

# Humidity and Temperature Measuring Solutions for Meteorological Applications

Excellent accuracy, reproducibility and long-term  
stability for harsh environments

## Humidity and Temperature Probes

### HC2A-S3/S3H – Standard Meteorological Humidity Probe

High-accuracy humidity and temperature digital probe for meteorological and outdoor applications.

- Range of application -50...100 °C / 0...100 %rh
- Accuracy:  $\pm 0.8$  %rh (S3H  $\pm 0.5$  %rh),  $\pm 0.1$  K, at 23 °C (S3H 10...90 %rh)
- Digital interface (UART) and scalable analog outputs, 0...1 V

### HC2A-S3A – High-End Meteorological Humidity Probe

Specialist fast-response high accuracy meteorological humidity and temperature probe designed for fastest recovery from condensation events.

- Range of application: -50...80 °C / 0...100 %rh
- Accuracy:  $\pm 0.8$  %rh,  $\pm 0.1$  K, at 23 °C (10...30 °C)
- Digital interface (UART) and scalable analog outputs, 0...1 V

### MP10A/MP400A – Standard Meteorological Probe with Fixed Sensors

Complete humidity and temperature instrument with DC supply and low power consumption ideal, for remote weather stations.

- Range of application: -40...85 °C / 0...100 %rh
- Hygromer® IN-1 sensor / Pt100 1/3 Class B
- Connection with T4/T7 connector or cable with open ends

### MP102H/40 – Transmitter with Analog and Digital Output

Meteorological transmitter with integrated electronics for two active outputs (current or voltage) and equipped with an RS485 interface.

- Humidity and temperature measurement with interchangeable HC2A-S3/HCA-S3A probes (order separately)
- Calculates all psychrometric parameters
- Freely scalable voltage or current output (optional RS-485)

## Handheld

### HP32 – Handheld Humidity and Temperature Meter

Handheld instrument for humidity and temperature measurement or logging in demanding applications

- Exchangeable probe - wide selection of probes for different applications
- Datalogging and spot checks
- Free evaluation software HygroSoft



## Weather Shields

### RS12T/RS24T – Actively Ventilated Shields

Weather and radiation protection shield with 12 VDC (RS24T 24 VDC) fan.

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

### AC Series – Naturally Ventilated Shields

Weather and radiation protection multi-plate protection shield.

- Easy-to-install protective shield for wall and mast mounting
- Suitable for various probes (Ø 15 and 25 mm), simple probe mounting
- Multi-plate system for natural ventilation

## Calibration

### HygroGen2 Humidity and Temperature Calibrator S and XL

On-site and in-lab humidity and temperature calibrator for all types of humidity instruments from any manufacturer.

- Chamber volume 2 litres (S); 20 liters (XL)
- Working volume 1.5 litres (S); 17 liters (XL)
- Humidity changes (5...95 %rh, 0.1 %rh stability): < 5 min. (S); <15 min. (XL)
- Temperature changes (23...50 °C, 0.01 °C stability): < 5 min. (S); <15 min. (XL)

### S8000 -100 – High Precision Chilled Mirror Hygrometer

Chilled Mirror Hygrometer with a unique advanced dual optics system which detects small changes in moisture condensed on the mirror surface.

- Accuracy of  $\pm 0.1$  °C ( $\pm 0.18$  °F)
- Precision measurement to -100°Cdp (13.8 ppb) with no need for additional cooling
- Sensor head optimised for fast response to low moisture levels
- Reproducibility of  $\pm 0.15$  °C ( $\pm 0.27$  °F) at -100 °C (-148 °F) frost point

