

## Three-Phase Solid-State Relays

### Crouzet Products /Automation Controls /Solid State Relays /Three-Phase Solid State Relays

#### PRODUCT FEATURES

- + Ratings up to 50 amps per phase at 600Vac
- + Epoxy-free design minimizes internal component stress
- + 100k-cycle UL508 Endurance rating for enhanced reliability
- + No external transient protection required (Internal TVS)
- + Back-to-back SCR output for heavy industrial loads
- + Available with zero-crossing (resistive loads) or random-fire (inductive loads) outputs
- + UL, CSA, TUV Approved, CE Compliant
- + EMC compliant for reliable operation in harsh environments
- + RoHS Compliant

[GN3/GNO CAD Drawings](#)

[GA3/GAO to GN3/GNO Cross Reference](#)

[CE Manufacturer's Declaration of Conformity](#)

[RoHS Information](#)



#### Three-Phase Solid State Relays no snubber

#### Three-Phase Solid State Relays with snubber

Current	Output voltage	Input voltage	Termination	Switching	Part number	
25 A	48-530 V AC	180-260 V AC	Screw Terminals	Zero voltage	<a href="#">GN325ASZ</a>	<a href="#">Check Stock</a>
25 A	48-530 V AC	90-140 V AC	Screw Terminals	Zero voltage	<a href="#">GN325BSZ</a>	<a href="#">Check Stock</a>
25 A	48-530 V AC	4-32 V DC	Screw Terminals	Zero voltage	<a href="#">GN325DSZ</a>	<a href="#">Check Stock</a>
25 A	48-530 V AC	18-36 V AC	Screw Terminals	Zero voltage	<a href="#">GN325ESZ</a>	<a href="#">Check Stock</a>
50 A	48-530 V AC	180-260 V AC	Screw Terminals	Zero voltage	<a href="#">GN350ASZ</a>	<a href="#">Check Stock</a>
50 A	48-530 V AC	90-140 V AC	Screw Terminals	Zero voltage	<a href="#">GN350BSZ</a>	<a href="#">Check Stock</a>
50 A	48-530 V AC	4-32 V DC	Screw Terminals	Zero voltage	<a href="#">GN350DSZ</a>	<a href="#">Check Stock</a>
50 A	48-530 V AC	18-36 V AC	Screw Terminals	Zero voltage	<a href="#">GN350ESZ</a>	<a href="#">Check Stock</a>
25 A	48-530 V AC	180-260 V AC	Screw Terminals	Instantaneous	<a href="#">GN325ASR</a>	<a href="#">Check Stock</a>
25 A	48-530 V AC	90-140 V AC	Screw Terminals	Instantaneous	<a href="#">GN325BSR</a>	<a href="#">Check Stock</a>

25 A	48-530 V AC	4-32 V DC	Screw Terminals	Instantaneous	<a href="#">GN325DSR</a>	<a href="#">Check Stock</a>
25 A	48-530 V AC	18-36 V AC	Screw Terminals	Instantaneous	<a href="#">GN325ESR</a>	<a href="#">Check Stock</a>
50 A	48-530 V AC	180-260 V AC	Screw Terminals	Instantaneous	<a href="#">GN350ASR</a>	<a href="#">Check Stock</a>
50 A	48-530 V AC	90-140 V AC	Screw Terminals	Instantaneous	<a href="#">GN350BSR</a>	<a href="#">Check Stock</a>
50 A	48-530 V AC	4-32 V DC	Screw Terminals	Instantaneous	<a href="#">GN350DSR</a>	<a href="#">Check Stock</a>
50 A	48-530 V AC	18-36 V AC	Screw Terminals	Instantaneous	<a href="#">GN350ESR</a>	<a href="#">Check Stock</a>

