

**Apollo**

## HygroClip 2



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## 1. HygroClip 2 in **general**



The **HC2-series** are digital **humidity-temperature** probes based on the AirChip 3000 technology.

These probes feature a **UART** serial interface and **two 0...1 V** linear analog output signals.

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## 1. HygroClip 2 in **general**

The **HC2 probes** are designed for use with the HygroClip 2 generation of ROTRONIC humidity-temperature instruments:

hand-held and bench top indicators, data loggers, transmitters, hygrostats, etc...

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## 1. HygroClip 2 in **general**



The **HC2 probes** maintain all of the benefits of the original HygroClip technology such as the possibility of **hot-swapping** probes.

Also **significant improvements** in the area of measurement accuracy and functionality are integrated.

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## 1. HygroClip 2 in **general**



The **HC2 probes** can also be used as a stand-alone device featuring:

**Analog output** signals and  
**Digital interface** (UTAT)



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## 1. HygroClip 2 in **general**



The **HC2 probes** offer the following user functions:

- Calculation of the **dew or frost point**
- Humidity temperature **calibration** and **adjustment**
- **Simulator** mode
- **Automatic** humidity **sensor test** and drift compensation
- **Sensor failure** mode
- Data **recording**

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## 1. HygroClip 2 in general



Power supply and connections	
Recommended supply voltage	<b>3.3 VDC</b>
Nominal current consumption	< 4.5 mA at VDD = 3.3 VDC 7.5 mA at VDD = 5 VDC
Maximum start-up current unlimited	< 50mA during 2 $\mu$ s
Minimum start-up current required	Typical: 8 mA during 2ms and 5 mA during 2s
Maximum current spike during operation	1 mA during maximum 2 $\mu$ s
Polarity protection	Mechanical only (keyed connector)

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## 1. HygroClip 2 in general



Humidity measurement	
Sensor	ROTRONIC Hygromer <sup>®</sup> IN1
Measuring range	0...100 %RH
Measurement accuracy at 23 ° C	± <b>0.8 %RH</b> (w. standard adjustment profile)
Repeatability	0.3 %RH
Long term stability	< 1 %RH / year
Sensor time constant	Typical 10 sec, 63% of a 35 to 80 %RH step change (1m/sec air flow at sensor)

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## 1. HygroClip 2 in **general**



Temperature measurement	
Sensor	Pt100 RTD, IEC 751 1/3 class B
Measuring range	-100...200 ° C (see also environmental limits)
Measurement accuracy at 23 ° C	±0.1 ° C
Repeatability	0.05° C
Long term stability	< 0.1° C / year
Sensor time constant	Typical 4 sec, 63% of a step change (1m/sec air flow at sensor)

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## 1. HygroClip 2 in **general**



Calculated parameters	
Psychrometric calculations	Dew or frost point (user configurable)
Start-up time and data refresh rate	
Start-up time	1.5s (typical)
Data refresh rate	1.0s (typical) – when not calculating any parameter

