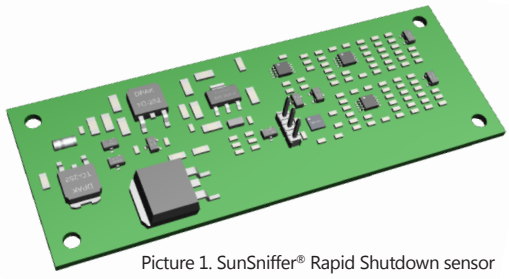
SunSniffer®

Sensor RSD

The heart of the SunSniffer® technology for highly accurate detection of module data and rapid power shutdown function



Picture 1. SunSniffer® Rapid Shutdown sensor

In total

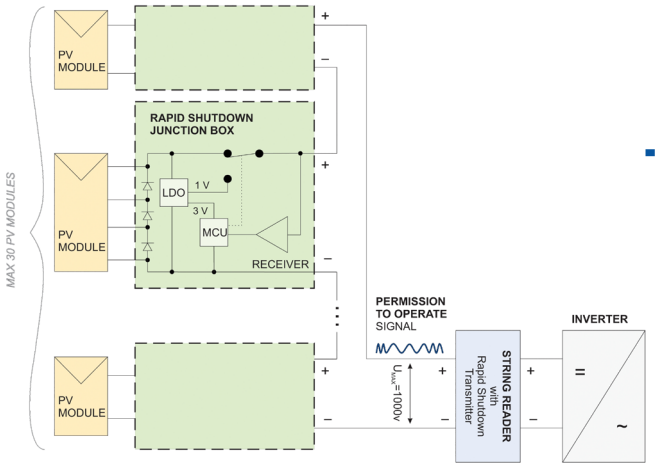
compliance with SunSpec Alliance specifications*

regarding rapid power shutdown controlled via Powerline Communication (PLC).

This sensor integrates not only a sensor measuring voltage and temperature of each module, but shuts the module down immediately if necessary. Data are sent via smart Powerline communication (existing DC cabling). In absence of permission to operate PLC signal, sent by String Reader-RSD, Sensor-RSD shuts off PV module output.

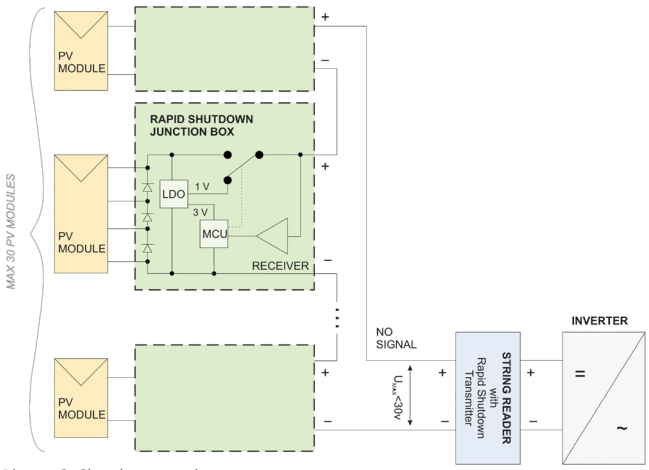
*SunSpec Alliance, 2016: Communication Signal for Rapid Shutdown SunSpec Interoperability Specification

Permission to operate mode:
power generation without any contraints,
„permission-to-operate" signal is sent continuously.



Picture 2. Permission to operate mode

Shutdown mode:
Absence of „permission-to-operate" signal for 10 seconds initiates automated shutdown, current is cut off.



Picture 3. Shutdown mode

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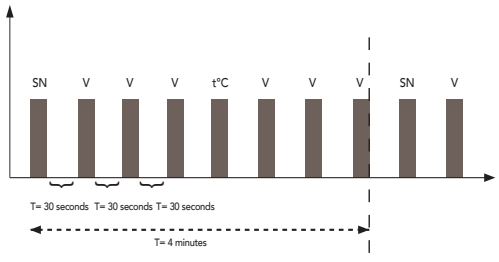
TECHNICAL SPECIFICATIONS:

Working voltage	5 ~ 45 ± 0.2 V
Temperature	-40 ~ + 85 ± 1 °C
Current consumption	≤ 10 mAmp
Serial Number length (SN)	30 bit
Data transmission interval (T)	30 ± 0.4 sec
including:	
- temperature transmission interval ($T_{t°C}$)	4 ± 0.4 min
- SP full serial number transmission interval (T_{SNfull})	4 ± 0.4 min
- voltage transmission interval (T_V)	30 ± 0.4 sec
Communication protocol	Power line with S-FSK modulation
Power control mode	Permission to operate watchdog
Dimensions (L x W x H)	92 x 34 x 10 mm
Maximum output voltage at shutdown mode	<1 V
Maximum shutdown delay	10 sec
Maximum turn-on delay	10 sec

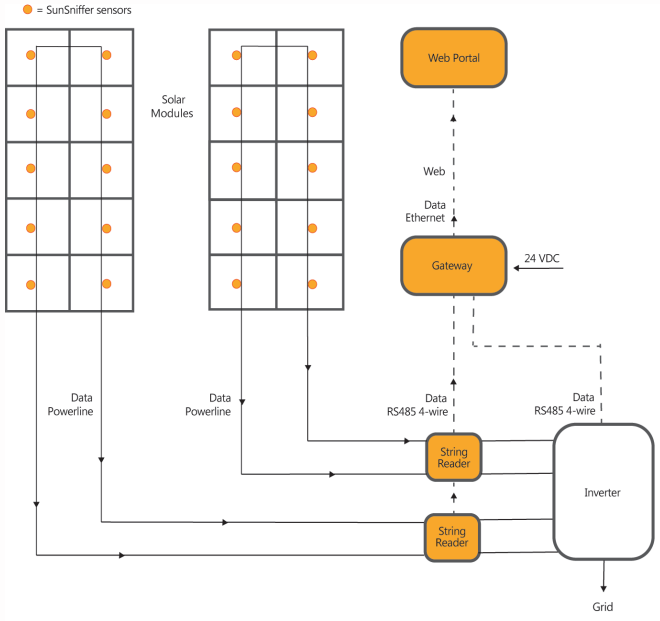
The SunSniffer® sensor transmits data with 30 seconds interval.

There are three types of data sent:
1) Module full serial number SN
2) Module voltage V
3) Module Temperature t°C.
The sequence is repeated every 4 minutes.

Please refer to data packet sequence below.



Picture 4. Sequence of data packets



Picture 5. SunSniffer® Technology Scheme

SunSniffer GmbH & Co. KG
Ludwig-Feuerbach-Str. 69
90489 Nürnberg | Germany

www.sunsniffer.de