FISCHER MESS- UND REGELTECHNIK

Instruction Manual

DA08 || Differential Pressure Gauge

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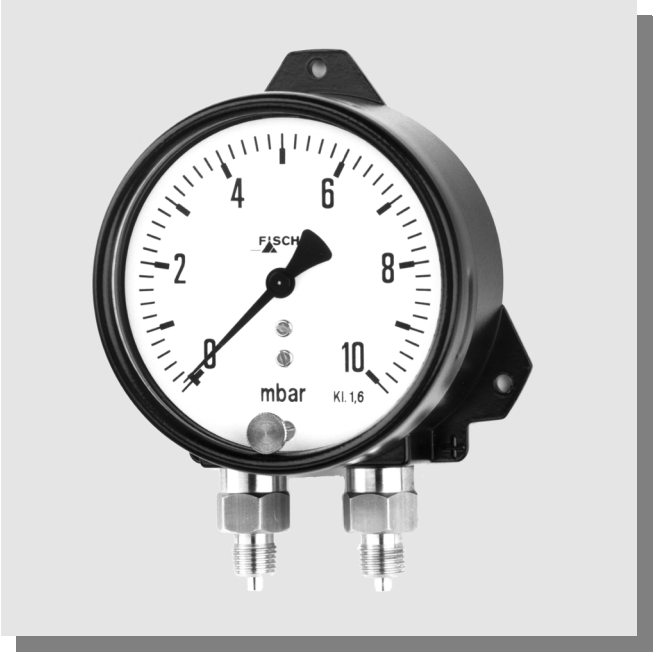


1. Safety Instructions

1.1. General

This manual contains detailed information about the product, and instructions for its installation, operation and maintenance. Operators and other technical personnel responsible for the equipment must read this thoroughly before attempting to install or operate this equipment. A copy of this manual must always be kept accessible at the place of work for reference by concerned personnel.

Chapter 1 (sections 1.2 through 1.7) contains general as well as specific safety instructions. Chapters 2 through 10, covering topics ranging from intended purpose of the equipment to its final disposal, also include important points relating to safety. Overlooking or ignoring any of these safety points can endanger humans and animals, and possibly cause damage to other equipment.

1.2. Personnel Qualification

Personnel responsible for installation, operation, maintenance and inspection of this product must have the qualifications, training and experience necessary to carry out such work on this type of equipment.

1.3. Risks of Disregarding Safety Instructions

Disregarding safety instructions, use of this product for purposes for which it is not intended, and/or operation of this product outside the limits specified for any of its technical parameters, can result in harm to persons, the environment, or the plant on which it is installed. Fischer Mess- und Regeltechnik GmbH will not be responsible for consequences in such circumstances.

1.4. Safety Instructions for Operators

Safety instructions for the proper use of this product must be followed. This information must be available at all times to by personnel responsible for installation, operation, maintenance and inspection of this product. Adequate steps must be taken to prevent the occurrence of hazardous conditions that can be caused by electric energy and the convertible energy of the process media. Such conditions can, for example, be the result of improper electrical or process connections. Detailed information is available in relevant published norms (DIN EN, UVW in Germany; and equivalents in other countries), industrial standards such as DVWG, Ex-, GL-, VDE guidelines, as well as regulations of the local authorities (e.g., EVUs in Germany).

1.5. Modifications Forbidden

Modification or other technical alteration of the product is not permissible. This also applies to the use of unauthorized spare parts for repair / maintenance of the product. Any modifications to this product, if and as necessary, should be done only by Fischer Mess- und Regeltechnik GmbH.

1.6. Operational Restrictions

The operational reliability of the product is guaranteed only when used for intended purposes. The product must be selected and configured for use specifically with defined process media. The limiting values of operating parameters, as given in the product specification sheet, must never be crossed.

1.7. Safety Considerations during Installation and Maintenance

The safety instructions given in this manual, existing national regulations relating to accident prevention, and the internal safety rules and procedures of the user organization regarding safety during installation, operation and servicing must all be followed meticulously.

