



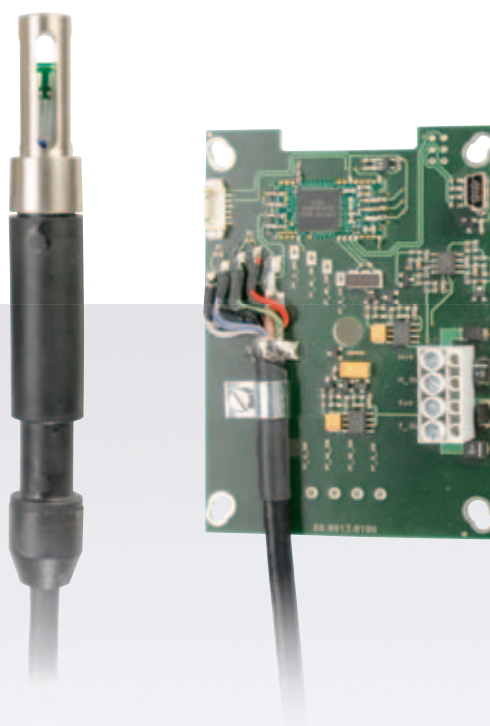
XB OEM-SERIES

THE OEM TRANSMITTER.

INTRODUCING AIRCHIP DIGITAL TECHNOLOGY.

IMPROVED PERFORMANCE IN ENVIRONMENTAL CHAMBERS, INCUBATORS AND DRYERS

- Relative humidity and temperature measurement
- Outstanding accuracy and repeatability
- Wide choice of probes to satisfy every application
- Various analog outputs available
- Freely scalable analog signals
- Simulator mode
- Automatic humidity sensor test and drift compensation
- Pt100 RTD direct 4-wire connection option available
- 2.000 point data recording



BUILD YOUR OWN OEM TRANSMITTER XB OEM TRANSMITTER ADVANTAGES.

The ROTRONIC XB OEM-Series is the latest development in transmitters for humidity, temperature and dew point. One outstanding feature of this innovative product is the ability to configure the transmitter to meet the requirements of the application. Choose from a wide range of signal output types, probes, sensors and cable length.

Service-Interface

- UART (Mini-USB)

Board

- Compact size
- Easy to install

Outputs

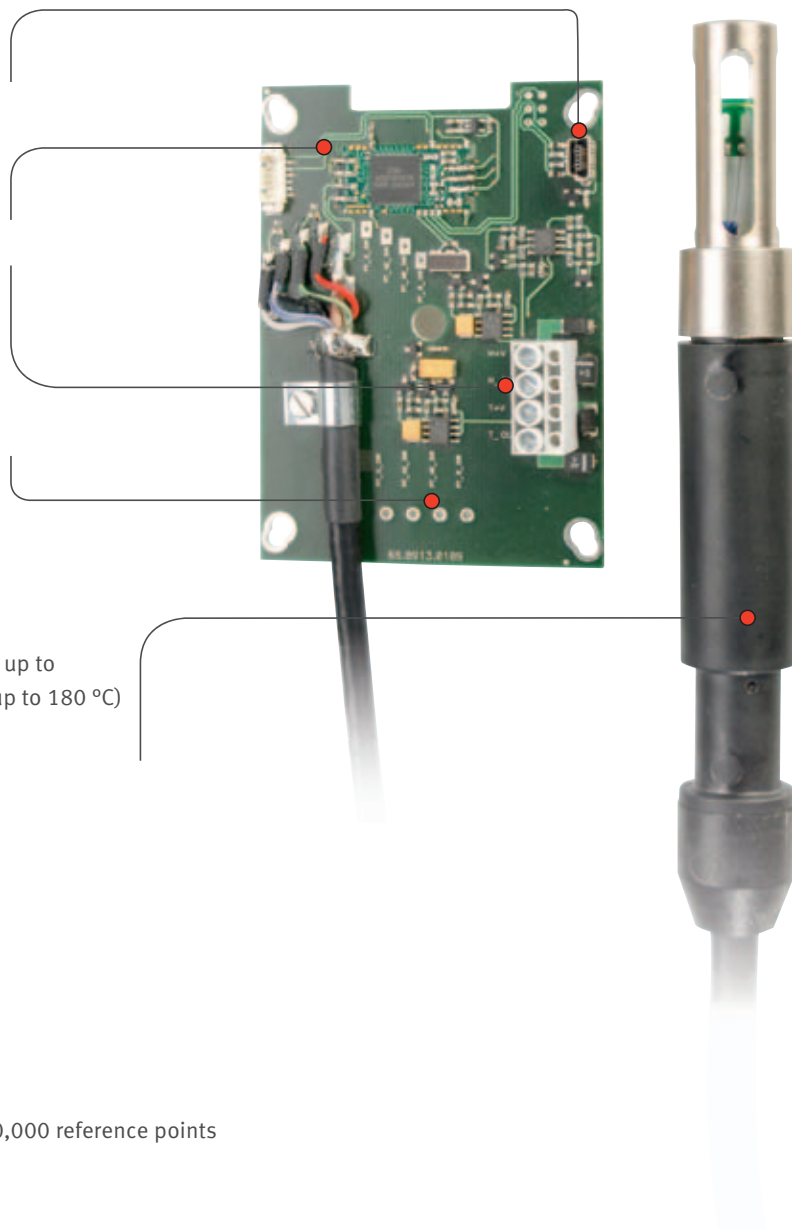
- Two freely scalable analog outputs
- Available as 2-wire (XB20) or 3/4-wire (XB3x)
- UART service-interface

