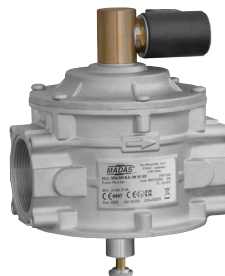
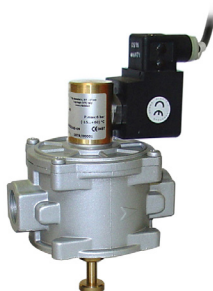


ELETTROVALVOLA A RIARMO MANUALE NORM. APERTA PER GAS  
 NORMALLY OPEN MANUAL RESET SOLENOID VALVE FOR GAS  
 ELECTROVÁLVULA CON REARME MANUAL NORMALMENTE ABIERTA PARA GAS



CE  II 2G - II 2D

CE 0497

**MADE IN ITALY**

|                                                                                                  | IT                                    | EN                                  | ES                                  |
|--------------------------------------------------------------------------------------------------|---------------------------------------|-------------------------------------|-------------------------------------|
| Pressione massima di esercizio<br>Maximum operating pressure<br>Presión máxima de funcionamiento | 6 bar (600 kPa)                       |                                     |                                     |
| Attacchi filettati<br>Threaded connections<br>Conexiones roscadas                                | DN 20 - DN 25 - DN 32 - DN 40 - DN 50 |                                     |                                     |
| Attacchi flangiati<br>Flanged connections<br>Conexiones embreadas                                | DN 25* - DN 32 - DN 40 - DN 50        |                                     |                                     |
|                                                                                                  | * su richiesta<br>con flange girevoli | * with swivel flanges<br>on request | * bajo petición<br>con bridas locas |
| In conformità a<br>In conformity with<br>Conforme                                                | Direttiva PED<br>2014/68/UE           | PED Directive<br>2014/68/EU         | Directiva PED<br>2014/68/UE         |

IT

EN

ES

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# 1.0 - GENERAL INFORMATION

This manual shows you how to safely install, operate and use the device.  
The instructions for use **ALWAYS** need to be available in the facility where the device is installed.

**ATTENTION: installation/wiring/maintenance need to be carried out by qualified staff (as explained in section 1.3) using appropriate personal protective equipment (PPE).**

For any information pertaining to installation/wiring/maintenance or in any case problems that cannot be resolved with the use of the instructions, it is possible to contact the manufacturer from the address and phone numbers provided on the last page.

## 1.1 - DESCRIPTION

Normally open, manual reset solenoid valves for gas, suitable to shut-off gas and signal danger sent by gas detectors (methane, LPG, carbon monoxide and similar), safety thermostats, etc.  
They can only be reset manually and only when they are not electrically powered.

## 1.2 - KEY OF SYMBOLS

|                                                                                   |                                                                                                              |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|   | <b>DANGER:</b> In the event of inobservance, may be caused damages to tangible goods.                        |
|  | <b>DANGER:</b> In the event of inobservance, may be caused damages to tangible goods, to people and/or pets. |
|  | <b>ATTENTION:</b> Attention is drawn to the technical details intended for qualified staff.                  |

## 1.3 - QUALIFIED STAFF

These are people who:

- Are familiar with product installation, assembly, start-up and maintenance;
- Know the regulations in force in the region or country pertaining to installation and safety;
- Are trained in first aid.

## 1.4 - USING NON-ORIGINAL SPARE PARTS

- To perform maintenance or change parts (ex. coil, etc.) **ONLY** manufacturer-recommended parts can be used. Using different parts not only voids the product warranty, it could compromise correct device operation.
- The manufacturer is not liable for malfunctions caused by unauthorised tampering or use of non-original parts.

## 1.5 - IMPROPER USE

- The product must only be used for the purpose it was built for.
- It is not allowed to use different fluids than those expressly stated.
- The technical data set forth on the rating plate must not be exceeded whatsoever. The end user or installer is in charge of implementing proper systems to protect the device, which prevent exceeding the maximum pressure indicated on the plate.
- The manufacturer is not responsible for any damage caused by improper use of the device.

## 2.0 - TECHNICAL DATA

|                                                        |                                                                                                                                               |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| • Use                                                  | : non-aggressive gases of the three families (dry gases)                                                                                      |
| • Ambient temperature (TS)                             | : -20 ÷ +50 °C                                                                                                                                |
| • Power voltages (see table 2)                         | : 12 Vdc - 24 Vdc - 24 V/50-60 Hz - 110 V/50-60 Hz - 220-240 V/50-60 Hz*                                                                      |
| • Power supply tolerance                               | : -15% ... +10%                                                                                                                               |
| • Electric wiring                                      | : electric cable l=3 metres with wire terminals                                                                                               |
| • Absorbed power                                       | : see table 2                                                                                                                                 |
| • Maximum operating pressure                           | : 6 bar (600 kPa)                                                                                                                             |
| • Closing time                                         | : < 1 s                                                                                                                                       |
| • Protection rating                                    | : IP65                                                                                                                                        |
| • Coil protection mode                                 | : see table 2                                                                                                                                 |
| • Mechanical resistance                                | : Group 2 (according to EN 13611)                                                                                                             |
| • Rp threaded connections                              | : (DN 20 - DN 25 - DN 32 - DN 40 - DN 50) according to EN 10226                                                                               |
| • Flanged connections to be coupled with PN 16 flanges | : (DN 25** - DN 32 - DN 40 - DN 50) ISO 7005 / EN 1092-1                                                                                      |
| • NPT threaded or ANSI flanged connections             | : on request                                                                                                                                  |
| • In compliance with                                   | : ATEX Directive 2014/34/EU - PED Directive 2014/68/EU<br>EMC Directive 2014/30/EU - LVD Directive 2014/35/EU<br>RoHS II Directive 2011/65/EU |

\* Only single-phase, the device does not work if powered with three-phase voltage.

