Industrial probe

HC2A-IC/IM/IE

HC2A-IC Series
HC2A-IC-A Series

HC2A-IM-M Series

HC2A-IE Series

Advantages

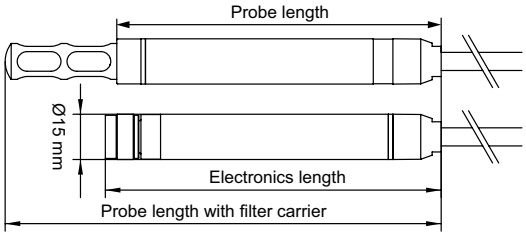
- Measures relative humidity and high temperatures up to 200 °C
- Built in Hygromer HT-1 sensor with advanced housing and construction
- High accuracy measurement, repeatability and long-term stability
- Hot swapable: Fast exchange without readjustment

Applications

- Production environment
- Industrial Manufacturing
- Drying processes
- Climate chambers

Industrial Cable Probe HC2A-IC Series

- Application range: 0...100 %RH, -100...200 °C[1]
- Accuracy: ±0.8 %RH, ±0.1 K @ 23°C
- Humidity sensor: HYGROMER HT-1
- Materials: PPS, stainless steel 1.4301

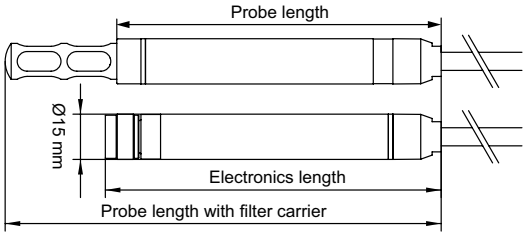


Order Code	Probe diameter	Probe length	Probe length with filter carrier	Electronic length	Cable length
HC2A-IC102	Ø 15 mm	100 mm	144 mm	111 mm	2000 mm (1920 - 2000 mm)
HC2A-IC105					5000 mm (4850 - 5000 mm)
HC2A-IC302		250 mm	294 mm		2000 mm (1920 - 2000 mm)

Delivery package: With filter carrier (SPA-SS), without filter. Filters must be purchased additionally.

Steel Industrial Cable Probe HC2A-IM Series

- Application range: 0...100 %RH, -100...200 °C[1]
- Accuracy: ±0.8 %RH, ±0.1 K @ 23°C
- Humidity sensor: HYGROMER HT-1
- Materials: stainless steel 1.4301



Order Code	Probe diameter	Probe length	Probe length with filter carrier	Electronic length	Cable length
HC2A-IM102-M	15 mm	86 mm	130 mm	97 mm	2000 mm (1920 - 2000 mm)
HC2A-IM302-M		236 mm	280 mm		2000 mm (1920 - 2000 mm)
HC2A-IM305-M					5000 mm (4850 - 5000 mm)

Delivery package: With filter carrier (SPA-SS), without filter. Filters must be purchased additionally.

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Measurement and data acquisition solutions

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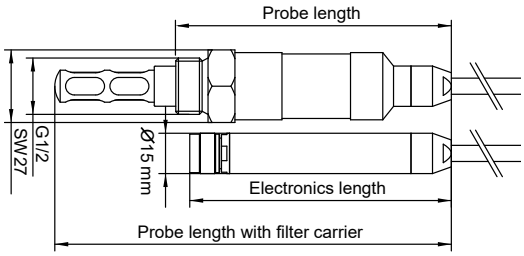
Industrial probe

HC2A-IC/IM/IE

Screw-in Probe HC2A-IE Series

- Application range: 0...100 %RH, -100...200 °C[1]
- Accuracy: ±0.8 %RH, ±0.1 K @ 23°C
- Humidity sensor: HYGROMER HT-1
- Pressure resistant to 100 bar / 1450 PSI
- Materials: stainless steel 1.4301

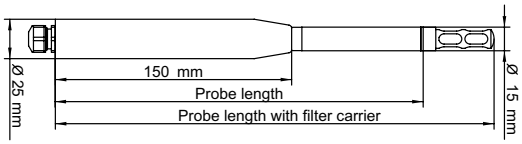


Order Code	Threat	Probe length	Probe length with filter carrier	Electronic length	Cable length
HC2A-IE02-G	1/2" G	104 mm	148 mm	97 mm	2000 mm (1920 - 2000 mm)
HC2A-IE02-NPT	1/2" NPT				

Delivery package: With filter carrier (SPA-SS), without filter. Filters must be purchased additionally.

