

# HC1

## Stand Alone Relative Humidity and Temperature Probes



### Advantages

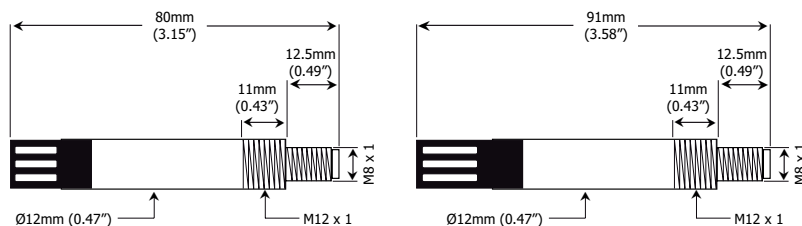
- Stand Alone Relative Humidity and Temperature Probes
- Using the HygroMer relative humidity sensor, accurate and stable relative humidity measurement
- Analog or digital outputs
- Polymer or stainless steel housing

### Applications

- HVAC & Building Automation, including Datacenters
- Industrial Process Control
- Environmental & Meteorological Monitoring
- Agriculture & Greenhouses
- Environmental Chambers

### HC1-S(M)12

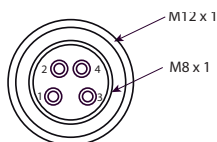
- Application range: 0 to 100 %rh, -20 to 80 °C
- Accuracy:  $\leq \pm 2$  %rh (10 to 90 %rh),  $\pm 0.2$  K @ 23°C
- Stability:  $\pm 1$  %rh/year
- Materials: Moulded polymer or stainless steel



### Electrical Connections

#### Digital Output

Cable	Connector	
Brown	Pin 1	Supply voltage V +
White	Pin 2	Modbus
Blue	Pin 3	V -
Black	Pin 4	Modbus



#### Voltage Output

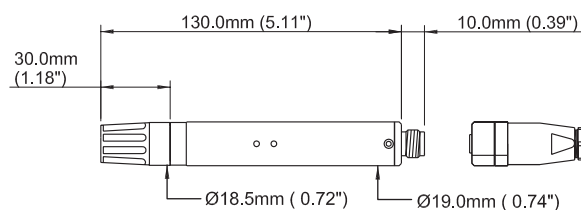
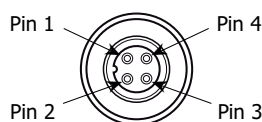
Cable	Connector	
Brown	Pin 1	Power supply V +
White	Pin 2	Output rh +
Blue	Pin 3	Output temperature +
Black	Pin 4	Common ground

### Modbus Register

Register	Content	Format
0	T ambient	235 = 23.5 °C
1	rh	457 = 45.7 %
2	Model type	64480 (fixed)
3	Trade mark	5000 (fixed)
4	Software release	xx.xx
5/6	Future purposes (don't use)	-
7	Modbus Device Address	Default 1
8	Baud rate	2 = 9600, 3=19200
9 to 13	Factory purposes	-
14	Flash protect	Default 0
15 to 254	Factory purposes (calibration registers)	-

## HC1-S(M)19

- Application range: 0 to 100 %rh, -20 to 80 °C
- Accuracy:1 Calibration Point:  
±3 %rh (30 to 80 %rh) / ±0.3 K
- Accuracy:2 Calibration Points:  
±2 %rh (10 to 90 %rh) / ±0.2 K
- Stability: ±1 %rh/year
- Materials: Molded polymer or Stainless Steel



## Electrical Connections

### Voltage Output

Cable	Connector	
Brown	Pin 1	Power supply V +
White	Pin 2	Output temperature +
Blue	Pin 3	Common ground
Black	Pin 4	Output rh +

### Current Output

Cable	Connector	Pin
Brown	Pin 1	Output rh +
White	Pin 2	Output temperature -
Blue	Pin 3	Output rh -
Black	Pin 4	Output temperature +

### Digital Output

Cable	Connector	RS232	RS485
Brown	Pin 1	Power supply V +	Power supply V +
White	Pin 2	TX	TX/RX +
Blue	Pin 3	RX	RX/TX -
Black	Pin 4	Ground	Ground

