



ms1 Set M

A hand-held precision instrument for the measurement of relative humidity of materials/ the aw value (water activity of foodstuffs) and temperature



For measurements of somewhat larger material samples, such as granulates, textiles, wood chips, sawdust, tobacco, tealeaves, herbs, potato crisps, biscuits, confectioneries, cereals, coffee beans etc.

Relative humidity measurements can also be performed if the sensor is open. The sintered filter provides excellent dust protection.

Set AM or Set AMS are to be preferred for measurements in very large product volumes.

Measurement range	: 6 ... 98% rh, (not condensing) corresponds to = 0.06 ... 0.98aw
Temperature	: -20...+80°C
Box sensor	: HSM-3 with resistive electrolyte measurement cell CK-3
Precision	: +/- 1.0% rh / 0.01aw, +/- 0.3°C
Communication	: RS 232 interface (optional)

Additional functions for relative humidity measurements in air (not applicable to humidity measurements in materials):

Mollier diagram:

the ms1 also computes and displays dew point temperature, mixing ratio, wet bulb temperature, specific enthalpy und partial water vapour pressure.



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Precise, fast, flexible

A practical, 1'000-times proven precision, hand-held instrument for humidity and temperature measurements. Thanks to its Novasina electrolyte sensor, the ms1 is particularly well suited to high precision humidity measurements in a broad range of materials and also in air. The instrument and sensor are extremely robust, have excellent long-term stability and are essentially hysteresis-free.

The integrated computer supplements relative humidity measurements with a number of parameters of the Mollier hx-Diagram. The large and clear LCD display is easy to read. The instrument is battery powered, but an additional mains power supply is available to support long-term measurements. An optional RS 232 interface and supporting PC software is available for connecting a printer resp. a PC.

The instrument is delivered in a sturdy plastic carrying case with space for various additional accessories.

Examples of relative humidity measurements with the **Set M**:

- Relative humidity of plastic granulates
- Relative humidity of tea or tobacco leaves
- Relative humidity of Textile samples
- Relative humidity (or aw values) of foodstuffs, cereals coffee beans (see also Set AM und Set AMS)
- Room- or air duct humidity, dew point temperature etc.
- Cosmetics
- Medications, pharmaceuticals

Instrument ms1:

Dimensions	: 54x43x265mm
Weight	: 280 g
Power	: 9V Battery

Humidity sensor:

Electrolyte measurement cell	
Range	: 6...98 % rh
Repeatability	: +/- 0.3% rh
Precision	: +/- 1.0% rh
<i>(10...95% rh, 25°C, with 5 point calibration)</i>	

Temperature sensor:

Precise NTC-Resistance	
Range	: -20...80°C
Repeatability	: +/- 0.1° C
Precision	: +/- 0.3° C

Humidity standards

Salt tablets SAL-T:

Saturated pure salt solutions based on national standards are recommended, with the following humidity values:

11%, 33%, 53%, 75%, and 90% rh

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The Set M is a simple and precise entry-level set for important aw value measurements in the food sector, particularly when larger volumes of samples are involved (%RH). It consists of an ms1 hand-held instrument with a large, special-purpose measurement sensor, and a range of accessories all housed in a robust plastic case. Space is available for further options, such as a power supply or interface/cable. The Set can be tested and recalibrated as required using individual Sensor Check humidity-standards.

Consists of :

Carrying case with:

- Measuring instrument ms1
 - Sensor HSM-3, 1m cable with 9-pin plug
 - 9V Battery
 - Plastic rack for the ms1
 - Sensor Check SC 75% rh
 - Adapter CH
 - Styrofoam box for calibration
 - User manual
 - Factory certificate of the 5-point calibration at 11-33-53-75-90%
- Weight: 2.300 kgs

Accessoirs to Set M



111 1564 230V power supply
111 1406 115V power supply

230V or 115V power supply

The power supply is recommended when the **ms1** is used for a long period in one place, or to preserve battery power when the RS 232 interface is extensively used. The ms1 does not recharge batteries. If rechargeable batteries are used an external charger is needed.

Power supply:

230V AC +/- 10% / 50-60Hz
115V AC +/- 5% / 50-60Hz
Output : 9 V DC / 16 mA
Power requirement: 0.4 VA
Plug : 4 mm diameter coax
Weight: 250g



111 0826 Interface PC

PC communication via RS232

RS232 interface, 1m long cable, CD with software NOVALOG32 for Win 9x/2000/NT/XP.

Interface Set comprising:

- 1m cable with D-Sub 25/25-pin
 - RS-232 Interface
 - CD with NOVALOG32 software for Windows systems
 - User manual
- Weight: 450g



111 0562 Interface Seiko

RS232 interface for Seiko printer

RS-232 interface, 1m long cable to connect a Seiko **DPU 411** thermal printer. This makes it possible to control the printer using the printer parameters defined in the **ms1** menu.

-> A printer must be obtained locally

Printer-Interface-Set Seiko:

Printer cable : Flat cable
- 1m long printer cable with D-Sub 25/25-pin
- RS 232 interface
- Seiko adapter box
Weight : 300g



111 6256 Adapter 25F/9M

D-Sub adapter 25F/9M

Additional adapter for the RS232 Interface for Seiko printer (111 0562), permitting connection to the more recent Seiko **DPU 414** printer.

Adapter Interface:

Dimensions : 60 x 40 x 20 mm
Adapter D-Sub 25F/9M
25-pin female con.
9 - pin male con.
Weight: 50g



111 0661 Interface Epson

RS232 interface for Epson printer

RS-232 interface, 1m long cable to connect an Epson or other compatible 9-pin needle printer. This makes it possible to control the printer using the printer parameters defined in the ms1 menu.

-> A printer must be obtained locally.

Printer-Interface-Set Epson:

Printer cable: Flat cable
- 1m long printer cable with D-Sub 25/25-pin
- RS 232 interface
- Epson adapter
Weight: 300g