


DOROT Control Function Electronic Level Control (FLEL)

Control Function Electronic Level Control (FLEL)
Electronic Level Control Using 70200 Pilot

Applicable Series:

S300, S100, S500

Sizes:

3/4" - 40" / 20-1000mm

1. Function Description

An automatic, Solenoid Control Valve.

The valve opens at low water levels via an electric command from a float positioned in the tank/reservoir. When the water levels reach a high set-value, the valve closes drip-tight.

2. Technical Features

- Media: Water; natural, non-aggressive fluids
- Pressure rating: PN16 or PN25 (250psi or 360 psi) per specific valve-model
- Temp. range:
 - S300: 2 – 80°C (35 - 176°F)
 - S500/S100: 2 – 60°C (35 - 140°F)
- Flow velocity for continuous operation: 0.05 – 5.5 m/sec (0.3 – 18 ft/sec)
 Max. flow velocity for intermittent operation: 8 m/sec (26 ft/sec)

Notes:

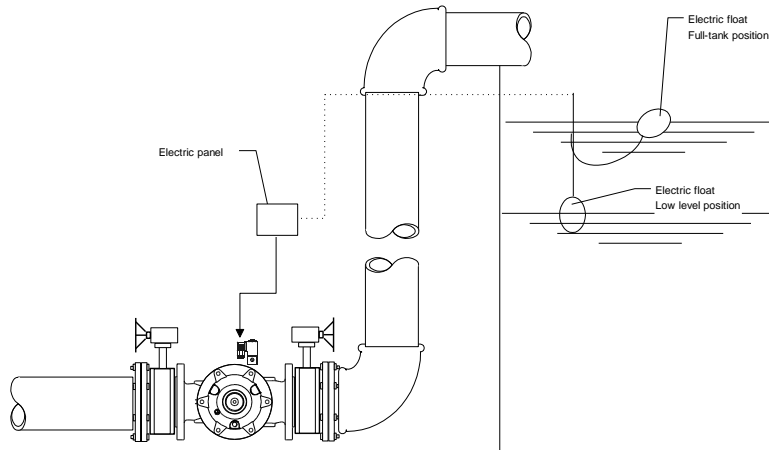
- In case the designed/actual operating conditions are not suitable for the above defined standard features, please contact Aquestia Applications-Engineering.
- Refer to specific valve model publications for further details.

3. Safety Guidelines

- Injury or damage to the system/surroundings may occur if installation, commissioning, operation or maintenance instructions are not followed correctly, or if applicable codes of practice and regulations are ignored.
- Dorot valves are designed for use in fresh water-systems. Please consult Aquestia Applications-Engineering in case other media is to be used.
- Be sure to depressurize the valve, prior to any disassembly of valve or control-trim parts.
- Electrical works (e.g. connection of solenoid-valves, limit-switches etc.), must be executed by a certified electrician.
- Errors in the layout-design, installation or operation may affect valve performance and may be a risk to the system and operators/users. Please note, the system layout, installation and commissioning of valves is the responsibility of the system designer, installer and/or user.
- In any case of doubt and prior to taking any further action, please contact Aquestia representative for assistance.


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4. Installation



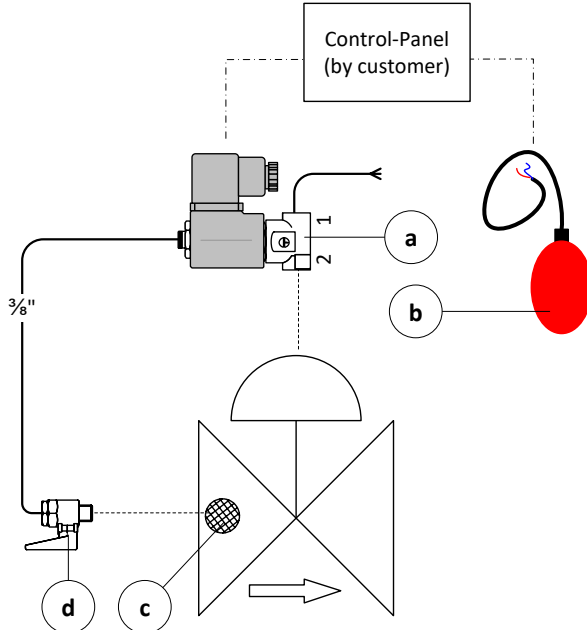
- a. The valve can be installed in any position, although installation with the bonnet facing up is recommended for ease of maintenance.
 - b. Flow direction should match the engraved arrow on the bonnet.
 - c. For maintenance considerations, it is recommended that manual isolation valves (gate or butterfly) are installed, both sides with a strainer between the upstream isolation valve and the valve inlet (as shown in the diagram above).
 - d. Flush pipeline upstream of the valve, before assembly of the control valve.
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Installation, Operation & Maintenance

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5. Control-trim Design

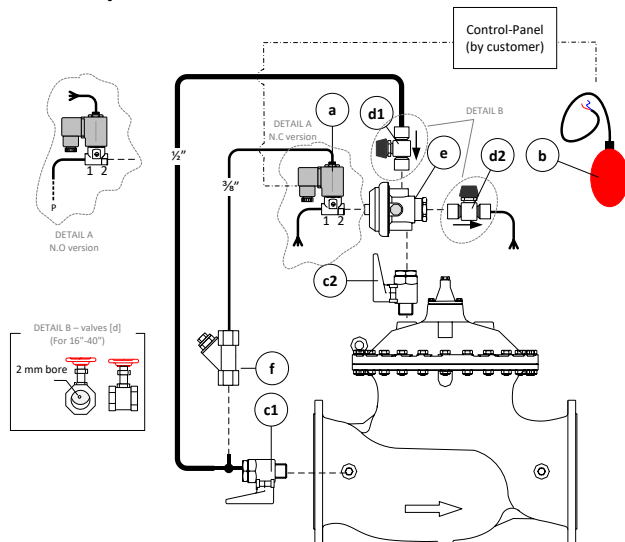
0.75" – 6" / 20 – 150 mm



Main Parts

- a. 3/2, Solenoid Valve*
- b. Elec. Switch Float, mod. 70-200
- c. Self-flushing, Inline Control Filter**
- d. Isolation Ball Valve
- e. 3/2 hyd. Relay Valve
- f. 1/2" Needle Valve (rubber seal removed)

