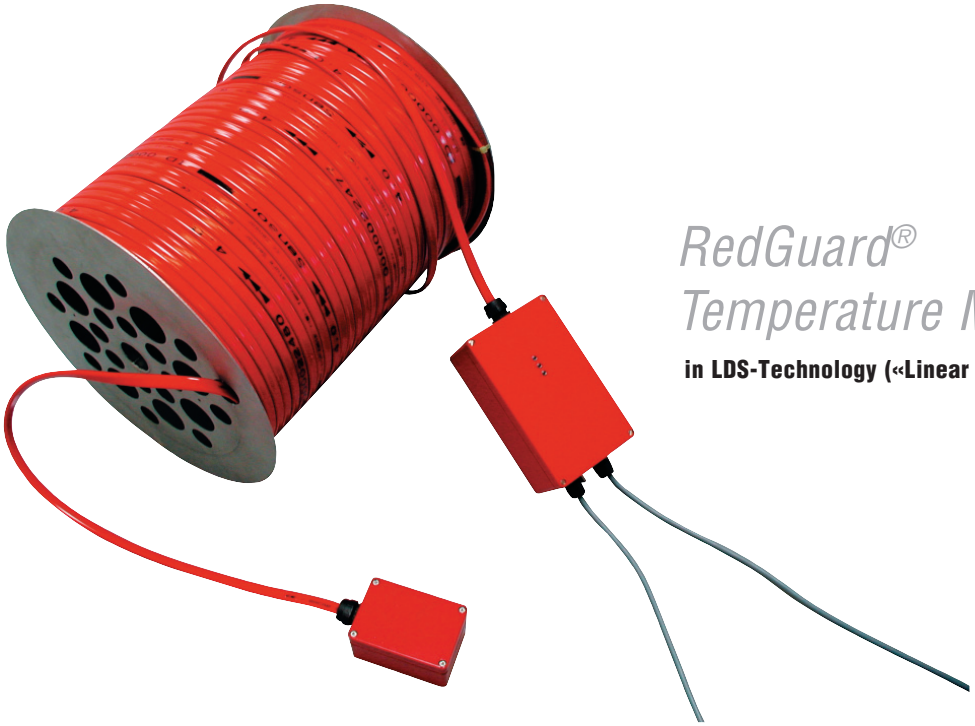
BARTEC

RedGuard®

Temperature Measurement System RedGuard®



RedGuard®
Temperature Measurement System

in LDS-Technology («Linear Distributed Sensors»)

Features

- up to 2.0 km of cable length
- excellent response time (< 10s)
- high sensitivity (0.1 °C)
- selectable sensor spacing (2 m up to 20 m)
- wide operating range of the sensors (- 40 °C to + 80 °C)
- wide operating range of the electronics (- 25 °C to + 65 °C)
- EMC hardened
- serial interface
- easy installation
- maintenance free
- simple configuration under Windows®

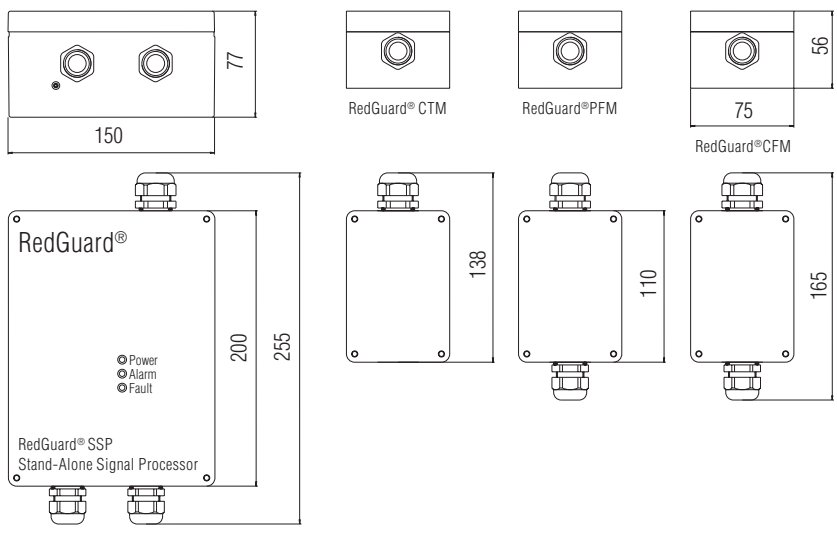
Description

The patented RedGuard® temperature measurement system consists of an up to 2.0 km long cable with distributed integrated temperature sensors and a control unit (PLC), which collects and analyses the temperature values from the sensors.

