

# WIL-RM-S-SG-R1 - Sensor

1183803

<https://www.phoenixcontact.com/us/products/1183803>



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Sensor for measuring loads on the rotor blade of wind turbine generators. Robust (can be stood on). With magnetic shielding. Cable resistance compensation thanks to 6-wire connection technology.

## Product description

WIL-RM-S-SG-R1 is an optimized sensor with integrated strain gauges specifically designed for use in wind turbine generators. The sensor is adhered to the inner side of the rotor blade near the base of the blade. In conjunction with a WIL-BI switchgear and controlgear assembly, loads on the rotor blade can be measured and evaluated. This allows the wind turbine generator to be controlled with load optimization, reducing the load on the rotor blades to a minimum.

The sensor is part of the Blade Intelligence rotor blade monitoring system for wind turbine generators (WTGs). The Blade Intelligence rotor blade monitoring system allows for recording and detailed analysis of typical measured values for lightning currents, temperature, ice thickness, and bending moments on the rotor of a WTG. It consists of the corresponding sensors, preassembled connecting cables, and a WIL-BI switchgear and controlgear assembly (as the evaluation unit).

## Your advantages

- Robust sensor for use in the rotor blade of a WTG
- Proactive monitoring of the rotor blade
- Proven technology, optimized for the wind industry

## Commercial data

Item number	1183803
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	DT02
Product key	DTHABA
GTIN	4063151222420
Weight per piece (including packing)	0.6 kg
Weight per piece (excluding packing)	0.6 kg
Customs tariff number	90303320
Country of origin	DE

## Technical data

### Notes

#### Note on application

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Only for industrial use

### Product properties

Product type

Sensor

### Dimensions

#### External dimensions

Width / Height / Depth

48 mm / 10 mm / 130 mm

### Cable/line

#### Cable entry

Connection method

M12 connector, 8-pos. (A-coded)

### Characteristics

#### Measuring system

Elongation: Working elongation

max. 800 µm/m (at 10<sup>8</sup> load cycles)

Elongation: Elongation at break

2500 µm/m

Resistance:

350 Ω ±0.3 %

Resistance: Offset

max. ± 3.5 Ω

K-factor:

approx. 2 ... 2.2 (see sensor rating plate)

Coefficient of expansion:

10.8 10<sup>-6</sup> K<sup>-1</sup>

### Environmental and real-life conditions

#### Ambient conditions

Degree of protection

IP67

Ambient temperature (operation)

-40 °C ... 60 °C

Ambient temperature (storage/transport)

-40 °C ... 85 °C

Shock (operation)

30g (in accordance with EN 60068-2-27/IEC 60068-2-27)

Vibration (operation)

5g (in accordance with EN 60068-2-6/IEC 60068-2-6)

Air pressure (operation)

70 kPa ... 106 kPa (up to 3,000 m above mean sea level;  
at >3,000 m above mean sea level observe derating)

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## Classifications

### ECLASS

ECLASS-11.0	27143137
ECLASS-12.0	27143137
ECLASS-13.0	27143137

### ETIM

ETIM 9.0	EC000926
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### UNSPSC

UNSPSC 21.0	43201500
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Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes, No exemptions
China RoHS	
Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits
EU REACH SVHC	
REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)

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## Accessories

### WIL-BLADE-INTELLIGENCE - Switchgear and controlgear assembly

1093550

<https://www.phoenixcontact.com/us/products/1093550>



Modular solution to monitor the rotor blades of wind turbine generators, with sensors for lightning monitoring, ice detection, and load monitoring

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### WIL-BI-RMS-000-00 - Switchgear and controlgear assembly

1184015

<https://www.phoenixcontact.com/us/products/1184015>



Evaluation unit for sensor data for load monitoring, including application software. Communication via Modbus/TCP and PROFINET. See "Technical data" tab for scope of supply.

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## NBC-MS-FS SCO-IE/.../... - Network cable

1408659

<https://www.phoenixcontact.com/us/products/1408659>



Network cable, Ethernet CAT5 (1 Gbps), 8-position, shielded, Plug straight M12 SPEEDCON, coding: A / IP67, on Socket straight M12 SPEEDCON, coding: A / IP67, cable length: Free input (0.2 ... 40.0 m)

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## WT-BASE LS HF 6 - Cable binder base

3240708

<https://www.phoenixcontact.com/us/products/3240708>



Cable binder base, for cable binders up to 6 mm wide, self-adhesive (rubber) and screwable, 4.8 mm fixing hole, 4-sided cable binder feed-through

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## WT-HF 2,5X98 - Cable tie

3240732

<https://www.phoenixcontact.com/us/products/3240732>

Cable binders for quick and secure bundling, standard version



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## WMTB-AL (29X8) - Cable marker

0830805

<https://www.phoenixcontact.com/us/products/0830805>



Cable marker, Aluminum label, aluminum color, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, mounting type: Assembly with cable ties, cable diameter: > 2.9 mm, lettering field size: 29 x 8 mm

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## WML HF 3(13X10)R - Wire-wrap label

0830812

<https://www.phoenixcontact.com/us/products/0830812>



Wire-wrap label, Roll, white, unlabeled, can be labeled with: THERMOMARK E. 300 (D)/600 (D), THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, cable diameter range: 3 ... 3 mm, cable diameter:  $\leq 3$  mm, lettering field size: 13 x 10 mm, Number of individual labels: 5000

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## TSD 04 SAC - Torque screwdriver

1208429

<https://www.phoenixcontact.com/us/products/1208429>



Torque screwdriver, with preset torque of 0.4 Nm and 4 mm hexagonal drive for M12 connectors



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## SAC BIT M12-D15 - Tool

1208432

<https://www.phoenixcontact.com/us/products/1208432>



Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive

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## TSD-M SAC-BIT ADAPTER - Adapter insert

1212600

<https://www.phoenixcontact.com/us/products/1212600>



Adapter bit for TSD-M...torque tools, E6.3-1/4" drive with 4 mm hexagon to accommodate SAC bits

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## B-STIFT - Marker pen

1051993

<https://www.phoenixcontact.com/us/products/1051993>



Marker pen, for manual labeling of unprinted Zack strips, smear-proof and waterproof, line thickness 0.5 mm

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## CUTFOX-S VDE - Diagonal cutter

1212207

<https://www.phoenixcontact.com/us/products/1212207>



Diagonal cutter for hard (piano wire) and soft wires, VDE 1000 V AC/1500 V DC tested

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## WIREFOX 10 - Stripping tool

1212150

<https://www.phoenixcontact.com/us/products/1212150>



Stripping tool, for cables and conductors from 0.02 - 10 mm<sup>2</sup>, self-adjusting, stripping length of up to 18 mm, cutting capacity of up to 10 mm<sup>2</sup> stranded/1.5 mm<sup>2</sup> solid, replaceable stripping blade

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## UNIFOX-CT 4,8 - Cable tie tool

1212475

<https://www.phoenixcontact.com/us/products/1212475>



Cable binder pliers, for plastic cable binders with a width of 2.2 - 4.8 mm, for a material thickness of up to 1.6 mm

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