developing solutions

FISCHER
MESS- UND REGELTECHNIK

Datasheet

DA55

Absolute pressure manometer

09005660 DB_EN_DA55_0 Rev. ST4-A 06/15

Masthead

Manufacturer: **FISCHER Mess- und Regeltechnik GmbH**

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1 Product and function description

1.1 Function diagram

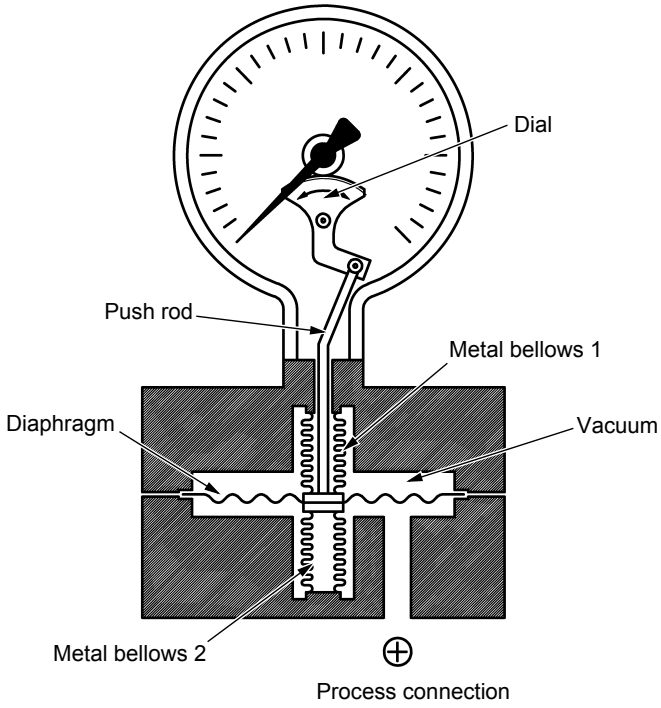

Fig. 1: DA55 function diagram

1.2 Design and mode of operation

The measuring system comprises two pressure chambers separated by a diaphragm. There is a vacuum in the first pressure chamber. A pressure difference in the second pressure chamber leads to an axial displacement of the diaphragm. A push rod transfers this displacement to the dial whereby the movement of the push rod is converted into a difference-proportional rotation of the indicator.

The push rod and pressure chamber are connected for fristion-free and wear-free sealing via metal bellows. The force of the spring of the 1st bellows is com-pensated by the symmetrically mounted 2nd bellows.

Product overview

The measuring system and all parts that have contact to the medium are produced in two versions:

- CrNi-steel 1.4404
- Hastelloy® C 276, 2.4819

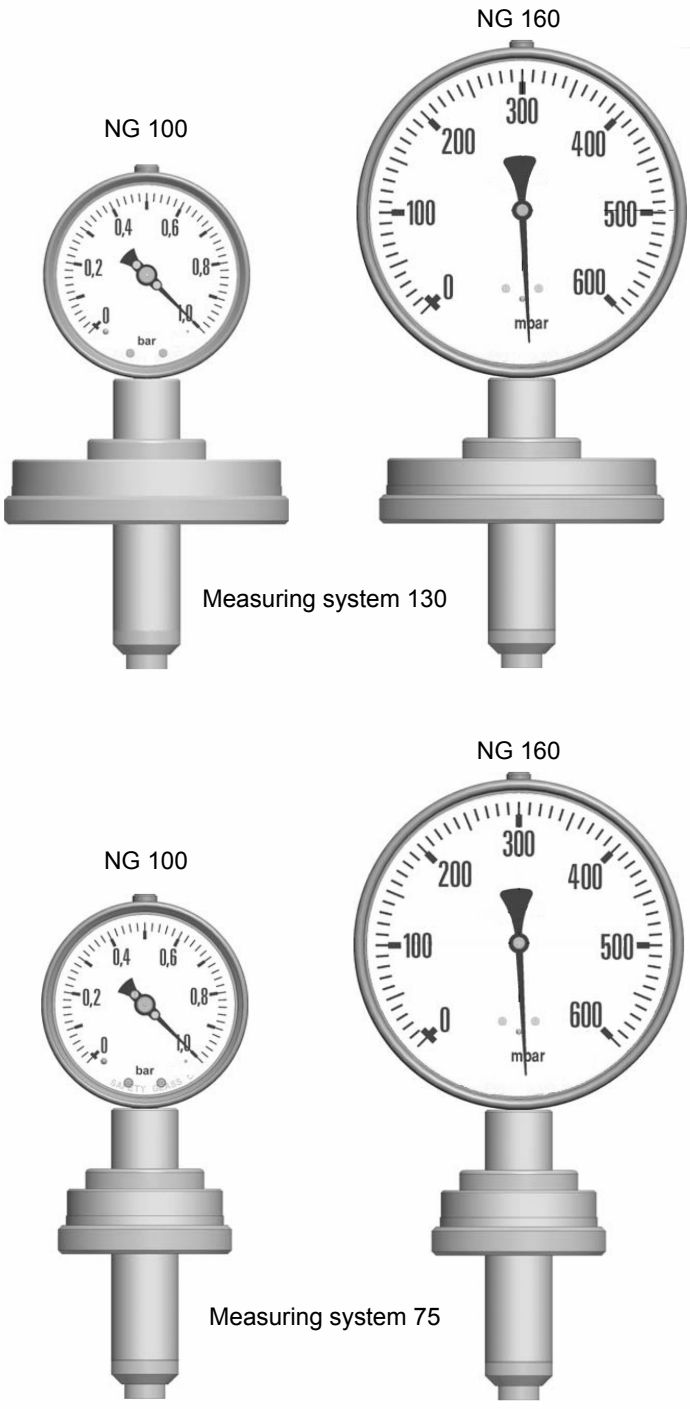

Fig. 2: Product overview

2 Technical data

2.1 General information

Please see order code.

2.2 Input variables

Measuring variable

Absolute pressure for gaseous and fluid media.

Measuring ranges

Measuring range	Overload protection	Characteristic curve deviation [%FS]	
		CrNi	Hastelloy C
0 … 25 mbar abs	atm.	± 2.5 %	± 3.0 %
0 … 40 mbar abs	atm.	± 2.5 %	± 3.0 %
0 … 60 mbar abs	atm.	± 2.5 %	± 3.0 %
0 … 100 mbar abs	atm.	± 2.5 %	± 2.5 %
0 … 160 mbar abs	atm.	± 1.6 %	± 2.5 %
0 … 250 mbar abs	atm.	± 1.6 %	± 2.5 %
0 … 400 mbar abs	atm.	± 1.6 %	± 1.6 %
0 … 0.6 bar abs	max. 15 bar	± 1.6 %	± 1.6 %
0 … 1.0 bar abs	max. 15 bar	± 1.6 %	± 1.6 %
0 … 1.6 bar abs	max. 15 bar	± 1.6 %	± 1.6 %
0 … 2.5 bar abs	max. 15 bar	± 1.6 %	± 1.6 %
0 … 4.0 bar abs	max. 15 bar	± 1.6 %	± 1.6 %
0 … 6.0 bar abs	max. 15 bar	± 1.6 %	± 1.6 %

Temperature influence

For a difference of +20 °C on the measuring system: typ. 0.3 % FS / 10 K

2.3 Application conditions

Admissible ambient temperature	-20 °C … +50 °C
Admissible media temperature	-10 °C … +80 °C
Admissible storage temperature	-20 °C … +70 °C
Protection class	IP 65 in compliance with EN 60529 / IEC 529

2.4 Construction design

Housing

Bayonet ring or safety housing in compliance with DIN EN 837-3

Size	NG100, NG160
Material	CrNi steel
Material no.	1.4404 (AISI 316L)

Inspection disk

Material	Laminated safety glass / Safety glass

Dial

Material	CrNi steel
Material no.	1.4404 (AISI 316L)

Dial face and indicator

Material	Aluminum, painted, printed

Parts in contact with the medium

	Measuring system [V]	Measuring system [H]
Pressure chamber		
Material	CrNi steel	Hastelloy® C 276
Material no.	1.4404 (AISI 316L)	2.4819
Diaphragm		
Material	CrNi steel	Hastelloy® C 276
Material no.	1.4404 (AISI 316L)	2.4819
Bellows		
Material	Hastelloy® C 276	Hastelloy® C 276
Material no.	2.4819	2.4819
Process connection		
Material	CrNi steel	Hastelloy® C 276
Material no.	1.4404 (AISI 316L)	2.4819

Inner thread	G ¼
Pipe union with inner thread	G ½, ¼-18 NPT, ½-14 NPT
Connecting port with outer thread	G ¼ B, G ½ B, ¼-18 NPT EXT, ½-14 NPT EXT, M20x1.5

Please also note the information in the order code.

