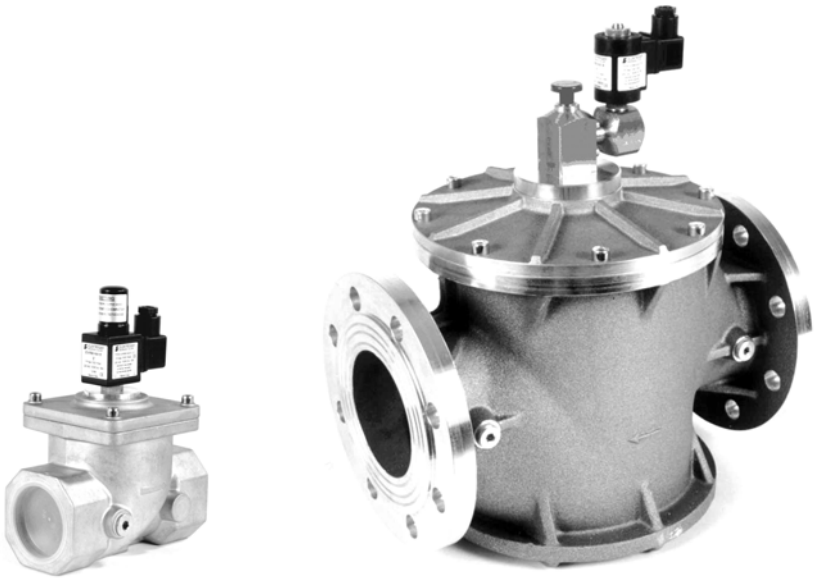
elektrogas
SOLENOID VALVES

EVRM-NA

Solenoid safety valves for Gas
Manual reset - Normally open
DN10 … DN150

www.elektrogas.com



EVRM-NA6 / EVRM-NA9

ISO 9001 SINCERT REGISTERED BY GASTEC
Certified Quality System

Printed in Italy - EE167/0104

EVRM-NA

Solenoid safety valves for gas

Manual reset - Normally open

The EVRM-NA type valve is a manual reset safety valve that is normally open. This type of device, connected with one or more gas leakage detectors or alarm signals for the presence of carbon monoxide, is suitable for performing locking operations on the gas line.

The EVRM-NA 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.**

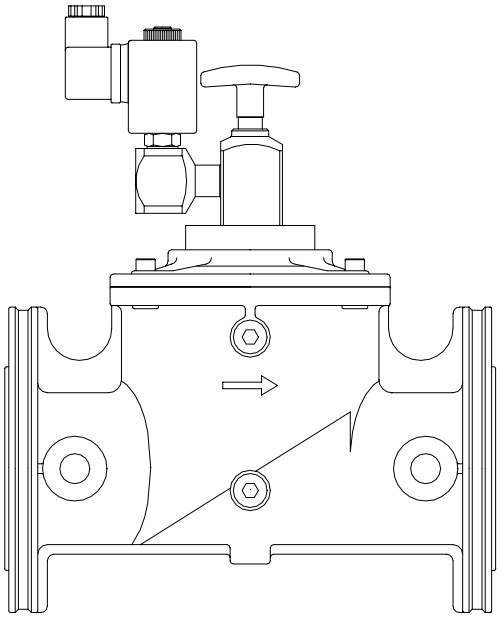


Fig. 1

2- Technical specifications

Connections ..... Gas threaded ISO 7/1
from Rp3/8" to Rp2"
Flanged PN16 – ISO 7005
from DN65 to DN150

Voltage rating .....230 VAC 50/60 Hz
Voltages on request ..... 110 VAC 50/60 Hz
24 V AC/DC
12 VDC

Voltage tolerance ..... -15% / +10%

Power consumption ..... see charts

Environment temperature ...-15°C / +60°C

Max. working pressure ..... 500 mbar

Flow capacity ..... see charts

Seal ..... NBR

Closing time ..... < 1 sec.

Protection class ..... IP 54 (EN60529)

Cable gland PG09

Overall dimensions ..... see charts

Printed in Italy - EE167/0104

3- Operation

The EVRM-NA type valve is a manual reset safety valve that is normally open. A manual operation is therefore necessary to open the valve and set the mechanism consenting to maintain this state. The powering by means of line current and/or condenser discharge, induced by the leakage detector, causes tripping of the mechanism and consequent closing of the gas passage. If energizing of the sensor persists due to the presence of gas, the valve remains under power and does not allow reset. When the causes for locking have been eliminated, valve must be opened manually.

