capacitance, Input/Output	0.8 pF		
Ambient Operating Temperature Range[7]	-40 to 80 °C		
Ambient Storage Temperature Range	-40 to 100 °C		
Weight (typical)	250 g - 275 g (45 A)		
Housing Material	UL94 V-0		
Baseplate Material	Aluminum		
Input Terminal Screw Torque Range (in-lb/Nm)	3.5-4.4 /0.4-0.5		
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 %		

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General Specifications

Description	30A	32A	45A
LED Input Status Indicator	Yellow		
MTBF (Mean Time Between Failures) at 40 °C ambient temperature (years)(5)	85		
MTBF (Mean Time Between Failures) at 60 °C ambient temperature (years)(5)	56		

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)Allows to support multi loads such as resistive, capacitive and Inductive loads

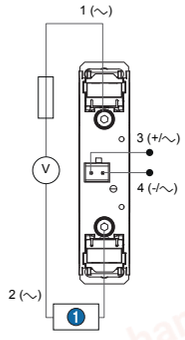
(4)Increase minimum voltage by 1 V for operations from -20 to -40 °C

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

Diagrams

Wiring

GNR+ -



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)	26..12 AWG (0.2..2.5 mm²) 2 x 26..12 AWG (0.2..2.5 mm²)	0.4 - 0.5
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

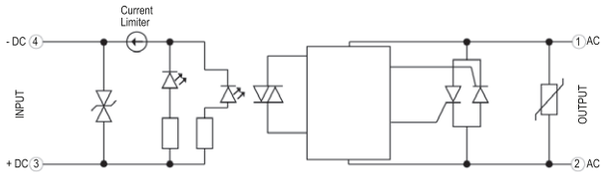
GNR+

1 *Load*

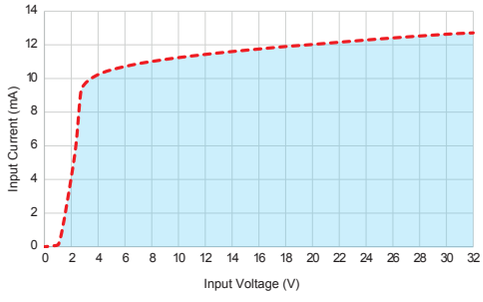
Diagrams

Equivalent Circuit Block

GNR+ series 4-32 V⎓ control

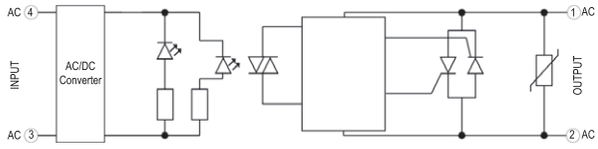


Input current vs Input Voltage
Standard Regulated AC inputs

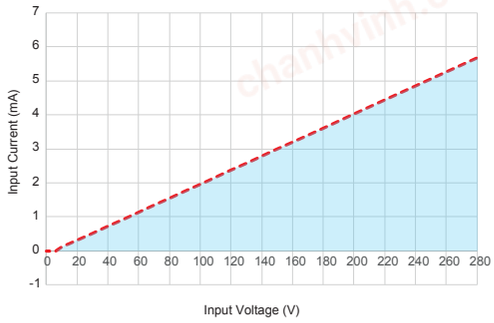


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GNR+ series 180-280 V~ control



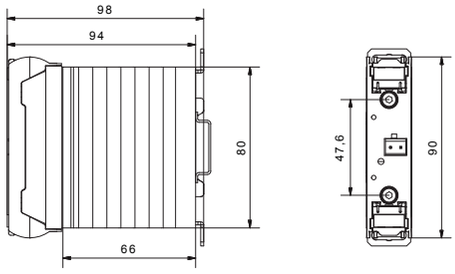
Input current vs Input Voltage
Standard Regulated DC inputs



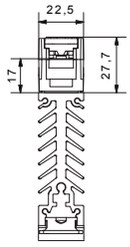
Diagrams

Dimensions (mm)

