

EVRM-NC

**Solenoid safety valves for Gas
Manual reset - Normally closed
DN10 ... DN150**

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EVRM-NC6 / EVRM-NC9

EVRM-NC

Solenoid safety valves for gas

Manual reset - Normally closed

Class A – Group 2

The EVRM-NC type valve is a manual reset safety valve that is normally closed. This type of device, connected with one or more pressure switches is suitable for locking operations upon gas, air, or electric current failure.

The EVRM-NC type valves are made in accordance with EN161 standard (when applicable). All models are conforming with the European Directives 89/336 EEC and 73/23 EEC.

1- Features

- ❑ Large range for inlet/outlet connections, from 3/8" to 6" pipes sizing.
- ❑ Provided with G1/4" pressure gauge on two sides in the inlet pressure chamber (except brass models). Others gauge points on request.
- ❑ Optional G1/8" connection for closed position indicator micro switch (on request from 3/4" to 6").
- ❑ Fine mesh filter incorporated to prevent dirty contamination of the seal seat (except brass models).
- ❑ Maximum operating pressure 500 mbar.
- ❑ Suitable for air and non-aggressive gases (EN 437, 1, 2 and 3 families).
- ❑ Coil insulation is class H (180°C).
- ❑ Terminals with DIN 43650 plug and PG connector.
- ❑ Valves are 100% tested by computerized testing machineries and are fully warranted.
- ❑ For valve identification see the following charts.

WARNING

- **This control must be installed in compliance with the laws in force.**
- **Read instructions before use.**
- **Elettromeccanica Delta S.p.a. reserves the right to update or make technical changes without prior notice.**

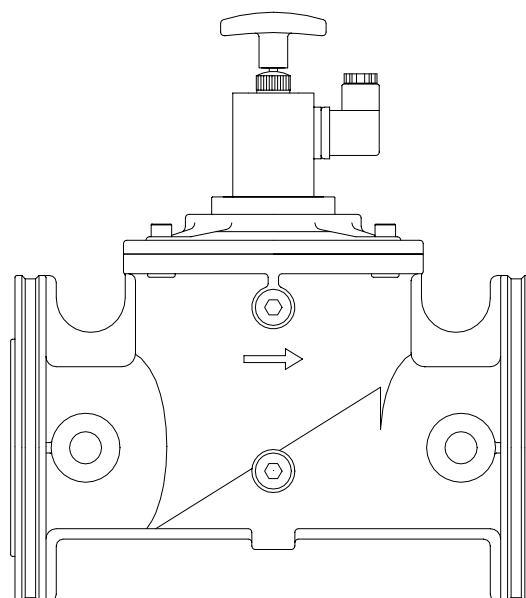


Fig. 1

2- Technical specifications

<i>Connections</i>	Gas threaded ISO 7/1 from Rp3/8" to Rp2" Flanged PN16 – ISO 7005 from DN65 to DN150
<i>Voltage rating</i>	230 VAC 50/60 Hz
<i>Voltages on request</i>	110 VAC 50/60 Hz 24 V AC/DC 12 V AC/DC
<i>Voltage tolerance</i>	-15% / +10%
<i>Power consumption</i>	see charts
<i>Environment temperature</i>	-15°C / +60°C
<i>Max. working pressure</i>	500 mbar
<i>Flow capacity</i>	see charts
<i>Seal</i>	NBR
<i>Closing time</i>	< 1 sec.
<i>Protection class</i>	IP 65 (EN 60529)
<i>Cable gland</i>	PG09
<i>Overall dimensions</i>	see charts

3- Operation

The EVRM-NC type valve is a manual reset safety valve that is normally closed.

When not in working position the spring works on the shutter keeping the gas passage closed. Simply by energizing the coil the valve does not open. It is necessary to manually move the reset rod located at the top of the coil.

Once opened, the valve can maintain this position until electric current circulates on the coil. In absence of electric current the valve closes rapidly and remains shut upon return of same.

Once the causes for the lock have been eliminated, valve must be opened manually as described above.

4- Accessories

A fine mesh filter is provided, to prevent dirty contamination of the seal seat. However, an external strainer must be installed upstream of the valve. Brass models are available without internal filter only.

