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# H7331 temperature, humidity, pressure regulator with two relay and RS232 outputs

code: H7331
Humidity, temperature, atmospheric pressure transmitter with two relay outputs. Outdoor, indoor use.

Relative humidity, temperature probe on a cable. Measured values are also converted to other humidity interpretation: dew point temperature, absolute humidity, specific humidity, mixing ratio, specific enthalpy. Built-in pressure sensor. Three two-state inputs.
**Included in delivery:**
• H7331 sensor
• Traceable calibration certificate
• Quick start manual
• Technical support at discussion forum

## Features

Humidistat is designed for two-state control of e.g. heating, ventilation, humidifier, dehumidifier, etc.
Transmitter is equipped with two relay outputs for alarm indication or control of external devices. Each relay can be assigned to any measured or computed value. For each relay setting of delay, hysteresis, audible alarm is enabled.
Measured temperature and relative humidity is recalculated to other humidity interpretations - dew point temperature, absolute humidity, specific humidity, mixing ratio or specific enthalpy.
Parameters are easy adjustable from regulator keyboard or from the computer. Large dual line LCD for simultaneous display of temperature, relative humidity or other calculated humidity interpretation is an advantage.
State-of-the-art capacitive polymer sensor ensures excellent calibration long term stability, inertia against water and condensation. Transmitter is designed for use in non-aggressive environment.

Transmitter is also equipped with three binary inputs for detection of two-state events - e.g. water, smoke, glass break detection, door contact.

## HUMIDISTAT APPLICATIONS

• temperature and humidity control
• monitoring of temperature, humidity:
• building management and automation

- server rooms
- telecommunication devices
- warehouses, glasshouses
- manufacturers
- museums, archives, galleries
- air-conditioned rooms, HVAC
- weather stations

Serial output RS232 - transmitter works with ModBus RTU communication protocol or with Advantech ADAM compatible protocol. Protocol is user selectable in special configuration mode by means of the PC. Serial link enables to read actual readings and modify transmitter configuration. Instrument works always in slave mode, i.e. responds only to master device query. Transmitters have the address space available from 1 to 255. Communication speed is 110 to 115200Bd.

## SOFTWARE:

• **Comet Database**
Complex solution for data acquisition and analysing. Easy to use and high flexible database software for Comet Transmitters and Regulators.

• **Sensor RS485/232 utility**
allows communication of sensors with RS485/RS232 output and sending data to **Comet Database**.

• **T-Sensor software**
Free configuration utility for Comet Transmitters and Regulators.

• **SensorReader software**
Basic data acquisition utility for Comet Transmitters and Regulators. Software is free for download.

• **3rd party software**
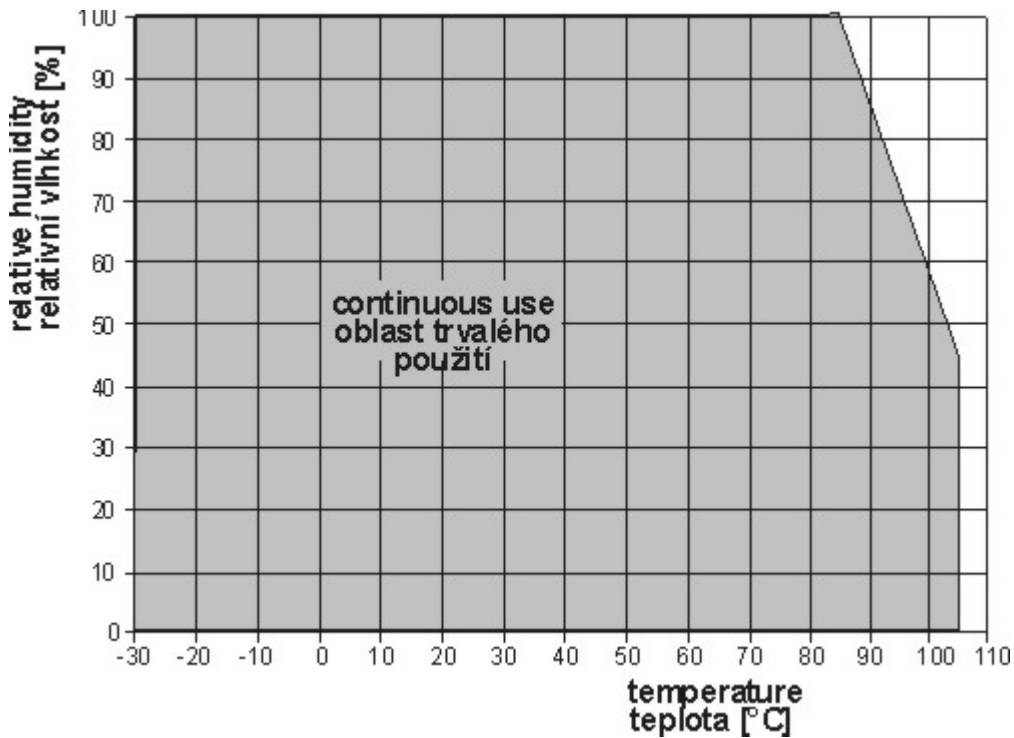ControlWeb, TIRS.NET, LabVIEW etc. Support for this software is provided by the 3rd party companies.





