Characteristics

1500 - MODULAR - ECONOMIC - SERIES -

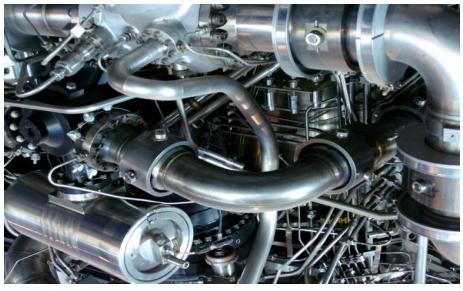
- Input:	pressure 0...0,1 up to 0...1000 bar
- Output:	4...20 mA current loop HART (2-wire)
- Voltage supply:	out of current loop (12...40 VDC)
- Accuracy:	see technical details
- Process connection:	several options
- Electrical connection:	lateral, Option: upwards
- Electrical connection:	several plugs / cable
- Temperature range:	-20...+80 °C (operation)
- Adjustment:	software
- Temperature medium:	-30...+100 °C
- Protection:	at least IP65 / IP68

Technical data

Input		
Pressure:	relative: 0...0,1 up to 0...1000 bar / -1...0 bar	absolute: 0...0,25 up to 0...16 bar
Pressure ranges:	see table page 2 (with overpressure safety, burst pressure)	
Output		
Current signal:	4...20 mA with superimposed communication signal (HART), 2-wire current loop	
Current range:	3,8...20,5 mA	
Signal on error:	3,6 mA (sensor short circuit, underflow) 21 mA (sensor break, sensor open circuit, overflow)	
Performance		
Sensor:	Accuracy:	<0,5% of span (at reference conditions) Including non-linearity, hysteresis, zero and full scale error (corresponds to error of measurement per IEC 61298-2)
	Adjustment:	in vertical mounting position with lower pressure connection
	Non-linearity:	<0,2% of span (BFSL per IEC 61298-2)
	Non-repeatability:	<0,1% of span (per IEC 61298-2)
	1-year stability:	<0,2% of span (at reference conditions)
	Temperature coefficient:	mean coefficient (TC) within compensated temperature range
		TC zero: <0,2% of span / 10 K <0,4% span / 10 K for ranges <250 mbar
		TC span: <0,2% span / 10 K
	Reference conditions:	15...25 °C / 860...1060 mbar / 45...75% rH / 24 VDC
Measuring amplifier:	Resolution:	16 Bit
	Accuracy:	0,3% of range
	Filter setting:	0...99 s
	Transmission behaviour:	linear with pressure
	Measuring rate:	10 measurements / s
	Configuration:	keys on display / via software (HART-communication)
	Turn-on delay time:	<5 s
	Response time:	20 ms

Applications

For use in industrial plants, terotechnology and public utility (eg tanks for drinking water). With the numerous electrical connections and the configuration via HART protocol, the pressure sensor is also suitable for applications with higher requirements.



Technical data (continued)

Supply

Voltage:	HART current loop: 12...40 VDC VDC
Load:	R = (U_B-12 V) / 21 mA
Reverse battery protection:	available (no function, no damage)

Ambient conditions

Temperature:	Operating range:	-20...80 °C 0...+80 °C (compensated range)
	Storing:	-20...+85 °C
	Medium:	-30...+100 °C
Condensation:	uncritical	
CE-conformity:	Pressure equipment directive:	97/23/EG EMC dirctive: 2004/108/EG
Shock resistance:	1000 g according IEC 60068-2-27 (mechanical shock)	
Vibration resistance:	20 g according IEC 60068-2-6 (vibration under resonance)	

Mechanics

Dimensions:	see page 3	
Pressure connection:	G 1/2 (EN837) / G 1/4 (EN837) / G 1/4 (DIN 3852-E) / 1/2 NTP / 1/4 NPT for NPT thread: nominal size for “US standard tapered pipe thread NPT”	
Electrical connection:	lateral	
	Option:	upwards
	Plugs and cables:	see page 3
Material:	Process connection:	stainless steel CrNi (contact with medium)
	Body:	PBT GF30
	Cover:	PBT GF30
Transmission fluid:	syntetic oil (internal), no transmission fluids for models with pressure ranges >25 bar	
Weight:	approx. 230 g	
Protection of device:	Ingress protection:	at least IP 65 (electronics)
	PCB:	potted

Pressure table (in bar)

Pressure range	0,1	0,16	0,25	0,4	0,6	1	1,6	2,5
Overpressure safety	1	1,5	2	2	4	5	10	10
Burst pressure	2	2	2,4	2,4	4,8	6	12	12
Pressure range	4	6	10	16	25	40	60	100
Overpressure safety	17	35	35	80	50	80	120	200
Burst pressure	20,5	42	42	96	96	400	550	800
Pressure range	160	250	400	600	1000	-1...0		
Overpressure safety	320	500	800	1200	1500	5		
Burst pressure	1000	1200	1700	2400	3000			

Electrical connection

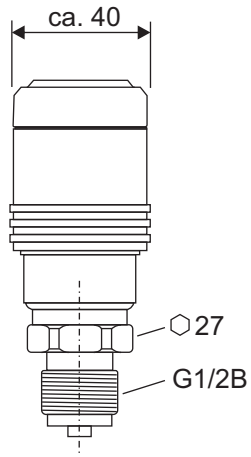
M12x1	Super Seal	Deutsch	Deutsch	Bayonet	Valve	MIL	Cable
							
