

## PM22 SERIES

PANEL MOUNT SOLID STATE RELAYS



### Features

- Output ratings up to 95 Amps at 600VAC
- Built-in overvoltage protection
- DBC substrate for superior thermal performance
- LED input status indicator
- IP20 touch-safe housing
- AC or DC control
- 4000 VAC optical isolation
- C-UL-US and TUV approved

### PRODUCT SELECTION

Control Voltage	25 A	50 A	95 A
90-280 VAC/VDC	PM2260A25V	PM2260A50V	PM2260A95V
4-32 VDC	PM2260D25V	PM2260D50V	PM2260D95V

### SPECIFICATIONS

#### Output <sup>(1)</sup>

Description	25 A	50 A	95 A
Operating Voltage (47-440Hz) [Vrms]	48-600	48-600	48-600
Transient Overvoltage [Vpk] <sup>3</sup>	1200	1200	1200
Maximum Off-State Leakage Current @ Rated Voltage [mA <sub>rms</sub> ]	1	1	1
Minimum Off-State dv/dt @ Maximum Rated Voltage [V/μsec]	500	500	500
Load Current, General Use UL508/LC A IEC 62314 @ 40°C [Arms] <sup>4</sup>	25	50	95
Load Current, Motor Starting UL508 FLA/LC B IEC 62314 @ 40°C [Arms] <sup>4</sup>	8.5/4.8	14/7.6	26/14
Minimum Load Current [Arms]	100	100	150
Maximum 1 Cycle Surge Current (50/60Hz) [A <sub>pk</sub> ]	286/300	716/750	1290/1350
Maximum On-State Voltage Drop @ Rated Current [V <sub>pk</sub> ]	1.35	1.35	1.30
Thermal Resistance Junction to Case (R <sub>jc</sub> ) [°C/W]	0.49	0.27	0.2
Maximum 1/2 Cycle I <sup>2</sup> t for Fusing (50/60Hz) [A <sup>2</sup> sec]	409/375	2563/2343	8320/7593
Minimum Heat Sink for Rated Current @ 40°C [°C/W]	2	0.7	0.25
Minimum Power Factor (at Maximum Load) <sup>5</sup>	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)

Description	PM2260DxxV	PM2260AxxV
Control Voltage Range	4-32 VDC <sup>6</sup>	90-280 VAC/VDC <sup>7</sup>
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)	7 mA	6 mA
Maximum Input Current	15 mA	10 mA
Nominal Input Impedance	Current Regulated	Current Limited
Maximum Turn-On Time [msec]	1/2 Cycle <sup>8</sup>	20
Maximum Turn-Off Time [msec]	1/2 Cycle	30

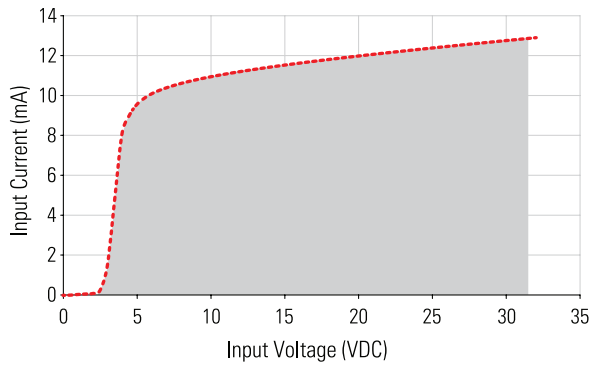
General <sup>(1)</sup>

Description	Parameters
Dielectric Strength, Input to Output (50/60Hz)	4000 Vrms
Dielectric Strength, Input/Output to Baseplate (50/60Hz)	4000 Vrms
Minimum Insulation Resistance (@ 500 VDC)	10 <sup>9</sup> Ohms
Maximum Capacitance, Input/Output	8 pF
Ambient Operating Temperature Range <sup>9</sup>	-40 to 80 °C
Ambient Storage Temperature Range	-40 to 100 °C
Short Circuit Current Rating <sup>10</sup>	100kA
Weight (typical)	2.3 oz (65 g)
Housing Material	UL94 V-0
Baseplate Material	Aluminum
Hardware Finish	Nickel Plating
Input Terminal Screw Torque Range (lb-in/Nm)	5/0.5 <sup>11</sup>
Load Terminal Screw Torque Range (lb-in/Nm)	18-20 / 2-2.2
SSR Mounting Screw Torque Range (lb-in/Nm)	20-25/2.2-2.8
Humidity	95% non-condensing
LED Input Status Indicator	Green

