

SUN2000-50KTL-M3



Compatible with Optimizer

MERC-1100W/1300W-P

Compact Design

49kg, Lighter & Smaller

Arc Fault Protection

Supported

High Current

Max Current 30A / MPPT 20A / Input

Protection Degree

IP66

Built-in PID Recovery

Supported

FAQ 1: Advantages and Disadvantages of Two 50K Units Replacing 100K?

Answer: Product parameters are basically the same, but the functions and features are greatly improved

Categories		HW-100kW	HW-50kW x 2	Comparison	Analysis
Features					
Parameters	Number of MPPTs	10	8	-	MPPT 30A/String 20A
	MPPT input current	26A	30A	+	
	Rated output power/kW	100	100	=	
Specifications	Dimensions width x height x depth/mm	1035*700*365	640*530*270	+	Smaller and Lighter Easy to install and exchange
	Volume/L	264	92*2	+	
	Weight/kg	90kg	48kg*2	=	
Networking	4G Dongle networking	Support	Support	=	No SmartLogger required WLAN FE Dongle supported Friendly to small-medium scale power stations
	SmartLogger networking	Support	Support	=	
	WLAN-FE Dongle networking	Not Support	Support	+	
Quick, easy installation	DC Connector	MC4 (4mm ² Cable)	MC4 (4mm ² Cable)	=	Smaller Cable Easy to install
	AC Connector	OT Terminal (70mm ² Cable)	OT Terminal (35mm ² Cable)	+	
Functions	AFCI	Optional	Standard	+	Active Safety Intelligent O&M
	PID recovery	No	Standard	+	
	Support Optimizer	No	Yes	+	
	module-Level Arc Fault Location	No	Optional (Optimizer fully configured)	+	
	Module-level rapid shutdown	No	Optional (Optimizer fully configured)	+	
	Module-level monitoring	No	Optional (Optimizer fully configured)	+	

FAQ 2: Will the DC/AC Ratio be Affected with Less MPPTs?

Answer: No impact with 182/162 module. Only have impact when using 210 module and the ratio is greater than 1.1. The actual impact is less than 5%.

Strategy: 1. recommend 182 modules and 210 three-cuts modules for the early projects.

2. If the project has used 210 half-cut modules and the ratio exceeds 1.1: recommend 1) use the 40K-M3 solution. (2) use the 100K-M1 solution.

➤ **Distributed PV application scale of 166/182/210 modules:**

- 182 modules are most used, 210 modules account for about 20%, 166 modules is rarely used
- 2 Type 210 modules: half-cut (current > 17 A) and three-cuts (current > 11 A)
- three-cut 210 modules should be recommended to use 50KTL-M3

DC/AC ratio		100KTL-M1	50KTL-M3	40KTL-M3
DC Power	Wp	100000	50000	40000
MPPT Current	A	26	30	26
String Current	A	20	20	20
Number of MPPTs	MPPTs	10	4	4
Number of Strings	Strings	20	8	8
166 Module-450W Imp	8.7 A	2 Strings/MPPT	2 Strings/MPPT	2 Strings/MPPT
182 Module-550W Imp	13.12 A	2 Strings/MPPT	2 Strings/MPPT	2 Strings/MPPT
210 Module-550W Imp	17.29 A	2 Strings/MPPT	2 Strings/MPPT	2 Strings/MPPT
210 Module-600W Imp	17.34 A	2 Strings/MPPT	2 Strings/MPPT	2 Strings/MPPT
210 Module-660W Imp	17.27 A	2 Strings/MPPT	2 Strings/MPPT	2 Strings/MPPT
Max. number of 166 Module-450W per String	Numbers/String	20	20	20
Max. number of 182 Module-550W per String	Numbers/String	20	20	20
Max. number of 210 Module-550W per String	Numbers/String	26	26	26
Max. number of 210 Module-600W per String	Numbers/String	24	24	24
Max. number of 210 Module-660W per String	Numbers/String	22	22	22
Max Ratio (166)	Pin : Pn	1.780	1.424	1.780
Common Ratio (166)	Pin : Pn	1.157	1.121	1.113
Max Ratio (182)	Pin : Pn	2.160	1.728	2.160
Common Ratio (182)	Pin : Pn	1.188	1.166	1.215
Max Ratio (210-550W)	Pin : Pn	1.404	1.123	1.404
Common Ratio (210-550W)	Pin : Pn	1.188	1.123	1.188
Max Ratio (210-600W)	Pin : Pn	1.440	1.152	1.440
Common Ratio (210-600W)	Pin : Pn	1.200	1.152	1.200
Max Ratio (210-660W)	Pin : Pn	1.452	1.162	1.452
Common Ratio (210-660W)	Pin : Pn	1.188	1.162	1.188

FAQ 3: Does the 50K BOS Higher Than the 100K BOS?

