



# M88H

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

## Versatile applications

- Aluminium housing ensures long lasting protection against moisture and corrosion
- 2 stage inverter with wide input voltage range from 200 to 1100 Vdc
- Suitable for indoor and outdoor applications (IP65)
- Easy cooling fan module removal for cleaning
- Communication compatibility with Sunspec protocols
- 400 V or 480 V nominal AC voltage
- 2 integrated mechanical DC switches (Variant M88H\_122)
- 2\*18 string fuses (Variant M88H\_122)
- Wiring box certified to protection class II (IEC 61439-2)

## Maximum profitability

- Peak efficiency of 98.8%
- Convenient wiring box available with built-in Type 2 AC and DC SPDs (EN 61463-11, EN 50539-11)
- 2 MPP trackers
- Maximum apparent power 73 kVA / 88 kVA

# 88 kVA transformerless solar inverters

## Technical data M88H

	M88H	
<b>INPUT (DC)</b>	400 VAC	480 VAC
Max. recommended PV power	90 kW <sub>p</sub> <sup>1)</sup>	110 kW <sub>p</sub> <sup>1)</sup>
Max. input power	76 kW	91 kW
Nominal power	70 kW	84 kW
Voltage range	200 ... 1100 V	
MPP operating voltage range	200 ... 1000 V	
Startup voltage	250 V	
Voltage range for nominal power	500 ... 800 V symmetrical load (50/50 %)	600 ... 800 V symmetrical load (50/50 %)
Max. current	140 A (70 A per MPP tracker)	
Max. number of MPP trackers	2	
String Fuse Protection	15 A <sup>2)</sup>	
Surge Protection Devices <sup>3)</sup>	Type 2, replaceable (EN 50539-11)	
<b>OUTPUT (AC)</b>	400 VAC	480 VAC
Max. apparent power	73 kVA <sup>3) 5)</sup>	88 kVA <sup>3) 6)</sup>
Nominal apparent power	66 kVA <sup>3)</sup>	80 kVA <sup>3)</sup>
Voltage range	400 V ±30% Y or Δ / 480 V ±20% Y or Δ <sup>4)</sup> 3 phase + PE (Δ) or 3 phase + N + PE (Y)	
Max. current / nominal current (per phase)	106 A / 96 A	
Nominal frequency	50 / 60 Hz	
Frequency range	50 / 60 Hz ± 5 Hz <sup>4)</sup>	
Power factor adjustable	0.8 cap ... 0.8 ind	
Total harmonic distortion (THD)	< 3 % @ nominal apparent power	
Surge Protection Devices	Type 2, replaceable (EN 61463-11)	

### GENERAL SPECIFICATION

Model variants	M88H_122 CF Model (Connectors and Fuses) M88H_121 ST Model (Screw Terminals)
Delta part numbers	M88H_122 Model: RPI883M122000 M88H_121 Model: RPI883M121200
Max. efficiency / EU eff.	98.8% / 98.5%
Operating temperature	-25 ... +60 °C
Nominal power without derating	-25 ... +40 °C
Storage temperature	-25 ... +60 °C
Humidity	0 ... 100 % non-condensing
Max. operating altitude	3000 m (above sea level)
Standard guarantee	5 years (guarantee extension is possible)

### MECHANICAL DESIGN

Size (L x W x D)	965 × 615 × 275 mm
Weight	84 kg / 68 kg power module
Cooling	Fans with removable fan module
AC terminals	M88H_122: Phoenix HKU 70 with screw terminals for conductors: 16-95 mm <sup>2</sup> Cu, 50 / 70 mm <sup>2</sup> Al (se) M88H_121: Phoenix HKU 150 with screw terminals for conductors: 35-150 mm <sup>2</sup> Cu, 120 / 150 mm <sup>2</sup> Al (se)
DC connectors	M88H_122: 2 x 9 pair Multi-Contact MC4 (included in package) M88H_121: Phoenix HKU 150 with screw terminals for conductors: 35-150 mm <sup>2</sup> Cu, 120 / 150 mm <sup>2</sup> Al (se)
Communication interfaces	2 x RS485, 2 x Dry contacts, 1 x EPO, 6 x Digital inputs
DC disconnectors	2 x integrated mechanically coupled DC disconnectors
Display	3 LEDs, 4-line LCD

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January 13, 2017 - All information and specifications are subject to change without notice

SAFETY / STANDARDS	M88H
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; ARN 4105; BDEW; UTE C15-712 ERDF-RES-PRO_64E
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) The value when the internal temperature of the inverter is 25 °C. At higher internal temperatures, the value may drop to 10A.
- 3) Cos Phi = 1 (VA = W)
- 4) AC voltage and frequency range will be programmed according to the individual country requirements.
- 5) 73 kVA is possible under the following conditions: DC input voltage 540 V with symmetrical load and ambient temp. is < 35 °C.
- 6) 88 kVA is possible under the following conditions: DC input voltage 650 V with symmetrical load and ambient temp. is < 35 °C.

	DC/AC SPDs (replaceable)	AC Terminal Blocks	String Fuses + Current Monitoring	Mechanical DC Disconnector	DC Terminal blocks
M88H_122 CF	X	X	X	X	
M88H_121 ST	X	X			X



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