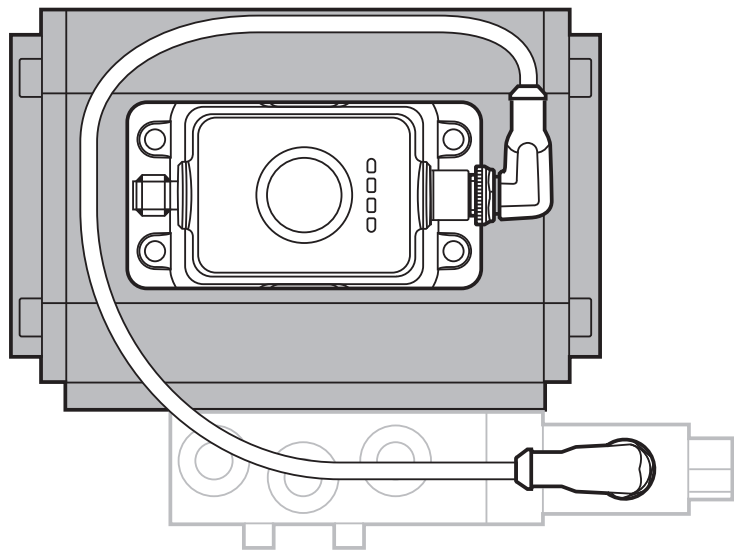


Operating instructions
Added value package MVQ201
with control valve

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1 Preliminary note

Technical data, approvals, accessories and further information at www.ifm.com.



Please note the respective operating instructions of the individual components of this set.

1.1 Symbols used

- ▶ Instruction
- > Reaction, result
- [...] Designation of keys, buttons or indications
- Cross-reference
-  Important note
Non-compliance may result in malfunction or interference.
-  Information
Supplementary note

2 Safety instructions

- The device described is a subcomponent for integration into a system.
 - The system architect is responsible for the safety of the system.
 - The system architect undertakes to perform a risk assessment and to create documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the architect of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ Functions and features).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.

- Installation, electrical connection, set-up, operation and maintenance of the product must be carried out by qualified personnel authorised by the machine operator.
- The device transmits data to one or several actuators. They start and execute processes and actions. Incorrect operation may cause damage to machines, material or persons.
- Protect units and cables against damage.

3 Functions and features

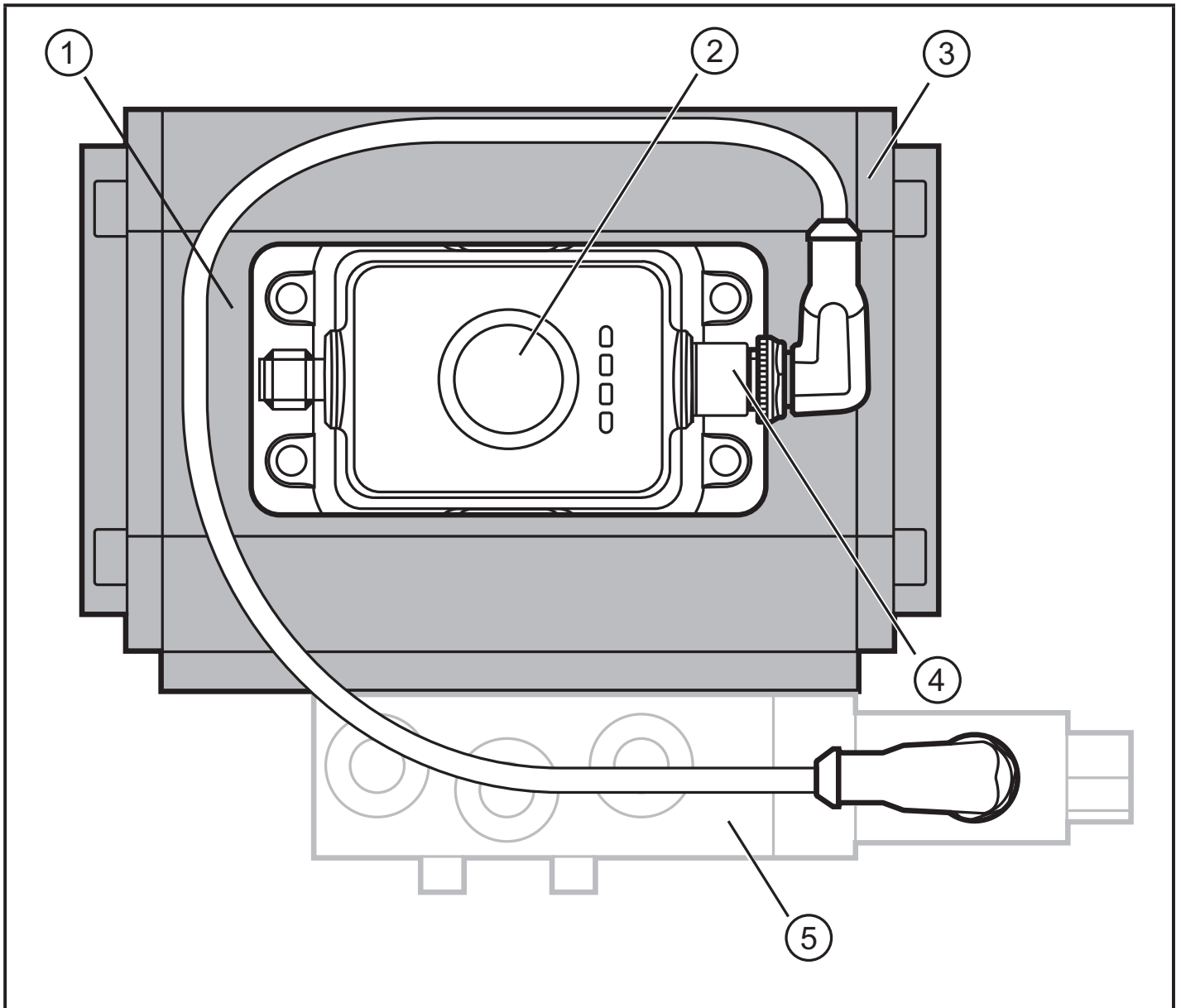
The set is designed for the use on pneumatic quarter-turn valves. It controls the automated actuator and signals its position.

