● *Characteristics*

- 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:	several plugs / cable
- Temperature range:	-40...+80 °C (operation)
- Limit value contacts:	2 electronically (NPN, PNP)
- Adjustment:	keys / software
- Temperature medium:	-30...+100 °C
- Protection:	at least IP65 / IP68

● *Technical data*

Input

Pressure: Pressure ranges:	relative: 0...0,1 up to 0...1000 bar / -1...0 bar absolute: 0...0,25 up to 0...16 bar 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...20,8 mA
Signal on error:	3,8 mA (sensor break, sensor open circuit)

Performance

Sensor:	Accuracy:	<0,5% of span
	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)
Measuring amplifier:	Resolution:	16 Bit / 0,3 µA
	Long term stability:	0,05% / year
	Filter setting:	yes
	Transmission behaviour:	linear with level
	Turn-on delay time:	<5 s
	Response time:	1 s
Indicator / limit values:	Resolution:	-9999...9999 digit
	Error of measurement:	±0,2% of range, ±1 digit
	Temperature drift:	100 ppm/K
	Features:	according VDMA 24574-1 up to 24574-4
	Operation:	according VDMA 24574-1 up to 24574-4

● *Applications*

For use in industrial plants, terotechnology and public utility (eg tanks for drinking water). With it's two configurable limit value contacts, the integrated display and the numerous electrical connections, the pressure sensor is also suitable for applications with higher requirements.

● *Technical data (continued)*

Indication

Display:	7 segment, 8,5 mm, red, 4 digits, representation mirror-inverted 180° possible
Head of display:	rotatable approx. 330°
Memory:	minimum / maximum values
Indication:	- measuring value - unit of measurement - control menu
Decimal point:	automatically or manually, dependent on measuring range / unit
	Representation: xxxx / xxx.x / xx.xx / x.xxx

Limit contacts

Electronically:	2x NPN or PNP (30 VDC, 200 mA) Option: 2x NPN or PNP (30 VDC, 1000 mA)
Indication:	1 LED red for each limit value
Voltage across:	<1 V
Settings:	with 3 keys (TouchM-Technology)
Setting range:	switch point and hysteresis: any value within measuring range
Switching delay:	0,0...999,9 s
Failsafe function:	adjustable
Galvanical insulation:	switching outputs are separated from measuring amplifier

Supply

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

Ambient conditions

Temperature:	Operating range: 0...+80 °C (nominal range)
	Storing: -20...+85 °C
	Medium: -30...+100 °C
Temperature coefficient:	mean temperature coefficient (TC) within rated 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
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:	see page 3
Material:	Process connection: stainless steel CrNi (contact with medium)
	Body: PTB GF30
	Head of display: polycarbonate
Transmission fluid:	syntetic oil (internal), no transmission fluids for models with pressure ranges >25 bar
Weight:	approx. 240 g
Protection:	Electronics: at least IP 65

Programmable features

Measuring amplifier:	measuring range start / measuring range end /
Display:	range of indication / time of indication / decimal point / units / stabilisation of zero point / locking of programming / calibration points / TAG number
Limit value contacts:	limit value 1 and 2 / hysteresis 1 and 2 / delay times 1 and 2

Pressure table

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			
Overpressure safety	320	500	800	1200	1500			
Burst pressure	1000	1200	1700	2400	3000			

● Electrical connection

M12x1	Super Seal	Deutsch	Deutsch	Bajonett	Valve	Cable
4-, 5-, 8-pole	3-pole	3-pole	4-pole	4-pole	4-pole	2-, 5-pole

Connection / Limit value (LV)	M12 4-pole	M12 5-pole	M12 8-pole	Bajonett 4-pole	Deutsch 4-pole	Deutsch 3-pole	Super Seal 3-pole	Valve 4-pole	Cable[1]
1 LV electronically	X	X	X	X	X			X	X
2 LV electronically		X	X						X

