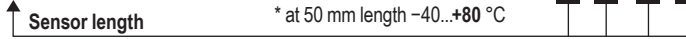# ExPro-C Temperature/humidity sensor

connectable exclusively to transmitters **ExCos-D** and **RedCos-D** for measuring of temperature and/or humidity
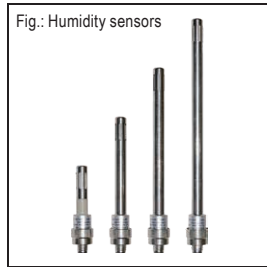
Subject to change!

Type	Function	Range	Sensor length	Connection	Installation area sensor
ExPro-CT-...	Temperature sensor	−40...+125 °C*	50 / 100 / 150 / 200 mm	Plug and socket to ExCos-D..., RedCos-D...	Zone 1, 2, 21, 22
ExPro-CF-...	Humidity sensor	0...100 % rH**	50 / 100 / 150 / 200 mm	Plug and socket to ExCos-D..., RedCos-D...	Zone 1, 2, 21, 22
ExPro-CTF-...	Combination sensor	−40...+125 °C* / 0...100 % rH**	50 / 100 / 150 / 200 mm	Plug and socket to ExCos-D..., RedCos-D...	Zone 1, 2, 21, 22

Sensor length   * at 50 mm length −40...**+80** °C

** Measurement of humidity only possible at a temperature of > 0°C!

Product views and applications

ExPro-C...

Fig.: Humidity sensors

Sensor for room application

Sensor for duct application

VL3 Sensor extension cable

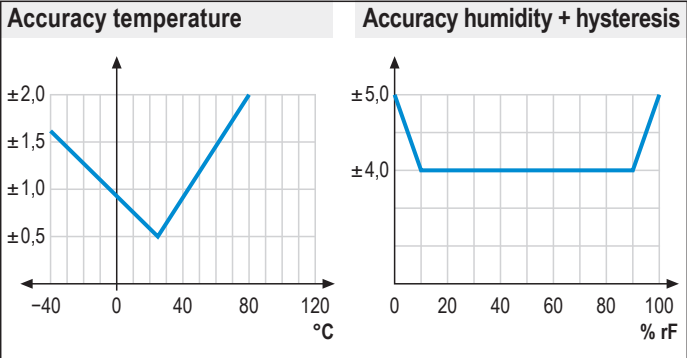| Technical data	ExPro- CT -...	ExPro- CF -...	ExPro- CTF -...
	Temperature sensor	**Humidity sensor**	**Temperature / humidity sensor**
Measuring range	−40...+125 °C *	0...100 % rH	−40...+125 °C * / 0...100 % rH
	* −40...+80 °C at 50 mm length		* −40...+80 °C at 50 mm length
Sensor length	ExPro-CT-50 = 50 mm	ExPro-CF-50 = 50 mm	ExPro-CTF-50 = 50 mm
	ExPro-CT-100 = 100 mm	ExPro-CF-100 = 100 mm	ExPro-CTF-100 = 100 mm
	ExPro-CT-150 = 150 mm	ExPro-CF-150 = 150 mm	ExPro-CTF-150 = 150 mm
	ExPro-CT-200 = 200 mm	ExPro-CF-200 = 200 mm	ExPro-CTF-200 = 200 mm
Response time sensor	T90 / 20 s	T90 / 4 s	T90 / 20 s, T90 / 4 s
Accuracy temperature	±0,5 °C at 25 °C ±0,025 °C/°C		
Accuracy humidity	±4 % at 10...90 % rH / ±5 % at < 10 % rH and > 90 % rH (narrower tolerance on request)		
	Measurement of humidity only possible at a temperature of > 0°C		
Housing protection	IP66 acc. to EN 60529, except for temperature/humidity sensor Pro-C		
Material **Adapter**	Stainless steel № 1.4305, length 50 mm in plastic PEEK-GF30 (max. room temperature +80 °C)		
Protection sleeve	Stainless steel № 1.4301 / AISI 304		
End cap	AISI 316		
Plug-in connector	Zinc die-cast nickel-plated, screw sleeve brass nickel-plated		
Filter element humidity sensor	Mesh size 100 µm		
Ambient temperature / humidity	−40...+125 °C (−40...+80 °C at 50 mm length) / 0...100 % rH		
Storage temperature	−40...+125 °C (−40...+80 °C at 50 mm length)		
Installation area sensor	in Ex areas zone 1, 2, 21, 22		
Scope of delivery	ExPro-C... sensor with plug-in connector and gasket (EPDM) for duct installation		

Description

ExPro-C... sensor is a measuring element which is in combination with an ...Cos-D... transmitter for temperature, humidity or combination of temperature and humidity measuring. **ExPro-C... sensors are only for use with ExCos-D.../RedCos-D... transmitters.** The electromechanical connection is done with a socket on the front resp. on the back side of the transmitter, but only 1 ExPro-C... per module is allowed and can be used.

Caution: The sensors shall only be used in non-condensing (humidity < 95% RT) and dust-free environment without aggressive media, e.g. acid, alkalis and salt water. In case of contact with water, use the TH-VA stainless steel immersion sleeve.

