



NORMALLY CLOSED MANUAL RESET SOLENOID VALVE FOR GAS

355AM

DN 15 - DN 20 - DN 25 - DN 32 - DN 40 - DN 50



CE-51AT1438/ED05

CE 0051

MADE IN ITALY

EC approval according to EN 161, compliant with Regulation (EU) 2016/426

EN

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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) by using suitable personal protective equipment (PPE).

For any information pertaining to installation/wiring/maintenance or in any case problems that cannot be solved with the instructions, contact the manufacturer by using the address and phone numbers provided on the last page.

1.1 - DESCRIPTION

Normally closed, manual reset solenoid valves for gas, suitable to shut off gas both to signal danger sent by gas detectors (methane, LPG, carbon monoxide and similar) or safety thermostats, and in the event of a power cut.

For additional safety, this solenoid valve can only be reset with the power supply on and only when the gas detector is not signalling danger.

IMPORTANT NOTE: The valve will not open by simply powering the coil. You must manually press the reset mechanism (as indicated in 4.0)

Reference standards: EN 161 - EN 13611.

1.2 - KEY OF SYMBOLS



DANGER: In the event of inobservance, this may cause damage to tangible goods.



DANGER: In the event of inobservance, this may cause damage to tangible goods, to people and/or pets.



ATTENTION: Attention is drawn to the technical details intended for qualified staff.

1.3 - QUALIFIED STAFF

These are people who:

- Are qualified to carry out 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 replace parts (ex. coil, connector, 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 rating 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 ÷ +60°C
• Supply voltages (see table 2)	: 24 V/50 Hz, 230 V/50-60 Hz*
• Power supply tolerance	: -15% ... +10%
• Electric wiring	: cable gland M20x1.5
• Absorbed power	: see table 2
• Maximum operating pressure	: 500 mbar
• Closing time	: <1 s
• Protection rating	: IP65
• Class	: A
• Mechanical resistance	: Group 2
• Rp Threaded connections	: (DN 15 - DN 20 - DN 25 - DN 32 - DN 40 - DN 50) according to EN 10226
• NPT threaded connections	: on request
• Filter element	: 1 mm wire mesh
• In compliance with	: Regulation (EU) 2016/426 (Appliances burning gaseous fuels) Directive EMC 2014/30/EU - Directive LVD 2014/35/EU Directive RoHS II 2011/65/EU

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

2.1 - MODEL IDENTIFICATION

See Table 2 on page 17.

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;
- Make sure that the pipe thread is not too long, to prevent damaging the body of the device when screwing it on;
- 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 mains voltage matches the supply voltage indicated on the product label;



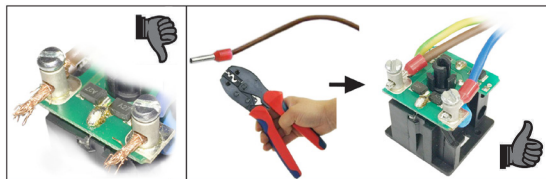
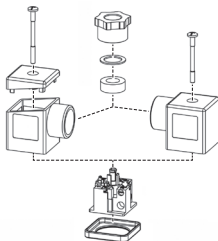
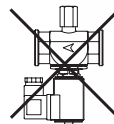
- Cut off power prior to proceeding with wiring;
- According to the plant geometry, check the risk of an explosive mixture arising inside the piping;
- If the solenoid valve is installed near other devices or as part of an assembly, compatibility between the solenoid valve and this other device must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



3.2 - INSTALLATION (see example in 3.4)

- Assemble the device by screwing it, with the due seals, onto the plant with pipes and/or fittings whose threads are consistent with the connection being attached;
- Do not use the coil (**1**) 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;

