



Short Form Catalog

MEASURING
INSTRUMENTS



2013

About COMET SYSTEM

COMET SYSTEM, s.r.o. is an independent company developing and manufacturing computerized measuring devices since 1991. Currently the most of the production includes datalogging measuring systems in several instrument families, humidity and temperature transmitters and portable thermo-hygro-barometers. Company is concentrated especially to the high technological level of its products. Comet instruments are designed for accurate measurement. Each instrument comes with included traceable calibration certificate based on requirements of EN ISO/IEC 17025 standard with declared metrological traceability of etalons. All instruments enable adjustment and calibration. Comet instruments are designed not only for measurement but also for long term monitoring in applications requiring accuracy and reliability.

Our mission is to develop and manufacture high quality instruments for measurement and record of:

temperature
relative humidity
atmospheric pressure
CO₂
electrical current
electrical voltage
pulses
two-state signals

Most instruments also enable to calculate:

dew point temperature
absolute humidity
specific humidity
mixing ratio
specific enthalpy

Products:

transmitters and regulators
battery powered data loggers
sixteen channel data loggers
temperature recorders with built-in printer
portable thermo-hydro-barometers

Distributor:

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Industrial transmitters

Measured physical quantities:

Temperature (°C)
Relative humidity (%RH)
Atmospheric pressure (hPa)
CO₂ (ppm)
Current (mA)

Calculated physical quantities:

Dew point temperature [°C]
Absolute humidity [g/m³]
Specific humidity [g/kg]
Mixing ratio [g/kg]
Specific enthalpy [kJ/kg]

Application:

- industrial temperature humidity pressure transmitters
- building HVAC management /automation
- air-conditioned rooms
- warehouses
- glasshouses
- museums, archives, galleries

General technical parameters:

Operating temperature: -30 .. +80°C (+125°C)
Operating humidity: 0 .. 100%
Operating atmospheric pressure: 600 .. 1100 hPa
Operating CO₂: 0 .. 2000 ppm / 10000 ppm
Temperature measurement accuracy: ±0.4°C
Humidity measurement accuracy: ±2.5% RH
Atmospheric pressure measurement accuracy: ±1.3 hPa
CO₂ measurement accuracy: ±(50ppm +2% from reading) at 25°C and 1013hPa
Current measurement accuracy: ±0.1%FS from 0°C to +50°C; ±0.3%FS from -30°C to +80°C
Protection: IP40 – IP65 (according to each type)
Power: 9 – 30 Vdc, transmitters with 0-10V output 15-30Vdc, PoE

Measured Value / Output	4-20mA	0-10V	RS232	RS485	Ethernet	Ethernet, PoE
T (°C)	T0110 T4111 P0120 P0132 Px1x1	T4211	T0310 T4311	T0410 T4411	T0510 T4511 P8510 P8511 P8541	P8610 T0610 T4611 T4611 P8641
RH (%)	T1110					
P (hPa)	T2114	T2214	T2314	T2414	T2514	
T (°C) + RH (%)	T3110 T3113 T3117 T3111 T3111P	T0210 T0213 T0211 T0211P	T3311 T3313 T3319 T3319P	T3411 T3413 T3417 T3419 T3419P	T3510 T3511 T3511P P8511 P8541	T3610 T3611 P8631
T (°C) + P (hPa)				T5410		
T (°C) + RH (%) + P (hPa)			T7310 T7311	T7410 T7411	T7510 T7511	T7610 T7611
CO ₂ (ppm)	T5140 T5141	T5240 T5241	T5340 T5341	T5440 T5441	T5540 T5541	
T (°C) + RH (%) + CO ₂ (ppm)			T6340	T6440	T6540	
T (°C) + 3x binary input					P8552	P8652
0-20 mA					P2520	

Pxxxx – without LCD display.
TxxxxP - version with pressure sensor up to 25bars.

Part of each instrument is calibration certificate, which is consistent with the requirements EN ISO/IEC 17025.

