Economic

- Without low voltage transformer – outstanding efficiency
- Lower costs compared with systems with low voltage transformer
- For direct connection to a medium-voltage transformer

Optional

- String current monitoring
- Increased yield due to Sunny Team
- Power factor compensation
- Extended DC input voltage range up to 1000 V

SUNNY CENTRAL HE

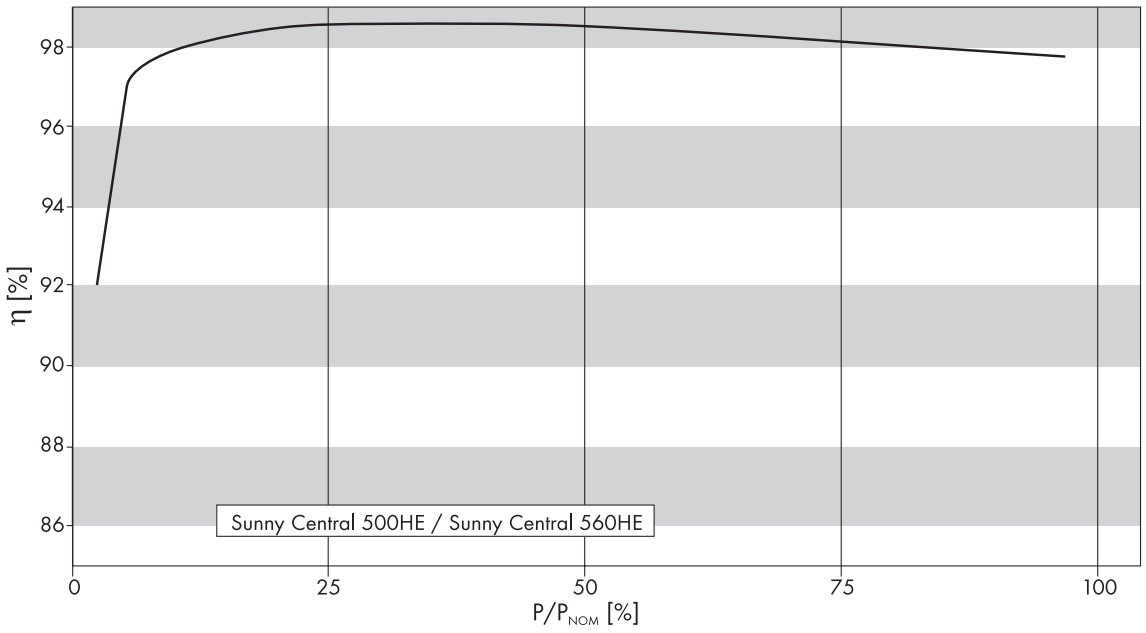
Optimal solution for direct feeding to a medium-voltage grid

The Sunny Centrals 200HE, 250HE, 350HE, 500HE and 560HE are the perfect choice for anyone looking for first-class central inverters for direct connection to the medium-voltage grid. They operate directly with a medium-voltage transformer and have all advantages of a standard inverter. The High Efficiency (HE) versions are not equipped with a low-voltage transformer. This results in the highest efficiency - the 500HE has over 98 % - and this lets you harvest the highest yields. Solar power plants become even more affordable.

Technical Data
SUNNY CENTRAL 500HE / 560HE

	SC 500HE	SC 560HE
Input data		
Max. PV power (recommended), (P_{PV})	580 kWp [1]	650 kWp [1]
DC voltage range, MPPT (U_{DC})	450 V – 820 V	540 V – 820 V
Max. permissible DC voltage ($U_{DC, max}$)	880 V	880 V
Max. permissible DC voltage ($U_{DC, EVR}$)	1000 V (optional)	1000 V (optional)
Max. permissible DC current Max. ($I_{DC, max}$)	2 x 591 A	2 x 591 A
Number of DC inputs / terminal without fuse	2 / DC-busbar + 4 x SMB or 2 x SMB-C	2 / DC-busbar + 4 x SMB or 2 x SMB-C
Output data		
Nominal AC output power (P_{AC})	500 kW	560 kW
Operating grid voltage +/- 10 % (U_{AC})	270 V	315 V
Nominal AC current ($I_{AC, nom}$)	1069 A	1027 A
Operating range, grid frequency (f_{AC})	50 Hz – 60 Hz	50 Hz – 60 Hz
Voltage ripple, PV voltage (U_{PP})	< 3 %	< 3 %
Harmonic distortion of grid current (K_{IAC})	< 3 % at nominal power	< 3 % at nominal power
Power factor (cos ϕ)	≥ 0.99 at nominal power	≥ 0.99 at nominal power
Efficiency [2]		
Max. efficiency $P_{AC, max}$ (η)	98.5 %	98.5 %
Euroeta (η)	98.3 %	98.4 %
Dimensions and Weight [4]		
Width / Height / Depth in mm (W / H / D)	1600 + 1200 / 2120 / 850	1600 + 1200 / 2120 / 850
Weight approx. (m)	2200 kg	2200 kg
Power consumption		
Own consumption in operation (P_{day})	< 1500W	< 1500W
Standby operating consumption (P_{night})	< approx. 100 W	< approx. 100 W
External auxiliary voltage / grid structure	3 x 400 V, 50 / 60 Hz / TN-S-grid	3 x 400 V, 50 / 60 Hz / TN-S-grid
External back-up fuse for auxiliary supply	B 20 A, 3-pole	B 20 A, 3-pole
SCC (Sunny Central Control) interfaces		
Communication (NET Piggy Back, optional)	Analog, ISDN, Ethernet, GSM	Analog, ISDN, Ethernet, GSM
Analog inputs	1 x PT 100, 2 x A_{in} [3]	1 x PT 100, 2 x A_{in} [3]
Overvoltage protection for analog inputs	Optional	Optional
Sunny String Monitor interface (COM1)	RS485	RS485
PC interface (COM3)	RS232	RS232
Electrically separated relay (ext. signal)	1	1

