

# Product data sheet

Specifications



Harmony, Solid state relay, 20 A, DIN rail mount, zero voltage switching, input 90...280 V AC/DC, output 48...600 V AC

SSD1A320M7C3

## Main

|                            |   |
|----------------------------|---|
| Range of product           | Harmony Solid State Relays                            |
| Product or component type  | Solid state relay up to 20 A                          |
| Device short name          | SSD1  |
| Number of channels         | 1   |
| Number of phases           | 1 phase   |
| Product configuration type | Contactors configuration with pluggable spring input  |
| Mounting support           | 35 mm symmetrical DIN rail conforming to EN/IEC 60715 |
| Rated current              | 20 A  |
| Output switching mode      | Zero voltage switching                                |

## Complementary

|                                 |  |
|---------------------------------|--|
| Operating frequency             | 47...440 Hz  |
| Rated duty                      | Uninterrupted  |
| Output voltage                  | 48...600 V AC  |
| Control circuit voltage         | 90...280 V AC/DC   |
| Tightening torque               | 2...2.2 N.m for load output<br>18...20 lb.in for load output   |
| Connections - terminals         | Plug-in/spring terminals, clamping connection capacity:0.13...3.30 mm <sup>2</sup> , AWG 26...AWG 12 for input<br>Telescopic screw, clamping connection capacity:0.75...10 mm <sup>2</sup> , AWG 20...AWG 8 for output |
| Dielectric strength             | 4 kV AC for input/output circuit<br>4 kV AC for input or output to case  |
| Rated impulse withstand voltage | 6 kV for input/output circuit<br>6 kV for input or output to case  |
| Insulation resistance           | 1000 MOhm at 500 V DC  |
| Local signalling                | LED (green) for control voltage  |
| Pick-up voltage                 | 90 V AC/DC turn-on   |
| Drop-out voltage                | 5 V AC/DC turn-off   |
| Input current range             | 6...10 mA  |
| Solid state switching type      | Zero voltage switching   |
| Load current                    | 0.1...20 A   |
| Transient overvoltage           | 1200 V   |

|  |  |
|--|--|
| <b>Inrush current</b>                        | 300 A at 60 Hz   |
| <b>Maximum voltage drop</b>                  | <1.3 V on-state  |
| <b>Motor controller rating</b>               | 0.37 kW/0.5 hp at 120 V AC<br>1.12 kW/1.5 hp at 240 V AC<br>2.24 kW/3 hp at 480 V AC   |
| <b>Electromagnetic compatibility</b>         | Electrostatic discharge 6 kV criteria A contact discharge conforming to IEC 61000-4-2<br>Electrostatic discharge 8 kV criteria A air discharge conforming to IEC 61000-4-2<br>Conducted RF disturbances 10 V, 0.15...80 MHz criteria A level 3 conforming to IEC 61000-4-6<br>Electrical fast transient/burst immunity test 2 kV, 5/100 kHz criteria B output ports conforming to IEC 61000-4-4<br>Electrical fast transient/burst immunity test 1 kV, 5/100 kHz criteria B input ports conforming to IEC 61000-4-4<br>Radiated radio-frequency electromagnetic field immunity test 10 V/m, 80 MHz...1 GHz criteria A conforming to IEC 61000-4-3<br>Radiated radio-frequency electromagnetic field immunity test 3 V/m, 1.4...2 GHz criteria A conforming to IEC 61000-4-3<br>Radiated radio-frequency electromagnetic field immunity test 1 V/m, 2...2.7 GHz criteria A conforming to IEC 61000-4-3<br>Surge immunity test 1 kV criteria A output ports line to line conforming to IEC 61000-4-5<br>Surge immunity test 2 kV criteria A output ports line to earth conforming to IEC 61000-4-5<br>Surge immunity test 1 kV criteria A input ports line to line conforming to IEC 61000-4-5<br>Surge immunity test 2 kV criteria A input ports line to earth conforming to IEC 61000-4-5<br>Radiated emission environment B for AC input supply conforming to IEC 60947-4-3<br>Conducted emission environment A for AC input supply conforming to IEC 60947-4-3<br>Immunity to microbreaks and voltage drops 30 %, 500 ms criteria A conforming to IEC 61000-4-11<br>Immunity to microbreaks and voltage drops 100 %, 20 ms criteria B conforming to IEC 61000-4-11 |
| <b>Device form designation</b>               | Form 5 semiconductor output DOL contactor  |
| <b>Maximum I<sup>2</sup>t for fusing</b>     | 409 A <sup>2</sup> .s for 10 ms<br>375 A <sup>2</sup> .s for 8.33 ms   |
| <b>Maximum leakage current</b>               | 1 mA off-state   |
| <b>DV/Dt</b>                                 | 500 V/μs off-state at maximum rated voltage  |
| <b>Response time</b>                         | 20 ms (turn-on)<br>30 ms (turn-off)  |
| <b>Power factor</b>                          | 0.5 with maximum load  |
| <b>Short circuit protection coordination</b> | Type 1<br>Type 2   |
| <b>Overvoltage category</b>                  | III  |
| <b>Width</b>                                 | 22.5 mm  |
| <b>Height</b>                                | 91.9 mm  |
| <b>Depth</b>                                 | 133.8 mm   |
| <b>Net weight</b>                            | 0.301 kg   |
| <b>Device presentation</b>                   | Complete product   |
| <b>Environment</b>                           |  |
| <b>Flammability rating</b>                   | V-0 conforming to UL 94  |
| <b>Vibration resistance</b>                  | 0.75 mm (f = 10...150 Hz) conforming to EN/IEC 60068-2-6   |
| <b>Shock resistance</b>                      | 50 gn for 11 ms (peak acceleration) , longitudinal position conforming to EN/IEC 60068-2-27<br>30 gn for 11 ms (peak acceleration) , vertical position conforming to EN/IEC 60068-2-27   |
| <b>Pollution degree</b>                      | 2  |
| <b>Standards</b>                             | IEC 61373:class B: category 1<br>IEC 60947-4-3<br>IEC 62314<br>IEC 60950-1<br>CSA C22.2 No 14-13<br>UL 508   |
| <b>IP degree of protection</b>               | IP20   |
| <b>Ambient air temperature for operation</b> | -40...80 °C  |
| <b>Ambient air temperature for storage</b>   | -40...100 °C   |

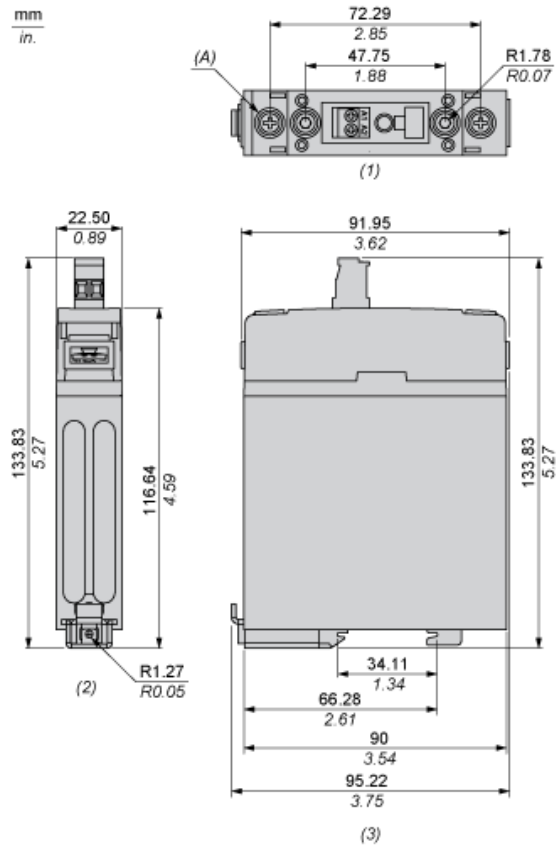
## Packing Units

|                              |          |
|------------------------------|----------|
| Unit Type of Package 1       | PCE      |
| Number of Units in Package 1 | 1        |
| Package 1 Height             | 2.6 cm   |
| Package 1 Width              | 9.7 cm   |
| Package 1 Length             | 14.0 cm  |
| Package 1 Weight             | 324.0 g  |
| Unit Type of Package 2       | S02      |
| Number of Units in Package 2 | 24       |
| Package 2 Height             | 15.0 cm  |
| Package 2 Width              | 30.0 cm  |
| Package 2 Length             | 40.0 cm  |
| Package 2 Weight             | 8.259 kg |

## Offer Sustainability

|                            |   |
|----------------------------|---|
| Sustainable offer status   | Green Premium product   |
| REACH Regulation           | <a href="#">REACH Declaration</a>   |
| EU RoHS Directive          | Pro-active compliance (Product out of EU RoHS legal scope)<br><a href="#">EU RoHS Declaration</a>   |
| Mercury free               | Yes   |
| China RoHS Regulation      | <a href="#">China RoHS declaration</a>  |
| RoHS exemption information | Yes   |
| Environmental Disclosure   | <a href="#">Product Environmental Profile</a>   |
| Circularity Profile        | <a href="#">End of Life Information</a>   |
| WEEE                       | The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins   |
| California proposition 65  | WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a> |

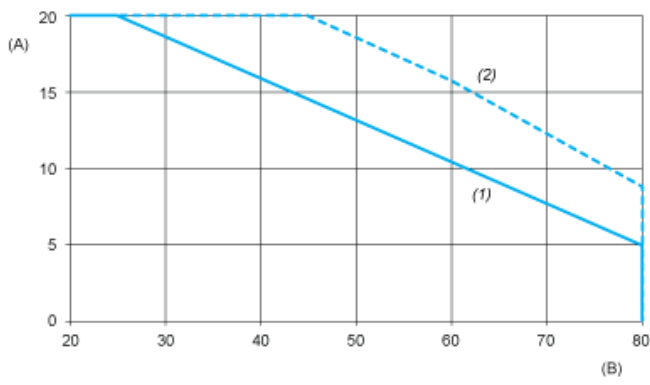
**Dimensions**



- (1) Front view
- (2) Top view
- (3) Side view
- (A) Screw 8-32 Stud Elevator Profile 1/4 48 UNS (2 Places)

**Derating Curves**

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- A : Load Current (Amperes)
- B : Ambient Temperature (°C)
- 1 : Multiple units, no minimum spacing between components
- 2 : Installed single unit, distance to adjacent components more than 22.5 mm

**Recommended replacement(s)**