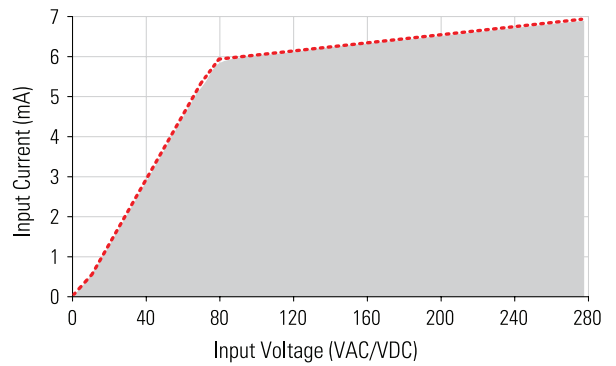


### INPUT CURRENT INFORMATION

4-32 VDC Input

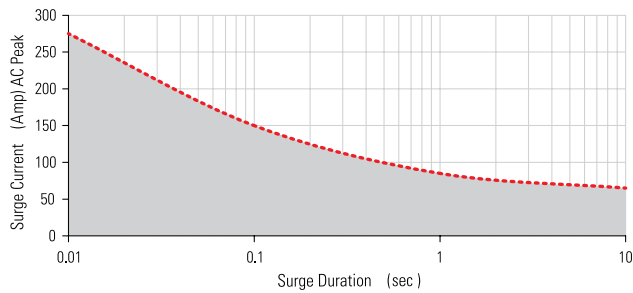


90-280 VAC/VDC Input

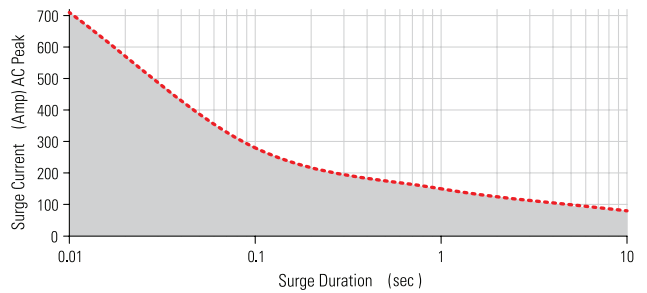


### SURGE CURRENT INFORMATION

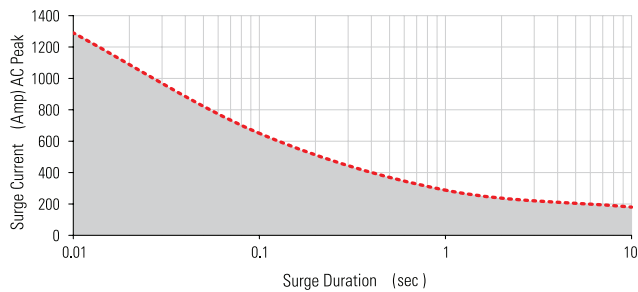
PM2260x25V



PM2260x50V



PM2260x95V

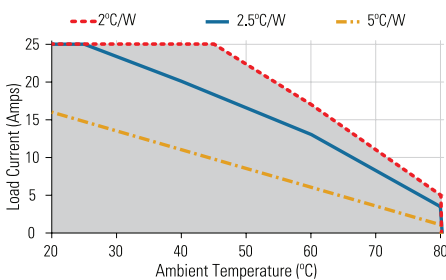


--- Single Pulse <sup>12</sup>

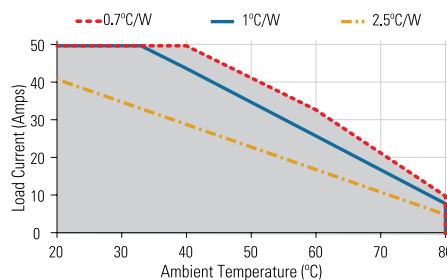


### THERMAL DERATE INFORMATION <sup>9</sup>

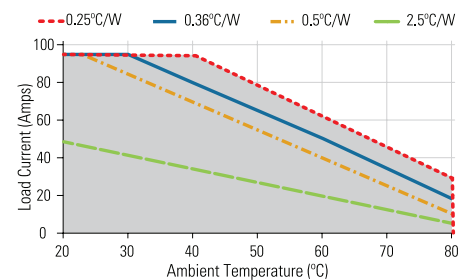
PM22xxx25x



PM2260x50V



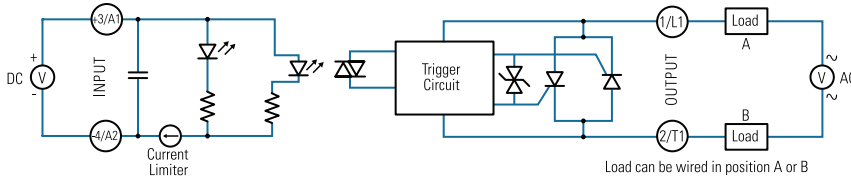
PM2260x95V



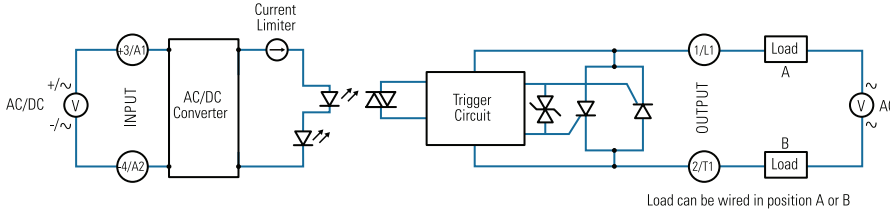