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 G¼" 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

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

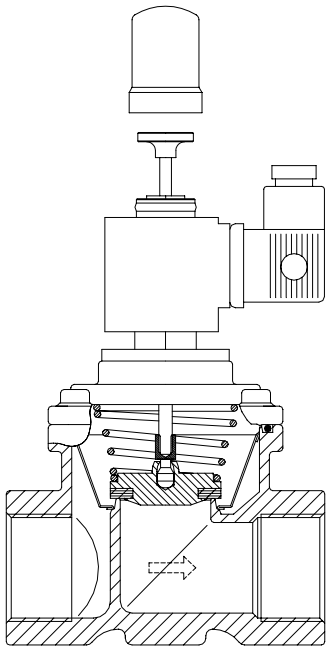


Fig. 2

6- General information

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

Printed in Italy - EE167/0104

7- Valve identification

Connections type		230 VAC	110 VAC	24 V AC/DC (1)	24 VDC-22W	12 VDC	12 VDC-22W
Threaded	Flanged						
3/8" brass		EVRMNA0AO	EVRMNA0BO	EVRMNA0CO	EVRMNA0COW	EVRMNA0DO	EVRMNA0DOW
1/2" brass		EVRMNA1AO	EVRMNA1BO	EVRMNA1CO	EVRMNA1COW	EVRMNA1DO	EVRMNA1DOW
3/4" brass		EVRMNA2AO	EVRMNA2BO	EVRMNA2CO	EVRMNA2COW	EVRMNA2DO	EVRMNA2DOW
1" brass		EVRMNA3AO	EVRMNA3BO	EVRMNA3CO	EVRMNA3COW	EVRMNA3DO	EVRMNA3DOW
3/8"		EVRMNAA0A	EVRMNA0B	EVRMNA0C	EVRMNA0CW	EVRMNA0D	EVRMNA0DW
1/2"		EVRMNA1A	EVRMNA1B	EVRMNA1C	EVRMNA1CW	EVRMNA1D	EVRMNA1DW
3/4"		EVRMNA2A	EVRMNA2B	EVRMNA2C	EVRMNA2CW	EVRMNA2D	EVRMNA2DW
1"		EVRMNA3A	EVRMNA3B	EVRMNA3C	EVRMNA3CW	EVRMNA3D	EVRMNA3DW
1"¼		EVRMNA35A	EVRMNA35B	EVRMNA35C	EVRMNA35CW	EVRMNA35D	EVRMNA35DW
1"½		EVRMNA4A	EVRMNA4B	EVRMNA4C	EVRMNA4CW	EVRMNA4D	EVRMNA4DW
2"		EVRMNA6A	EVRMNA6B	EVRMNA6C	EVRMNA6CW	EVRMNA6D	EVRMNA6DW
		230 VAC	**110 VAC**	**24 VDC**		**12 VDC**	
	DN 65	EVRMNA7A	EVRMNA7B	EVRMNA7C		EVRMNA7D	
	DN 80	EVRMNA8A	EVRMNA8B	EVRMNA8C		EVRMNA8D	
	DN 100	EVRMNA9A	EVRMNA9B	EVRMNA9C		EVRMNA9D	
	DN 125	EVRMNA93A	EVRMNA93B	EVRMNA93C		EVRMNA93D	
	DN 150	EVRMNA95A	EVRMN95B	EVRMNA95C		EVRMNA95D	

(1) Impulsive operation only.

