



## Main

|                                     |                            |
|-------------------------------------|----------------------------|
| Range of product                    | Modicon Power Supply       |
| Product or component type           | Power supply               |
| Power supply type                   | Regulated switch mode      |
| Variant option                      | Universal                  |
| Enclosure material                  | Metal                      |
| Nominal input voltage               | 380...500 V AC three phase |
| Rated power in W                    | 960 W                      |
| Output voltage                      | 48 V DC                    |
| Power supply output current         | 20 A                       |
| Permissible temporary current boost | 1.5 x In (for 5 seconds)   |

## Complementary

|                                 |                                                                                                                                                                                                                                 |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input voltage limits            | 320...575 V AC 3 phases                                                                                                                                                                                                         |
| Nominal network frequency       | 50...60 Hz                                                                                                                                                                                                                      |
| Network system compatibility    | TN<br>TT<br>IT                                                                                                                                                                                                                  |
| Maximum leakage current         | 2 mA 500 V AC                                                                                                                                                                                                                   |
| Input protection type           | Integrated fuse (not interchangeable) 3.15 A<br>External protection (recommended)                                                                                                                                               |
| Inrush current                  | 35 A at 380 V<br>35 A at 500 V                                                                                                                                                                                                  |
| Power factor                    | 0.90 at 380 V AC<br>0.90 at 500 V AC                                                                                                                                                                                            |
| Efficiency                      | 95 % at 380 V AC<br>95 % at 500 V AC                                                                                                                                                                                            |
| Output voltage adjustment       | 48...56 V                                                                                                                                                                                                                       |
| Power dissipation in W          | 49 W                                                                                                                                                                                                                            |
| Current consumption             | < 1.9 A 380 V AC<br>< 1.7 A 500 V AC                                                                                                                                                                                            |
| Turn-on time                    | < 2 s                                                                                                                                                                                                                           |
| Holding time                    | > 20 ms 380 V AC<br>> 20 ms 500 V AC                                                                                                                                                                                            |
| Startup with capacitive loads   | 200000 µF                                                                                                                                                                                                                       |
| Residual ripple                 | < 200 mV                                                                                                                                                                                                                        |
| Meantime between failure [MTBF] | 912400 H at 25 °C, full load conforming to SR 332<br>382500 h at 55 °C, 80 % load conforming to SR 332                                                                                                                          |
| Output protection type          | Against overload and short-circuits, protection technology: manual or automatic reset by switch<br>Against over temperature, protection technology: automatic reset<br>Against overvoltage, protection technology: manual reset |

The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric Industries SAS nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information contained herein.

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Connections - terminals  | <p>Screw connection: 4 x 10 mm<sup>2</sup>, (AWG 12...AWG 8) with wire end ferrule for output</p> <p>Screw connection: 4...16 mm<sup>2</sup>, (AWG 12...AWG 6) without wire end ferrule for output</p> <p>Screw connection: 0.75...6 mm<sup>2</sup>, (AWG 18...AWG 10) without wire end ferrule for input</p> <p>Screw connection: 0.75...4 mm<sup>2</sup>, (AWG 18...AWG 12) with wire end ferrule for input</p> <p>Cage clamp: 0.2...1.5 mm<sup>2</sup>, (AWG 22...AWG 16) without wire end ferrule for diagnostic relay</p> <p>Cage clamp: 0.2...1.5 mm<sup>2</sup>, (AWG 22...AWG 16) without wire end ferrule for shut down input</p> <p>Cage clamp: 0.2...0.75 mm<sup>2</sup>, (AWG 22...AWG 18) with wire end ferrule for diagnostic relay</p> <p>Cage clamp: 0.2...0.75 mm<sup>2</sup>, (AWG 22...AWG 18) with wire end ferrule for shut down input</p> |
| Line and load regulation | <p>&lt; 0.17 % at 100 % load in line at 25 °C</p> <p>&lt; 0.6 % +/- 0.5 % at 100 % load at 25 °C for single mode</p> <p>4 % at 150 % load at 25 °C for parallel mode</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Status LED               | 1 LED (green and red) product status                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Depth                    | 128.7 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Height                   | 124 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Width                    | 110 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Net weight               | 2.29 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Output coupling          | Single/parallel by switch                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Marking                  | CE<br>UKCA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Mounting support         | <p>Top hat type TH35-15 rail conforming to IEC 60715</p> <p>Top hat type TH35-7.5 rail conforming to IEC 60715</p> <p>Double-profile DIN rail</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Supply                   | <p>SELV conforming to EN/IEC 60950-1</p> <p>SELV conforming to EN/IEC 60204-1</p> <p>SELV conforming to IEC 60364-4-41</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Dielectric strength      | <p>4000 V AC with input to output</p> <p>2000 V AC with input to ground</p> <p>1500 V AC with output to ground</p> <p>4000 V AC with input to diagnostic relay</p> <p>500 V AC with output to diagnostic relay</p> <p>1500 V AC with diagnostic relay to ground</p> <p>4000 V AC with shutdown input to input</p> <p>1500 V AC with shutdown input to ground</p> <p>With shutdown input not isolated from output</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Shutdown input           | Non isolated input, dry contact 0.3 mA 4 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Diagnostic relay         | Electromechanical relay 1000.0 mA 30 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Service life             | 10 year(s) 40 °C 80 % load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Overvoltage category     | III<br>II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## Environment

