Reference and Design Consideration for PV Strings Applied to Integ M Series

1. Parameters

Series	Design parameter basis for PV string (with battery)		Input parameters allowed for PV string (with battery)	
	Max. Voc per PV string (V)	Min. Vmp per PV string (V)	Max. DC input voltage(V)	MPPT voltage range (V)
MTS-3-8K	500	100	600	100-500
MTH-4-6K	850	120	1000	120-850
MTH-8-20K	850	200	1000	200-850
MHT-25-50K	850	200	1000	200-850

- Max. Voc per PV string (V): Maximum allowable input voltage per PV string when the battery is connected.
- Min. Vmp per PV string (V): Minimum input voltage per PV string when the battery is connected.
- Max. DC input voltage: The maximum voltage that the components inside the inverter can withstand.
- MPPT voltage range: Inverter maximum operation voltage range when the battery is connected, it is also one of the most important references for PV array configuration.

2. Example

Take P-type 182mm wafer PV module as an example, PV module electrical parameters at STC are as follows:

Pmax: 580W, Voc: 52.3V, Vmp: 43.85A, Isc: 14.13A, Imp: 13.23A, β_Voc: -0.275%/℃. (The temperature of STC condition is 25℃.)

Considering local minimum temperature is -10℃, Voc of each PV module at -10℃ is as follows:

$Voc_{(-10℃)}$: 52.3+(25-(-10))*0.275*52.3/100=57.33V

Model	No.(n) of accessible PV modules	PV modules No. range of per string	No. of PV inputs	Recommended input PV capacity(kW)*
MTS-8K-30	100/43.85≤n≤500/57.33	3~8	2	8*2*580=9.28
MTH-6K-25	120/43.85≤n≤850/57.33	4~14	2	12*1*580=6.96
MTH-10K-25	200/43.85≤n≤850/57.33	5~14	2	11*2*580=12.76
MTH-20K-40	200/43.85≤n≤850/57.33	5~14	4	10*4*580=23.20
MHT-50K-100	200/43.85≤n≤850/57.33	5~14	8	14*8*580=64.96

Recommended input PV capacity(kW)*: Total PV installed capacity is calculated according to 1.3 times (DC/AC) oversizing.