

# NORMALLY OPEN MANUAL RESET SOLENOID VALVES

Serie IENA05/6..



## DESCRIPTION

The functioning principle of solenoid valves series IENA is very simple and extremely safe. The coil, when under tension, releases and springs up the closing device.

The reset is manual to check the causes of gas detection.

During normal conditions there is no electric absorption, no wear and tear.

**Pmax = 0,5 bar**

**Pmax = 6 bar**

- 6 bar versions in conformity with the 97/23/EC Directive (PED Directive)
- In conformity with the 94/9/EC Directive (ATEX Directive)
- In conformity with the 2004/108/EC Directive (Electromagnetic Compatibility)
- In conformity with the 2006/95/EC Directive (Low Voltage)

## IDENTIFICATION

**IENA O 0 02N I 1 B**

Gas normally open manual solenoid valve **series IENA..**

### Version

**O** = brass body  
**A** = aluminum body

### Pmax

**0** = Pmax 0,5 bar  
**6** = Pmax 6 bar

**B** = biogas

### Voltage

**1** = 12 V/50 Hz  
**2** = 12 Vdc  
**3** = 24 V/50 Hz  
**4** = 24 Vdc  
**5** = 110 V/50-60 Hz  
**6** = 230 V/50-60 Hz

### Coil

**I** = IP65 (ATEX zone 2)  
**E** = EEX (ATEX zone 1)

### Connections

Threaded				Flanged			
Code	GAS	Code NPT	NPT	Code	PN 16	Code ANSI	ANSI PN 16
<b>02</b>	DN 15 (G 1/2")	<b>02N</b>	DN 15 (NPT 1/2")				
<b>03</b>	DN 20 (G 3/4")	<b>03N</b>	DN 20 (NPT 3/4")				
<b>04</b>	DN 25 (G 1")	<b>04N</b>	DN 25 (NPT 1")	<b>25</b>	DN 25	<b>25A</b>	DN 25 ANSI
<b>05</b>	DN 32 (G 1"1/4)	<b>05N</b>	DN 32 (NPT 1"1/4)	<b>32</b>	DN 32	<b>32A</b>	DN 32 ANSI
<b>06</b>	DN 40 (G 1"1/2)	<b>06N</b>	DN 40 (NPT 1"1/2)	<b>40</b>	DN 40	<b>40A</b>	DN 40 ANSI
<b>07</b>	DN 50 (G 2")	<b>07N</b>	DN 50 (NPT 2")	<b>50</b>	DN 50	<b>50A</b>	DN 50 ANSI
				<b>08</b>	DN 65	<b>08A</b>	DN 65 ANSI
				<b>09</b>	DN 80	<b>09A</b>	DN 80 ANSI
				<b>10</b>	DN 100	<b>10A</b>	DN 100 ANSI

**NOTE: not all combinations are possible  
Please contact the technical department.**

# GENERAL DATA

## TECHNICAL DATA

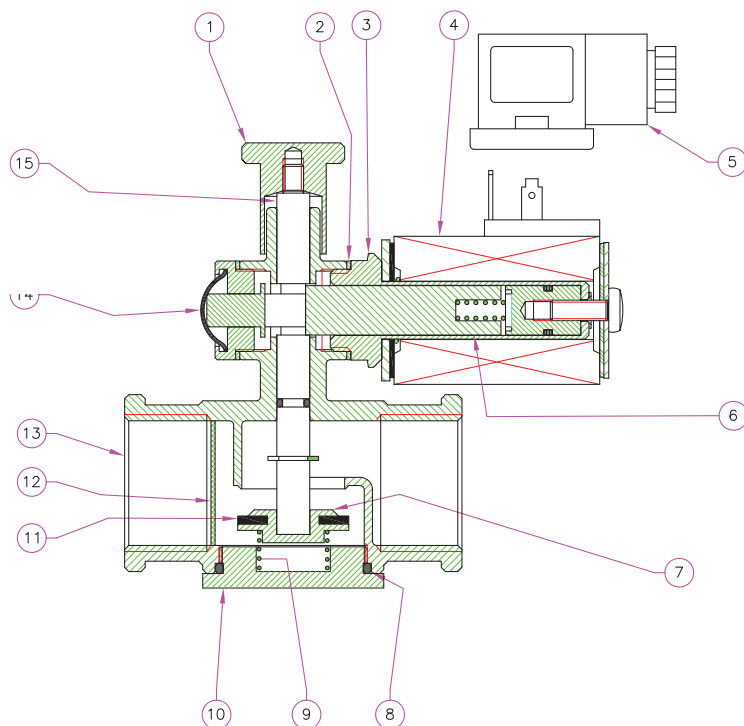
- Use: not aggressive gases of the 3 families (dry gases)
- Threaded connections Rp (brass body): (DN 15 ÷ DN 25) according to EN 10226
- Threaded connections Rp: (DN 15 ÷ DN 50) according to EN 10226
- Flanged connections PN 16: (DN 25 ÷ DN 100) according to ISO 7005
- On request ANSI 150 flanged connections
- Power supply voltage: 12 Vdc, 12 V/50 Hz, 24 Vdc, 24 V/50 Hz, 110 V/50 Hz, 230 V/50-60 Hz
- Power supply voltage tolerance: -15% ... +10%
- Power absorption: see coils and connector table
- Max. working pressure: 500 mbar or 6 bar
- Environment temperature: -15 ÷ +60 °C
- Max superficial temperature: 70 °C
- Protection degree: IP65
- Class: A
- Group: 2
- Closing time: <1 s

Coils: polyammiac resin encapsulated with glass fibre, connection type DIN 43650; the insulation class is F (155°) and the enamelled copper wire class is H (180°).

## MATERIALS

- Die-cast aluminium (UNI EN 1706)
- OT-58 brass (UNI EN 12164)
- 11S aluminium (UNI 9002-5)
- Galvanized and 430 F stainless steel (UNI EN 10088)
- NBR rubber (UNI 7702)

# COMPONENTS



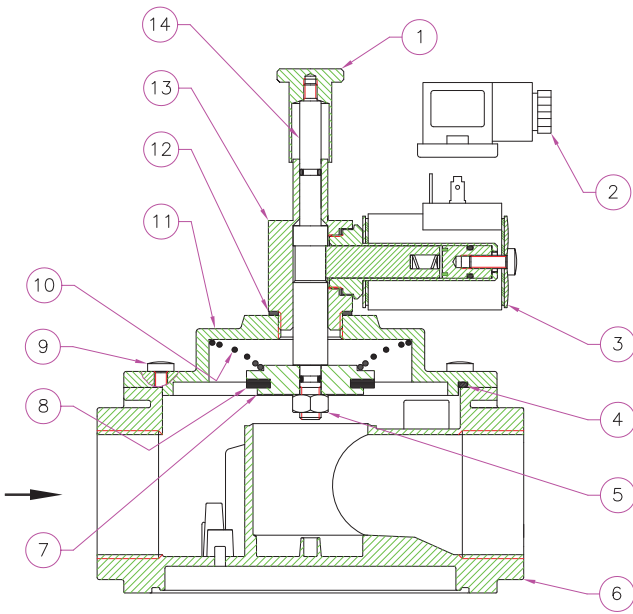
**fig. 1: DN 15  
DN 20  
DN 25  
version with brass body**

### LEGEND

- 1 - Reset handgrip
- 2 - Aluminium washer
- 3 - Coil armature assembly
- 4 - Electrical coil
- 5 - Electrical connector
- 6 - Plunger
- 7 - Closure member
- 8 - Seal O-Ring
- 9 - Closing spring
- 10 - Lower cap
- 11 - Seal washer
- 12 - Filtering organ (on request)
- 13 - Body valve
- 15 - Central pin