4-, 5-, 8-pole	3-pole	3-pole	4-pole	4-pole	4-pole	6-pole	4-pole

HART Communication and configuration

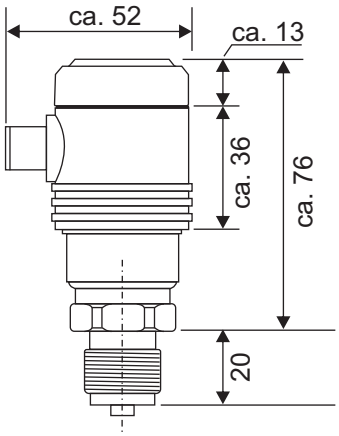
The HART-Tool is a graphical user interface for the ME series with menu-driven progam for configuration. It can be used for putting into operation, configuration, analysis of signals, data backup and documentation of the device. Connection via HART interface DEV-HM for operating systems: Windows 2000, Windows XP, Windows 7 and 8.1. Possible settings are: Adjustment and simulation of output current, filter function, limits of measuring range, linear output signal, HART address, 2-point calibration, 10-point calibration (linearization)

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

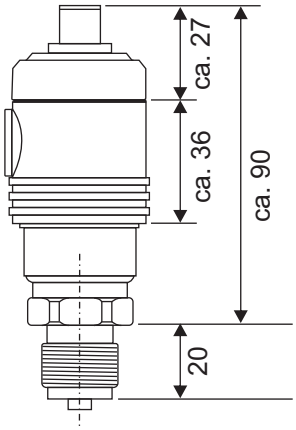
Dimensions (in mm)



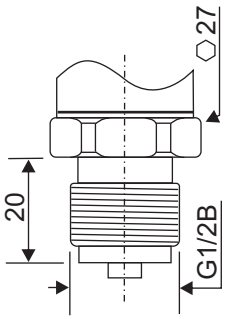
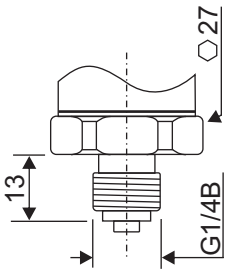
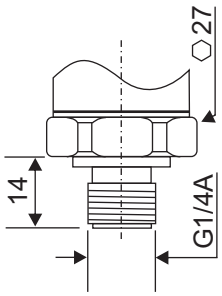
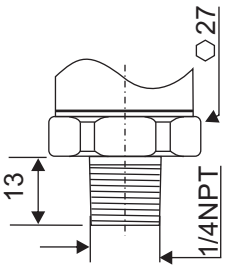
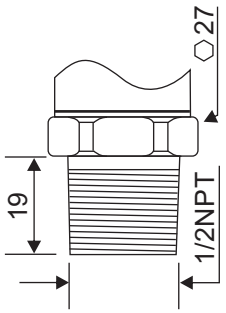
Lateral electrical connection



Electrical connection upwards



Pressure connection (in mm)

G1/2B (EN837) Manometer	G1/4B (EN837) Manometer	G1/4A (DIN 3852-E)	1/4NPT	1/2NPT
		 Overload limit 600 bar		

Order code

O	D	X	X	X	X	X	X	-	X	X	X

Kind of pressure:	Relative pressure	0
	Absolute pressure	1
Temperature medium:	-30...+100 °C	0
Process connection:	G1/2” (EN 837), manometer	0
	G1/4” (EN 837), manometer	1
	G1/4” (DIN 3852 E)	2
	1/2”NPT	3
	1/4"NPT	4
	Other connection (to indicate)	5
Contact with medium:	CrNi steel	0
Pressure range:	To indicate[1)]	X
Electrical connection:	Lateral (standard)	0
	Upwards	1
Electrical connection:	M12, 4-pole	0
	M12, 5-pole	1
	M12, 8-pole	2
	Deutsch DT04, 3-pole	3
	Deutsch DT04, 4-poe	4
	Super Seal 1.5, 3-pole	5
	Bayonet (DIN), 4-pole	6
	Valve plug, 4-pole	7
	Cable, 2 m	8
	MIL, 6-pole	9
Configuration:	Factory setting[2)]	0
	Customized (please indicate)[3)]	1
Other:	Special model	0

1) Pressure range absolute: 2 = 0...0,25 / 3 = 0...0,4 / 4 = 0...0,6 / 5 = 0...1 / 6 = 0...1,6 / 7 = 0...2,5 / 8 = 0...4 / 9 = 0...6 / A = 0...10 / B = 0...16 bar

Pressure range relative: 0 = 0...0,1 / 1 = 0...0,16 / 2 = 0...0,25 / 3 = 0...0,4 / 4 = 0...0,6 / 5 = 0...1 / 6 = 0...1,6 / 7 = 0...2,5 / 8 = 0...4 / 9 = 0...6 / A = 0...10 / B = 0...16 / C = 0...25 / D = 0...40 / E = 0...60 / F = 0...100 bar / G = 0...160 / H = 0...250 / I = 0...400 / J = 0...600 / K = 0...1000 / L = -1...0 bar

2) Measuring range: / Indicating range

3) All settings, which are possible according the technical data, can be selected. For not given values the details of factory-set are used.

Accessories:

DEV-HM (Interface HART, USB, software) Order No.: