ELEPHANT

Manufacturer of shut-off and control valves

TECHNICAL DATA SHEET

Electromagnetic valve ELEPAHNT VS6x-xF-NC-x DN25-100 10 bar pilot operated, cast iron/stainless steel, flanged

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Carrer d'Aragó,264,3-1,08007 Barcelona, Spain

1. GENERAL INFORMATION ABOUT THE PRODUCT

1.1. Product name: Electromagnetic valve ELEPAHNT VS6x-xF-NC-x DN25-100 10 bar pilot operated, cast iron/stainless steel, flanged.
1.2. Manufacturer: Limited liability company «ELEPHANT».
Location (legal entity address): Carrer d'Aragó,264,3-1,08007 Barcelona, Spain.
1.3. Purpose: An electromagnetic solenoid valve is a special device designed for convenient control of the flow of the working medium. This process is carried out in a pressurized pipeline.
1.4. Principle of operation: A pilot-operated solenoid valve works thanks to the interaction of two flows: the main and the pilot. The electromagnet controls a small pilot hole, and the pressure of the medium opens or closes the main passage with a larger cross-section.
Let's consider the process step by step:
The diaphragm (or piston) is pressed against the valve seat by the pressure from above and the spring. The pilot channel is closed by the solenoid armature. The pressure above and below the diaphragm is balanced, but the area of the upper surface is larger, so the valve is closed.
When voltage is applied:
The electromagnet lifts the armature, opening the pilot hole. The medium begins to flow out of the upper cavity through the pilot channel. The pressure above the diaphragm drops, and the pressure below (inlet pressure) lifts it. The diaphragm breaks away from the seat, and the valve opens, allowing the main flow of medium to pass through.
When the voltage is turned off:
The electromagnet releases the armature, and the pilot channel closes. The pressure in the upper cavity is equalized through a small equalization hole. The diaphragm (or piston) is pressed against the seat again, and the valve closes.

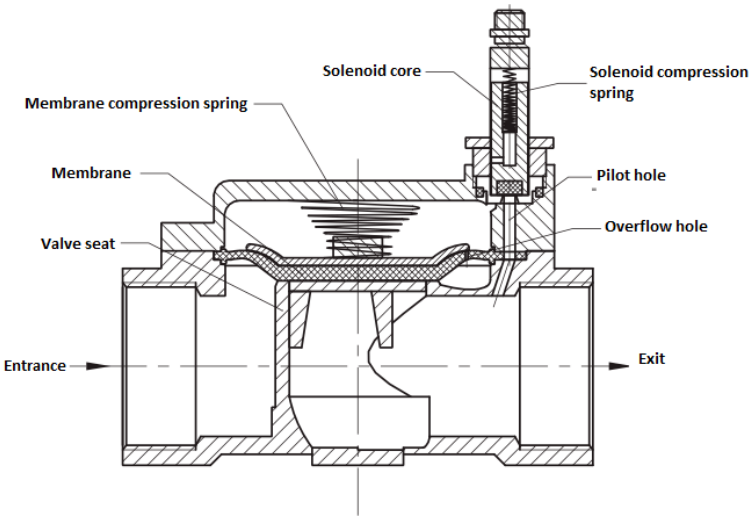
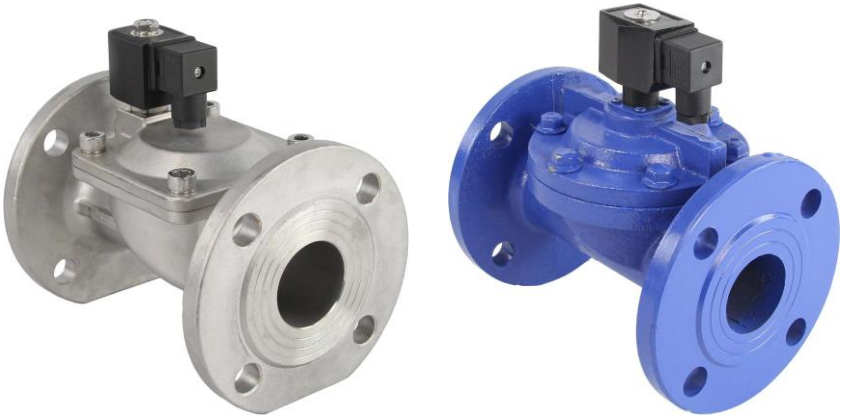


Figure 1 – Valve structure in cross section

1.5. Operating restrictions: The valve is not intended for use in nuclear power plant safety systems or in environments containing aggressive components, dust, or gases in concentrations that are destructive to metals.



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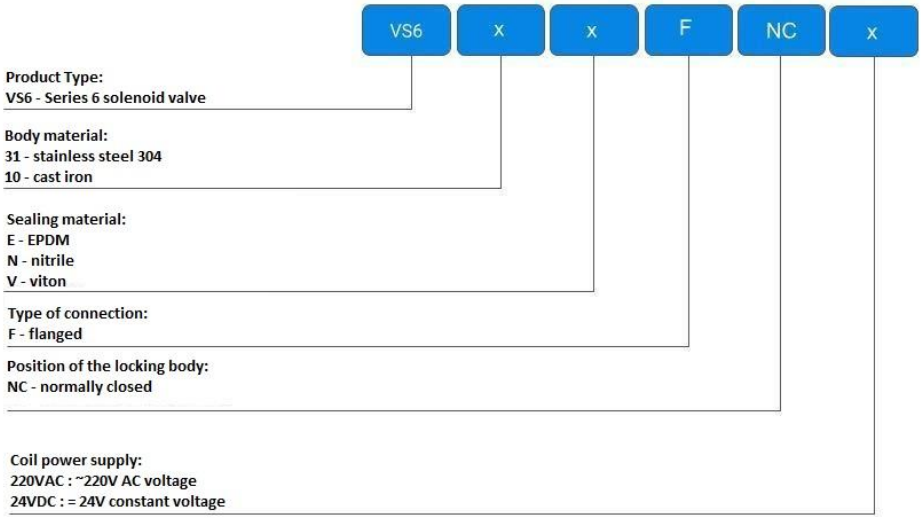
1.6. Decoding of the designation:



2. KEY TECHNICAL DATA AND CHARACTERISTICS

Table 1. Specifications

Nominal diameter, DN	25-100 stainless steel AISI 304 housing 40-100 cast iron housing
Nominal pressure, bar	10
Minimum pressure drop, bar	0,3
Maximum pressure, bar	12
Working medium	air, gas, light oil, water
Working medium temperature, ° C	NBR: from -5 to +80; VITON: from -10 to +150; EPDM: from -5 to +90
Ambient temperature, ° C	from -10 to +60
Seal	NBR, VITON, EPDM
Connection	flanged
Body material	Cast iron or AISI 304 stainless steel
Coil insulation rating	F
Coil protection rating	IP65
Valve design	normally closed
Coil supply voltage, V	220VAC - 220V AC voltage 24VDC - 24V DC
Average service life, opening/closing cycles	200 000 (in a non-aggressive environment and at average pressure and temperature values)

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Table 2. Coil power and current (housing material - AISI 304 stainless steel)

DN	Coil current		Coil power
	220VAC, A	24VDC, A	220VAC /24VDC, W
25	0,06	0,54	13
32	0,06	0,54	13
40	0,06	0,54	13
50	0,06	0,54	13
65	0,06	0,54	13
80	0,06	0,54	13
100	0,06	0,54	13

Table 3. Coil power and current (housing material - cast iron)

DN	Coil current		Coil power
	220VAC, A	24VDC, A	24VDC, W
40	0,14	1,25	30
50	0,14	1,25	30
65	0,14	1,25	30
80	0,14	1,25	30
100	0,14	1,25	30

3. WEIGHT AND DIMENSIONS

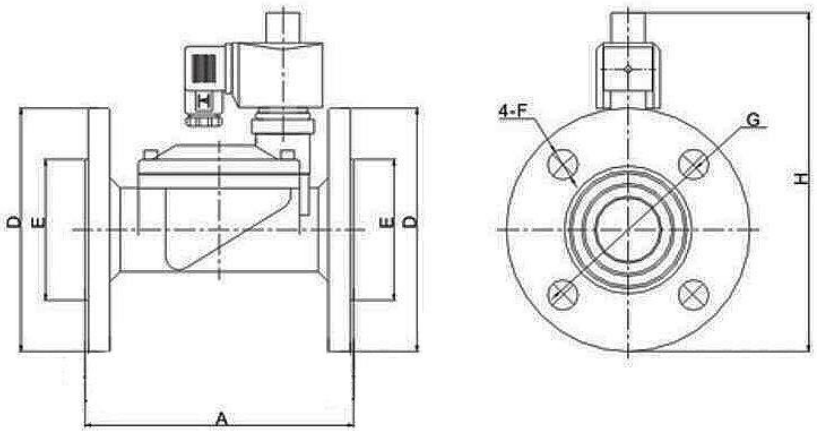

Figure 1 – Valve dimensions (body material - AISI 304 stainless steel)

Table 4. Dimensions (body material - AISI 304 stainless steel)

DN	A	ØD	H	ØE	ØG	4-ØF	Weight, kg
	mm						
25	135	115	167	85	66	4-14	2,9
32	160	131	189	100	76	4-18	4,4
40	175	141	197	110	84	4-18	5,1
50	205	157	205	125	94	4-18	7,7
65	255	190	245	145	119	4-18	12,5
80	275	200	280	160	131	4-18	15,3
100	345	225	350	180	160	8-18	23,2

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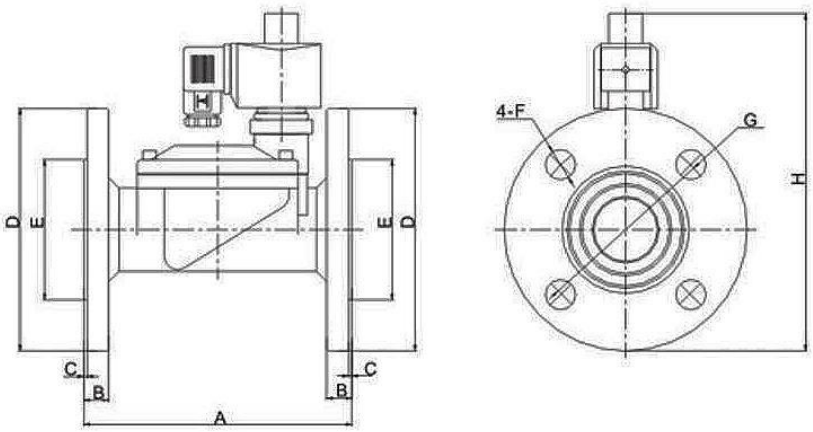

Figure 2 – Valve dimensions (body material - cast iron)

Table 5. Dimensions (body material - cast iron)

DN	A	ØD	H	ØE	ØG	B	4-ØF	C	Weight, kg
	mm								
40	166	147	205	82	108	14	4*18	2	6
50	216	162	225	103	123	13	4*18	2	9,2
65	252	173	250	113	135	15	4*18	2	15,1
80	258	196	270	126	158	16	4*18	2	17
100	316	214	298	144	178	14,5	8*18	2	23,2

4. INSTALLATION AND CONNECTION

4.1. Due to the heating of the coil during operation, it is recommended to install the valve away from heat sources in a dry and ventilated room.
4.2. There should be sufficient free space around the valve for cooling the coil and for replacing a faulty coil without dismantling the valve from the pipeline. When installing outdoors, it is recommended to use a canopy or protective box to prevent precipitation from falling on the coil.
4.3. Attention! Pilot-operated valves can ONLY be installed on a horizontal section of the pipeline.
4.4. It is not permitted to install valves with the coil facing downwards.
4.5. The valve must be installed so that the direction of the arrow on the body coincides with the direction of movement of the working medium.
4.6. Installation of valves in places where water leaks are possible, as well as under pipelines that fog up or freeze during operation, is not permitted.
4.7. It is recommended to install a mechanical cleaning filter with a mesh size of no more than 500 μm upstream of the valve.
4.8. To avoid water hammer, do not reduce the diameter of the pipeline with adapters upstream and downstream of the solenoid valve.
4.9. The valve connection cable must have a grounding conductor connected to the lower terminal of the coil.
4.10. The cross-section of the power cable for 220V AC power supply must not be less than 1.5 mm2.
4.11. The power supply cable to the solenoid valve coil should be installed in a U-shaped loop (the wire should not be stretched) to allow any condensation to drain off.
4.12. It is strictly forbidden to apply voltage to a coil that is not installed on the valve.
4.13. During installation, mechanical impact on the coil should be avoided.
4.14. In accordance with the procedures established at the enterprise, the valve must not be subjected to loads from the pipeline (bending, compression, tension, torsion, skewing, vibration, misalignment of pipes, uneven tightening of fasteners). The connection points must ensure the tightness of the internal cavities relative to the external environment.
4.15. After installation, the system in which the valve is installed must be subjected to hydraulic testing at a pressure 1.5 times higher than the design working pressure in the system. The test is carried out in accordance with the procedures established at the enterprise.

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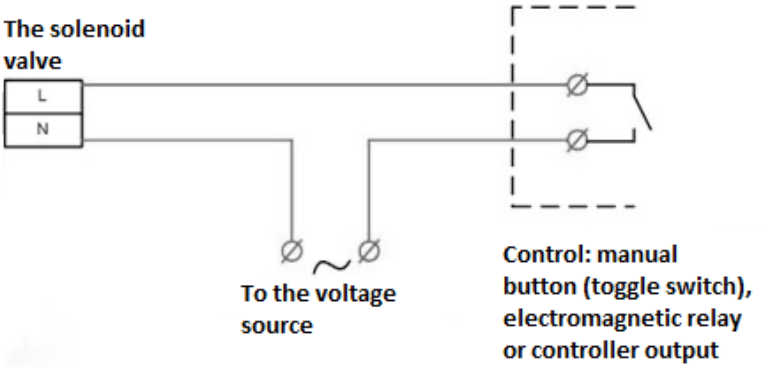

Connection diagram

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5. OPERATION AND TECHNICAL MAINTENANCE

5.1. The valve may be operated under the parameters specified in Table 1 of this data sheet.
5.2. Valves with loose or removed cover mounting screws must not be operated.
5.3. The working medium inside the valve must not be allowed to freeze.
5.4. Maintenance of the valve should only be performed when the coil is de-energized.
5.5. Maintenance of the valve consists of removing the cover and flushing the body chambers, impulse channel, and diaphragm.
5.6. To avoid accidents, general safety requirements must be observed during installation and operation.

6. STORAGE AND TRANSPORTATION

6.1. Products must be stored in the manufacturer's packaging in accordance with the storage conditions.
6.2. Products must be transported in accordance with the conditions established by the manufacturer.

7. UTILIZATION

7.1. The product is disposed of in accordance with the procedure established at the enterprise (remelting, burial, resale).

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8. WARRANTY OBLIGATIONS

8.1. Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.
8.2. The warranty applies to equipment installed and used in accordance with the installation instructions and product specifications described in this data sheet.
8.3. The manufacturer guarantees compliance of the product with safety requirements, provided that the consumer complies with the rules of transport, storage, installation and operation.
8.4. The warranty covers all defects caused by the fault of the manufacturer.
8.5. The warranty does not apply:

- parts and materials of the product subject to wear and tear;
- for cases of damage caused by:
    - modifications to the original design of the product;
    - violation of general installation recommendations;
    - faults caused by improper maintenance and storage; improper operation and use of the equipment.

9. WARRANTY TERMS

9.1. Claims to the quality of the goods may be made during the warranty period.
9.2. Defective products are repaired or exchanged for new ones free of charge during the warranty period. ELEPHANT decides whether to replace or repair the product. The replaced product or its parts resulting from the repair shall become the property of 'ELEPHANT'.
9.3. Costs related to dismantling, installation and transport of the defective product during the warranty period shall not be reimbursed to the Buyer.
9.4. If the claim is unfounded, the Buyer shall pay the costs of diagnostics and expertise of the product.
9.5. Products are accepted for warranty repair (as well as for return) fully assembled.

WARRANTY CARD №____

№	Product Name	Packs

Name and address of the trading organisation

_____

Date of sale _____ Seller's signature _____

Stamp or seal of the trading organisation Acceptance stamp

I agree with the terms and conditions of the warranty:
Buyer _____ (signature)
Warranty period - 12 months from the date of commissioning, but not more than 18 months from the date of sale.
For warranty repairs, complaints and product quality claims, please contact ELEPHANT at: Carrer d'Aragó,264,3-1,08007 Barcelona, Spain E-mail address: sales@valveelephant.com.

When making a complaint about the quality of goods, the buyer shall present the following documents:
1. A free-form application, which shall specify:
- name of the organisation or full name of the buyer, actual address, contact telephone numbers;
- name and address of the organisation that carried out the installation;
- basic parameters of the system in which the product was used;
- a brief description of the defect.

2. Document confirming the purchase of the product (delivery note, receipt)..
3. Act of hydraulic test of the system in which the product was installed.
4. This completed warranty card.
A note on the return or exchange of goods _____

Date: «___»_____202__r. Caption _____

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