

Monitoring of large plants

Solar-Log¹⁰⁰⁰ PM+

The Powermanagement (PM+) for photovoltaic plants in the medium voltage network

In accordance with statutory provisions arising out of the Medium-Voltage Directive of the German Federal Association of Energy and Water Management (BDEW) and the Renewable Energy Law (EEG), network operators must, when required, be able to remotely control the output of the generating plants that are feeding in to their networks.

The Solar-Log¹⁰⁰⁰ PM+ is equipped with a digital PM+ interface and can evaluate the potential-free outputs from two ripple control receivers that are able to be actuated by the network operator.

In the area of the provision of reactive power the voltage-dependent reactive power control via the function Q(U) represents a serious technical challenge. Being able to control the reactive power, allows a dynamic adjustment to current network conditions and thus assures a greater influence over the voltage stability in the network.

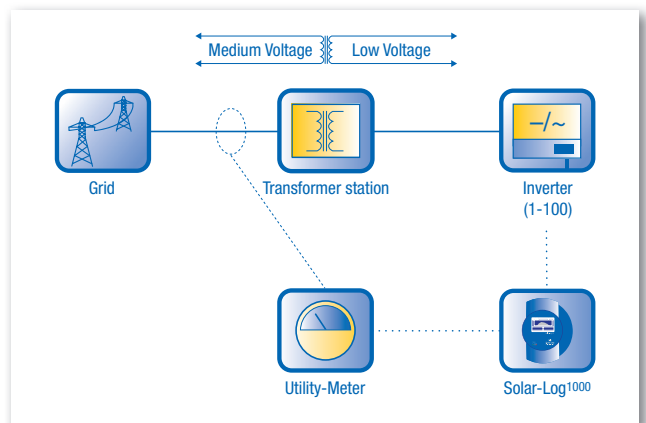
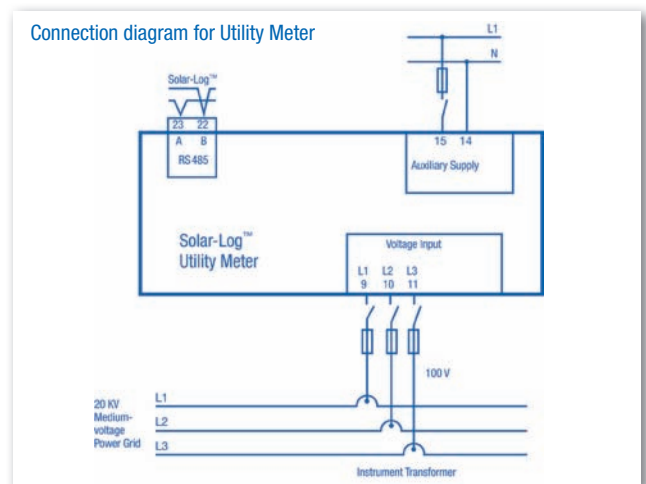
Solar-Log™ Utility Meter

Function

The combination of the Solar-Log¹⁰⁰⁰ PM+ and the Solar-Log™ Utility Meter makes it possible to regulate the feed-in reactive power according to the voltage prevailing on the medium voltage level. The Utility Meter which takes measurements via voltage converters in the medium voltage network, relays the measured values to the Solar-Log¹⁰⁰⁰ PM+ via an RS485 Bus. Based on the voltage measured at the time the Solar-Log¹⁰⁰⁰ PM+ uses stored characteristic curves to calculate the required reactive power. Based on this, the connected inverters are controlled accordingly.



Solar-Log™ Utility-Meter



Basic set-up of Q(U) regulation

Technical data	
Voltage measurement	17 V-520 V L-L, 4 inputs
Interface	RS485
Mounting	Top hat rails, 95-240 V _{AC} / 135-340 V _{DC} voltage supply

Type	Art.-No.
Solar-Log™ Utility Meter Measuring unit for cos phi control in conjunction with the network voltage	255385

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Feed-in management for large plants