<u>Current</u>	<u>Output voltage</u>	<u>Input voltage</u>	<u>Termination</u>	<u>Switching</u>	<u>Part number</u>	
25 A	48-600 V AC	180-260 V AC	Screw Terminals	Zero voltage	<a href="#">GN325ALZ</a>	<a href="#">Check Stock</a>
25 A	48-600 V AC	90-140 V AC	Screw Terminals	Zero voltage	<a href="#">GN325BLZ</a>	<a href="#">Check Stock</a>
25 A	48-600 V AC	4-32 V DC	Screw Terminals	Zero voltage	<a href="#">GN325DLZ</a>	<a href="#">Check Stock</a>
25 A	48-600 V AC	18-36 V AC	Screw Terminals	Zero voltage	<a href="#">GN325ELZ</a>	<a href="#">Check Stock</a>
50 A	48-600 V AC	180-260 V AC	Screw Terminals	Zero voltage	<a href="#">GN350ALZ</a>	<a href="#">Check Stock</a>
50 A	48-600 V AC	90-140 V AC	Screw Terminals	Zero voltage	<a href="#">GN350BLZ</a>	<a href="#">Check Stock</a>
50 A	48-600 V AC	4-32 V DC	Screw Terminals	Zero voltage	<a href="#">GN350DLZ</a>	<a href="#">Check Stock</a>
50 A	48-600 V AC	18-36 V AC	Screw Terminals	Zero voltage	<a href="#">GN350ELZ</a>	<a href="#">Check Stock</a>
25 A	48-600 V AC	180-260 V AC	Screw Terminals	Instantaneous	<a href="#">GN325ALR</a>	<a href="#">Check Stock</a>
25 A	48-600 V AC	90-140 V AC	Screw Terminals	Instantaneous	<a href="#">GN325BLR</a>	<a href="#">Check Stock</a>
25 A	48-600 V AC	4-32 V DC	Screw Terminals	Instantaneous	<a href="#">GN325DLR</a>	<a href="#">Check Stock</a>
25 A	48-600 V AC	18-36 V AC	Screw Terminals	Instantaneous	<a href="#">GN325ELR</a>	<a href="#">Check Stock</a>
50 A	48-600 V AC	180-260 V AC	Screw Terminals	Instantaneous	<a href="#">GN350ALR</a>	<a href="#">Check Stock</a>
50 A	48-600 V AC	90-140 V AC	Screw Terminals	Instantaneous	<a href="#">GN350BLR</a>	<a href="#">Check Stock</a>
50 A	48-600 V AC	4-32 V DC	Screw Terminals	Instantaneous	<a href="#">GN350DLR</a>	<a href="#">Check Stock</a>
50 A	48-600 V AC	18-36 V AC	Screw Terminals	Instantaneous	<a href="#">GN350ELR</a>	<a href="#">Check Stock</a>

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# GN3 Series 3 Phase Solid State Relay - DC Input



- ▶ Three-phase solid-state relay
- ▶ Ratings up to 50 amps @ 530Vac
- ▶ DBC substrate for superior thermal performance
- ▶ Epoxy-free design reduces internal component stress
- ▶ Back-to-Back dual SCR output for heavy industrial loads
- ▶ 100k-cycle UL508 endurance rating for enhanced reliability
- ▶ No external transient protection required (internal TVS)
- ▶ EMC Compliant for reliable operation in harsh environments
- ▶ UL/CSA/TUV Approved, CE & RoHS Compliant



## Output Specifications

Output Current (40°C)	25	50
Voltage range (Vrms) (1)	48-600Vac	48-600Vac
Peak Voltage (Vpk, t = 1 min.)	1100	1100
Off-state leakage mArms		
(without RC / with RC)	0.06 / 3.0	0.06 / 3.0
Minimum Current (mArms)	100	100
Max. 1 cycle surge current (Apk, Ta = 25°C)	500	800
Max. 1 second surge current (Apk, Ta = 25°C)	100	160
Forward voltage drop (Vpk @ Imax, Ta = 40°C)	1.35	1.35
I <sup>2</sup> T (60Hz, ½ cycle)	1040	2600
Rjb (thermal res. Junction to baseplate, °C/W)	0.24	0.12
Static off-state dv/dt (V/us, Ta = 25°C)	500	500
HP Ratings at 240V	1	3
HP Ratings at 480V	3	7.5
HP Ratings at 600V	5	10
Min/Max wire size	16/8 AWG	16/8 AWG
Terminal Torque (N-m)	2.4	

## Input Specifications

Input voltage	4-32Vdc
Drop out voltage	1Vdc
Min. input current (for on-state)	24mA
Maximum input current	35mA
Input Resistance (Ohms)	Current Regulated
Turn-on time (2)	8.33msec
Turn-off time	8.33msec
Min/Max stranded/solid wire	24/14 AWG
Torque (N-m)	1.9

## General Characteristics

Operating Temperature (°C)	-40 to + 80
Storage Temperature (°C)	-40 to + 100
Input to output isolation	4000Vrms
Input/output to ground isolation	2500Vrms
Input to output capacitance	8pF (typical)
Operating Frequency	47 to 63 Hz
Housing Material	UL 94V0 (self extinguishing)
Weight (grams)	360