Industrial Cable Probe HC2A-IC-A Series

- Application range: 0...100 %RH, -100...200 °C[1]
- Accuracy: ±0.8 %RH, ±0.1 K @ 23°C
- Humidity sensor: HYGROMER HT-1
- Materials: PPS, stainless steel 1.4301



Order Code	Probe diameter	Probe length	Probe length with filter carrier	Electronic length	Cable length
HC2A-IC402-A	Ø 15/25 mm	384 mm	428 mm	111 mm	2000 mm (1920 - 2000 mm)
HC2A-IC702-A		684 mm	728 mm		

Delivery package: With filter carrier (SPA-SS), without filter. Filters must be purchased additionally.

Filters for HC2A-IC / IM / IE

Order Code	Filter carrier	Filter element	Pore size	Application range
SPA-PCB-PE	Polycarbonate, black	Polyethylene, white	40-50 µm	-50...100°C
SPA-PCB-PTFE		PTFE, white	10 µm	
SPA-PCB-WM		Wire mesh 1.4401		
SPA-PCW-PE	Polycarbonate, white	Polyethylene, white	40-50 µm	
SPA-PCW-PTFE		PTFE, white	10 µm	
SPA-PCW-WM		Wire mesh 1.4401		
SPA-PE	No filter carrier, only filter	Polyethylene	40-50 µm	
SPA-PTFE		PTFE, white	10 µm	-100...200 °C
SPA-WM		Wire mesh 1.4401		
SPA-SS-WM	1,4301			
SPA-SSS	Sintered steel, 1.4404 (Carrier and filter)		25 µm	
SPA-SS-PFTE	Stainless steel, 1.4301	Teflon	10 µm	
SPA-SS		No filter	-	

Standard: SPA-SS without filter

Compatibility

HF5, HF8, HP32, HP23

HC2A-IC102 in combination with the HF5 transmitter (most popular application).

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HC2A-IC/IM/IE

Service Cables

For HF, HP21 / 22, HL-20

Features

- Connects Rotronic instruments via their service interface (UART) to a USB interface
- Requires HW4 software
- For programming (settings, scaling, firmware update, etc.)
- Two different types:
  AC3006, the instrument must be supplied with power.
  AC3009, the instrument is supplied with power via the USB interface.

AC3006 in combination with a 2-wire type: with all 2-wire types (HF320, HF420, HF520, HF620, HF720) ensure that the computer or laptop is galvanically isolated from the main power supply.

AC3006

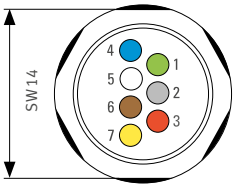
AC3009

Technical Information

Technical Data for HC2A-IC / IM / IE

Humidity sensor	HYGROMER HT-1
Temperature sensor	PT100 1/3 class B
Response time sensor	τ63: <15 s without filter, (temperature and humidity)
Max. air velocity (m/s)	3.5 without filter
Operating humidity	0...100 %RH
Operating temperature	-50...+100 °C[2] Electronics -100...200 °C[1] Measuring head
Accuracy @ 23 °C	±0,8 %RH ±0,1 K
Factory adjustment	@23°C and 10, 35, 80 %rH
Long-term stability	< 1 %RH / year
Supply voltage	3.3...5 VDC
Current consumption	Approx. 5 mA (adjusted at 3.3 VDC)
Protection rating	IP65 (except the sensor area)
Digital communication	UART (19200 baud fixed)
Protocols	RoAscii (default) MODBUS (setting with HW4)
Analogue outputs	2x 0...1 VDC
Analogue outputs parameters	• Humidity (default) • Temperature (default) • Dew point (setting with HW4) • Frost point (setting with HW4)
Analog output scaling	• Humidity (0...100 %RH = 0...1 V) • Temperature (-40...60 °C = 0...1 V) • Freely settable with HW4
Timing	1st measurement after 1.5 s Measurement interval 1 s
Air Chip 3000	Saves adjustment data so that probes can be interchanged without re-adjusting
Compatible devices	HF5, HF8, HP32, HP23, HL-NT
Delivery package	• Probe • Certificate • Filter holder, filter itself is not included

