

MSR145: The revolutionary mini Data Logger

This thumb-sized Swiss Quality MSR145 data logger records over 2 000 000 measured values - with an optional microSD card, even over a billion measured values - and is ideal for long-term measurements. It is capable of simultaneously measuring and recording a variety of measures such as temperature, humidity, pressure, 3-axis acceleration and light. All measured values can be rapidly transferred to a PC or laptop via the USB interface or microSD card for data analysis purposes.

Versatile universal data logger

You have the choice between different casings, battery capacities and sensors. Additionally, you can equip your MSR logger with analogue inputs (selectable input configuration). The analogue inputs allow you to connect individual, external sensors for different measuring tasks (e.g., CO₂, conductivity, pH, etc.). In addition to your MSR145 data logger you will also receive the user-friendly software for data acquisition and analysis free of charge.

1. Select the housing and the corresponding battery.

Housing	Type and battery	Picture	Size & weight	Medium	Sheat material	Item-no.
Standard IP 60	Design housing with 260 mAh battery		20 x 15 x 52 mm approx. 16 g	Air	PC, not encapsulated	145B5 select
	Design housing with 800 mAh battery		39 x 23 x 72 mm approx. 56 g	Air	PC, not encapsulated	145B7 select
Waterproof IP 67	Silicon tube with 260 mAh battery		18 x 14 x 62 mm approx. 18 g	Air, various liquids	Silicon, encapsulated	145B4 select
	Design housing with 260 mAh battery		20 x 15 x 61 mm approx. 23 g	Air, various liquids	PC, encapsulated	145B6 select
	Design housing with 800 mAh battery		39 x 23 x 72 mm approx. 64 g	Air, various liquids	PC, encapsulated	145B8 select

2. Select the sensors.

Please select the sensors for your data logger here. **For the measured parameters temperature, humidity and fluid pressure you can now choose whether you wish to provide your MSR145 data logger with more than one sensor of the same measured parameter.** Please note the following restrictions for this option:

- Only one measured parameter can be equipped with multiple sensors.
- The slot for a microSD card cannot be combined with this option.
- The light sensor (L), the temperature sensor (FT) and the port for a thermal element of Type K (T3, T4) cannot be selected.

Measured parameter / Measuring/storage rate	Working range / Accuracy	Internal sensor	External sensor (according to cable length)		
			0.20 m	1.00 m	1.60 m
Temperature 1/s up to one sample every 12 h	-10...+58 °C ±0.1 °C (+5...+45 °C) ±0.2 °C (-10...+58 °C)	only available externally	Item no. FT/020	Item no. FT/100	Item no. FT/160
	external: -55...+125 °C internal: -20...+65 °C ±0.5 °C (-10...+65 °C) ±2 °C (-55...+125 °C)	Item no. T2	Item no. FT2/020	Item no. FT2/100	Item no. FT2/160
Connector for thermal element of Type K (without sensor) Cannot be selected at the same time as the temperature sensor. 1/s up to one sample every 12 h	1 x -250...+1200 °C	only available externally	Item no. FT3/020	Item no. FT3/100	Item no. FT3/160
	4 x -250...+1200 °C	only available externally	Item no. FT4/020	Item no. FT4/100	Item no. FT4/160
Humidity with integrated temperature 1/s up to one sample every 12 h	0...100 % rel. humidity external: -20...+85 °C internal: -20...+65 °C ±2 % rel. humidity (10...85 %, 0...+40 °C) ±4 % rel. humidity (85...95 %, 0...+40 °C)	Item no. H	Item no. FH/020	Item no. FH/100	Item no. FH/160
Air pressure absolute, with integrated temperature 10/s up to one sample every 12 h	0...2000 mbar abs. external: -20...+85 °C internal: -20...+65 °C ±2.5 mbar (750...1100 mbar abs., +25 °C)	Item no. P	Item no. FP/020	Item no. FP/100	Item no. FP/160
	0...14 bar absolute -20...+65 °C ±50 mbar (1...10 bar abs., +25 °C)	Item no. P2	only available internally	only available internally	only available internally
Fluid pressure with integrated temperature 20/s up to one sample every 12 h Material in contact with media: ▪ Stainless Steel AISI 316L (DIN 1.4404 / 1.4435) ▪ O-rings: Viton® 70° Shore	0...3000 mbar abs. -20...+85 °C ±30 mbar	only available externally	Item no. FP3/020	Item no. FP3/100	Item no. FP3/160
	0...30 bar absolute -20...+85 °C ±300 mbar	only available externally	Item no. FP4/020	Item no. FP4/100	Item no. FP4/160
3-axis-acceleration (static) 50/s up to one sample every 12 h	±15 g -20...+65 °C ±0.15 g (+25 °C)	Item no. A	Item no. FA/020	Item no. FA/100	Item no. FA/160
Light 1/s up to one sample every 12 h	0...65 000 lx max. sensitivity at 500 nm	Item no. L	Item no. FL/020	Item no. FL/100	Item no. FL/160



