

NOVA22 SERIES AC OUTPUT

DR2260D20U

SSR 20A 4-32VDC:48-660VAC

- 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.

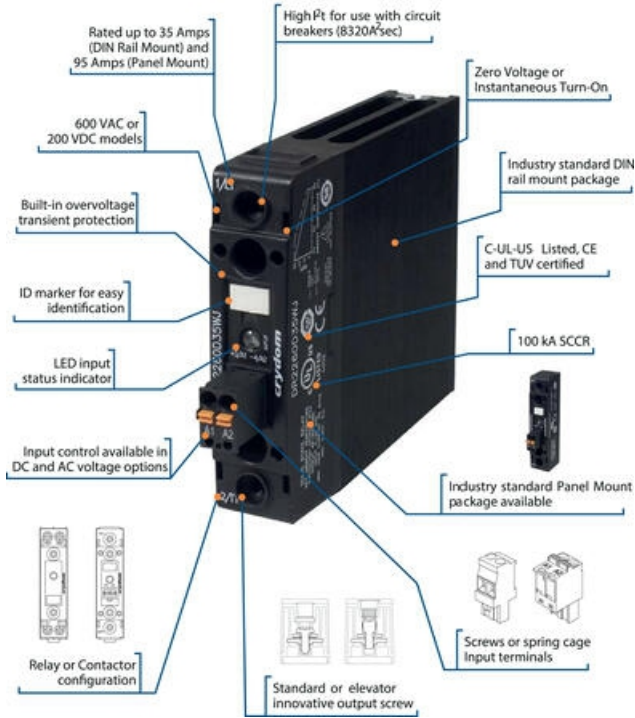
- Relay or contactor terminal configurations
- Screw or spring cage plug-in input terminals
- Standard or elevator screws, allowing the use of ring terminals

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)

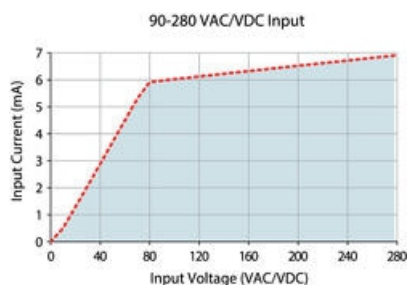
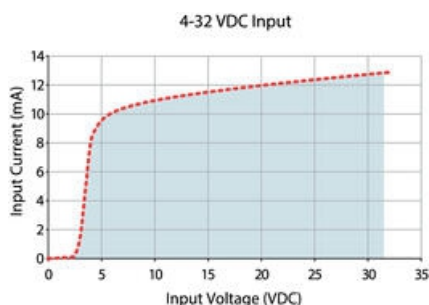
Description	DR2260Dxxx	DR2260Axxx
Control Voltage Range	4-32 VDC (5)	90-280 VAC/VAC (6)
Maximum Reverse Voltage	-32 VDC	-
Minimum Turn-On Voltage	4 VDC	90 VAC/VDC

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

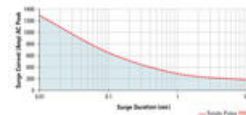
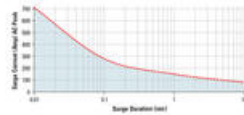
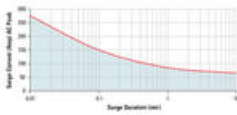


Surge Current Information

DR2260x20x

DR2260x30x

DR2260x35x

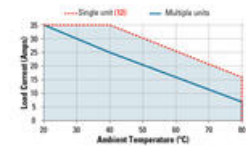
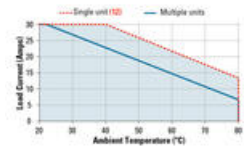
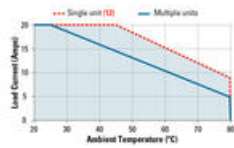