Interior transmitters

Measured physical quantities:

Temperature (°C)
Relative humidity (%RH)
Atmospheric pressure (hPa)
CO₂ (ppm)

General technical parameters:

Operating temperature: 0 .. 50°C
Operating humidity: 5 .. 95%
Operating atmospheric pressure: 600 .. 1100 hPa
Operating CO₂: 0 .. 2000 ppm / 10000 ppm
Temperature measurement accuracy: ±0.5°C
Humidity measurement accuracy: ±2.5% RH
Atmospheric pressure measurement accuracy: ±1.3 hPa
CO₂ measurement accuracy: ± (50ppm +2% měřené hodnoty) při 25°C a 1013hPa
Protection: IP20
Power: 9 – 30 Vdc, transmitters with 0-10V output 15-30Vdc

Calculated physical quantities:

Dew point temperature [°C]
Absolute humidity [g/m³]
Specific humidity [g/kg]
Mixing ratio [g/kg]
Specific enthalpy [kJ/kg]

Application:

- building HVAC management / automation
- air-conditioned rooms
- warehouses
- museums, archives, galleries

Measured Value / Output	4-20mA	0-10V	RS232	RS485
T (°C)	T0118	T0218	T0318	T0418
P (hPa)	T2118	T2218		
T (°C) + RH (%)	T3118	T3218	T3318	T3418
T (°C) + RH (%) + P (hPa)			T7318	T7418
T (°C) + CO ₂ (ppm)	T8148	T8248		T8448

Part of each instrument is calibration certificate, which is consistent with the requirements EN ISO/IEC 17025.

Industrial regulators

Measured physical quantities:

Temperature (°C)
Relative humidity (%RH)
Atmospheric pressure (hPa)
CO₂ (ppm)

Application:

- building HVAC management / automation
- air-conditioned rooms
- warehouses
- glasshouses
- weather stations
- compressed air measurement
- data centres, server rooms

General technical parameters:

Operating temperature: -30 .. +80°C
Operating humidity: 0 .. 100%
Operating atmospheric pressure: 600 .. 1100 hPa
Operating CO₂: 0 .. 2000 ppm / 10000 ppm
Temperature measurement accuracy: ±0.4°C
Humidity measurement accuracy: ±2.5% RH
Atmospheric pressure measurement accuracy: ±1.3 hPa
CO₂ measurement accuracy: ±(50ppm +2% from reading) at 25°C and 1013hPa
Protection: IP40 – IP65 (according to each type)
Two relay outputs: 50V, 2A, 60VA, optionally 250Vac, 8A

Calculated physical quantities:

Dew point temperature [°C]
Absolute humidity [g/m³]
Specific humidity [g/kg]
Mixing ratio [g/kg]
Specific enthalpy [kJ/kg]

Measured Value / Output	2xRelay	2xRelay +RS232	2xRelay +RS485	2xRelay +Ethernet
T (°C) + 3 Binary Inputs		H4331	H0430 H4431	H0530 H4531 H4531R
T (°C) + RH (%)	H3060 H3061 H3061P H3020 H3021 H3021P H3023			
T (°C) + RH (%) + 3 Binary Inputs		H3331 H3331P	H3430 H3431 H3431P H3433	H3530 H3531 H3531P H3531R
T (°C) + RH (%) + P (hPa) + 3 Binary Inputs		H7331	H7430 H7431	H7530 H7531 H7531R
CO ₂ (ppm)	H5021 H5024	H5321 H5324	H5421 H5424	H5521 H5524
T (°C) + RH (%) + CO ₂ (ppm)	H6020	H6320	H6420	H6520

HxxxxP is version with pressure sensor up to 25bars

Part of each instrument is calibration certificate, which is consistent with the requirements EN ISO/IEC 17025.

Battery powered data loggers

Measured physical quantities:

Temperature (°C)
Relative humidity (%RH)
Dew point temperature (%RH)
Atmospheric pressure (hPa)

General technical parameters:

Operating temperature: -30 .. +70°C
Operating humidity: 0 .. 100%
Temperature measurement accuracy: ±0.4°C
Humidity measurement accuracy: ±2.5% RH
Logging interval: 10s ... 24h
Memory capacity: 32000 values
Resolution of voltage input: 13 bits (8192 levels)
Resolution of current input: 7900 levels
Protection: IP20 – IP67 (according to each type)
Battery life: 3 – 7 years (according to each type and method of measuring)
Communication: USB, RS232, ETHERNET, GSM/GPRS, SMS

Application:

- transport of food and pharmaceuticals
- storing of food and pharmaceuticals
- museums, archives, galleries
- air-conditioned rooms
- warehouses
- glasshouses
- weather stations

Part of each instrument is calibration certificate, which is consistent with the requirements EN ISO/IEC 17025.

