NOVA22 SERIES AC OUTPUT

DR2260D30U
SSR 30A 4-32VDC:48-660VAC

Sensata Technologies
Crydom

- Load current 20, 30 and 35 A
- Operating voltage 48-600 VAC
- Control voltage 4-32 VDC and 90-280 VAC/VDC
- Relay or contactor configurations
- Load Monitoring Module available for contactor configuration

PRODUCT DESCRIPTION

NOVA22 solid state relays were developed combining technology and innovation to offer high performing solid state relays in a 22.5mm industrial package. The advanced design and technology used in NOVA22 products provide greater power density than any other 22.5 mm wide SSR in the market: 35 A in DIN rail mount and 95 A in Panel Mount package.

Wide and innovative range of connection
The unique range of terminal options and configurations makes NOVA22 the most versatile solution.

- Relay or contactor terminal configurations
- Screw or spring cage plug-in input terminals
- Standard or elevator screws, allowing the use of ring terminals

Diverse range of applications
NOVA22 solid State Relays can be used in a wide range of ac and dc applications. Ideal for heating applications, NOVA22s are also suitable for motion, power and lighting applications; especially for demanding applications that require higher levels of reliability including:

- Industrial OEMs: Plastic machinery, packaging and material handling equipment, industrial ovens, pumps
- Food & Beverage: Baking ovens, refrigeration, food processing equipment
- Building Equipment: HVAC&R, lighting, access control
- Energy & Infrastructure: Renewable Energy, water and waste water treatments
- Transportation: Railway vehicles, agricultural machinery

Power & Versatility in a 22.5mm Package!

TECHNICAL DATA

Output Specifications (2)

Description	20A	30A	35A
Operating Voltage (47-440Hz) [VRMS]	48-600	48-600	48-600
Transient Overvoltage [Vpk] (3)	1200	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mARMS]	1	1	1
Minimum Off-State dV/dt @ Maximum Rated Voltage [V/_sec]	500	500	500
Load Current, General Use UL508/LC A IEC62314 @ 40°C [ARMS]	20	30	35
Load Current, Motor Starting UL508 FLA/LC B IEC62314 @ 40°C [ARMS]	8.5/4.8	14/7.6	26/14
Minimum Load Current [mARMS]	100	100	150
Maximum 1 Cycle Surge Current (50/60Hz) [Apk]	286/300	716/750	1290/1350
Maximum On-State Voltage Drop @ Rated Current [Vpk]	1.35	1.35	1.3
Maximum 1/2 Cycle I² t for Fusing (50/60Hz) [A² sec]	409/375	2563/2343	8320/7593
Minimum Power Factor (at Maximum Load) (4)	0.5	0.5	0.5
Motor Rating UL 508/IEC62314 [HP (kW)]: 120 VAC	0.5 (0.37)	1 (0.74)	2 (1.5)
Motor Rating UL 508/IEC62314 [HP (kW)]: 240 VAC	1.5 (1.1)	3 (2.2)	5 (3.73)
Motor Rating UL 508/IEC62314 [HP (kW)]: 480 VAC	3 (2.24)	5 (3.7)	10 (7.4)

Input Specifications (2)

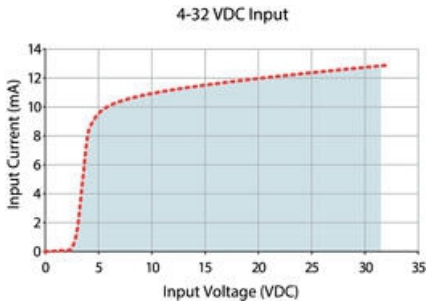
Description	DR2260Dxxx	DR2260Axxx
Control Voltage Range	4-32 VDC (5)	90-280 VAC/VAC (6)
Maximum Reverse Voltage	-32 VDC	-
Minimum Turn-On Voltage	4 VDC	90 VAC/VDC

