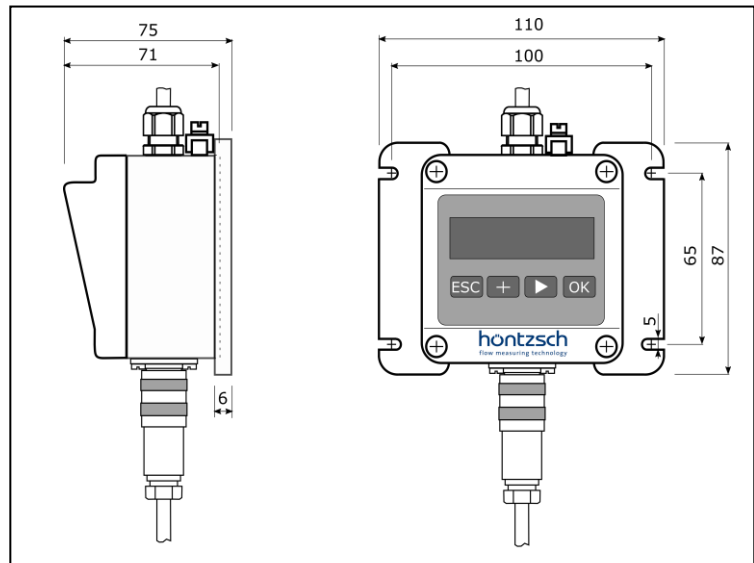


**Parameterizable transducer U10b in IP65 aluminium housing for use with thermal flow sensors TA and TA Di for measuring flow rate, flow velocity and temperature**



**Properties**

- for measuring standard flow velocity  $S_v$ , standard flow rate  $SV/t$  and mass flow of gases, independent of temperature and pressure
- for measuring temperature
- transducers U10b convert the standard velocity-proportional signal of a thermal flow sensor with thin-film element into a linearized output signal compensated over the entire temperature range
- easy-to-read optional LCD display with keypad
- 2 analog outputs
- 1 quantity pulse / limit value
- M-bus optional



**Model designation**

<b>U10b</b>	<b>24 VDC</b>	<b>AS80</b>	<b>4-20 mA</b>
(1)	(2)	(3)	(4)

**Type**

<b>Typ</b>	<b>Article No.</b>
transducer U10b / 24 VDC / AS80 / 4-20 mA	A010/040

**(1) Transducer type**

U10b	
input flow $v/TA$	for thermal flow sensor with a thin-film sensor element
input temperature $t/TA$	for thermal flow sensor with a thin-film sensor element

<b>(2) Power supply</b>	
mains supply	24 V DC ±10 %
power consumption	Less than 3 W

<b>(3) Housing</b>	
dimensions	housing: 80 / 80 / 71 (60) mm (L / B / H) incl. mounting plates: 110 / 87 / 75 (64) mm (L / B / H)
connection to the sensor	connection by screw connector 423-5. Do not shorten or lengthen the sensor connection cable!
connection power supply and output	cable gland for cables with outer diameter 5 ... 9 mm, terminals for wires with cross-section 0.2 ... 1.5 mm <sup>2</sup> . The applicable standards and regulations must be observed when laying the cables.
protection	IP65, IEC 529 and EN 60 529
material	aluminium, powder coated
EMC	EN 61 000-6-2 and EN 61 000-6-4
working temperature range	without display : -25 ... +60 °C with display : -20 ... +60 °C

<b>(4) Outputs</b>	
analog output 1 flow or temperature	4 ... 20 mA (linear), update every 500 ms burden max. 500 Ohm
analog output 2 * flow or temperature	4 ... 20 mA (linear), update every 500 ms burden max. 500 Ohm
measuring units flow	Sm/s, Sft/min, Scfm, Sl/s, Sl/min, Sl/h, Sm <sup>3</sup> /s, Sm <sup>3</sup> /min, Sm <sup>3</sup> /h and kg/h quantity counter in Sm <sup>3</sup>
measuring units temperature	°C, °F
pulse output	for quantity measurement or as limit value, open drain, max. 28.5 V, 20 mA, pulse duration 0.5 s, max. pulse frequency 1 Hz per unit of volume SV, internal current limiting, thermal circuit breaker
parameter settings	physical measuring unit, starting value and terminal value of analog outputs, time constant, profile factor, pipe inside diameter, quantity pulse, limit value, working pressure, standard basis, standard density, parameters changeable via display and keypad
* Analog output 2 is dropped with devices with M-Bus option.	

<b>Measurable gases *</b>			
Medium	Calibration	Medium	Calibration
Air	Calibration in the medium	Carbon dioxide (CO <sub>2</sub> )	transformed characteristics
Nitrogen (N <sub>2</sub> )	transformed characteristics	Landfill gas (40 % CH <sub>4</sub> )	transformed characteristics
Argon (Ar)	transformed characteristics	Helium (He)	transformed characteristics
Methane (CH <sub>4</sub> )	transformed characteristics	Hydrogen (H <sub>2</sub> )	transformed characteristics
Propane (C <sub>3</sub> H <sub>8</sub> )	transformed characteristics	Oxygen (O <sub>2</sub> )	transformed characteristics
Butane (C <sub>4</sub> H <sub>10</sub> )	transformed characteristics	Custom 1,2	customized calibrations

Calibration always performed in air, in addition, characteristics transformation for the listed media.