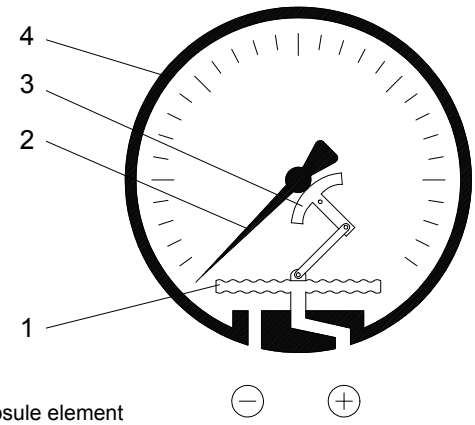
It is the responsibility of the users to ensure that only suitably qualified and experienced technical personnel are used for installation, operation and servicing of this equipment.

2. Application

These instruments are mainly used in industrial and climatic engineering to measure low and lowest differential pressures. They are suitable for measuring non-aggressive and clean gaseous media.

3. Product Description and Functions

3.1. Functional Scheme



1. Capsule element
2. Indicator
3. Motion work
4. Pressure-tight housing

3.2. Construction and Operation

A capsule element measuring system is installed into a pressure-tight housing. The higher pressure acts on the inside of the capsule element, the lower pressure is lead into the pressure-tight housing.

The differential pressure arising between the internal and external side of the measuring system leads to a deformation of the capsule element.

This movement is turned into a scaled measured value indication via the motion work.

4. Installation

The instrument is intended for wall or panel mounting (see ordering code on type plate). For details see 12. Dimensions and 13. Ordering Code.

The instrument is intended and factory adjusted for vertical mounting, pressure ports downward. When mounted in other orientation (max. ± 10°) the pointers' zero position needs to be adjusted (see 5.2).

4.1. Process Connections

- Only qualified technicians authorized for this type of work should undertake installation.
- Ensure that process equipment and pressure lines are at atmospheric pressure before making pressure connections.
- The instrument should be provided with suitable protection against pressure surges (e.g., snubber or pulsation damper).
- Ensure that the mechanical configuration and materials of construction of the instrument are compatible with the process media.
- Ensure that process pressure is always less than the specified safe pressure rating.

5. Commissioning

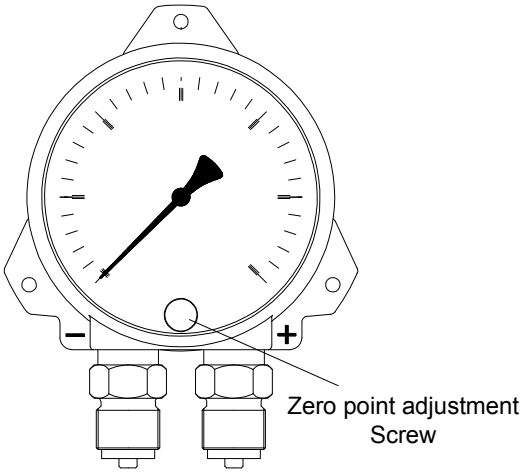
- All connections to the instrument must be correctly selected to meet operational requirements, and installed in a way that does not cause physical stress to the instrument.
- Pressure lines must have a downward gradient throughout from the pressure instrument to the process vessel / pipe. This is to prevent formation of air / gas pockets (for liquid applications) and liquid plugs (for air / gas applications). If this continuous downward gradient cannot be provided for any reason, then suitable water and / or air separation devices must be inserted into the pressure lines.
- Pressure lines must be kept as short as possible and must not have short bends to avoid measurement errors induced by pressure line delays.
- Carefully check the tightness of all pressure connections before start-up.

5.1. Pressure Connections

The instruments pressure ports are marked by "+" and "-" symbols. For differential pressure applications the "+" port must be connected to the higher pressure and the "-" port should be connected to the lower pressure.

Differential pressure mesurement:
+ higher pressure / - lower pressure

5.2. Zero Point Adjustment



The differential pressure gauge is factory adjusted therefore in normal case adjustment during installation is not necessary. If necessary the instrument can be adjusted any time.

Adjustment note:

- Equalize pressure in both chambers (either pressureless or plant-specific pressure).
- Use zero point adjustment screw to set the pointer to zero.

6. Maintenance

The instrument is inherently maintenance-free.

However, to ensure reliable operation and maximize the operating life of the instrument, it is recommended that the instrument, its external electrical and process connections, and external connected devices be regularly inspected, e.g.:

- Check the display.
- Check all pressure connections for leak-tightness.

