**MSR145- Series**

High-Quality Mini Long-Term Logger for Temperature, RH, Air Pressure, Light, Acceleration in Grammes

- for temperature, relative humidity with integrated temperature, pressure (e.g. altimeter, water column, barometer), light and 3-axes acceleration
- real-time clock with date / adjustable sampling rate / memory capacity for 2.000.000 values, optional micro SD card für 1 billion values
- evaluation software
- marker function or start / stop via internal key
- Li-Ion rechargeable battery, status indication via LEDs
- norm: EU directive RoHS / WEEE
- **external sensors available in our online shop**

### TECHNICAL SPECIFICATIONS (INTEGR. SENSORS)

#### Temperature
- **Meas. range**
  - -20 ... +65 °C
- **Accuracy**
  - ±0.5 °C (at -10 ... +65 °C)
  - ±2 °C (at -55 ... +125 °C)
- **Sampling rate** 1/s ... every 12 h

#### Relative hum.
- **Meas. range**
  - with integr. temperature -20 ... +65 °C
- **Accuracy**
  - ±2 % RH (10 ... 85 %, 0 ... +40 °C)
  - ±4 % RH (85 ... 95 %, 0 ... +40 °C)
- **Sampling rate** 1/s ... 12 every h

#### Air pressure
- **Meas. range**
  - with integr. temperature -20 ... +65 °C
- **Accuracy**
  - ±2.5 mbar (at 750 ... 1.100 mbar abs., +25 °C)
  - ±50 mbar (at 1 ... 10 bar abs., +25 °C)
- **Sampling rate** 10/s ... every 12 h

#### 3-axes accelerometer
- **Meas. range**
  - with integr. temp. -20 ... +65 °C
- **Accuracy**
  - ±15 g (position)
- **Sampling rate** 50/s ... every 12 h

### Light
- **Meas. range**
  - 0 ... 65.000 lx max. sensitivity of 500 nm
- **Sampling rate** 1/s ... every 12 h

#### Thermocouple
- **Meas. range**
  - -250 ... +1.200 °C (1 or 4 times)
- **Sampling rate** 1/s ... every 12 h

**The following sensors are only available as ext.**

#### Liquid pressure
- **Meas. range**
  - with integr. temp. -20 ... +85 °C
- **Accuracy**
  - ±30 mbar
  - ±300 mbar
- **Sampling rate** 20/s ... every 12 h

#### Materials in contact with media:
- stainless steel AISI 316L (DIN 1.4404 / 1.4435)
- o-rings: Viton® 70° Sh

### Analog inputs
- **Meas. range**
  - 2 or 4 inputs, 0 ... 3.0 V, 12 Bit resolution; further input config. available in our online shop
- **Sampling rate** 50/s ... every 12 h

### GENERAL DATA

- **Memory**
  - 2.000.000 readings, with optional SD card, extendable to 1 billion
- **Interface**
  - USB
- **Software**
  - setup-/ reader-/ viewer-/ online software (Windows 2000 / XP / Vista / 7)
- **LEDs**
  - blue: data recording, red: alarm, yellow: battery charging level indication
- **Protection cl.**
  - standard IP 60 / waterproof IP 67
- **Power supply**
  - lithium polymer rechargeable battery
  - 260 mAh or 800 mAh
- **Dimensions**
  - width: 52 ... 72 mm; height: 14 ... 23 mm; depth: 18 ... 39 mm (dep. on model)
- **Weight**
  - approx. 18 ... 64 g (dep. on model)

### INCLUDES

- Data logger, software, USB cable, manual

### ITEM NO. ITEM

different models can be configured in our online shop

### OPTIONAL ACCESSORIES

- K-B47002 charging station for up to 7 loggers

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www.pce-instruments.com/us
MSR165 Series

3-Axis Acceleration Sensor for Long-Term Recording (Additional Sensors Optionally Available)

- 3-axis acceleration with lithium polymer rechargeable battery for extra-long life
- sensors for temperature, relative humidity, light and absolute pressure are available optionally
- marker function or start / stop via internal key
- USB interface for PC / software for data analysis via PC or laptop are included in the delivery content
- adjustable real-time clock with date / adjustable sampling rate
- norms: EU RoHS / WEEE
- the datalogger can be configured in our online shop: www.pce-instruments.com/english

TECHNICAL SPECIFICATIONS (INTEGR. SENSORS)

3-axis acceleration (13 bit resolution)
With integr. temp. -20 ... +65 °C
Meas. range ±15 g
Accuracy ±0.15 g (at +25 °C)
Sampling rate up to 1600 /s (±15 %)

Temperature
Meas. range -20 ... +65 °C
Accuracy ±0.5 °C (at -10 ... +65 °C)
±2 °C (at -55 ... +125 °C)
Sampling rate 1/s ... every 12 h

