

SELECTION TABLE OF TEMPERATURE, HUMIDITY, PRESSURE CO₂ TRANSMITTERS Hxxxx

MEASURED VALUE / OUTPUT	2 x Relay	2 x Relay RS485	2 x Relay RS232	2 x Relay Ethernet
temperature + 3 binary inputs		H0430 fig.2 page 70 H4431 fig.1 page 70	H4331 fig.1 page 72	H0530 fig.2 page 74 H4531 fig.1 page 74 H4531R page 24
temperature + humidity	H3060 fig.3 page 68 H3061 fig.5 page 68 H3020 fig.3 page 68 H3021 fig.5 page 68 H3023 fig.4 page 68			
temperature + humidity + 3 binary inputs		H3430 fig.3 page 70 H3431 fig.5 page 70 H3433 fig.4 page 70	H3331 fig.5 page 72	H3530 fig.3 page 74 H3531 fig.5 page 74 H3531R page 24
temperature + humidity + atmos. pressure + 3 binary inputs		H7430 fig.3 page 70 H7431 fig.5 page 70	H7331 fig.5 page 72	H7530 fig.3 page 74 H7531 fig.5 page 74 H7531R page 24
CO ₂ concentration	H5024 fig.1 page 68 H5021 fig.5 page 68	H5424 fig.1 page 70 H5421 fig.5 page 70	H5324 fig.1 page 72 H5321 fig.5 page 72	H5524 fig.1 page 74 H5521 fig.5 page 74
CO ₂ + temperature + humidity	H6020 fig.3 page 68	H6420 fig.3 page 70	H6320 fig.3 page 72	H6520 fig.3 page 74

fig. 1



fig. 2



fig. 3



fig. 4



fig. 5



Illustrative pictures of mechanical construction of Hxxxx transmitters
- number of cable glands of particular models may differ

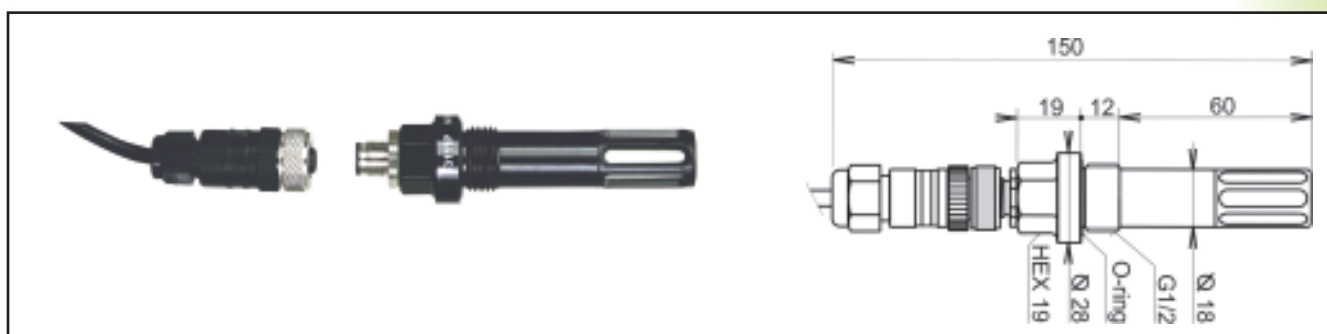
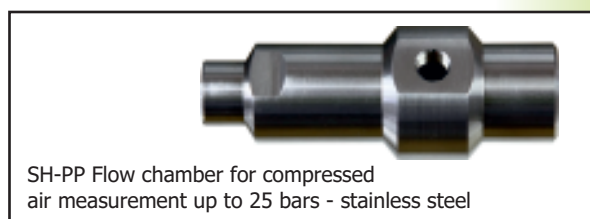
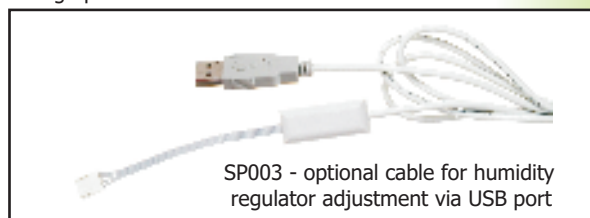
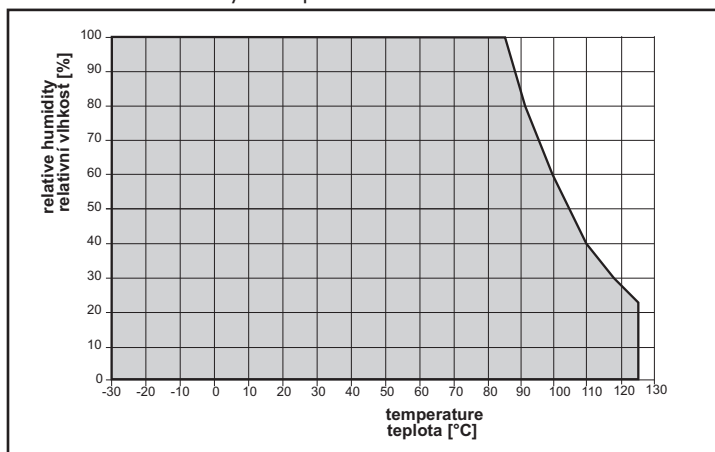
TEMPERATURE, HUMIDITY CO₂ REGULATORS Hx0xx WITH RELAY OUTPUTS