|                                       |                                                                                                                                                                                                                                                               |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards                             | <p>EN 62368-1</p> <p>EN/IEC 61204-3</p> <p>EN 61000-6-1</p> <p>EN 61000-6-2</p> <p>EN 61000-6-3</p> <p>EN 61000-6-4</p> <p>EN 61000-3-2</p> <p>EN 61000-3-3</p> <p>UL 62368-1</p> <p>CSA C22.2 No 62368-1</p> <p>CSA C22.2 No 107.1</p> <p>EN/IEC 62368-1</p> |
| Product certifications                | CE[RETURN]CUL listed[RETURN]CUL recognized[RETURN]RCM[RETURN]CB Scheme[RETURN]EAC[RETURN]KC[RETURN]UKCA[RETURN]CURus                                                                                                                                          |
| Operating altitude                    | <p>&lt; 5000 m overvoltage category III</p> <p>Overvoltage category II</p>                                                                                                                                                                                    |
| Shock resistance                      | 150 m/s <sup>2</sup> for 11 ms                                                                                                                                                                                                                                |
| IP degree of protection               | IP20                                                                                                                                                                                                                                                          |
| Ambient air temperature for operation | <p>-25...55 °C without current derating mounting position A &lt; 2000 m</p> <p>55...70 °C with current derating of 3.3 % per °C mounting position A &lt; 2000 m</p>                                                                                           |

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical shock protection class | Class I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Pollution degree                  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Vibration resistance              | 3.5 mm (f= 3...11.9 Hz) conforming to IEC 60068-2-6<br>20 m/s² (f= 11.9...150 Hz) conforming to IEC 60068-2-6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Electromagnetic immunity          | Immunity to electrostatic discharge - test level: 8 kV (contact discharge) conforming to EN/IEC 61000-4-2<br>Immunity to electrostatic discharge - test level: 15 kV (air discharge) conforming to EN/IEC 61000-4-2<br>Immunity to conducted RF disturbances - test level: 15 V/m (80 MHz...2 GHz) conforming to EN/IEC 61000-4-3<br>Immunity to conducted RF disturbances - test level: 5 V/m (2...2.7 GHz) conforming to EN/IEC 61000-4-3<br>Immunity to conducted RF disturbances - test level: 5 V/m (2.7...6 GHz) conforming to EN/IEC 61000-4-3<br>Immunity to fast transients - test level: 4 kV (on input-output) conforming to EN/IEC 61000-4-4<br>Surge immunity test - test level: 4 kV (between power supply and earth) conforming to EN/IEC 61000-4-5<br>Surge immunity test - test level: 3 kV (between phases) conforming to EN/IEC 61000-4-5<br>Immunity to conducted RF disturbances - test level: 15 V (0.15...80 MHz) conforming to EN/IEC 61000-4-6<br>Immunity to magnetic fields - test level: 30 A/m (50...60 Hz) conforming to EN/IEC 61000-4-8<br>Immunity to voltage dips conforming to EN/IEC 61000-4-11<br>Disturbing field emission conforming to EN 55016-2-3<br>Limits for harmonic current emissions conforming to EN 61000-3-2<br>Conforming to EN 55016-1-2<br>Conforming to EN 55016-2-1 |
| Electromagnetic emission          | Conducted emissions conforming to EN 61000-6-3<br>Radiated emissions conforming to EN 61000-6-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

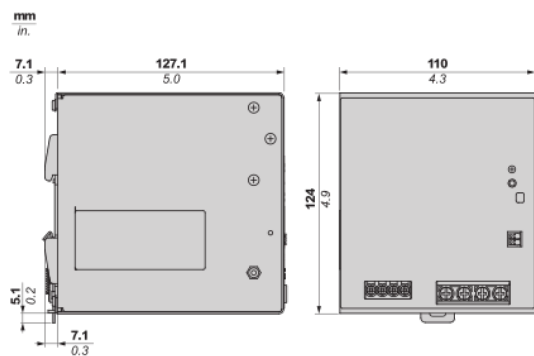
## Packing Units

|                              |         |
|------------------------------|---------|
| Unit Type of Package 1       | PCE     |
| Number of Units in Package 1 | 1       |
| Package 1 Height             | 15.5 cm |
| Package 1 Width              | 21.0 cm |
| Package 1 Length             | 22.2 cm |
| Package 1 Weight             | 3.0 kg  |
| Unit Type of Package 2       | S03     |
| Number of Units in Package 2 | 2       |
| Package 2 Height             | 30.0 cm |
| Package 2 Width              | 30.0 cm |
| Package 2 Length             | 40.0 cm |
| Package 2 Weight             | 6.6 kg  |