1) 2-pole (+shield) without limit value contacts, 5-pole (+shield) with limit value contacts
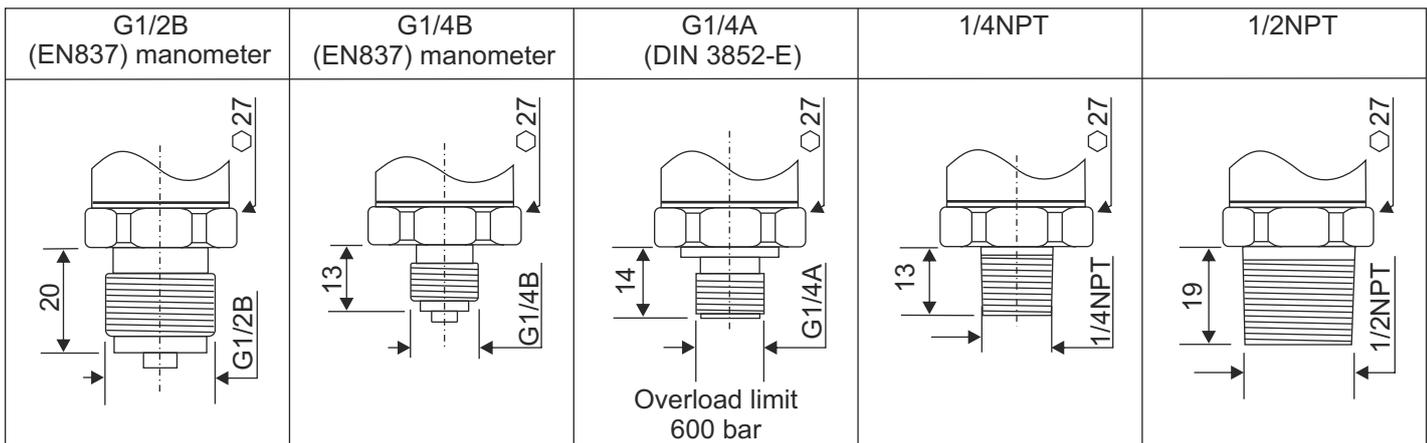
● HART Communication and configuration

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. Possible settings are: Adjustment and simulation of output current, filter function, limits of measuring range, linear output signal, HART address, HART TAG number, 2-point calibration, 6-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)

ca. 40

◯27

ca. 37

ca. 36

ca. 100

20

● Pressure connection (in mm)

G1/2B (EN837) manometer	G1/4B (EN837) manometer	G1/4A (DIN 3852-E)	1/4NPT	1/2NPT
◯27 / 20 / G1/2B	◯27 / 13 / G1/4B	◯27 / 14 / G1/4A / Overload limit 600 bar	◯27 / 13 / 1/4NPT	◯27 / 19 / 1/2NPT
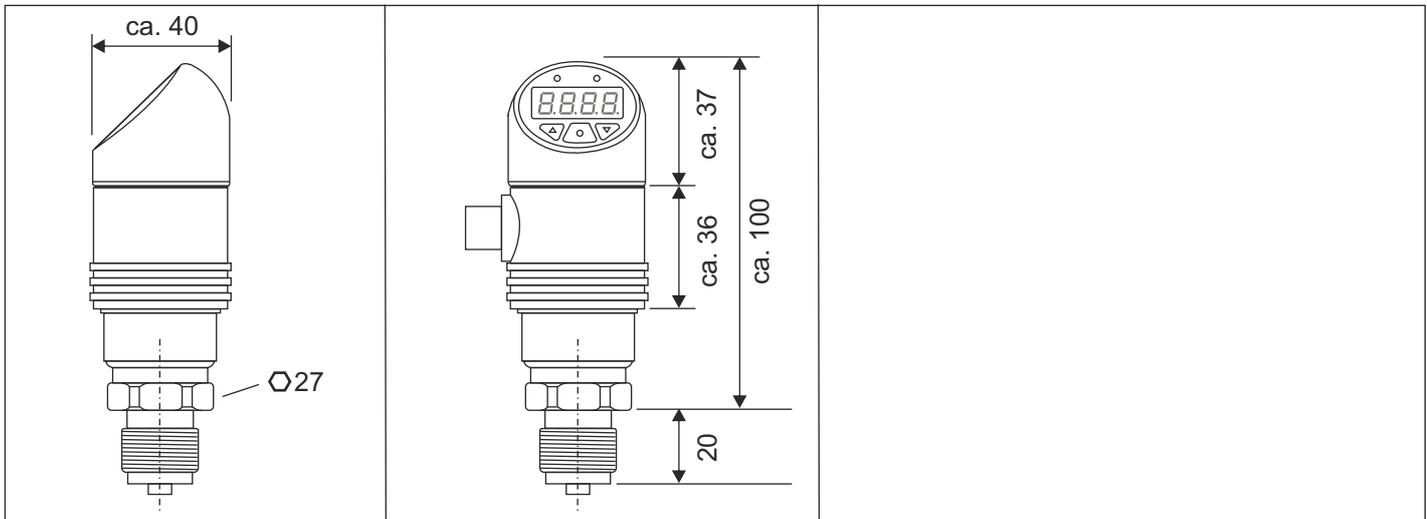
● Ordering code

O	P	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 |

Limit value contacts:	2x PNP, 30 VDC, 200 mA (standard)	0
	1x PNP, 30 VDC, 200 mA	1
	without	2
	2x NPN, 30 VDC, 200 mA	3
	1x NPN, 30 VDC, 200 mA	4
	2x PNP, 30 VDC, 1000 mA	5
	1x PNP, 30 VDC, 1000 mA	6
	2x NPN, 30 VDC, 1000 mA	7
	1x NPN, 30 VDC, 1000 mA	8

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

| **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.: