

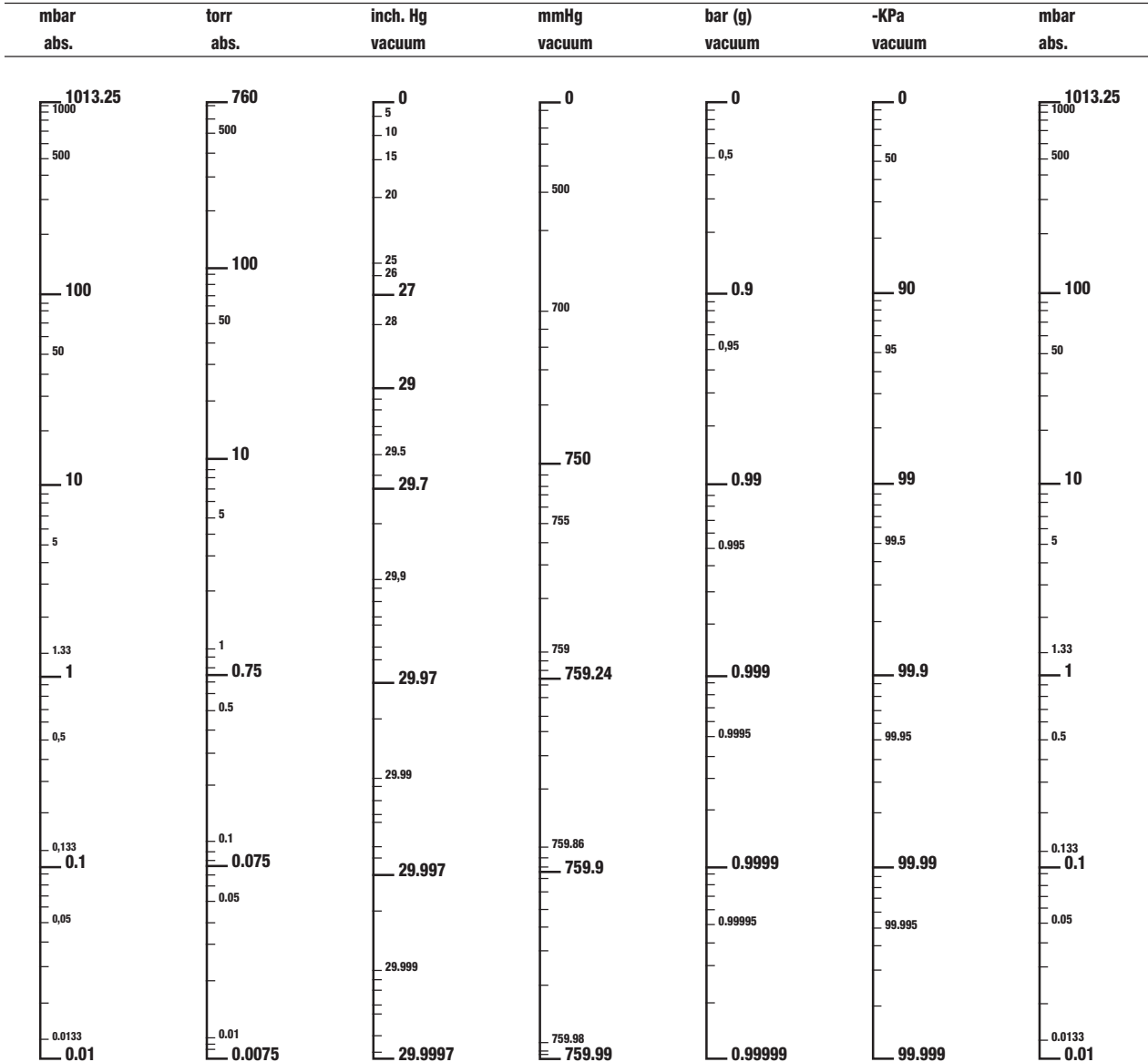
VACUUM MEASUREMENT, CONTROL AND ADJUSTMENT INSTRUMENTS

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CONVERSION TABLE

VACUUM UNIT CONVERSION TABLE



PRESSURE UNIT CONVERSION FACTORS (ABSOLUTE VALUES)

PRESSURE UNIT CONVERSION FACTORS (ABSOLUTE VALUES)

| | = mbar | = bar (g) | = torr | = inch. Hg | = psi (lbf/in ²) | = atm | = Kg/cm ² (at) | = mm H ₂ O | = m H ₂ O | = Pa (N/m ²) |
|---------------------------------|---------------------------|-------------------------|-------------------------|-------------------------|------------------------------|--------------------------|---------------------------|-----------------------|--------------------------|--------------------------|
| mbar | x 1 | 10 ⁻³ | 0.75 | 2.95 x 10 ⁻² | 14.5 x 10 ⁻³ | 9.87 x 10 ⁻⁴ | 1.02 x 10 ⁻³ | 10.2 | 1.02 x 10 ⁻² | 100.0 |
| bar (g) | x 1000.0 | 1 | 750.0 | 29.53 | 14.6 | 0.987 | 1.02 | 10197.0 | 10.19 | 100000 |
| torr | x 1.33 | 1.33 x 10 ⁻³ | 1 | 3.94 x 10 ⁻² | 1.93 x 10 ⁻² | 1.316 x 10 ⁻³ | 1.359 x 10 ⁻³ | 13.59 | 1.359 x 10 ⁻³ | 133.32 |
| inch. Hg | x 33.9 | 33.9 x 10 ⁻³ | 25.4 | 1 | 0.491 | 3.34 x 10 ⁻² | 3.45 x 10 ⁻² | 345.0 | 0.345 | 3386.0 |
| psi (lbf/in²) | x 68.9 | 6.89 x 10 ⁻² | 51.7 | 2.04 | 1 | 6.8 x 10 ⁻² | 7.03 x 10 ⁻² | 703 | 0.703 | 6897 |
| atm | x 1013.25 | 1.013 | 760.0 | 30.0 | 14.696 | 1 | 1.033 | 10332 | 10.332 | 101325.0 |
| Kg/cm² (at) | x 981 | 0.981 | 735.6 | 28.96 | 14.2 | 0.968 | 1 | 10000 | 10 | 98067.0 |
| mm H₂O | x 9.81 x 10 ⁻² | 9.81 x 10 ⁻⁵ | 7.35 x 10 ⁻² | 2.89 x 10 ⁻³ | 1.42 x 10 ⁻³ | 9.67 x 10 ⁻⁵ | 10 ⁻⁴ | 1 | 10 ⁻³ | 9.8067 |
| m H₂O | x 98.067 | 9.81 x 10 ⁻² | 73.5 | 2.89 | 1.42 | 9.67 x 10 ⁻² | 10 | 10000 | 1 | 9806.7 |
| Pa (N/m²) | x 0.01 | 10 ⁻⁵ | 7.5 x 10 ⁻³ | 2.95 x 10 ⁻⁴ | 1.45 x 10 ⁻⁴ | 9.87 x 10 ⁻⁶ | 1.02 x 10 ⁻⁵ | 0.102 | 1.02 x 10 ⁻⁴ | 1 |