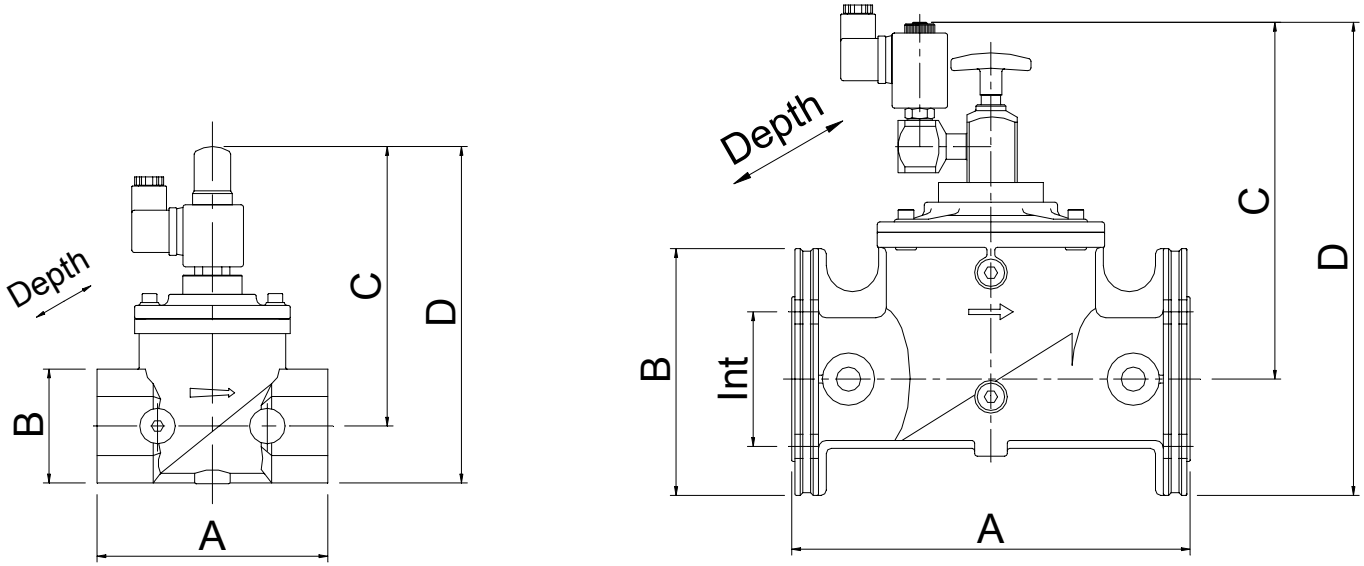
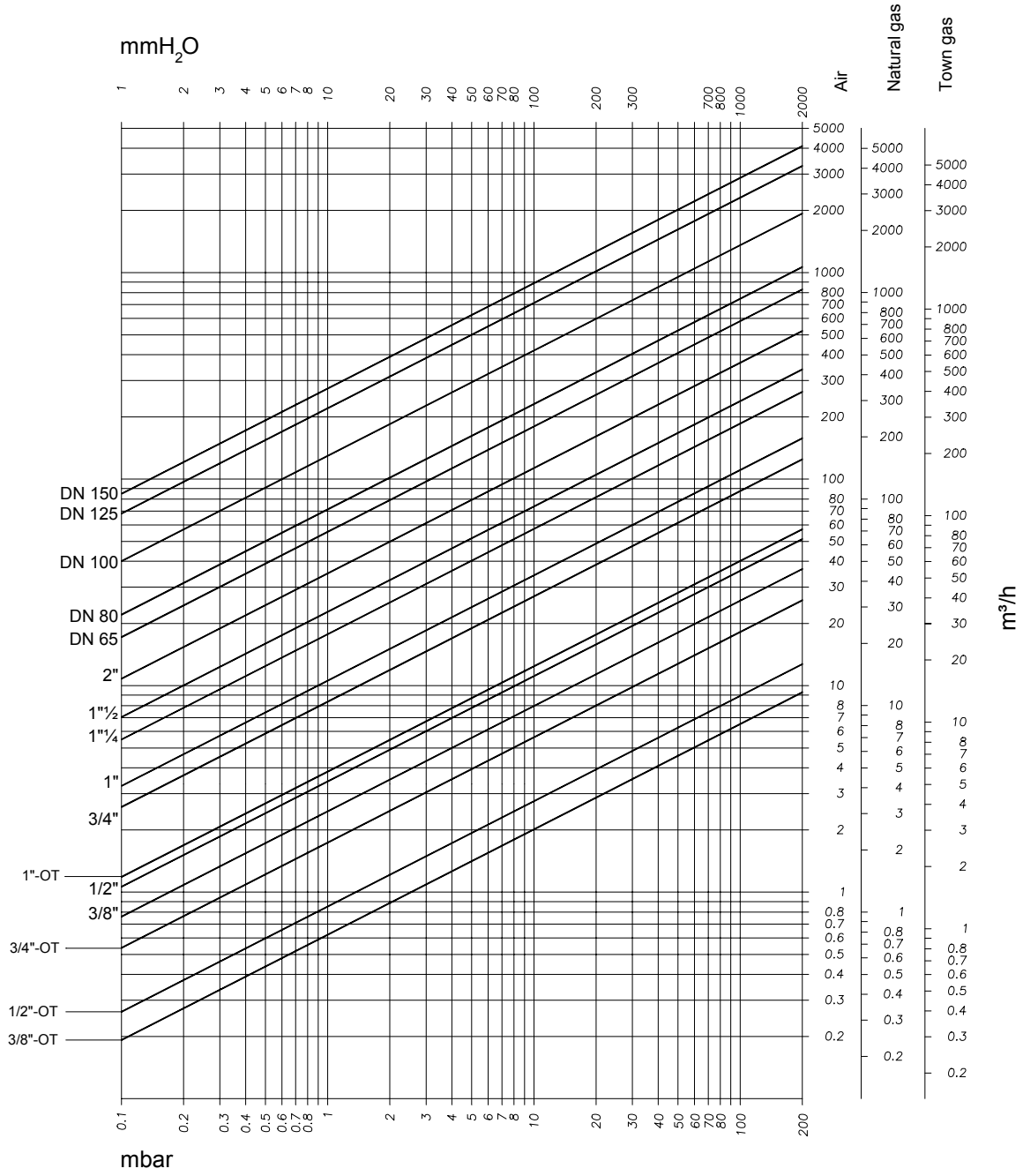