The RedGuard® software handles both monitoring of temperatures and temperature gradients. Overrun of set thresholds generates alarms, which can be output either on a relay or/and forwarded on the serial interface.

By means of the serial interface system can easily be integrated into larger systems (open architecture).

Dimensions control unit

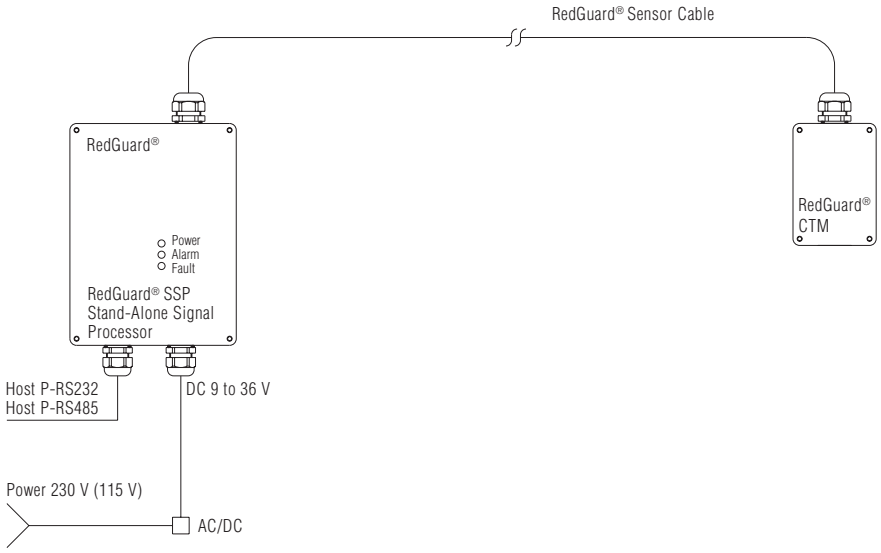


RedGuard® Control Unit SSP

Description

The Control Unit SSP sequentially scans the temperature sensors and converts the collected analog signals into temperature values. Depending on the user configuration, the control unit can output an alarm on a LED and a relay, or/and forward the alarm information on the serial interface.
It also controls the interface data handling, memorizes in a ring buffer special events and monitors the functioning of the system.

Wiring Diagram with internal protection filter unit



Ordering information	
Article	**Article number**
SSP Control Unit	**SSP01RG0ABSR0**
CTM Cable Termination Unit	**CTM00RG0PEFGR**
CFM Cable Filter/Connection Unit	**CFM00RG0PEFGR**
PFM Protection Filter Unit	**PFM00RG0PEFGR**
CCA Acces Cable	**ZCABLFR9PURBR8034**
Mounting Tool	**ZAPISECOCAPL**
Clamp (100 pcs)	**ZACBRFIPAMBCVD01**

Control Unit SSP
The control unit SSP sequentially addresses the temperature sensors in the cable and memorizes their values in a ring buffer. They are analysed after each cycle. Depending on the user configuration, the control unit forwards the alarm information on the serial interface.

Signal handling algorithm
Clustering algorithm: the configuration of an alarm event is made by means of two thresholds sets for the temperature (magnitude and gradient). This set of thresholds can be defined for the global system and for each and every temperature sensor. The clustering algorithm allows the user to define up to 25 reaction patterns.

Relay output 'alarm'
Relay with three contacts (common, n.c., n.o.). The relay can be configured in two different ways: hold the alarm during a preset time, hold the alarm until manual confirmation.
Output: 9 to 50 V,
20 Watt max. at 50 Volt (resistive load).

Relay output 'error'
Driven by software or monitoring circuitry. n.c. without power supply.
Output 9 to 50 Volt,
20 Watt max. at 50 Volt (resistive load).

LED Display
Green LED: Power on. Yellow LED: Error, coupled with Error relay Red LED: Alarm, coupled with Alarm relay.

Monitoring circuitry
Two independent circuits, one for hardware, one for software.

Sampling Interval
Selectable, minimum 1 s (dependning on system size/number of sensors).

Event memory
Storage of the last 100 events in a ring buffer, including date and event code.

