FISCHER MESS- UND REGELTECHNIK

MA 13 || Bourdon Tube Pressure Gauge (for chemical use)

Application

The pressure gauge MA13 for overpressure and vacuum meets the high technical requirements of corrosion-resistance and interference immunity. It is used for liquid and gaseous media, except those having a high viscosity or are liable to crystalize.

Application Fields

- Chemical industries
- Materials processing
- Pneumatic systems
- Machinery and terotechnology
- Environmental technology

Construction and Operation

The measure pressure is transferred into the measuring element via the connection thread. By means of the pressure admission an elastic deformation occurs, leading to a movement of the measuring element.

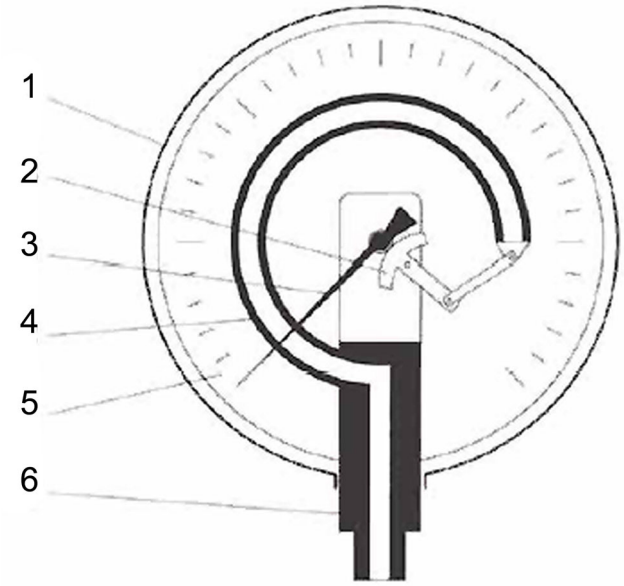
This movement is converted into a pressure-proportional pointer deflection via the motion work. The measuring element and the connection thread is one construction, together with the motion work and the scale. Therefore the measuring system is autonomical against forces acting on the case.

Internal spring stops limit the pointer deflection up to 270 angular degrees.

Regulations for prevention of accidents and div. laws require measuring instruments for special processes acc. to manifold safeguards. The type ''bayonet-case acc. to DIN 16006“ meets these requirements disposing of following features: blow-out of case back wall, front-window of security laminated glass, security against fracture via separating wall between measuring element and dial.



Functional Diagram



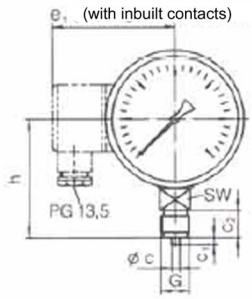
1 Connection thread
2 Measuring element
3 Movement
4 Dial
5 Pointer
6 Case

Technical Data

Measuring ranges	0 to 0.6 bar ...0 to 600 bar acc to DIN 16064 ref. to order code
Max. pressure load	1.3 x the measuring end value (for short time)
Accuracy	class. 1.0 acc. to DIN 16005
Temperature fault/20°C	increasing per 10°C + 0.3% falling per 10°C -0.3%
Ambient temperature	-25°C to 60°C
Media temperature	max. 100°C
Measuring scale	round case diameter 100/160 mm security case diameter 100/160 mm acc. to DIN 16006
Protection class	IP54 acc. to DIN 40050
Perm. range of application	in case of permanent load: end value of scale in case of alternating load: 0.9fold end value of scale
Pressure connections	lower connection BSP ½“ acc. to DIN 16288 back connection BSP ½“ excentrical acc. to DIN 16288 for casing acc. to DIN 16006 only lower connection possible
Materials	
Measuring system	stainless steel Cr-Ni 1.4571
Case	stainless steel Cr-Ni 1.4301
Movement	stainless steel Cr-Ni 1.4301
Dial	aluminium
Pointer	aluminium
Optional Equipments	
Electrical equipment	Contact modules/transducers (mechanical creep-, magnetic- or inductive contacts) as well as capacitive swing angle transformers with angle-proportional output signals can be integrated within the case which has been enlarged by means of an adequate high bayonet-type face ring. Electrical accessories acc. to datasheet KE...
Liquid filling	In case of aggravated operating conditions like vibrations and pressure oscillations, or against condensation in case of outdoor-installation, the case can be filled with damping liquid.
Marking pointer	Adjustable pointer for signal marking behind the window.
Drag pointer	The drag pointer is carried by the measuring indicator. Between the two pointers does not exist a fixed connection, e.g. once reached maximum values are accumulated. Via an adjusting knob in the window the drag pointer can be readjusted.
Installation/Mounting	Screwed tube connection via cutting- or clamping ring connection or direct screwing into the tube by means of appropiate connecting parts and sealing materials. Wallmounting with back flange or gauge support MZ31... Panelmounting via frontring.
Accessories	Couplings to further thread diameters, tube connecting screwings, solder- and welding fittings, shut-off valves, manifolds etc. acc. to datasheet MZ...

