



## DR22 Series

### DC Output DIN Rail Mount SSRs

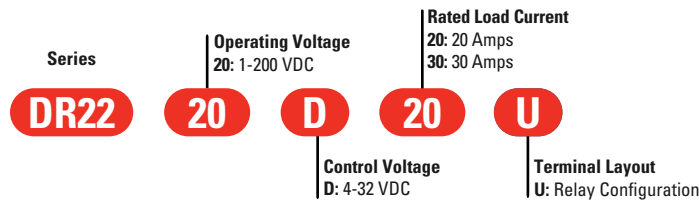
- Output ratings up to 30 Amps at 200 VDC
- Integral heat sink eliminates the need for complex thermal calculations
- DBC substrate for superior thermal performance
- LED input status indicator
- IP20 touch-safe housing
- 1kHz Maximum PWM Frequency
- 3750 VAC optical isolation
- C-UL-US approved

**NOVA22**

### PRODUCT SELECTION

Control Voltage	20 A	30 A
4-32 VDC	DR2220D20U	DR2220D30U

### AVAILABLE OPTIONS



### OUTPUT SPECIFICATIONS <sup>(1)</sup>

Description	20 A	30 A
Absolute Maximum Rating [VDC]	200	200
Recommended Operating Voltage [VDC]	1-150	1-150
Maximum Off-State Leakage Current @ Rated Voltage [mA]	0.1	0.2
Load Current, DC General Use UL508 @ 40°C [ADC]	20	30
Load Current, DC Motor Starting UL508 FLA @ 40°C [ADC]	4.1	5.4
Minimum Load Current [mA] <sup>(2)</sup>	5	5
Maximum Surge Current [ADC] (10ms)	58	86
Maximum On-State Voltage Drop @ Rated Current [VDC]	0.680	0.535
Maximum On-State Resistance [RDS-ON][Ohms]	0.034	0.016
Maximum Pulse Width Modulation Frequency [Hz] <sup>(3)</sup>	1000	900
Motor Rating UL 508 [HP (kW)]: 120 VDC	1/3 (0.25)	1/2 (0.37)

### INPUT SPECIFICATIONS <sup>(1)</sup>

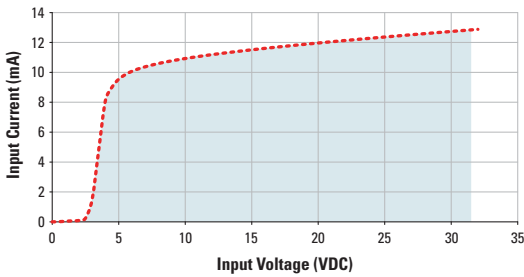
Description	DC Control
Control Voltage Range	4-32 VDC
Maximum Reverse Voltage	-32 VDC
Minimum Turn-On Voltage <sup>(4)</sup>	4 VDC
Must Turn-Off Voltage	1 VDC
Minimum Input Current (for on-state)	11 mA
Maximum Input Current	15 mA
Nominal Input Impedance	Current Regulated
Maximum Turn-On Time [µsec]	75
Maximum Turn-Off Time [µsec]	100

**GENERAL SPECIFICATIONS <sup>(1)</sup>**

Description	Parameters
Dielectric Strength, Input to Output (50/60Hz)	3750 VRMS
Dielectric Strength, Input/Output to Case (50/60Hz)	2500 VRMS
Minimum Insulation Resistance (@ 500 VDC)	10 <sup>9</sup> Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range	-40 to 80 °C
Ambient Storage Temperature Range	-40 to 100 °C
Weight (typical)	10.5 oz (298 g)
Housing Material	UL94 V-0
Heat Sink Material	Aluminum
Din Rail Clip Material	Zinc Plated Steel
Hardware Finish	Nickel Plating
Input Terminal Screw Torque Range (lb-in/Nm)	13-15/1.5-1.7
Load Terminal Screw Torque Range (lb-in/Nm)	13-15/1.5-1.7
Humidity	95% non-condensing
LED Input Status Indicator	Green