\*\* DN 25 with swivel flanges.

## 3.0 - COMMISSIONING THE DEVICE



### 3.1 - OPERATIONS PRIOR TO INSTALLATION

- It is necessary to close the gas upstream of the valve prior to installation;
- Make sure that the line pressure **DOES NOT EXCEED** the maximum pressure declared on the product label;
- Any protective caps (if any) must be removed prior to installation;
- Valve pipes and insides must be clear of any foreign bodies;
  - If the device is threaded:
    - make sure that the pipe thread is not too long, to prevent damaging the body of the device when screwing it on;
  - If the device is flanged:
    - make sure the inlet and outlet counter-flanges are perfectly coaxial and parallel in order to prevent unnecessary mechanical stress to the body. Also calculate the space to insert the seal gasket;
    - With regard to tightening operations, equip yourself with one or two calibrated torque wrenches or other controlled locking tools;
- In accordance with EN 161 a suitable filter must be installed upstream of a gas closing safety device;
- With outdoor installation, it is advisable to provide a protective roof to prevent rain from damaging the electrical parts of the device.
- Prior to carrying out any electrical wiring operations, make sure that the main voltage matches the supply voltage indicated on the product label;



- Cut out power prior to proceeding with wiring;
- According to the plant geometry, check the risk of explosive mixture arising inside the piping;
- If the solenoid valve is installed near other devices or as part of an assembly, compatibility between the solenoid valve and this other device must be evaluated beforehand.
- Avoid installing the solenoid valve near surfaces that could be damaged by the coil temperature;
- Provide a protection against impacts or accidental contacts if the solenoid valve is accessible to unqualified personnel.



### 3.2 - INSTALLATION (see example in 3.4)

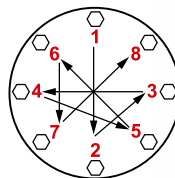
#### Threaded devices:

- Assemble the device by screwing it, with the due seals, onto the plant with pipes and/or fittings with the right threading for the connection being attached.
- Do not use the coil **(2)** as a lever to help you screw it on, only use the specific tool;
- The arrow, shown on the body **(8)** of the device, needs to be pointing towards the application;

#### Flanged devices:

- Assemble the device by flanging it, with the due seals, onto the plant with pipes whose flanges are consistent with the connection being attached. The gaskets must be free from defects and must be centred between the flanges;
- If, after installing the gaskets, there is still an excessive space in between, do not try to reduce the said gap by excessively tightening the bolts of the device;
- The arrow, shown on the body **(8)** of the device, needs to be pointing towards the application;
- Insert the relative washers inside the bolts in order to prevent damage to the flanges during tightening;
- When tightening, be careful not to "pinch" or damage the gasket;
- Tighten the nuts or bolts gradually, in a "cross" order (see the example below);
- Tighten them, first by 30%, then by 60%, and finally 100% of the maximum torque (see the table below according to EN 13611);

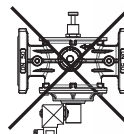
| Diameter          | DN 25 | DN 32 | DN 40 | DN 50 |
|-------------------|-------|-------|-------|-------|
| Max. torque (N.m) | 30    | 50    | 50    | 50    |



- Tighten each nut and bolt again clockwise at least once, until the maximum torque has been achieved uniformly;

#### Common procedures (threaded and flanged devices):

- The device can also be installed vertically without prejudicing the correct operation. It cannot be put in upside down (with the reset handgrip **(9)** pointing upwards);
- During installation, avoid debris or metal residues from getting into the device;
- To guarantee mechanical tension-free assembly, we recommend using compensating joints, which also adjust to the pipe's thermal dilation;
- If the device is to be installed in a ramp, it is the installer's responsibility to provide suitable supports or correctly sized supports, to properly hold and secure the assembly. Never, for any reason whatsoever, leave the weight of the ramp only on the connections (flanged or threaded) of the individual devices;
- In any case, following installation, check the tightness of the plant;
- **ATTENTION:** The coil is provided with a 3m long co-pressed power supply cable. This cable **MUST NOT** be replaced with a different one. In the event of damage, the part (coil) must be disposed of and replaced with an identical new one;
- In the dangerous area, wire the ends of the cable with explosion-proof approved equipment (E.g. Terminal box with "E" protection or increased safety according to EN 60079-7) using the special wire terminals.
- Make sure the connection cables are inserted correctly into the electrical terminal, ensuring they are not crushed and/or damaged in order to prevent short circuits and interferences.
- The valve needs to be connected to earth either through the pipe or through other means (e.g. cable jumpers).



## Special conditions for safe use

A fuse calibrated to rated current (max. 3 x Inom. according to IEC 60127-2-1) or a motor protection switch calibrated to rated current and with automatic thermal cut-out must be connected in series to every solenoid valve as protection against short circuits. With very low solenoid valve rated currents, it is sufficient to install a fuse with lower current values, according to the IEC standard above. The fuse can be integrated into the associated power supply unit or must be housed separately. The rated voltage of the fuse must be equal to or above the established rated voltage of the magnetic coil. The fuse-connection breaking capacity must be equal to or higher than the maximum possible short circuit current in the installation site (usually 1500 A).

A maximum ripple of 20% is valid for all direct current magnets.

For further technical information and method of installation/wiring, refer to the coil's technical manual (attached).

