ExPro-B Digital temperature / humidity probe
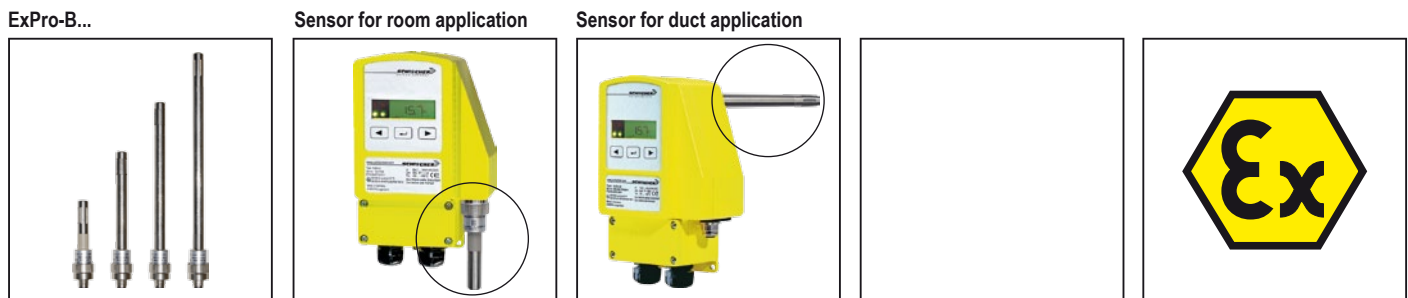
connectable exclusively to transducers **ExBin-D** and **RedBin-D** for temperature and / or humidity measuring

Subject to change !

Type	Function	Range	Probe/sensor length	Connectable to	Connection	Installation area probe
ExPro-BT-...	Temperature probe	−40...+125 °C*	50 / 100 / 150 / 200 mm	ExBin-D..., RedBin-D...	Plug and socket	Zone 1, 2, 21, 22
ExPro-BF-...	Humidty probe	0...100 % rH	50 / 100 / 150 / 200 mm	ExBin-D..., RedBin-D...	Plug and socket	Zone 1, 2, 21, 22
ExPro-BTF-...	Combination probe	−40...+125 °C* / 0...100 % rH	50 / 100 / 150 / 200 mm	ExBin-D..., RedBin-D...	Plug and socket	Zone 1, 2, 21, 22

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

Product views and applications

ExPro-B... **Sensor for room application** **Sensor for duct application**

Technical data	ExPro- BT -...	ExPro- BF -...	ExPro- BTF -...
Application as	Temperature probe	Humidity probe	Temperature / humidity probe
Measuring range	−40...+125 °C	0...100 % rF	−40...+125 °C and 0...100 % rH
Sensort types and length	ExPro-BT- 50 = 50 mm	ExPro-BF- 50 = 50 mm	ExPro-BTF- 50 = 50 mm
	ExPro-BT-100 = 100 mm	ExPro-BF-100 = 100 mm	ExPro-BTF-100 = 100 mm
	ExPro-BT-150 = 150 mm	ExPro-BF-150 = 150 mm	ExPro-BTF-150 = 150 mm
	ExPro-BT-200 = 200 mm	ExPro-BF-200 = 200 mm	ExPro-BTF-200 = 200 mm
Response time probe	T90 / 20 s	T90 / 4 s	T90 / 20 s, T90 / 4 s
Accuarcy temperature	± 1,5 °C (max.) at −25...+85 °C, ± 2,0 °C (max.) at −40...+125°C + transducer		
Accuarcy humidity	± 2 % at 10...90 % rH, ± 4% at < 10 % rF and > 90 % rH + transducer		
Accuarcy temperature + humidity	± 0,4 °C at 25 °C ± 0,025 °C/°C; ± 2 % at 10...90 % rH, ± 4 % at < 10 % rH and > 90 % rH + transducer		
Hysteresis humidity	± 1 %		
Housing protection	IP66 acc. to EN 60529		
Material thermowell	Stainless steel 1.4305, at length 50 mm in plastic (max. room temperature +80 °C)		
Filter element	at humidity probes with mesh size 100 μm		
Ambient temperature / humidity	−40...+125 °C / 0...100 % rH		
Storage temperature	−40...+125 °C		
Installation area probe	in Ex areas zone 1, 2, 21, 22		
Delivery	ExPro-B... probe with plug connector and gasket (EPDM) for duct installation		