Thermal Derate Information

DR2260x20x

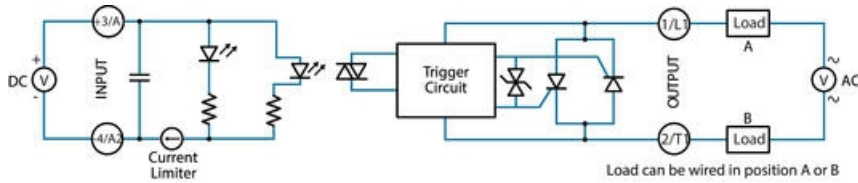
DR2260x30x

DR2260x35x

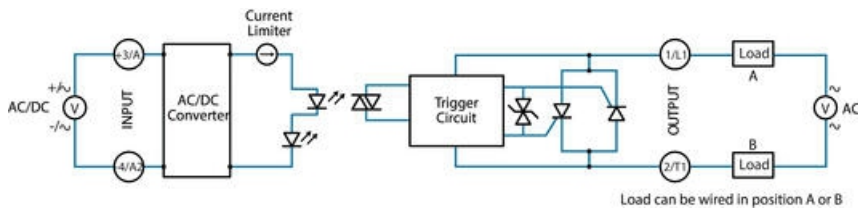


Equivalent Circuit Block Diagrams/Wiring Diagram

DC Control



AC/DC Control



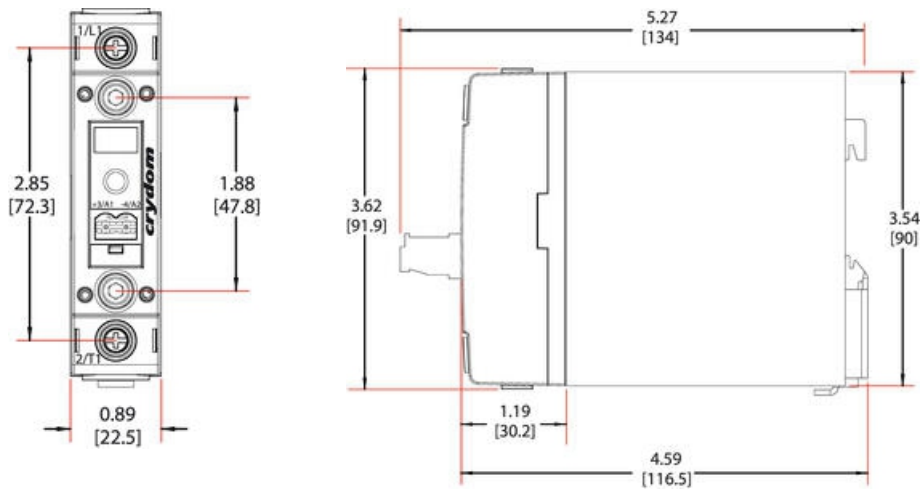
Recommended Wire Sizes			
Terminal Configuration	Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lb)[N]	
Output (13)	2 x 18 AWG (1 mm ²) Stranded	20 [88]	
Relay "U" suffix	2 x 10 AWG (6 mm ²) Stranded	60 [266]	
Input	2 x 18 AWG (1 mm ²) Stranded	20 [88]	
Relay "U" suffix	2 x 12 AWG (4 mm ²) Stranded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

Mechanical Specifications

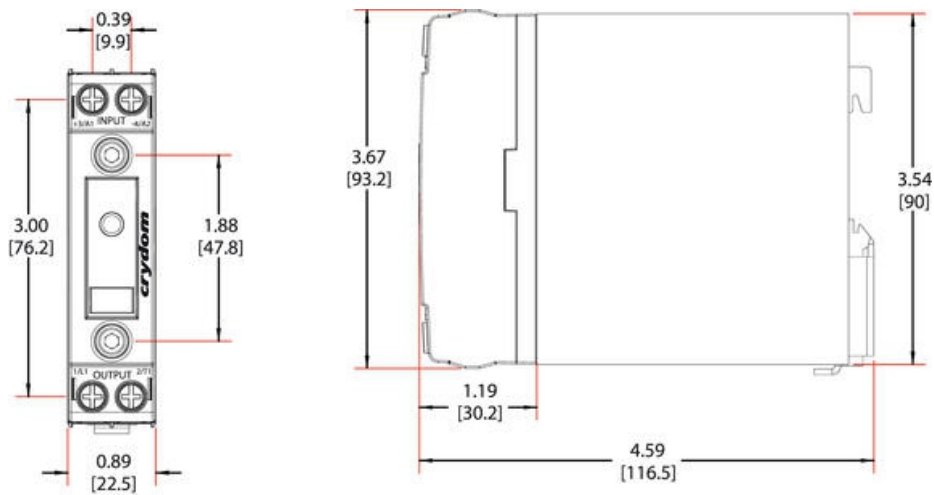
Tolerances ±0.02 in / 0.5 mm

All dimensions are in : inches (millimeters)

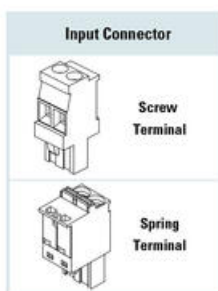
Contactor Configuration



Relay Configuration



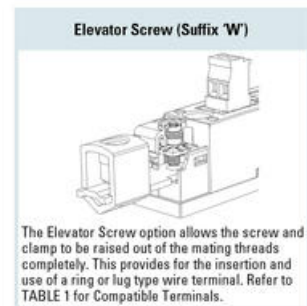
Input Connector



Protective Earth Connection



Elevator Screw (Suffix 'W')



Compatible Terminals

Recommended Accessories

TABLE 1: Compatible Terminals

Terminal	Pin Lug	Ring Lug	Endpin Lug	Endpin Lug
Options Part No.			1100	1100
Min. Wire Size (AWG)	18-22	18-22	18-22	18-22
Max. Wire Size (AWG)	10	10	10	10

Recommended Accessories

Connectors	ID Marker	Lug Terminal
CP201	CNLB	TRAD
CP202	CNLN	TRAM
	CNL2	

New Accessories!

Connectors
Part number: CP201, CP202
Plugable input connectors, 2 position, with screw terminals (CP201) or spring wire terminals (CP202). Compatible with Connector Configuration 01/02/03/04.

Lug Terminal
Part number: TRAD
Eager wire lug for AWG 10-12 used to AWG 10-12 wire size. Not used with "Standard" screw terminal ("U" suffix) 01/02/03/04.

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 $\sqrt{2}$ (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, Duration 11ms.

Electromagnetic Compatibility

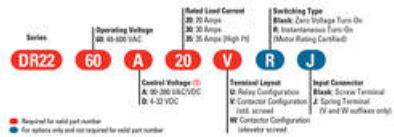
Generic Standard	Immunity Tests	Test Specification Level	Performance
IEC 61000-6-2 Immunity for Industrial Environments	Electrostatic Discharge	4kV air discharge	Criterion A
	IEC 61000-4-2	4kV contact discharge	Criterion A
	Fast transients (burst)	Output 2kV, 5kHz, 100kHz	Criterion B
	IEC 61000-4-4	Input 1kV, 5kHz, 100kHz	Criterion B
	Surge	Output 1kV Line to Line	Criterion B
	IEC 61000-4-5	Output 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
I ² t Value	409 A ² s
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	20 A
Output voltage (String)	48-600V ac

Peak current	286 A
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 I _{max}	1,35 V