## 3.3 - INSTALLATION IN PLACES WHERE THERE IS THE RISK OF EXPLOSION (DIRECTIVE 2014/34/EU)

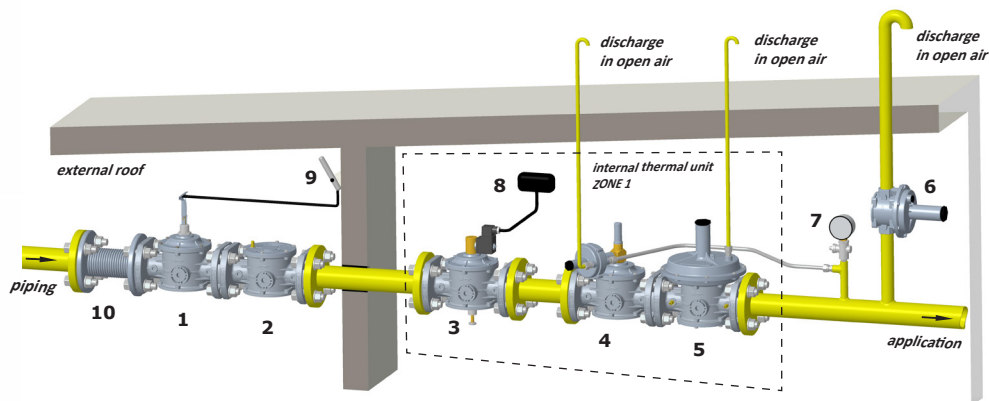
The solenoid valve complies with Directive 2014/34/EU as a device of group II, category 2G and as device of group II, category 2D; consequently, it is suited for installation in zones 1, 21, 2 and 22 as classified in Annex I of Directive 99/92/EC. The solenoid valve is not suitable for use in zones 0 and 20, as defined in aforementioned Directive 99/92/EC. To determine the qualification and size of the hazardous zones, please refer to standard IEC EN 60079-10-1.

If installed and subject to maintenance in full compliance with all conditions and technical instructions provided in this manual, the device does not pose a source of specific hazards: in particular, under conditions of normal operation, it is not expected for the solenoid valve to emit a flammable substance into the atmosphere with methods such as to originate an explosive atmosphere.

During installation and maintenance, it is imperative to comply with the Ex standards, in particular EN 60079-14. Electrical installation must be carried out by authorised personnel in accordance with relative national regulations.

## 3.4 - GENERIC EXAMPLE OF AN INSTALLATION

1. SM jerk ON/OFF valve
2. FM gas filter
3. **M16/RM N.A. EEX Manual reset solenoid valve**
4. OPSO series MVB/1 MAX shut off valve
5. RG/2MC pressure regulator
6. MVS/1 relief valve
7. Pressure gauge and relative button
8. Gas detector
9. SM remote jerk ON/OFF valve lever control
10. Compensation/Vibration damping joint



## 4.0 - MANUAL RESET

To reset the solenoid valve:

- Make sure the valve is **NOT** electrically powered;
- Close the flow downstream of the solenoid valve in order to balance the pressure between upstream and downstream when opening;
- Push the reset handgrip (9) and wait an instant to balance the pressure from and to the user's up to the hooking;
- After balancing the pressures, press the reset handgrip (9) until it connects.



## 5.0 - FIRST START-UP



- Before start-up make sure that all of the instructions on the rating plate, including the direction of flow, are observed;
- After having gradually pressurized the system, check the seal and operation of the solenoid valve, electrically powering / disconnecting the connector **ONLY IF** connected to the coil.

**IMPORTANT NOTE:** Do not use the connector as a switch to close the solenoid valve.

- Make sure the solenoid valve is closed by electrically connecting it.



## 5.1 - RECOMMENDED PERIODIC CHECKS

- Use a suitable calibration tool to ensure the bolts are tightened as indicated in 3.2;
  - Check tightness of the flanged/threaded connections on the system;
  - Check tightness and operation of the solenoid valve;
- It is the responsibility of the final user or installer to define the frequency of these checks based on the severity of the service conditions.



## 6.0 - MAINTENANCE

On completion of the operations described below, repeat the procedure indicated in paragraph 5. If the coil need to be replaced:

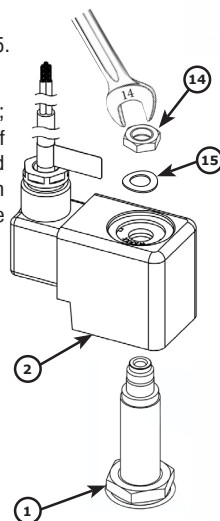


- Before performing any operation, make sure that the device is not electrically powered;
- Since the coil is also suitable to be permanently powered, coil heating in case of continuous operation is an entirely normal phenomenon. It is advisable to avoid touching the coil with bare hands after a continuous power supply lasting longer than 20 minutes. In case of maintenance, wait for the coil to cool down or, if necessary, use suitable protections;



### 6.1 - COIL REPLACEMENT (see figure on the side)

- Disconnect the coil's power supply cable, requiring replacement, from the system;
- Use a size 14 commercial spanner to loosen the nut (14) completely and remove it together with the washer (15);
- Remove the coil (2) from the armature assembly (1);
- Insert the armature assembly: the new coil + washer + nut;
- Tighten the nut (max torque = 1,2 Nm);
- Re-wire as indicated in 3.2;



## 7.0 - TRANSPORT, STORAGE AND DISPOSAL

- During transport the material needs to be handled with care, avoiding any impact or vibrations to the device;
- If the product has any surface treatments (ex. painting, cataphoresis, etc) it must not be damaged during transport;
- The transport and storage temperatures must observe the values provided on the rating plate;
- If the device is not installed immediately after delivery it must be correctly placed in storage in a dry and clean place;
- In humid facilities, it is necessary to use driers or heating to avoid condensation.
- At the end of its service life, the product is to be disposed of separately from other waste (WEEE directive 2012/19/EU) and in compliance with the legislation in force in the country where this operation is performed.



