



## **Specific operating instructions for all „green line“ valves**

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# Specific operating instructions for all "green line" valves

## Only valid for the functional mode: "*attenuated - open / closed*"

### 1. Intended use and properties:

The "green line" valves in the functional mode "**attenuated open / closed**" can only be used as switching valves and display the following characteristics:

- The normal position of the valve is closed (NC)
- The customer can select one of four different delay times.
- The current reduction begins automatically after the end of the switch-on sequence (energy efficiency)
- There is an optical LED end position indicator on the cover of the terminal box
- An electrical end position indicator (on / off) can be tapped at the cable terminal on the terminal box.

### 2. General

- The green line series valves are only valid in combination with our general operating instructions and the corresponding data sheet.
- To ensure fault-free operation, these specific operating instructions are to be read through completely. müller co-ax is not liable for damage caused by incorrect commissioning.
- Before beginning use of the valve, the customer must make sure that the operational parameters are correct. For example, the nominal pipe size, pressure stage, the maximal allowable flow rate and the operating temperature of the media.

### 3. Residual matter:

- Before installing the valve, clean the pipeline completely. Large pieces of residual matter may cause the valve to fail.

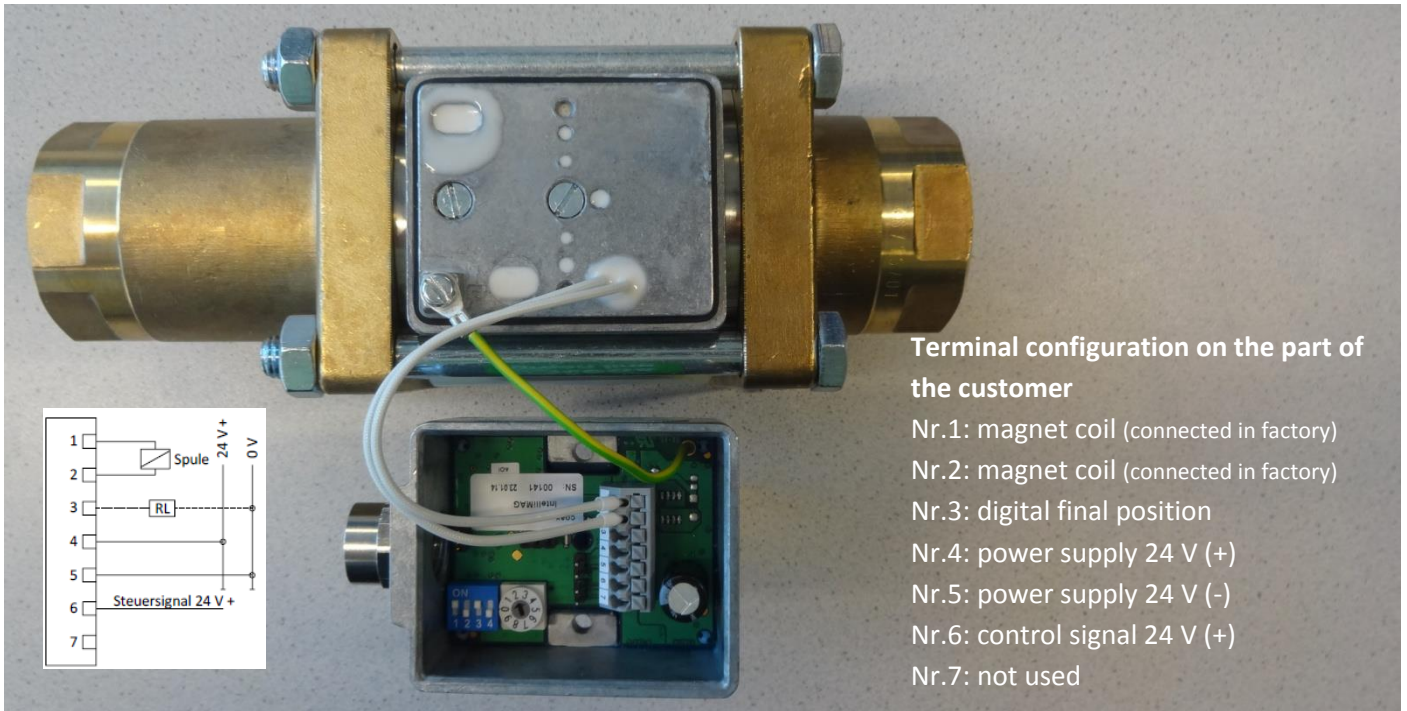
### 4. Piping:

- The direction of flow from A to B must be followed.
- It is not permitted to install the valve in turbulent pipeline zones such as directly at a T-piece, angle or manifold. We recommend allowing an upstream settling zone of five times the pipe diameter
- The diameter of the pipeline should correspond to the valve connection. Reductions to a smaller pipeline diameter are not permissible (flow velocity), but increasing to a larger pipeline is permitted.
- The preferred installation position is vertical. Ensure easy access to the terminal box.