Operation of the supplied sensor (MVQ201) is only permitted with an IO-Link master with A port.

3.1 Product overview

Order number	Individual components
ZZ0628	Valve sensor MVQ201 Cable EVC030 Hafner control valve, can be switched from 3/2-way valve to 5/2 valve
ZZ0629	Valve sensor MVQ201 Cable EVC030 Mounting plate E12569 Hafner control valve, can be switched from 3/2-way valve to 5/2 valve
ZZ0630	Valve sensor MVQ201 Cable EVC030 Mounting plate E12573 Hafner control valve, can be switched from 3/2-way valve to 5/2 valve

3.1.1 Individual components



- 1: Standard actuator
- 2: Valve sensor MVQ201
- 3: Connection cable
- 4: M12 connection valve control
- 5: Hafner control valve

4 Installation



- ▶ Disconnect power before installation.
- ▶ Ensure that the machine stands still.
- ▶ Do not start the drive during installation.
- ▶ Keep potential interfering sources (magnets, heat sources) at a distance.

4.1 Installation of the control valve

Adhere to the safety regulations and provisions for the installation of pneumatic systems. Installation work is only allowed following the interruption of the compressed air supply. Adhere to the following order of installation (deinstallation in reversed order):

1. Mechanical fixing
 2. Electrical and pneumatic connection
 3. Power on
 4. Switch on the compressed air supply
- ▶ During installation, check whether the seals pre-mounted in the control valve are present and correctly placed on the connections 2 and 4.
 - ▶ When silencers are used make sure that they are correctly installed.