## 8.0 - WARRANTY

The warranty conditions agreed with the manufacturer at the time of the supply apply.

For damage caused by:

- Improper use of the device;
- Failure to observe the requirements described herein;
- Failure to observe the regulations pertaining to installation;
- Tampering, modification and use of non-original spare parts;

are not covered by the rights of the warranty or compensation for damage.

The warranty also excludes maintenance work, other manufacturers's assembling units, making changes to the device and natural wear.

## 9.0 - RATING PLATE DATA

**MADAS**<sup>®</sup>  
s.r.l.

Via Moratello, 5/6/7  
37045 - Legnago  
(VR) Italy

Mod.: **M16/RM N.A. DN 50 EEX**  
P.max=PS=6 bar (600 kPa)

IP65 - 220-240 V/50-60 Hz 7.7-9.4 VA TS: -20+50°C  
**CE** 0497 **CE** Ex II 2G II 2D  
Year: 2017 Lot: U1745 25407/00001

The plate data (see examples provided here) includes the following:

- Manufacturer's name/logo and address (possible distributor name/logo)
- Mod.: = name/model of the device followed by the diameter size
- P. max = Maximum pressure at which product operation is guaranteed
- PS = Allowable maximum pressure
- IP... = Protection rating
- 220-240V... = Power supply voltage, frequency (if Vac), followed by electrical absorption
- TS = Temperature range within which product operation is guaranteed
- **CE** 0497 = In compliance with PED Dir. followed by Notified Body No.
- **CE** Ex = Conformità Dir. ATEX seguita dal modo di protezione
- year = Year of manufacture
- Lot = Product serial number (see explanation below)
  - U1745 = Lot issued in year 2017 in the 45th week
  - 25407 = progressive job order number for the indicated year
  - 00001 = progressive number referred to the quantity of the lot

-  = Disposal in accordance with WEEE directive 2012/19/EU



### Coil protection mode

- II product group
- 2 product category

### Gas: II 2G Ex mb IIC T... Gb X

- G explosive atmosphere with gas or vapours
- Ex suitable for explosive atmosphere
- mb encapsulated for zone 1
- IIC explosion group
- T... temperature class (T4 < 135 °C) - (T5 < 100 °C) - (T6 < 85 °C)
- Gb Product Level (EPL) - equipment for use in explosive atmospheres due to the presence of gas, with an "high" level of protection, which is not a source of ignition in normal operation or during expected malfunctions
- X particular conditions of use (\*)

### Dust: II 2D Ex mb tb IIC T...°C Db X

- D explosive atmosphere with dust
- Ex suitable for explosive atmosphere
- mb encapsulated for zone 21
- tb protection by enclosure for zone 21
- IIC explosion group
- T... temperature class expressed in °C
- Db Product Level (EPL) - equipment for use in explosive atmospheres due to the presence of gas, with an "high" level of protection, which is not a source of ignition in normal operation or during expected malfunctions
- X particular conditions of use (\*)

\* see paragraph 3.2 - "Special conditions for safe use"



## 5.0 - PRIMERA PUESTA EN SERVICIO



- Antes de la puesta en servicio compruebe que se respeten todas las indicaciones presentes en la placa, incluida la dirección del flujo;
- Tras haber presurizado de forma gradual la instalación, compruebe la estanqueidad y el funcionamiento de la electroválvula, alimentando/desalimentando eléctricamente el conector **SOLO SI** está conectado a la bobina.

**NOTA IMPORTANTE:** No utilice el conector como interruptor para cerrar la electroválvula.

- Compruebe que la válvula esté cerrada alimentándola eléctricamente.



## 5.1 - COMPROBACIONES PERIÓDICAS RECOMENDADAS

- Compruebe con el instrumento específico calibrado, que el apriete de los pernos sea conforme con lo indicado en 3.2;
  - Compruebe la estanqueidad de las conexiones embridadas/roscaadas en la instalación;
  - Compruebe la estanqueidad y el funcionamiento de la electroválvula;
- Es deber del usuario final o del instalador, determinar la frecuencia de dichas comprobaciones en función de la relevancia de las condiciones de servicio.



## 6.0 - MANTENIMIENTO

Una vez acabadas las operaciones descritas a continuación, repita los procedimientos indicados en el apartado 5.

Si es necesario sustituir la bobina:

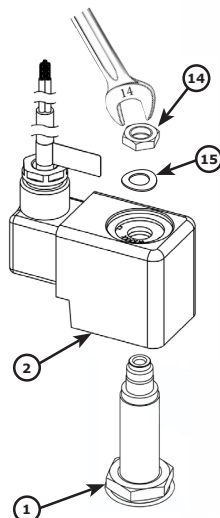


- Antes de realizar cualquier operación, asegúrese de que el aparato no reciba alimentación eléctrica;
- Como la bobina es idónea también para alimentación permanente, el calentamiento de la bobina en caso de funcionamiento continuo es un fenómeno normal. Se aconseja evitar el contacto de las manos desnudas con la bobina tras una alimentación eléctrica continua superior a 20 minutos. En caso de mantenimiento, hay que esperar a que se enfríe la bobina o, si esto no es posible, utilizar protecciones adecuadas;



## 6.1 - SUSTITUCIÓN DE LA BOBINA (consulte la figura de al lado)

- Desconecte de la instalación el cable de alimentación de la bobina que se quiera sustituir;
- Con una llave comercial de 14 mm desenrosque completamente la tuerca (14) y extráigala junto a la arandela (15);
- Quite la bobina (2) del manguito (1);
- Introduzca en el manguito: la nueva bobina + arandela + tuerca;
- Apriete la tuerca (par máx. = 1,2 Nm);
- Realice de nuevo el cableado como se indica en el punto 3.2;



## 7.0 - TRANSPORTE, ALMACENAMIENTO Y ELIMINACIÓN

- Durante el transporte, el material se debe tratar con cuidado, evitando que el dispositivo esté sometido a choques, golpes o vibraciones;
- Si el producto presenta tratamientos superficiales (ej. pintura, cataforesis, etc.) no se deben dañar durante el transporte;
- La temperatura de transporte y almacenamiento debe coincidir con la indicada en los datos de la placa;
- Si el dispositivo no se instala inmediatamente después de la entrega, se debe almacenar correctamente en un lugar seco y limpio;
- En lugares húmedos es necesario usar secadores o bien calefacción para evitar la formación de condensación.

