



1 Installation

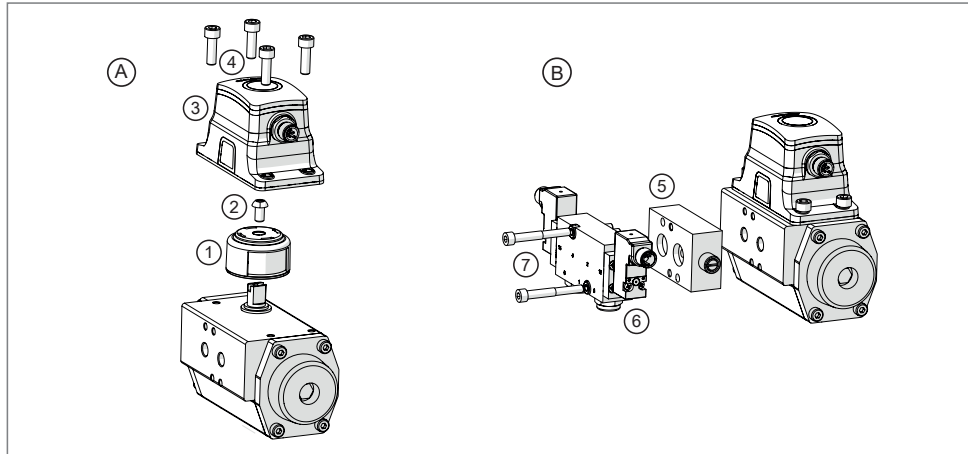


Fig. 1: Installation of the mechanical components (observe the labelled sequence)

A: Installation MVQ301

- 1: Puck
- 2: Hexagon socket screw 1 x M6 x 12
- 3: MVQ301
- 4: Hexagon socket screw 4 x M5 x 16

B: Installation of solenoid valve and throttle plate

- 5: Throttle plate
- 6: Solenoid valve
- 7: Cylinder screw 2 x M5 x 45

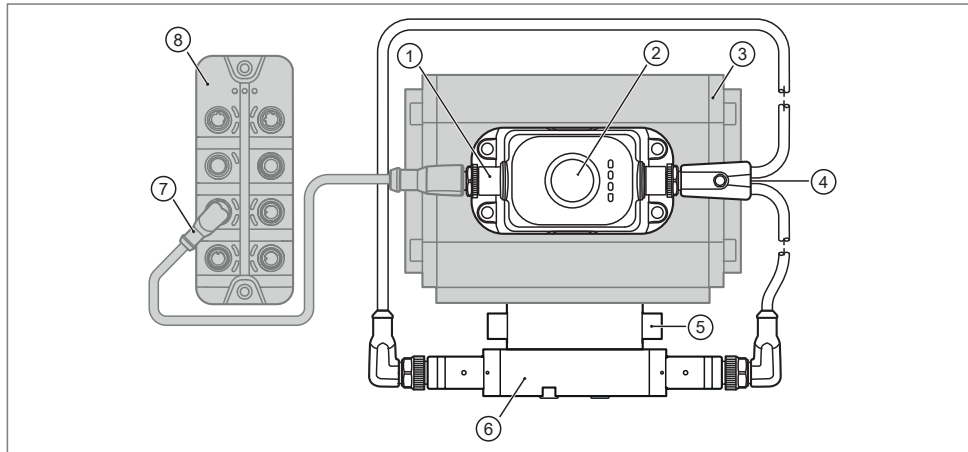


Fig. 2: Wiring of the components (greyed out components are not included)

- 1: M12 connector
- 2: MVQ301
- 3: Drive / actuator
- 4: Y connection cable

- 5: Throttle plate
- 6: Solenoid valve
- 7: 5-wire connection cable
- 8: IO-Link master port class B

2 Set-up / advanced teach

! Before using the device and after dismantling or replacing the valve, an advanced teach must be carried out.