## Standards of Compliance

CE Compliant with the LVD 73/23/EEC	
UL Recognized per UL 508 and CSA C22.2 no. 14-95	
TUV Certified per EN 60950	
IEC 62314	
IEC 60068-2-6	35mm/10-55Hz
IEC 60068-2-27	15G / 11ms
IEC 61000-4-2 Level 3	Electrostatic Discharge
IEC 61000-4-3 Level 3	Radiated Electromagnetic Noise
IEC 61000-4-4 Level 3	Immunity to Electrically Fast Transients
IEC 61000-4-5 Level 3	Immunity to Electrical Surges
IEC 61000-4-6 Level 3	Conducted Electromagnetic Noise
CISPR 11 Class A Conducted and Radiated Noise for Industrial Enviroments	

## Part Numbers

No Snubber	Zero Crossing Output			
	Rating	Output	Input	Part Number
	25 Amp	48-600Vac	4-32Vdc	GN325DLZ
50 Amp	48-600Vac	4-32Vdc	GN350DLZ	

No Snubber	Random Fire Output			
	Rating	Output	Input	Part Number
	25 Amp	48-600Vac	4-32Vdc	GN325DLR
50 Amp	48-600Vac	4-32Vdc	GN350DLR	

## Part Numbers

Snubber	Zero Crossing Output			
	Rating	Output	Input	Part Number
	25 Amp	48-530Vac	4-32Vdc	GN325DSZ
50 Amp	48-530Vac	4-32Vdc	GN350DSZ	

Snubber	Random Fire Output			
	Rating	Output	Input	Part Number
	25 Amp	48-530Vac	4-32Vdc	GN325DSR
50 Amp	48-530Vac	4-32Vdc	GN350DSR	

### Notes:

- (1) Voltage range for relay with snubber circuit is 48-530Vac.
- (2) Random SSR's turn on in less than 100µs

# GN3 Series 3 Phase Solid State Relay - AC Input



- ▶ Three-phase solid-state relay
- ▶ Ratings up to 50 amps @ 530Vac
- ▶ DBC substrate for superior thermal performance
- ▶ Epoxy-free design reduces internal component stress
- ▶ Back-to-Back dual SCR output for heavy industrial loads
- ▶ 100k-cycle UL508 endurance rating for enhanced reliability
- ▶ No external transient protection required (internal TVS)
- ▶ EMC Compliant for reliable operation in harsh environments
- ▶ UL/CSA/TUV Approved, CE & RoHS Compliant



## Output Specifications

Output Current (40°C)	25	50
Voltage range (Vrms) (1)	48-600Vac	48-600Vac
Peak Voltage (Vpk, t = 1 min.)	1100	1100
Off-state leakage mArms (without RC / with RC)	0.06 / 3.0	0.06 / 3.0
Minimum Current (mArms)	100	100
Max. 1 cycle surge current (Apk, Ta = 25°C)	500	800
Max. 1 second surge current (Apk, Ta = 25°C)	100	160
Forward voltage drop (Vpk @ Imax, Ta = 40°C)	1.35	1.35
I <sup>2</sup> T (60Hz, ½ cycle)	1040	2600
Rjb (thermal res. Junction to baseplate, °C/W)	0.24	0.12
Static off-state dv/dt (Vus, Ta = 25°C)	500	500
HP Ratings at 240V	1	3
HP Ratings at 480V	3	7.5
HP Ratings at 600V	5	10
Min/Max wire size	16/8 AWG	16/8 AWG
Terminal Torque (N-m)	2.4	

## Input Specifications

Input voltage AC/DC	18-36V	90-140V	180-280V
Drop out voltage AC/DC	2V	10V	10V
Min. input current (for on-state)	15mA	7mA	7mA
Maximum input current	20mA	16mA	20mA
Input Resistance (Ohms)	Current Regulated		
Turn-on time (2)	28mSec	20mSec	20mSec
Turn-off time	30mSec	30mSec	30mSec
Min/Max stranded/solid wire	24/14 AWG	24/14 AWG	24/14 AWG
Terminal Torque (N-m)	1.9		