Inlet pressure area is provided with bilateral G $\frac{1}{4}$ " gauges, to connect min/max adjustable pressure switches, leakage tester or other gas equipments. On request are available gauges in outlet area from DN32 model to DN50. These are standard from DN65 to DN150. Brass models are available without gauges only.

On request, valves are supplied with a G1/8" connection on the bottom, to installed a closed position indicator micro switch (from 3/4" to 6"). An adapting rod is provided too.

5- Coil features

The continuous service (100% ED) causes inevitable coil heating, depending of working environment. This situation is absolutely normal and has not to worry. To improve the coil cooling, install the valve allowing free air circulation.

Coil and terminal box are provided with suitable gaskets, to avoid water and dirty contamination (see the *Service Instruction Section*).

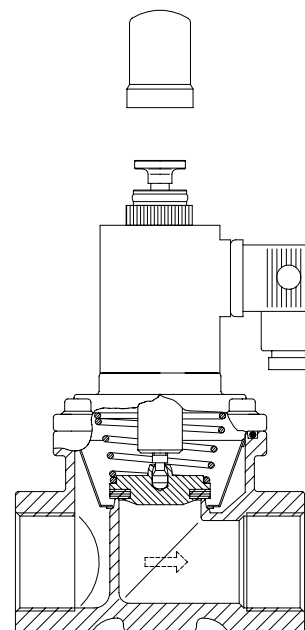


Fig. 2

6- General information

Backpressure sealing is compliant with the *Class A*: the maximum backpressure admitted, with leakage within the EN161 requirements, is 150mbar.

Maximum torsional stresses admitted are compliant with the *Group 2* of the EN161 standard.

All components are design to withstand any mechanical, chemical and thermal condition occurring during typical service.

Effective impregnation and surface treatments has been used to improve mechanical sturdiness, sealing and resistance to corrosion of the components.

Valves are suitable for use with air and non-aggressive gases included in the 1, 2 and 3 families (EN 437).

Materials used:

- Aluminium*
- Brass*
- Copper*
- Stainless steel*
- Nitrile rubber (NBR)*
- Ethylene propylene (EPDM)*
- Fluoroelastomer (FPM)*
- PTFE*

7- Valve identification

Connections		230 VAC	110 VAC	24 V AC/DC	12 V AC/DC
Threaded	Flanged				
3/8" brass		EVRMNC0AO	-	EVRMNC0CO*	EVRMNC0DO*
1/2" brass		EVRMNC1AO	-	EVRMNC1CO*	EVRMNC1DO*
3/4" brass		EVRMNC2AO	-	EVRMNC2CO*	EVRMNC2DO*
1" brass		EVRMNC3AO	-	EVRMNC3CO*	EVRMNC3DO*
3/8"		EVRMNC A0A	EVRMNC A0B	EVRMNC A0C	EVRMNC A0D
1/2"		EVRMNC A1A	EVRMNC A1B	EVRMNC A1C	EVRMNC A1D
3/4"		EVRMNC A2A	EVRMNC A2B	EVRMNC A2C	EVRMNC A2D
1"		EVRMNC A3A	EVRMNC A3B	EVRMNC A3C	EVRMNC A3D
1 1/4"		EVRMNC A35A	EVRMNC A35B	EVRMNC A35C	EVRMNC A35D
1 1/2"		EVRMNC A4A	EVRMNC A4B	EVRMNC A4C	EVRMNC A4D
2"		EVRMNC A6A	EVRMNC A6B	EVRMNC A6C	EVRMNC A6D
	DN 65	EVRMNC A7A**	EVRMNC A7B**	EVRMNC A7C**	EVRMNC A7D**
	DN 80	EVRMNC A8A**	EVRMNC A8B**	EVRMNC A8C**	EVRMNC A8D**
	DN 100	EVRMNC 9A**	EVRMNC 9B**	EVRMNC 9C**	EVRMNC 9D**
	DN 125	EVRMNC 93A**	EVRMNC 93B**	EVRMNC 93C**	EVRMNC 93D**
	DN 150	EVRMNC 95A**	EVRMNC 95B**	EVRMNC 95C**	EVRMNC 95D**

(*) Specify AC or DC. (**) Class B when not specified.