Example: To convert 10 mbar into Torr = 10 x 0.75 = 7.5 Torr

3.00



3



VACUUM AND PRESSURE GAUGES

The measurement method of our vacuum gauges is based on the principle of the Bourdon spring (Eugène Bourdon, France, 1808–1884).

It is made using section tubes in special copper alloy, one end is welded to the threaded pin of the vacuum-pressure gauge, thus forming a single body with it, while the other closed end is free

As the vacuum or the pressure inside increases, it tends to shift from the initial position (Bourdon effect).

The movement of the free end of the spring determines the vacuum-pressure measurement.

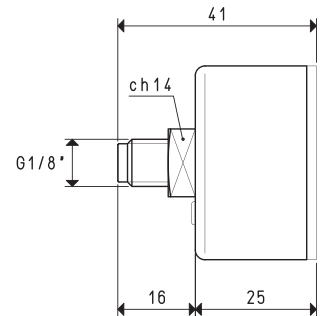
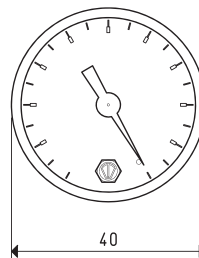
In order to allow an easier reading, this movement is amplified by means of a connection lever and transmitted to the pointer.

All is enclosed in a sturdy metal casing which contains the dial and the pointer, that can be seen through a glass.

They are available in various versions, with coaxial or radial connectors, with built-in or external flange, dry or glycerine filled.

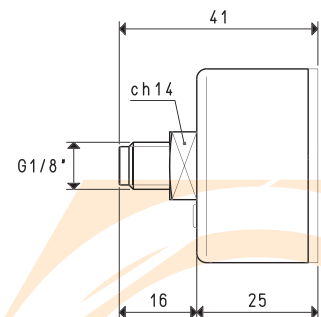
Except for vacuum gauges with diameter Ø 40 mm, all the other models have a double scale dial.

All the vacuum and pressure gauges we will describe in these pages are made in compliance with all the safety standards and measurement units in force in the European Union.



VACUUM GAUGE

| Art. | Scale Kpa | Double Scale | Scale error allowed | Operating temperature | Notes | Weight g |
|----------|--------------|--------------|------------------------|--------------------------|-------|-------------|
| 09 03 15 | 0 ÷ -100 | -- | 2.5% | -10 °C ÷ +50 °C | dry | 52 |



PRESSURE GAUGES

| Art. | Scale bar (g) | Double Scale | Scale error allowed | Operating temperature | Notes | Weight g |
|----------|------------------|--------------|------------------------|--------------------------|-------|-------------|
| 09 03 20 | 0 ÷ 1.6 | 0 ÷ 23 psi | 2.5% | -10 °C ÷ +50 °C | dry | 54 |
| 09 03 25 | 0 ÷ 10 | 0 ÷ 1.0 MPa | 2.5% | -10 °C ÷ +50 °C | dry | 54 |

3D drawings available at www.vuototecnica.net

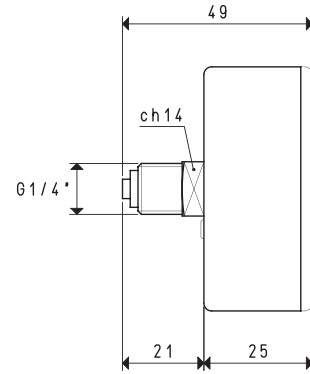
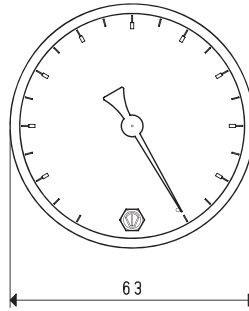
Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