# COMPONENTS

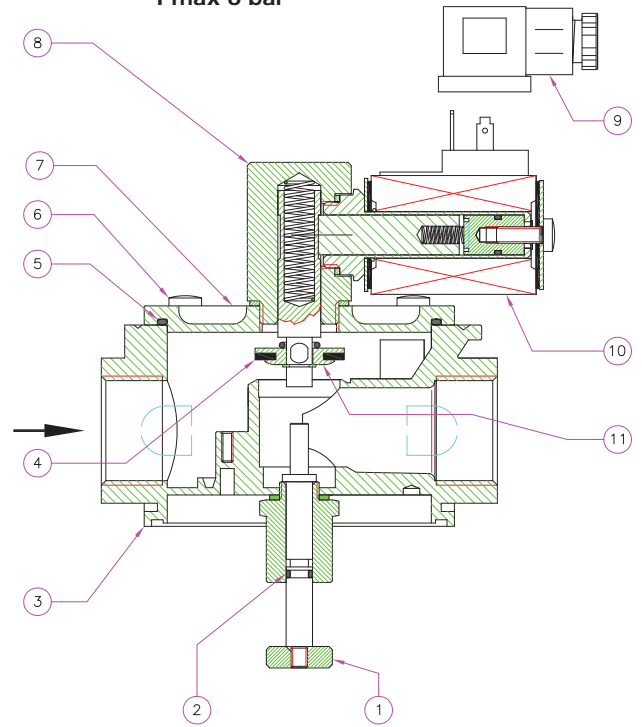
**fig. 2: DN 20 -50  
Pmax 0,5 bar**



**LEGEND**

- |                          |                       |
|--------------------------|-----------------------|
| 1 - Reset handgrip       | 8 - Washer seal       |
| 2 - Electrical connector | 9 - Fixing screws     |
| 3 - Electrical coil      | 10 - Closing spring   |
| 4 - O-Ring seal cover    | 11 - Cover            |
| 5 - Self-blocking nut    | 12 - Aluminium washer |
| 6 - Valve body           | 13 - Brass block      |
| 7 - Closure member       | 14 - O-Ring seal      |

**fig. 3: DN 20 -50  
Pmax 6 bar**

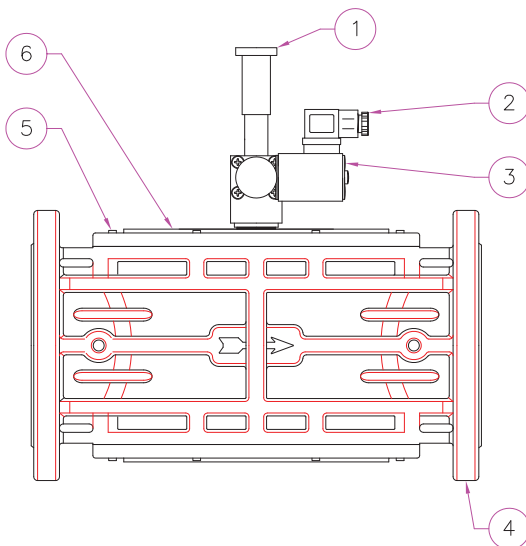


**LEGEND**

- |                       |                          |
|-----------------------|--------------------------|
| 1 - Reset pin         | 6 - Fixing screws        |
| 2 - O-Ring seal       | 7 - Cover                |
| 3 - Valve body        | 8 - Brass block          |
| 4 - Washer seal       | 9 - Electrical connector |
| 5 - Cover O-Ring seal | 10 - Electrical coil     |

The reset pin (1) located under the valve body (3) is available in DN 15 ÷ DN 50 connections ; in DN 65 ÷ DN 100 connections the reset is the same of the 500 mbar versions.

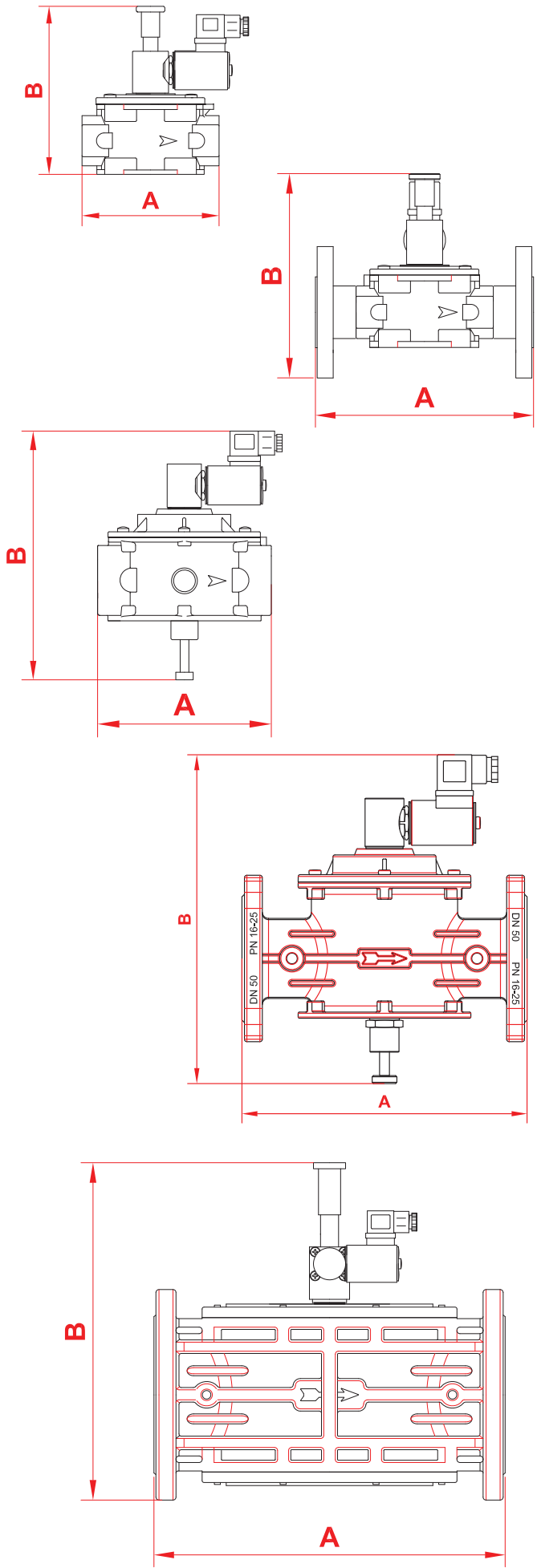
**fig. 4: DN 65  
DN 80  
DN 100  
Pmax 0,5 bar  
Pmax 6 bar**