Loggers with external temperature inputs are supplied without external probes. Probes must be specified and ordered optionally.



Measured Value / Output	Channels	
T (°C)	1xT	R0110E, R0110 S0110E, S0110 S0111
	2xT	S0121 S0122
	4xT	S0141
T (°C) + Binary Signal Input	2xT + 2xUss 0-5V	S0541
	2xT + 2xState	S0841
	3xT + 1xState	S0842
T (°C) + RH (%)	1xT, 1xRH	R3120 R3121 S3120 S3121 S3121P
	2xT, 1xRH	S3631
T (°C) + RH (%) + Binary Signal Input	1xT, 1xRH, 2xUss 0-5V	S3541
Current/Voltage + Binary Signal Input	1xUss 0-5V, 1xState	S5011
	2xUss 0-5V, 1xState	S5021
	1xIss 0-20mA, 1xState	S6011
	2xIss 0-20mA, 1xState	S6021
Pulse Counting and Binary Signal State	1xCounter, 1xState	S7021
Event Data Logger	4xBinary State	S7841

Rxxxx – without LCD display.
S3121P - version with pressure sensor up to 25bars.

Sixteen channel centralized monitoring systems

The complete solution for monitoring of temperature, humidity and other values especially in following applications:

General technical parameters:

Monitoring: temperature, humidity, pressure, voltage, current, resistance, frequency, two-state events, counting of pulses, thermocouples
 Communication: RS232, RS485, USB, Ethernet, GSM, SMS
 Logging interval: 1 s to 24 h
 Memory capacity: 2MB, 480 000 values
 Alarm: acoustic, visual, relay, SMS, e-mail, voltage output 0/5V

Application:

- data centers, server rooms
- storing of food and pharmaceuticals
- blood banks
- building HVAC management / automation
- warehouses
- weather stations
- research and development



Data loggers are directly compatible with Comet temperature humidity pressure transmitters. Complete data acquisition monitoring system can be easily built.

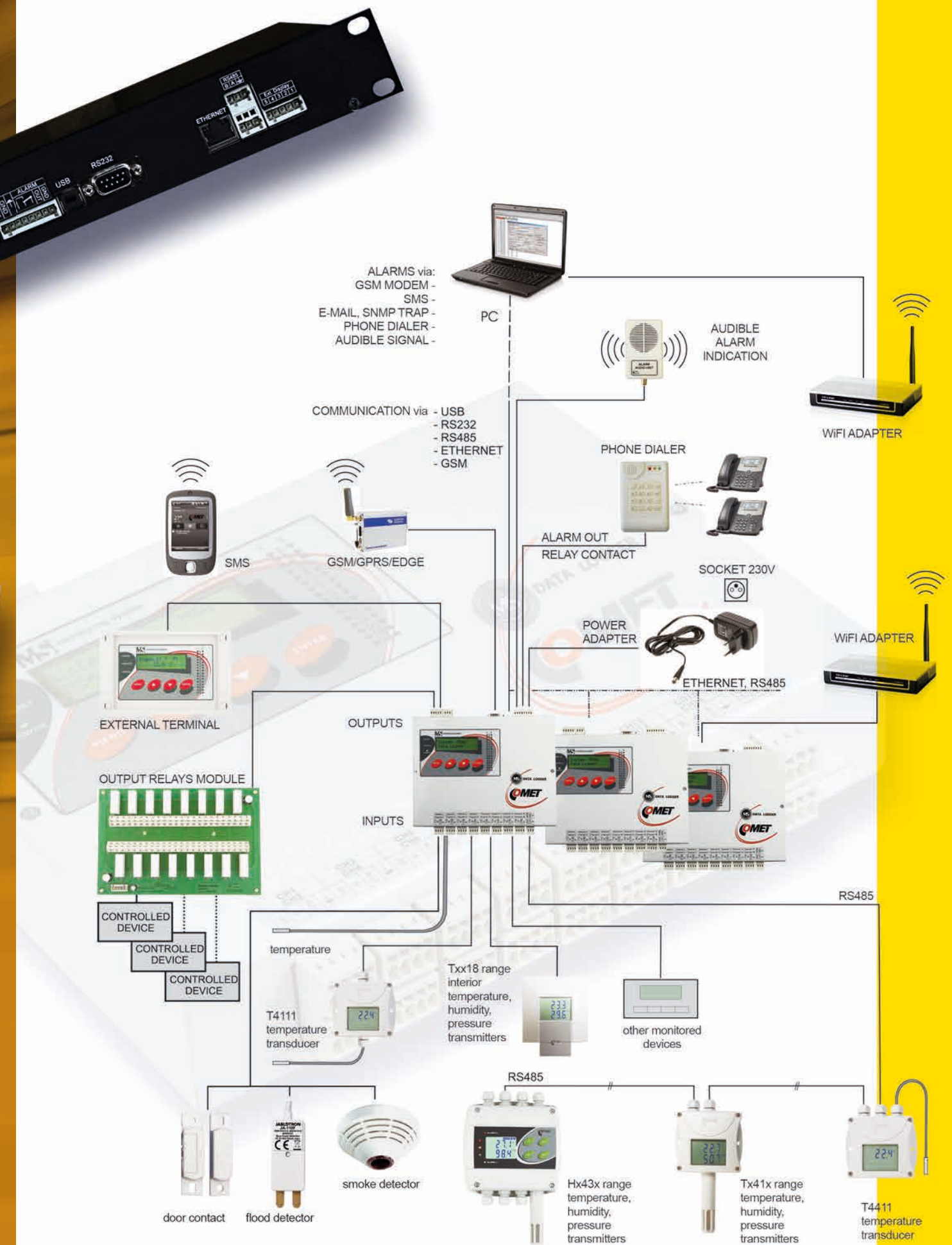
DATA LOGGER WITH USER CONFIGURABLE INPUTS

- | | |
|-----------------|--|
| MS6D | wall mounting, mounting to watertight case MP033, MP034, dual line illuminated alphanumeric display, four control buttons, 32 alarm LEDs |
| MS6-Rack | mounting to 19" rack - one rack unit 1U, dual line illuminated alphanumeric display, four control buttons, 32 alarm LEDs |
| MS6R | desktop use with rubber feet or mounting to 19" rack - one rack unit 1U, dual line illuminated alphanumeric display, four control buttons, 32 alarm LEDs |

DATA LOGGER WITH FIXED INPUTS

- | | |
|--------------|--|
| MS55D | wall mounting, mounting to watertight case MP033, MP034, dual line illuminated alphanumeric display, four control buttons, 32 alarm LEDs, counting of pulses, ac inputs, galvanically isolated inputs option |
|--------------|--|

Included accessory: Each system comes with included **traceable calibration certificate** based on requirements of EN ISO/IEC 17025 standard with declared metrological traceability of etalons.



Portable thermometers hygrometers barometers

Measured physical quantities:

Temperature (°C)
Relative humidity (%RH)
Dew point temperature (%RH)
Atmospheric pressure (hPa)

General technical parameters:

Operating temperature: -10 to +60°C
Temperature measurement accuracy: ±0.4°C
Humidity measurement accuracy: ±2.5%RH
Atmospheric pressure measurement accuracy: ± 2hPa
Logging interval: 10 s to 24 h
Memory capacity: 16000 values

Application:

- operative measurement
- data record
- museums, archives, galleries
- air-conditioned rooms
- research and development

Measured Value / Output		with datalogging	w/o datalogging
T (°C) - Pt1000/Ni1000	1xT	D0211	
	2xT	D0221	
	4xT	D0241	
T (°C) - Ni1000	1xT		C0111
	2xT		C0121
	4xT		C0141
T (°C) - Thermocouples J, K, S	1xT	D0311	C0311
	2xT	D0321	C0321
T (°C) + RH (%)	1xT+RH	D3120	C3120
	1xExt. T+RH	D3121	C3121
	1xExt. T+RH	D3121P	C3121P
	1xT+RH, 1xExt. T	D3631	C3631
	2xT, 1x+RH	D3633	C3633
T (°C) + RH (%) + P (hPa)	1xT+RH+hPa	D4130	C4130
	2xT+RH+hPa	D4141	C4141

D3121P / C3121P - version with pressure sensor up to 25bars.