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

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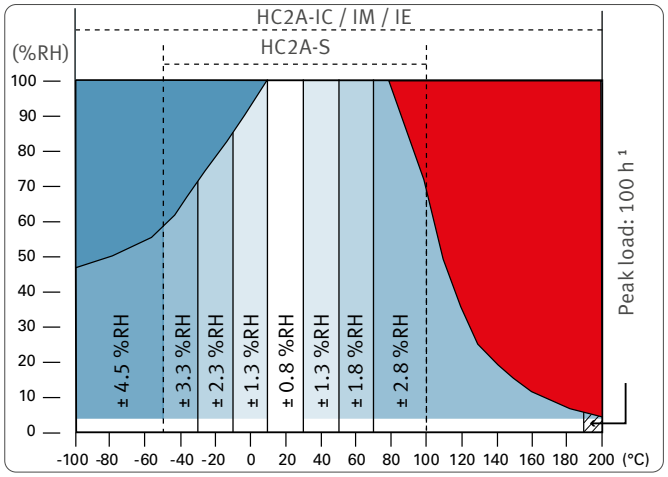
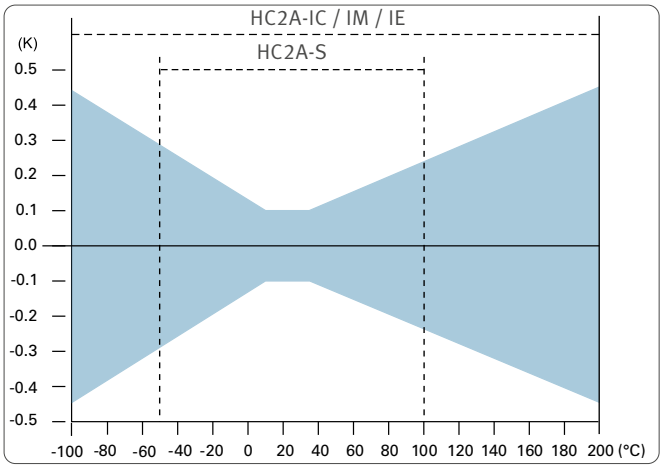
Accuracy of HC2 Probes

Humidity Window



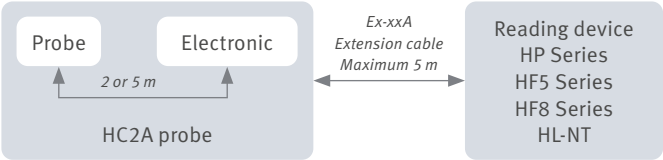
Temperature Window



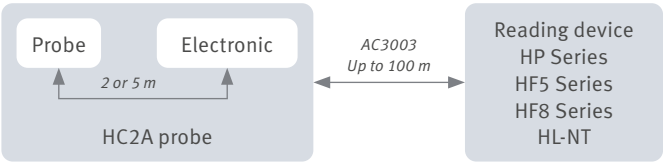
Possible Extension Cables

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 100m.



Order Code	Cable Length	Color
E2-01A	1 m (0.95 - 1.05 m)	Black
E2-02A	2 m (1.92 - 2.08 m)	
E2-05A	5 m (4.85 - 5.15 m)	
E3-01A	1 m (0.95 - 1.05 m)	White
E3-02A	2 m (1.92 - 2.08 m)	
E3-05A	5 m (4.85 - 5.15 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 pre-assembled Cat. 5 cable	10 m (9.8 - 10.2 m)
AC30003/50		50 m

Subject to technical change without notice. Printing and other errors reserved.

[1] *Peak load: 100h. Maximal permissible continuous load: 190°C.*
[2] *Temperatures above 40 °C can have an influence on the accuracy.*

Whilst every effort has been made to ensure the accuracy of this specification, we cannot accept responsibility for damage, injury, loss or expense from errors or omissions. In the interest of technical improvement, this specification may be altered without notice.

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