**LEGEND**

- |                     |
|---------------------|
| 1 - Reset handgrip  |
| 2 - Connector       |
| 3 - Electrical coil |
| 4 - Valve body      |
| 5 - Fixing screws   |
| 6 - Cover           |

# DIMENSIONS



Overall dimensions in mm (P.max 500 mbar)

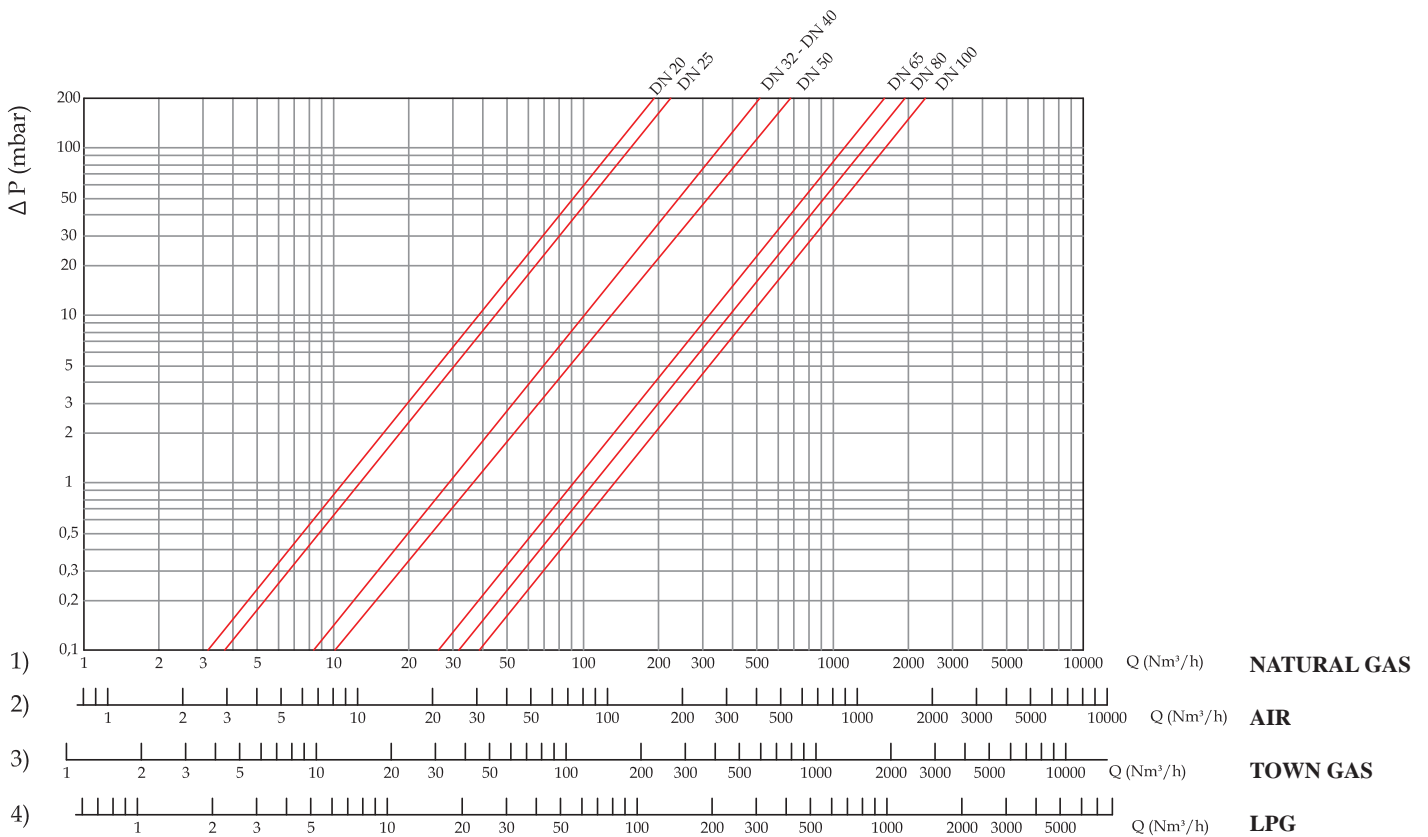
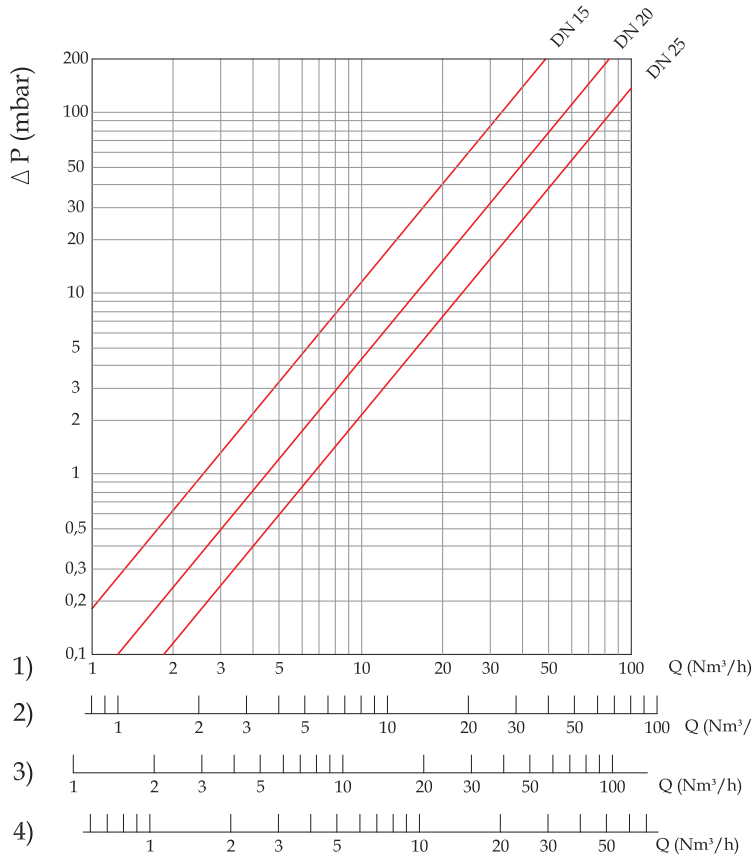
Threaded sizes	Flanged connections	A	B	Kg
DN 15*	-	66	109	0,5
DN 20*	-	66	109	0,5
DN 25*	-	82	122	1
DN 20	-	120	149	1,1
DN 25	-	120	149	1,1
DN 32	-	160	196	2,1
DN 40	-	160	196	2,1
DN 50	-	160	216	2,3
-	DN 25	192	174	3,8
-	DN 32	230	245	3,5
-	DN 40	230	245	3,5
-	DN 50	230	245	3,5
-	DN 65	290	328	6,5
-	DN 80	310	335	6,9
-	DN 100	350	360	11,8

Overall dimensions in mm (P.max 6 bar)

Threaded sizes	Flanged connections	A	B	Kg
DN 15*	-	66	109	0,5
DN 20*	-	66	109	0,5
DN 25*	-	82	122	1
DN 20	-	120	194	1,3
DN 25	-	120	194	1,3
DN 32	-	160	230	2,1
DN 40	-	160	230	2,1
DN 50	-	160	257	2,4
-	DN 25	192	194	4
-	DN 32	230	267	3,5
-	DN 40	230	267	3,5
-	DN 50	230	267	3,5
-	DN 65	290	328	6,5
-	DN 80	310	335	6,9
-	DN 100	350	360	11,8

\* = brass body

# PRESSURE DROP DIAGRAM



## COILS AND CONNECTORS

Connections	Voltage	Coil code	Coil stamping	Connector code	Connector type
<b>DN 15 - DN 20 brass body</b>	12 Vdc	BO-0600	BO-0600 12 V DC	CN-0010	NORMAL
	12 V/50 Hz	BO-0800	BO-0800 12 V 50-60 Hz	CN-0010	NORMAL
	24 Vdc	BO-0610	BO-0610 24 V DC	CN-0010	NORMAL
	24 V/50 Hz	BO-0810	BO-0810 24 V 50-60 Hz	CN-0010	NORMAL
	110 V/50 Hz	BO-0820	BO-0820 110 V 50-60 Hz	CN-0010	NORMAL
	230 V/50-60 Hz	BO-0830	BO-0830 230V 50-60 Hz	CN-0010	NORMAL
<b>DN 25 brass body</b>	12 Vdc	BO-0030	BO-0030 12 V DC R	CN-0010	NORMAL
	12 V/50 Hz	BO-0010	BO-0010 12 V DC	CN-0050	RECTIFIER
	24 Vdc	BO-0040	BO-0040 24 V DC R	CN-0010	NORMAL
	24 V/50 Hz	BO-0070	BO-0070 24 V 50 Hz D	CN-0010	NORMAL
	110 V/50 Hz	BO-0105	BO-0105 110 V 50 Hz D	CN-0010	NORMAL
	230 V/50-60 Hz	BO-0120	BO-120 230 V 50 Hz V	CN-0010	NORMAL
<b>DN 20 ÷ DN 100 aluminium body</b>	12 Vdc	BO-0010	BO-0010 12 V DC	CN-0010	NORMAL
	12 V/50 Hz	BO-0010	BO-0010 12 V DC	CN-0050	RECTIFIER
	24 Vdc	BO-0020	BO-0020 24 V DC	CN-0010	NORMAL
	24 V/50 Hz	BO-0070	BO-0070 24 V 50 Hz D	CN-0010	NORMAL
	110 V/50 Hz	BO-0105	BO-0105 110 V 50 Hz D	CN-0010	NORMAL
	230 V/50-60 Hz	BO-0110	BO-110 230 V 50-60 Hz D	CN-0010	NORMAL



# INSTALLATION

The solenoid valve is in conformity with the Directive 94/9/CE (said Directive ATEX 100 a) as device of group II, category 3G and as device of group II, category 3D; for this reason it is suitable to be installed in the zones 2 and 22 as classified in the attachment I to the Directive 99/92/EC. The solenoid valve is not suitable to be used in zones 1 and 21 and, all the more so, in zones 0 and 20 as classified in the already said Directive 99/92/EC. To determine the qualification and the extension of the dangerous zones, see the norm EN 60079-10.

The device, if installed and serviced respecting all the conditions and the technical instructions of this document, is not source of specific dangers: in particular, during the normal working, is not forecast, by the solenoid valve, the emission in the atmosphere of inflammable substance in way to cause an explosive atmosphere.



**Installation must be in compliance with local legislation in force!**

**WARNING: Read carefully the instruction sheet of each product before installing.  
Installation and maintenance operations must be carried out by qualified personnel.**

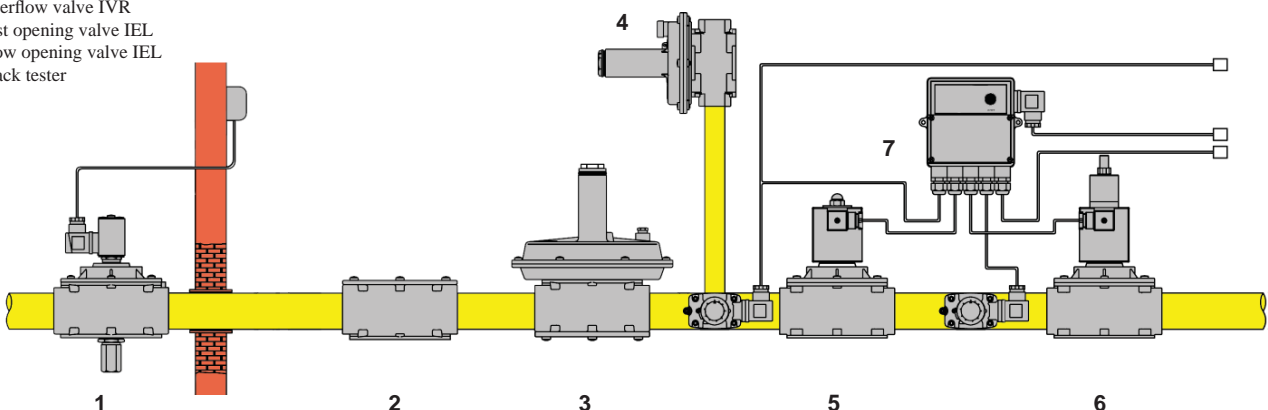
- The gas supply must be shut off before installation.
- Check that the line pressure **DOES NOT EXCEED** the maximum pressure stated on the product label.
- They are normally installed upstream of the regulator devices and must be installed with the arrow (on the body of the device) facing towards the user appliance.
- **DN 15 ÷ DN 100:** the device will function equally effectively if installed vertical. The device must not be installed upside down (with the coil underneath).
- During installation take care not to allow debris or scraps of metal to enter the device.
- If the device is threaded check that the pipeline thread is not too long; overlong threads may damage the body of the device when screwed into place. Do not use the coil for leverage when screwing into position; use the appropriate tool.
- If the device is counterflanged check that the inlet and outlet flanges are perfectly parallel to avoid unnecessary mechanical stresses on the body of the device. Also calculate the space needed to fit the seal. If the gap left after the seal is fitted is too wide, do not try to close it by over-tightening the device's bolts.
- Always check that the system is gas-tight after installation.

## ELECTRICAL CONNECTIONS

- Before making electrical connections, check that the mains voltage is the same as the power supply voltage stated on the product label.
- Disconnect the power supply before wiring.
- Wire the connector with H05RN-F 3X0,75mm<sup>2</sup> cable outside Ø from 6,2 a 8,1 mm, taking care to ensure that the device has IP65 protection.
- Use the cable terminals when wiring the connector.
- Connect the power supply to terminals 1 and 2 and the ground wire to terminal  $\perp$ .

## EXAMPLE OF INSTALLATION

1. manual reset solenoid valve IENA
2. gas filter IF
3. filter regulator IFR
4. overflow valve IVR
5. fast opening valve IEL
6. slow opening valve IEL
7. leak tester



## MANUAL RESET

### **DN 15 ÷ DN 25 (P. max 500 mbar and 6 bar) brass body** (see fig. 1):

push the reset handgrip (1) and wait an instant to balance the pressure up to the hooking.  
The red label under the manual reset (1), if visible, shows that the valve is closed.  
To close manually the solenoid valve, push the closing push button (14) when it there is.

### **DN 20 ÷ DN 50 (P. max 500 mbar)** (see fig. 2):

pull up the reset handgrip (1) up to the hooking.

### **DN 20 ÷ DN 50 (P. max 6 bar)** (see fig. 3):

push the reset pin (1) and wait an instant to balance the pressure up to the hooking.

### **DN 65 ÷ DN 100 (P. max 500 mbar and 6 bar)** (see fig. 4):

pull up the reset handgrip (1) and wait an instant to balance the pressure from and to the user's.  
Then pull up the reset handgrip (1) up to the hooking.

## MAINTENANCE

Before performing any internal checks make sure that:

1. the power supply to the device is disconnected
2. there is no pressurised gas inside the device

### **DN 15 ÷ DN 25 brass body** (see fig. 1):

unscrew the lower cap (10) from the body valve (13), then check the closure member (7) and if necessary change the rubber seal component (11).  
Reassemble doing backward the same operation of dismantling.

### **DN 20 ÷ DN 100** (see fig. 2):

take the cover (11) off the body of the valve unscrewing the fixing screws (9), then check the closure member (7) and if necessary change the rubber seal component (8).  
Reassemble doing backward the same operation of dismantling.



**All operations must be carried out only by qualified personnel.**

FOR FURTHER INFORMATION PLEASE CONTACT OUR TECHNICAL OFFICE.