

HC2A-S3A HIGH-END METEOROLOGICAL PROBE



HC2A-S3A

Advantages

- Especially designed for the use in meteorological applications
- New humidity sensor HYGROMER HM1-SK
- Highest accuracy at 0.8 %rh and 0.1 °C
- Free configuration software HW5

Applications

- Meteorology
- Weather stations
- Snow gun



Sensor HYGROMER HM1-SK

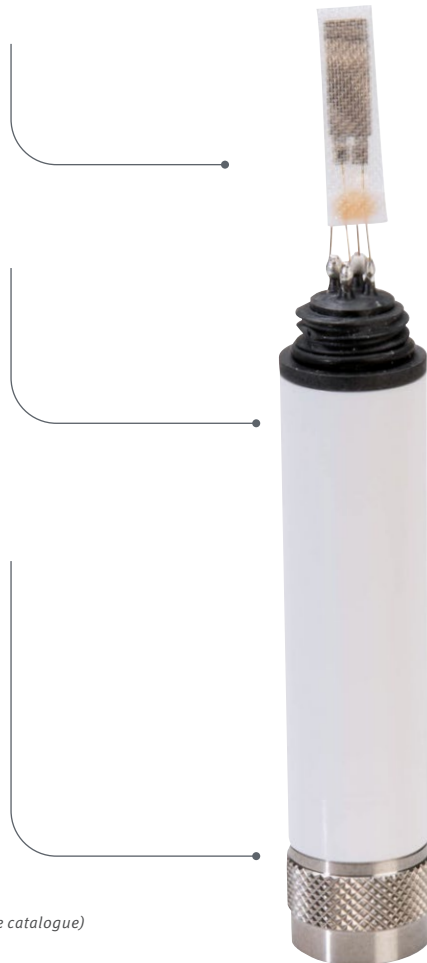
- New sensor HM1-SK with additional protection
- Excellent long-term stability (< 1 %rh per year)¹

Smart Electronic

- Based on the Rotronic's AirChip3000
- Calculates the dew / frost point
- Saves adjustment data so that probes can be interchanged without re-adjusting (hot-swappable)

Flexibility and Compatibility

- User scalable analog output signals (2 x 0...1V)²
- Digital interface via UART³
- Compatible with Rotronic devices HF5, HF8, HP32



¹ Drift < 1 %rh per year with clean air or similar (see also pollutant table in the catalogue)

² HW5 software and service cable AC3001 is required

³ Universal asynchronous receiver transmitter

⁴ Original equipment manufacturer

Standard Precision

Order code	Type	Accuracy @ 23 °C	Application range	Sensor element	Long-term stability
HC2A-S3A	High-End Meteo*	±0.8 %rh ±0.1 K	-50...80 °C ⁴ / 0...100 %rh	HYGROMER HM1-SK	<1 %rh per year with clean air

* The housing is full white to avoid any heating from sun radiation.

Computer Connection

The cable AC3001 allows direct connection to a computer via USB and, with use of the HW5 software to adjust the HC2A-S3A probe's parameters such as:

- Scale of analog outputs
- Calculated parameter on analog outputs
- Probe adjustment

Possible Filters

The HC2A-S3A is tested together with the standard filter SPA-WM (wire-mesh).
Standard: HC2A-S3A + SPA-PCW-WM with filter (wire-mesh)

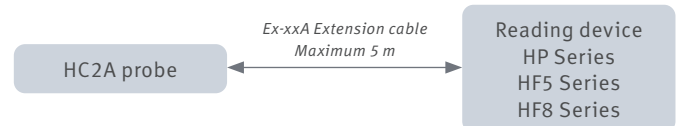
Order code	Filter carrier	Filter element	Pore size	Application range
SPA-PCW-PE	Polycarbonate, white	Polyethylene, white	40-50 µm	-50...80 °C
SPA-PCW-PTFE		PTFE, white	10 µm	
SPA-PCW-WM		Wire mesh 1.4401		
SPA-PE	No filter carrier, only filter	Polyethylene, white	40-50 µm	
SPA-PTFE		PTFE, white	10 µm	
SPA-WM		Wire mesh 1.4401		

Possible Extension Cables

It is possible to extend the distance between the probe and its reading device with extension cable.

