


Characteristics

1 - MODULAR - ECONOMIC - SERIES -

	- Input:	pressure 0...10 mbar up to 0...1 bar
	- Output:	4...20 mA current loop HART (2-wire)
	- Voltage supply:	out of current loop (12...40 VDC)
	- Accuracy:	see technical details
	- Process connection:	2x hose connection
	- Medium:	clean dry air, dry gases
	- Electrical connection:	several plugs / cable
	- Temperature range:	-20...+80 °C (operation)
	- Adjustment:	software
	- Material enclosure:	PBT GF 30
- Protection:	at least IP65	

Technical data

Input

Differential pressure: 0...10 mbar up to 0...1 bar
 Pressure ranges: see table page 2 (with overpressure safety, burst pressure)
 Medium: clean dry air, dry gases and the like (non-corrosive, non-ionic working)

Output

Current signal: 4...20 mA with superimposed communication signal (HART), 2-wire current loop
 Current range: 3,6...21 mA
 Signal on error: 21 mA (sensor break, sensor open circuit, sensor short circuit, underflow)
 HART ability: to be used for factory configuration and service

Performance

Pressure sensor:	Accuracy:	$\pm 0,1\% \dots \pm 0,25\%$ FSO (linearity and hysteresis)	
	Zero offset:	$\pm 0 \dots 1,25\%$ FS	
	Repeatability:	$\pm 0,2\% \dots \pm 0,5\%$ FSO	
	Temperature effects:	within rated temperature range	
		Offset: $\pm 0,5 \dots 2,5\%$ FS	
		Span: $\pm 0,4 \dots 1\%$ FSO	
	Long term stability:	0,25...0,5% FS (offset and span, 1 year)	
	Response time:	100 μ s	
	Measuring amplifier:	Resolution:	16 Bit
		Accuracy:	0,3% of range
Filter setting:		0...99 s	
Transmission behaviour:		linear with pressure	
Turn-on delay time:		<5 s	
Measuring rate:		10 Measurements/s	
Linearization:		10 calibration points	
Configuration:		Via software with HART communication (factory configuration and service)	
Response time:		100 ms	

Applications

The differential pressure sensor is suitable for heating, climate and ventilating applications as well as for general pressure measurement. Numerous electrical connections and the size of the enclosure are useful details of the device. Factory and configuration are done via HART tool.



Photo: Erich Westendarp @ pixello.de



Photo: Poschle@pixello.de



Photo: Simon Coste @ fotolia.de

● Technical data (continued)

Supply

Voltage: HART current loop: 12...40 VDC VDC
 Load: $R = (U_B - 12 \text{ V}) / 22 \text{ mA}$
 Reverse battery protection: available (no function, no damage)

Ambient conditions

Temperature: Operating range: 0...+50 °C (compensated range)
 -20...+80 °C (nominal range)
 Storing: -20...+85 °C
 Condensation: uncritical
 CE-conformity: Pressure equipment directive: 97/23/EG EMC directive: 2004/108/EG

Mechanics

Dimensions: see page 3
 Pressure connection: 2x hose connection 4 mm
 Electrical connection: Plugs and cables: see page 3
 Material: Process connection: PBT GF30
 Body, cover: PBT GF30
 Colour of enclosure: black
 Flammability of enclosure: UL94 HB
 Weight: approx. 50 g
 Fitting position: Any
 System pressure: see pressure table below
 Protection of device: Ingress protection: at least IP 65 (electronics)
 PCB: potted









Adjustable features

Measuring amplifier: Nominal measuring range start (LRL) / Nominal measuring range end (URL) /
 Measuring range start (LRV) / Measuring range end (URV) / Filter function /
 Adjustment output current / Simulation output current / HART address /
 Linear output signal / 2-point calibration / 10-point calibration (linearization)

Pressure table (in mbar)

Pressure range	10	20	50	100	200	500	1000	
Overpressure safety	100	100	250	250	1000	1000	3000	
Burst pressure	150	150	500	500	1400	1400	5000	
System pressure	15	30	75	150	300	500	1500	

● **Electrical connection**

M12x1	Super Seal	Deutsch	Deutsch	Bayonet	Valve	MIL	Cable
							
4-, 5-, 8-pole	3-pole	3-pole	4-pole	4-pole	4-pole	6-pole	4-pole

● **HART Communication and configuration**

The HART-Tool is a graphical user interface for the ME series with menu-driven program for configuration. It can be used for putting into operation, configuration, analysis of signals, data backup and documentation of the device.

