

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	GN325ASZ	Check Stock
25 A	48-530 V AC	90-140 V AC	Screw Terminals	Zero voltage	GN325BSZ	Check Stock
25 A	48-530 V AC	4-32 V DC	Screw Terminals	Zero voltage	GN325DSZ	Check Stock
25 A	48-530 V AC	18-36 V AC	Screw Terminals	Zero voltage	GN325ESZ	Check Stock
50 A	48-530 V AC	180-260 V AC	Screw Terminals	Zero voltage	GN350ASZ	Check Stock
50 A	48-530 V AC	90-140 V AC	Screw Terminals	Zero voltage	GN350BSZ	Check Stock
50 A	48-530 V AC	4-32 V DC	Screw Terminals	Zero voltage	GN350DSZ	Check Stock
50 A	48-530 V AC	18-36 V AC	Screw Terminals	Zero voltage	GN350ESZ	Check Stock
25 A	48-530 V AC	180-260 V AC	Screw Terminals	Instantaneous	GN325ASR	Check Stock
25 A	48-530 V AC	90-140 V AC	Screw Terminals	Instantaneous	GN325BSR	Check Stock

25 A	48-530 V AC	4-32 V DC	Screw Terminals	Instantaneous	GN325DSR	Check Stock
25 A	48-530 V AC	18-36 V AC	Screw Terminals	Instantaneous	GN325ESR	Check Stock
50 A	48-530 V AC	180-260 V AC	Screw Terminals	Instantaneous	GN350ASR	Check Stock
50 A	48-530 V AC	90-140 V AC	Screw Terminals	Instantaneous	GN350BSR	Check Stock
50 A	48-530 V AC	4-32 V DC	Screw Terminals	Instantaneous	GN350DSR	Check Stock
50 A	48-530 V AC	18-36 V AC	Screw Terminals	Instantaneous	GN350ESR	Check Stock
<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	GN325ALZ	Check Stock
25 A	48-600 V AC	90-140 V AC	Screw Terminals	Zero voltage	GN325BLZ	Check Stock
25 A	48-600 V AC	4-32 V DC	Screw Terminals	Zero voltage	GN325DLZ	Check Stock
25 A	48-600 V AC	18-36 V AC	Screw Terminals	Zero voltage	GN325ELZ	Check Stock
50 A	48-600 V AC	180-260 V AC	Screw Terminals	Zero voltage	GN350ALZ	Check Stock
50 A	48-600 V AC	90-140 V AC	Screw Terminals	Zero voltage	GN350BLZ	Check Stock
50 A	48-600 V AC	4-32 V DC	Screw Terminals	Zero voltage	GN350DLZ	Check Stock
50 A	48-600 V AC	18-36 V AC	Screw Terminals	Zero voltage	GN350ELZ	Check Stock
25 A	48-600 V AC	180-260 V AC	Screw Terminals	Instantaneous	GN325ALR	Check Stock
25 A	48-600 V AC	90-140 V AC	Screw Terminals	Instantaneous	GN325BLR	Check Stock
25 A	48-600 V AC	4-32 V DC	Screw Terminals	Instantaneous	GN325DLR	Check Stock
25 A	48-600 V AC	18-36 V AC	Screw Terminals	Instantaneous	GN325ELR	Check Stock
50 A	48-600 V AC	180-260 V AC	Screw Terminals	Instantaneous	GN350ALR	Check Stock
50 A	48-600 V AC	90-140 V AC	Screw Terminals	Instantaneous	GN350BLR	Check Stock
50 A	48-600 V AC	4-32 V DC	Screw Terminals	Instantaneous	GN350DLR	Check Stock
50 A	48-600 V AC	18-36 V AC	Screw Terminals	Instantaneous	GN350ELR	Check Stock

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 ² 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	

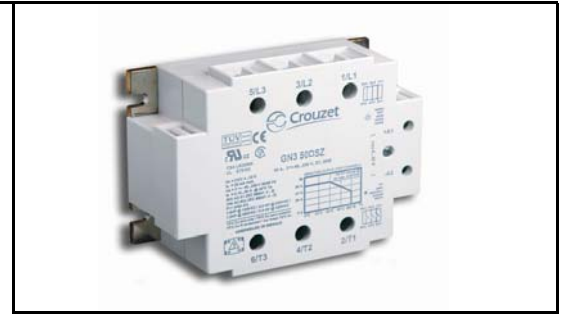
Snubber	Random Fire Output			
	Rating	Output	Input	Part Number
	25 Amp	48-530Vac	4-32Vdc	GN325DSR
50 Amp	48-530Vac	4-32Vdc	GN350DSR	

- 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 ² 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 Enviroments