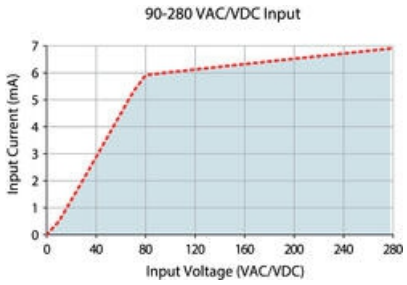
Must Turn-Off Voltage	1 VDC	5 VAC/VDC
Minimum Input Current (for on-state)	10 mA	6 mA
Maximum Input Current	15 mA	10 mA
Nominal Input Impedance	Current Limited	Current Limited
Maximum Turn-On Time [msec]	½ Cycle (7)	20
Maximum Turn-Off Time [msec]	½ Cycle	30

General Specifications (2)

Description	Parameters
Dielectric Strength, Input to Output (50/60Hz)	4000 Vrms
Dielectric Strength, Input/Output to Case (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10^9 Ohm
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range (8)	-40 to 80°C
Ambient Storage Temperature Range	-40 to 100°C
Short Circuit Current Rating (9)	100kA
Weight (typical)	Option “U” 10.5 oz (298 g), Option “V”,“W” 10.6 oz (301 g)
Housing Material	UL94 V-0
Heat Sink Material	Aluminum
Din Rail Clip Material	Zink Plated Steel
Hardware Finish	Nickel Plating
Input Terminal Screw Torque Range (in-lb/Nm)	Option “U” 13-15/1.5-1.7, Option “V”,“W” 5/0.5 (10)
Load Terminal Screw Torque Range (in-lb/Nm)	Option “U” 13-15/1.5-1.7, Option “V”,“W” 18-20/2-2.2
Humidity	95% non-condensing
LED Input Status Indicator	Green

