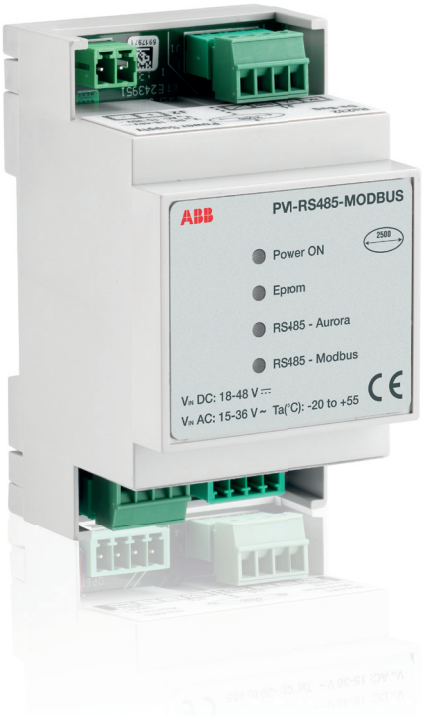
Solar inverters

ABB monitoring and communications
PVI-RS485-MODBUS Converter



PVI-RS485-MODBUS is the ABB devices family able to convert the proprietary Aurora Protocol to ModBus RTU or ModBus TCP communication protocol.

The PVI-RS485-MODBUS enables ABB inverters to exchange data with third party devices such as controller as well as data logger supporting ModBus (RTU or TCP) communication protocol.

The PVI-RS485-MODBUS is a DIN rail mounted device and can be configured and upgrated locally by simply using a PC (connected to the RS485 port through ABB PVI-USB-RS232-485 Adapter) running a common testing application able to operate as a ModBus master for accessing data in the PVI-RS485-MODBUS connected as slave device.

The PVI-RS485-MODBUS is capable to manage up to 32 ABB string inverters or 32 ABB 55kW inverter modules and, according to the specific product model, it allows customer to manage inverter power control in range of Smart Grid functionalities.

Highlights

- Converters from ABB proprietary Aurora Protocol to MODBUS RTU
  - PVI-RS485-MODBUS-STRING (for ABB string inverters)
  - PVI-RS485-MODBUS-CENTRAL (for ABB central inverters)
- Converters from ABB proprietary Aurora Protocol to MODBUS TCP
  - PVI-RS485-MODBUS-TCP-STRING (for ABB string inverters)
  - PVI-RS485-MODBUS-TCP-CENTRAL-xx (for ABB central inverters)
- Up to 32 inverters or 55kW modules manageable
- Multi-drop bus connection allowed for RTU
- 50 Hz transformer and cables are provided
- Active-reactive power control allowed by some Modbus RTU models

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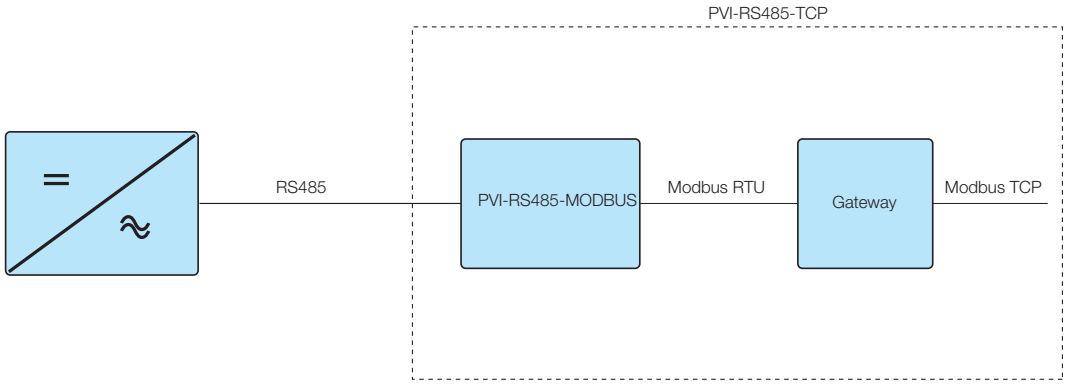
Block diagram of PVI-RS485-MODBUS Converter



Technical data and types

Type code	PVI-RS485-MODBUS
Power entry characteristic	
AC input voltage range ($V_{ac,min}$...$V_{ac,max}$)	15...36 V
Nominal AC input voltage ($V_{ac,n}$)	24 V
Rated frequency (f_r)	50 or 60 Hz
DC Input Voltage Range ($V_{dc,min}$...$V_{dc,max}$)	18...48 V
Nominal DC input voltage ($V_{dc,n}$)	24 V
RS485 section	
Serial interface ype	RS485 Half-Duplex
Baud rate	19200 bps not modifiable
Protocol	ABB Proprietary
Number of devices	32
Line biasing resistor (where necessary)	1 kΩ between +5V/+D and RTN/-D
Termination resistor	120 Ω settable via switch
RS485 MODBUS section	
Serial Interface Type	RS485 Half-Duplex
Baud rate	19200 bps
Protocol	MODBUS RTU - MODBUS/TCP
Number of devices	32
Line biasing resistor (where necessary)	1 kΩ between +5V/+D and RTN/-D
Termination resistor	120 Ω settable via switch
Physical and environmental	
Environmental protection rating	IP 20 (Indoor use only)
Ambient temperature range	-40...+ 60°C/-40...140°F
Relative humidity	0...95%
Compliance	
Isolation	Yes, 2500 V_{DC}
Marking	CE
Safety and EMC standard	EN55022; EN61000-6-2/3; EN61000-4-2/3/4/5/6/8/11/14/16
Available products variants	
RTU STRING	PVI-RS485-MODBUS-STRING (for ABB string inverters)
TCP STRING	PVI-RS485-MODBUS-TCP-STRING (for ABB string inverters)
RTU CENTRAL	PVI-RS485-MODBUS-CENTRAL (for ABB central inverters)
TCP CENTRAL EU version	PVI-RS485-MODBUS-TCP-CENTRAL-EU (for ABB central inverters)
TCP CENTRAL US version	PVI-RS485-MODBUS-TCP-CENTRAL-US (for ABB central inverters)
TCP CENTRAL Core CN version	PVI-RS485-MODBUS-TCP-CENTRAL-CORE (for ABB central Core inverter)

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:

www.abb.com/solarinverters

www.abb.com

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