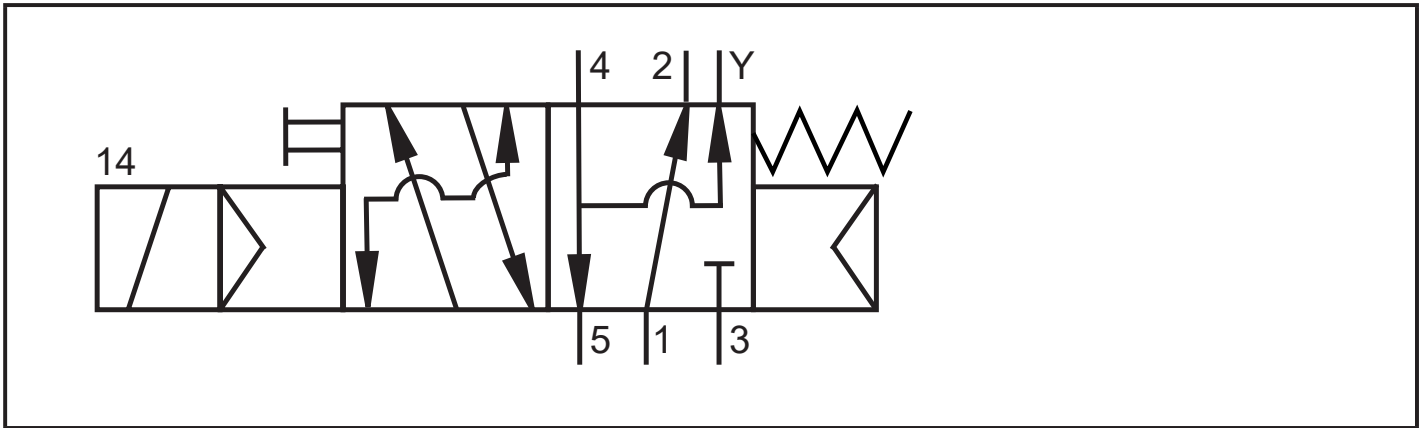


Hazard by noise

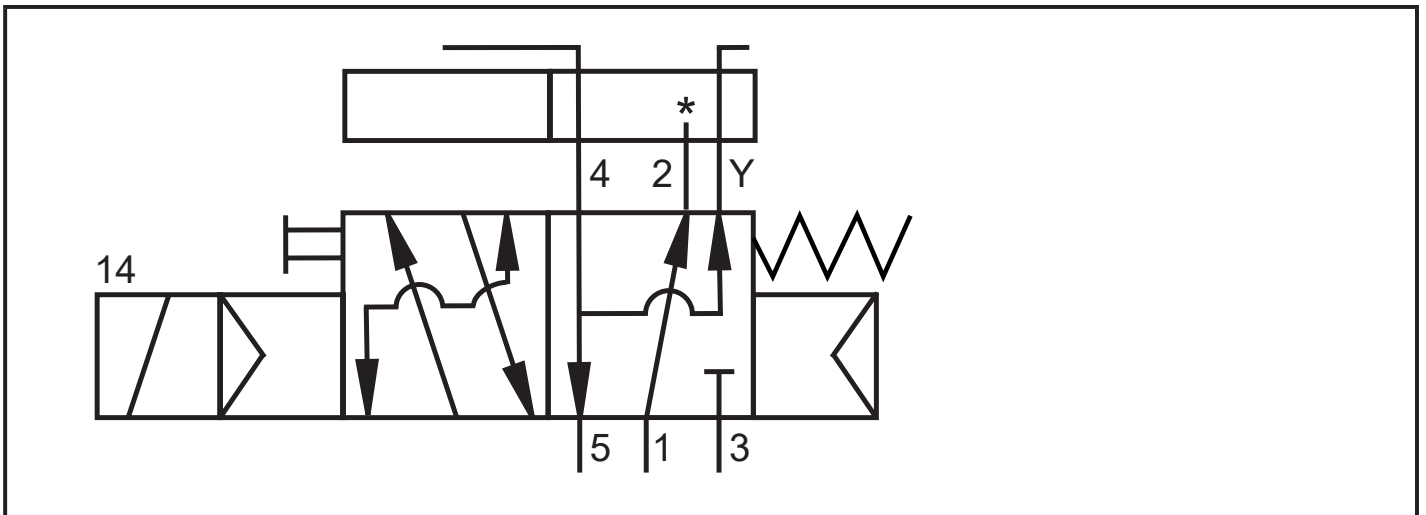
Compressed air connection only after suitable installation of all connection tubes and only with installed silencers or common exhaust allowed. Operation without connection tubes and with open exhaust connections can lead to a harmful noise level.

5 Pneumatics

5.1 Circuit diagram



1: 5/2-way valve use without valve adapter plate



2: 5/2-way valve use with valve adapter plate



The valve adapter plate transforms the 5/2-way valve into a 3/2-way valve with spring chamber air ventilation.



Number of mechanical switching operations: 5,000,000

5.2 General notes about compressed air

For all components that are operated with compressed air the purity of the compressed air determines the lifetime and ensures safe operation. In the supplied control valve pneumatic pilot valves are used which are designed for a pressure range from 2.5 ... 10 bar. Operation outside the indicated operating pressure range or use of incorrectly processed compressed air can cause permanent leaks and irreparable damage to the pneumatic components and

may lead to malfunctioning. Pressure peaks above the permissible operating pressure are to be avoided by means of approved technical measures. Not only the pressure but also the purity of the compressed air determines the lifetime of the control valves and ensures safe operation. For a long life certain requirements must be met. Compressed air in perfect condition and to the greatest possible extent without any chemical contamination must be used at all times. The basis for this is ISO 8573 part 1: 2001.

5.3 Specification of the compressed air purity

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According to ISO 8573-1:2001 the air purity is divided into three classes:

- The purity class of the solid particle content
- The purity class for the humidity content
- The purity class for the total oil content

The supplied control valve is appropriate for lubricated or non-lubricated compressed air of the purity classes 7-4-4.

5.3.1 Application note

The indicated specification is a minimum requirement, i.e. the products may have a longer life.

This is achieved by means of a lower particle concentration and humidity and if only very small amount or no oil at all is added.