El producto, al final de su vida útil, deberá eliminarse por separado respecto a los demás residuos (Directiva RAEE 2012/19/UE) y en conformidad con la legislación vigente en el país en el que se realiza esta operación.



## 8.0 - GARANTÍA

Valen las condiciones de garantía establecidas con el fabricante en el momento del suministro.

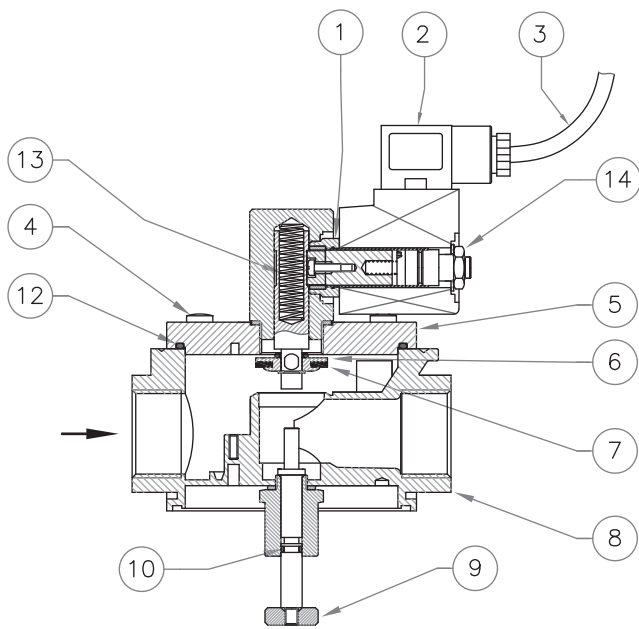
Por daños causados por:

- uso impropio del dispositivo;
- incumplimiento de las disposiciones indicadas en este documento;
- incumplimiento de las normas relacionadas con la instalación;
- Alteración, modificación y uso de partes de repuesto no originales;

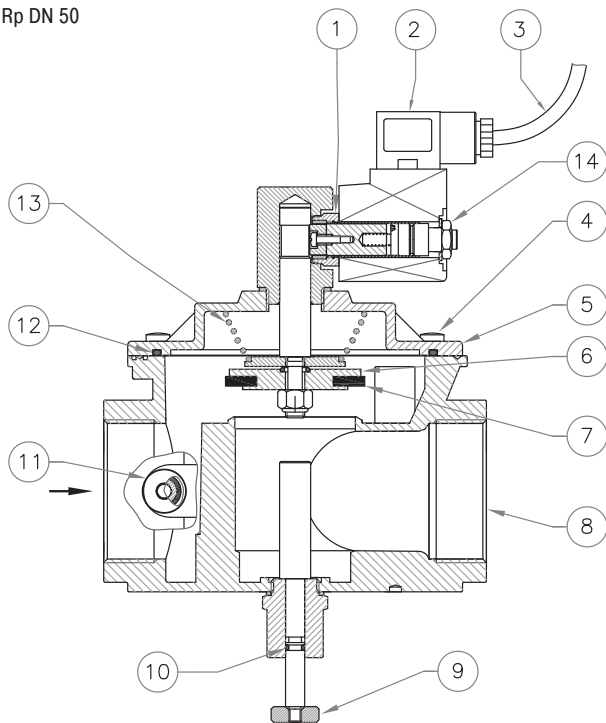
no se pueden reclamar derechos de garantía ni resarcimiento de daños.

Además, se excluyen de la garantía los trabajos de mantenimiento, el montaje de aparatos de otros fabricantes, la modificación del dispositivo y el desgaste natural.

