**MSR385WD:**
Universal Data Logger with wireless sensors for operating temperatures up to +125 °C

Permanently record temperature, humidity and pressure values using miniature transmitter modules over long periods of time, at operating temperatures from -20 °C to +125 °C, even in inaccessible locations: The MSR385WD wireless data logger, which operates in the 868 MHz ISM band, offers these options.

Due to the high levels of thermal resistance of its transmitter modules (MSR385SM), the new wireless data logger facilitates metrological applications even at high operating temperatures of up to 125 °C. The measured values are transmitted by means of transmitter modules equipped with temperature, humidity and pressure sensors, in the unlicensed frequency band at 868 MHz, across long distances of up to 500 m. The optimised power management ensures that – depending on the frequency of measurements and radio transmissions – the power supply to the miniature transmitter modules is warranted for up to five years. The measured data of the transmitter modules recorded by the data logger can be read out via a USB interface and processed further using the MSR PC software for data analysis purposes. The MSR385WD has a colour OLED display, is capable of storing over one million measured values and can be equipped with up to ten transmitter modules.

**Temperature range and housing selection of the MSR385SM transmitter module**

<table>
<thead>
<tr>
<th>Temperature range</th>
<th>Housing and battery</th>
<th>Picture</th>
<th>Size &amp; weight</th>
<th>Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20...+125 °C</td>
<td>Silicone hose, replaceable 800 mAh Li-SOCl₂ battery, not encapsulated, IP 60</td>
<td><img src="image1.png" alt="Picture" /></td>
<td>35x55x25 mm approx. 25 g</td>
<td>Air</td>
</tr>
<tr>
<td></td>
<td>Silicone hose, replaceable 800 mAh Li-SOCl₂ battery, encapsulated, waterproof IP 67</td>
<td><img src="image2.png" alt="Picture" /></td>
<td>35x55x25 mm approx. 40 g</td>
<td>Air, various liquids</td>
</tr>
<tr>
<td>-20...+65 °C</td>
<td>ABS housing, rechargeable 260 mAh LiPo battery, not encapsulated, IP 60</td>
<td><img src="image3.png" alt="Picture" /></td>
<td>38x15x78 mm approx. 45 g</td>
<td>Air</td>
</tr>
</tbody>
</table>

**Technical data MSR385SM transmitter module**

- **Frequency band:** Unlicensed frequency range at 868 MHz (EU version).
- **Range:** Up to 500 m (outdoors).
- **LED:** Red, status acknowledgement when button is pushed, on/off, measurement interval setting.
- **Power supply:** Rechargeable 260 mAh LiPo battery or replaceable 800 mAh Li-SOCl₂ battery. The LiPo battery is charged via the USB connection. Energy-efficient through optimised power management.
- **Operating conditions:** -20...+125 °C, in ABS housing -20...+65 °C.
- **Storage conditions:** +5 °C...+45 °C (ideal storage conditions for battery). 10...95 % relative humidity, non-condensing.
Selection of sensors for the MSR385SM transmitter module

For the time being, the transmitter module can be equipped with up to three different internal and/or external sensors; however, we are continuously expanding our product range. To configure your desired combination online, visit the MSR385WD product configurator at www.msr.ch.

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Working range of the sensor</th>
<th>Accuracy</th>
<th>Measurement/storage rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>-40...+125°C</td>
<td>±0.2 °C (-10...+50 °C) ±1 °C (-40...+125 °C)</td>
<td>1 s, 10 s, 1 min, 15 min, 1 h</td>
</tr>
<tr>
<td>Relative humidity with integrated temperature</td>
<td>0...100 % rel. humidity -40...+125°C</td>
<td>±1.8 % rel. humidity (10...85 %, 0...+40 °C) ±4 % rel. humidity (85...95 %, 0...+40 °C)</td>
<td></td>
</tr>
<tr>
<td>Air pressure absolute, with integrated temperature</td>
<td>10...1100 mbar absolute -40...+125°C</td>
<td>±2.5 mbar (750...1100 mbar absolute, 0...+85 °C)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10...2000 mbar absolute -40...+85°C</td>
<td>±2 mbar (750...1100 mbar absolute, +25 °C)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0...14 bar absolute -20...+85°C</td>
<td>±40 mbar (1...10 bar absolute, 0...+40 °C)</td>
<td></td>
</tr>
</tbody>
</table>

Options:
- External temperature sensor
- External humidity sensor
- External air pressure sensor

General technical information on the MSR385WD Wireless Data Logger

The multi-channel data logger, which features an integrated ISM band receiver module, receives and stores the measured data of up to ten transmitter modules (MSR385SM). Flash memory for data security in the event of a power failure. Brilliant, high-contrast OLED (organic light-emitting diode) colour display.

Dimensions:
Housing without aerial: 120 x 75 x 25 mm
Aerial length: 85 mm

Memory capacity:
Over 1 000 000 measured values.

Power supply:
Via USB connection (2 days' autonomous operation possible with integrated 2400 mAh LiPo battery).

LED:
- Blue: Data recording indicator
- Red: Alarm indicator
- Yellow: Charge level indicator

Key button:
To operate the menu functions of the OLED display.

Interface:
USB, GSM module planned.

PC software:
Free Setup, Reader, Viewer & Online software for recording and analysing the data (Windows XP/Vista/7/8).

Operating conditions:
Temperature -20 °C to +65 °C
- +5 °C...+45 °C (ideal storage conditions for battery).
- 10...95 % relative humidity, non-condensing.

Standards:
The MSR385WD complies with the EU Directive RoHS / WEEE.