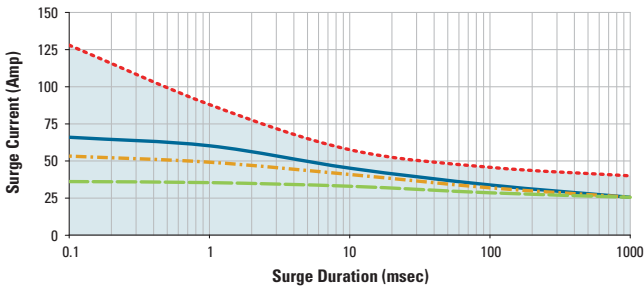
**INPUT CURRENT INFORMATION**

4-32 VDC Input

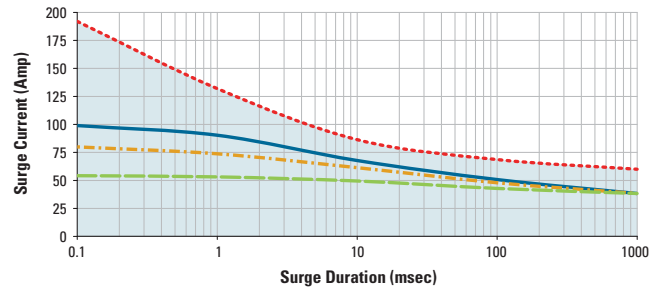


**SURGE CURRENT INFORMATION**

DR2220D20U



DR2220D30U



--- Single Pulse \*    — Duty Factor (10%) \*\*    - - - Duty Factor (20%) \*\*    - - - Duty Factor (50%) \*\*

For Pulse Width Modulation applications select the curve according to the duty factor and pulse duration as follows:

$$\text{Duty Factor} = \frac{\text{Pulse Width}}{\text{Period}} \times 100 (\%)$$

Duty Factor 10%



Duty Factor 20%



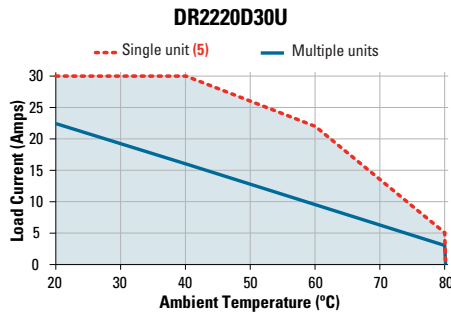
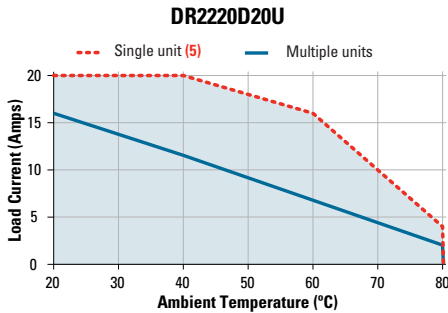
Duty Factor 50%



\* for Single Surge Pulse Tc=40°C ;Tj=175°C

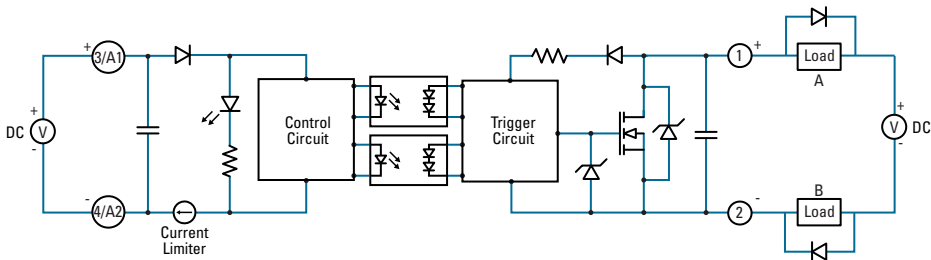
\*\* for Repetitive Surge Pulse Tc=40°C ;Tj=130°C

**THERMAL DERATE INFORMATION**



**EQUIVALENT CIRCUIT BLOCK DIAGRAMS/WIRING DIAGRAM**

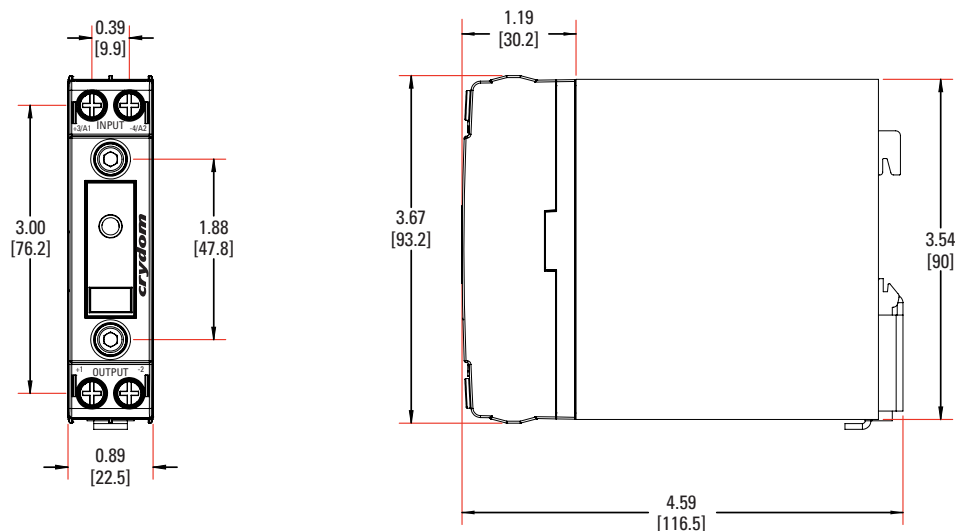
Load can be wired in position A or B inductive loads must be diode suppressed.