**fig. 1**  
Rp DN 20 - Rp DN 25



**fig. 2**  
Rp DN 32 - Rp DN 40 - Rp DN 50



**fig. 3**  
DN 32 FL - DN 40 FL - DN 50 FL

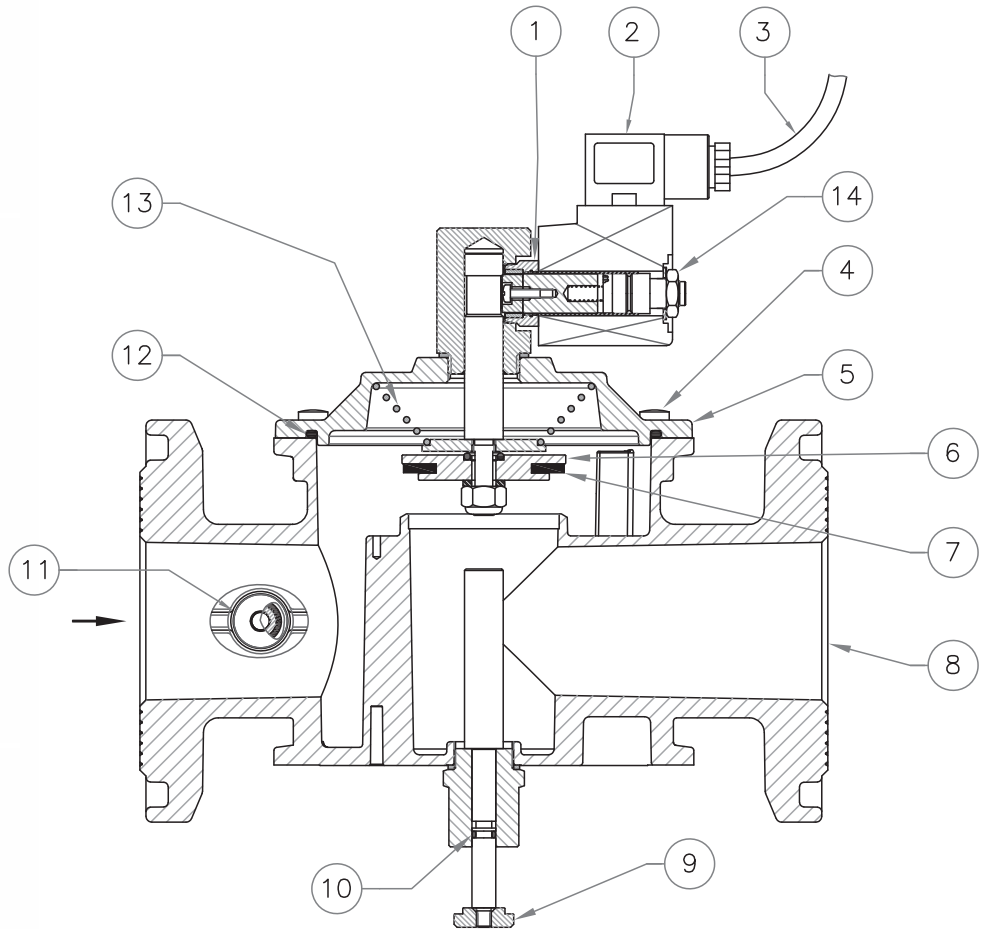


fig. 1, 2 e 3

1. Cannotto bobina
2. Bobina
3. Cavo di alimentazione
4. Viti di fissaggio coperchio
5. Coperchio
6. Otturatore
7. Rondella di tenuta
8. Corpo valvola
9. Manopola di riarmo
10. O-Ring di tenuta
11. Tappo G 1/4 (optional)
12. O-Ring di tenuta coperchio
13. Molla di chiusura
14. Dado bloccaggio bobina
15. Rondella per bobina

fig. 1, 2 and 3

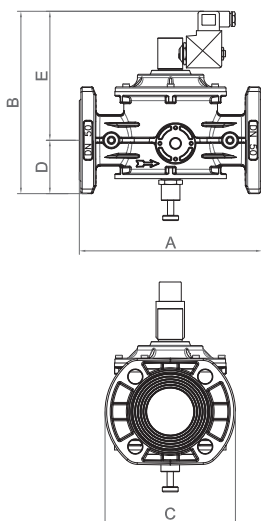
1. Coil armature assembly
2. Coil
3. Power supply cable
4. Cover clamping screws
5. Cover
6. Obturator
7. Sealing washer
8. Valve body
9. Reset handgrip
10. Sealing O-Ring
11. Cap G 1/4 (optional)
12. Cover sealing O-Ring
13. Closing spring
14. Coil locking nut
15. Coil washer

fig. 1, 2 y 3

1. Manguito bobina
2. Bobina
3. Cable de alimentación
4. Tornillos de fijación de la tapa
5. Tapa
6. Obturador
7. Arandela de estanqueidad
8. Cuerpo de la válvula
9. Bóton de rearme
10. Junta tórica de estanquidad
11. Tapón G 1/4 (opcional)
12. Junta tórica de estanquidad tapa
13. Muelle de cierre
14. Tuerca de bloqueo de la bobina
15. Arandela para bobina

Tabella 1 - Table 1 - Tabla 1

Dimensioni di ingombro in mm - Overall dimensions in mm - Dimensiones totales en mm



Attacchi filettati  
Threaded connections  
Conexiones roscadas

Attacchi flangiati  
Flanged connections  
Conexiones bridadas

fori  
holes  
orificios

A

B

C

D

E

DN 20 - DN 25

-

-

120

158

94

72

126

DN 32 - DN 40

-

-

160

240

140

88,5

151,5

DN 50

-

-

160

265

140

96,5

168,5

-

PN 16 - ANSI 150  
DN 25

4

191

198

115

72

126

-

PN 16 - DN 32

4

230

267

165

101,5

165,5

-

PN 16 - ANSI 150  
DN 40 - DN 50

4

230

267

165

101,5

165,5

Le dimensioni sono indicative, non vincolanti - The dimensions are provided as a guideline, they are not binding  
Las dimensiones son indicativas, no vinculantes

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Tabella 2 - Table 2 - Tabla 2

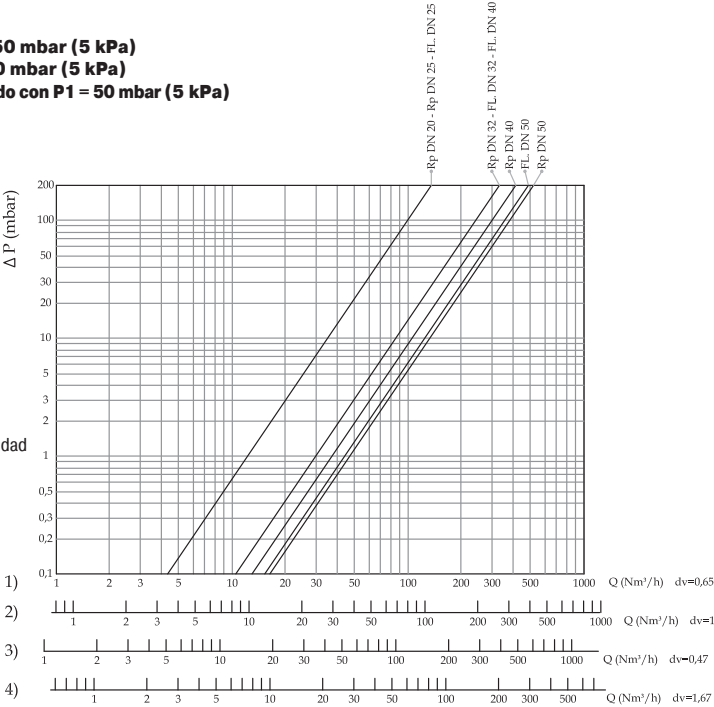
Bobine per elettrovalvole **M16/RM N.A. EEX**  
Coils for **M16/RM N.A. EEX** solenoid valves  
Bobinas para electroválvulas **M16/RM N.A. EEX**