3.01

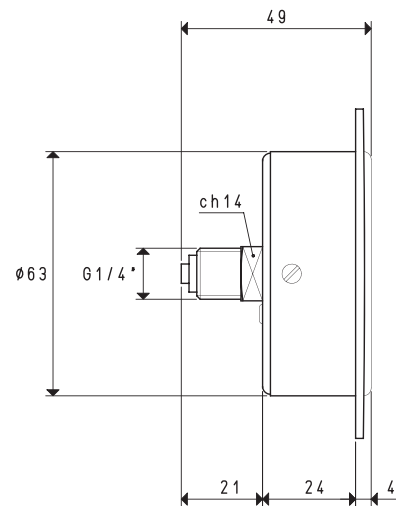
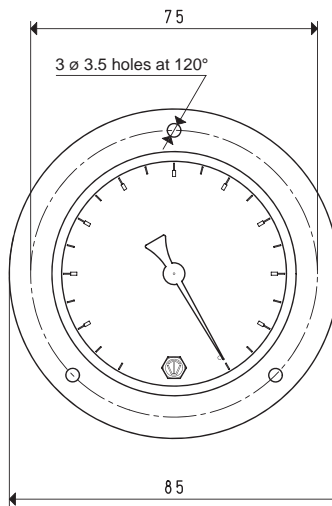


VACUUM GAUGES



VACUUM GAUGE

| Art. | Scale mbar | Double Scale KPa | Scale error allowed | Operating temperature | Notes | Weight g |
|----------|---------------|---------------------|------------------------|--------------------------|-------|-------------|
| 09 03 10 | 0 ÷ -1000 | 0 ÷ -100 | 2.5% | -10 °C ÷ +50 °C | dry | 134 |



VACUUM GAUGE

| Art. | Scale mbar | Double Scale Kpa | Scale error allowed | Operating temperature | Notes | Weight g |
|----------|---------------|---------------------|------------------------|--------------------------|-------|-------------|
| 09 01 10 | 0 ÷ -1000 | 0 ÷ -100 | 2.5% | -10 °C ÷ +50 °C | dry | 162 |

3D drawings available at www.vuototecnica.net

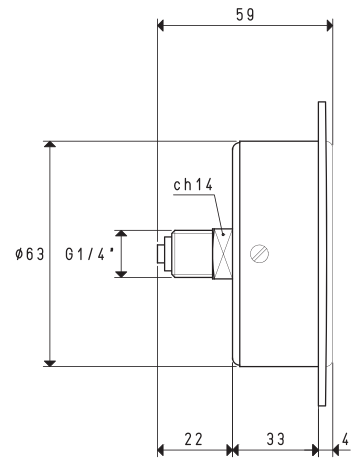
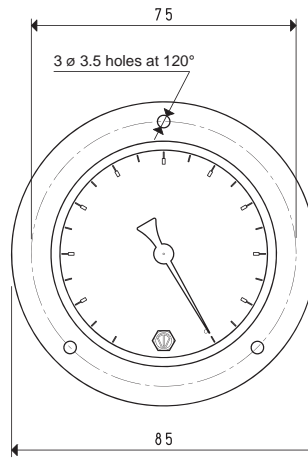
3.02

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



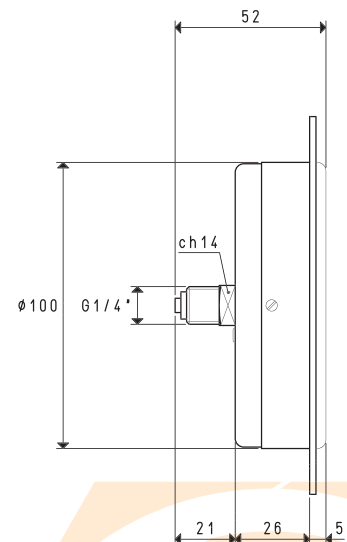
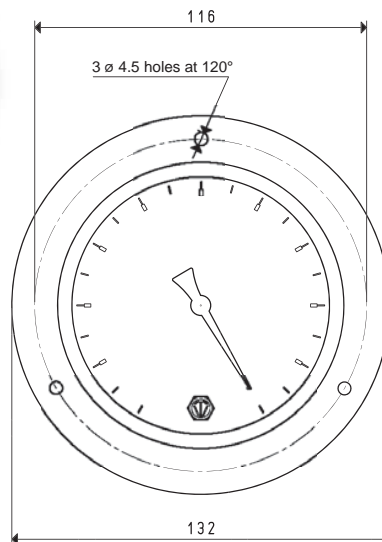
VACUUM GAUGES



3

VACUUM GAUGE

| Art. | Scale mbar | Double Scale KPa | Scale error allowed | Operating temperature | Notes | Weight g |
|----------|---------------|---------------------|------------------------|--------------------------|----------------|-------------|
| 09 01 16 | 0 ÷ -1000 | 0 ÷ -100 | 1.6% | -10 °C ÷ +50 °C | glycerine bath | 348 |



VACUUM GAUGE

| Art. | Scale mbar | Double Scale KPa | Scale error allowed | Operating temperature | Notes | Weight g |
|----------|---------------|---------------------|------------------------|--------------------------|-------|-------------|
| 09 02 10 | 0 ÷ -1000 | 0 ÷ -100 | 1% | -10 °C ÷ +50 °C | dry | 346 |

3D drawings available at www.vuototecnica.net

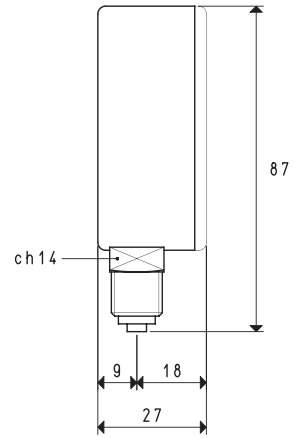
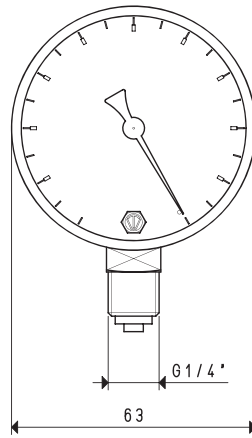
Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