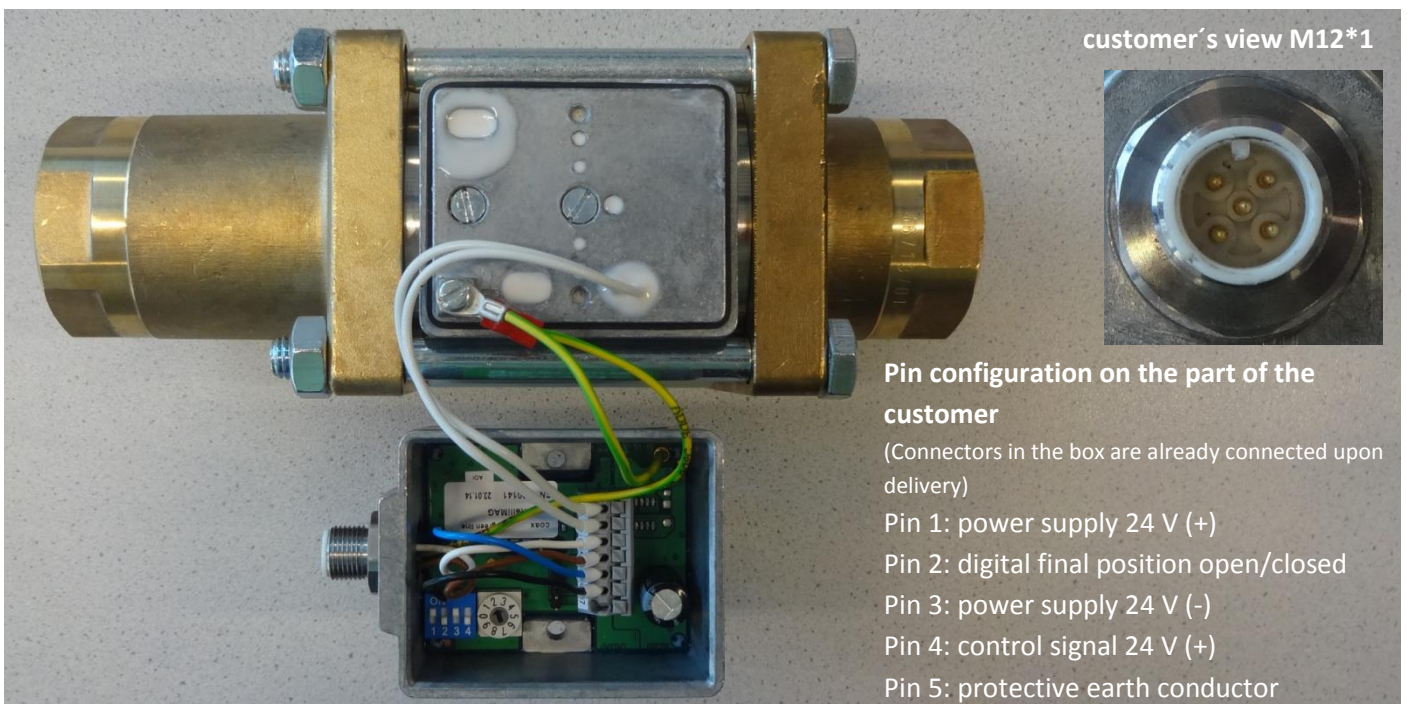
### 5. Level of contamination:

- We recommend a max. contamination of no more than 180 mg / litre and a particle size of no greater than 50 µm.