Relative humidity
With integr. temp. -20 ... +65 °C
Meas. range 0 ... 100 % RH
Accuracy ±2 % RH (at 10 ... 85 %, 0 ... +40 °C)
±4 % RH (at 85 ... 95 %, 0 ... +40 °C)
Sampling rate 1/s ... every 12 h

Air pressure
With integr. temp. -20 ... +65 °C
Meas. range 0 ... 2000 mbar absolute
0 ... 14 bar absolute
Accuracy ±2.5 mbar (at 750 ... 1100 mbar abs., +25 °C)
±50 mbar (1 ... 10 bar abs., +25 °C)
Sampling rate 10/s ... every 12 h

Light
Meas. range 0 ... 65000
Max. sensitivity 500 nm
Sampling rate 1/s ... every 12 h

Analogue inputs
4 inputs, 0 ... 3.0 V, 12 bit resolution; other input configurations available in online shop:
light sensor not available, max. 2 ext. sensors possible
Interval 50/s ... every 12 h

General details
Memory 2,000,000 values, with optional
SD card increase to 1,000,000,000
Switch markings and start / stop of
measurement
Interface USB
Software setup / reader / viewer / online
software (Windows 2000/XP/Vista/7)
LEDs blue: data logging; red: alarm;
yellow: battery level indication
Power supply lith. poly. rechargeable batt. 800 mAh
Operating cond. -20 ... +65 °C / 10 ... 95 % RH
Dimens. / weight 39 x 23 x 72 mm / approx. 69 g
Protection class waterproof IP 67

INCLUDES
3-axis acceleration data logger, software, interface cable, instruction manual

ITEM NO. ITEM
different models can be configured in online shop
www.pce-instruments.com/english

⚠ Note: the optional accessories must be specified when ordering the 3-axis data logger as the device must be configured according to your requirements directly at the factory.

www.pce-instruments.com/english
MSR145WD- Series

Wireless Data Logger with BLE, Display and MSR SmartCloud

- Bluetooth Low Energy (Bluetooth 4.0 Smart) 2.4 GHz
- radio range: approx. 10 m
- communication with various MSR145WD data loggers possible
- alarm function, transmission to MSR SmartCloud
- free app for smartphones (min. iPhone 4S, iPad 3, in process for Android)
- can be used with PC with Windows or Linux (Bluetooth dongle available)
- external sensors available in our online shop

TECHNICAL SPECIFICATIONS WITH INT. SENSORS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>Meas. range -20 ... +65 °C</td>
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<tr>
<td></td>
<td>Accuracy ±0.2 °C (-10 ... +50 °C)</td>
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<tr>
<td>Relative humidity</td>
<td>Meas. range: 0 ... 100 % RH; Accuracy ±1.8 % RH (10 ... 85 %, 0 ... +40 °C), ±4 % RH (85 ... 95 %, 0 ... +40 °C)</td>
</tr>
<tr>
<td>Air pressure</td>
<td>Meas. range 10 ... 2000 mbar absolute; Accuracy ±2 mbar (750 ... 1.100 mbar abs.,+25 °C)</td>
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<tr>
<td>3-axis acceleration</td>
<td>Meas. range ±15 g; Accuracy ±0.15 g (+25 °C)</td>
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<tr>
<td>Light</td>
<td>Meas. range 0 ... 65000 lx; Accuracy max. sensitivity at 500 nm</td>
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<tr>
<td>General details</td>
<td>Memory more than 1,000,000 values</td>
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<tr>
<td></td>
<td>Switch the switch is used to make markings or to start and stop the measurement</td>
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</tbody>
</table>

Interface USB, Bluetooth
Software free setup, reader, viewer and online (Windows XP/Vista/7/8) software; values can be transferred to a PC during or after measurement; displays data of several loggers with chronological synchronism by means of integrated clock
Display high-contrast OLED, (organic light emitting diode) - colour display for data and charts; resolution: 96 x 64 pixels, size: 22.14 (W) x 15.42 mm (H); response time: <10 µs; angle of vision >160°
LEDs blue: recording data; red: alarm display; yellow: battery level indication
Protection cl. IP60 (standard) / IP65 (waterproof)
Regulations EU directive RoHS / WEEE
Power supply lithium polymer recharg. batt. 260 mAh or 800 mAh; charging via USB
Oper. cond. -20 ... +65 °C / 10 ... 95 % RH
Dimensions 57 x 35 x 17 / 25 mm (dep. on model)
Weight approx. 27 ... 62 g (dep. on model)

INCLUDES
Data logger, software, USB cable, instruction manual

ITEM NO. ITEM
different models can be configured in our online shop www.pce-instruments.com/english

OPTIONAL ACCESSORIES
K-B47002 charging station for up to 7 loggers

Note: the optional accessories must be specified when ordering the 3-axis data logger as the device must be configured at the factory according to your requirements.