MODEL	MEASURED VALUE	MAXIMUM MEASURING RANGE	STEM LENGTH	OUTPUT	DESCRIPTION
H3060	temperature+humidity	-30 to +80°C	75mm	2x relay	Thermostat-Humidistat - outdoor indoor use
H3061	temperature+humidity	-30 to +105°C ¹⁾ probe including cable	probe cable 1,2,4m	2x relay	Thermostat-Humidistat - T+RH probe of 18mm diameter, 88mm length with 1m cable. Cable lengths 2m or 4m available optionally.
H3061P	temperature+humidity up to 25bars	-30 to +105°C ¹⁾ probe including cable	probe cable 1,2,4m	2x relay	Thermostat-Humidistat with compressed air probe up to 25 bars. T+RH metal probe with 1m cable. Cable lengths 2m or 4m available optionally. G1/2 thread.
H3020	temperature+humidity	-30 to +80°C	75mm	2x relay	Thermostat-Humidistat - outdoor indoor use
H3023	temperature+humidity	-30 to +125°C ¹⁾	150mm	2x relay	Thermostat-Humidistat - for duct mounting
H3021	temperature+humidity	-30 to +105°C ¹⁾ probe including cable	probe cable 1,2,4m	2x relay	Thermostat-Humidistat - T+RH probe of 18mm diameter, 88mm length with 1m cable. Cable lengths 2m or 4m available optionally.
H3021P	temperature+humidity up to 25bars	-30 to +105°C ¹⁾ probe including cable	probe cable 1,2,4m	2x relay	Thermostat-Humidistat with compressed air probe up to 25 bars. T+RH metal probe with 1m cable. Cable lengths 2m or 4m available optionally. G1/2 thread.
H5024	CO ₂ concentration	0 to 2000ppm	-	2x relay	CO₂ level transmitter , built-in sensor, outdoor, indoor.
H5021	CO ₂ concentration	0 to 10000ppm	probe cable 1,2,4m	2x relay	CO₂ level transmitter , probe with 1 m cable, diameter 18.5mm. Available also with cable lengths 2m or 4m.
H6020	CO ₂ concentration+ temperature+humidity	0 to 2000ppm	75mm	2x relay	Temperature humidity CO₂ transmitter ,outdoor,indoor.

