

Loop Powered Transmitter Series 83/84

High Precision field mount Humidity and Temperature Transmitters

Principal of Operation

The instrument uses a capacitance type sensing element with polymer dielectric medium. The temperature sensor is a Pt-1000 Ohm RTD. Microprocessor control allows for multipoint calibration. A maximum accuracy of 1.5 %RH is achieved with 8 points. Built in special temperature compensation is to correct humidity values from deviations arising from temperature effects on the sensor and the electronics.

Applications

Type 83 was constructed for critical relative humidity and temperature measurements in cases without hazardous conditions. The exchangeable probes with built-in memory of the calibration can be replaced in seconds and allow minimal maintenance.

Housing made of PC and probe tubes made of PP, PTFE and stainless steel are available in different lengths and diameters. Analog current and voltage outputs are selectable. The graphic display and accessories allow for a easy re-calibration. There are several different Sensorfilters available.

Features

1. Moisture meters with the highest accuracy for measuring relative humidity and temperature in enclosures with protection class IP 65 with fixed or flexible probes.
2. Various probe tubes (from PP to stainless steel) are available, including pressure-proof for operation pressure + vacuum.
3. Measured values can be displayed as relative or absolute values.
4. Microprocessor-controlled measurement and calibration.
5. Linear measurements outputs for all possible dimensions of humidity and temperature.
6. Readings of humidity and temperature is also via CAN-BUS available (Type 84).



Technical Specifications:

SENSORS:

Humidity (capacitiv)..... SE-02
Temperature (4-Wires).....Pt-1000

RANGES:

Humidity 0 to 100 %RH
Temperature range:-50 to 150 °C

ACCURACY OF SYSTEM CLASS A / B:

Humidity at 0...50°C +/- 1.5 / 2.5%RH
Humidity at -25...+100°C +/- 2.0 / 3.0%RH
Humidity at -50...+150°C +/- 2.5 / 4.0%RH
Temperature +/- 0.3 / 0.5 °C

REPEATABILITY / RESOLUTION:

Humidity <0.5%RH / 0.1°C
Temperature 0.5%RH / 0.1%RH

POSSIBLE HUMIDITY DIMENSIONS:

%RH, g/kg, g/m³, Dewpoint °C or °F , etc.

MAXIMUM TEMPERATURES:

Electronic Housing. -20 to +60 °C
Sensors.-50 to +150 °C

POWER SUPPLY / OUTPUTS:

Input 12-24 VDC
Consumption approx. 4VA
Outputs: 4-20mA, max. Load 500 Ohms
.....2-10V, 1-5V , max. Load 500 Ohms
Type 83Hart Communication
Type84 CAN Bus Communication

MATERIALS AND DIMENSIONS:

Probe tubes from PP, PTFE, stainless Steel
Diameter 25mm (all Materials)
Diameter 15mm (only stainless steel)
Standart lengths 150mm to 1000mm
Protection Class..... IP 65

OPTIONS:

High temperature probes up to +150 C with Aluminium-Cooling-Element
Probes for Vacuum/Pressure 30mbar to 30 bar.

Sensors:

Precious metal high precision sensors for maximum accuracy and reliability.

Probe:

Pluggable or permanently mounted measuring probes with simultaneous detection of humidity and temperature. Plug-in probes are pre-calibrated and exchangeable at any time without interrupting the process.

Electronic:

Linearization with temperature compensation, sensor break and short circuit monitoring. Probe connection and outputs are possible at different sides of the casing.

Display and Keyboard:

Optional graphical display for display of measured values and for assistance in the configuration and calibration.

Measured Values and Memory:

Simultaneous display of humidity and temperature dimensions freely selectable.

Configuration:

Output range and signal boundaries are programmable by the user. The behavior of the outputs on sensor breaks can be specified. With digital outputs address, baud rate handshake and polling are adjustable. Only one serial port is in use on the computer for up to 99 devices.

Calibration:

Accompanying Software calibration at up to 20 points for humidity results in high system accuracy. Part calibrated in accordance with the scope and temperature calibration possible.

Service and Guarantee:

Factory and calibration credits and validation against national standards are possible. Short-term calibration, testing and repair service as well as loaners are available. 12-month guarantee on the transmitter, 6 months guarantee on the probes.