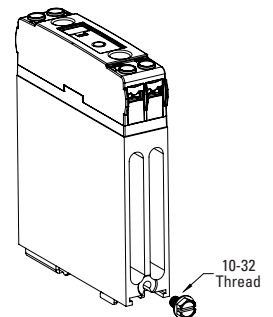
Recommended Wire Sizes		
Terminal Configuration	Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lb)[N]
Output Relay "U" suffix	2 x 18 AWG (1 mm <sup>2</sup> ) Stranded	20 [88]
	2 x 10 AWG (6 mm <sup>2</sup> ) Stranded	60 [266]
Input Relay "U" suffix	2 x 18 AWG (1 mm <sup>2</sup> ) Stranded	20 [88]
	2 x 12 AWG (4 mm <sup>2</sup> ) Stranded	40 [177]

**MECHANICAL SPECIFICATIONS**

Tolerances: ±0.02 in / 0.5 mm  
All dimensions are in: inches [millimeters]

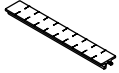


**Protective Earth Connection**



Protective Earth (PE) screw type recommended is 10-32 UNC standard not provided with SSR. Through the use of a DIN rail ground (protective conductor) terminal block, the DIN rail itself can be used as the grounding bus bar. In this case, the zinc plated steel material used for the DIN rail clip of DR22 models, permits a secure path to ground and avoid the need of a further PE connection.

**ACCESSORIES**

Recommended Accessories
 <p><b>ID Marker</b></p>
CNLB
CNLN
CNL2

**AGENCY APPROVALS, CONFORMANCES AND EMC**



**Certification in accordance with:**

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.

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) IEC 61000-4-4	Output	2kV, 5kHz, 100kHz	Criterion B
		Input	1kV, 5kHz, 100kHz	Criterion B
	Surge IEC 61000-4-5	Output	1kV Line to Line	Criterion B
			2kV Line to Earth	Criterion B

**GENERAL NOTES**

- (1) All parameters at 25°C unless otherwise specified.
- (2) Low current loads and high ambient temperature can affect turn-on time.
- (3) 8 VDC Minimum control voltage. Resistive loads only . Consider switching losses; at maximum frequency reduce to 75% output current.  
 Recommended suppressor diode connected at load side, see wiring diagram.
- (4) Increase minimum voltage by 1 V for operations from -20 to -40°C.
- (5) Minimum spacing to obtain max. current is 22.5mm between adjacent units.

**⚠ DANGER / PELIGRO / DANGER /GEFAHR / PERICOLO / 危險**

<p><b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH.</b></p> <ul style="list-style-type: none"> <li>• Disconnect all power before installing or working with this equipment.</li> <li>• Verify all connections and replace all covers before turning on power.</li> </ul> <p><b>Failure to follow these instructions will result in death or serious injury.</b></p>	<p><b>RIESGO DE DESCARGA ELECTRICA O EXPLOSION.</b></p> <ul style="list-style-type: none"> <li>• Desconectar todos los suministros de energia a este equipo antes de trabajar con este equipo.</li> <li>• Verificar todas las conexiones y colocar todas las tapas antes de energizar el equipo.</li> </ul> <p><b>El incumplimiento de estas instrucciones puede provocar la muerte o lesiones serias.</b></p>	<p><b>RISQUE DE DESCARGE ELECTRIQUE OU EXPLOSION</b></p> <ul style="list-style-type: none"> <li>• Eteindre toutes les sources d'énergie de cet appareil avant de travailler dessus de cet appareil</li> <li>• Vérifier tous connections, et remettre tous couverts en olace avant de mettre sous</li> </ul> <p><b>De non-suivi de ces instructions provoquera la mort ou des lésions sérieuses.</b></p>	<p><b>GEFAHR EINES ELEKTRISCHE N SCHLAGES ODER EINER EXPLOSION.</b></p> <ul style="list-style-type: none"> <li>• Stellen Sie jeglichen Strom ab, der dieses Gerät versorgt, bevor Sie an dem Gerät Arbeiten durchführen</li> <li>• Vor dem Drehen auf Energie alle Anschlüsse überprüfen und alle Abdeckungen ersetzen.</li> </ul> <p><b>Unterlassung dieser Anweisungen können zum Tode oder zu schweren Verletzungen führen.</b></p>	<p><b>RISCHIO DI SCOSSA ELETTRICA O DELL'ESPLOSIONE.</b></p> <ul style="list-style-type: none"> <li>• Spenga tutta l'alimentazione che fornisce questa apparecchiatura prima di lavorare a questa apparecchiatura</li> <li>• Verificare tutti i collegamenti e sostituire tutte le coperture prima dell'accensione</li> </ul> <p><b>L'omissione di queste istruzioni provocherà la morte o lesioni serie</b></p>	<p><b>存在电击、爆炸或电弧闪烁危险</b></p> <ul style="list-style-type: none"> <li>• 在操作此设备之前请先关闭电源。</li> </ul> <p><b>若不遵守这些说明,可能会导致严重的人身伤害甚至死亡。</b></p>
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**⚠ WARNING / AVERTISSEMENT / WARNUNG /ADVERTENCIA / AVVERTENZA / 警告**