Hxxxx

- 1) Maximum temperature range for models with T+RH probe on the cable is valid for the whole T+RH probe including the cable. Near plastic case with electronics maximum temperature is +80°C (+60°C for CO₂ transmitters H5024, H6020).
Relative humidity at temperature over +85°C is limited in accordance with the graph.



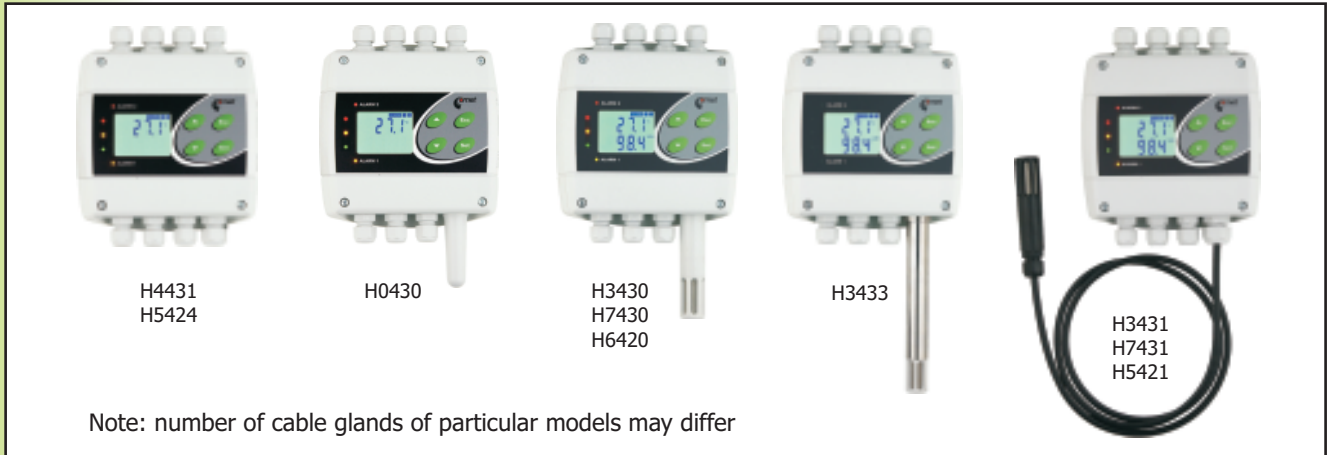
Included accessories: traceable calibration certificate from the manufacturer, instruction manual. Calibration certificate with declared metrological traceability of etalons is based on requirements of EN ISO/IEC 17025 standard.
Free program TSensor for configuring of the transmitter is ready to download from www.cometsystem.cz

Other optional accessories: - see further in catalog

TEMPERATURE, HUMIDITY, PRESSURE CO, REGULATORS AND TRANSMITTERS Hx4xx - RELAY OUTPUTS AND RS485 OUTPUTS

APPLICATIONS - temperature and humidity control and monitoring:

in building management and automation, warehouses, glasshouses, air-conditioned rooms, museums, archives, galleries, weather stations



Note: number of cable glands of particular models may differ

Humidistats are 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. Measured values are converted to galvanically isolated RS485 serial output.

Measured temperature and relative humidity is recalculated to other humidity interpretations - dew point temperature, absolute humidity, specific humidity, mixing ratio or specific enthalpy.

Degrees Celsius and Fahrenheit are user selectable.

Parameters are easy adjustable from regulator keyboard or from the computer.

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.

Transmitters, except CO₂ transmitters, are also equipped with three binary inputs for detection of two-state events - e.g. water, smoke, glass break detection, door contact.

NEW The CO₂ - carbon dioxide level is recently regarded as an important parameter that substantially determines the quality of the interior climate. Especially in buildings where many people gather, such meeting rooms, hospitals, schools, cinemas, theatres and care centres. With the help of CO₂ sensor engineers, technical advisors, environmental experts and health specialists can optimize the ventilation for creation of a healthy interior climate.

