



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 TT IT
Maximum leakage current	2 mA 500 V AC
Input protection type	Integrated fuse (not interchangeable) 3.15 A External protection (recommended)
Inrush current	35 A at 380 V 35 A at 500 V
Power factor	0.90 at 380 V AC 0.90 at 500 V AC
Efficiency	95 % at 380 V AC 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 < 1.7 A 500 V AC
Turn-on time	< 2 s
Holding time	> 20 ms 380 V AC > 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 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 Against over temperature, protection technology: automatic reset Against overvoltage, protection technology: manual reset

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Connections - terminals	Screw connection: 4 x 10 mm², (AWG 12...AWG 8) with wire end ferrule for output Screw connection: 4...16 mm², (AWG 12...AWG 6) without wire end ferrule for output Screw connection: 0.75...6 mm², (AWG 18...AWG 10) without wire end ferrule for input Screw connection: 0.75...4 mm², (AWG 18...AWG 12) with wire end ferrule for input Cage clamp: 0.2...1.5 mm², (AWG 22...AWG 16) without wire end ferrule for diagnostic relay Cage clamp: 0.2...1.5 mm², (AWG 22...AWG 16) without wire end ferrule for shut down input Cage clamp: 0.2...0.75 mm², (AWG 22...AWG 18) with wire end ferrule for diagnostic relay Cage clamp: 0.2...0.75 mm², (AWG 22...AWG 18) with wire end ferrule for shut down input
Line and load regulation	< 0.17 % at 100 % load in line at 25 °C < 0.6 % +/- 0.5 % at 100 % load at 25 °C for single mode 4 % at 150 % load at 25 °C for parallel mode
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 UKCA
Mounting support	Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715 Double-profile DIN rail
Supply	SELV conforming to EN/IEC 60950-1 SELV conforming to EN/IEC 60204-1 SELV conforming to IEC 60364-4-41
Dielectric strength	4000 V AC with input to output 2000 V AC with input to ground 1500 V AC with output to ground 4000 V AC with input to diagnostic relay 500 V AC with output to diagnostic relay 1500 V AC with diagnostic relay to ground 4000 V AC with shutdown input to input 1500 V AC with shutdown input to ground With shutdown input not isolated from output
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 II

Environment

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

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 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 Immunity to electrostatic discharge - test level: 15 kV (air discharge) conforming to EN/IEC 61000-4-2 Immunity to conducted RF disturbances - test level: 15 V/m (80 MHz...2 GHz) conforming to EN/IEC 61000-4-3 Immunity to conducted RF disturbances - test level: 5 V/m (2...2.7 GHz) conforming to EN/IEC 61000-4-3 Immunity to conducted RF disturbances - test level: 5 V/m (2.7...6 GHz) conforming to EN/IEC 61000-4-3 Immunity to fast transients - test level: 4 kV (on input-output) conforming to EN/IEC 61000-4-4 Surge immunity test - test level: 4 kV (between power supply and earth) conforming to EN/IEC 61000-4-5 Surge immunity test - test level: 3 kV (between phases) conforming to EN/IEC 61000-4-5 Immunity to conducted RF disturbances - test level: 15 V (0.15...80 MHz) conforming to EN/IEC 61000-4-6 Immunity to magnetic fields - test level: 30 A/m (50...60 Hz) conforming to EN/IEC 61000-4-8 Immunity to voltage dips conforming to EN/IEC 61000-4-11 Disturbing field emission conforming to EN 55016-2-3 Limits for harmonic current emissions conforming to EN 61000-3-2 Conforming to EN 55016-1-2 Conforming to EN 55016-2-1
Electromagnetic emission	Conducted emissions conforming to EN 61000-6-3 Radiated emissions conforming to EN 61000-6-4