Auxiliary equipment

Fluid filling

Only possible in measuring ranges greater than 0 … 100 mbar.

Glycerine
Silicone oil
Paraffin

Limit switch

Auxiliary electrical equipment are ordered separately according to data sheet KE## and the inductive position sensor is ordered according to data sheet KE09. The technical data, functional principles and electrical connection are explained there.

Reference indicator

Settable indicator for marking the limit value.

Drag indicator

The drag indicator is 'dragged' with the measured value indicator. This indicator marks previous achieved maximum values. The drag indicator can be reset via a pushbutton in the inspection disk. Only possible for measuring ranges greater than 0…60 mbar.

O_2 applications

All parts that have contact with the medium can be cleaned in compliance with the requirements of the Chemicals Professional Association. This device with this option is oil and grease free.

Assembly

The device is designed for vertical installation onto the pressure lines.

2.5 Dimensional drawing

Il dimensions in mm unless otherwise stated.

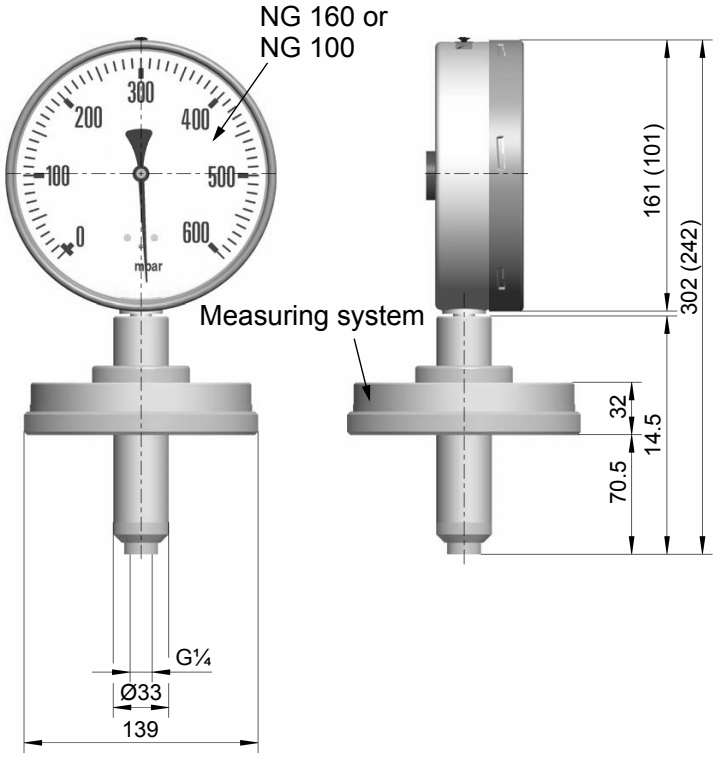

Fig. 3: Measuring system 130

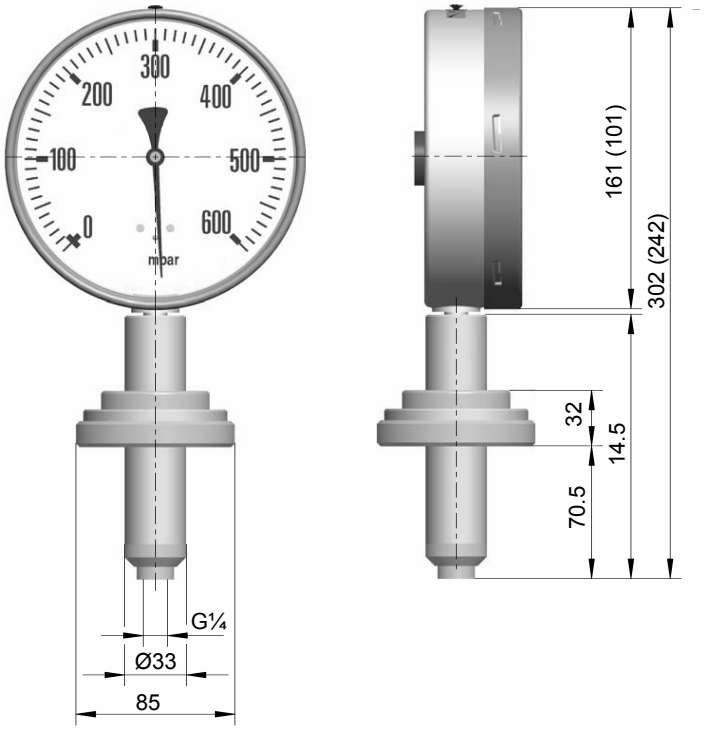

Fig. 4: Measuring system 75

3 Order Codes

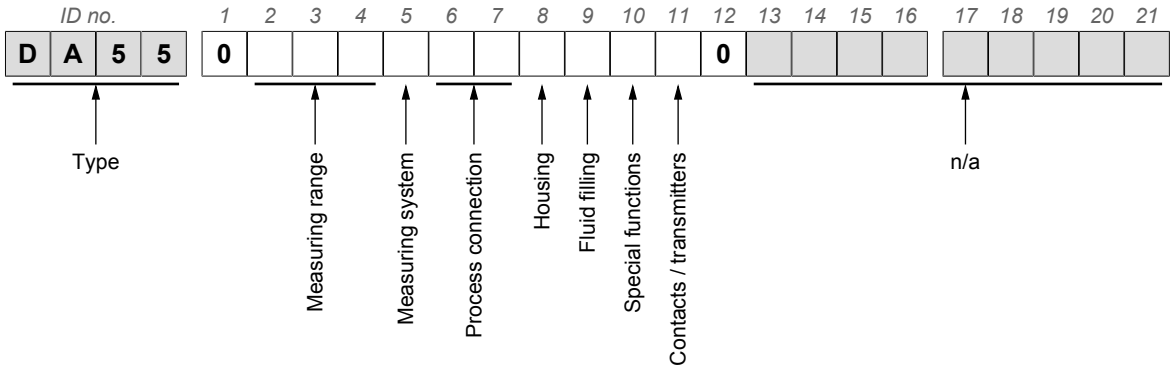

Fig. 5: Order Codes

Measuring range

[2,3,4]	← *ID no.*	
562	0 … 25 mbar abs	Measuring system 130
572	0 … 40 mbar abs	
582	0 … 60 mbar abs	
592	0 … 100 mbar abs	
602	0 … 160 mbar abs	
822	0 … 250 mbar abs	
831	0 … 400 mbar abs	Measuring system 75
011	0 … 0.6 bar abs	
021	0 … 1.0 bar abs	