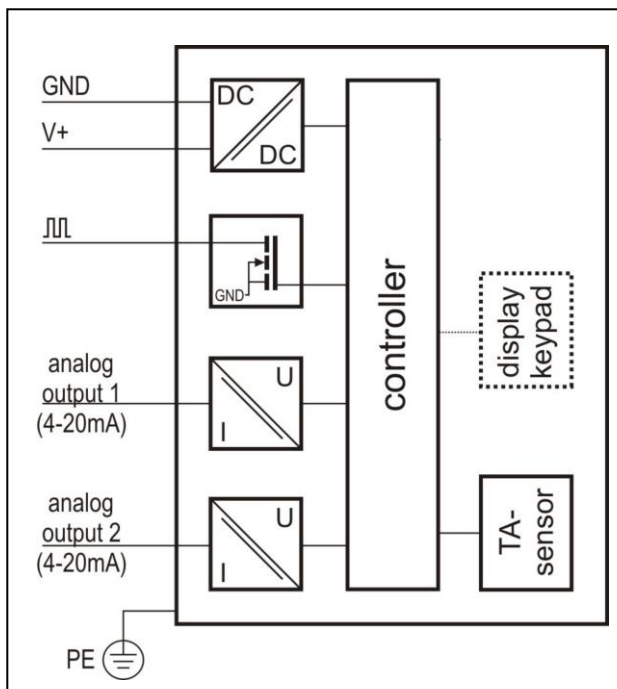
The media stored for the realisation of the smallest measurement uncertainties are generally also calibrated in real gas.

On request, additional calibration data for up to two further calibrations can be stored in other media or as special calibrations

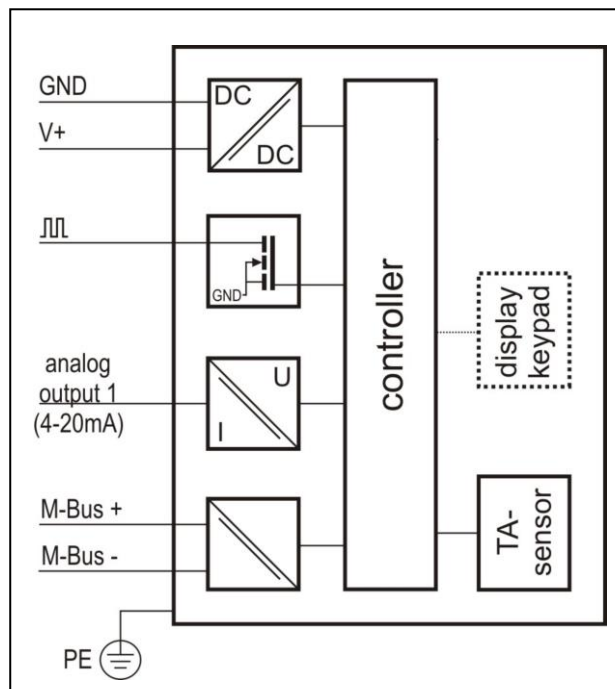
**\* For a correct measurement, the calibration data of the connected sensors must be stored in the transducer as calibration number (KKZ) or pairs of values.**

<b>Options</b>		
	<b>Description</b>	<b>Article no.</b>
local LCD with keypad and quantity counter	illuminated, in housing cover, multi-row, graphic-capable, temperature range -20 ... +60 °C, display options: - instantaneous value (volume flow and temperature) - volume - graphical overview of the instantaneous values of the last 10 seconds - status information	A010/530
separate housing cover with local LCD, keypad and quantity counter	see above	A010/531
ATEX type of protection category 3G and 3D (zone 2 and 22)	Ex ec IIC T4 Gc X * Ex tc IIIC T135 °C Dc X * * option display and keypad not possible	TAEX2E

<b>M-Bus option</b>		
	<b>Description</b>	<b>Article no.</b>
M-Bus option	M-Bus according to EN13757-2 and EN13757-3, measurable variables: Sl/s, Sl/min, Sl/h, Sm <sup>3</sup> /s, Sm <sup>3</sup> /min, Sm <sup>3</sup> /h and kg/h, as well as quantity counter in Sm <sup>3</sup> readable, bus address (0) and baud rate (2400) preset and alterable via M-Bus, galvanically isolated, Bus Load: 2 Unit Loads (3mA)	M-BUS OPTION
	Setting parameter: physical variables, baud rate, bus address, damping, profile factor, tube inside diameter, standard basis, standard density, working pressure, quantity pulse, limit value	
ATEX type of protection category 3G and 3D (zone 2 and 22)	Ex ec IIC T4 Gc X * Ex tc IIIC T135 °C Dc X * * option display and keypad not possible	TAEX2EM



Wiring diagram U10b, standard



Wiring diagram U10b with M-Bus option