- The device can also be installed vertically without affecting correct operation. It cannot be put in upside down (with the cover (5) pointing downwards);
- 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 expansion;
- If the device is to be installed in a ramp, it is the installer's responsibility to provide suitable or correctly sized supports to hold and secure the assembly. Never, for any reason whatsoever, leave the weight of the ramp only on the connections (threaded or flanged) of the individual devices;
- In any case, following installation, check the tightness of the plant;
- Wiring cannot have cables connected directly to the coil. **ALWAYS and ONLY** use the connector identified by the manufacturer;
- Before wiring the connector (2), unscrew and remove the central screw (3). Use the designated cable terminals (see figures below). **NOTE:** Connector wiring operations (2) must be carried out taking care to ensure the product's IP65 rating;
- Wire the connector (2) with 3x0.75mm² cable for external Ø 6.2 to 8.1 mm. The cable must be in double sheath, suitable for outdoor use, with a minimum voltage of 500V and a temperature of at least 90°C;



- Connect terminals 1 and 2 to the power supply and the earth cable to terminal $\oplus$;
- Secure the connector (2) to the coil (1), tightening (recommended tightening torque 0.4 N.m $\pm$ 10%) the centre screw (3);
- The valve needs to be connected to earth either through the pipe or through other means (e.g. cable jumpers).

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

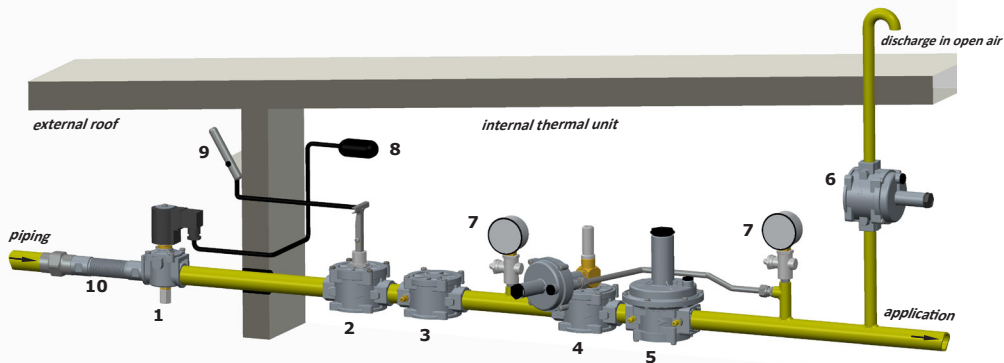
The solenoid valve is not suitable for use in potentially explosive areas.

3.4 - GENERIC EXAMPLE OF AN INSTALLATION

1. 355AM manual reset solenoid valve

2. Jerk ON/OFF valve
3. Gas filter
4. OPSO shut off valve
5. Pressure regulator

6. Relief valve
7. Pressure gauge and relative button
8. Gas detector
9. Remote jerk ON/OFF valve lever control
10. Expansion joint/anti-vibration mount





4.0 - MANUAL RESET (see fig.1 and 2)

To reset the solenoid valve:

- Make sure there is power;
- Close the flow downstream of the solenoid valve in order to balance the pressure between upstream and downstream when opening;
- Loosen and remove the protective cover (9);
- Fully press the reset pin (10) and wait a few seconds for the pressure upstream and downstream of the valve to stabilise until it locks into place;
- Screw the protective cover (9) back on in its original place. Or seal it in that position.



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 pressurised the system, reset the solenoid valve, as indicated in 4.0;
- Check the tightness, the operation and the closing of the solenoid valve, electrically disconnecting the connector **ONLY IF** connected to the coil. **IMPORTANT NOTE:** Do not use the connector as a switch to close the solenoid valve.



5.1 - RECOMMENDED PERIODIC CHECKS

- Use a suitable calibration tool to ensure the bolts are tightened as indicated in 3.2;
 - Check the tightness of the flanged/threaded connections on the system;
 - Check the 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

No maintenance operations need to be carried out inside the device.

On completion of the operations described below, repeat the procedure indicated in paragraph 5.

If the coil and/or electronic board/connector 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;

NOTE: if the coil **(1)** needs to be changed following an electrical failure, we recommend changing the connector **(2)** as well. The coil and/or connector replacement operations need to be carried out taking care to ensure the product's IP65 rating.



6.1 - REPLACING THE CONNECTOR

- Fully unscrew and remove the central screw **(3)**, then remove the connector **(2)** from the coil **(1)**;
- When you have taken out the existing internal electrical wiring, wire the new connector and secure it to the coil, as shown in 3.2;



6.2 - REPLACING THE COIL

- Fully unscrew and remove the central screw **(3)**, then remove the connector **(2)** from the coil **(1)**;
- Loosen the screw **(17)** that locks the coil **(1)** and take it out from the armature assembly **(4)** along with the gaskets/discs;
- Insert the new coil + seals + discs into the armature assembly **(4)** and secure everything with the screw;
- Couple the connector to the coil and secure it as shown in 3.2;
- If it is necessary to set up the wiring, proceed as described 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 (e.g. 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' assembling units, making changes to the device and natural wear.

9.0 - RATING PLATE DATA

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

- Manufacturer's name/logo and address
- Mod.: = device name/model followed by the connection diameter
- CE-51AT1438/ED05 = certification pin number
- Cl. A = Seal strength in counterflow at 150 mbar in accordance with EN 161
- Gr. 2 = Mechanical resistance group 2 in accordance with EN 161
- EN 161 = Product reference regulation
- P.max = Maximum pressure at which product operation is guaranteed
- IP... = Protection rating
- 230V.... = Power supply voltage, frequency (if Vac), followed by electrical absorption
- TS = Temperature range within which product operation is guaranteed
-  0051 = Conformity with Regulation (EU) 2016/426 followed by Notified Body No.
- year = Year of manufacture
- Lot = Product serial number (see explanation below)
 - U2002 = Lot issued in year 2020 in the 2nd week
 - 1728 = progressive job order number for the indicated year
 - 00002 = progressive number referring to the quantity of the lot
-  = Disposal in accordance with WEEE directive 2012/19/EU

BOSS™

Lodge Way House, Lodge Way,
Harlestone Road,
Northampton NN5 7UG.

