



EN Performance Monitoring

Solar-Log™

Publisher:
Solare Datensysteme GmbH
Fuhrmannstr. 9
72351 Geislingen-Binsdorf
Germany

International support
Tel.:+49 7428 9418 -640
Fax:+49 7428 9418 -280

e-mail: support@solar-log.com

Italy
Technical support: +39 0471 631032
e-mail: italy-support@solar-log.com

France
Technical support: +33 97 7909708
e-mail: france-support@solar-log.com

Switzerland
Technical support: +41 565 355346
e-mail: switzerland-fl-support@solar-log.com

Holland
Technical support: +31 85 888 1110
e-mail: benelux-support@solar-log.com

Belgium
Technical support: +32 553 03670
e-mail: benelux-support@solar-log.com

United States
Technical support: +1 203 702 7189
e-mail: usa-support@solar-log.com

Australia & New Zealand
Technical support: +61 1300 79 20 01
e-mail: australia@solar-log.com

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1 Performance Monitoring

To monitor different sized inverters, the Solar-Log™ normalized the value from every inverter to 1 kWp. This is based on the amount of generator power set in [Configuration | Devices | Configuration](#). The generator power is equivalent to 100% and the value here is normalized to 1 kWp.

Example plant:

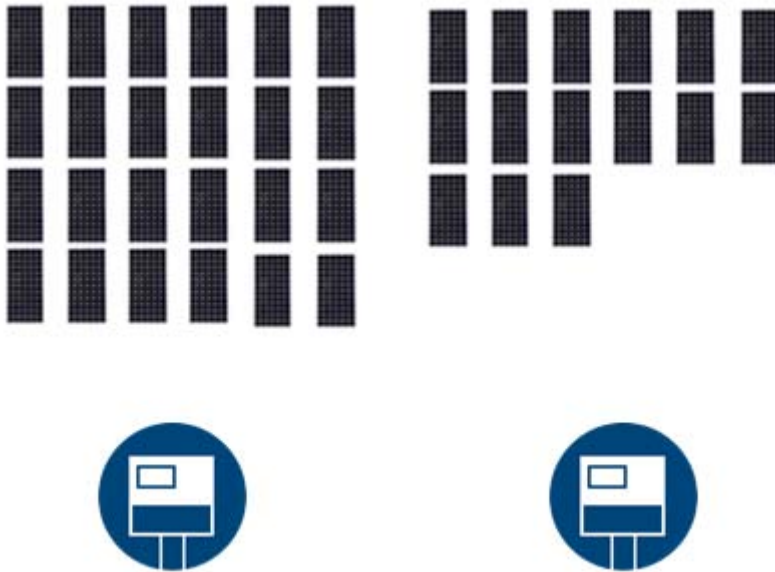


Fig.: Performance Monitoring: Example plant with two inverters

Inverter 1, Inverter 1 house

Generator Power:
25* 220W (modules) = 5500 Wp
.....
Module Field 1

Inverter 2, Inverter 2 house

Generator Power:
15* 220W (modules) = 3300 Wp
.....
Module Field 1

The Solar-Log™ compares all of the inverters that are located in the same module field. [Settings for the module fields](#) are under [Configuration | Devices | Configuration](#).