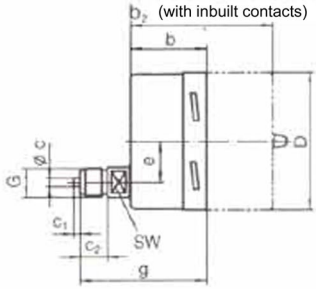
Dimensioned drawings

Standard variant connection below

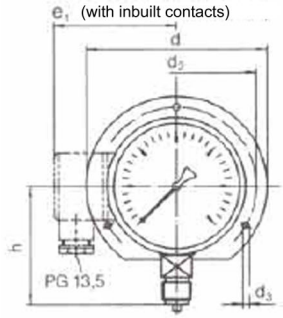


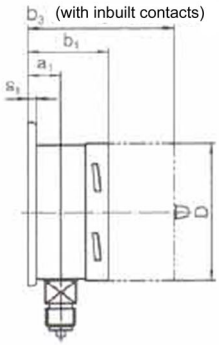


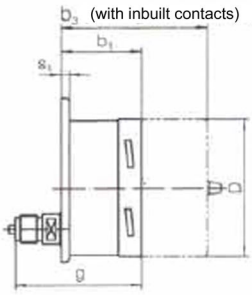
Back connection



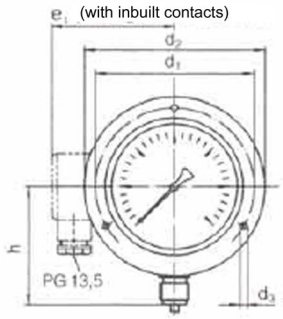
Variant with back flange

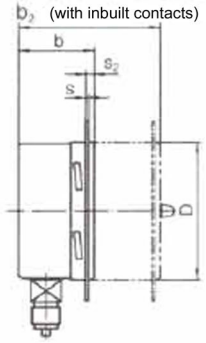


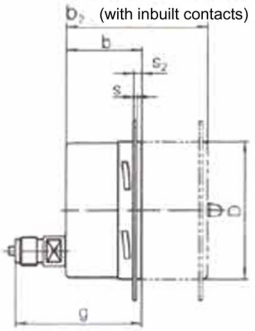




Variant with front ring

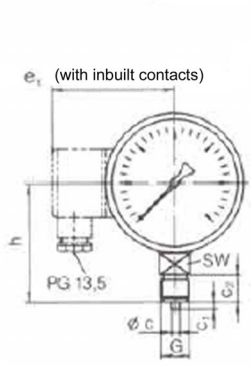


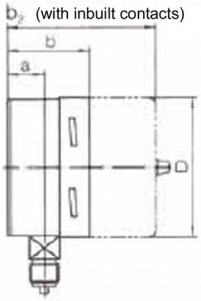


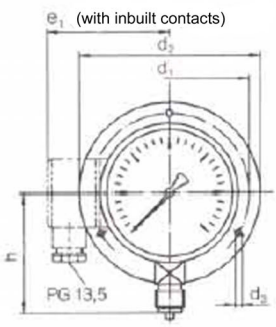


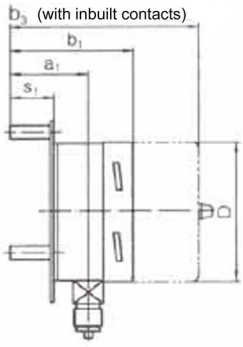
NG	D	a	a_1	b	b_1	b_2	b_3	c	c_1	c_2	d_1	d_2	d_3	e	e_1	g	G	h±1	s	s_1	s_2	SW	SW_1
100	101	20	23.5	55	58.5	103	106.5	6	5	20	116	132	4.8	30	89	97	G½A	87	2	6	6	22	17
160	161	15.5	19	50.5	54	98.5	102	6	5	20	178	196	5.8	52	119	92.5	G½A	118	2	6	6	22	17

Safety case acc. to DIN 16006









NG	D	a	a_1	b	b_1	b_2	b_3	c	c_1	c_2	d_1	d_2	d_3	e_1	G	h±1	s_1	SW
100	101	27	57	60	90	108	138	6	5	20	116	132	4.8	89	G½A	87	32	22
160	161	40	70	78	108	126	156	6	5	20	178	196	5.8	119	G½A	118	32	22

Ordering Code

Bourdon Tube Pressure Gauge (for chemical use) Type MA13

						0	0				0

Measuring Ranges

0 . . . 0.6 bar	0	1
0 . . . 1.0 bar	0	2
0 . . . 1.6 bar	0	3
0 . . . 2.5 bar	0	4
0 . . . 4 bar	0	5
0 . . . 6 bar	0	6
0 . . . 10 bar	0	7
0 . . . 16 bar	0	8
0 . . . 25 bar	0	9
0 . . . 40 bar	1	0
0 . . . 60 bar	1	1
0 . . . 100 bar	1	2
0 . . . 160 bar	1	3
0 . . . 250 bar	1	4
0 . . . 400 bar	1	5
0 . . . 600 bar	1	6
-1 . . . 0 bar	3	1
-1 . . . 0.6 bar	3	2
-1 . . . 1.5 bar	3	3
-1 . . . 3 bar	3	4
-1 . . . 5 bar	3	5
-1 . . . 9 bar	3	6
-1 . . . 15 bar	3	7

Measuring Indication

Bayonet case ø 100	L
Bayonet case ø 160	M
Safety case ø 100 acc. to DIN 16006	O
Safety case ø 160 acc. to DIN 16006	P

Construction

Standard	O
Front ring for panel mounting	G
Back flange	B

Pressure Connection

Thread BSP ½ below	8	7
Thread BSP ½ back	9	7

Optional: Liquid Filling

Without liquid filling	0
Damping liquid glycerine	1
Damping liquid in case of inbuilt contacts	2

Optional: Special Functions

Without special functions	0
Adjustable marking pointer	1
Readjustable drag pointer (measuring ranges ≥ 1 bar)	2

Optional: Contacts - Transducers

Without contacts / transducers	0
Inbuilt contacts acc. to datasheet KE... (for measuring ranges ≥ 1 bar)	1
Inbuilt capacitive position transducer electrical acc. to datasheet KE... (for measuring ranges ≥ 1 bar)	2

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