Inspection and test schedules depend on operating and site conditions. The operating manuals of other equipment to which the instrument is connected must be read thoroughly to ensure that all of them work correctly when connected together.

7. Transport

The product must be protected against shock and vibration during transport. It must therefore be properly packed, preferably in the original factory packaging, whenever it is to be transported.

8. Service

Any defective devices or devices with missing parts should be retourned to Fischer Mess- und Regeltechnik GmbH. For quick service contact our service department.

Remaining medium in and on dismantled measuring instruments may cause danger to persons, environment and equipment. Take reasonable precautions! Clean the instrument thoroughly if necessary.

9. Accessories

n.A.

10. Disposal

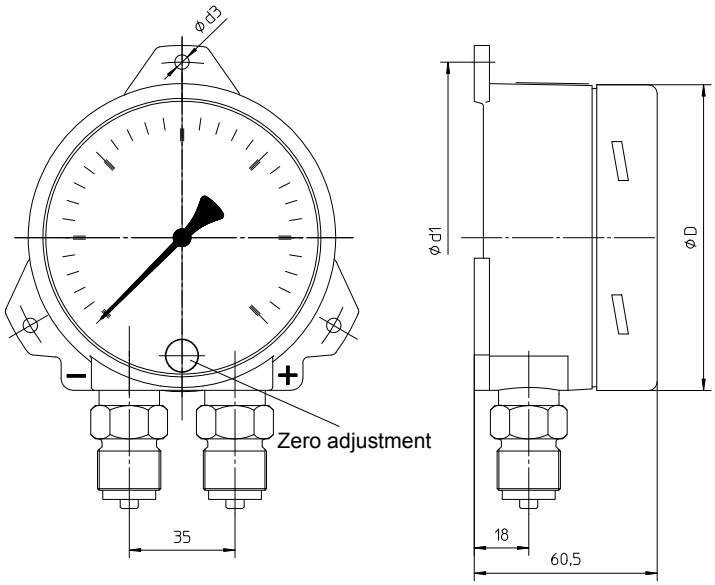
Protect your environment!
Use the product in accordance with relevant regulations. Please be aware of environmental consequences of disposal at the end of the product's life, and take care accordingly.

11. Specifications

	General
Measuring range	0...4 mbar up to 0...160 mbar (see Ordering Code)
Max. overpressure	For ranges ≤ 16mbar 10x FS; For ranges > 16mbar max. 200 mbar
Max. stat. operating pressure	200 mbar
Accuracy	Class 1.6 acc. to DIN 16005
Perm. ambient temperature	-20...+70°C
Max. media temperature	Max. 50°C
Indicator	Circular dial type ø 100 or 160 mm, 270°-scale
Pressure connections	At the bottom or rear of the housing (depends on type, see Ordering Code)
Zero point adjustment	Located in the dial
	Materials
Housing	Aluminium varnished black
Capsule element	CuBe2
Front glass	Plexiglass
Motion work	Brass

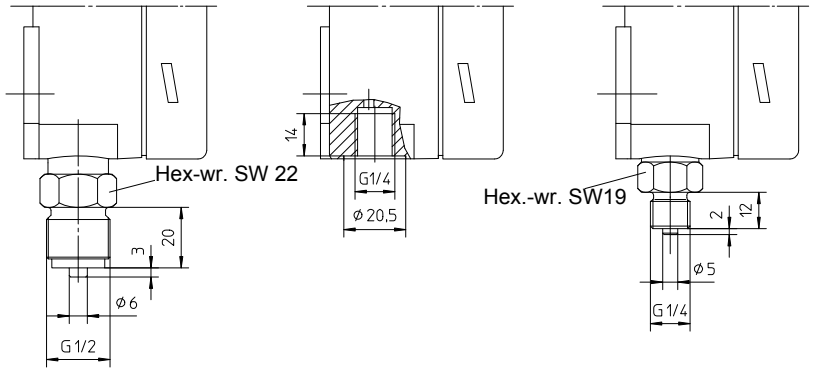
12. Dimensions (all units in mm unless stated otherwise)