## EQUIVALENT CIRCUIT BLOCK DIAGRAMS/WIRING DIAGRAM

### DC Control



### AD/DC Control



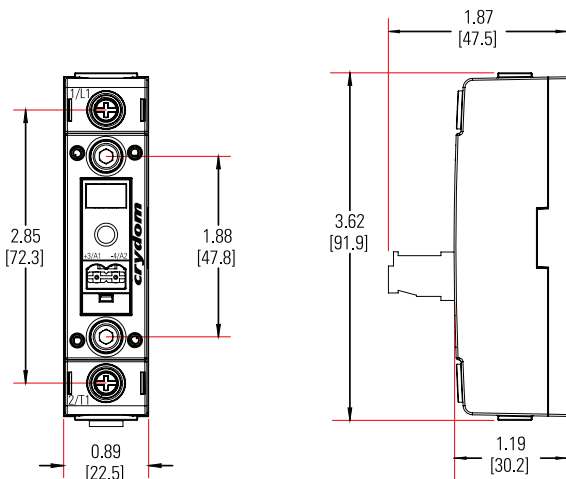
### Recommended Wire Sizes

Terminal Configuration	Wire Size (Solid / Stranded)	Wire Pull-Out Strength (lb) [N]	
Output	2 x 20 AWG (0.75 mm <sup>2</sup> ) [minimum]	25 [111]	
	2 x 10 AWG (6 mm <sup>2</sup> )	80 [355]	
Input	Screw	2 x 8 AWG (10 mm <sup>2</sup> ) [maximum]	90 [400]
		30 AWG (0.05 mm <sup>2</sup> ) [minimum]	4.5 [20]
	Spring	12 AWG (3.3 mm <sup>2</sup> ) [maximum]	30 [133]
		26 AWG (0.13 mm <sup>2</sup> ) [minimum]	5 [22]
		12 AWG (3.3 mm <sup>2</sup> ) [maximum]	5 [22]