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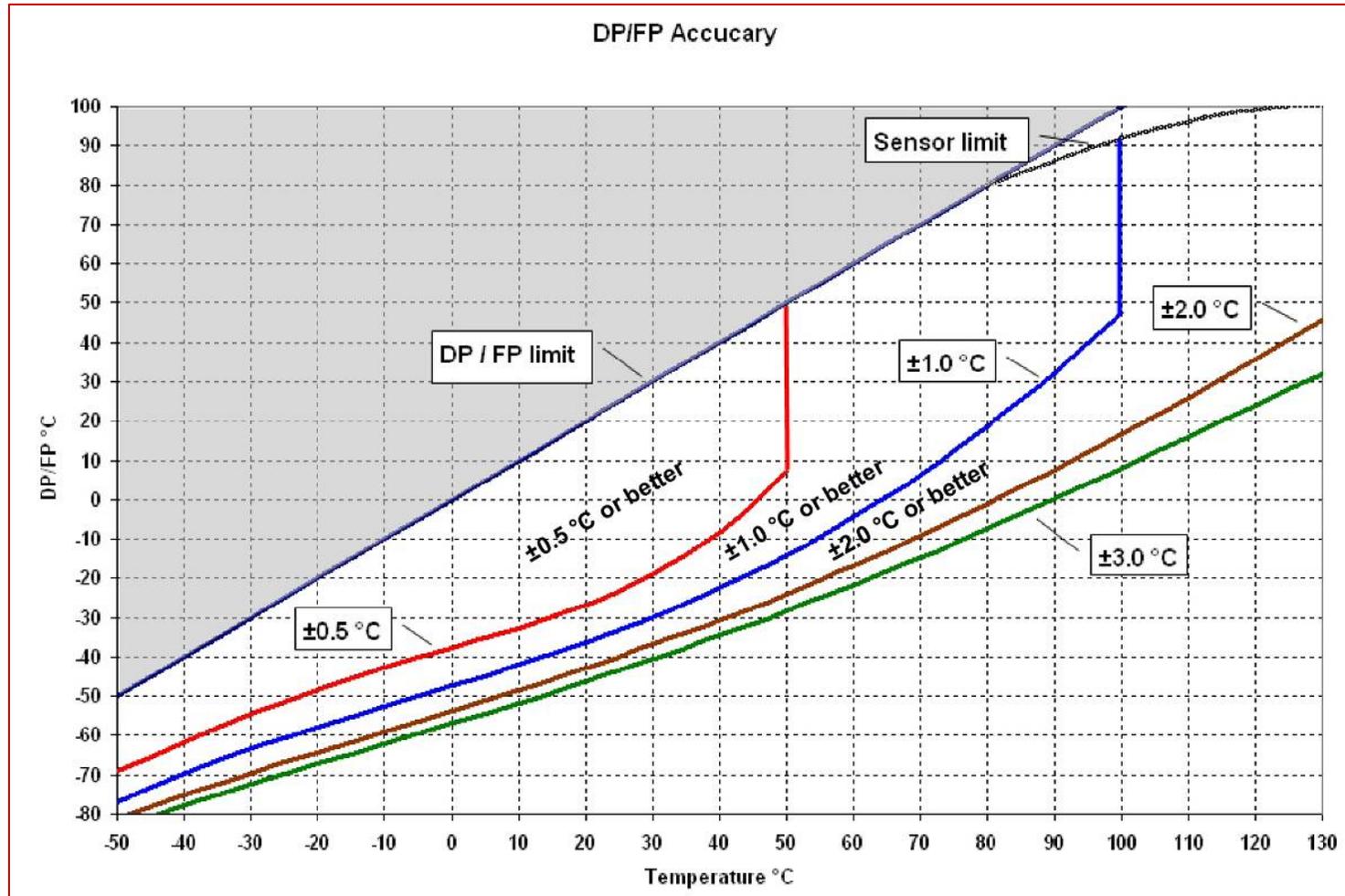
## 1. HygroClip 2 in **general**



Digital interface	
Interface type	<b>UART</b> (Universal Asynchronous Receiver Transmitter)
Organization	Dialog, duplex
Default configuration	Baud rate : 19200 Parity : none Data bits : 8 Stop bits : 1
Baud rate configuration:	No
Logical levels	Logical 0: $\leq 0.3V * VDD$ Logical 1: $\geq 0.8V * VDD$
Maximum cable length	5 m (16.4 ft) w/o signal booster

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## 1. HygroClip 2 in general



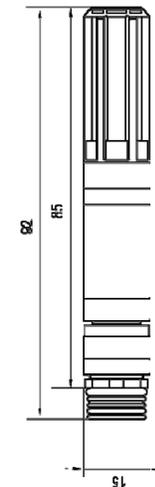
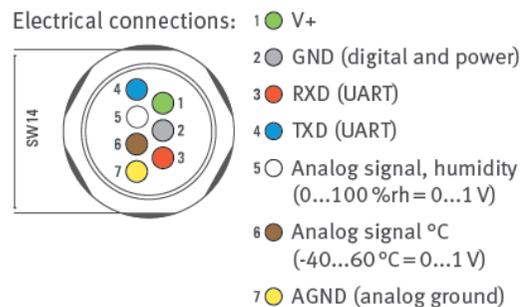
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## 2. The different probes

### Climate measurement

**HC2-S** Standard HygroClip2 (black)

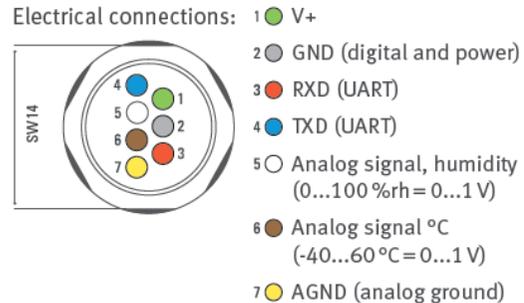
**HC2-S3** Standard HygroClip2 (white)



*Main utilization: indicators, data loggers and transmitters, with or without an extension cable*

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## Measurement in tight spaces



*Main utilization: indicators, data loggers and transmitters*

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