Wall Mounting

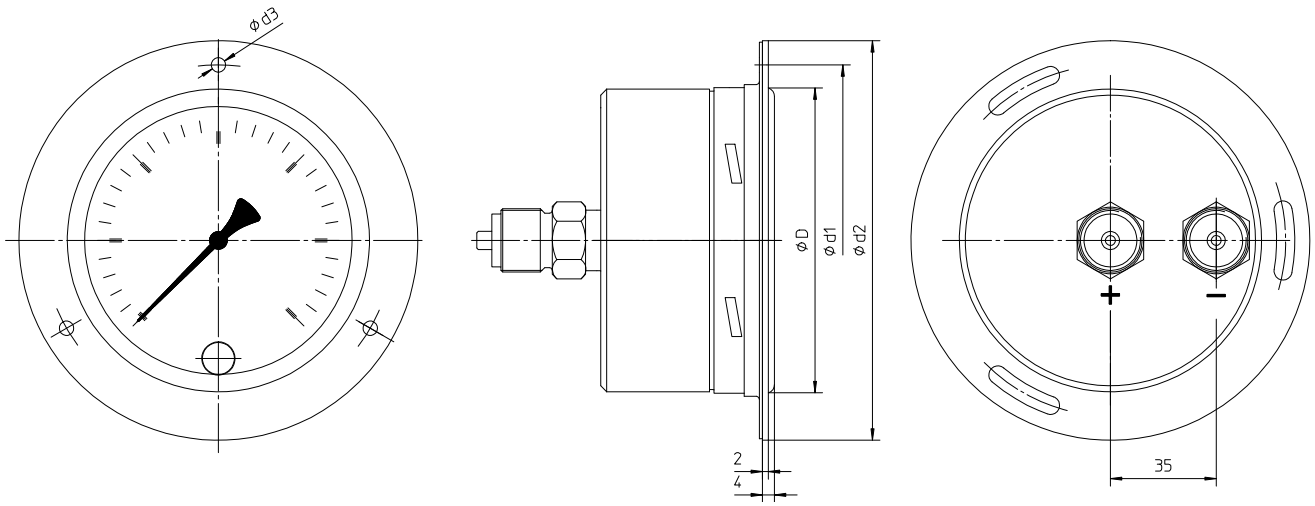


NG	øD	ød1	ød2	ød3
100	101	116	132	4,8
160	161	178	196	5,8

Variants of Process Connection



Panel Mounting (rear connection)



13. Ordering Code

Differential Pressure Gauge	DA08			A	0							

Measuring Range

0 . . . 4 mbar (only for size 160)	> 5	2
0 . . . 6 mbar	> 5	3
0 . . . 10 mbar	> 5	4
0 . . . 16 mbar	> 5	5
0 . . . 25 mbar	> 5	6
0 . . . 40 mbar	> 5	7
0 . . . 60 mbar	> 5	8
0 . . . 100 mbar	> 5	9
0 . . . 160 mbar	> 6	0

Nominal Pressure of Measuring System

200 mbar	> A	0

Pressure Connection

Female thread G¼	> 0	1
Male connection shank G¼	> 0	6
Male connection shank G½	> 0	8
Cutting ring connection of brass for 6 mm tube	> 2	8
Cutting ring connection of brass for 8 mm tube	> 2	9
Cutting ring connection of brass for 10 mm tube	> 3	0
Screw connection of (material?) for flexible tube 6/4	> 4	7
Screw connection of (material?) for flexible tube 8/6	> 4	8

Indication

Bajonet ring case ø100, aluminium	>	U
Bajonet ring case ø160, aluminium	>	V

Mounting

Wall mounting (bottom connection)	>	B
Front ring for panel mounting (bottom connection)	>	L
Front ring for panel mounting (rear connection)	>	G

14. CE-Certificate

FISCHER
MESS- UND REGELTECHNIK

Zertifiziert nach DIN EN ISO 9001-2000
Zertifizierungs-Nr.: **08 100 1999**

Declaration of conformity

acc. to EC-Machine guidelines 98/37/EC, Appendix II B

We declare herewith, that the delivered components

Designation: Differential Pressure Gauge

Art.-no.: Line DA08 ...

are determined for installation in a machine, and the putting into service of which is prohibited until it has been confirmed, that the machine in which these components will be installed, corresponds to the regulations of the EC guideline 98/37/EC.

Applicated harmonized standards
especially: --------

Applicated harmonized standards and technical specifications
especially: DIN EN 837 (analogously application)

Bad Salzuflen, 15.04.05

(authorized signature)

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