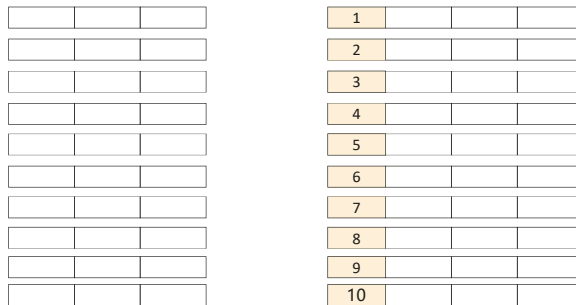
Answer:

If the distance between the Inverter and sub-board is less than 45 meter, the BoS cost of 50k will be less than 100k.

If the distance is greater than 45m, 50k solution will require AC combined box and BOS cost will be higher than 100k.

Typical 500kWac Solution

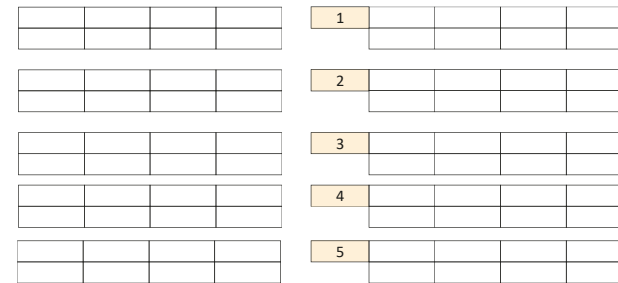
50kTL-M3



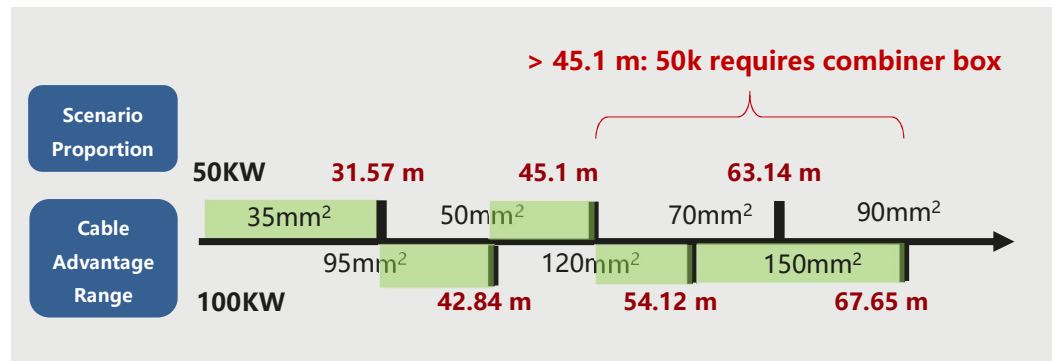
VS

Typical 500kWac Solution

100kTL-M1



Inverter Model	Maximum single-phase current (A)	Cable Type Selection (mm ²)	Cable Flow (A)	exploits coefficient	1% Voltage Drop support length (m)
50KTL	83.33	35	105	79.4%	31.57 m
50KTL	83.33	50	130	64.1%	45.1m
50KTL	83.33	70	165	50.5%	63.14m
100KTL	183.33	120	240	76.4%	42.84m
100KTL	183.33	150	270	67.9%	54.12m
100KTL	183.33	185	315	58.2%	67.65 m



FAQ 4: The 50K Solution Will Increase the Number of Inverters Which Type of the Following Inverter Parallel Mode is Recommended?

Answer: Smart Dongle is recommended. One Smart Dongle Supports Up to 10 Devices



Smart Dongle for 50KTL-M3

	Smart Dongle-WLAN-FE	Smart Dongle-4G
Number Of Inverters	10	10
Interface	USB/RS485	

VS

Smart Dongle for 100KTL-M1

	Smart Dongle-4G
Number Of Inverters	10
Interface	USB/RS485

FAQ5: Will the 50k Solution Increase the Installation and O&M Cost?

Answer: The installation cost is similar with 100k solution, but the operating experience will be better.



49KG / 92L

50KTL-M3

Need 2 people to install



Installation

The installation time of
50KTL : **0.5A**



90KG / 264L

100KTL-M1

Need 4 people to install



The installation time of
100KTL: **A**

Operation & Maintenance

- The Reliability of 2 units of 50k: **<B**
- Cost of the replacement: **<C**

The 100kTL is much heavier than 50kTL

- The Reliability of 100k: **B**
- Cost of the replacement: **C**