Interface
Serial interface RS232 or RS422, galvanically isolated, with hardware (only RS232) or software handshake, up to 115,200 Baud.

Reset signal
Optoisolated input, 4 to 30 Volt, 4 mA.

Communication
Telegram based protocol with a library of function keys, groups of functions for data transfer, data call-up, test and diagnosis, alarm settings, event script and intervention management.

Sensor Sampling Rate
Up to 100 sensors per second

Operating Temperature
-20 to +65 Degrees Celsius

Enclosure
ABS enclosure, IP 65

Power Supply
DC 9 to 36 V, less than 6 Watt, connector bar with two contacts each for Zero, Plus.

Outer Dimensions
200 x 150 x 77 mm (without cable entries)

RedGuard®Sensor Cable

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RedGuard® Sensor Cable

Description

The sensor cable contains the addressable temperature sensors. Redundant loops assure both signal quality for communication and integrity of measured temperatures.

The sensor cable consists of a flat cable with eight strands - two each for the ground, supply voltage, data and address. The pitch between the strands is 1.27 mm.

The flat cable is protected by two additional sheaths. The material used for the inner sheath is polyethylene, providing a barrier to the ambient humidity. The outer sheath is made of polyurethane, providing an optimal mechanical and chemical resistance.

In order to increase the pulling strength of the cable, four aramid fibres are molded in-between the flat cable and the inner sheath.

Technical data

Cable outer dimensions
6.0 x 14.0 mm (typical)

Cable outer sheath
Polyurethane

Connectivity
Standard 8-pole flat cable connector (1.27 mm spacing)

Absolute accuracy
± 2 Degrees Celsius

Calibration
Calibration data for each individual sensor. Temperature in Degree Celsius

Sensitivity
± 0.1 Degrees Celsius

Temperature Range
-40 to +80 Degrees Celsius
120 Degrees Celsius short term.

Installation Temperature
+5 to +45 Degrees Celsius

Cable length
Up to 2000 m
in partial lengths of 500 m max.

Color
RAL 3000 red

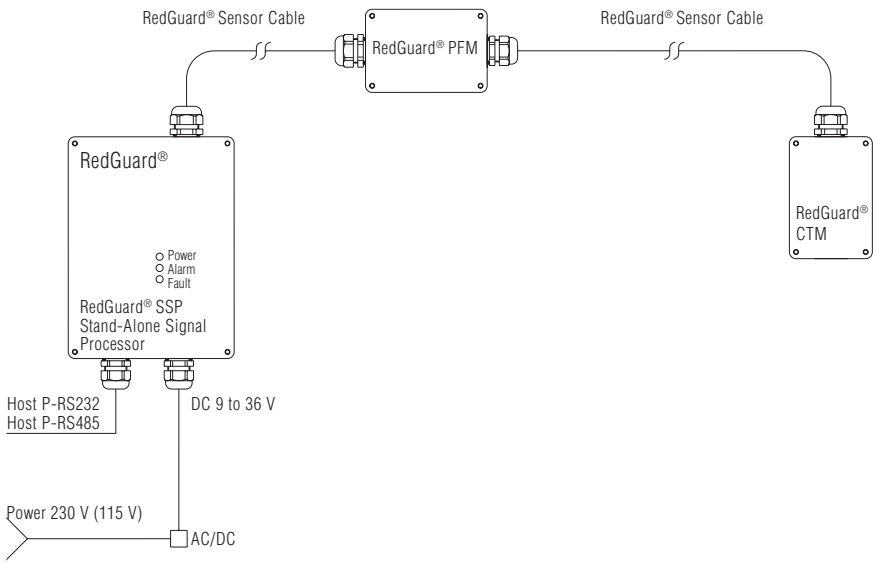
Printing
Black: Sensor Position, Sensor Serial Number, Sensor Type, and Sensor Spacing.For OEM clients, a 8 mm high specific text between the sensors is possible. Bitmap characters are allowed.

Bending radius
50 mm between sensors,
200 mm around sensor

Mounting
Special clamp for horizontal and vertical mounting

Pulling strength
500 Newton (during installation)
0 Newton (under operating conditions)

Wiring Diagram with external protection filter unit



Ordering information

Sensor spacing in Meter	Article no.
2	**02**
4	**04**
7	**07**
10	**10**
14	**14**
20	**20**

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Complete order no.
Please insert correct code.
Technical data subject to change without notice.

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