Pt100 RTD output

- Direct 4-wire connection optional available

Wide selection of probes

- PEEK and steel probes with a temperature range up to 200° C available (With Hygromer HH-1R sensor up to 180 °C)
- 15mm and 25/15mm probe diameter available
- Probe lengths up to 700 mm



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

APPLICATIONS

The ROTRONIC XB OEM-Series of temperature and humidity transmitters is designed exclusively for the OEM market using the latest AIRCHIP3000 technology. Digital signal processing significantly benefits humidity measurement in the following key areas:

Environmental Chambers

Many products are tested over a variety of environmental conditions. The exceptionally wide measuring range of the ROTRONIC XB OEM units means these test conditions can be easily checked.

Industrial Process Monitoring

The maximum measurement temperature of 200 °C and the robust design of ROTRONIC probes means that even the most difficult process application can be checked with a ROTRONIC XB OEM transmitter

Environmental Test

Every product from mobile telephones to automobiles are today subjected to thorough environmental testing to ensure reliability. Humidity and temperature conditions are a critical part of this process.

Drying processes

Monitoring and control of any industrial drying process can have significant benefits in terms of product quality, energy use and productivity.

Measurement accuracy

Digital processing of the sensor signals by the XB OEM transmitters provides more scope and greater flexibility when compensating sensor characteristics such as linearity and temperature compensation. The ROTRONIC HYGROMER® capacitive sensors have always been the leader in both precision and stability. With the application of digital technology, sensor performance is now further enhanced.

Calibration

Calibration and sensor data are retained permanently within each XB OEM transmitter. Software-based calibration is simple and precise; there are no hard to reach, hard to adjust potentiometers. Multiple calibration points can be selected across the full measurement range. Transmitters of the XB OEM-series are primarily used in environmental chamber applications that require highly accurate humidity measurement.

Field Service made easy with the XB OEM-Series

On-site validation and maintenance of the sensors is made simple with the XB OEM transmitters. Use a Hygropalm handheld HP22/HP23 instrument and service cable to perform the following:

- Display of the % Relative Humidity reading from the transmitter on the Hygropalm HP22/HP23
- Single point calibration of the transmitter using a reference probe attached to the HP22/HP23
- Single and multipoint calibration of the transmitter against a known reference environment

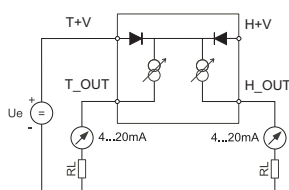
Applications

Many manufacturers of environmental chambers have chosen the ROTRONIC XB OEM transmitters. Additional applications are dryer cabinets for clothes, complex climate controls in pasta machines, process-drying and many more.

THE OUTPUTS OF THE XB OEM TRANSMITTER SERIES

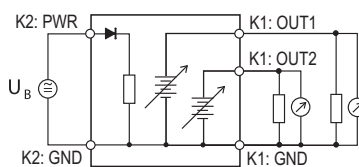
The high flexibility of the XB OEM transmitter allows customer using ROTRONIC HW4 software to choose the output signal (0...1V, 0...5V, 0...10V, 0...20 mA, 4...20mA) and freely scale it with the HW4 ROTRONIC software, to any value up to the probe limits. Dew-/frost point, Pt100 RTD direct outputs optional available.

