# HygroClip2

AIR CHIP TECHNOLOGY

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## UNIQUE SENSING INTELLIGENCE.

### INTRODUCING AIRCHIP DIGITAL TECHNOLOGY.

### INNOVATION IN HUMIDITY AND TEMPERATURE MEASUREMENT

- Relative humidity, temperature measurement and dew point calculation
- Outstanding accuracy and repeatability
- Excellent long-term stability <1 %RH / year
- Integrated data acquisition and calibration history
- Auto-diagnostics with error compensation
- Programmable alarm functions
- Advanced easy-to-use calibration features
- 100% field interchangeable

rotronic
MEASUREMENT SOLUTIONS

# SPECIFY THE BEST:
# HYGROCLIP2 ADVANTAGES AT A GLANCE.

**When it comes to measuring humidity with the highest accuracy, the HygroClip2 series of probes is in a class of its own. Based on AirChip3000 technology, its unique features are sure to impress.**
**In combination with advances in sensor technology and integration, the HygroClip2 will provide superb precision and state-of-the-art functionality, taking humidity measurement to a whole new level of performance and reliability (< 0.8 %RH / 0.1 K).**

**Fast response**
- By decoupling the Pt100 temperature sensor from the probe, thermal response is significantly improved

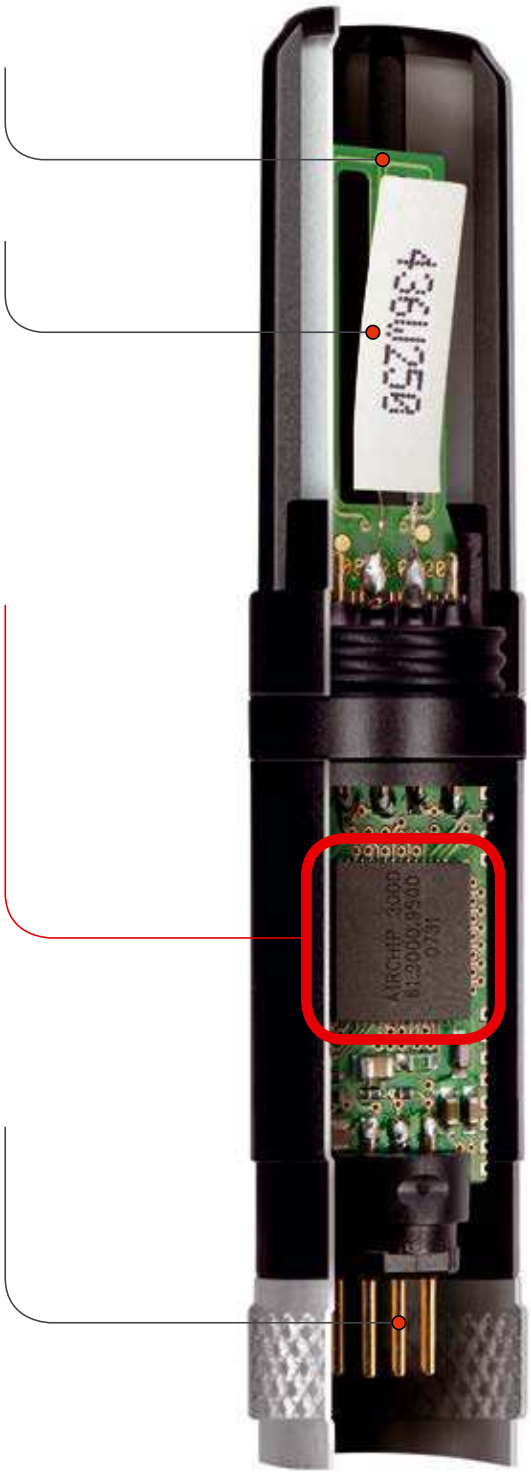
**Innovative filter technology**
- The latest in filter technology provides a high level of protection and maintains the optimum measurement environment for the Hygromer humidity and Pt100 temperature sensors

AIR CHIP TECHNOLOGY

**AirChip3000**
- Compensates humidity and temperature over 30,000 reference points
- 2,000 data point memory
- Dew/frost point calculation
- Sensor auto-diagnostics and automatic correction
- Active alarming and information
- ASIC (Application Specific Integrated Circuit), micro-controller and EEPROM on one chip

**Maximum flexibility**
- The UART[1] interface and user scalable analog outputs allow the probe to be used as a stand-alone device that can also be effortlessly integrated into an OEM application
- The probes can be interchanged without adjustment

[1] Universal Asynchronous Receiver Transmitter



# APPLICATIONS.

In addition to individual probes, the HygroClip2 product family includes handheld instruments, transmitters, data loggers and custom designed products, all based on cutting-edge AirChip3000 digital technology. Maintenance in the field is easy; the HygroClip2 probes can be interchanged within a matter of seconds without the need for system recalibration. We will gladly advise you which specific model to use to achieve the best possible results for your application.

