

# PV String Monitoring Solution

## Guarantee the long term power efficiency of PV installations

In mid- and large-scale photovoltaic (PV) installations, it is mandatory to properly monitor the string level production over time to guarantee long term power performance by maximizing energy production, optimizing facility management, and decreasing operations and maintenance costs.

Mersen, a worldwide leader in electrical protection solutions, is proud to deliver a string monitoring solution to be installed in the string combiner box.

### Highlights:

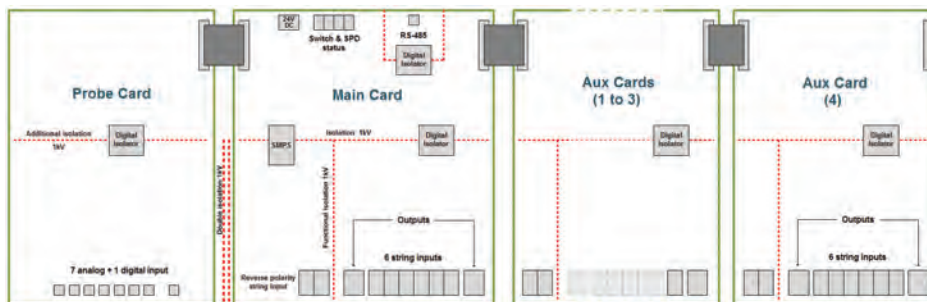
- **Built-in Power Supply** – Take power directly from the PV string. Eliminates the need to purchase and install a separate power supply to power the device
- **Accuracy** – 0.5% precision compared to 5% from competitors
- **Voltage and Current Measurement** – Additional voltage measurement provides a greater level of detail and is required by some integrators
- **Flexible 6-String Device** – Allows for greater flexibility (can be configured for 6, 12, 18, 24 or 30 string boxes)
- **Integrated Bus Bar** – Combines strings into 1 or 2 outputs based on ampere rating. Eliminates the need for separate comb bus bar
- **Higher Amp Rating** – Designed for string inputs up to 25A. Compare to competitor products with 15A or 20A inputs per string
- **Increased Functionality** – Option to connect up to 8 external sensors (anemometer, thermometer, sun sensor, etc...)



### Ratings:

**Volts** : 1000VDC maximum  
**Amps** : 25A maximum per string  
**Number of Strings**  
: 6, 12, 18, 24, 30  
**Operating Temperature**  
: -30°C to +70°C  
**Degree of Protection**  
: IP20

## Flexible, High-Performance System



A flexible electronic system to monitor from 6 to 30 PV strings by adding up to 4 **AUX Cards** to the **MAIN Card** and up to 8 external sensors by adding the **PROBE Card**.

### Catalog Numbers

HMMC6A	T1034626	6-String Main Card
HMAC6A	A1034632	6-String Auxiliary Card (add up to 4 Aux Cards for each Main Card)
HMPC8A	B1034633	Probe Card (monitor up to 8 external sensors for each probe card)
HMKCNA	C1034634	Connection Kit: Convert RS-485/DB9 to RS-485 line output
HMKCGA	D1034635	Configuration Kit: Includes configuration software & USB connection cable
HM2RS485COMA	D1039304	WebCom Energy Data Logger

### Approvals:

- UL Recognized Component File E356648
- SunSpec Alliance Certified
- EMC (electromagnetic compatibility): EN 61000-6-2, EN 61000-6-3
- Security: EN 61010-1
- Installation : IEC 61439-3, 62103



# PV String Monitoring Solution

## Additional Specifications

Main Card - HMMC6A	
Electrical Features	
Number of Strings	Max. 6
System Voltage	Max. 1000VDC
Input Current	Max. 25A
Output Current	Max. 150A
String Voltage Measurement	
Measurement Range	± 1000VDC
Precision	± 0.5% (± 5V)
String Current Measurement	
Measurement Range	± 25A
Precision	± 0.5% (± 100mA)
On-board Temperature Measurement	
Measurement Range	-40°C to +100°C
Precision	± 2°C
Communication	
Protocol	Modbus RTU on isolated RS485
Data Rate	19.2kbps (programmable)
External Relay Control	
Number of Outputs	3
Relay Coil Power	24VDC (max. 20mA)
External Measurement and Signaling Inputs	
SPD End-of-Life Status	1, potential-free input
DC Breaker Status	1, potential-free input
Auxiliary 1 & 2*	2, potential-free inputs
Power Supply from PV Strings	
Voltage Range	250VDC to 1000VDC
Power Consumption	4W at 1000VDC
External Power Supply	
Voltage Range	24VDC ± 10%
Power Consumption	1.5W
Mechanics	
Input Connector	CAGE CLAMP® (max. 6mm <sup>2</sup> )
Dimensions (LxWxH) in mm	190 x 160 x 35
Environmental Conditions	
Operating Temperature	-30°C to +70°C
Storage Temperature	-40°C to +100°C
Relative Humidity	10% to 95% non-condensing

\*Additional Inputs (i.e. door open, 2nd switch status, etc...)

Aux Card - HMA6A	
Electrical Features	
Number of Strings	Max. 6
System Voltage	Max. 1000VDC
Input Current	Max. 25A
Output Current	Max. 150A
String Voltage Measurement	
Measurement Range	± 1000VDC
Precision	± 0.5% (± 5V)
String Current Measurement	
Measurement Range	± 25A
Precision	± 0.5% (± 100mA)
On-board Temperature Measurement	
Measurement Range	-40°C to +100°C
Precision	± 2°C
Power Consumption	
Card Consumption	0.5W
Mechanics	
Input Connector	CAGE CLAMP® (max. 6mm <sup>2</sup> )
Dimensions (LxWxH) in mm	190 x 160 x 35
Same Environmental Conditions as Main Card	

Probe Card - HMPC8A	
Measurement Inputs	
Digital Input	1 input potential-free or pulse
	Pulse frequency: 0 to 100Hz
Analog Inputs	7 inputs, individually configurable
	• 4-20mA: precision ±1%, impedance 100Ω
	• 0-10V: precision ±1%
Power Consumption	
Card Consumption	0.5W
Sensor Consumption	Depends on number and type
Mechanics	
Input Connector	CAGE CLAMP® (max. 2.5mm <sup>2</sup> )
Dimensions (LxWxH) in mm	190 x 160 x 20
Same Environmental Conditions as Main Card	