## General Characteristics

Operating Temperature (°C) (3)	-40 to + 80
Storage Temperature (°C)	-40 to + 100
Input to output isolation	4000Vrms
Input/output to ground isolation	2500Vrms
Input to output capacitance	8pF (typical)
Operating Frequency	47 to 63 Hz
Housing Material	UL 94V0 (self extinguishing)
Weight (grams)	360

## Standards of Compliance

CE Compliant with the LVD 73/23/EEC	
UL Recognized per UL 508 and CSA C22.2 no. 14-95	
TUV Certified per EN 60950	
IEC 62314	
IEC 60068-2-6	35mm/10-55Hz
IEC 60068-2-27	15G / 11ms
IEC 61000-4-2 Level 3	Electrostatic Discharge
IEC 61000-4-3 Level 3	Radiated Electromagnetic Noise
IEC 61000-4-4 Level 3	Immunity to Electrically Fast Transients
IEC 61000-4-5 Level 3	Immunity to Electrical Surges
IEC 61000-4-6 Level 3	Conducted Electromagnetic Noise
CISPR 11 Class A Conducted and Radiated Noise for Industrial Environments	

## Part Numbers

Zero Crossing Output				
Rating	Output	Input	Part Number	
25 Amp	48-600Vac	180-260VAC	GN325ALZ	
25 Amp	48-600Vac	90-140VAC	GN325BLZ	
25 Amp	48-600Vac	18-36Vac	GN325ELZ	
50 Amp	48-600Vac	180-260VAC	GN350ALZ	
50 Amp	48-600Vac	90-140VAC	GN350BLZ	
50 Amp	48-600Vac	18-36Vac	GN350ELZ	

Random Fire Output				
Rating	Output	Input	Part Number	
25 Amp	48-600Vac	180-260VAC	GN325ALR	
25 Amp	48-600Vac	90-140VAC	GN325BLR	
25 Amp	48-600Vac	18-36Vac	GN325ELR	
50 Amp	48-600Vac	180-260VAC	GN350ALR	
50 Amp	48-600Vac	90-140VAC	GN350BLR	
50 Amp	48-600Vac	18-36Vac	GN350ELR	

## Part Numbers

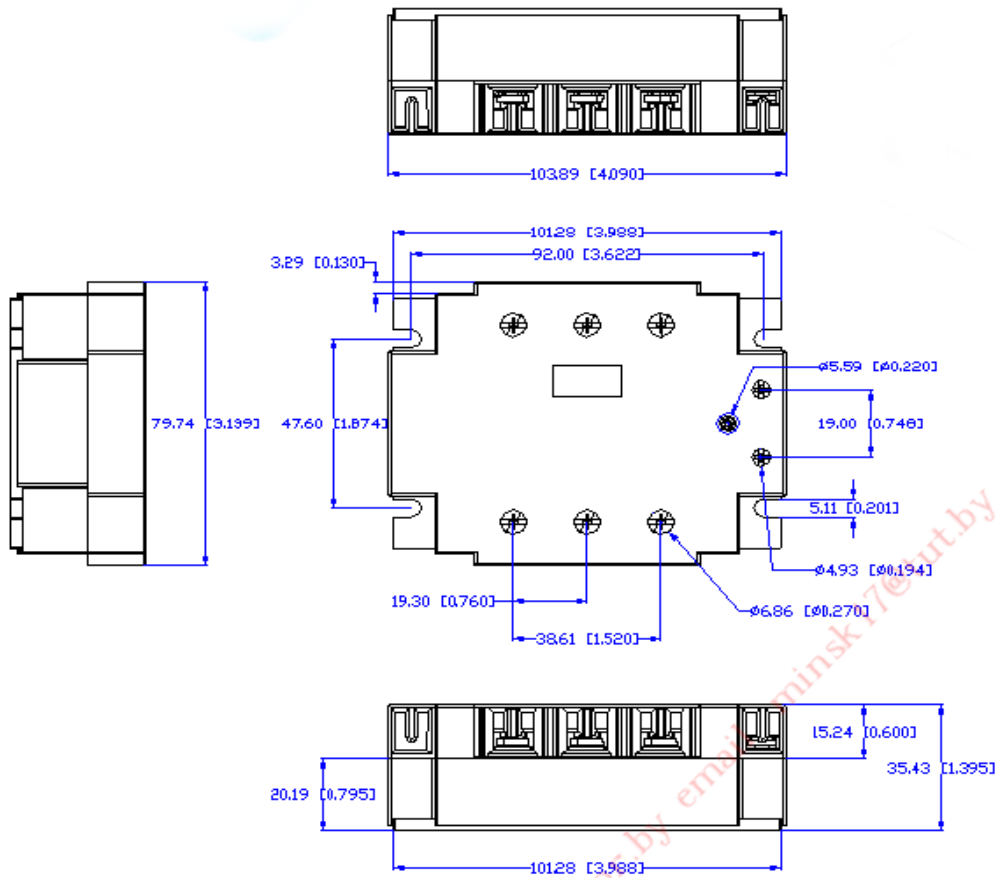
Zero Crossing Output				
Rating	Output	Input	Part Number	
25 Amp	48-530Vac	180-260VAC	GN325ASZ	
25 Amp	48-530Vac	90-140VAC	GN325BSZ	
25 Amp	48-530Vac	18-36Vac	GN325ESZ	
50 Amp	48-530Vac	180-260VAC	GN350ASZ	
50 Amp	48-530Vac	90-140VAC	GN350BSZ	
50 Amp	48-530Vac	18-36Vac	GN350ESZ	