Efficiency curve

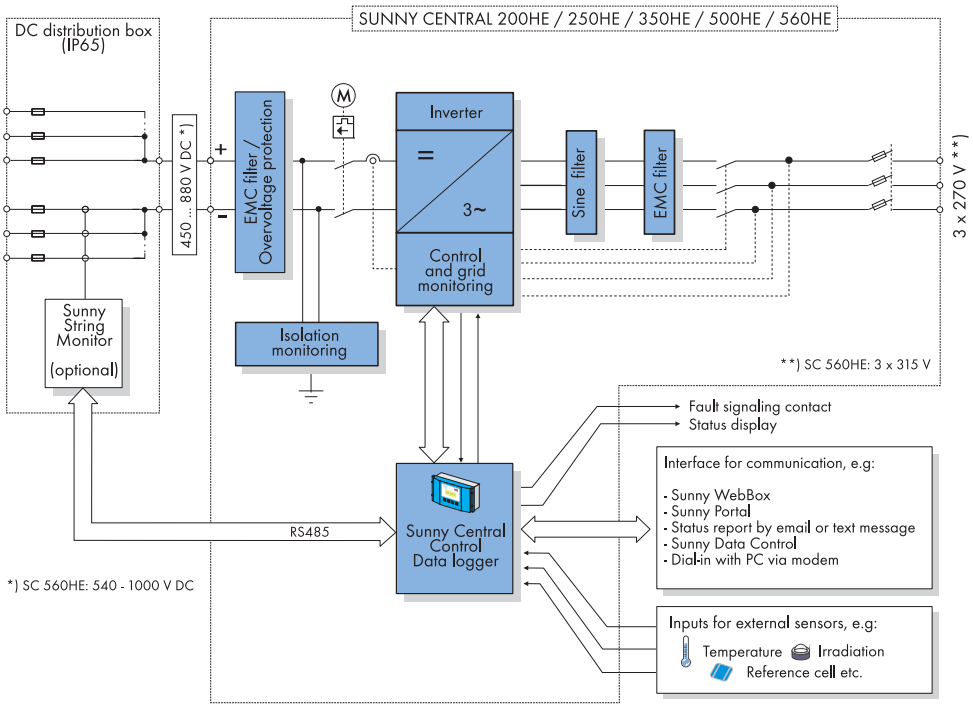


	SC 500HE	SC 560HE
Features		
Display (SCC)	Yes	Yes
Ground fault monitoring	Yes	Yes
Heating	Yes	Yes
Emergency stop	Yes	Yes
Power switch AC side	Protection load disconnector	Protection load disconnector
Power switch DC side	motor-driven	motor-driven
Monitored overvoltage protectors AC	Yes	Yes
Monitored overvoltage protectors DC	Yes	Yes
Monitored overvoltage protectors for auxiliary supply	Yes	Yes
Standards		
EMC	EN 61000-6-2, EN 61000-6-4	EN 61000-6-2, EN 61000-6-4
Grid monitoring	as per VDEW regulations	as per VDEW regulations
CE conformity	Yes	Yes
Protection rating and ambient conditions		
Protection rating as per EN 60529	IP20	IP20
Enclosure type according to 60721-3-3 ambient conditions: Fixed location, with weather protection	Classification of • chemically active substances: 3C1L • mechanically active substances: 3S2	Classification of • chemically active substances: 3C1L • mechanically active substances: 3S2
Permissible ambient temperature (T)	–20 °C ... +45 °C	–20 °C ... +45 °C
Relative humidity, not condensing (U_{AIR})	15 % ... 95 %	15 % ... 95 %
Max. altitude (above sea level)	1000 m	1000 m
Fresh air consumption (V_{AIR})	6200 m³/h	6200 m³/h