The control valve has an initial lubrication, therefore lubricated compressed air is not required. If lubricated air is used the initial lubrication is removed and the control valve must always be used with lubricated air.

Some applications, e.g. packaging machines, food industry etc. have far higher requirements as regards the processing of compressed air. Note the existing regulations.

We recommend to filter the compressed air as close as possible in front of the control valve. Only in this way contamination, e.g. by rust from steel pipes, can be efficiently prevented.

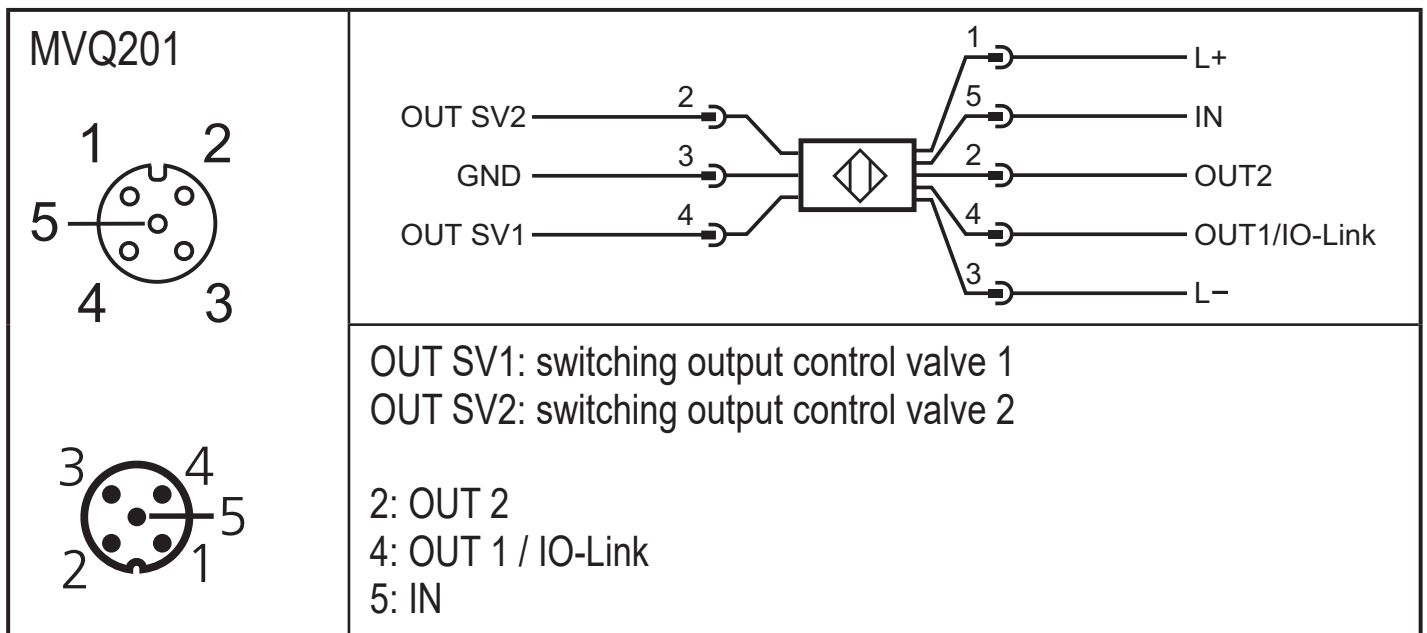
Mixing of synthetic oils with mineral oils can lead to failure of moving parts due to adherence or clotting.

5.3.2 Approved lubricants

If lubricated compressed air is used, only oil of class 1 (without additives), HLP oils to DIN 51524 part 2 may be used. The oil must not impact the materials used.

6 Electrical connection MVQ201

► Disconnect the system from power and connect the unit.



The output to the control valve can be switched via IO-Link or a digital input.



► Only connect the device to a master port class A.

7 Troubleshooting

Symptom	Cause	Solution
Control valve does not switch	Defective solenoid on the control valve due to overvoltage	Replace the solenoid and remove the overvoltage
	Undervoltage on the solenoid	Check the voltage supply
The drive shows inverted behaviour (opens upon closing command and vice versa)	Connections 2 and 4 of the control valve are reversed	Mount the control valve rotated by 180°
No movement of the control valve despite correct electrical connection	Compressed air supply not ensured	Verify and establish the compressed air supply

Symptom	Cause	Solution
No movement of the control valve despite correct electrical connection when the valve adapter plate is used	Faulty installation of the valve adapter plate	Mount the valve adapter plate in accordance with the assembly drawing

8 Maintenance / repair

The unit must not be modified nor can it be repaired. In case of a fault please contact the manufacturer.

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9 Disposal

Dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations when it is no longer used.