Part Numbers

No Snubber	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

No Snubber	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

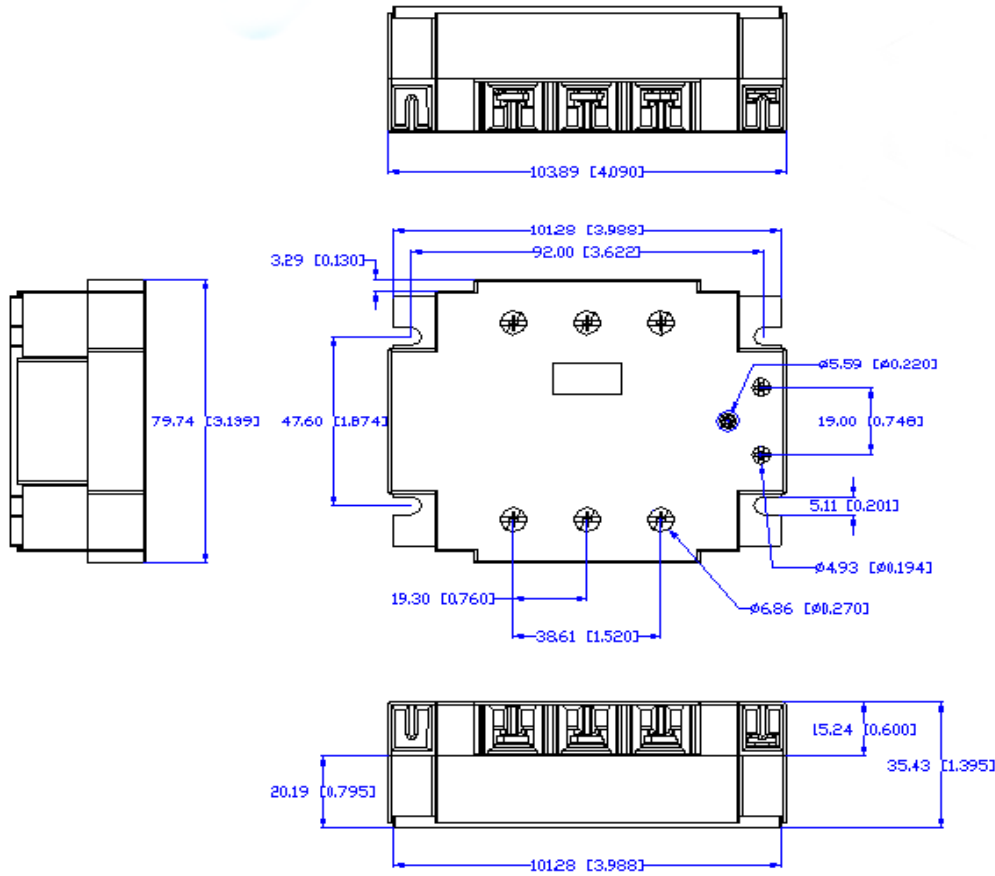
Snubber	Zero Crossing Output			
	Rating	Output	Input	Part Number
	25 Amp	48-530Vac	180-260VAC	GN325ASZ
	25 Amp	48-530Vac	90-140VAC	GN325BSZ
	25 Amp	48-530Vac	18-36Vac	GN325ESZ
	50 Amp	48-530Vac	180-260VAC	GN350ASZ
	50 Amp	48-530Vac	90-140VAC	GN350BSZ
	50 Amp	48-530Vac	18-36Vac	GN350ESZ

Snubber	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:

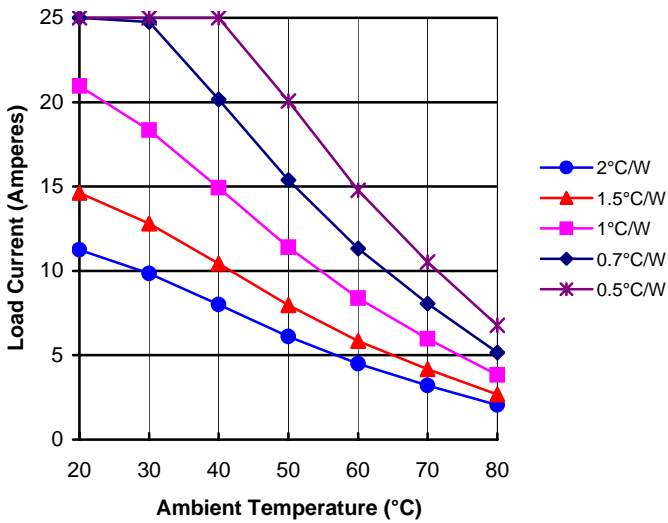
- (1) Voltage range for relay with snubber circuit is 48-530Vac.
- (2) Random AC input SSR's turn-on is 20mS
- (3) Operatinting temperature for 180-260VAC input is -20 to +60°C

Dimensions mm (inches)



Derate Curves

DERATE CURVES:
GN3 3 Phase SSR 25A



DERATE CURVES:
GN3 3 Phase SSR 50A