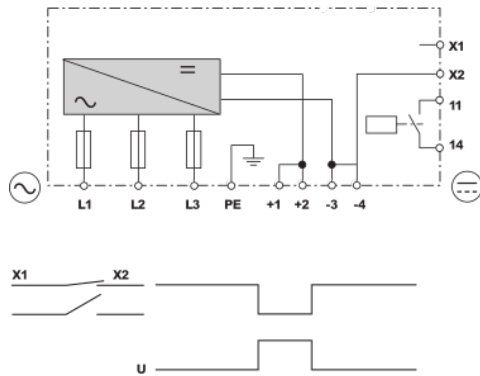
## Offer Sustainability

|                            |                                                                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 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)                                                                        |
| Mercury free               | Yes                                                                                                                               |
| China RoHS Regulation      |  <a href="#">China RoHS Declaration</a>        |
| RoHS exemption information |  <a href="#">Yes</a>                           |
| 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       |

## Dimensions

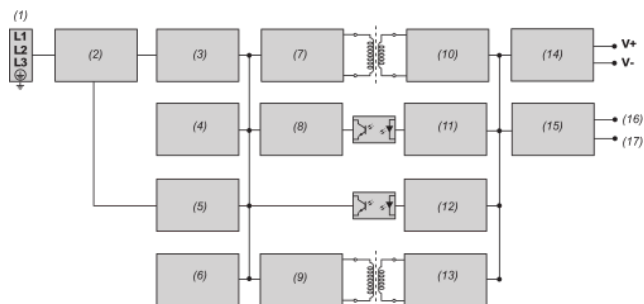


## Wiring



U : Out

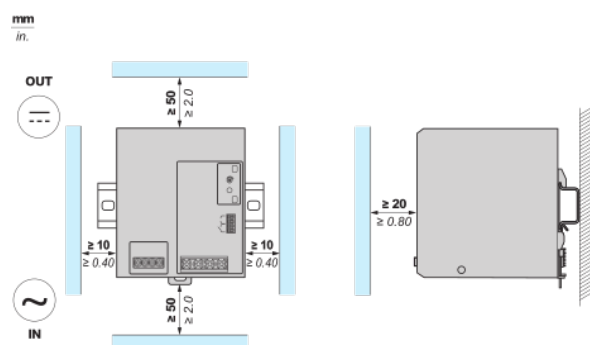
## Block Diagram



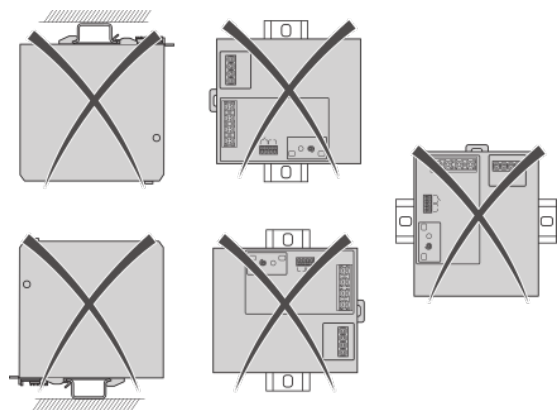
- (1) : Input
- (2) : EMI filter
- (3) : PI filter, inrush current circuit, PFC circuit
- (4) : PFC controller
- (5) : Input monitoring
- (6) : Housekeeper control
- (7) : Primary power stage
- (8) : LLC controller
- (9) : Housekeeper primary circuit
- (10) : Secondary power stage
- (11) : Secondary controller, voltage & current controller, SR controller, OCP & OCP
- (12) : Secondary MCU
- (13) : Housekeeper secondary circuit
- (14) : Output filter
- (15) : LED & relay controller
- (16) : DC OK LED
- (17) : DC OK relay contact

## Mounting

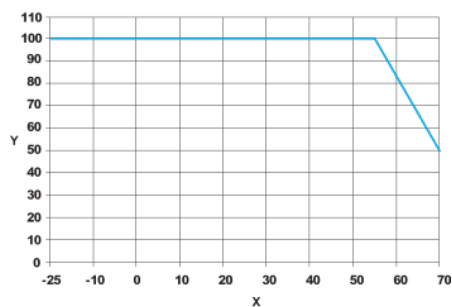
### Mounting Position



### Incorrect Mounting



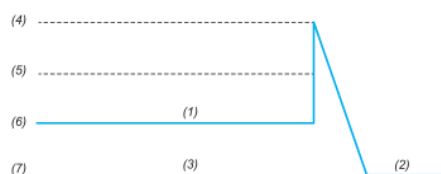
## Performance Curve



X : Surrounding Air Temperature (°C)

Y : Percentage of Maximum Load (%)

## Overvoltage Protection Behavior



Overvoltage range : 54...60 VDC, Latch mode

(1) : Variable output voltage range

(2) : Latch

(3) : Typical overvoltage condition as seen at the output

(4) : Maximum overvoltage protection level

(5) : Overvoltage protection

(6) : Nominal output voltage

(7) : Zero output