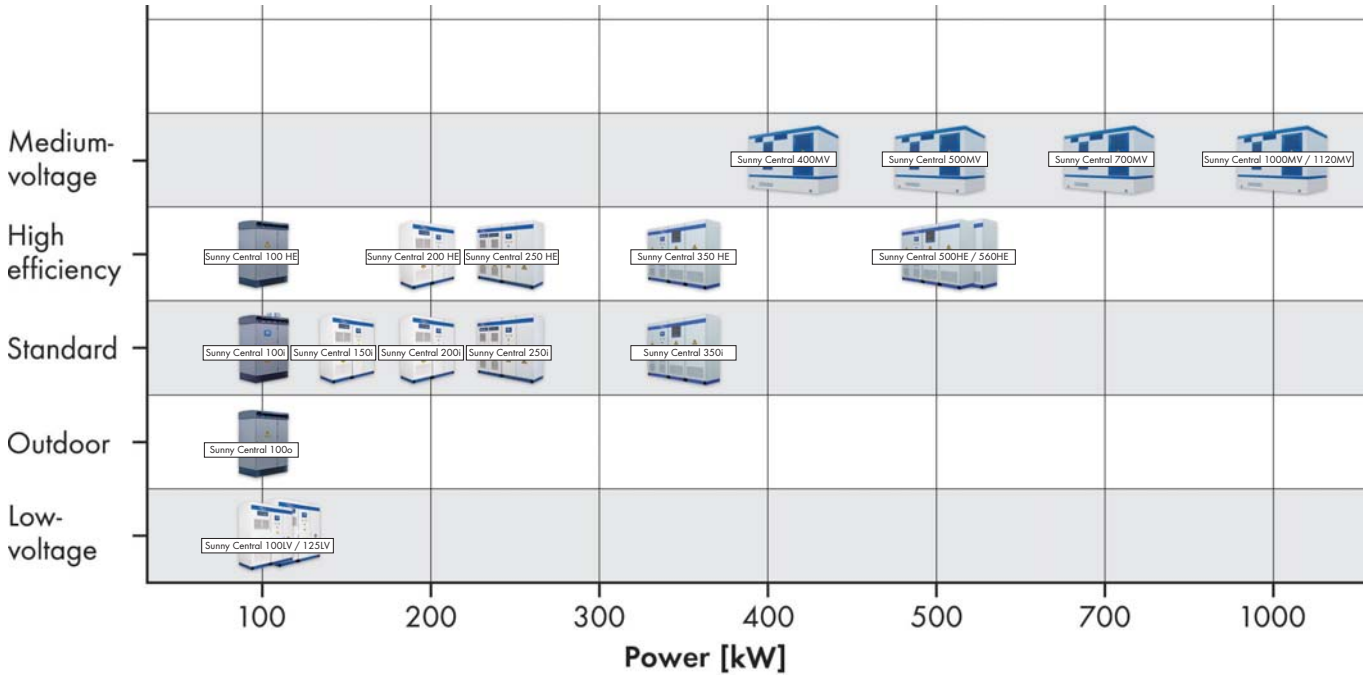
HE: High Efficiency, inverter without electric separation for connection to a medium-voltage transformer
(taking into account the SMA specification for the transformer)

1) Specifications apply to irradiation values = 1,000 (kWh/(kWp x year))
2) Efficiency measured without an internal power supply for the SC 500HE at U_{DC} = 500 V and for the SC 560HE at U_{DC} = 600 V)
3) Terminal for an analog sensor provided by the customer in two-wire and four-wire version
4) The EVR option increases the cabinet size by 210 mm

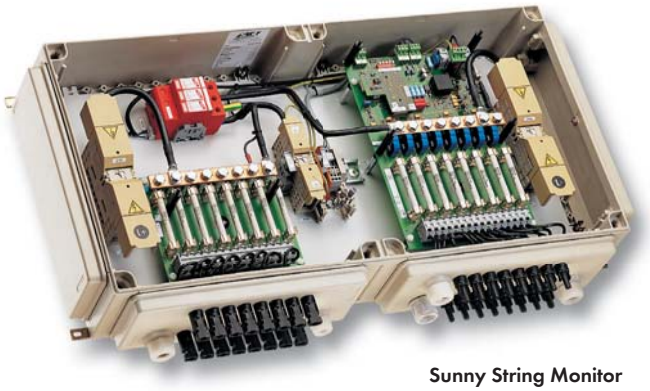
Please also read: Transport instructions for Sunny Central and the Sunny Central installation guide



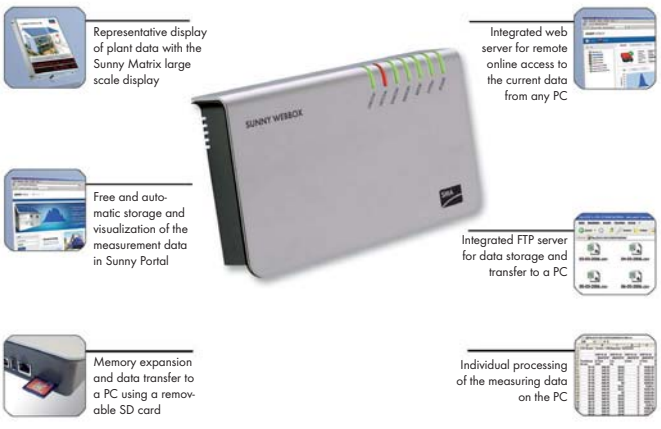
SUNNY CENTRAL Product Overview



Accessories



Sunny String Monitor



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