## MECHANICAL SPECIFICATIONS

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



Input Connector	
	Screw Terminal
	Spring Terminal



## ORDERING OPTIONS

Example : PM2260A25VRJH

	PM22	60	A	25	V	R	J	H
<b>Series</b>	PM22							
<b>PM22</b>								
<b>Operating Voltage</b>		60						
<b>60: 48-600 VAC</b>								
<b>Control Voltage<sup>1</sup></b>			A					
<b>A: 90-280 VAC/VDC D: 4-32 VDC</b>								
<b>Rated Load Current</b>				25				
<b>25: 25 Amps 50: 50 Amps 95: 95 Amps</b>								
<b>Terminal Layout</b>					V			
<b>V: Contactor Configuration</b>								
<b>Switching Type</b>						R		
<b>Blank: Zero Voltage Turn-On R: Instantaneous Turn-On (Motor Rating Certified)</b>								
<b>Input Connector</b>							J	
<b>Blank: Screw Terminal J: Spring Terminal</b>								
<b>Thermal Pad</b>								H
<b>Blank: Not Included H: Included</b>								

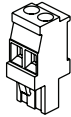
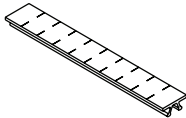

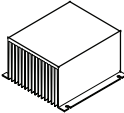
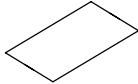
— Required for valid part number  
□ For options only and not required for valid part number







## 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) Heat sinking required, see derating curves. For load currents greater than 50A use conductors with at least 75°C insulation.
- (5) High inductive loads requires nominal control voltage; AC input models only.
- (6) Increase minimum voltage by 1 V for operations from -20 to -40°C.
- (7) For ambient temperatures above 40°C the maximum control voltage must not exceed 250 VAC/VDC.
- (8) Turn-on time for Instantaneous turn-on versions is 0.1 msec.
- (9) AC input models operating range is -20 to 60°C.
- (10) When protected with the appropriate class and rated fuse. For detailed info please contact Sensata Technical Support.
- (11) Input torque to screw terminals Connector.
- (12) 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).



Recommended Accessories					
					
Connectors	ID Marker	Hardware Kit	Heat Sink Part No.	Thermal Resistance [°C/W]	Thermal Pad
CP201 CP202	CNLB CNLN CNL2	HK8	HS259DR HS073 HS072 HS053 HS033 HS023	2.5 0.7 0.7 0.5 0.36 0.25	HSP-7

<b>Connectors</b> Part number: CP201, CP202		<b>Hardware Kit</b> Part number: HK8	
	Pluggable input connectors, 2 position, with screw terminals (CP201) or spring type terminals (CP202). Compatible with Contactor configuration NOVA22 SSRs.		Bag with 2 SSR mounting screws 8-32 x 3/8, Hex Socket Cap, compatible with PM22 Series Panel Mount SSRs. Used to mount the SSR onto any of our compatible heat sinks.
<b>Heat Sink</b> Part number: HS259DR		<b>Thermal Pad</b> Part number: HSP-7	
	DIN Rail mountable heat sink with 2.5°C/W thermal resistance. Heat sink material is aluminum with black anodized finish. Suitable for mounting a single PM22 Series Panel Mount SSRs.		Non-adhesive thermal pad for half-puck package SSRs. Compatible with PM22 Series Panel Mount SSRs.

**AGENCY APPROVALS & CERTIFICATIONS**

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 IEC 61000-4-2	8kV air discharge		Criterion A
		6kV 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 Earth	Criterion B
			2kV Line to Earth	Criterion B
		AC Input Option	1kV Line to Earth	Criterion A
			2kV Line to Earth	Criterion A



**WARNINGS**



**RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE**

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

**Failure to follow these instructions can result in serious injury, or equipment damage.**



**HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH**

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

**Failure to follow these instructions will result in death or serious injury.**

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