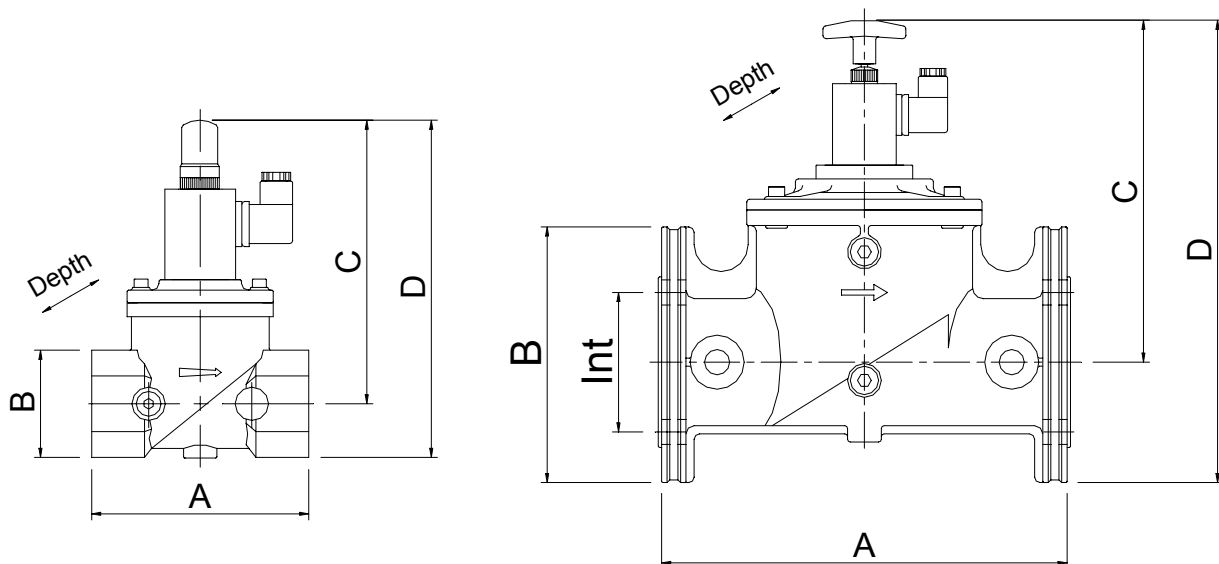
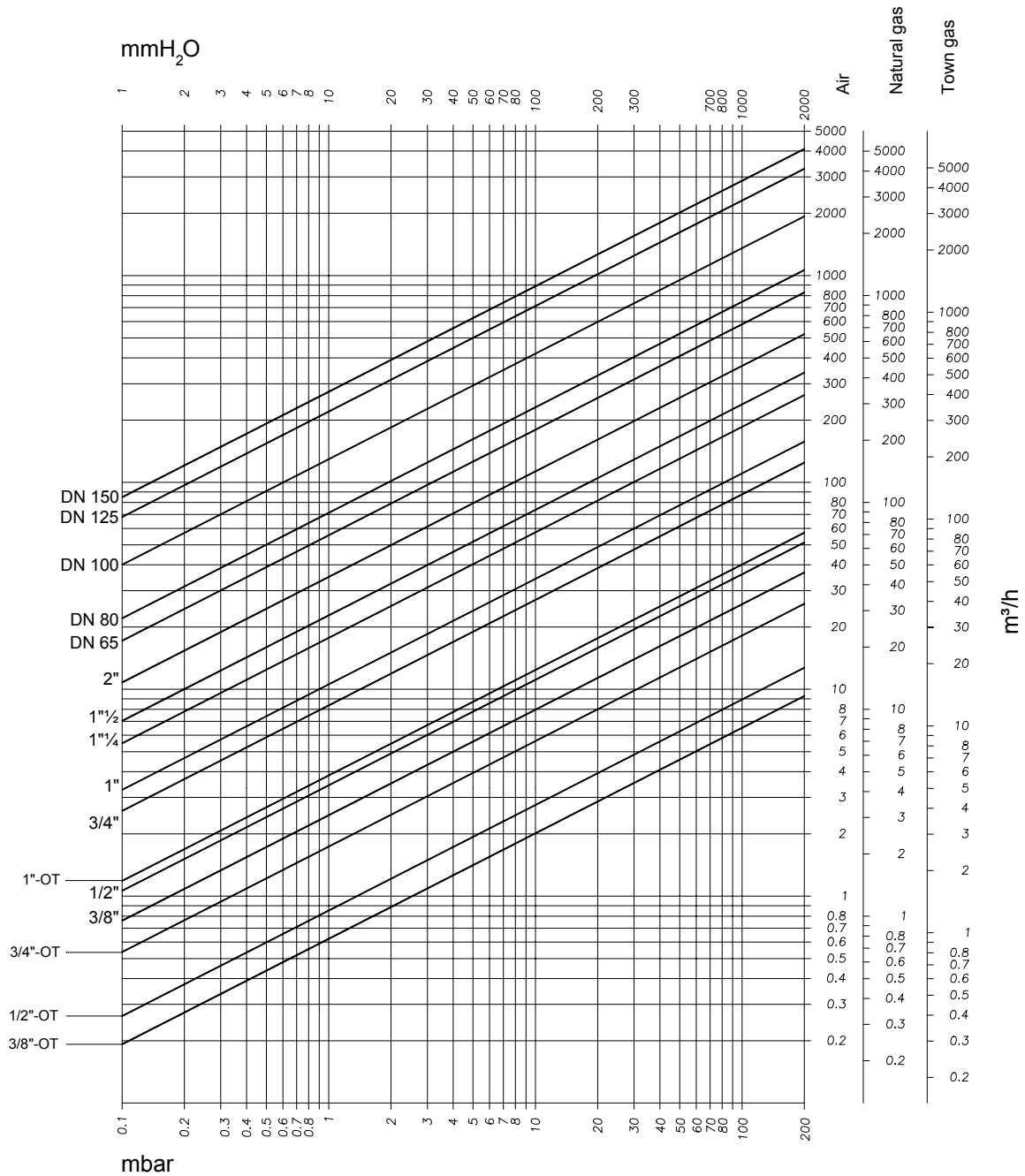