Description

ExPro-B... probe is a sensor head resp. measuring element which is in combination with an ...Bin-D... transducer for temperature, humidity or combination of temperature and humidity measuring. **ExPro-B... probes are only for use with ExBin-D.../RedBin-D... transducers.**
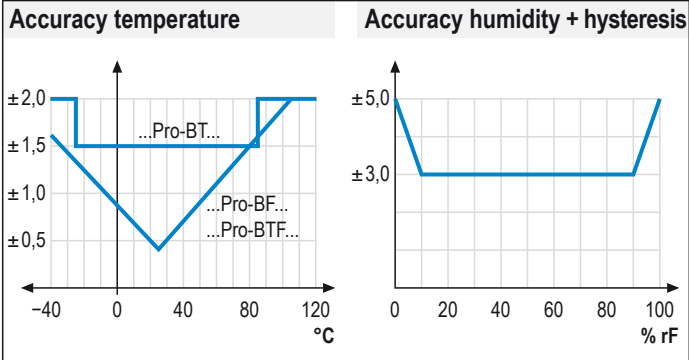The electromechanical connection is done with a socket on the front resp. on the back side of the transducer, but only 1 ExPro-B... per module is allowed and can be used.
Warning: Aggressive gases can destroy the sensor element.

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	Sinter filter cap for humidity sensors in stainless steel, mesh size 100 μm.
	Not for high humidity measurements !

Accuracy temperature and humidity incl. hysteresis

Accuracy temperature

...Pro-BT...

...Pro-BF...
...Pro-BTF...

$\pm 2{,}0$
$\pm 1{,}5$
$\pm 1{,}0$
$\pm 0{,}5$

−40   0   40   80   120
°C

Accuracy humidity + hysteresis

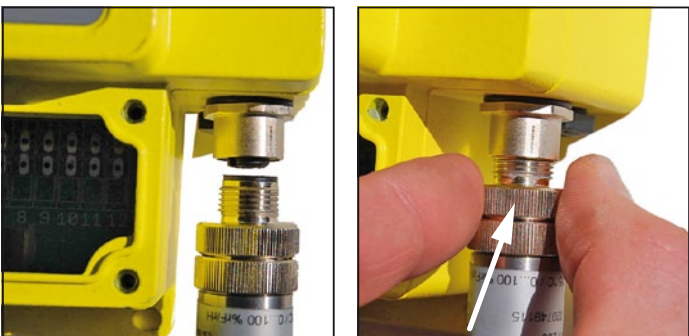$\pm 5{,}0$

$\pm 3{,}0$

0   20   40   60   80   100
% rF

Important information for installation and operation

A. ExPro-B... probe

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

B. Temperature flow

When measuring temperature over the max. allowed environmental temperature of the transducer of +50 °C regard that no temperature flow over the probe takes place.
The mounting of the probe 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 probe into the socket of the transducer. The probe cannot be opened as parts of the element are moulded. A small distance tolerance between transducer and probe has to be accepted due to production conditions.

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

Intrinsically safe parameters

$U_i = 9{,}6$ V $C_i = 120$ nF
$I_i = 9{,}7$ mA $L_i = 0$

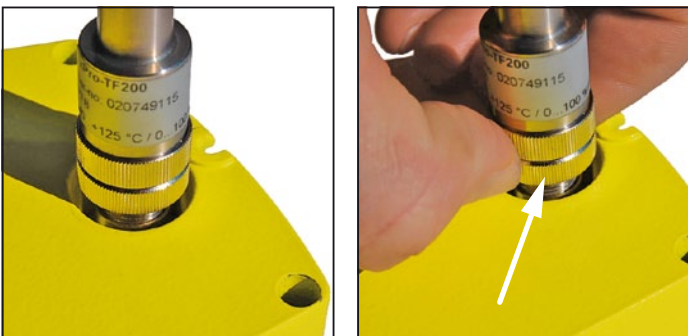## Mounting room probe (at terminal box side)

For mounting the probe 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 transducer and probe has to be accepted due to production conditions.

Mounting duct probe (back side)

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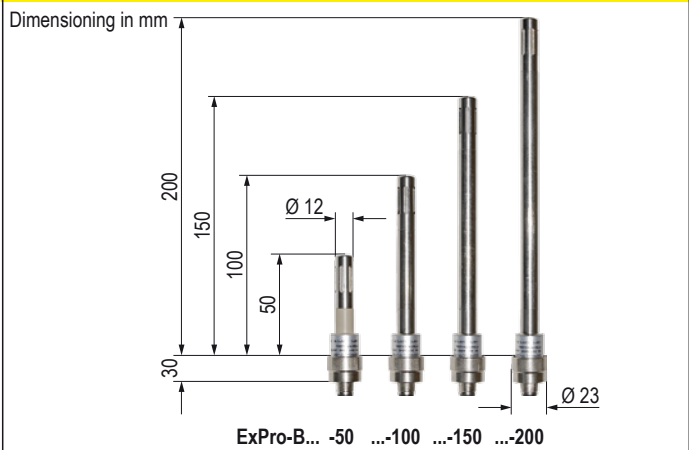A small clearance between transducer and probe has to be accepted due to production conditions.

MFK mounting flange for duct installation

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

Height variably adjustable

Bottom side

Dimensions

Dimensioning in mm

200
150
100
50
30
Ø 12
Ø 23

ExPro-B... -50   ...-100   ...-150   ...-200