Mounting arrangements
Instrument hook-ups for the process industry

In many applications within the process industries, measuring instruments are exposed to critical operating conditions. In order to be able to withstand, for example, strong pressure surges or extreme temperatures, WIKA attaches valves, protective devices and mounting accessories to the pressure measuring instrument, depending on the application. This ensures a stable measurement and optimises maintenance and servicing activities.

Example of a mounting arrangement

Added value for mounting arrangements

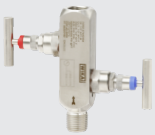
The combination of pressure measuring instruments with matched components enables the protection and the extension of the function of the entire measuring unit. WIKA offers the qualified assembly of all elements with the pressure measuring instrument into a mounting arrangement, known as an “instrument hook-up”.
The diverse portfolio of the attachable components results from the variation in the applications and customer requirements.

Valves

Models IV1, IV2 – Shut-off valve

Needle valve and multiport needle valve
Block-and-bleed valve

Data sheets AC 09.19 and AC 09.21



Model IVM – Monoflange

Compact block-and-bleed arrangement with flange connection

Data sheet AC 09.17

Models IV3, IV5 – Valve manifold

Shut-off, pressure equalising, purge and vent valves for differential pressure measuring instruments

Data sheet AC 09.23

Model 910.10 – Stopcock

Shut-off device for pressure measuring instruments

Data sheet AC 09.01

Model 910.11 – Shut-off valve

Shut-off and throttle valve

Data sheet AC 09.02

Protective devices and adapters

Model 910.12 – Snubber

Protection from pressure surges and pulsations in the medium

Data sheet AC 09.03

Model 910.13 – Overpressure protector

Adjustable protection against overpressure

Data sheet AC 09.04

Model 910.22 – In-line filter

Filtration of solids from gaseous and liquid media

Data sheet AC 09.10

Model 910.14 – Connection adapter

Adapter pieces for the mounting of valves and protective devices

Data sheet AC 09.05

Model 910.15 – Syphon

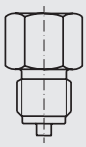
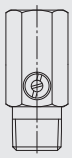
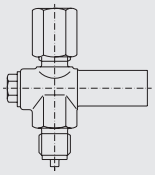
Protection from pulsations and overheating through the medium

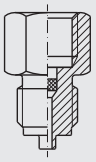
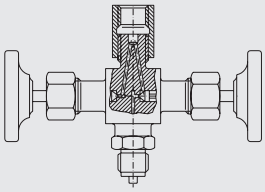
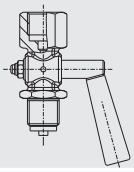
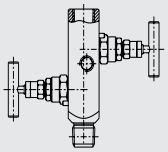
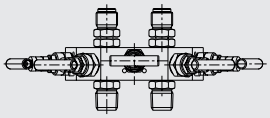
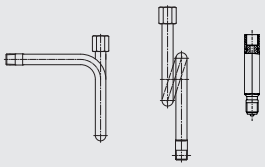
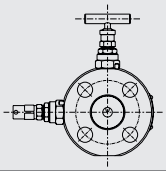
Data sheet AC 09.06

Mounting instructions

WIKA mounts the desired components to process industry pressure measuring instruments. For the mounting, WIKA standards with respect to sealing and leak testing apply. The flow direction on valves and valve manifolds is marked with an arrow. This marking is particularly important for the orientation of differential pressure instruments on valve manifolds.
If there are no alternative customer specifications, the instrument hook-up is assembled starting from the pressure measuring instrument in the following sequence.

Attachment sequence

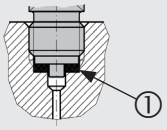
Attachment sequence starting from the pressure measuring instrument		Standard orientation and options
Model 910.14 **Connection adapter**		For adapting threads or to enable positioning of the pressure measuring instrument through a 360° range.
Model 910.12 **Snubber**		Adjustment screw will be aligned to the front, in the direction of the dial.
Model 910.13 **Overpressure protector**		Adjustment screw (longer side) will be aligned to the right, as shown in the drawing. The set value, as standard, depends on the pressure element: Bourdon tube: 1.1 x full scale value Diaphragm or capsule element: Between full scale value and max. permissible overpressure

Attachment sequence starting from the pressure measuring instrument		Standard orientation and options
Model 910.22 **In-line filter**		To filter out solid substances from gaseous and liquid media.
Model 910.11 **Shut-off valve**		■ Shut-off valve without test connection per DIN 16270 (with vent screw) ■ Shut-off valve with test connection per DIN 16271 (with vent screw) ■ Shut-off valve with separate shut-off test connection per DIN 16272
Model 910.10 **Stopcock**		■ Shut-off device ■ Shut-off device with test connection
Models IV1, IV2 **Shut-off valve (square or flat version)**		Vent connections (if available) point to the rear. All T-handles, for safety reasons, will be supplied in fully closed position.
Models IV3, IV5 **Valve manifold (only for differential pressure measuring instruments)**		Orientation is determined by the threaded connections of both process connections on the differential pressure measuring instrument and the arrow marking on the valve manifold.
Model 910.15 **Syphon**		■ U-form: process connection points to the rear ■ Trumpet form: upper half of the pipe loop runs forward ■ Compact form: with fixed connection thread or LH-RH adjusting nut
Connecting flange or model IVM monoflange		Flanges (if available) are the first accessory component on the process side. A flange-mounting of the complete mounting arrangement to the application is thus enabled.

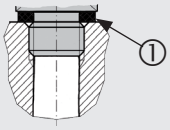
Mounting instructions

The assembly of all components is made in compliance with the specified torques and positions. Each mounting point is sealed expertly. Depending on the connection threads and the temperature and pressure ranges, PTFE tape, stainless steel sealings and other sealing rings are used (for details, see WIKA model 910.17).
The forces required for mounting and dismounting of instrument hook-ups should be applied as close to the process side as possible. For the mounting and dismounting only the designated spanner flats are to be used to prevent mounting forces from damaging the instrument or valve body.

Parallel connection threads
The sealing face ① is sealed with flat gasket, lens-type sealing ring or WIKA profile sealing, usually metallic. High-temperature resistant ceramic paste is normally used for thread lubrication. The sealing point is located before or after the thread.

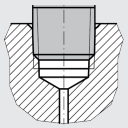


e.g. G ½ per EN 837



e.g. G ¼ per DIN 3852-E

Tapered connection threads
The thread is wrapped with sealing material (e.g. PTFE tape).
The sealing point is located in the thread.


e.g. ½ NPT

For instrument hook-ups of oxygen applications, only tested sealants and lubricants can be used. For hazardous areas, either conductive sealants and lubricants are used or the mounting arrangement offers additional possibilities for equipotential bonding (e.g. weld spots or fuse plates).

Leak test

In line with EN 12266-1:2003, each sealing point will be 100 % tested with leak detection spray under standard test pressure. At leaking points, after the application of the leak detection spray, bubbles become visible. The bubble detection method can detect leakage rates of approx. $1 \cdot 10^{-3}$ mbar l/s.
For critical applications, further tests are carried out, depending on the complexity of the instrument hook-up.
Besides the bubble detection method with leak detection spray, WIKA also uses the pressure drop method or determination of leakage rates with helium. In accordance with the EN 1779 (test gas method B4 and B6) leak testing standard, leakage rates of better than $1 \cdot 10^{-6}$ mbar · l/s can be detectable with helium.

Further information

For the selection, installation and operation of pressure gauges, see technical information IN 00.05.

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