| Ø             | Voltage<br>Voltage<br>Voltage | Codice bobina<br>Coil code<br>Código de la bobina | Modo di protezione bobina<br>Coil protection mode<br>Modo de protección bobina | Potenza assorbita<br>Absorbed power<br>Potencia absorbida |
|---------------|-------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------|
| DN 20 ÷ DN 50 | 12 Vdc                        | BO-0901                                           | II 2G Ex mb IIC T4 Gb<br>II 2D Ex mb tb IIIC T130 °C Db                        | 9,9 VA                                                    |
|               | 24 Vdc                        | BO-0911                                           |                                                                                | 10,1 VA                                                   |
|               | 24 V/50-60 Hz                 | BO-0915                                           |                                                                                | 7,6 VA                                                    |
|               | 110 V/50-60 Hz                | BO-0920                                           |                                                                                | 9,1 VA                                                    |
|               | 220-240 V/50-60 Hz            | BO-0930                                           |                                                                                | 7,7 - 9,4 VA                                              |

Diagramma calcolato con P1 = 50 mbar (5 kPa)  
Diagram calculated with P1 = 50 mbar (5 kPa)  
Tabla de pérdidas de carga calculado con P1 = 50 mbar (5 kPa)

dv = densità relativa all'aria  
dv = density relative to the air  
dv = densidad relativa del aire

- 1) metano - methane - metano
- 3) gas di città - town gas - gas de ciudad
- 2) aria - air - aire
- 4) gpl - lpg - gas líquido



**ATTACCHI FILETTATI NPT / NPT THREADED CONNECTIONS**  
**CONEXIONES ROSCADAS NPT**

richiedere fattibilità / request feasibility / consulte la disponibilidad

Aggiungere la lettera **"N"** dopo  
le cifre indicanti gli attacchi

Add the letter **"N"** after figures  
denoting the connection

Añadir la letra **"N"** a continuación de  
las cifras que indican los diámetros de  
conexión

Es. / E.g. / Ej.  
RM07**N**E0000 008

**ATTACCHI FLANGIATI ANSI 150 / ANSI 150 FLANGED CONNECTIONS**  
**CONEXIONES EMBRIDADAS ANSI 150**

richiedere fattibilità / request feasibility / demander la faisabilité / consulte la disponibilité

Aggiungere la lettera **"A"** dopo  
le cifre indicanti gli attacchi

Add the letter **"A"** after figures  
denoting the connection

Añadir la letra **"A"** a continuación de  
las cifras que indican los diámetros de  
conexión

Es. / E.g. / Ej.  
RM07**A**E0000 008

**BIOGAS**

richiedere fattibilità / request feasibility / demander la faisabilité / consulte la disponibilité

Aggiungere la lettera **"B"** dopo  
le cifre indicanti gli attacchi

Add the letter **"B"** after figures  
denoting the connection

Añadir la letra **"B"** a continuación de  
las cifras que indican los diámetros de  
conexión

Es. / E.g. / Ej.  
RM50**B**E0000 008

**ELASTOMERI IN FKM (Viton) / ELASTOMERS IN FKM (Viton)**  
**ELASTÓMEROS DE FKM (Viton)**

Aggiungere la lettera **"V"** dopo  
le cifre indicanti gli attacchi

Add the letter **"V"** after figures  
denoting the connection

Añadir la letra **"V"** a continuación de  
las cifras que indican los diámetros de  
conexión

Es. / E.g. / Ej.  
RM07**V**E0000 008

**CATAFORESI / CATAPHORESIS**  
**CATAFORESIS**

Aggiungere la lettera **"K"** dopo  
le cifre indicanti gli attacchi

Add the letter **"K"** after figures  
denoting the connection

Añadir la letra **"K"** a continuación de  
las cifras que indican los diámetros de  
conexión

Es. / E.g. / Ej.  
RM07**K**E0000 008

**CONNETTORI CON LED / CONNECTORS WITH LED**  
**CONECTOR CON LED**

Aggiungere la lettera **"L"** prima  
delle cifre che indicano il  
voltaggio

Add the letter **"L"** before figures  
denoting the voltage

Añadir la letra **"L"** a continuación de las  
cifras que indican el voltaje

Es. / E.g. / Ej.  
RM07E0000 **L**008

**COMBINAZIONI POSSIBILI / POSSIBLE COMBINATIONS**  
**POSIBLES COMBINACIONES**

È possibile combinare tra di  
loro le versioni.  
Non serve indicare **"BV"** in  
quanto **"B"** include **"V"**

It is possible to combine the  
above mentioned versions. It is  
not needed to state **"BV"** as the  
letter **"B"** includes **"V"** too

Es posible combinar las versiones  
entre sí. No es necesario indicar  
**"BV"**, dado que **"B"** incluye **"V"**

Es. / E.g. / Ej.  
RM07**BK**E0000 008

**NOTA:** È possibile che alcuni modelli non siano disponibili nelle versioni suddette sia singole e/o combinate. È consigliato chiedere SEMPRE la fattibilità.

