



For measuring the standard flow velocity N_v of air from which, independent of pressure and temperature, the standard volume flow and mass flow can be determined.

The transducers U10a convert the N_v -proportional signal of a thermal flow sensor with a film sensor element into a linearized and over the entire working temperature range compensated output signal.

Hardware

Input v/TA

for thermal flow sensors TA with a thin-film sensor element.

Output 4 ... 20 mA (linear)

for a burden of max. 400 Ohm. Instantaneous values are sent every second.

Output 0 ... 10 V (linear)

for an impedance of min. 50 kOhm. Instantaneous values are sent every second.

Pulse output f(V)

for quantity measurement: open-collector type for max. 30 V, 20 mA. Pulse width 0.5 s.

Pulse frequency f:

max 1 Hz per unit of volume N_V .

External power supply

24 VDC $\pm 10\%$, power consumption less than 5 Watt. The supply lines are electrically separated from the output lines of the transducer.

Housing AS80

Overall size: L·W·H = 80·80·60 mm
Material: aluminium

Protective system

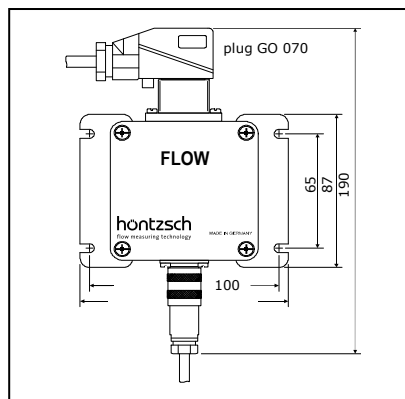
IP 65, DIN40 050.

Working temperature range

-25 °C ... +50 °C

CE Conformity

Transducers U10a with the corresponding sensors do not cause electromagnetic interference outside the permissible limiting values.



U10a for Sensor with connection cable

Connection by screw connectors 423-5. Do not shorten or lengthen the sensor connection cable!

Localized LCD display

with quantity counter (optional) in the lid of the housing AS80.

Display 2 x 16 LCD. Working temperature range -5 °C ... +50 °C. Display units: quantity in Nm^3 and Nm^3/s or Nm^3/h selectable. Reset quantity counter through internal reset key (push at least 3 s)

Connection GO 070

7 pole connector with flange type GO 070 FAM mounted on the housing AS80, plug with terminal screws type GO 070 WF and a cable entry for cable with outside \varnothing 4...10 mm, wires 0.14...0.5 mm².

Software

Analog output 4 ... 20 mA / 0 ... 10V

4 ... 20 mA / 0 ... 10 V = 0 ... x m/s. Terminal value x configurable. Output value is the mean standard flow velocity

$$N_{Vm} = N_{Vlocal} \cdot PF$$

$$N_{Vlocal} = \text{local standard flow velocity}$$

Time constant configurable. Possible settings: 1 ... 20 s.

Standard factory setting: 1 s.

Coefficient/Profile Factor PF

configurable. Reasonable settings: 0.5 ... 1.100.

Standard factory setting PF = 1.000.

Pulse output f(V)

1 Pulse = 1 Nm^3 . Necessary settings for quantity measurements: interior pipe diameter D_i and profile factor PF. Pipe diameter D_i is also configurable.

Zero point compensation

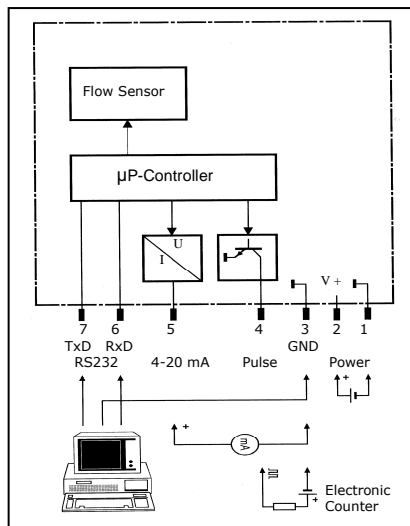
To compensate the zero point and measurements at velocities of less than $\approx 1 Nm/s$ the mean working pressure as input value is required. The mean absolute pressure is configurable. Standard factory setting is 1014 hPa.

RS232 Interface

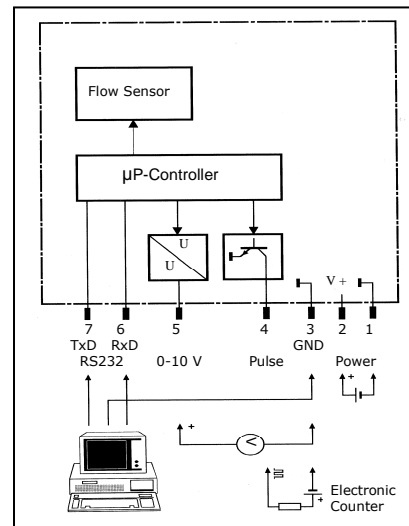
A programming adapter and software **UCOM** for WIN95, 98, 2000, ME, NT, XP, VISTA and Windows 7 are available for the transducer configuration with a PC.

Factory settings

When ordering, please specify desired settings.



U10a wiring diagram (4 ... 20 mA)



U10a wiring diagram (0 ... 10 V)