XB20-Series

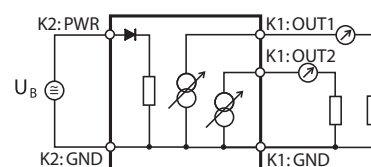


2-wire, loop powered transmitter

XB3-Series



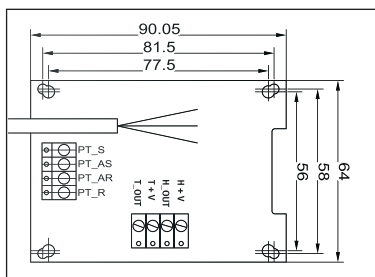
3-wire transmitter voltage signal



3-wire transmitter current signal

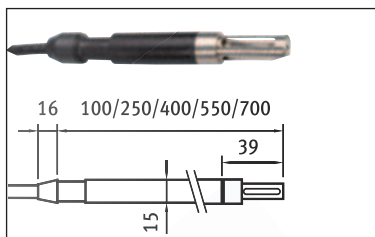
TECHNICAL INFORMATION.

Dimension of the board

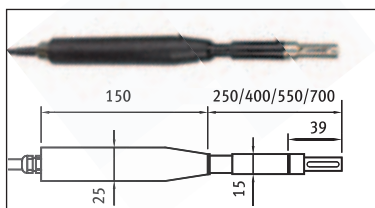


Probe dimension

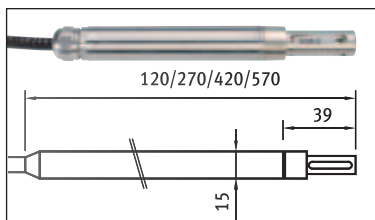
PEEK probe Ø15mm



PEEK probe Ø25/15mm



Steel probe Ø15mm



| Specification | XB20 | XB3 |
|--|---|---|
| Power supply / Connections | | |
| Circuit type | 2-wire loop powered | 3-wire |
| Supply voltage VDC | 10...28 VDC, V min = 10 V + (0.02 x Load*) *Load resistance in ohms | XB31 15...40 VDC / 12...28 VAC XB32 15...40 VDC / 12...28 VAC XB33 5...40 VDC / 5...28 VAC XB34 10...40 VDC / 8...28 VAC XB35 15...40 VDC / 12...28 VAC |
| Output signal type | 4...20 mA | XB31 0...20 mA XB32 4...20 mA XB33 0...1 V XB34 0...5 V XB35 0...10 V |
| Nominal current consumption | 2 x 20 mA | < 50 mA |
| Electrical connections | Terminal block | |
| Polarity protection | Protective diode on V+ | |
| Humidity measurement | | |
| Sensor | Hygromer® IN-1 | |
| Measurement range | 0...100 %rh | |
| Measurement accuracy at 23 °C | ±1.0 %rh | |
| Repeatability | 0.3 %rh | |
| Long term stability | < 1 %rh / year | |
| Temperature measurement | | |
| Sensor (Standard) | Pt100 RTD, IEC 751 1/3 class B | |
| Measuring range | -100...200 °C (see also environmental limits) | |
| Measurement accuracy at 23 °C | ±0.2 °C | |
| Repeatability | 0.05 °C | |
| Long term stability | < 0.1 °C / year | |
| Calculated parameters | | |
| Psychrometric calculations | Dew or frost point (user configurable option) | |
| Environmental limits | | |
| Storage and transit | -50...+70 °C, 0...100 %rh, non condensing | |
| Operating limits at electronics | -40... +85 °C, 0...100 %rh, non condensing | |
| Maxi. humidity /temperature at sensor | See humidity/temperature window of sensor | |
| Maximum air velocity at probe | 40 m/s (7,870 ft /min) – depends on dust filter type | |
| Digital interface (service connector) | | |
| Interface type | UART (Universal Asynchronous Receiver Transmitter) | |
| Maximum service cable length | 5 m (16.4 ft) | |
| Firmware update | Via service connector, requires HW4 software | |
| Start-up time and data refresh rate | | |
| Start-up time | 3.4s (typical) | 1.9s (typical) |
| Data refresh rate | 3.4s (typical) | 1.7s (typical) |
| Conformity with standards | | |
| CE / EMC immunity | EMC Directive 2004/108/EG: EN 61000-6-1: 2001 EN 61000-6-2: 2005 EN 61000-6-3: 2005, EN 61000-6-4: 2001 + A11 | |
| Solder type | Lead free (RoHS directive) | |
| FDA / GAMP directives | compatible | |

Change over now to the HygroClip2 probes with integrated AirChip3000 technology for your temperature and humidity measurements. You can find detailed information about our probes at www.rotronic-humidity.com. We would also be happy to advise you in person or on the phone.

rotronic
MEASUREMENT SOLUTIONS

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