



## M50A

High efficiency 3-phase solar inverters that are the 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

### Maximum profitability

- Peak efficiency of 98.6%
- Built-in and replaceable AC and DC-side Type 2 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 <sup>8)</sup>)

# 55 kVA solar inverters

## Technical data

INPUT (DC)	M50A
Max. input voltage	1000 V <sub>DC</sub> <sup>1)</sup>
Input voltage range	200 ... 1100 V <sub>DC</sub> <sup>2)</sup>
MPP operating voltage range (full power)	
Symmetrical load	520 ... 800 V <sub>DC</sub> (50/50%)
Asymmetrical load	620 ... 800 V <sub>DC</sub> (60/40%; 40/60%)
Nominal voltage	600 V <sub>DC</sub>
Max. current, total (DC1/DC2)	100 A (50 A / 50A)
Max. short-circuit current I <sub>SC</sub>	72 A (12 A per string)
Max. number of MPP trackers	Parallel inputs: 1 MPP tracker Separate inputs: 2 MPP trackers
Maximum input power (total / per input)	58 kW / 34.8 kW <sup>3)</sup>
String fuse protection	15 A <sup>4)</sup>
DC surge protection devices <sup>5)</sup>	Type 2

OUTPUT (AC)	
Max. apparent power	55 kVA <sup>6) 8)</sup>
Nominal apparent power	50 kVA <sup>6)</sup>
AC voltage range	230 ± 20% / 400 V ± 20% <sup>7)</sup> 3 phase + PE or 3 phase + N + PE
Nominal current (pro phase)	73 A <sup>8)</sup>
Nominal frequency	50 / 60 Hz
Frequency range	50 / 60 Hz ± 5 Hz <sup>7)</sup>
Adjustment range power factor	0.8 cap ... 0.8 ind
Total harmonic distortion (THD)	< 3 % @ nominal apparent power
AC surge protection devices <sup>5)</sup>	Type 2

### GENERAL SPECIFICATION

Delta model name	M50A
Part numbers Delta	RPI M50A_12s Model: RPI503M221000
Peak efficiency	98.6%
Efficiency EU	98.4%
Overall operating temperature range	-25 ... +60 °C
Full power without derating	-25 ... +48 °C <sup>9)</sup>
Storage temperature range	-25 ... +60 °C
Relative humidity	0 ... 100% non-condensing
Max. operating altitude	2000 m (above sea level)
Standard guarantee	5 years (guarantee extension is possible)
Topology	Without transformer

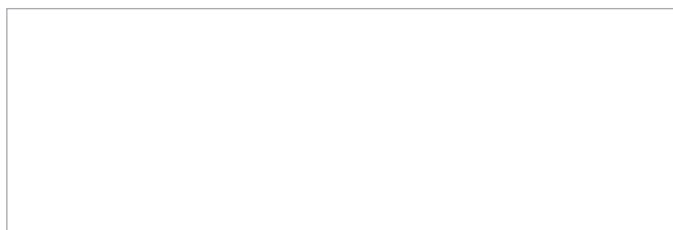
### MECHANICAL DESIGN

Size (W x H x D)	612 x 740 x 278 mm
Weight	74 kg
Cooling	Fans
AC connector	China Aviation Optical-Electrical Technology Co. PVE5T125KE36 (included)
DC connection type	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 disconnect	Integrated
Display	2 LEDs, 4-line LCD

SAFETY / STANDARDS	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) The maximum voltage withstand is 1100 VDC. The inverter starts to work when the PV voltage drops below 1000 VDC.
- 2) 1000 V for inverter with firmware version less than DPS 1.32
- 3) Maximum 34.8 kW per DC input with asymmetrical load (60/40 %)
- 4) The value when internal temperature of the inverter is 25 °C. At higher internal temperatures, the value may drop to 10 A.
- 5) M50\_12s model has integrated AC & DC-side Type 2 SPDs
- 6) Cos Phi = 1 (VA = W)
- 7) AC voltage and frequency range will be programmed according to the individual country requirements.
- 8) Possible under the following conditions: DC input voltage > 580 V; symmetrical load; ambient temperature < 25 °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
M50A_12s	X	X	X



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