Fig. 3

Model	Connections	Max. Pressure (mbar)	Power Consump. (W)	Overall dimensions (mm)							Weight (Kg)
				A	B	C	D	Depth	Int	Holes	
EVRMNC0AO	3/8"	500	8	58	30	115	130	30	-	-	0,4
EVRMNC1AO	1/2"	500	8	58	30	115	130	30	-	-	0,4
EVRMNC2AO	3/4"	500	8	55	35	113	130	35	-	-	0,6
EVRMNC3AO	1"	500	8	62	45	115	137	40	-	-	0,7
EVRMNC0	3/8"	500	12	77	32	148	164	70	-	-	0,9
EVRMNC1	1/2"	500	12	77	32	148	164	70	-	-	0,9
EVRMNC2	3/4"	500	12	96	46	158	180	85	-	-	1,1
EVRMNC3	1"	500	12	96	46	158	180	85	-	-	1,1
EVRMNC35	1 1/4"	500	12	153	65	188	220	120	-	-	2
EVRMNC4	1 1/2"	500	12	153	65	188	220	120	-	-	2
EVRMNC6	2"	500	12	156	77	192	230	106	-	-	2,3
EVRMNC7	DN 65	500	25	305	190	250*	340*	200	145	4x18	7,6
EVRMNC8	DN 80	500	25	305	190	250*	340*	200	160	8x18	7,6
EVRMNC9	DN 100	500	45	350	220	280*	410*	252	180	8x18	17
EVRMNC93	DN 125	500	45	460	250	335*	505*	310	210	8x18	29
EVRMNC95	DN 150	500	45	460	285	335*	505*	310	240	8x22	31

(*) Valve closed.