## Technical Information

	HC1-X12	HC1-X19
Probe type	Analog or Digital relative humidity and temperature	
Probe Diameter	12mm	19mm
Measuring range	-20 to 80 °C / 0 to 100 %rh	
Accuracy at 23 °C	±2 %rh (10 to 90 %rh) / ±0.2 K	1 Calibration Point: ±3 %rh (30 to 80 %rh) / ±0.3 K 2 Calibration Points: ±2 %rh (10 to 90 %rh) / ±0.2 K
Long-term stability	<1 %rh / year	
Probe housing	Molded polymer or stainless steel	
IP Protection rating	IP65	
Power supply	14 to 30 VDC (0 to 5 V/ 0 to 10 V output) 5 to 30 VDC (0 to 1 V & mA output)	
Output signal	0 to 1V, 0 to 5V, 0 to 10 V RS485	4 to 20 mA 0 to 1V, 0 to 5V, 0 to 10 V RS232, RS485
Response time rh sensor	<10 sec typical (for 90% of the step change)	
Electrical connections	4 pin M8 connector, 4 pin M12 connector	M12

## HC1-Series Accessories and Spare Parts

Order Code	Product / Description
<b>Protection cap</b>	
A000002	19mm (0.75") Slotted protection cap black
A000003	12mm (0.47") Slotted protection cap black
A000046	13mm HDPE Protection cap
A000120	ø90mm (3.54") WM weather protection cap (for ø19mm (0.75") probes)
A000125	ø120mm (4.72") WM weather protection cap (for ø19mm (0.75") probes)
<b>Filter</b>	
A000014	19mm (0.75") PVDF filter
A000015	19mm (0.75") PVDF filter w/ protection cap black
A000017	12mm (0.47") PVDF filter
A000018	12mm (0.47") PVDF filter w/ protection cap black
A000021	19mm (0.75") Mesh filter w/ protection cap black
A000022	12mm (0.47") Mesh filter w/ protection cap black
A000023	12mm (0.47") Flat SS sintered dust filter
A000025	19mm (0.75") Arrow 5µm SS sintered filter
A000027	19mm (0.75") connector, no cable, w/screw terminal
A000028	12mm (0.47") Arrow 20µm SS sintered filter
A000040	19mm (0.75") Foil filter 2µm w/protection cap black
A000042	19mm (0.75") Oleophobic foil filter 0.7µm (w/protection cap black)
K9	12mm (0.47") Mesh filter with protection cap, light brown, extra long (30mm)
K10	12mm (0.47") PTFE filter with peek protection cap
K11	12mm (0.47") Slotted protection cap, light brown, extra long (30mm)
<b>Cable</b>	
A000030-xx xx = total length i.e. A000030-20	19mm (0.75") Connector - Connector - Cable (price per meter)
A000031	19mm (0.75") connector with 2m (6.5') cable
A000032	19mm (0.75") connector with 5m (16') cable
A000033	12mm (0.47") connector with 2m (6.5') cable
A000036	12mm (0.47") connector with 5m (16') cable
A000037	12mm (0.47") connector with 10m (32.8') cable
A000321	12mm (0.47") connector without cable (with solder terminal)
A000321-xx xx = total length i.e. A000321-20	12mm (0.47") connector - Connector - Cable (price per meter)
A000322	12mm (0.47") Connector with 20m (25.6') cable
<b>Mounting</b>	
A000100	3/4" NPT SS adj. fitting for SS probes
A000101	1/2" NPT SS adj. fitting for SS probes
A000110	Al mounting flange for ø19mm (0.75"), SS probes (outside ø80mm (3.15"))
A000111	Al mounting flange for ø12mm (0.47"), SS probes (outside ø40mm (1.57"))
A000150	Mini flange for ø19mm (0.75") polymer probe

## Compatibility

- HC1 Series are standalone probes which are not compatible with Rotronic transmitters and Rotronic handhelds.
- The only compatible accessories and spare parts like filters, protection caps, mounting clips etc. are listed here.
- In case of insecurity, please contact your local Rotronic partner.