8" – 40" / 200 – 1000 mm



* Solenoids:

3/2 Solenoid	Valve
NC	NO
NO	NC

** Filters:

Valve Diameter	Filter
3/4"-6" 20-150 mm	Self-Flushing Filter
8" – 40" 20-1000 mm	'Y' Pattern Control Filter

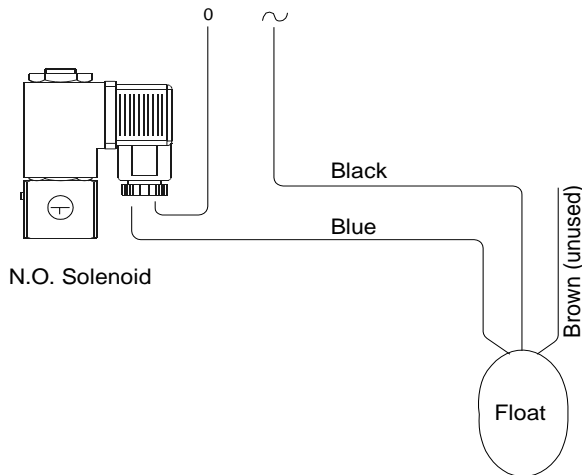
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6. Commissioning & Adjustment

- Open isolation valves [d].
- Start the pump, or open network main valve.
- Send "CLOSE" signal to the solenoid [a].
- Install the electric float in the tank/reservoir at the desired water level.
- Connect the float (b) and solenoid (a) to the electric control-box as shown in the diagram.

**Note: for N.C. valve mode, (valve is closed when electric command ceases)- use the electric schematic. For N.O. mode, connect the solenoid to the N.O. wire of the float, while it is in a vertical position.*

**Note: For safety, it is recommended to use a low-tension current. The standard solenoid has a 24VAC coil, that can be replaced by a different one if required.*



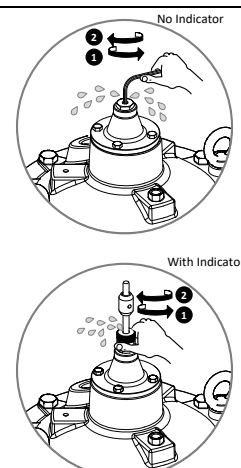
ⓘ Charging the downstream system must be done slowly to prevent pressure surges

Air bleed in S-300/500 valves

This should be done with the control chamber pressurized (main valve closed)

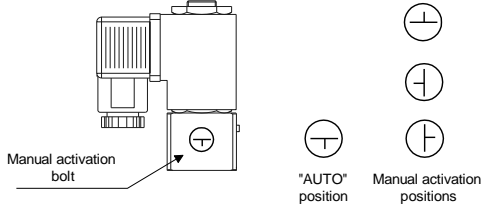
Using the supplied Allen key – open air-bleed-screw at the top of the bonnet and reclose it when only water, (no air) is discharged (refer to diagram on the right).

In cases where an indicator rod exists – using hand force only – release and tighten the round nut at the top of the indicator guide.



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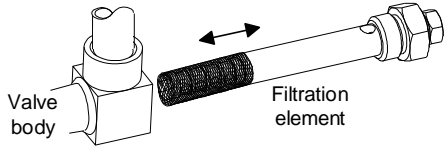
7. Manual Activation

<p>EL(NO/NC)</p> <p>The EL Valve can be opened manually by the manual override bolt, if the solenoid fails.</p>	 <p>Manual activation bolt</p> <p>"AUTO" position</p> <p>Manual activation positions</p>
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ⓘ REMEMBER to return the manual override to "AUTO" position after maintenance is completed.

8. Maintenance

- Inspect and clean the inline filter [c] as water quality dictates. This service should be performed every few months.
- During this operation, the main valve must be isolated from external pressure, by closure of up- and downstream isolation valves [A, B].
- Inspect valve performance by checking water levels periodically.

	 <p>Valve body</p> <p>Filtration element</p> <p>Extraction of screen element, filter</p>
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9. Troubleshooting		
General check list	Ball valves [b]	All must be opened when operated
	Schematic diagram	Verify that piping is consistent with the schematic diagram
	Release air trapped in the control chamber (S300 only)	
	Filter	Check and clean
	Solenoid (a) position of manual override is incorrect.	Slot to be horizontal to arrow, or dot pointing down
	Faulty solenoid	When the solenoid valve changes position, a “click” is heard. If there is no “click” sound, the pilot should be replaced.
Valve fails to open	Solenoid (a), incorrect voltage.	Measure $\pm 10\%$ of nominal voltage. Check wire sizing.
	No current	Damaged wires.
	Faulty Solenoid	When the solenoid valve changes position, a “click” is heard. If there is no “click” sound, the pilot should be replaced.
Valve fails to close	Main valve diaphragm is cracked	Disassemble and replace diaphragm
	Foreign object stuck in main valve internal trim	Disassemble main valve, extract inner trim and flush/remove foreign object.

Aquestia Ltd. reserves the right to make product changes without prior notice. To ensure receiving updated information on parts specifications, please contact us at info@aquestia.com.

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