8- Loss of pressure



Formula of conversion from air to other gases

Gas type	Specific gravity (Kg/m ³)	K
Natural Gas	0.80	1.25
Town Gas	0.57	1.48
Liquid Gas	2.08	0.77
Air	1.25	1.00

+15°C, 1013 mbar, dry

$$V_{\text{AIR}} = \frac{V_{\text{GAS TO BE USED}}}{K}$$

$$K = \sqrt{\frac{\text{AIR SPECIFIC GRAVITY}}{\text{GAS SPECIFIC GRAVITY}}}$$

Valve installation

Verify the line pressure is lower of the maximum working pressure admitted to the valve.

Check correspondence of flow direction with arrow printed on valve body.

Check correct alignment of connecting pipes and allow enough space from the walls to allow free air circulation.

Make sure no foreign body is entered into the valve during handling.

Install in an area that is protected from rain and water splashes or drops.

Threaded models:

1. Put sealing agent onto the pipe thread (avoid excessive quantities of fittings glue which could enter in the valve and damage the seal seat).
2. Screw the pipes using proper tools only. Do not use unit as lever because damage to the valve stem could result.

Flanged models:

1. Position the gasket and insert the bolts.
2. Screw the nuts tightening them crosswise and using proper tools only.

Avoid overtightening and mount tension free.

Following chart shows the maximum values of bending moment (F_{max}), torque (T_{max}) and screws driving torque (C_{max}), according with EN13611.

DN	F_{max} (Nm) $t < 10$ s	T_{max} (Nm)	C_{max} (Nm)
3/8"	70	35	-
1/2"	105	50	-
3/4"	225	85	-
1"	340	125	-
1 1/4"	475	160	-
1 1/2"	610	200	-
2"	1100	250	-
65	1600	-	50
80	2400	-	50
100	5000	-	80
125	6000	-	160
150	7600	-	160

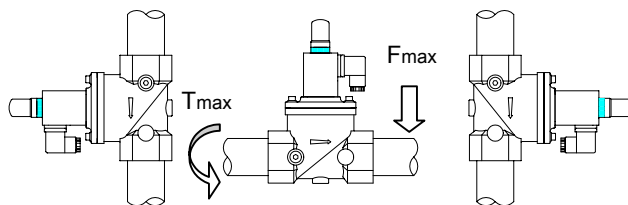


Fig. 4

Valve may be mounted with coil in horizontal or vertical position. Coil may be oriented 360 degrees in any direction.

Electrical connections (IEC 730-1)

Check correspondence between valve voltage rating and line power supply, before making any electrical connections.

1. Switch off power supply and remove protection cover.
2. Connect power cables to rectifier circuit terminal board.
3. Screw back the box cover, taking care to use all gaskets properly, because this could condition the valve life duration.

In case of 12V or 24V power supply, if it is rectified or direct, connect with entries "+,-". Do not reverse the polarity.

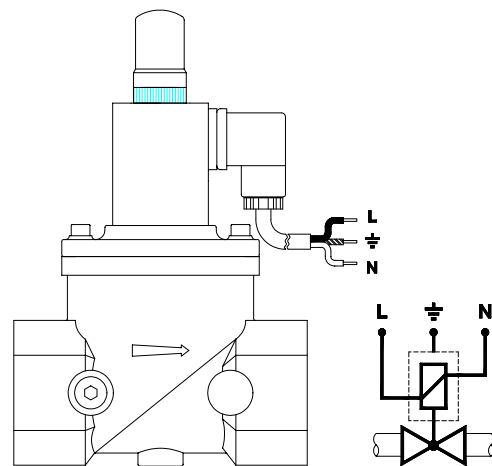


Fig. 5

WARNING

- To prevent product damage and dangerous situations, read the Installation and Service Instructions carefully.
- Turn off all power before servicing any part of the system.
- Perform leak and functional tests after mounting. A gas leak detection spray may be used also.
- Coil and DIN plug must be replaced with identical spare parts only.
- If the coil is turned, make sure the cap is properly tightened and the coil is locked.
- Use all gaskets properly (void warranty).
- All wiring must be in compliance with local and national codes.
- Make sure all works are performed by qualified technicians only.