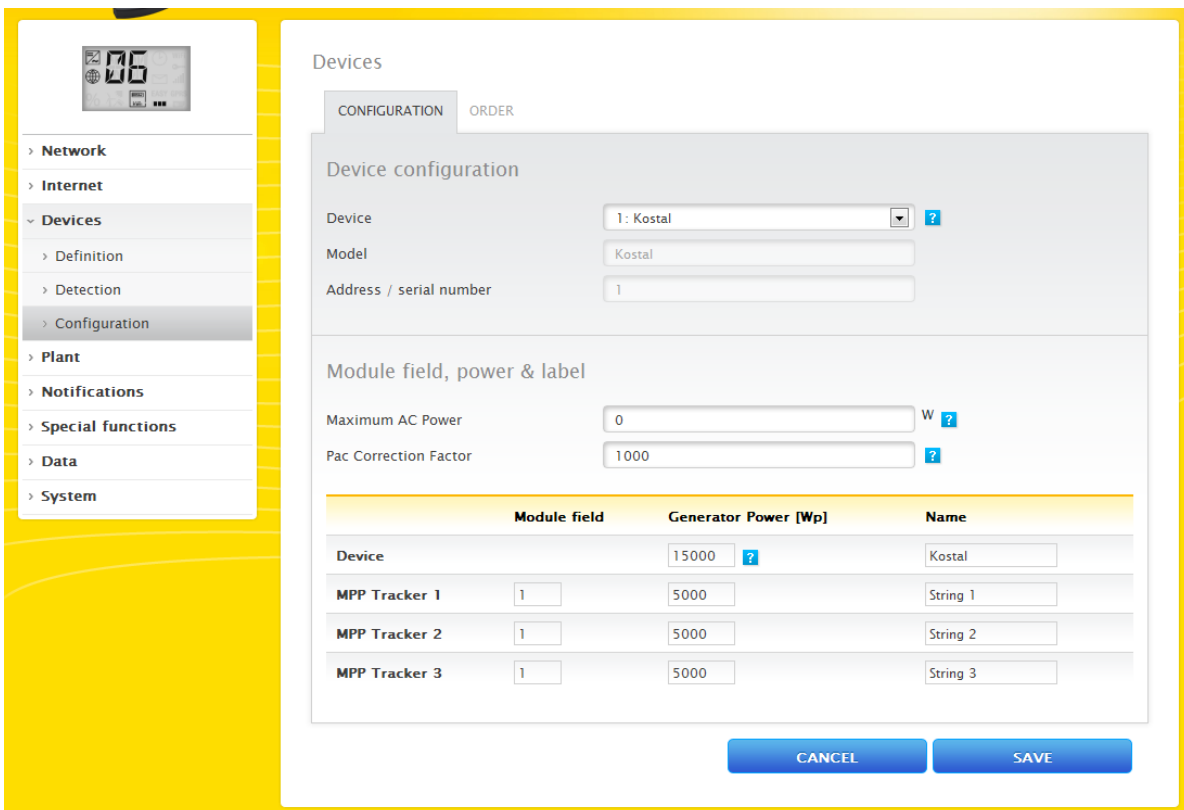


Fig.: Configuring module fields

Performance Monitoring Configuration under Configuration | Notifications.