**NOTE:** It is possible certain models are not available on the above mentioned versions, both singles and/or combined too. We suggest to ask ALWAYS for the feasibility.

**NOTA:** Puede suceder que algunos modelos no estén disponibles en las versiones citadas, ya sean individuales o combinadas. Se aconseja consultar SIEMPRE la viabilidad.

IT

Attacchi filettati / Threaded connections / Conexiones roscadas

| Attacchi<br>Connections<br>Conexiones | Voltaggio<br>Voltage<br>Voltage | <b>P. max = 6 bar (600 kPa)</b> |     |
|---------------------------------------|---------------------------------|---------------------------------|-----|
|                                       |                                 | Codice / Code / Código          |     |
| <b>DN 20</b>                          | 12 Vdc                          | RM03E0000                       | 001 |
|                                       | 24 Vdc                          | RM03E0000                       | 005 |
|                                       | 24 V/50 Hz                      | RM03E0000                       | 003 |
|                                       | 110 V/50-60 Hz                  | RM03E0000                       | 002 |
|                                       | 220-240 V/50-60 Hz              | RM03E0000                       | 008 |
| <b>DN 25</b>                          | 12 Vdc                          | RM04E0000                       | 001 |
|                                       | 24 Vdc                          | RM04E0000                       | 005 |
|                                       | 24 V/50 Hz                      | RM04E0000                       | 003 |
|                                       | 110 V/50-60 Hz                  | RM04E0000                       | 002 |
|                                       | 220-240 V/50-60 Hz              | RM04E0000                       | 008 |
| <b>DN 32</b>                          | 12 Vdc                          | RM05E0000                       | 001 |
|                                       | 24 Vdc                          | RM05E0000                       | 005 |
|                                       | 24 V/50 Hz                      | RM05E0000                       | 003 |
|                                       | 110 V/50-60 Hz                  | RM05E0000                       | 002 |
|                                       | 220-240 V/50-60 Hz              | RM05E0000                       | 008 |
| <b>DN 40</b>                          | 12 Vdc                          | RM06E0000                       | 001 |
|                                       | 24 Vdc                          | RM06E0000                       | 005 |
|                                       | 24 V/50 Hz                      | RM06E0000                       | 003 |
|                                       | 110 V/50-60 Hz                  | RM06E0000                       | 002 |
|                                       | 220-240 V/50-60 Hz              | RM06E0000                       | 008 |
| <b>DN 50</b>                          | 12 Vdc                          | RM07E0000                       | 001 |
|                                       | 24 Vdc                          | RM07E0000                       | 005 |
|                                       | 24 V/50 Hz                      | RM07E0000                       | 003 |
|                                       | 110 V/50-60 Hz                  | RM07E0000                       | 002 |
|                                       | 220-240 V/50-60 Hz              | RM07E0000                       | 008 |

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| Attacchi flangiati / Flanged connections / Conexiones embrizadas |                               |                          |
|------------------------------------------------------------------|-------------------------------|--------------------------|
| Attacchi<br>Connections<br>Conexiones                            | Vtaggio<br>Voltage<br>Voltaje | P. max = 6 bar (600 kPa) |
|                                                                  |                               | Codice / Code / Código   |
| DN 25                                                            | 12 Vdc                        | RM25E0000 001            |
|                                                                  | 24 Vdc                        | RM25E0000 005            |
|                                                                  | 24 V/50 Hz                    | RM25E0000 003            |
|                                                                  | 110 V/50-60 Hz                | RM25E0000 002            |
|                                                                  | 220-240 V/50-60 Hz            | RM25E0000 008            |
| DN 32                                                            | 12 Vdc                        | RM32E0000 001            |
|                                                                  | 24 Vdc                        | RM32E0000 005            |
|                                                                  | 24 V/50 Hz                    | RM32E0000 003            |
|                                                                  | 110 V/50-60 Hz                | RM32E0000 002            |
|                                                                  | 220-240 V/50-60 Hz            | RM32E0000 008            |
| DN 40                                                            | 12 Vdc                        | RM40E0000 001            |
|                                                                  | 24 Vdc                        | RM40E0000 005            |
|                                                                  | 24 V/50 Hz                    | RM40E0000 003            |
|                                                                  | 110 V/50-60 Hz                | RM40E0000 002            |
|                                                                  | 220-240 V/50-60 Hz            | RM40E0000 008            |
| DN 50                                                            | 12 Vdc                        | RM50E0000 001            |
|                                                                  | 24 Vdc                        | RM50E0000 005            |
|                                                                  | 24 V/50 Hz                    | RM50E0000 003            |
|                                                                  | 110 V/50-60 Hz                | RM50E0000 002            |
|                                                                  | 220-240 V/50-60 Hz            | RM50E0000 008            |

**IT**

Fotografie e disegni contenuti nel presente documento, incluse posizioni di componenti (es. bobine, connettori, ecc.), sono da considerarsi puramente indicativi, non vincolanti e sono inseriti a solo scopo dimostrativo. Ci riserviamo qualsiasi modifica tecnica e costruttiva.

**EN**

Pictures and drawings in this document, including positions of components (e.g. coils, connectors, etc.), are to be considered purely indicative, they are not binding and are included for demonstration purposes only. We reserve the right to any technical and construction changes.

**ES**

Las fotografías y los dibujos de este documento, incluidas las posiciones de los componentes (por ejemplo, bobinas, conectores, etc.), deben considerarse meramente indicativos, no son vinculantes y se incluyen únicamente con fines de demostración.

Nos reservamos el derecho de realizar cualquier cambio técnico y estructural.

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