

humidity and humidity/temperature transducer

GRHU ... MP and GHTU ... MP

General

The newest generation of humidity/temperature transducer offers even greater possibilities to compensate the special sensor characteristics due to the newest micro-processor technology. Regarding precision, temperature stability and functionality a new dimension is entered.

The transducer can be used for almost all applications due to the different types (e.g. wall or channel mount, with separated probe or with heat absorption hat) and the wide temperature range (electronic: -25°C...+50°C; sensor: -40...+120°C).

- on-site display for humidity and temperature
- output ranges freely scaleable
- temperature range up to 120°C
- adjustment by operator possible
- output signals for humidity and temperature are electrically isolated
- available output signals: 4-20mA, 0-1V or 0-10V

Specification

Measuring ranges:

Humidity: 0,0 ... 100,0 %RH (temperature compensated)
 Temperature: -40,0 ... 120,0 °C or -40,0 ... 248 °F

Recommended humidity range: 20,0 ... 80,0 %RH (standard)
 5,0 ... 95,0 %RH (with option high humidity)

Display options: with option UNI an alternative display unit can be shown instead of the humidity measuring value. The unit selection will be done via the interface or at the keyboard.

Wet bulb temperature -27,0 ... 60,0 °C
 Dewpoint temperature -40,0 ... 60,0 °C
 Enthalpy -25,0 ... 999,9 kJ/kg
 Atmospheric humidity 0,0 ... 640,0 g/kg
 absolute humidity 0,0 ... 200,0 g/m³

Accuracy: (at 25°C and in recommended range)

Display: humidity ±2,5 %RH
 temperature: ±0,4 % of meas. value ±0,2 °C
 Add. output signal: each ±0,2 % FS

Temperature compensation: automatically

Output signal: GRHU 1 x 4-20mA (2-wire), freely scaleable
 GHTU 2 x 4-20mA (2-wire), freely scaleable
 option: 0-1V, 0-10V (other output signals upon request)

Connection: 4 - 20 mA (2-wire) note for GHTU:
 output signals are electrically isolated from each other
 for option AV01, AV10: 0 - 1 (10) VDC (3-wire) note for GHTU:
 output signals are not electrically isolated from each other
 for option AV01G, AV10G: 0 - 1 (10) VDC (3- or 4-wire) note for GHTU:
 output signals are electrically isolated from each other

Auxiliary energy: 12 ... 30 VDC or 18 ... 30VDC (for output 0-10V)

Reverse voltage protection: 50V, permanently

Perm. impedance (at 4-20mA): RA [Ω] = (Uv [V] - 12V) / 0.02 A

Permissible load (at 0-1(10)V): RL [Ω] > 3000Ω

Display: approx. 10 mm high, 4-digit LCD-display,
 alternating humidity and temperature display

Working temperature: -25 to 50°C (electronics)
 Sensor head and tube: -40 to 100°C - for short time up to 120°C

Storage temperature: -25 to 70°C

Relative humidity (electronic): 0 to 95 %RH (non-condensing)
 If there is a risk of condensation due to temperature changes, please use our encapsulated or lacquered types (optionally available).

Housing: ABS (IP65)

Sensor tube: tube 14 mm Ø, with screw-type protection cap

Sensor length: 50 mm (...1R) or 220 mm (...1K, ...2K)
 option: 300mm, 400mm, 500mm

Electric connection: elbow-type plug acc. to EN 175301-803/A (IP65),

Mounting: 4 housing holes for wall mounting or
 by means of plastic tube clamps for duct mounting

Functions: min-/max-value memory,
 offset and slope adjustable,
 output signal scaleable

Order code (examples)

GHTU-2K-MP / AV10, FL300: GHTU-2K-MP, 0-10V, FL = 300 mm

GRHU-MP / KABEL, HO: GRHU-MP, with separated sensor tube and high humidity sensor

Design types

Surface mounting

Sensor tube at the side
 Tube Length: 50mm

Design type: ...-1R



Duct mounting

Sensor tube at the side
 Tube Length: 220mm

Design type: ...-1K



Duct mounting

Sensor tube downwards
 Tube Length: 220mm

Design type: ...-2K



Prices - humidity transducer

GRHU - 1R - MP (sensor tube at the side, FL = 50mm)

GRHU - 1K - MP (sensor tube at the side, FL = 220mm)

GRHU - 2K - MP (sensor tube pointing downwards, FL = 220mm)

Prices - humidity / temperature transducer

GHTU - 1R - MP (sensor tube at the side, FL = 50mm)

GHTU - 1K - MP (sensor tube at the side, FL = 220mm)

GHTU - 2K - MP (sensor tube pointing downwards, FL = 220mm)

Options / upcharges

- HO: High-humidity sensor upcharge:
 (for humidity measuring < 20 %RH and > 80 %RH)

Note: Upon ordering the range of application can be stated, for this the device will be optimised free of charge (e.g. 10-40% or 60-90%).

- UNI: selectable humidity display unit upcharge:

- LACK: Encapsulated PC board upcharge:
 (for outdoor application, i.e. applications where condensation is possible)

- FL300, FL400, FL500: upcharge:
 (Extra long sensor tube - no interim lengths possible)

- AV01: output signal 0-1V (note: please refer to connection) upcharge:

- AV01G: output signal 0-1V (note: please refer to connection) upcharge:

- AV10: output signal 0-10V (note: please refer to connection) upcharge:

- AV10G: output signal 0-10V (note: please refer to connection) upcharge:

- KABEL: with separated sensor tube upcharge:
 Sensor tube (Ø14x 68mm) connected to device via 1m teflon cable.
 Inclusive option high-humidity sensor
 (Ordering note: specifying the design type (e.g. -1R) is unnecessary)

- SHUT: heat absorption hat / weather protection shield upcharge:
 (Ordering note: specifying the design type (e.g. -1R) is unnecessary)



Application:

The heat absorption hat is especially designed for measurements in the open air. The measuring results that can be achieved will not be influenced by either sun or rain.

Design:

Heat absorption hat made of plastic, dia 110 mm, approx. 140 mm high. Additionally equipped with a stainless steel base for wall mounting, with 3 fixing holes for screws with a max. shaft Ø of 5 mm. Large projection approx. 160 mm.

Spare / accessory parts

Spare protection cap with stainless steel gauze
 (105µm mesh size) - for standard and high humidity use

Bronze filter (not for use in high humidity)