Part of each instrument is calibration certificate, which is consistent with the requirements EN ISO/IEC 17025.

Loggers with external temperature inputs are supplied without external probes. Probes must be specified and ordered optionally.

Temperature recorders with built-in printer



Application:

- Temperature record during transport of food, flowers, livestock, pharmaceuticals, HACCP

TÜV SÜD certified to conform EN 12830, Class 1 and EN 13486, Class 1 for the transport of food.

Includet traceable calibration certificate
Indication of temperature exceeding by LED and acoustically
Possibility of remote data transmission using GPRS modem
Fast print to usual 57 mm thermo paper in 10 m rolls

	G0221E	G0241	G0841	G0841W	G0841M	G0841MW
Measuring temperature range	-90 to +260°C					
Operating temperature range	-30 to +65°C					
Operating temperature range of the printer	-20 to +50°C					
Compatible temperature probes	with Pt1000 sensor with maximum cable length 20 meters					
Accuracy of the input without probe	±0.2°C					
Resolution	0.1°C					
Logging interval	user selectable from 1 minute to 60 minutes					
Memory capacity	1MB - 172 032 records from one probe, 102 400 records from two probes					
Semitrailer version	x	x	✓	✓	✓	✓
Measured signals	2xT	2xT + 2xcontact	2xT + 2xcontact	2xT + 2xcontact	2xT + 2xcontact	2xT + 2xcontact
Output for GPRS modem	x	✓	✓	✓	x	x
Built-In GPRS modem	x	x	x	x	✓	✓
Built-In wireless alarm unit	x	x	x	✓	x	✓
Power	9 to 32Vdc, protected against alternator load shedding+internal Lithium battery					
Consumption while printing	approximately 8 W					
Consumption - not printing	approximately 0.1 W			approximately 0.2W		
Dimensions without holders &connectors (mm)	175 x 124 x 51			250 x 242 x 110		
Weight (gr)	370			1650		
Protection	IP20			IP65		

Comet Database

Comet Database

A solution for data collection to one central database is available. It is based on MS SQL or MySQL. Software system is suitable for users who want to analyze data from multiple loggers MS or other products of Comet System.

Comet Database contains many useful tools for data analysis - graphs, tables, statistics, etc. Comet database also offers advanced features - secured access to data, accounts administration, remote monitoring, error diagnostic, database backup, etc.



What does Comet Database offer?

- » 24 hours supervision
- » storage place for your data
- » simple and clear access to your measured values
- » storage place for all Comet System devices
- » alarm SMS texts and e-mails

Comet Database also exists in 30 days trial version. So you can test it without any worries.

- system for data acquisition and analysis



Comet Database Viewer

Each purchased Comet Database already contains one licence of Database Viewer. This low cost browser enables several clients to view database from different places on internal network or internet. Other viewer licences can be purchased separately for other users of Comet Database.

Don't be *explosive*

ATEX certification for use in potentially explosive environments.

Programmable sensors of temperature and humidity with accurate and stable sensors - 4-20mA output.

In the case of need to have Ethernet output, use P2520 transmitter.

The intrinsically safe transmitters version T311xEx are intended for use in potentially explosive atmosphere (zone 2).

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



SENSOR MODEL		T3110Ex	T3113Ex	T3111Ex
temperature	range	-30 to +80°C	-30 to +125°C	-30 to +105°C
	accuracy	±0,4°C		
humidity	range	0 to 100 %RV		
	accuracy	±2,5 %RV		
output		4-20 mA		
recommended calibration interval		1 year		
protection class of the case with electronics		IP65		
protection class of the sensors cover		IP40		
temperature operating range of the case with electronics		-30 to +60°C		
temperature operating range of the sensing element		-30 to +80°C	-30 to +125°C	-30 to +105°C
humidity operating range		0 to 100 %RV		
electromagnetic compatibility		EN 61326-1		

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