HC2A-S3A

HC2A-S3A Series

Advantages

- New humidity sensor HYGROMER HM1-SK
- Adjusted with an additional adjustment point for more accurate high humidity measurement
- Highest accuracy at 0.8 %rh and 0.1 °C
- Free evaluation and configuration HW5 software
- Especially designed for the use in meteoroloigal applications together with a wheater station

Applications

- Meteorology
- Weather stations
- Snow canon

Sensor HYGROMER HM1-SK
- New sensor HM1-SK with additional protection
- Additional humidity adjustment point at 90 %rh (10 %rh / 40 %rh / 70%rh / 90%rh)
- 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 ouput signals (2 x 0...1V)[2]
- Digital interface via UART[3]
- Rapidly interfaced with HygroCLip2Advanced devices from Rotronic or in OEM[4] applications

[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*

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Standard Precision

Order code	Type	Accuracy @ 23 °C	Application range	Sensor element	Long-term stability
HC2A-S3A	Meteo* Standard	±0.8 %rh ±0.1 K	-50...80 °C[5] / 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

Possible Filters

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-PCB-PE	Polycarbonate, black	Polyethylene, white	40-50 µm	
SPA-PCB-PTFE		PTFE, white	10 µm	
SPA-PCB-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		

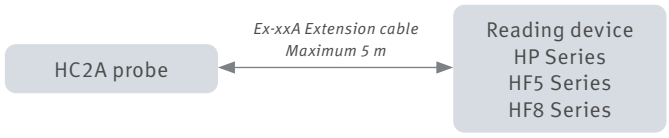
Standard: HC2A-S3A + SPA-PCW-WM with filter (wire mesh)

Possible Extension Cables

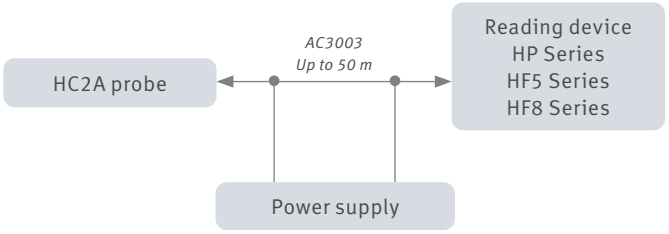
It is possible to extend the distance between the probe and its reading device with extension cable.

- 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
E3-01A	1 m	White
E3-02A	2 m	
E3-05A	5 m	
E2-01A	1 m	Black
E2-02A	2 m	
E2-05A	5 m	



Order code	Description	Cable length
AC3003	Signal amplifier, probe and instrument side with luster terminal	Self assembly
AC3003/10	AC3003 with luster terminal and Cat. 5 cable for self assembly	10 m
AC3003/20		20 m
AC3003/50		50 m



[5] *The sensor withstands only 60 °Cdp.*

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Possible Accessoires

Naturally Ventilated Shields

AC1000 with HC2A-S3A+E3-02XX

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

Order code	AC1000

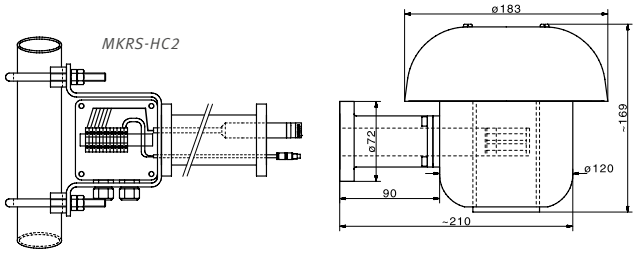
Actively Ventilated Shields

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

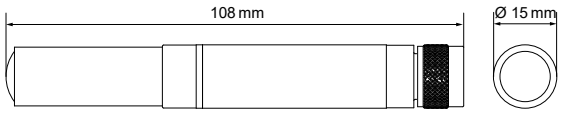
- Easy-to-install protection shield with integrated fan
- Special white coating (RAL 9010) minimizes solar heating
- Simple probe mounting
- Suitable for various probes

Order code	RS12T or RS24T

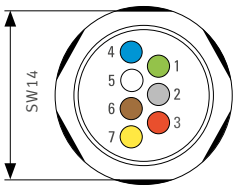


Technical Information

HC2A-S3A



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 Analogsignal °C (-40...60 °C = 0...1 V)
7 AGND (analog ground)

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	• RoASCII (Default) • MODBUS (setting with HW5)
Analog outputs	2 x 0...1 V
Analog outputs Parameters	• Humidity (default) • Temperature (default) • Dew point (setting with HW5) • Frost point (setting with HW5)
Analog output scaling	• Humidity (0...100 %rh = 0...1 V) • Temperature (-40...60 °C = 0...1 V) • Freely settable with HW5
Timing	1st measurement after 1.5 s Measurement interval of 1 s

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