031	0 … 1.6 bar abs	
041	0 … 2.5 bar abs	
051	0 … 4.0 bar abs	
061	0 … 6.0 bar abs	

Measuring system

[5]	← *ID no.*	**Material number**
V	CrNi steel	1.4404 (AISI 316L)
H	Hastelloy ® C 276	2-4819

Process connection

[6.7]	← *ID no.*	
01	Inner thread	G ¼
03	Pipe union with inner thread	G ½
04	Pipe union with inner thread	¼-18 NPT
05	Connecting port with inner thread	½-14 NPT
11	Connecting port with outer thread	G ¼ B
13	Connecting port with outer thread	G ½ B
14	Connecting port with outer thread	¼-18 NPT EXT
15	Connecting port with outer thread	½-14 NPT EXT
S2	Connecting port with outer thread	M20 x 1.5

Housing

[8]	← *ID no.*
L	Bayonet ring housing NG 100
M	Bayonet ring housing NG 160
0	Safety housing NG 100
P	Safety housing NG 160

All housings are made of CrNi steel 1.4404 (AISI 316L).

Fluid filling

[9]	← *ID no.*		**Filling level**
0	Without fluid filling		
1	Glycerine	No limit switch possible	90 %
4	Paraffin	Possible for inductive contacts	90 %
5	Silicone oil		90 %

Note: It is only possible to fill fluids in limit switches with contacts under certain conditions. This information is stated in the data sheet KE##. It is not possible to fill fluids for a capacitive position encoder.

Special functions

[10]	← *ID no.*	
0	Without special function	
1	Reference indicator, can be set	
2	Drag indicator, can be set	Measuring range ≥ 0… 60 mbar

Limit switch

[11]	← *ID no.*	
0	Without limit switch	
1	Limit switch with contacts in accordance with data sheet KE##	Measuring range ≥ 0…100 mbar
2	Capacitive position encoder in accordance with data sheet KE09	Measuring range ≥ 0…100 mbar