The CO₂ measurement is based on a 2-source, 2-beam process. CO₂ measurement with long-term stability is guaranteed thanks to the proven non-dispersive infrared (NDIR) CO₂ measurement cell.

The unique patented auto-calibration procedure compensates for aging of the infrared source.

TECHNICAL PARAMETERS

Maximum switching voltage, current, power:	50V, 2A, 60VA, resistive load
Audible alarm:	from built-in beeper - switchable
Range of relative humidity measurement:	0 to 100%
Accuracy of relative humidity measurement:	±2.5% relative humidity from 5 to 95% at 23°C
Accuracy of temperature measurement:	±0.4°C from -30 to +100°C, ±0.4% from reading over +100°C
Accuracy and range of dew point temperature:	±1.5 °C at ambient temperature <25°C and RH>30%, range -60 to +80°C
Accuracy and range of absolute humidity:	±3g/m ³ at ambient temperature T < 40°C, range 0 to 400 g/m ³
Accuracy and range of specific humidity:	±2g/kg at ambient temperature T < 35°C, range 0 to 550 g/kg
Accuracy and range of mixing ratio:	±2g/kg at ambient temperature T < 35°C, range 0 to 995 g/kg
Accuracy and range of specific enthalpy:	± 3kJ/kg at ambient temperature T < 25°C, range: 0 to 995 kJ/kg
Accuracy and range of barometric pressure output:	± 1.3hPa at 23°C range: 600 to 1100hPa
Supported pressure units:	hPa, kPa, mbar, mmHg, inHg, inH ₂ O, PSI, oz/in ²
Accuracy and range of CO ₂ level H5424, H6420:	±(50ppm +2% from reading) 0 to 2000ppm at 25°C and 1013hPa NEW
Accuracy and range of CO ₂ level measurement H5421:	±(100ppm +5% from reading) 0 to 10000ppm at 25°C and 1013hPa
Operating temperature range of electronics:	-30 to +80°C (-30 to +60°C for CO ₂ transmitters H5424, H6420)
Signal for binary inputs:	from voltage-less contact, open collector or two-state voltage signal. Inputs are not galvanically isolated.
Minimum pulse length at binary input:	500 ms, shorter pulse may not be detected
Voltage at open contact:	3.3 V
Low voltage level:	0 to +0.5 V
High voltage level:	+3.0 to +30V
Filtering ability of humidity sensor cover:	0.025mm, filter from stainless steel mesh
Power:	9 to 30Vdc
Dimensions of the case without cable glands:	135 x 136 x 45 mm (W x H x D)
Protection of instruments measuring T+H :	IP65 electronics with terminals, IP40 humidity and temperature sensor
Protection of instruments also measuring pressure:	IP54 electronics with terminals, IP40 humidity and temperature sensor
Protection of instruments with built-in CO ₂ sensor:	IP30