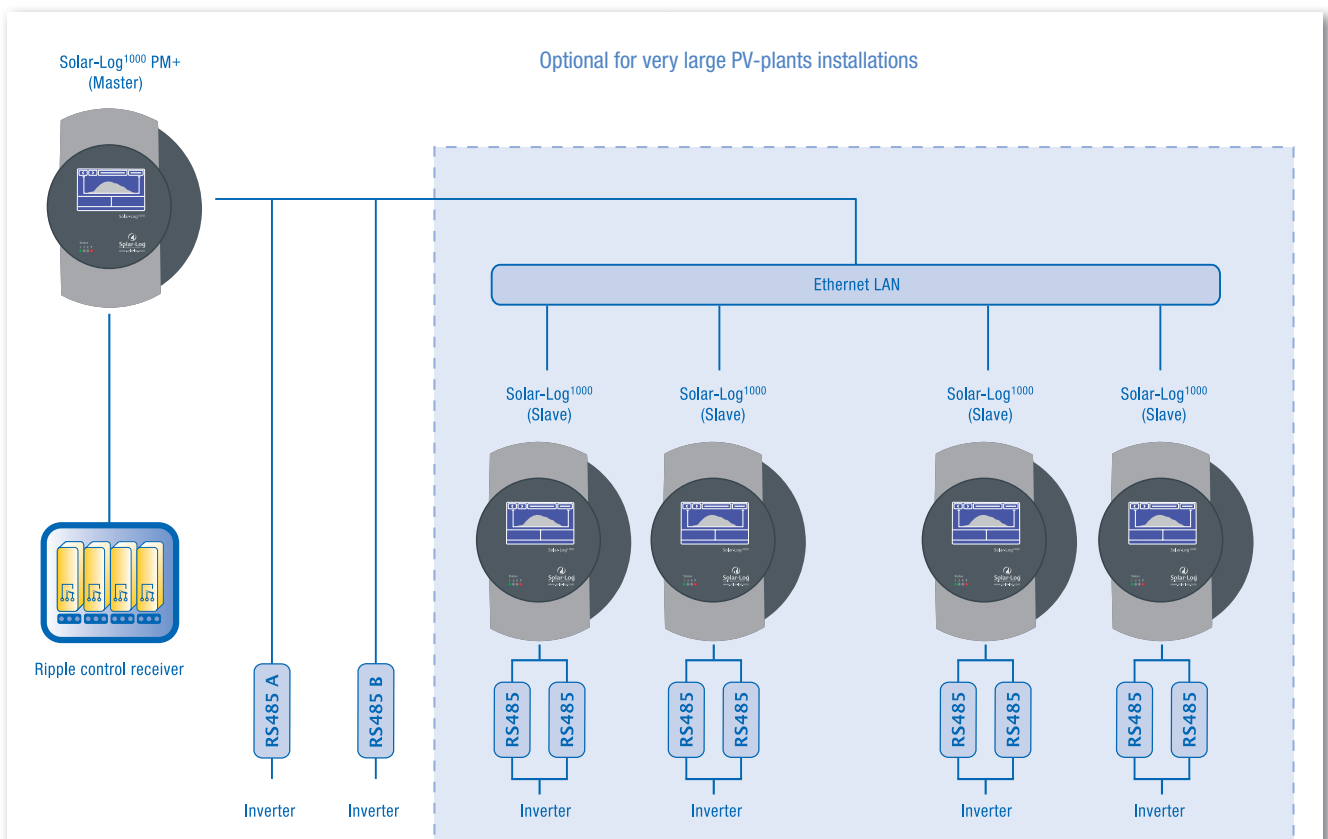
In order to provide feed management for large plants, there is the option to operate the Solar-Log¹⁰⁰⁰ PM+ in a network with several Solar-Log¹⁰⁰⁰ units.

Function:

- The ripple control receiver signals are received on the Solar-Log¹⁰⁰⁰ PM+ (Master) and are distributed to the connected inverters via an RS485 bus.
- In addition, the switching commands of the Solar-Log¹⁰⁰⁰ PM+ (Master) energy supplier are forwarded to other Solar-Log¹⁰⁰⁰ units that then, in turn, switch the connected inverters on.
- For this procedure, the Solar-Log¹⁰⁰⁰ PM+ (Master) is connected to up to 9 Solar-Log¹⁰⁰⁰ (Slave) units via the network (RJ45 wiring).

Configuration:

- The IP addresses of the connected Solar-Log¹⁰⁰⁰ units are entered and stored in the Solar-Log¹⁰⁰⁰ PM+ (Master).
- After a reboot of the Solar-Log¹⁰⁰⁰ (Slave), this then appears in "Configuration" under "Extension" as a new menu entry "Feed-in Management".
- This menu item configures the "Feed-in Management" of the inverters connected to this Solar-LogTM.



Example

Further information at:

www.solar-log.com/en/service-support/downloads/brochures-data-sheets.html/Solar-Log¹⁰⁰⁰ PM+ Technical Description