GAS-NPT thread adapters available at page 1.117

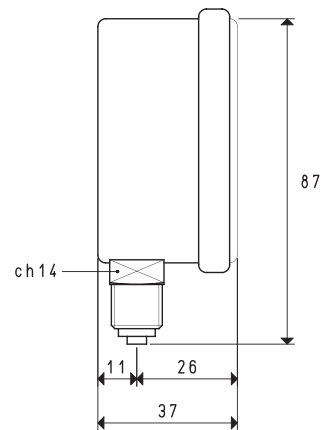
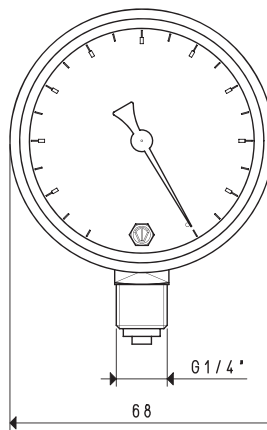
3.03



VACUUM GAUGES



| VACUUM GAUGE | | | | | | |
|--------------|---------------|---------------------|------------------------|--------------------------|-------|-------------|
| Art. | Scale mbar | Double Scale KPa | Scale error allowed | Operating temperature | Notes | Weight g |
| 09 05 10 | 0 ÷ -1000 | 0 ÷ -100 | 2.5% | -10 °C ÷ +50 °C | dry | 136 |



| VACUUM GAUGE | | | | | | |
|--------------|---------------|---------------------|------------------------|--------------------------|----------------|-------------|
| Art. | Scale mbar | Double Scale KPa | Scale error allowed | Operating temperature | Notes | Weight g |
| 09 05 16 | 0 ÷ -1000 | 0 ÷ -100 | 1.6% | -10 °C ÷ +50 °C | glycerine bath | 218 |

3D drawings available at www.vuototecnica.net

3.04

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = 0.4536$

GAS-NPT thread adapters available at page 1.117



VACUUM GAUGE WITH STEEL PUNCH

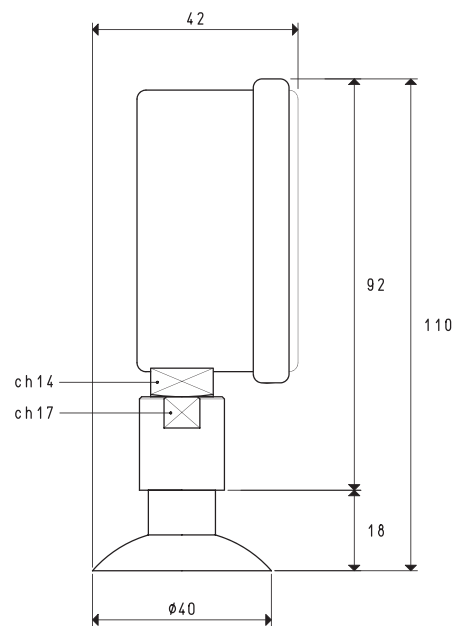
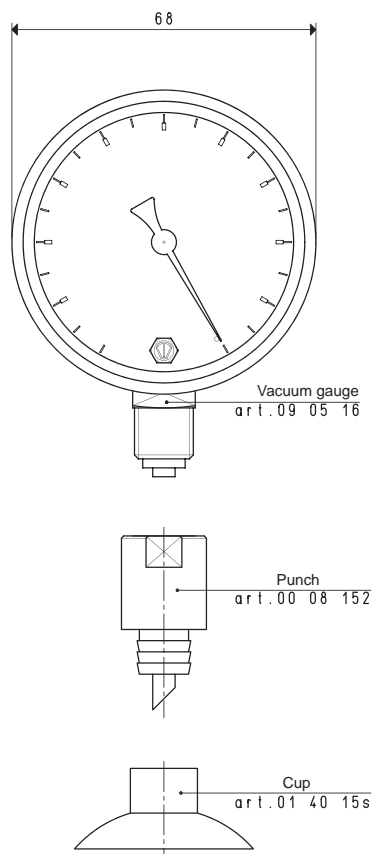


This vacuum gauge has been designed to allow the immediate detection of the vacuum level inside tin cans and food containers in general.

The glycerine bath vacuum gauge art. 09 05 16 used for this application (features described in the previous page), is provided with a hardened steel punch to easily perforate the containers and with a vacuum cup in silicon compound to guarantee vacuum seal after perforation.

It is available in the standard version (which is the one shown in this page), but can be provided in other versions upon request.

3



| Art. | Scale mbar | Double Scale KPa | Scale error allowed | Operating temperature | Notes | Weight g |
|----------|---------------|---------------------|------------------------|--------------------------|----------------|-------------|
| 09 05 99 | 0 ÷ -1000 | 0 ÷ -100 | 1.6% | -10 °C ÷ +50 °C | glycerine bath | 250 |

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

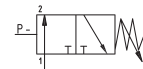
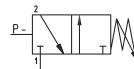
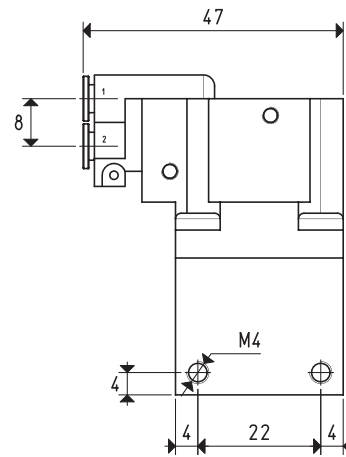
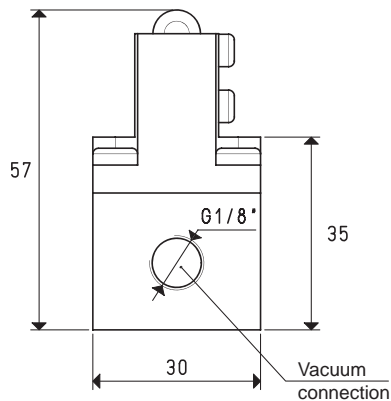
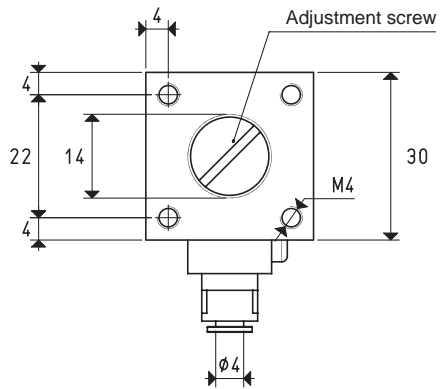
3D drawings available at www.vuototecnica.net