Figure: Relative humidity operating range

## Technical Data

| Technical parameters | Value |
|---|---|
| Output | RS232 |
| Measured Value | Temperature + Relative Humidity + Atmospheric Pressure |
| Construction Type | With T+RH Probe on Cable |
| Design | Industrial |
| Temperature Measuring Range | -30 to 105 °C |
| Relay Output | Yes |
| Two-State Input | Yes |
| Lcd Display | Yes |
| PoE | No |
| Maximum switching voltage, current, power of relay output | 50V, 2A, 60VA |
| Audible alarm | from built-in beeper - switchable |
| Relative humidity range | 0 to 100% |
| Accuracy of relative humidity measurement | ±2.5% relative humidity from 5 to 95% at 23°C |
| Accuracy of temperature output | ±0.4°C from -30 to +100°C<br>±0.4% from reading over +100°C |
| Available temperature units | degrees Celsius, Fahrenheit |
| Accuracy and range of dew point temperature output - for more details see graphs | ±1.5°C at ambient temperature T<25°C and RH>30%<br>range -60 to +80 °C |
| Accuracy and range of absolute humidity output | ±1.5g/m3 at ambient temperature T < 25°C<br>range 0 to 400 g/m3 |
| Accuracy and range of specific humidity output | ±2g/kg at ambient temperature T < 35°C<br>range 0 to 550 g/kg |
| Accuracy and range of mixing ratio output | ±2g/kg at ambient temperature T < 35°C<br>range 0 to 995 g/kg |
| Accuracy and range of specific enthalpy output | ±3kJ/kg at ambient temperature T < 25°C<br>range: 0 to 995 kJ/kg |
| Maximum measuring pressure range | 600 to 1100hPa |
| Accuracy | ±(1,3hPa+0.06% from adjusted output span) at 23°C from 800 to 1100hPa |
| Available pressure units | hPa, kPa, mbar, mmHg, inHg, inH2O, PSI, oz/in2 |
| Signal for binary inputs | dry contact, open collector or two-state voltage signal.<br>Inputs are not galvanically isolated. |
| Minimum pulse length at binary input | 500 ms |
| Voltage at open contact | 3.3 V |
| Low voltage level | 0 to +0.5 V |
| High voltage level | +3.0 to +30V |
| Temperature operating range | -30 to +80°C |
| Temperature operating range of LCD display | readable to operating temperature +70°C, it is recommended to switch OFF the LCD over +70°C |
| Temperature compensation of the humidity sensor | all temperature range |

| | |
|---|---|
| Filtering ability of sensor cover | 0.025mm - filter with stainless steel mesh |
| Communication protocol | ModBus RTU and Advantech ADAM compatible protocol |
| Communication speed | 110 to 115200 Bd |
| IP protection | IP54 electronics, IP40 sensors |
| Power | 9-30Vdc, power consumption approximately 1W |
| Length of the probe cable | 1m, 2m or 4m optionally |
| Dimensions | 136 x 159 x 45 mm (W x H x D), probe length 88 mm, probe diameter 18mm |
| Weight | approximately 500g |
| Warranty | 3 years |