

EESOLAR-20KTL-MBO
Smart Energy Controller



Active Safety
AFCI Active
Arcing Protection



Higher Yields
Up to 30% More Energy



Battery Ready
2 Battery Terminals;
Compatible with EESTORE-5-30

Technical Specification	EESOLAR-20KTL-MBO
Efficiency	
Max. efficiency	98.4%
European weighted efficiency	98.1%
DC Input	
Recommended max. PV power	30,000 Wp
Max. input voltage ¹	1,100 V
Max. input current per MPPT	30 A (two strings) / 20 A (single string)
Max. short-circuit current	40 A
Start-up voltage	200 V
MPPT operating voltage range ²	200 V ~ 1,000 V
Full-load MPPT voltage range	480 V ~ 800 V
Rated input voltage	600 V
Max. number of inputs	4
Number of MPP trackers	2
Smart String Energy Storage System Terminal	
Compatible Smart String ESS	EESTORE Battery System 5kWh – 15kWh
Number of terminals	2
Max. charging power	21 kW (Single string) / 25 kW (Two strings)
Max. discharge power	22.0 kW
Max. operating current	26.25 A (per string)
Operating voltage range	600 V ~ 980 V
Output	
Rated output power	20,000 W
Max. apparent power	22,000 VA
Max. active power (cosφ = 1)	22,000 W
Rated output voltage	220 Vac / 380 Vac, 230 Vac / 400 Vac, 240 Vac / 415 Vac; 3 W / N + PE
Rated output current	30.4 A / 380 Vac
	28.9 A / 400 Vac
	27.8 A / 415 Vac
Max. output current	33.6 A / 380 Vac
	31.9 A / 400 Vac
Rated AC grid frequency	50 Hz / 60 Hz
Adjustable power factor	0.8 leading - 0.8 lagging
Max. total harmonic distortion	≤ 3%
Feature & Protection	
Overvoltage category	PV II / AC III
Input-side disconnection device	Yes
Anti-islanding protection	Yes
AC over-current protection	Yes
DC reverse-polarity protection	Yes
DC surge protection	TYPE II
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11
DC insulation resistance detection	Yes
Residual current monitoring unit	Yes
Arc fault protection	Yes
General Data	
Operating temperature range	-25 °C ~ +60 °C (-13 °F ~ 140 °F)
Relative humidity	0 % RH ~ 100 % RH
Max. operating altitude	4,000 m (13,123 ft.) (Derating above 2,000 m)
Cooling	Smart air cooling
Display	LED indicators, Integrated WLAN + Univers APP
Communication	RS485; WLAN / Ethernet via EEDongleA-05
Weight	21 kg
Dimensions (W x H x D)	546 x 460 x 241.5 mm
Protection level	IP66
Max. number of paralleled unit (with Smart String ESS)	3
Optimizer Compatibility	
Compatible optimizer	SUN2000-450W-P2, SUN2000-600W-P, MERC-1100W-P, MERC-1300W-P
Standards Compliance (More Available Upon Request)	
Safety	RCM, IEC 62109-1&2, AS/NZS 60947.3:2025
Grid connection standards	AS/NZS 4777.2:2020, AS/NZS 4777.2:2015

*1 The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

*2 Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

Disclaimer: the preceding values are measured by an internal laboratory of Huawei in a specific environment. The actual values may vary with products, software versions, usage conditions, and environmental factors.