### HygroCal100 Advanced – Humidity Validator

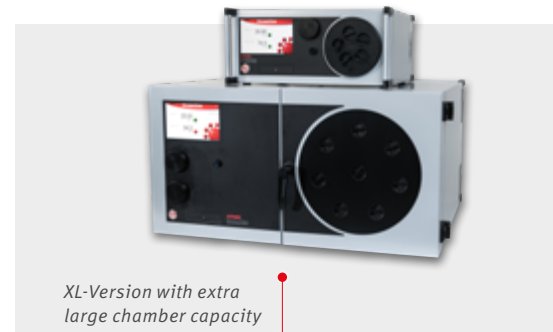
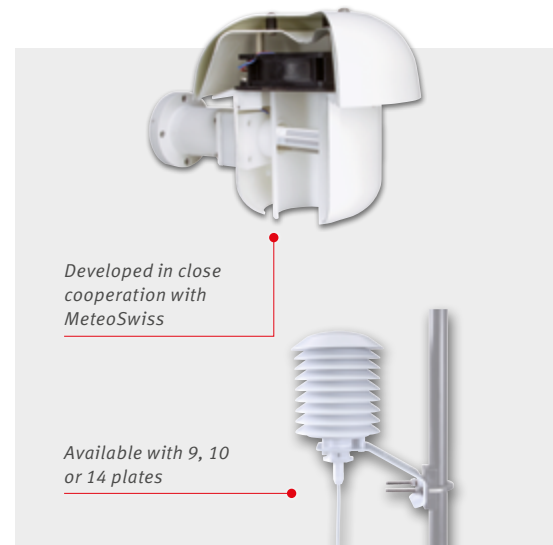
Portable lightweight humidity validator to automate calibration procedures of up to 7 probes remotely over the free software or directly over the device.

- Portable device with optional battery pack and hard carry case
- Intuitive UI makes simple automating probe verification
- Validate 7 probes simultaneously
- Automated validation procedures for complete hands-off probe verification

### Optidew 401 – Cost-effective Chilled Mirror Hygrometer

Fast-responding chilled mirror hygrometers for use in industrial humidity control and precision laboratory applications. Available in bench-top and wall-mount configurations.

- New chilled mirror hybrid sensor gives fast dynamic response to changes in humidity
- Accurate to  $\pm 0.15$  °C dew-point,  $\pm 0.1$  °C temperature
- Wide measurement range from -40 to +120 °C dew-point





## Applications

Humidity and temperature measurement technology faces challenges in a variety of harsh environmental applications, including weather forecasting, agriculture, offshore platforms, and buoys. These measurements are also crucial in data centers and HVAC systems within demanding production industries. Below, you can find a selection of specifications and their associated requirements.

Application specifications	Requirement
High accuracy	Capacitive sensors known for precise measurements.
Extreme cold conditions	Special humidity sensors that can operate at extremely low temperatures without freezing (with and without accessories).
High humidity ranges	Sensors capable of accurate measurements in very high humidity environments.
Salty environments	Use of corrosion-resistant materials due to exposure to corrosion in salty environments.
Fast response time	Sensors with fast response times to capture rapid changes in humidity, e.g., near cloud formation areas.
Long-Term monitoring	Sensors that function reliably over extended periods with minimal maintenance or calibration.



## Process Sensing Technologies

Process Sensing Technologies (PST) – since the end of 2024, part of DwyerOmega – provides, through its well-established brands, an unmatched suite of instruments, analyzers, and sensors for precision measurements and monitoring in highly demanding end markets. These markets include pharmaceuticals/life sciences, specialty gases, semiconductors, oil and gas, petrochemicals, and power, as well as gas detection, food and beverage, building automation, and more.

With Rotronic’s 60 years of experience in developing innovative precision instruments, we are the application experts in humidity measurements for extreme meteorological conditions. Our development process is rigorous, incorporating extensive testing in our state-of-the-art climate chamber. This ensures sensor performance is rigorously proven in a wide range of real-world conditions. Learn more on our website and contact us to discuss your application.

For further information on our products and solutions, simply scan the QR codes.



Meteorological measuring instruments



Meteorological applications



Calibration services



Product catalogue