- Passive connections are possible up to 5m (see table below for possible options)
- An amplifier cable (AC3003) allows connections up to 50 m

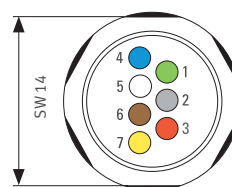
Order Code	Cable Length	Color
E3-05A	5 m	White



Wire assignment extension cable

Wire assignment		
Green	VDD (+)	3.3 VDC
		5...24 VDC / 5...16 VAC
		5...40 VDC / 6...28 VAC
Gray	GND	Digital and power supply GND
Red	RxD	UART
Blue	TxD	
White	Out1	Analog output 1, standard humidity 0...100 %rh = 0...1 V
Brown	Out2	Analog output 2, standard temperature -40...60 °C = 0...1 V
Yellow	AGND	Analog GND (connect to GND when using docking stations)

Connector pin-out



- 1 V+
- 2 GND (digital and supply)
- 3 RXD (UART)
- 4 TXD (UART)
- 5 Analog signal humidity (0...100 %rh = 0...1 V)
- 6 Analog signal °C (-40...60 °C = 0...1 V)
- 7 AGND (analog ground)

⁴ The sensor withstands only 60 °Cdp.

Possible Accessoires

Naturally Ventilated Shields

Naturally ventilated radiation shields are used where the natural ventilation (wind) provides sufficient air flow, e.g. measurement stations in the mountains.

Features

- Easy-to-install protection shield for wall and mast mounting
- Multi-plate system for natural ventilation
- Simple probe mounting
- For probe diameters of 15 or 25 mm
- For mast diameters of 25...50 mm
- Protection against wind speeds up to 70 m/s and horizontal precipitation



AC1000 with HC2A-S3A+E3-02XX

Order code	AC1000
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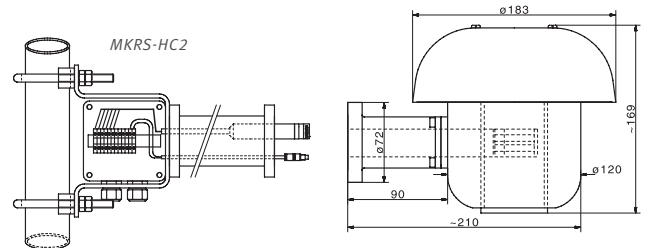
Actively Ventilated Shields

The ventilated weather and radiation protection shield RS12T with 12 VDC fan and RS24T with 24 VDC fan were developed in close cooperation with MeteoSwiss. This state-of-the-art device reduces the influences of thermal radiation on humidity and temperature measured values to a minimum.

Features

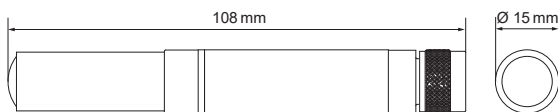
- Easy-to-install protection shield with integrated fan
- Special white coating (RAL 9010) minimizes solar heating
- Simple probe mounting
- Suitable for various probes

Order code	RS12T or RS24T
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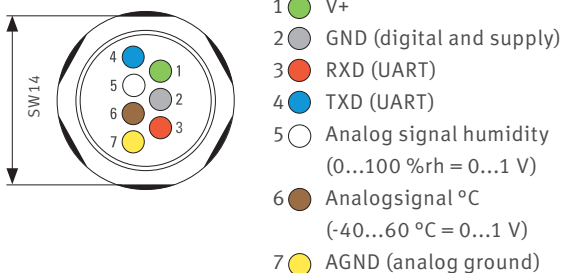


Technical Information

HC2A-S3A



Connector pin-out



Technical Data

Supply voltage	3.3...5 VDC
Current consumption	Approx. 5 mA (adjusted at 3.3 VDC)
Load	> 10 kΩ
Protection rating	IP65 (except the sensor area)
Digital interface	UART (19200 baud fixed)
Protocols	<ul style="list-style-type: none"> • RoASCII (Default) • MODBUS (setting with HW5)
Analog outputs	2 x 0...1 V
Analog outputs Parameters	<ul style="list-style-type: none"> • Humidity (default) • Temperature (default) • Dew point (setting with HW5) • Frost point (setting with HW5)
Analog output scaling	<ul style="list-style-type: none"> • Humidity (0...100 %rh = 0...1 V) • Temperature (-40...60 °C = 0...1 V) • Freely settable with HW5
Timing	1 st measurement after 1.5 s Measurement interval of 1 s

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