Fig. 3

Model	Connections	Max. Pressure (mbar)	Power Consump. (W)	Overall dimensions (mm)							Weight (Kg)
				A	B	C	D	Depth	Int	Holes	
EVRMNA0/O	3/8"	500	16	58	30	115	130	30	-	-	0,4
EVRMNA1/O	1/2"	500	16	58	30	115	130	30	-	-	0,4
EVRMNA2/O	3/4"	500	16	55	35	113	130	35	-	-	0,6
EVRMNA3/O	1"	500	16	62	45	115	137	40	-	-	0,7
EVRMNA0	3/8"	500	16	77	32	130	148	70	-	-	0,6
EVRMNA1	1/2"	500	16	77	32	130	148	70	-	-	0,6
EVRMNA2	3/4"	500	16	96	46	138	165	85	-	-	0,8
EVRMNA3	1"	500	16	96	46	138	165	85	-	-	0,8
EVRMNA35	1"¼	500	16	153	65	162	195	120	-	-	1,6
EVRMNA4	1"½	500	16	153	65	162	195	120	-	-	1,6
EVRMNA6	2"	500	16	156	77	167	205	106	-	-	1,9
EVRMNA7	DN 65	500	19	305	190	260	350	200	145	4x18	8,2
EVRMNA8	DN 80	500	19	305	190	260	350	200	160	8x18	8,2
EVRMNA9	DN 100	500	19	350	220	270	400	252	180	8x18	16
EVRMNA93	DN 125	500	19	460	250	310	480	310	210	8x18	28
EVRMNA95	DN 150	500	19	460	285	310	480	310	240	8x22	30

Printed in Italy - EE167/0104

8- Loss of pressure



Formula of conversion from air to other gases

Gas type	Specific gravity (Kg/m³)	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

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

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

Printed in Italy - EE167/0104

9- 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.

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"¼	475	160	-
1"½	610	200	-
2"	1100	250	-
65	1600	-	50
80	2400	-	50
100	5000	-	80
125	6000	-	160
150	7600	-	160

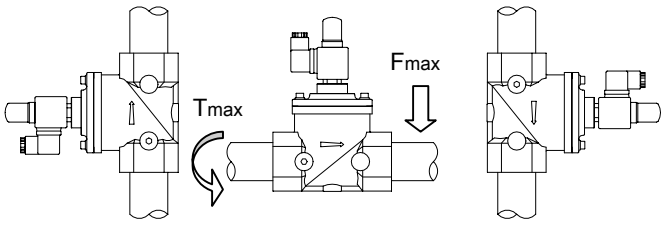


Fig. 4

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

CAUTION

Do not dismount or tamper with the resetting mechanism (void warranty).

10- 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.

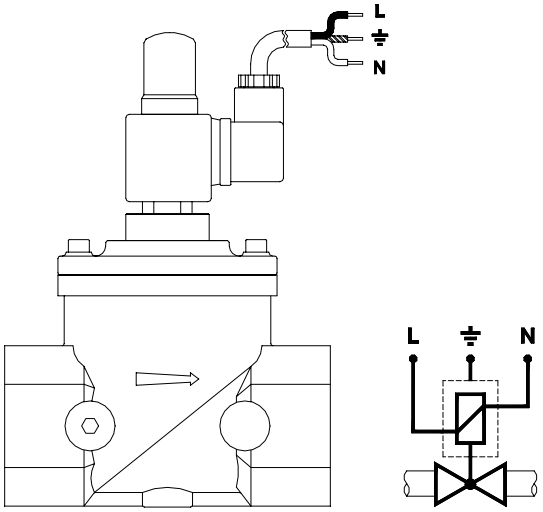


Fig. 5

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.**

Printed in Italy - EE167/0104