

ABB monitoring and communications PVI-PMU



ABB's PVI-PMU enables customers to control active and reactive power of the inverters in accordance with eeG-2009§6 and BDEW norms.

Thanks to its two RS485 ports, the PVI-PMU can be used for controlling the power generated by ABB Inverters in PV plants where an external data acquisition system has been installed too.

The proprietary Aurora Protocol is the communication protocol the PVI-PMU uses to exchange data with all ABB Inverters; meanwhile, the power control management commands, sent by an external source, are received through a dedicated analog and digital inputs.

The PMU provides three different control functions for the implementation of active power limitation and three different operating modes for reactive power control.

This combination of the "digital" input status and the signals received from the analog inputs enables one of the three active power control functions.

1. Active power limitation in four steps
2. Active power limitation in 11 steps
3. Continuous active power limitation

Reactive power is controlled using the 4-20 mA analog inputs.

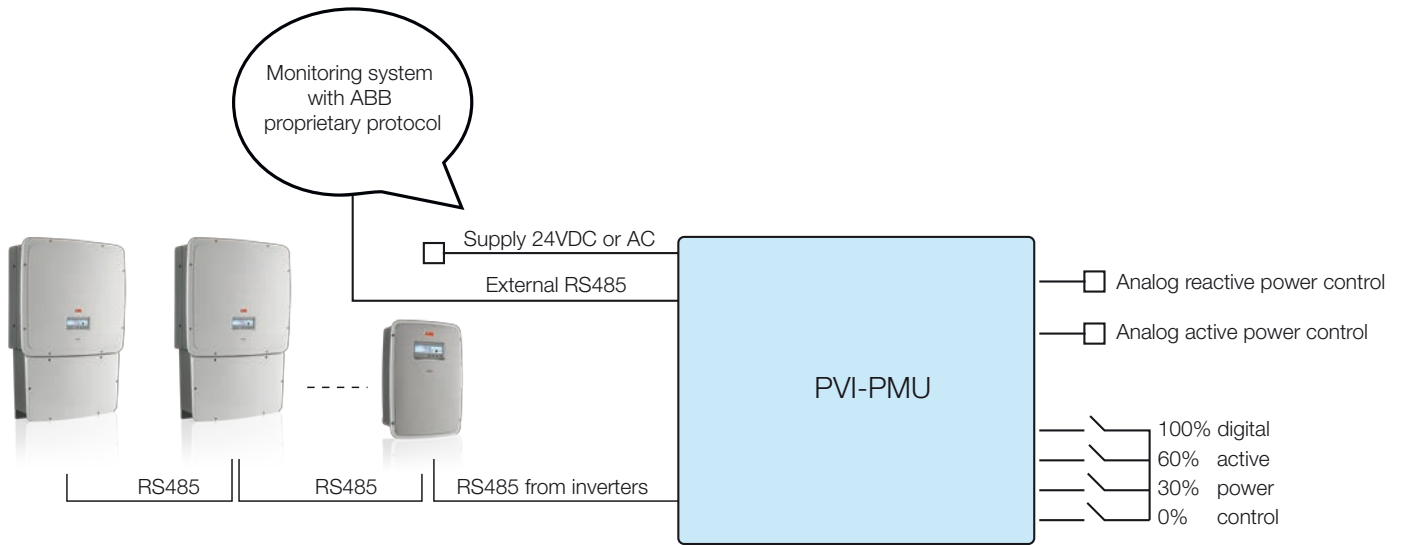
Using the combination of analog and digital inputs, three different reactive power management operating modes are selectable:

1. Fixed $\cos(\varphi)$ based on the inverters nominal power
2. Fixed $\cos(\varphi)$ based on inverter instantaneous power
3. Fixed $\tan(\varphi)$ based on inverter instantaneous power

Highlights

- An external isolated power supply unit is provided
- This unit is capable of controlling up to 32 Inverters or 55kW modules with each PVI-PMU unit
- ABB's PVI-PMU enables active and reactive power control according to eeG-2009§6 and BDEW
- It is easy to be integrated in an existing data acquisition system.
- DIN rail mountable device
- The PVI-PMU is compatible with all ABB string and central inverters

Block diagram of PVI-PMU



Technical data and types

Type code	PVI-PMU
Power entry characteristic	
AC Input voltage range ($V_{ac,min} \dots V_{ac,max}$)	15...36 V
Nominal AC input voltage ($V_{ac,n}$)	24 V
Nominal frequency (f_n)	50/60 Hz
DC input voltage range ($V_{dc,min} \dots V_{dc,max}$)	18...48 V
Nominal DC input voltage ($V_{dc,n}$)	24 V
Power consumption	< 10 W
RS485 section	
Ports	RS485 inverter / RS485 external
Serial interface type	Half-Duplex
Baud rate	19200 bps
Protocol	ABB proprietary
Number of inverters	32 ⁽¹⁾
Power factor range	± 0.9
Line biasing resistor (where necessary)	1 k Ω between +5V/+D and RTN/-D
Termination resistor	120 Ω ⁽²⁾
Isolation	100 V _{dc} ⁽⁴⁾
Analog input section	
Active power control	4...20 mA (max 22 mA)
Reactive power control	4...20 mA (max 22 mA)
Digital input section	
Number of inputs for active power control	4 ⁽³⁾
Rating voltage	15 V
Rating current	50 mA
Isolation	100 V _{dc} ⁽⁴⁾
Physical and environmental	
Environmental protection	IP 20
Ambient temperature range	-20...+60 °C
Relative humidity	0...95%
Dimension	53x90x57 mm
Weight	180 g
Compliance	
Marking	CE
Safety and EMC standard	EN55011; EN61000-6-2

1. Max 32 string inverter or 55kW modules
2. Adjustable
3. Alternative to the analog input
4. Between input and serial port

Remark. Features not specifically listed in the present data sheet are not included in the product

Support and service

ABB supports its customers with dedicated, global service organization in more than 60 countries and strong regional and national technical partner networks providing complete range of life cycle services.

For more information please contact your local ABB representative or visit:

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