

 **DOROT** Control Function, Electronic Normally Closed (EL\M NC)

Control Function, Electronic Normally Closed (EL\M NC)	
Electronic Control Using Solenoids and Manual Override	
Applicable Series:	Sizes:
S100, S300, S500	1½" - 40" /40-1000mm

1. Function Description

Dorot Series 300 Electric Control Valve ('30-EL') is an automatic, solenoid control valve, activated by the pressure of the pipeline. The valve uses an electric current or pulse, to open and close the main valve. The standard valve is supplied in the "normally closed" position.

A "normally open" position is optional. Electric activation can be added to other control applications upon request.

EL(NC) - An automatic, solenoid-controlled valve. The valve opens when the solenoid is energized and closes drip-tight when the solenoid is de-energized.

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:

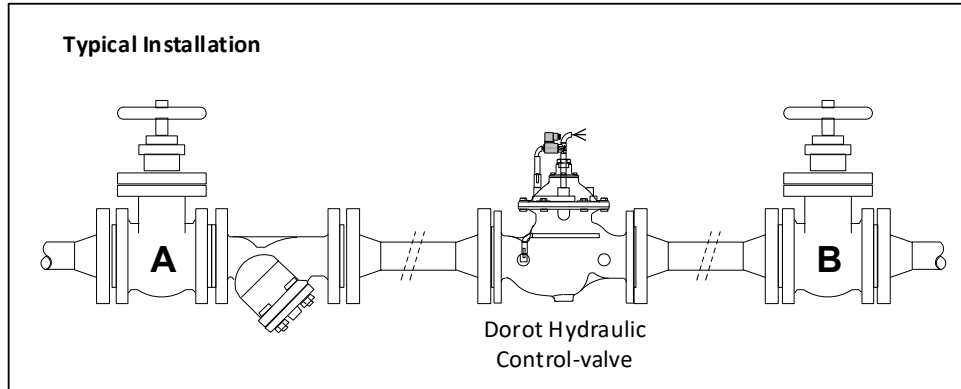
- In case the designed/actual operating conditions are not suitable for the above defined standard features, please contact Aquestia Applications-Engineering.
- Refer to specific valve model publications for further details.

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



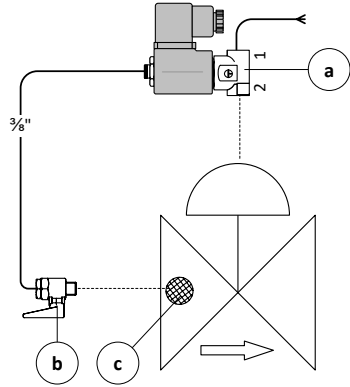
- The valve can be installed in any position, although installation with the bonnet facing up is recommended for ease of maintenance.
 - Flow direction should match the engraved arrow on the bonnet.
 - For maintenance considerations, it is recommended that manual isolation valves (gate or butterfly)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