Accessories

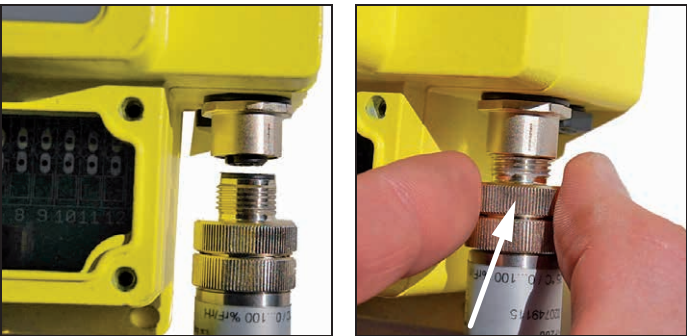|	
MFK	Mounting flange for duct mounting for variable immersion depth in ducts
MKR	Mounting bracket for round ducts up to Ø 600 mm
TH-VA	Immersion sleeve in stainless steel V4A / DIN EN 1.4571, length 120 mm. Other length on request.
Kit-FA-VA	Stainless steel sinter filter cap for humidity sensors, pore size 10 µm. **Not for high humidity measurements!**
Kit-FA-PTFE	PTFE sintered filter for humidity sensors, pore size 20 µm. **Not for high humidity measurements!**
VL3	Sensor extension cable, 3 m, PVC

Accuracy temperature and humidity incl. hysteresis

Accuracy temperature

Accuracy humidity + hysteresis

Max. Medium temperature – Temperature class (surface temp.)

Temperature class	T6	T5	T4	T3	T2	T1
Max. medium temperature [°C]	60	75	110	125	125	125

Important information on installation and operation

A. ExPro-C... sensor

The power for ExPro-C... sensor is supplied via an instrinsically safe (IS) circuit from the transmitter. Unused sensor entries have to be closed with the black caps.

B. Temperature flow

When measuring temperature over the max. allowed environmental temperature of the transmitter of +50 °C regard that no temperature flow over the sensor takes place. The mounting of the sensor has to ensure that errors due to heat dissipation are within the tolerance limits and the max. allowed environmental temperature is not exceeded.

C. Mounting

Screw the sensor into the socket of the transmitter. The sensor cannot be opened as parts of the element are moulded. A small distance tolerance between transmitter and sensor has to be accepted due to production conditions.

Intrinsically safe parameters

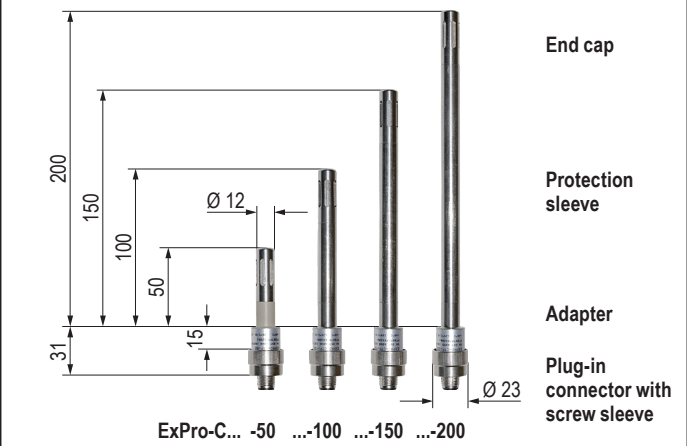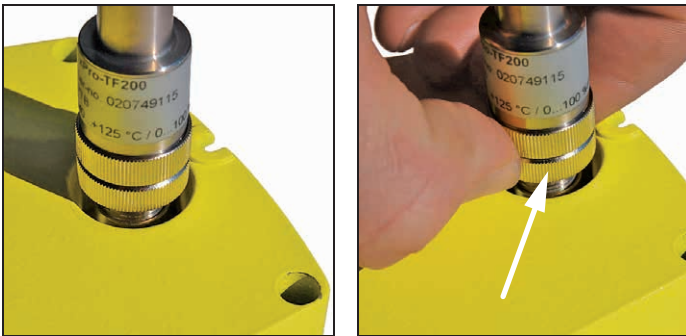U_i = 7,9 V C_i = 0 P_i = 95 mW
I_i = 48 mA L_i = 0

Mounting room sensor (at terminal box side)

For mounting the sensor must be plugged into the socket and screwed on the sensor by turning the lower knurled screw clockwise. Tighten hand-screwed only.
A small clearance between transmitter and sensor has to be accepted due to production conditions.

Mounting duct sensor (back side)

For mounting the sensor must be plugged into the socket and screwed on the sensor by turning the lower knurled screw clockwise. Tighten hand-screwed only.
A small clearance between transmitter and sensor has to be accepted due to production conditions.

MFK mounting flange for duct installation

The flange is to be moved over the sensor and fixed with the adjusting screw on the side. The flange can be mounted with 4 screws directly to the duct.

Bottom side

Height variably adjustable

Dimensions [mm]

End cap

Protection sleeve

Adapter

Plug-in connector with screw sleeve

Ø 12
Ø 23

ExPro-C... -50 ...-100 ...-150 ...-200