



RPI M50A

High efficiency 3-phase solar inverters for the European market - Perfect choice for large-scale solar PV systems, such as those used in the commercial or agricultural sectors.

Versatile applications

- Aluminium housing ensures long lasting protection against moisture and corrosion
- Wide input voltage range
- Suitable for indoor and outdoor applications (IP65)
- Compact design for simplified installation – exceptional power density-to-size ratio

Maximum profitability

- Peak efficiency of 98.6%
- Built-in and replaceable AC and DC-side Type II SPDs (surge protection devices) and string fuses
- 2 MPP trackers - symmetrical and asymmetrical loading possible (40/60% or 60/40%)
- Nominal apparent power 50 kVA (55 kVA max. apparent power possible ⁸⁾)

50 kVA transformerless solar inverters

Technical data RPI M50A

INPUT (DC)	RPI M50A
Max. recommended PV power	70 kW _p ¹⁾
Max. input power	58 kW
Nominal power	52 kW ²⁾
Voltage range	200 ... 1100 V ³⁾
MPP operating voltage range	200 ... 1000 V
Startup voltage	250 V
Voltage range for maximum power	520 ... 800 V symmetrical load (50/50%)
Max. current	100 A (50 A per MPP tracker)
Max. number of MPP trackers	Parallel inputs: 1 MPP tracker Separate inputs: 2 MPP trackers
Input load	≤ 34.8 kW per MPPT, symmetrical and asymmetrical
String Fuse Protection	15 A ⁴⁾
Surge Protection Devices ⁵⁾	Type II

OUTPUT (AC)	RPI M50A
Max. apparent power	55 kVA ⁶⁾ ⁸⁾
Nominal apparent power	50 kVA ⁶⁾
Voltage range	230 ± 20% / 400 V ± 20% ⁷⁾ 3 phase + PE or 3 phase + N + PE
Nominal current (pro phase)	73 A ⁸⁾
Nominal frequency	50 / 60 Hz
Frequency range	50 / 60 Hz ± 5 Hz ⁷⁾
Power factor adjustable	0.8 cap ... 0.8 ind
Total harmonic distortion (THD)	< 3% @ nominal apparent power
Surge Protection Devices ⁵⁾	Type 2

GENERAL SPECIFICATION

Model name	RPI M50A
Part numbers Delta ⁵⁾	RPI M50A_12s Model: RPI503M221000
Max. efficiency	98.6%
Efficiency EU	98.4%
Operating temperature	-25 ... +60 °C
Full power without derating	-25 ... +48 °C ⁹⁾
Storage temperature	-25 ... +60 °C
Humidity	0 ... 100% non-condensing
Max. operating altitude	2000 m (above sea level)
Standard guarantee	5 years (guarantee extension is possible)

MECHANICAL DESIGN

Size (L x W x D)	740 × 612 × 278 mm
Weight	74 kg
Cooling	Fans
AC connector	China Aviation Optical-Electrical Technology Co. PVE5T125KE36 (included)
DC connector	12 pairs of Multi-Contact MC4 (included)
Communication interfaces	2 x RS485, 2 x Dry contacts, 1 x EPO, 6 x Digital inputs
AC/DC disconnecter	Integrated
Display	2 LEDs, 4-line LCD

SAFETY / STANDARDS	RPI M50A
Protection degree	IP65
Safety class	I
Configurable trip parameters	Yes
Insulation monitoring	Yes
Overload behavior	Current limitation; power limitation
Anti-islanding protection / Grid regulation	VDE 0126-1-1/A1; UTE C15-712-1 VDE 16 1-1 A1 VFR 2013/VFR 2014; UTE C15-712 MV; French Islands (50 Hz/60 Hz); G59/3 LV; VDE-AR-N 4105; BDEW; ÖNORM E8001-4-712 + A1: 04/2014; TOR D4
EMC	EN61000-6-2; EN61000-6-3; EN61000-3-11; EN61000-3-12
Safety	IEC62109-1 / -2; CE compliance

- 1) When operated with balanced DC inputs (50/50%)
- 2) Max. 34.8 kW per DC input with asymmetrical load (60/40%)
- 3) For some firmware versions limited to 1000 V
- 4) The value when internal temperature of the inverter is 25 °C. At higher internal temperatures, the value may drop to 10 A.
- 5) RPI M50_12s model has integrated AC & DC-side Type II SPDs
- 6) Cos Phi = 1 (VA = W)
- 7) AC voltage and frequency range will be programmed according to the individual country requirements.
- 8) 55 kVA / 80A_{AC} is possible under the following conditions: DC input voltage 600 V with symmetrical load and ambient temp. is < 34 °C.
- 9) Full nominal power without derating up to +48 °C with nominal voltages (AC and DC) and Cos Phi = 1

	DC SPDs	AC SPDs	String Fuses
RPI M50A_12s	X	X	X