TEMPERATURE, HUMIDITY, PRESSURE CO₂ REGULATORS AND TRANSMITTERS Hx4xx - RELAY OUTPUTS AND RS485 OUTPUTS

MODEL	MEASURED VALUE	MAXIMUM MEASURING RANGE	STEM LENGTH	OUTPUT	OTHER OUTPUT	DESCRIPTION
H0430	temperature+3 binary	-30 to +80°C	53mm	2x relay	RS485 ²⁾	Outdoor and indoor use.
H4431	temperature+3 binary	-200 to +600°C	-	2x relay	RS485 ²⁾	Temperature transducer for Pt1000 probes.
H3430	temp.+humidity+3binary	-30 to +80°C	75mm	2x relay	RS485 ²⁾	Outdoor and indoor use.
H3431	temperature+humidity+3 binary inputs	-30 to +105°C ¹⁾ probe including cable	probe cable 1,2,4m	2x relay	RS485 ²⁾	Thermometer-hygrometer. T+RH probe with 1m cable. Cable lengths 2m or 4m available optionally.
H3433	temp.+humidity+3binary	-30 to +125°C ¹⁾	150mm	2x relay	RS485 ²⁾	Thermometer-hygrometer. Duct mount.
H7430	temp.+humidity+atm. pressure+3 binary	-30 to +80°C	75mm	2x relay	RS485 ²⁾	Thermometer-hygrometer-barometer. Outdoor and indoor use.
H7431	temperature+humidity+atmospheric pressure+3 binary inputs	-30 to +105°C ¹⁾ probe including cable	probe cable 1,2,4m	2x relay	RS485 ²⁾	Thermometer-hygrometer-barometer. Outdoor and indoor use. T+RH probe with 1m cable. Cable lengths 2m or 4m available optionally.
H5424	CO ₂ concentration	0 to 2000ppm	-	2x relay	RS485 ²⁾	CO ₂ transmitter, built-in sensor, outdoor.
H5421	CO ₂ concentration	0 to 10000ppm	probe cable 1,2,4m	2x relay	RS485 ²⁾	CO ₂ level transmitter, probe with 1 m cable, diameter 18.5mm. Available also with cable lengths 2m or 4m.
H6420	CO ₂ concentration+ temperature+humidity	0 to 2000ppm	75mm	2x relay	RS485 ²⁾	Temperature humidity CO₂ transmitter, outdoor, indoor use.

1) Maximum temperature range for models with T+RH probe on the cable is valid for the whole T+RH probe including the cable.

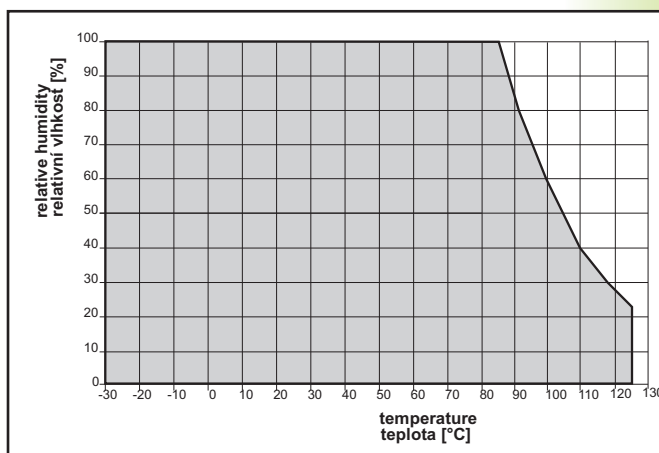
Near plastic case with electronics maximum temperature is +80°C (+60°C for CO₂ transmitters H5424, H6420).
Relative humidity at temperature over +85°C is limited in accordance with the graph.

2) Serial output RS485 is galvanically isolated from other circuitry to prevent collisions on the RS485 bus.

The transmitter works with ModBus RTU communication protocol or with Advantech ADAM compatible protocol - user selectable.

Serial link enables to read actual readings and modify transmitter configuration.

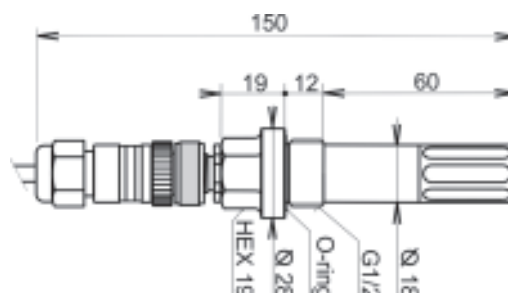
Instrument works always in slave mode, i.e. responds only to master device query. Transmitters have the address space available from 1 to 255. Communication speed up to 115200Bd.



SH-PP Flow chamber for compressed air measurement up to 25 bars - stainless steel



All transmitters with probe on the cable are available with metal probe T+RH for compressed air up to 25 bars.
Model marking is then H3431P.



Included accessories: traceable calibration certificate from the manufacturer, instruction manual.