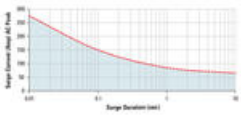
Input Current Information

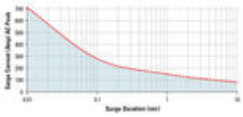


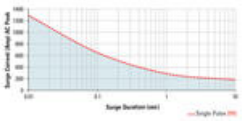


Surge Current Information

DR2260x20x	DR2260x30x	DR2260x35x

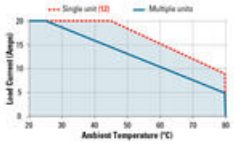




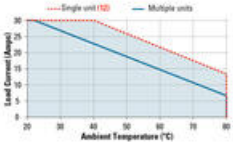


Thermal Derate Information

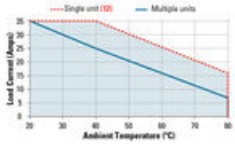
DR2260x20x



DR2260x30x

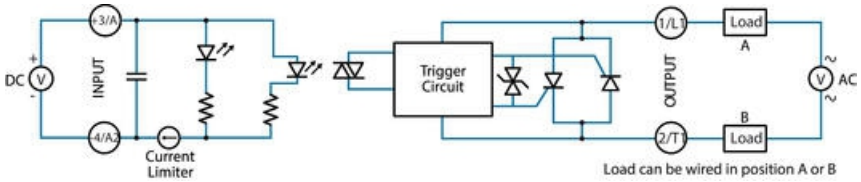


DR2260x35x

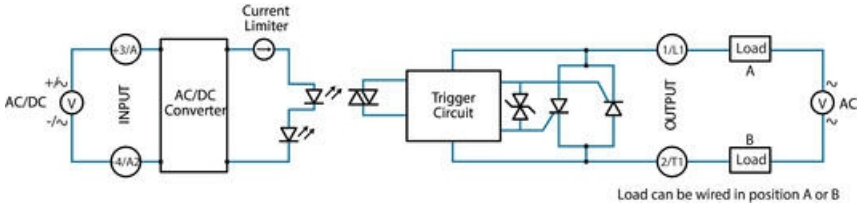


Equivalent Circuit Block Diagrams/Wiring Diagram

DC Control



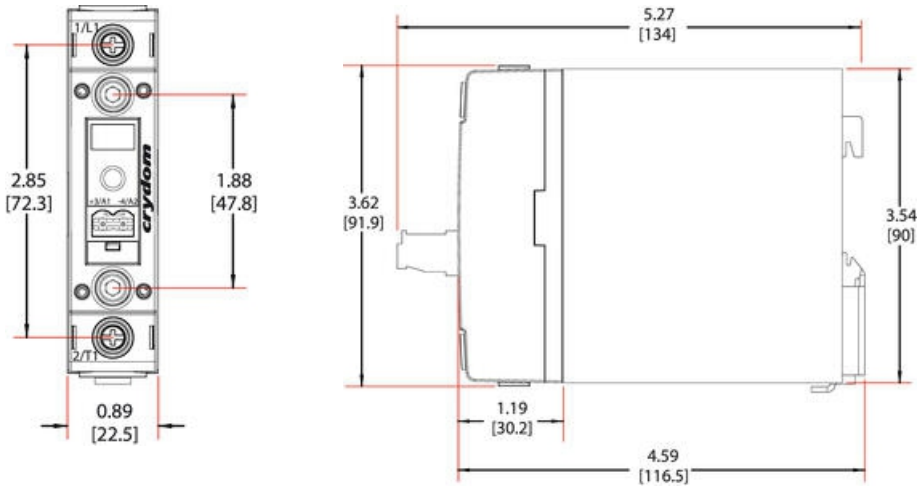
AC/DC Control



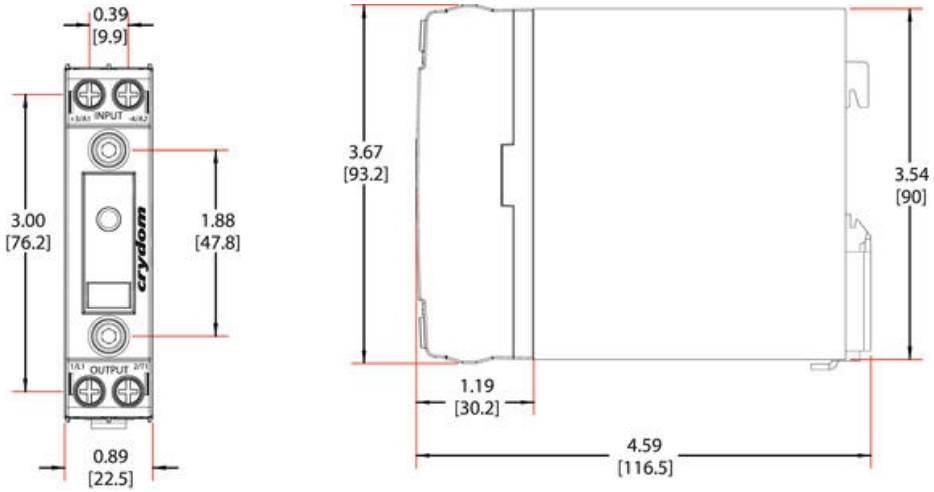
Recommended Wire Sizes			
Terminal Configuration		Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lb)[N]
Output (13) Relay "U" suffix		2 x 18 AWG (1 mm²) Stranded	20 [88]
		2 x 10 AWG (6 mm²) Stranded	60 [266]
Input Relay "U" suffix		2 x 18 AWG (1 mm²) Stranded	20 [88]
		2 x 12 AWG (4 mm²) Stranded	40 [177]
Output Contactor "V" &"W" suffixes		2 x 20 AWG (0.75 mm²) [minimum]	25 [111]
		2 x 10 AWG (6 mm²)	80 [355]
		2 x 8 AWG (10 mm²) [maximum]	90 [400]
Input Contactor "V" &"W" suffixes	Screw	30 AWG (0.05 mm²) [minimum]	4.5 [20]
		12 AWG (3.3 mm²) [maximum]	30 [133]
	Spring	26 AWG (0.13 mm²) [minimum]	5 [22]
		12 AWG (3.3 mm²) [maximum]	5 [22]

Mechanical Specifications
Tolerances ±0.02 in / 0.5 mm
All dimensions are in : inches (milimeters)

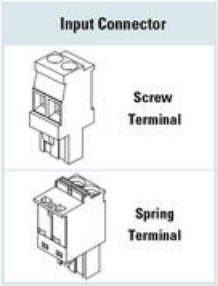
Contactor Configuration



Relay Configuration

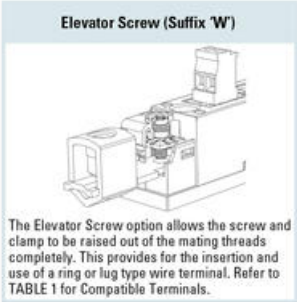


Input Connector



Protective Earth Connection

Elevator Screw (Suffix 'W')