The advanced teach of the device is carried out via a suitable parameter setting software (e.g. moneo|configure). For this, the following steps must be implemented (terms in square brackets represent IO-Link parameters):

- Check and, if necessary, adjust the [Valve rotation] and [Deadband].
- Select the required [Setup mode].
 - The [Automatic valve setup] mode determines the valve control.
 - The [Automatic valve setup and control tuning] mode additionally optimises the positioning. The duration of the advanced teach may be longer in this mode
- Save the settings on the device.
- Send the [Setup Start] system command to the device.
- ▷ The device starts the automatic set-up.
- ▷ During the set-up, the valve opens and closes automatically. The RGB LED of the device flashes at 1 Hz and the status LEDs show a running light.

If the set-up was successful:

- RGB LED flashes green 5 times.
- [Inbetriebnahme Ergebnis] indicates the result [Erfolgreich].

If the set-up was not successful:

- RGB LED flashes red.
- [Setup result] shows an error code as a result, → see table 1.

! Troubleshooting information → see table 1.
It can also be read directly from the device using the BLOB functions described in the operating instructions.

After eliminating the cause of the error, restart set-up using the system command [Setup Start].



3 Troubleshooting

! For complete troubleshooting and further information, → see operating instructions for the device.

3.1 Errors during advanced teach

If the advanced teach is not or only partially carried out, the error codes from the [Setup result] parameter can be used to find a solution:

Error code	Cause	Recommended action
Setup issue 01	No valid signal.	► Check puck or possible signal interference (EMC).
Setup issue 02	Starting positions fluctuating.	► Check that the device and puck are correctly installed and that the compressed air supply is correct.
Setup issue 03	Movement not possible.	► Check for possible blockages, compressed air supply and power supply (IO-Link B port).
Setup issue 04	Movement too slow.	► Check the speed of the actuator and the compressed air supply.
Setup issue 05	No control to hold the position recognised.	► Check the compressed air supply (possible leakage), wiring and the type of solenoid valve.
Setup issue 06	Deviating closed positions	► Check air pressure and increase if necessary.
Setup issue 07	Deviating open positions	► Check air pressure and increase if necessary.
Setup issue 08	Operating range too small / too large.	► Check the technical data for the minimum and maximum operating range limits.
Setup issue 09	Strongly varying valve behaviour / optimisation not possible.	► Reduce the speed of the actuator or increase the deadband.
Setup issue 10	Parameter locked.	► Complete the block parameter setting before set-up.
Setup issue 11	Optimisation of the control not possible / positions could not be set in the specified time.	► Reduce the speed of the actuator or increase the deadband.

Tab. 1: Error codes from [Setup result]

3.2 Other sources of fault

Improper use of the device, accessories and power supply can lead to further faults:

Error	Cause	Recommended action
The green LED is off.	Missing voltage supply.	► Check voltage supply and wiring.
The 3 white LEDs flash synchronously at 1 Hz.	The device has no advanced teach and therefore no operating range in which a target value can be specified.	► Perform an advanced teach.
The valve does not move when an advanced teach is started.	No compressed air connected or air pressure too low.	► Increase air pressure. ► Check the installation of the throttle plate. ► Do not close the throttles completely. ► Reset the manual operation of the solenoid valve. ► Check the wiring of the solenoid valves. ► Remove the bolt from the partial stroke test.
	No B-port voltage available.	► Connect the B port voltage correctly to the device. Control via LED on the coil of the solenoid valve. Remark: with some IO-Link masters, the B port voltage must be switched on separately. ► Ensure that a 5-pole connection cable is used.
The valve does not move after successful set-up.	The device is in the safe state. Possible causes: • IO-Link communication interrupted. • Target value not valid. • Position cannot be maintained (leakage). Positioning not possible (blockage, time-out, overshoot).	► Determine and eliminate the cause of the safe state. Write the new or changed target value to the device or execute the system command [Restart control].
The device reports an error after advanced teach.	The valve does not move.	See the error → The valve does not move when an advanced teach is started.
	The valve moves too quickly.	Set the throttles.
	The determined operating range is < 50° or > 300°.	The application is not suitable.
	The system command [Setup Start] does not start set-up. No [Inbetriebnahmemodus] was selected.	Select the required [Setup mode].

Tab. 2: Other sources of fault