Mod.: 355AM DN 50

CODE: 35500398

CE-51AT1438/ED05 Cl.A Gr.2 EN 161 P.max:500 mbar

IP65 - 230 V/50-60 Hz 9 VA

TS: -20+60 °C

 **0051**

year: 2020 Lot: U2002 1728/00002



fig. 1
DN 15 - DN 20 - DN 25

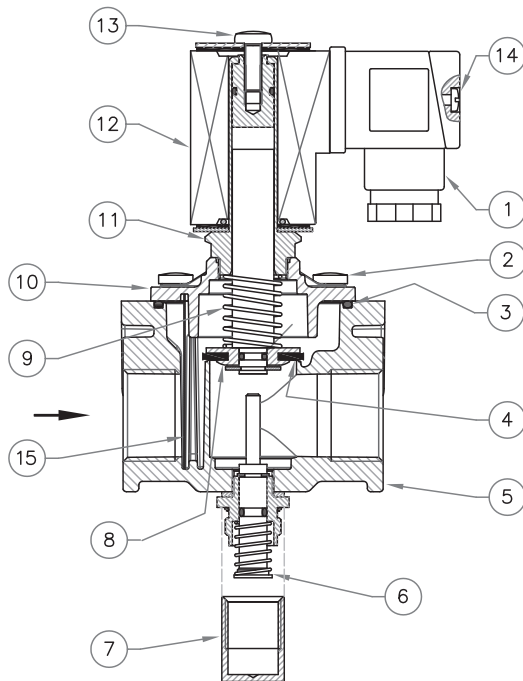


fig. 2
DN 32 - DN 40 - DN 50

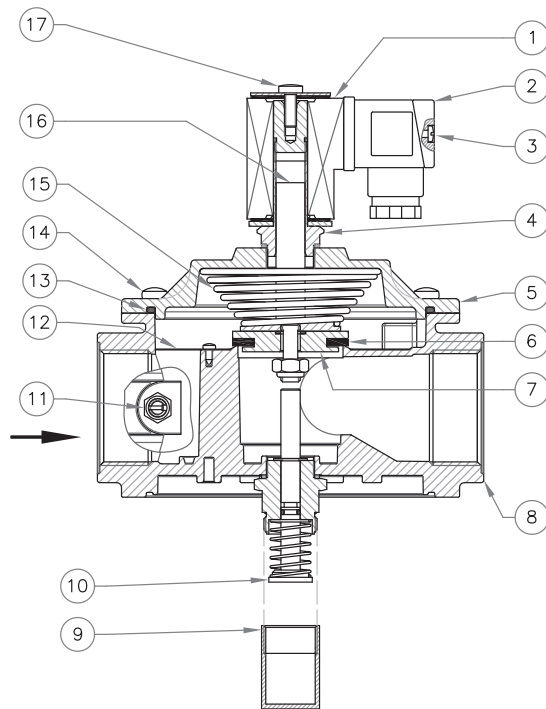


fig. 1 and 2

1. Electric coil
2. Electric connector
3. Connector clamping screw
4. Armature assembly for coil
5. Cover
6. Sealing washer
7. Obturator
8. Valve body
9. Protective cover
10. Reset pin
11. Pressure test nipple (optional)
12. Filter element
13. Valve cover sealing O-Ring
14. Valve cover fastening screws
15. Closing spring
16. Mobile core
17. Coil locking screw

Table 1

Overall dimensions in mm

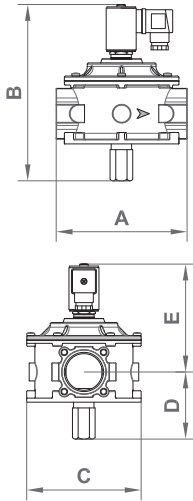
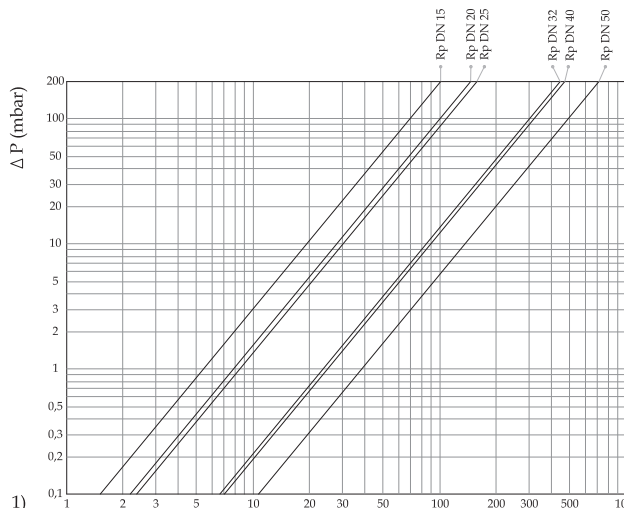
Threaded connections	A	B=(D+E)	C	D	E	
Rp DN 15 Rp DN 20 Rp DN 25	75	163	74	52	111	
Rp DN 32 - Rp DN 40	160	212	140	78	134	
Rp DN 50	160	244	140	92,5	151,5	
The dimensions are provided as a guideline, they are not binding						

Table 2
Coils and connectors for 355AM solenoid valve

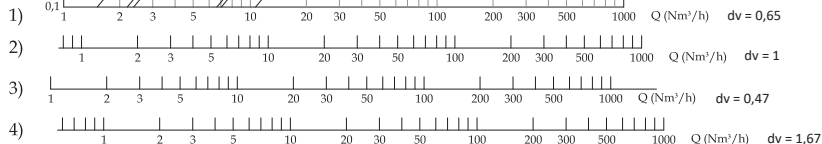
Valve code	Connections	Voltage	Coil + connector code (available as special order)	Coil stamping	Connector type	Absorbed power
Standard						
35500502	Rp DN 15	24 V/50 Hz	B13059	BO-0040 24 V DC R	24 Vac Rectifier	8 VA
35500513	Rp DN 20					
35500535	Rp DN 25					
35500546	Rp DN 32					
35500557	Rp DN 40					
35500568	Rp DN 50					
35500343	Rp DN 15	230 V/50-60 Hz	B13058	BO-0050 220 V RAC	230 Vac Rectifier	9 VA
35500354	Rp DN 20					
35500365	Rp DN 25					
35500376	Rp DN 32					
35500387	Rp DN 40					
35500398	Rp DN 50					

Pressure drop diagram (calculated with P1 = 50 mbar)



dv = density relative to the air

- 1) methane
- 2) air
- 3) town gas
- 4) lpg



NOTES

EN

We reserve the right to any technical and construction changes.



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