3.05



MINI PNEUMATIC VACUUM SWITCH

These vacuum switches feature reduced overall dimensions and, according to the model, they give or remove a pneumatic signal when a certain adjustable vacuum level is reached. The pressure differential between the set maximum value and the value of reset of the rest signal is not adjustable. They are particularly suited for controlling vacuum generators and for activating pneumatic valves.



3D drawings available at www.vuototecnica.net

| Art. | | 12 01 30 | 12 02 30 |
|--------------------------------------------------|-----------|-----------|-----------|
| Adjustment range | mbar abs. | 930 ÷ 50 | 900 ÷ 40 |
| Fixed differential | mbar | 70 | 100 |
| Repeatability | mbar | ±5 | ±5 |
| Idle signal | | NC | NO |
| Supply pressure | bar (g) | 2 ÷ 8 | 2 ÷ 8 |
| Pneumatic microvalve | art. | 00 12 17 | 00 12 18 |
| Max. capacity of the 6 bar (g) microvalve | NI / s | 1.2 | 1.2 |
| Working temperature | °C | -10 ÷ +60 | -10 ÷ +60 |
| Weight | g | 104 | 102 |

3.06

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



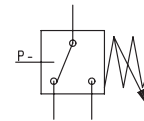
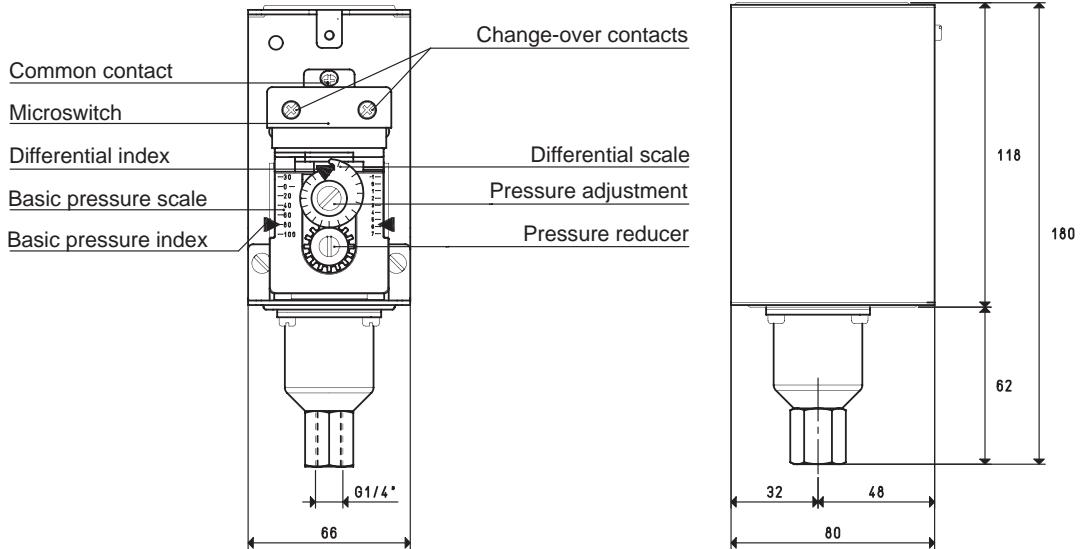
ELECTROMECHANICAL VACUUM - PRESSURE SWITCHES

The vacuum - pressure switches of the 836 series are compact, sturdy and accurate units that can be adapted to many applications. The feature of the control is a quick tripping precision microswitch, equipped with silver contacts. Normal industrial vibrations have no effect on the efficient opening and closing of the contacts.

The particular linear construction, relatively friction free, assures a precise and reliable operation independent of the pressure switch mounting angle.

The "Long Life" bellows with which they are equipped, are made of copper alloy and can be used for air, water, oil, liquid, vapour and gas circuits, provided that all these agents are not corrosive.

These devices are included in the U.L. lists and approved by C.S.A.



3D drawings available at www.vuototecnica.net

| Art. | | 836 - C6A | 836 - C2A |
|--------------------------------|-------------------|---------------------------------------|-----------------|
| Adjustment range | bar abs. | 0 ÷ 8 | 0 ÷ 1.7 |
| Adjustable differential | mbar | from 133 to 1200 | from 26 to 1280 |
| Max. line pressure | bar abs. | 21 | 4.5 |
| Repeatability | measuring range % | ±0.5 | ±0.5 |
| Contacts | | one change-over | |
| Contact features | | unipolar with double interruption | |
| | | 125 VA with ac from 24 to 600 Volts | |
| | | 57.5 VA with ac from 115 to 230 Volts | |
| | | Rated current for non inductive loads | |
| Contact capacity | A | 5 a 240 V in A.C. | |
| | A | 3 a 600 V in A.C. | |
| Electrical connections | | with terminals | |
| Working temperature | °C | -25 ÷ +70 | |
| Protection | | IP 54 | |
| Weight | Kg | 0.984 | 1.130 |