Handheld instruments

Transmitters

Data loggers

Meteorological probes

Custom designs for OEM applications

# PROBE OPTIONS.

Whether you need a simple climate probe for measuring ambient conditions, or a more sophisticated cable probe for high temperature and other special applications, we can provide you with the ideal HygroClip2 probe to suit your requirements.

All HygroClip2 probes can be individually calibrated and adjusted to maximize measurement precision where you need it the most. This capability is exactly what makes every probe in the product range a high-end solution for your application.

## Probes for Industrial Applications

With a variety of mechanical designs, our industrial probes are suitable for use in the most demanding environments. Operating range 0...100 %RH, -100...200 °C[1] (-148...392 °F) and 0...100 bar (0...1450 PSI).

## Probes for Handheld Instruments

Almost any conceivable measurement task can be performed with our range of hand-held probes. Depending on probe type, the operating range is between 0...100 %RH and -100...200 °C.

Interested in information about the right choice of probe?
A complete and up-to-date overview of all probe options is available on our web site **www.rotronic.com.**

[1] Short-term peak load

# TECHNICAL INFORMATION.

### Factory Adjustment.

Two different adjustment profiles are available from the factory; this means that measurement accuracy can be matched to the application need. Calibration data is stored within the probe and can be retrieved later for audit purposes.

### Probe Output Signal.

When connected to a PC the HygroClip2 probes can be rescaled with different ranges to suit the application need. It is also possible to assign the internally calculated dew or frost point value to one of these outputs; thus converting the HygroClip2 into a dew point probe.

### Sensor Diagnostics.

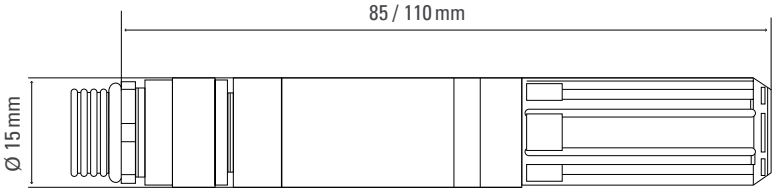
The intelligence of AirChip3000 technology enables advanced sensor diagnostics. Should the RH sensor deviate from factory defined parameters (for example because of chemical contamination) measurement values can be automatically compensated and a digital alarm triggered. The HygroClip2 probe can also be programmed to generate an alarm in the form of pre-defined analog output signals in the event of a problem with either the RH or temperature sensor. The user has full control over these features using ROTRONIC HW4 software.

### Data Logging and Alarm Generation.

Up to 2,000 measurement values can be stored in the HygroClip2 probe; the user is able to configure the measurement interval, set alarm limits, scale the output signal and download data using optional ROTRONIC HW4 software. The HygroClip2 probe can be programmed with set limits to generate an alarm which is available when the probe is communicating with a PC or compatible ROTRONIC device. Thus, the HygroClip2 can be integrated in any application.

| | |
|---|---|
| Humidity sensor | ROTRONIC Hygromer® IN-1 |
| Temperature sensor | Pt100 class A (HC2-S)<br>Pt100 1/3 class B (HC2-IC / HC2-IM / HC2-IE) |
| Accuracy<br>with Standard adjustment profile | ±0.8 %RH / ±0.1 K, at 10...30 °C<br>at 23 °C und 10, 35, 80 %RH |
| Accuracy<br>High Precision adjustment profile | ±0.5 %RH / ±0.1 K, at 10...30 °C<br>at 23 °C and 10, 20, 30, 40, 50, 60, 70, 80, 90 %RH |
| Long-term stability, humidity sensor | <1 %RH, 0.1 °C / year |
| Humidity response time τ63 | <15 s, without filter |
| Measurement range | 0...100 %RH, -100...200 °C[1]<br>(depending on probe type) |
| Electronics operating range | -50...100 °C and 0...100 %RH |
| Analog output signals<br>(standard, user scalable) | 0...1 V = 0...100 %RH<br>0...1 V = -40...60 °C |
| Interface | UART |
| Accuracy analog output | ±1 mV |
| Alarm function | Yes, analog & digital, programmable |
| Précision sortie analogique | ±1 mV |
| Audit Trail / Electronic Records | FDA 21CFR Part 11 and GAMP compliant |
| Power supply | 3.3...5 VDC |
| Current consumption | 4.5 mA @3.3 VDC |
| IP protection | IP65 |
| Housing/probe material | Polycarbonate , PEEK or stainless steel<br>(depends on probe type) |
| Filter | Polyethylene / wire mesh filter |
| Standards | CE-compliant 2014/30/EU |

[1] Short-term peak load




85 mm (plolycarbonate housing) / 110 mm (stainless steel housing)

Electrical connections:


1 V+
2 GND (digital and power)
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)



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