<p><b>RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE</b></p> <ul style="list-style-type: none"> <li>• The product's side panels may be hot, allow the product to cool before touching.</li> <li>• Follow proper mounting instructions including torque values.</li> <li>• Do not allow liquids or foreign objects to enter this product.</li> </ul> <p><b>Failure to follow these instructions can result in serious injury, or equipment damage.</b></p>	<p><b>RISQUE DE DOMMAGE MATERIEL ET DE SURCHAUFFE DU BOITIER</b></p> <ul style="list-style-type: none"> <li>• Les panneaux latéraux du produit peuvent être chauds. Laisser le produit refroidir avant de le toucher.</li> <li>• Respecter les consignes de montage, et notamment les couples de serrage.</li> <li>• Ne pas laisser pénétrer de liquide ni de corps étrangers à l'intérieur du produit.</li> </ul> <p><b>Le non-respect de cette directive peut entraîner, des lésions corporelles graves ou des dommages matériels.</b></p>	<p><b>GEFAHR VON MATERIALSCHÄDEN UND GEHÄUSEERHITZUNG</b></p> <ul style="list-style-type: none"> <li>• Die Seitenwände können heiß sein. Lassen Sie das Produkt abkühlen, bevor Sie es berühren.</li> <li>• Beachten Sie die Montageanweisungen,</li> <li>• Führen Sie keine Flüssigkeiten oder Fremdkörper in das Produkt ein.</li> </ul> <p><b>Die Nichtbeachtung dieser Anweisung kann Körperverletzung oder Materialschäden zur Folge haben.</b></p>
<p><b>RIESGO DE DAÑOS MATERIALES Y DE SOBRECIENTAMIENTO DE LA UNIDAD</b></p> <ul style="list-style-type: none"> <li>• Los paneles laterales del producto pueden estar calientes. Esperar que el producto se enfríe antes de tocarlo.</li> <li>• Respetar las instrucciones de montaje, y en particular los pares de apretado.</li> <li>• No dejar que penetren líquidos o cuerpos extraños en el producto.</li> </ul> <p><b>Si no se respetan estas precauciones pueden producirse graves lesiones, daños materiales.</b></p>	<p><b>RISCHIO DI DANNI MATERIALI E D'INVOLUCRO CALDO</b></p> <ul style="list-style-type: none"> <li>• I pannelli laterali dell'apparecchio possono scottare; lasciar quindi raffreddare il prodotto prima di toccarlo.</li> <li>• Seguire le istruzioni di montaggio corrette.</li> <li>• Non far entrare liquidi o oggetti estranei in questo apparecchio.</li> </ul> <p><b>La mancata osservanza di questa precauzione può causare gravi rischi per l'incolumità personale o danni alle apparecchiature.</b></p>	<p><b>材料损坏和高温外壳的危险性</b></p> <ul style="list-style-type: none"> <li>• 产品的一侧面板可能很热, 在其冷却前请不要触碰。</li> <li>• 遵照正确的安装说明, 包括扭矩值。</li> <li>• 请勿让液体及其他异物进入本产品。</li> </ul> <p><b>如不能正确执行这些操作说明, 极有可能造成严重人体伤害或者设备的损坏。</b></p>

**ANNEX - ENVIROMENTAL INFORMATION**

The environmental information disclosed in this annex including the EIP Pollution logo are in compliance with People’s Republic of China Electronic Industry Standard SJ/T11364 – 2006, Marking for Control of Pollution Caused by Electronic Information Products.

Part Name	Toxic or hazardous Substance and Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Semiconductor die	X	O	O	O	O	O
Solder	X	O	O	O	O	O

附件 – 环保信息

此附件所标示的包括电子信息产品污染图标的环保信息符合中华人民共和国电子行业标准 SJ/T11364 - 2006, 电子信息产品污染控制标识要求。

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
半导体芯片	X	O	O	O	O	O
焊接点	X	O	O	O	O	O



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