3.08

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

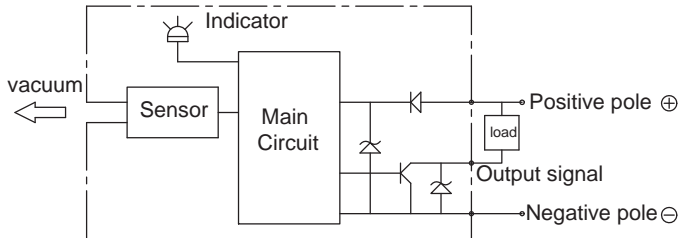
GAS-NPT thread adapters available at page 1.117



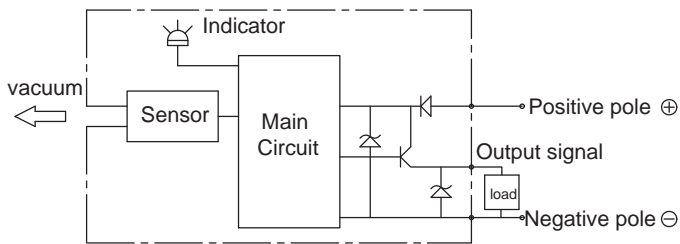
MICRO DIGITAL VACUUM SWITCHES

INTERNAL ELECTRIC DIAGRAMS

- NPN on

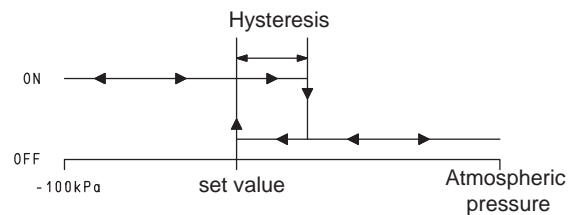


- PNP on



OUTPUT CONTACT DIAGRAM

The LED lights up at the preset pressure and turns off at the preset pressure minus the hysteresis



| Electrical features and specifications | Art. 12 05 10 P Art. 12 05 11 P | Art. 12 05 10 N Art. 12 05 11 N |
|-----------------------------------------------|------------------------------------|------------------------------------------------------|
| Adjustment range | | da 0 a -100 kPa |
| maximum overpressure | | 200 kPa |
| Operating voltage | | 10.8 ÷ 30 VDC (Protection against polarity reversal) |
| Electrical absorption | | ≤20 mA |
| Commutation outputs | 1 digital PNP, NO | 80 mA maximum |
| Reaction time | | ≤1 ms |
| Commutation frequency | | 1000Hz |
| Hysteresis | | Not adjustable, 2% of the set maximum value |
| Repeatability | | ±2% of the measuring range |
| Commutation indicator | | Red LED |
| Insulation resistance | | 100 MΩ |
| Proof voltage | | 500 VAC, 1 min |
| Protection class | | IP 40 |
| Working environment conditions | | |
| Installation position | | Any |
| Controlable fluids | | Dry air and non-corrosive gasses |
| Operating temperature | | -10 ÷ +60 °C |
| Storage temperature | | -20 ÷ +70 °C |
| Emitted interference | | In compliance with EN 55011, Group 1, Class B |
| Interference immunity | | In compliance with EN 61326 - 1 |
| Mechanical features and specifications | | |
| Container material | | Polycarbonate PC |
| Connection material | | Nickel-plated brass and aluminium |
| Weight (without cable) | | Approx. 5g |
| Electrical connection | | 1.5 m long three-conductor cable |
| Connection to fluid | | M5 male or female thread |

3D drawings available at www.vuototecnica.net

3.10



ANALOG VACUUM SWITCHES



These compact and extremely light switches come enclosed in a sturdy ABS casing; these features allow their installation on the machine and close to the application. If accurately calibrated, these analog switches provide very precise measurements values. The adjustment range is from 0 to -1 bar (g) and can be interfaced with external logics via an analog output from 1 to 5 Volts and a digital PNP output, configurable via Teach-In.

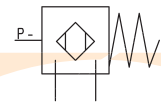
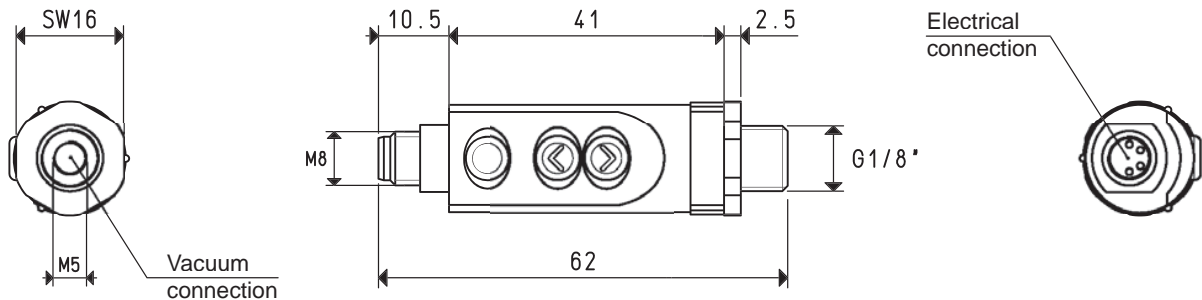
The commutation point, as well as the hysteresis from 0 to 100% of the set value, can be easily programmed via push buttons located on the control panel; the two two-colour LEDs on the control panel signal the commutation status and the error code, if any.

These devices can be rotated freely to place the display in the desired position, without having to unscrew them from the vacuum connection.

The vacuum connection is dual threaded: male G 1/8" or female M5. The electrical connection is an M8 4-pin threaded plug and upon request the connection cable is available in PUR, with an axial or radial connector.

These vacuum switches are suited for measuring and controlling dry air and non-corrosive gasses. They are recommended in all those cases that require a measurement and commutation to be installed on safety or energy-saving devices, on systems for optimising the work cycle time and in circuit vacuum level adjustment circuits.