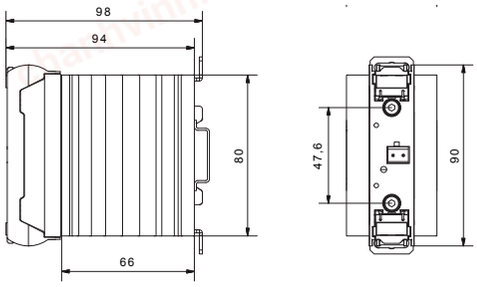
GNR+ 22.5 mm front view



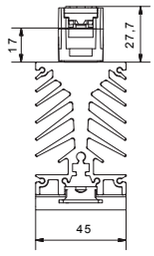
GNR+ 22.5 mm side view



GNR+ 45 mm front view - GNR45DCZP



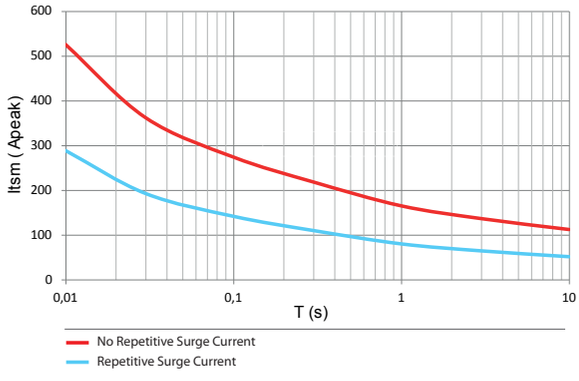
GNR+ 45 mm front view



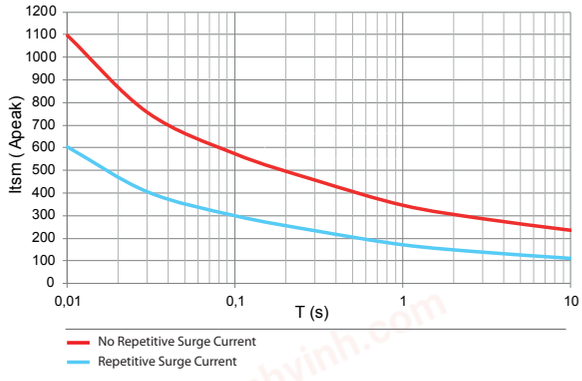
Curves

Surge Current Information

GNR+ - 30 A

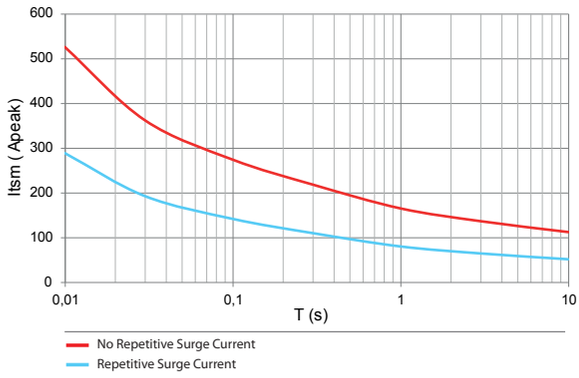


GNR+ - 32 A



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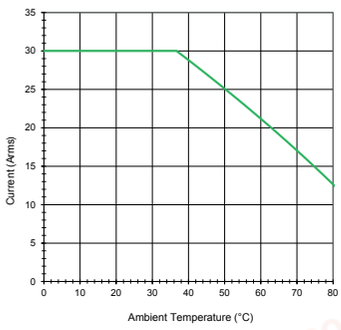
GNR+ - 45 A



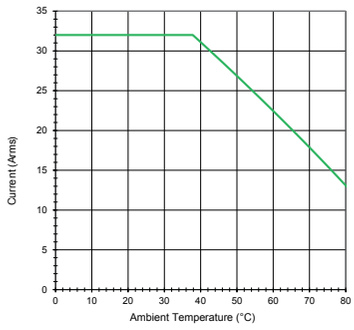
Curves

Thermal Derating Curves

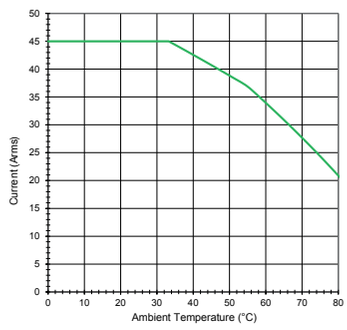
GNR+ - 30 A



GNR+ - 32 A



GNR+ - 45 A



Standards Specifications

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)

c UL us ES16951

VDE REG 10102*

CE

* VDE ONLY GNR30DCZP / GNR30ACZP / GNR32DCZP

Warning:

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