

# PV String Monitoring Solution

## Guarantee the long term power efficiency of PV installations

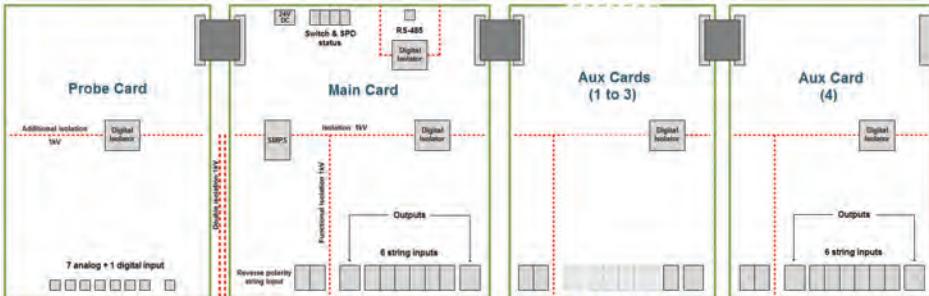
In mid- and large-scale photovoltaic (PV) installations, it is mandatory to properly monitor the string level production over time to guarantee long term power performance by maximizing energy production, optimizing facility management, and decreasing operations and maintenance costs.

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...)

### 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
HMKGCA	D1034635	Configuration Kit: Includes configuration software & USB connection cable
HM2RS485COMA	D1039304	WebCom Energy Data Logger



### 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

### 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



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## Additional Specifications

Main Card - HMMC6A		Aux Card - HMAC6A	
<b>Electrical Features</b>		<b>Electrical Features</b>	
Number of Strings	Max. 6	Number of Strings	Max. 6
System Voltage	Max. 1000VDC	System Voltage	Max. 1000VDC
Input Current	Max. 25A	Input Current	Max. 25A
Output Current	Max. 150A	Output Current	Max. 150A
<b>String Voltage Measurement</b>		<b>String Voltage Measurement</b>	
Measurement Range	± 1000VDC	Measurement Range	± 1000VDC
Precision	± 0.5% (± 5V)	Precision	± 0.5% (± 5V)
<b>String Current Measurement</b>		<b>String Current Measurement</b>	
Measurement Range	± 25A	Measurement Range	± 25A
Precision	± 0.5% (± 100mA)	Precision	± 0.5% (± 100mA)
<b>On-board Temperature Measurement</b>		<b>On-board Temperature Measurement</b>	
Measurement Range	-40°C to +100°C	Measurement Range	-40°C to +100°C
Precision	± 2°C	Precision	± 2°C
<b>Communication</b>		<b>Power Consumption</b>	
Protocol	Modbus RTU on isolated RS485	Card Consumption	0.5W
Data Rate	19.2kbps (programmable)	<b>Mechanics</b>	
<b>External Relay Control</b>		Input Connector	CAGE CLAMP® (max. 6mm²)
Number of Outputs	3	Dimensions (LxWxH) in mm	190 x 160 x 35
Relay Coil Power	24VDC (max. 20mA)	<b>Same Environmental Conditions as Main Card</b>	
<b>External Measurement and Signaling Inputs</b>		<b>Probe Card - HMPC8A</b>	
SPD End-of-Life Status	1, potential-free input	<b>Measurement Inputs</b>	
DC Breaker Status	1, potential-free input	Digital Input	1 input potential-free or pulse
Auxiliary 1 & 2*	2, potential-free inputs		Pulse frequency: 0 to 100Hz
<b>Power Supply from PV Strings</b>		Analog Inputs	7 inputs, individually configurable
Voltage Range	250VDC to 1000VDC		• 4-20mA: precision ±1%, impedance 100Ω
Power Consumption	4W at 1000VDC		• 0-10V: precision ±1%
<b>External Power Supply</b>		<b>Power Consumption</b>	
Voltage Range	24VDC ± 10%	Card Consumption	0.5W
Power Consumption	1.5W	Sensor Consumption	Depends on number and type
<b>Mechanics</b>		<b>Mechanics</b>	
Input Connector	CAGE CLAMP® (max. 6mm²)	Input Connector	CAGE CLAMP® (max. 2.5mm²)
Dimensions (LxWxH) in mm	190 x 160 x 35	Dimensions (LxWxH) in mm	190 x 160 x 20
<b>Environmental Conditions</b>		<b>Same Environmental Conditions as Main Card</b>	
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...)