Random Fire Output				
Rating	Output	Input	Part Number	
25 Amp	48-530Vac	180-260VAC	GN325ASR	
25 Amp	48-530Vac	90-140VAC	GN325BSR	
25 Amp	48-530Vac	18-36Vac	GN325ESR	
50 Amp	48-530Vac	180-260VAC	GN350ASR	
50 Amp	48-530Vac	90-140VAC	GN350BSR	
50 Amp	48-530Vac	18-36Vac	GN350ESR	

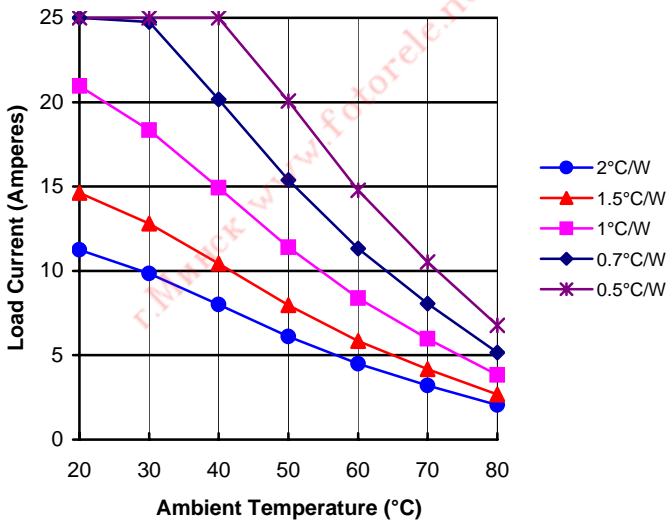
- Notes:**
- (1) Voltage range for relay with snubber circuit is 48-530Vac.
  - (2) Random AC input SSR's turn-on is 20mS
  - (3) Operating temperature for 180-260VAC input is -20 to +60°C

Dimensions mm (inches)

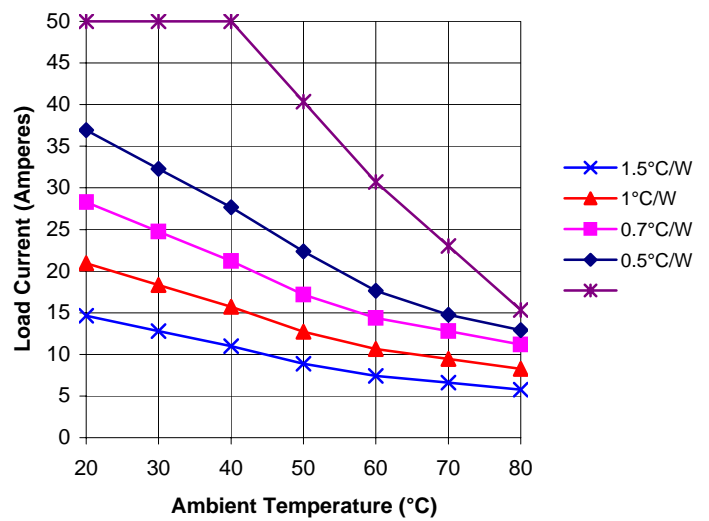


## Derate Curves

DERATE CURVES:  
GN3 3 Phase SSR 25A



DERATE CURVES:  
GN3 3 Phase SSR 50A



**Реле ssr-1, Минск** Т.80447584780

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