3. Do you require 2 or 4 analogue inputs?

Should you wish to connect additional third-party external sensors to your MSR145 datalogger then please indicate here whether you require two or four analogue inputs.

Analogue inputs	Inputs	Input configuration	Item no.
 Including alarm output and input for starting and stopping data recording. Measurement/storage rate: 50/s up to one sample every 12 h Not available combinations: - Analogue inputs with thermal element - Analogue inputs with light and temperature	2 analogue inputs (resolution: 12 Bit)	0...3.0 V - standard	E33
	4 analogue inputs (resolution: 12 Bit)	0...3.0 V - standard	E3333
	2 analogue inputs (resolution: 12 Bit)	Select the number of inputs for the respective input configuration:	Exx
	4 analogue inputs (resolution: 12 Bit)	(1) 0 0...20 mA (2) 0 4...20 mA (3) 0 0...3.0 V (4) 0 0.5...4.5 V / 0...5.0 V (5) 0 0...10.0 V / 1.0...6.0 V (6) 0 0...12.0 V (7) 0 0...24.0 V	Exxxx

4. Would you like to expand the memory capacity of your MSR145 to over 1 billion measured values?

Please order the expansion slot for plugging-in a standard microSD card here.	Item no.
Expansion slot for microSD card (available only for design housing B7 and B8) Please note that: - this expansion slot with plugged-in microSD card only meets the protection category IP60, even with the design housing B8, - the expansion slot is not available in combination with light or thermal element, - the expansion slot is not available in combination with a multiple selection of sensors of the same measurand, - one formatted and ready for use microSD card (≥4GB) is included.	N10006

5. General technical data on the MSR145.

Memory capacity:	Over 2 000 000 measured values – expandable to over 1bn.
Key:	Set bookmark or start and stop recording.
LED:	
blue:	Record indicator
red:	Alarm indicator
yellow:	Battery charge indicator
Power supply:	- Lithium-polymer battery, 260 mAh or 800 mAh. - The battery is charged via the USB connection. - One battery charge is sufficient for operation of the unit for up to two years, depending on the battery and the measurement rate.
Options:	Charging station (USB hub) for 7 MSR145 (item number B47002)
Interface:	USB
PC software:	Free Setup, Reader, Viewer and Online software (Windows XP/Vista/7/8) to record and evaluate data. All measurement parameters can be rapidly transferred to a PC via USB connection both during the measurement operation and once the measurement task has been completed. Thanks to the integrated clock (RTC), data from as many MSR145 units as required can be synchronised and merged into a single data record.
Operating conditions:	
Temperature:	-20...+65 °C
Optimum storage conditions:	
Temperature:	+5...+45 °C (ideal storage conditions for the battery)
Humidity:	10...95 % relative humidity, non-condensing
Standards:	The MSR145 complies with EU-Directives RoHS / WEEE.