Klinger Pressure Gauge

Type **1xx / 2xx**
Operation Instructions

1 Notes per current pressure equipment directive

- The pressure gauges are defned as “pressure accessories”
- The volume of the “pressure-bearing housings” of Klinger pressure gauges is < 0.1 litre.
- The pressure gauges carry CE marking for fluid group 1 per annex II, diagram 1 when their permissible working pressure is > 200 bar

Instruments that do not carry the mark are manufactured per article 4, paragraph 3 “sound engineering practice”.

Applicable standards (depending on model)

- EN 837-1 Bourdon tube pressure gauges, dimensions, metrology, requirements and testing
- EN 837-2 Selection and installation recommendations for pressure gauges
- EN 837-3 Diaphragm and capsule pressure gauges, dimensions, metrology, requirements and testing

Specifications: See data sheet at www.klinger.dk

2 Safety

WARNING!
Before installation, commissioning and operation, ensure that the appropriate pressure gauge has been selected in terms of measuring range, design and suitable wetted material (corrosion) for the specific measuring conditions.
In order to guarantee the measurement accuracy and long-term stability specifed, the corresponding load limits must be observed.

Only qualifed persons authorised by the plant manager are permitted to install, maintain and service the pressure gauges.

For hazardous media such as oxygen, acetylene, flammable or toxic gases or liquids, and refrigeration plants, compressors, etc., in addition to all standard regulations, the appropriate existing codes or regulations must also be followed.

From pressure gauges which do not correspond to a safety version per EN 837 highly pressurised media might leak out through the possibly bursting window in case of a component failure.
For gaseous media and working pressures > 25 bar a pressure gauge with safety version S3 is recommended per EN 837-2.

After an external fire, pressure media can leak out, particularly at soft solder joints. All instruments must be checked and, if necessary, replaced before recommissioning the plant.

Non-observance of the respective regulations can cause serious injuries and/or damage to the equipment

3 Mechanical connection

In accordance with the general technical regulations for pressure gauges (e.g. EN 837-2).

When screwing the instruments in, the force required to do this must not be applied through the case, but only through the spanner flats provided for this purpose, and using a suitable tool.

For parallel threads, use flat gaskets, lens-type sealing rings or profle sealings at the sealing face. With tapered threads (e.g. NPT threads), sealing is made in the threads using additional sealing materials, e.g. PTFE tape (EN 837-2).

The torque depends on the sealing used. In order to orientate the measuring instrument so that it can be read as well as possible, a connection with clamp socket or union nut should be used.

When a blow-out device is ftted to a pressure gauge, it must be protected against being blocked by debris and dirt. With safety pressure gauges (see k) there must be a free space of > 15 mm behind the blow-out back.

After installation, open the vent valve (if available) or set from CLOSE to OPEN. The version of the vent valve depends on the model and can deviate from the above illustration!

4 Requirements for the installation point

If the line to the measuring instrument is not adequately stable, a measuring instrument holder should be used for fastening (and possibly via a flexible capillary).
If vibrations can't be avoided by means of suitable installation, instruments with liquid flling should be used.

The instruments should be protected against coarse dirt and wide fluctuations in ambient temperature.

Ambient temperature: -20 ÷ +60°C

Service conditions type 1xx

-10 … +80°C Element: Phospor Bronze
Welding: Tin Alloy
-30 … +80°C Element: Phospor Bronze
Welding: Silver Alloy

Service conditions type 2xx

-40 … +250°C dry execution;
-20 … +100°C glycerine filled execution;
-40 … +120°C silicone fluid filled execution.

Scale ranges for pressure values between –1 and 1.600 bar acc. to EN 837-1

Graduation	Class 1,6 per SP/NP		Class 1/1,6 per SP/SF/DP/PQ/MP/BP/MA		Class 0,6 per SP/SF/TR		Class 0,25 per CP	
	Division	Division N.	Division	Division N.	Division	Division N.	Division	Division N.
0 ÷ 1	0,05	20	0,02	50	0,01	100	0,005	200
0 ÷ 10	0,5	20	0,2	50	0,1	100	0,05	200
0 ÷ 100	2	20	2	50	1	100	0,5	200
0 ÷ 1000	50	20	20	50	10	100	5	200
-1 ÷ 0	0,05	20	0,02	50	0,01	100	0,005	200
-1 ÷ +9	0,5	20	0,2	50	--	--	--	---
0 ÷ 1,6	0,05	32	0,02	80	0,02	80	0,01	160
0 ÷ 16	0,5	32	0,2	80	0,2	80	0,1	160
0 ÷ 160	5	32	2	80	2	80	1	160
0 ÷ 1600	50	32	20	80	20	80	10	160
-1 ÷ +0,6	0,05	32	0,02	80	---	--	--	--
-1 ÷ +15	0,5	32	0,2	80	--	--	--	--
0 ÷ 2,5	0,1	25	0,05	50	0,02	125	0,01	250
0 ÷ 25	1	25	0,5	50	0,2	125	0,1	250
0 ÷ 250	10	25	5	50	2	125	1	250
0 ÷ 2500	100	25	50	50	20	125	10	250
-1 ÷ +1,5	0,1	25	0,05	50	---	--	--	--
-1 ÷ +24	1	25	0,5	50	--	--	--	--
0 ÷ 0,4	0,01	40	--	--	---	--	--	--
0 ÷ 4	0,2	20	0,1	40	0,05	80	0,02	200
0 ÷ 40	2	20	1	40	0,5	80	0,2	200
0 ÷ 400	20	20	10	40	5	80	2	200
0 ÷ 4000	--	--	100	40	50	80	20	200
-1 ÷ +3	0,1	40	0,1	40	---	--	--	--
0 ÷ 0,6	0,02	30	0,01	60	0,005	120	0,002	300
0 ÷ 6	0,2	30	0,1	60	0,05	120	0,02	300
0 ÷ 60	2	30	1	60	0,5	120	0,2	300
0 ÷ 600	20	30	10	60	5	120	2	300
-1 ÷ +5	0,2	30	0,1	60	---	120	--	--

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