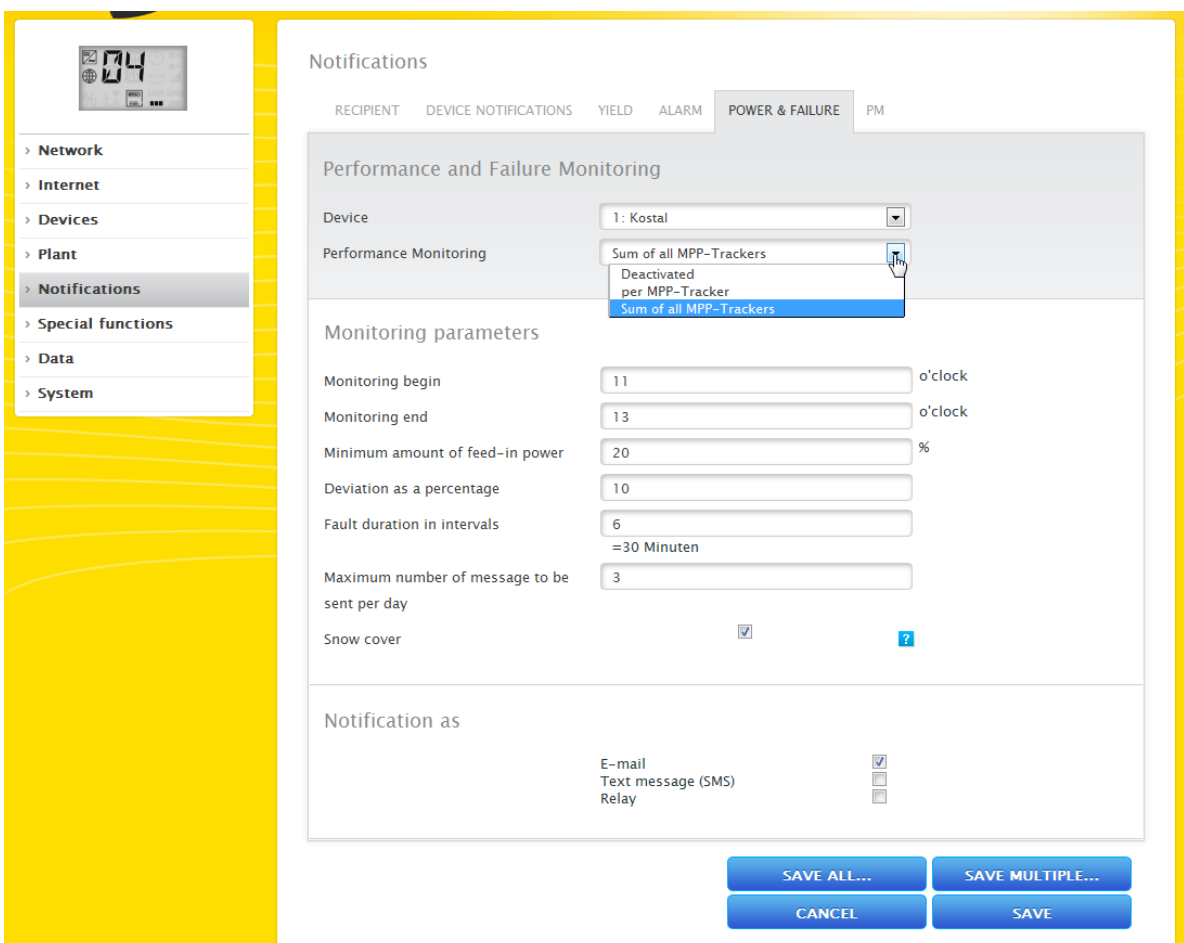


Fig.: Configuring performance monitoring

The output measured from the inverters is contrasted with the generator capacity that is listed in the system.

A notification is sent (by email) when the deviation exceeds the amount configured (for example 10%) over a set time period (for example 30 minutes).

Note!



For performance monitoring configurations, see the chapter "Configuring Notification" in the Installation Manual.

1.1 Performance Monitoring Notification

Example Notification:

Module Field 1 - Inverter 1 'Inverter 1 House'

IRV = 4916W (Inverter 2, Inverter 2 House'), IAV = 3950W, deviation = 19.65 %

The notification contains the following information:

Module field:

The module field which was affected or at least the module field in which a deviation was detected.

Deviating inverter:

Inverter 1

IRV:

The reference value that is used to contrast inverters. It comes from the most effective operating inverter, the value is in W.

IAV:

The amount of output from inverter with a deviation.

Dev:

The amount of deviation as a percentage of the reference value.

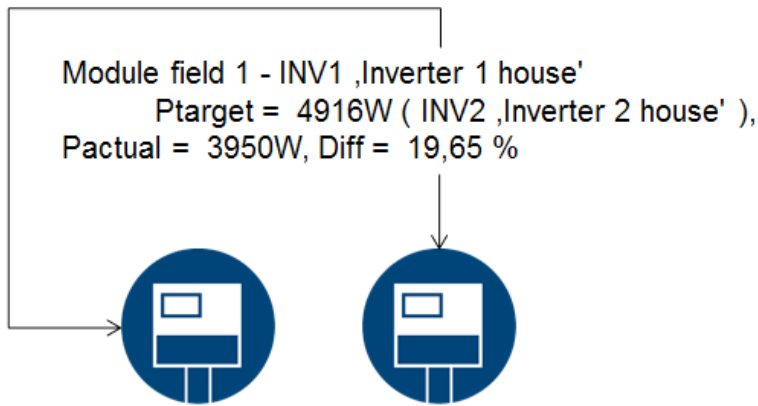


Fig.: Performance Monitoring with notification and inverter

Inverter 1, Inverter 1 house		Inverter 2, Inverter 2 house
Generator Power=	5500 Wp	3300 Wp
Current power output	= 3950 W	= 2950 W
Current efficiency	= 71.81 %	= 89.39 %
	Inverter with a deviation	Reference Inverter

Inverter has generated the most power with its value of 0.8939 and is thus used as the [reference inverter](#).

1.2 Calculation and Explanation of the Notification

In regard to the reference inverter, inverter 1 is compared to all of the inverters in the same module field (in the example only output is used).

A deviation of 19.65% is determined based on the comparison of the generator capacity and IRV forecast.

Calculating the Deviation for Inverter 1

Deviation Calculation

Inverter 1 IRV calculation	$(5500 \times 89.39)100 = \text{IRV } 4916 \text{ W}$
Efficiency of Inverter 1	$(3950 \text{ W} : 5500 \text{ W}) * 100 = 71.81\%$
This corresponds to 71.81 % of the generator power or a value of 0.7181 kWp.	

Deviation as a percentage

IRV Inverter 1 - IAV Inverter 1	$4916 \text{ W} - 3950 \text{ W} = 966 \text{ W}$
Deviation as a percentage	$(966 \text{ W} : 4916 \text{ W}) * 100 = 19.65 \%$

Inverter 2 is used as the reference inverter since it was the most effective one at the time of the measurement. Inverter 1 should have produced an output of 4916 W based on the measurement and the calculations comparing all of the inverters in the same module field. The actual output was 3950 W, a deviation of 19.65%. This caused a notification to be sent.

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Solare Datensysteme GmbH
Fuhrmannstraße 9
72351 Geislingen-Binsdorf
Germany
Tel: +49 7428 9418 200
Fax: +49 7428 9418 280
info@solar-log.com
www.solar-log.com
www.solarlog-WEB.com

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