**6. Electrical connection and notes:**  
**"Cable screw fitting" version**



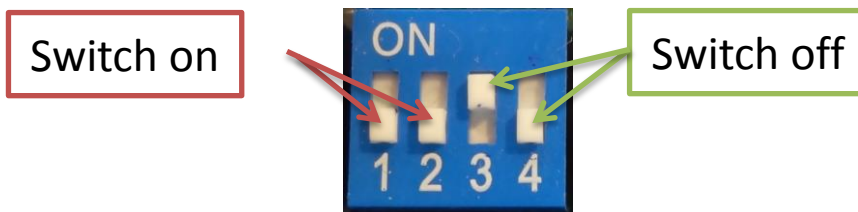
**"M12\*1 connector" version**



- Incorrect connections may lead to damage to the electronics.
- Allowable valve voltage supply: 24V DC +/- 10%
- Recommended pre-fuse: 1.6A "medium-lag" or 2.5A "quick blow".
- There may be a short-term initial current (<0.5s) of 4.5A (load-dependent); the typical continuous current load is <0.7A (valve-dependent, refer to our data sheet)
- We recommend that the peak power supply current be 4.5A (i.e. 100W for 24V).
- We recommend using shielded cables and connecting the valve body to earth.
- We recommend a cable cross-section of 0.75 mm<sup>2</sup>.

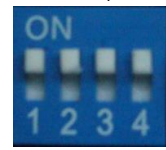
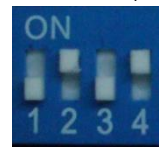
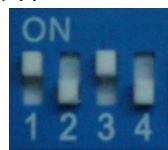
## 7. Operating element: "Time switch"

- The switching time of the valve can be set to one of four different levels of attenuation.
- The adjustment is done with a quad sliding switch.
- The delayed **switch-on** (valve open) is set with the sliding switches no. **1 and 2**.
- The delayed **switch-off** (valve closed) is set with the sliding switches no. **3 and 4**.



- Shown below are the binary codes of the four levels of attenuation (turning on / off shown equivalently).

Level 1 (approx. 200 ms)    Level 2 (approx. 400 ms)    Level 3 (approx. 800 ms)    Level 4 (approx. 1000 ms)



- We advise to start the valves with the factory settings.
- The delay set can only be activated via the **electrical control signal**.
- **Switching on the control signal** causes the **valve opening** to be delayed.
- **Switching off the control signal** causes the **valve closing** to be delayed.
- On the other hand, a complete failure of the **voltage supply** (e.g. emergency stop) causes a complete failure of the control electronics and an immediate closing of the valve to its normal position (caution: closing shock hazard).

## 8. End position indicator:

The end position of the valve is indicated on the cover of the terminal box by a multi-coloured LED. A permanently illuminated green LED indicates the valve status "valve is off and closed", while an illuminated red LED indicates the status "valve is powered and open".



As a rule, the end position signal can also be electrically tapped at the open terminal or at the M12\*1 connector. The valve status "open" is acknowledged with 24 V and the status "closed" with 0 V.

## 9. Recommended steps for commissioning:

- Fit the valve in the pipeline
- Connect the cabling according to the terminal diagram (make sure the wire ends are firmly seated)
- First switch on the voltage supply to the solenoid
- Then switch the valve on and off several times with the control signal.  
(Caution! the electronics have a "learning mode". Under certain circumstances, the desired levels of attenuation take effect only after switching for the second time)

## 10. Troubleshooting

**Fault symptom:** "Valve cannot be switched"

**Remedial action:**

- Check the solenoid voltage supply (24 V +/- 10 %)
- Check the control signal voltage (24 V +/- 10 %)
- Check the potential equalization between the voltage supply and the control signal
- Does the media correspond to the order?
- Check the allowable media pressure and the media temperature
- Check the switch position of the function switch  
This must **always be (!)** in position 2.



**Fault symptom:** "No electrical end position signal can be tapped at the terminal"

**Remedial action:**

- Check the potential equalization between the end position display and the 24 V (-) voltage supply.
- Check that the control signal has a sufficient voltage supply

**Fault symptom:** "Blinking LED on terminal box"

(an even regular blinking of the LED indicates the fault code: "End position not reached")

Red blinking signal: Meaning: "valve open" end position not reached

Green blinking signal: Meaning: "valve closed" end position not reached

**Remedial action:**

- Does the media correspond to the order? (too high friction ?)
- Check the allowable media pressure and the media temperature
- Check that the voltage supply is adequate.

**Fault symptom:** "Opening or closing shocks"

**Remedial action:**

- Set the next highest level of delay and switch several times.
- The switching on and off should only take place with the control signal. In no account is the coil to be switched off.
- Is flow rate too high? Check the flow rate and the pipe cross-section.

## 11. Technical support

If there are any questions, please contact müller co-ax at:

e- mail: [heinz.hirschlein@co-ax.com](mailto:heinz.hirschlein@co-ax.com)

tel.: +49 (0) 7947-828-64

For questions concerning valves that have already been delivered, please provide us with the serial number from the nameplate.