3



3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

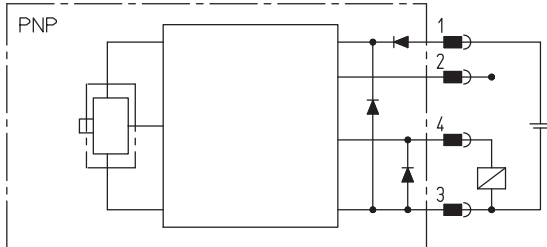
GAS-NPT thread adapters available at page 1.117

3.11



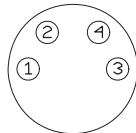
ANALOG VACUUM SWITCHES

ELECTRIC DIAGRAM



Connections

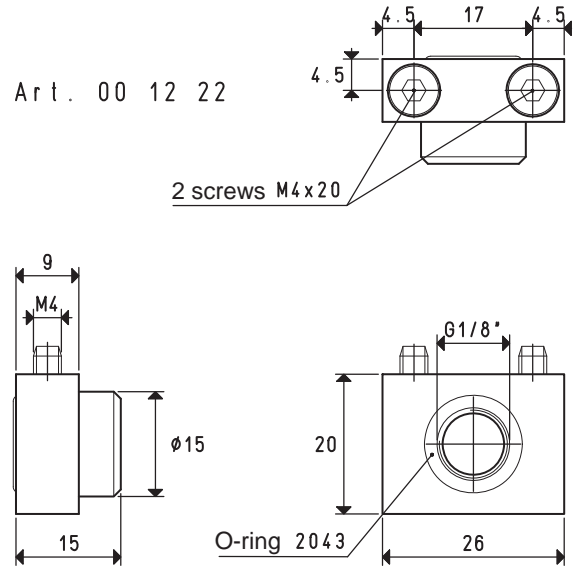
- 1 . V +
- 2 . analog output
- 3 . V -
- 4 . commutation output



Cable colour
 Pin1 = brown
 Pin2 = white
 Pin3 = blue
 Pin4 = black

WALL-FIXING KIT

Art. 00 12 22



Electrical features and specifications

Art. 12 07 10

| | |
|-----------------------|--------------------------------------------------------|
| Adjustment range | from 0 to -1 bar (g) |
| maximum overpressure | 5 bar (g) |
| Operating voltage | 10.8 ÷ 30 VDC (Protection against polarity reversal) |
| Electrical absorption | ≤30 mA |
| Commutation output | 1 digital PNP, NO or NC, max. commutation power 125 mA |
| Analog output | 1 ÷ 5 V; load impedance ≥500 Ω |
| Output tolerance | ±1% |
| Offset | 1 V ÷ 0.1 Volt |
| Reaction time | ≤2.5 ms |
| Commutation frequency | 400Hz |
| Hysteresis | Adjustable from 0 to 100% of the set maximum value |
| Repeatability | ±0.2% of the measuring range |
| Error code signal | via two-colour LEDs |
| Insulation resistance | 100 MΩ a 500 VDC |
| Proof voltage | 1000 VDC, 1 min |
| Protection class | IP 65 |

Working environment conditions

| | |
|-----------------------|-------------------------------------|
| Installation position | Any |
| Measurable fluids | Non-corrosive gasses and dry air |
| Operating temperature | 0 ÷ +50 °C |
| Storage temperature | -20 ÷ +80 °C |
| Emitted interference | In compliance with DIN EN 50081 - 1 |
| Interference immunity | In compliance with DIN EN 50082 - 2 |

Mechanical features and specifications

| | |
|-----------------------|-------------------------------|
| Container material | ABS/PC plastic |
| Connection material | Nickel-plated brass |
| Weight | 19 g |
| Electrical connection | M8-4 pin plug |
| Connection to fluid | Male G1/8", female M5 threads |

Accessories

| | | |
|-----------------------------|----------------------------------------------------|-----------------|
| Electrical connection cable | With axial connector, mt. 5 - PUR M8 x 1x 0.25 mm | - Art. 00 12 20 |
| Electrical connection cable | With radial connector, mt. 5 - PUR M8 x 1x 0.25 mm | - Art. 00 12 21 |
| Wall-mounting kit | Support with O-ring and screws | - Art. 00 12 22 |

3D drawings available at www.vuototecnica.net

3.12

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



DIGITAL VACUUM AND PRESSURE SWITCHES

These compact and extremely light digital vacuum and pressure switches are enclosed in a sturdy ABS casing. These features allow installation on the machine and close to the application.

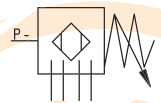
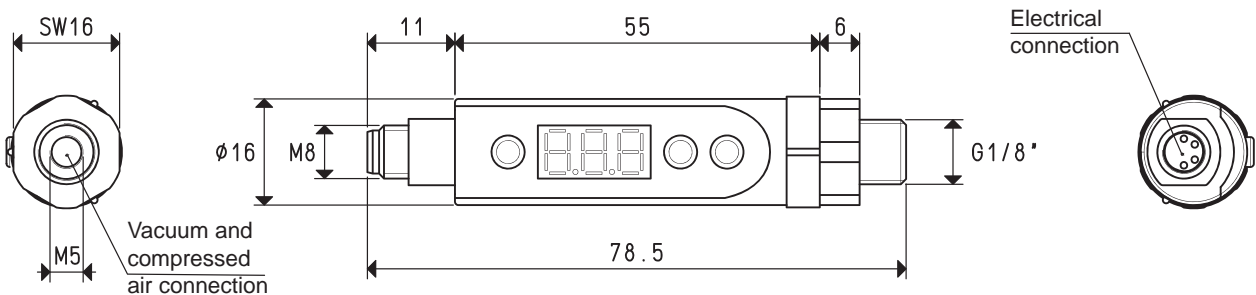
These digital switches, accurately calibrated and compensated for temperatures, is able to give very precise measurements values. The measured values are shown on the display, making the vacuum gauge redundant. The two LEDs, one red and one green, built-in the control panel, indicate the commutation status of the two digital output signals.