Operating systems: Windows 2000, Windows XP, Windows 7 and 8.1

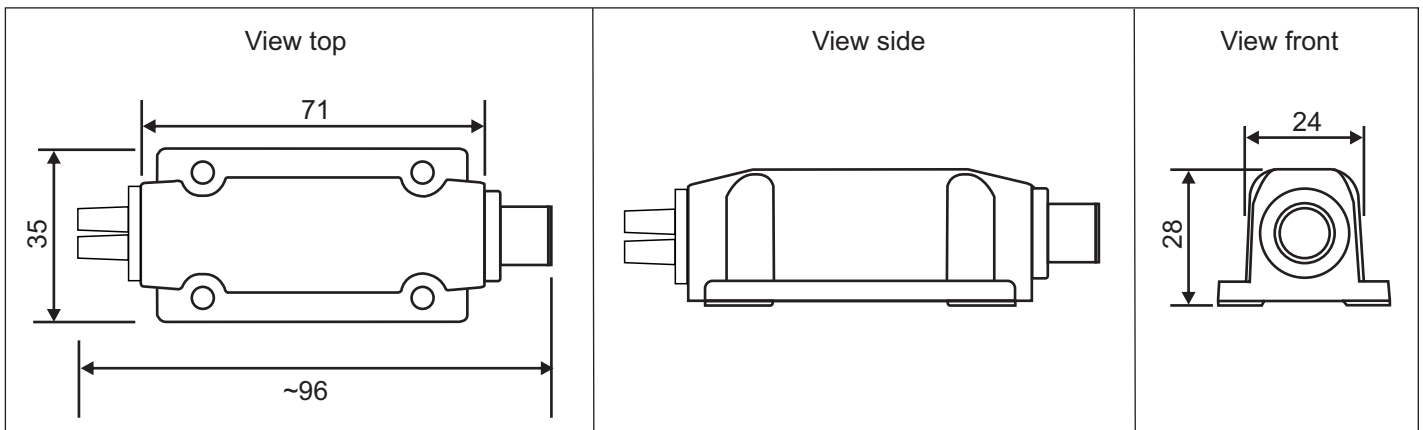
Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

Possible settings are:

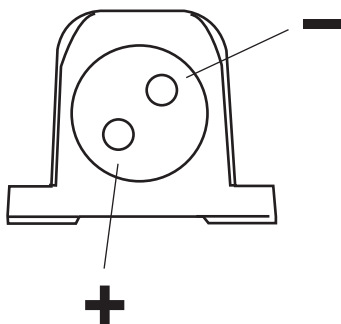
- Adjustment of output current
- Limits of nominal measuring range (URL, LRL)
- Limits of measuring range (LRV, URV)
- 10-point calibration (linearization)
- Simulation of output current
- Linear output signal
- 2-point calibration
- Filter function
- HART address

Please note: When using communication via a HART modem, a communication resistance of 250 Ω has to be taken into account.

● **Dimensions (in mm)**



● **Pressure connection**



● **Order code**

M D - X - X X X X X X

Input:	0...10 mbar	10							
	0...20 mbar	20							
	0...50 mbar	50							
	0...100 mbar	A1							
	0...200 mbar	A6							
	0...500 mbar	A7							
	0...1 bar	B1							
	Output:	4...20 mA HART		2					
Enclosure:	U-CASE5			5					
Supply:	12...40 VDC				2				
Electrical connection:	M12, 4-pole							1	
	M12, 5-pole							2	
	M12, 8-pole							3	
	Deutsch DT04, 3-pole							4	
	Deutsch DT04, 4-pole							5	
	Super Seal 1.5, 3-pole							6	
	Bayonet (DIN), 4-pole							7	
	Valve plug, 4-pole							8	
	Cable, 2 m							9	
MIL, 6-pole							A		
Configuration:	Factory setting ¹⁾								1
Special model:	No								0
	Yes (to specify)								1

1) Measuring range: Settings are made according order