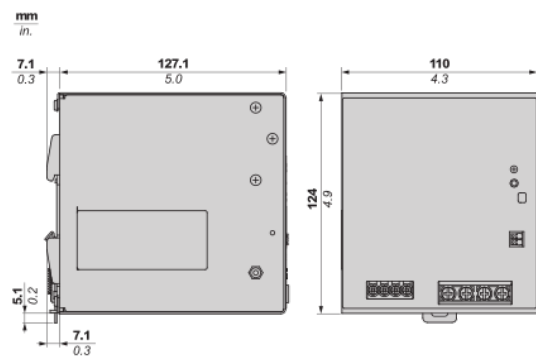
Packing Units

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

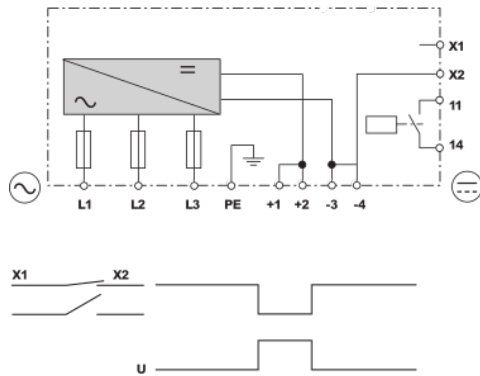
Offer Sustainability

Sustainable offer status	Green Premium product
REACH Regulation	 REACH Declaration
EU RoHS Directive	Pro-active compliance (Product out of EU RoHS legal scope)
Mercury free	Yes
China RoHS Regulation	 China RoHS Declaration
RoHS exemption information	 Yes
Environmental Disclosure	 Product Environmental Profile
Circularity Profile	 End Of Life Information
WEEE	The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins

Dimensions

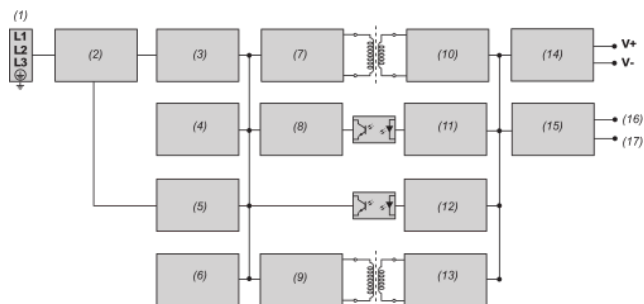


Wiring



U : Out

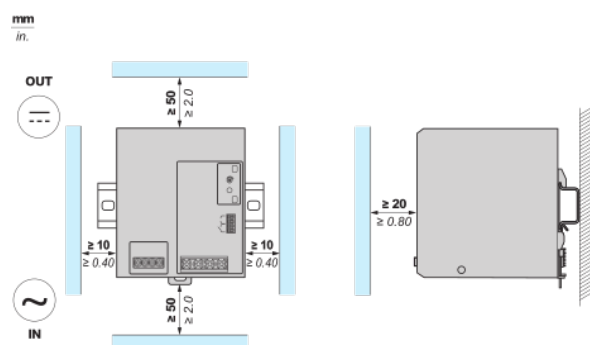
Block Diagram



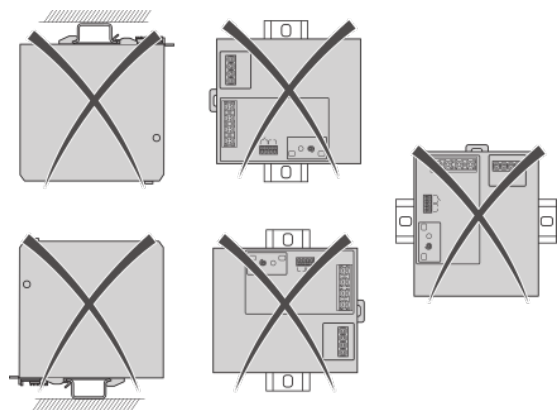
- (1) : Input
- (2) : EMI filter
- (3) : PI filter, inrush current circuit, PFC circuit
- (4) : PFC controller
- (5) : Input monitoring
- (6) : Housekeeper control
- (7) : Primary power stage
- (8) : LLC controller
- (9) : Housekeeper primary circuit
- (10) : Secondary power stage
- (11) : Secondary 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

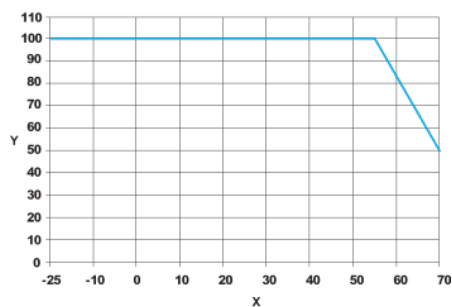
Mounting Position



Incorrect Mounting



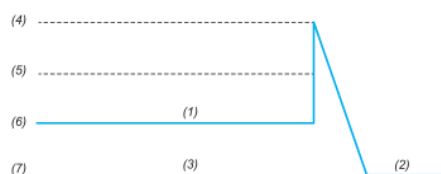
Performance Curve



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