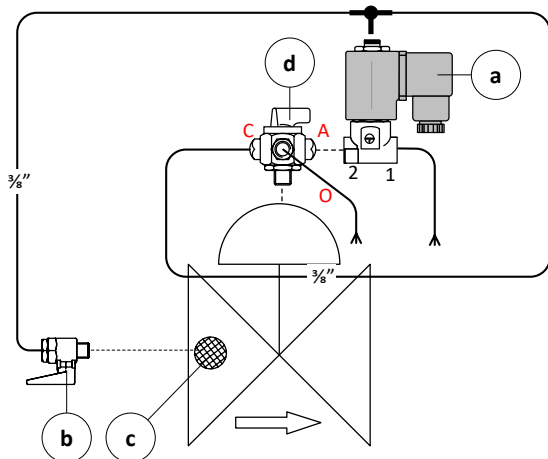
EL(N.C)- 1.5"-6" \ 40-150 mm



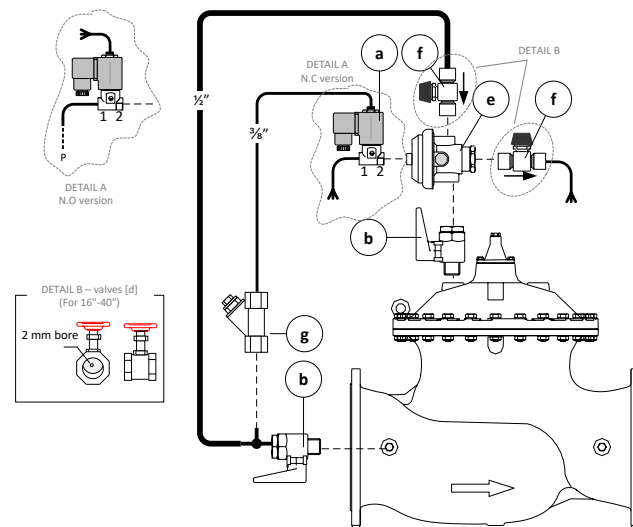
Main Parts

- a. Solenoid valve*
- b. Isolation ball valve
- c. Self-flushing, inline control filter
- d. SY3 – 3-pos. selector valve (SY6 for 6" valves)
- e. Relay valve
- f. 1/2" needle valve
- g. 1/2" 'Y' pattern control filter (only for 8"- 40")

EL(N.C)\M- 1.5"-6" \ 40-150 mm



EL(N.C)- 8"- 40" \ 200-1000 mm



*For EL and EL\M

Valve type	Solenoid type
EL(NC)	3/2 (NO)
EL(NO)	3/2 (NC)

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6. Commissioning & Adjustment

- a. Open ball valve [b].
- b. Start the pump or open isolation valve [A].
- c. Bleed air out of the control chamber (refer to 'Air-bleed procedure' below).
- d. In cases where there is a manual override [d] - turn override bolt of solenoid [a] to "AUTO" position.

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

<p><u>Air bleed in S-300/500 valves</u></p> <p>This should be done with the control chamber pressurized (main valve closed)</p> <p>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).</p> <p>In cases where an indicator rod exists – using hand force only – release and tighten the round nut at the top of the indicator guide.</p>	
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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>EL/M</p> <p>Valve can be opened or closed manually by operating the selector valve. Turn the handle toward port "OPEN" or "CLOSE" respectively.</p>	

ⓘ REMEMBER to return the manual override to the "AUTO" position after maintenance is completed.


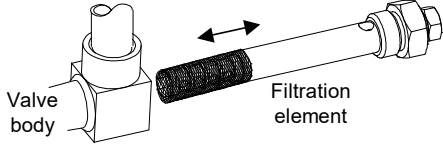
ⓘ REMEMBER to return the manual selector valve to the "AUTO" position after maintenance is completed.

Installation, Operation & Maintenance

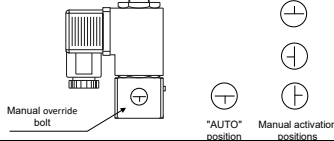
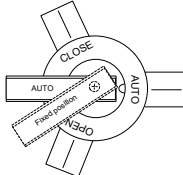
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8. Maintenance

- a. 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].
- b. Inspect valve performance by checking pressure gauge(s) periodically.

	 <p>Valve body Filtration element</p> <p>Extraction of screen element, filter</p>
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9. Troubleshooting

Valve fails to open	No electricity to Solenoid (for NC valve)	Check electrical supply
	Solenoid not functioning properly	Check solenoid, replace it with a new one
Valve fails to close	Common ball valve is closed	Open common ball valve
	No electricity to solenoid (for NO valve)	
	Solenoid not functioning properly	Check solenoid, replace it with a new one
Valve fails to switch position (OPEN/CLOSE)	Solenoid override is manually OPEN/CLOSE	
	Selector valve is in manual position	

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