



METEOROLOGICAL PROBES FOR RELATIVE HUMIDITY AND TEMPERATURE

# HYGROMET MP102H/402H



## RELIABLE & ACCURATE.

BASED ON THE AIRCHIP3000 DIGITAL TECHNOLOGY.

### INNOVATION IN HUMIDITY AND TEMPERATURE MEASUREMENT

- Relative humidity and temperature measurement with interchangeable HygroClip HC2-S3
- Utilizes the new faster HygroMer V-1 sensor and filter technology offering significantly improved protection against the growth of biofilm
- Highest accuracy at 0.8 %rh and 0.1 °C
- Range of application: 0...100 %rh and -40...80 °C
- All psychrometric calculations available
- Outstanding long-term stability
- Optional: directly connected Pt100 sensor
- Resistant to air pollution and moisture condensation
- Digital interface
- UART- and service interface to PCB



# HYGROMET MP102H/402H

## SPECIFY THE BEST:

## HYGROMET MP102H/402H ADVANTAGES AT A GLANCE.

### Relative humidity and temperature measurement with interchangeable HygroClip HC2-S3

- Can be interchanged in a few seconds without the need for readjustment
- Range of application: 0...100 %rh / -50...100 °C (HC2-S3)
- Accuracy at 23 °C:  $\pm 0.8$  %rh /  $\pm 0.1$  K
- Utilizes the new V-1 sensor and improved filter technology for faster response and protection against the growth of biofilm.

### Current and voltage output signal

Meteorological probe with integrated electronics for two active outputs (current or voltage) and equipped with a RS485 interface. Humidity and temperature are measured with the plug-in HygroClip HC2-S3 sensor module. In addition the MP102H/MP402H can be equipped with a signal conditioned Pt100 temperature probe in various accuracy classes.

Both models differ as follow:

- **MP102H:** voltage output
- **MP402H:** current output

### Optional: directly connected Pt100 sensor

- The Pt100 additional temperature probe consists of stainless steel and is available in several accuracy classes
- Optional calculated parameters outputs are available
- The electronics installed in the MP102H/MP402H permit signal adaptation to the relevant application; providing active output for the temperature measurement with HygroClip HC2-S3 or with additional Pt100

### Naturally and actively ventilated shields

- Optimum protection against rainfall and sunshine with natural ventilation  
Suitable for horizontally incident rain up to 68 km/h
- Compact, ventilated radiation shield with built-in fan  
Supply voltage 10...16 VDC or 24 VDC  
Optimum protection of the meteorological probe at all weather conditions (mountains, sea, desert, etc.)

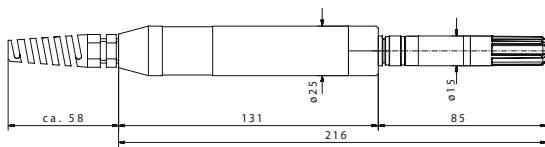


## APPLICATIONS.

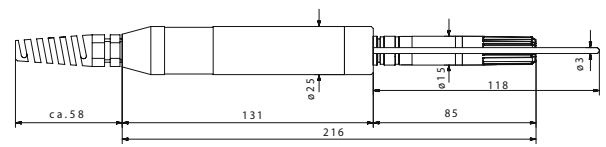
ROTRONIC meteorology probes are robust high quality products developed for demanding applications and a long lifetime. Successful applications include weather stations, snow making, road, bridge and airport runway condition monitoring, snow- and ice warning systems, research in the outdoors, rooftop monitoring for HVAC and building automation systems.

## MODEL TYPE/DIMENSIONS.

### MP102H/402H with HC2-S3 probe



### MP102H/402H with HC2-S3 probe and optional Pt 100



Mechanical design and dimensions of both series are identical.

**MP102H:** Meteorology transmitter with voltage output (0...1 VDC, 0...5 VDC or 0...10 VDC)

**MP402H:** Meteorology transmitter with current output (0...20 mA or 4...20 mA)

## ACCESSORIES.

Even the best probes measure inaccurately if the surrounding conditions are not representative of the actual climatic conditions. Without appropriate weather protection shields, the probe temperature will not be correct, and since relative humidity is temperature dependent, significant measurement errors will be the result. Poorly ventilated weather protection shields can result in a micro-climate around the probes causing consequential errors of measurement.

Weather protection shields were developed in close co-operation with MeteoSuisse and are utilized world-wide. Tests conducted clearly demonstrated the unmatched accuracy obtained by the combination of ROTRONIC probes and ventilated weather protection!

**MeteoSwiss**

### Actively ventilated shields

Order code

- RS12T: 12 VDC

- RS24T: 24 VDC



### Naturally ventilated shields



Order code AC1002/1012

AC1004

AC1015



# HYGROMET MP102H/402H

## TECHNICAL INFORMATION.

Device type	Humidity temperature probe with analog output signals and RS485 interface
Circuit type	3/4-wire
Supply voltage	15...24 VDC, (0...1 VDC outputs: 5 VDC min./ 0...5 VDC outputs: 10 VDC min./ 0...10 VDC outputs: 20 VDC min.)
Nominal current consumption	< 50 mA
Electrical connections	3 m cable with tinned ends
Polarity protection	Protective diode on V+
Psychrometric calculations	All available
Start-up time	3 s (typical)
Data refresh rate	1 s (typical)
Output 1	Can be made to correspond to any parameter
Factory default parameter	Relative humidity or dew / frost point
Factory default scale	As per ordering code
Output 2	Can be made to correspond to any parameter
Factory default parameter	Temperature
Factory default scale	As per ordering code
Output 1 and Output 2	
Signal type	0...20 mA, 4... 20 mA, 0... 1 V, 0... 5 V, 0... 10 V (user configurable)
User configurable scaling limits	- 999... + 9999 engineering units
Short circuit tolerant	Yes
Maximum external load	500 Ω (current output)
Minimum external load	1000 Ω (voltage output), 0 Ω (current output)
Interface type	RS-485
Interface type	UART (Universal Asynchronous Receiver Transmitter)
Maximum service cable length	5 m (16.4 ft)
HC2-S3 Probe material	Polycarbonate
Probe dust filter material	Polyethylene
Housing material	POM
Housing protection grade	IP 65
Weight (with HC2-S3 probe)	258 g (9.1 oz)
CE / EMC immunity	EMC Directive 2004/108/EG: EN 61000-6-1: 2001, EN 61000-6-2: 2005 EN 61000-6-3: 2005, EN 61000-6-4: 2001+A11
Solder type	Lead free (RoHS directive)
Fire protection class	Corresponds to UL94-HB
FDA / GAMP directives	Compatible
Storage and transit	-50...+70 °C / -20...+70 °C (models with display), 0...100 %rh, non condensing
Operating limits at electronics	-40 ... +80 °C, 0...100 %rh, non condensing
Temperature limits at probe	Depends on probe model
Maximum humidity at sensor	100 %rh
Maximum air velocity at probe	20 m/s (3,935 ft/min)
Critical environments	Humidity sensor: as per DV04-14.0803.02 - Critical chemicals

Interested in further information (special applications, order codes)? A complete and up-to-date overview of our HygroMet MP102H/MP402H series is available on our web site [www.rotronic.com](http://www.rotronic.com). We would also be happy to advise you on the phone.

Change over now to the HygroClip2 probes with integrated AirChip3000 technology for your temperature and humidity measurements. You can find detailed information about our probes at [www.rotronic-humidity.com](http://www.rotronic-humidity.com). We would also be happy to advise you in person or on the phone.

**rotronic**  
MEASUREMENT SOLUTIONS

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