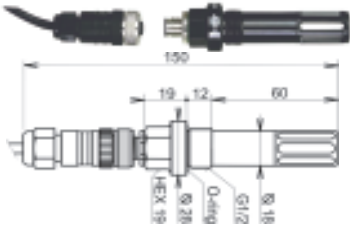






Calibration certificate with declared metrological traceability of etalons is based on requirements of EN ISO/IEC 17025 standard.

Free program TSensor for configuring of the transmitter is ready to download from www.cometsystem.cz







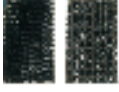

Free program SensorReader for logging values from one thermometer to a PC disk file is ready to download.

Optional accessories: - see further in catalog

OPTIONAL ACCESSORIES FOR HUMIDITY TRANSMITTERS

<p>New - probe for compressed air</p>	<p>Order code</p>	
	<p>TxxxxP Hxxxx1P</p>	<p>Optional temperature, humidity, dew-point probe designed for compressed air measurement up to 25 bars. Cable lengths 1, 2 or 4m available. Length 110mm, diameter 18mm, G1/2 thread. Available with TxxxxP, HxxxxP transmitters.</p>
	<p>SH-PP</p>	<p>Flow chamber for compressed air measurement up to 25 bars - stainless steel DIN 1.430. Inlet and outlet connection - G1/8 thread. Humidity probe connection - G1/2 thread. Screw-coupling not included.</p>
	<p>TxxxxL HxxxxL</p>	<p>Transmitter version with watertight male connector IP67 Lumberg RSFM4 instead of cable gland for easy connection/disconnection of the output. Specify please your order with letter L behind model code - e.g. T3110L or H3020L</p>
	<p>K1427</p>	<p>Female connector ELKA 4012PG7 for TxxxxL, HxxxxL transmitters with male connector Lumberg for easy connection/disconnection of the output. Cable is easily connected to screw terminals of the connector. IP67 protection.</p>
	<p>without LCD</p>	<p>Transmitter version with blind lid without LCD. Specify please the requirement in your order.</p>
	<p>OEM</p>	<p>Transmitters are also available without Comet logo as OEM products. Specify please the requirement in your order. Minimum order of OEM transmitters without Comet logo is 100 pcs.</p>
	<p>F8000</p>	<p>Solar radiation shield for transmitters with T+RH probe on a cable.</p>

OPTIONAL ACCESSORIES FOR HUMIDITY TRANSMITTERS

	Order code	
	F5200	grey sensor cover with filter from stainless steel mesh, filtering ability 0,025mm
	F5200B	black sensor cover with filter from stainless steel mesh, filtering ability 0,025mm
	SP003	Cable for transmitter adjustment via USB port - for models Tx1xx, Tx2xx with analog outputs and models Hx0xx.
	PP4	flat plastic circular flange for duct mounting
	PP90	right-angled stain-less steel flange for wall mounting
	SP004	plastic gland for direct mounting of the humidity probe to a 29 mm diameter hole
	SP005	tool for easy wire connection to WAGO terminals Wago - for transmitters with current and voltage output
	SP006	tool for easy wire connection to WAGO terminals Wago - for Txxxx transmitters with serial output RS485 and RS232 and Hxxxx transmitters
	MD036	self adhesive Dual Lock for easy installation
	A1515	ac/dc adapter 230V-50Hz/12Vdc for Ethernet transmitters Tx5xx, Hx5xx - with co-axial connector
	A1510	ac/dc adapter 230V-50Hz/12Vdc for serial output Txxxx transmitters and Hxxxx transmitters - for connection to terminals
	MD046	ACCESSORIES FOR EASY RELATIVE HUMIDITY CALIBRATION AND ADJUSTMENT anodized duraluminum vessel for relative humidity calibration and adjustment
	HM023	set of 5 humidity standards 10% RH with 5 application pads
	HM024	set of 5 humidity standards 80% RH with 5 application pads