Compatible Terminals

Recommended Accessories

Recommended Accessories		
Connectors	ID Marker	Leg Terminal
CP201	CNLB	TRM0
CP202	CNLN	TRM6
	CNL2	

General Notes
(1) Control voltage 18-52 VAC/VDC is available upon request.
(2) All parameters at 25°C unless otherwise specified.
(3) Output will self trigger between 900-1200 Vpk, not suitable for capacitive loads.
(4) High inductive loads requires nominal control voltage; AC input models only.
(5) Increase minimum voltage by 1 V for operations from -20 to -40°C.
(6) For ambient temperatures above 40°C the maximum control voltage must not exceed 250 VAC/VDC.
(7) Turn-on time for Instantaneous turn-on versions is 0.1 msec.
(8) AC input models operating range is -20 to 60 °C.
(9) When protected with the appropriate class and rated fuse. For detailed info please contact Crydom Technical Support.
(10) Input torque only for contactor (V,W) with screw terminals Connector.
(11) For single surge pulse Tc=25°C; Tj=125°C. For AC Output SSRs, AC RMS value of surge current equals the peak value divided by _2 (1.414).
(12) Minimum spacing to obtain max. current is 22.5mm between adjacent units.
(13) For 35 Amp Relay (”U”) layout models, use Pin Terminals (L 0.410 in x Ø 0.102 in) to install 8 AWG wire.
(14) Applicable to Relay (”U”) option.

Agency approvals, Conformances and EMC
cUL US E116949 cRU US (14) E116949 TDV IEC CE RoSH emc
Certification in accordance with:
United States Standard for Industrial Control Equipment - UL 508 and
Canadian Standard Association for Industrial Control Equipment – C22.2 No. 14.
TUV Certified in accordance to EN62314
Vibration Resistance:
IEC 60068-2-6: Amplitude Range 10-500 Hz, Displacement 0.75mm
Shock Resistance:
IEC 60068-2-27: Peak Acceleration 50g, Duration11ms.

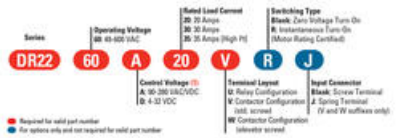
Electromagnetic Compatibility				
Generic Standard	Immunity Tests	Test Specification Level		Performance
IEC 61000-6-2 Immunity for Industrial Environments	Electrostatic Discharge	4kV air discharge		Criterion A
	IEC 61000-4-2	4kV contact discharge		Criterion A
	Fast transients (burst)	Output	2kV, 5kHz, 100kHz	Criterion B
	IEC 61000-4-4	Input	1kV, 5kHz, 100kHz	Criterion B
	Surge	Output	1kV Line to Line	Criterion B
	IEC 61000-4-5		2kV Line to Earth	Criterion B

PART NUMBERS

Product Selection

Control Voltage	20A	30A	35A
90-280 VAC/VDC	DR2260A20x	DR2260A30x	DR2260A35x
4-32 VDC	DR2260D20x	DR2260D30x	DR2260D35x

Available Options



SPECIFICATIONS

Approvals	CE, CSA, EMC, UL
Connection Thread	Screw terminal
Control voltage	4-32V dc
Control voltage DC max	32 V
Control voltage DC min	4 V
Height	93.2 mm
I2t Value	2563 A^2s
Insulation voltage in/out	4000 V
IP Class	IP20
Leakage Current At V Max, T = 25 ° C Max	1 mA
Load Current Min	100 mA
Load Voltage	ac
Number of poles	1
Output current	30 A
Output voltage (String)	48-600V ac

Peak current	716
Peak Voltage	1200 V
Power Consumption max	15 mA
Power Consumption min	10 mA
Temperature range bearing, from	-40 °C
Temperature range bearing, to	100 °C
Temperature range from	-40 °C
Temperature range to	80 °C
Tripping voltage	1 V
Weight	298 g
Width	22.5 mm
Voltage Drop Over The Semi-Conductor at Imax	1.35 V