The two commutation outputs are completely independent. The switch point between the scale values as well as the hysteresis from 0 to 100% of the set up value can be easily programmed via the push buttons on the control panel.

Other additional functions can be configured, such as the comparison between two values, NO and NC contacts, choice of the measurement unit, locking the programmed values and functions, display reversal, etc. These devices can be rotated freely to place the display in the desired position, without having to unscrew them from the vacuum connection.

The vacuum or the pressure connections can be carried out via a dual male G 1/8" or female M5 thread. The electrical connection is carried out via M8-4 pin threaded plug and upon request the connection cable is available in PUR, with an axial or radial connector. These switches are suited for measuring and controlling dry air and non-corrosive gasses.

They are recommended in all those cases that require a signal when a certain vacuum level is reached set for safety, for starting a cycle, for checking the cup grip, etc. Moreover, the hysteresis function allows managing the vacuum generator compressed air supply, allowing considerable energy saving.



3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

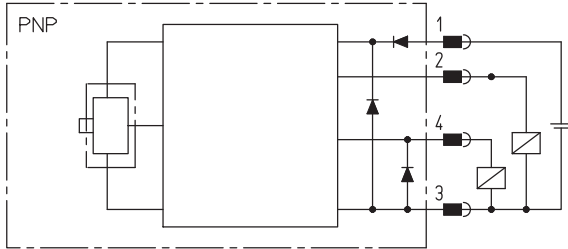
GAS-NPT thread adapters available at page 1.117

3.13



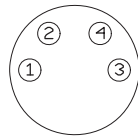
DIGITAL VACUUM AND PRESSURE SWITCHES

ELECTRIC DIAGRAM



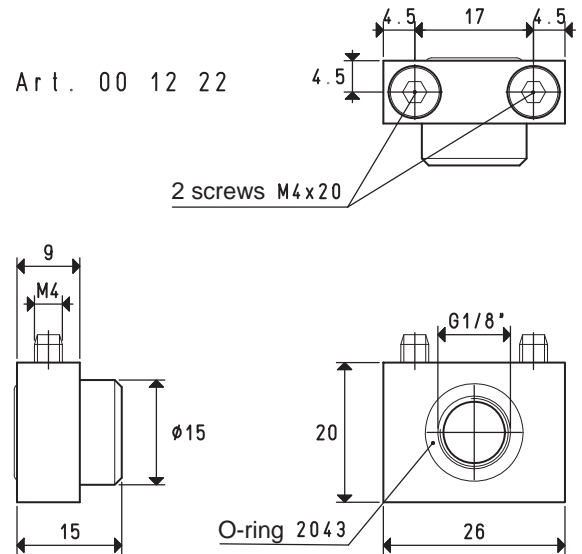
Connections

- 1 . V +
- 2 . commutation output 2
- 3 . V -
- 4 . commutation output 1



Cable colour
 Pin1 = brown
 Pin2 = white
 Pin3 = blue
 Pin4 = black

WALL-FIXING KIT



| Electrical features and specifications | Art. 12 10 10 Vacuum switch | Art. 12 25 11 Pressure switch |
|-----------------------------------------------|------------------------------------------------------|----------------------------------|
| Adjustment range | from 0 to -1 bar (g) | from 0 to 10 bar (g) |
| maximum overpressure | 5 bar (g) | 16 bar (g) |
| Minimum detected values | 0.01 bar (g) 1 KPa 1 mmHg 0.1 InHg | 0.01 bar (g) -- -- -- |
| Operating voltage | 10.8 ÷ 30 VDC (Protection against polarity reversal) | |
| Electrical absorption | ≤35 mA | |
| Commutation output | 2 digital PNP,NO or NC,max commutation power 125 mA | |
| Display tolerance | ≤ ±1% F.S. | |
| Reaction time | ≤2.5 ms | |
| Commutation frequency | 400Hz | |
| Hysteresis | Adjustable from 0 to 100% of the set maximum value | |
| Repeatability | ±0.2% of the measuring range | |
| Display | 3-digit, 7-segment LED | |
| Insulation resistance | 100 MΩ a 500 VDC | |
| Proof voltage | 1000 VDC, 1 min | |
| Protection class | IP 65 | |
| Working environment conditions | | |
| Installation position | Any | |
| Measurable fluids | Non-corrosive gasses and dry air | |
| Operating temperature | 0 ÷ +50 °C | |
| Storage temperature | -20 ÷ +80 °C | |
| Emitted interference | In compliance with DIN EN 50081 - 1 | |
| Interference immunity | In compliance with DIN EN 50082 - 2 | |
| Mechanical features and specifications | | |
| Container material | ABS/PC plastic | |
| Connection material | Nickel-plated brass | |
| Weight | 20 g | |
| Electrical connection | M8-4 pin plug | |
| Connection to fluid | Male G1/8", female M5 threads | |
| Accessories | | |
| Electrical connection cable | With axial connector, mt. 5 - PUR M8 x 1x 0.25 mm | - Art. 00 12 20 |
| Electrical connection cable | With radial connector, mt. 5 - PUR M8 x 1x 0.25 mm | - Art. 00 12 21 |
| Wall-mounting kit | Support with O-ring and screws | - Art. 00 12 22 |

3D drawings available at www.vuototecnica.net



DIGITAL VACUUM AND PRESSURE SWITCHES



These compact and extremely light digital vacuum and pressure switches are enclosed in a sturdy ABS casing. These features allow installation on the machine and close to the application.

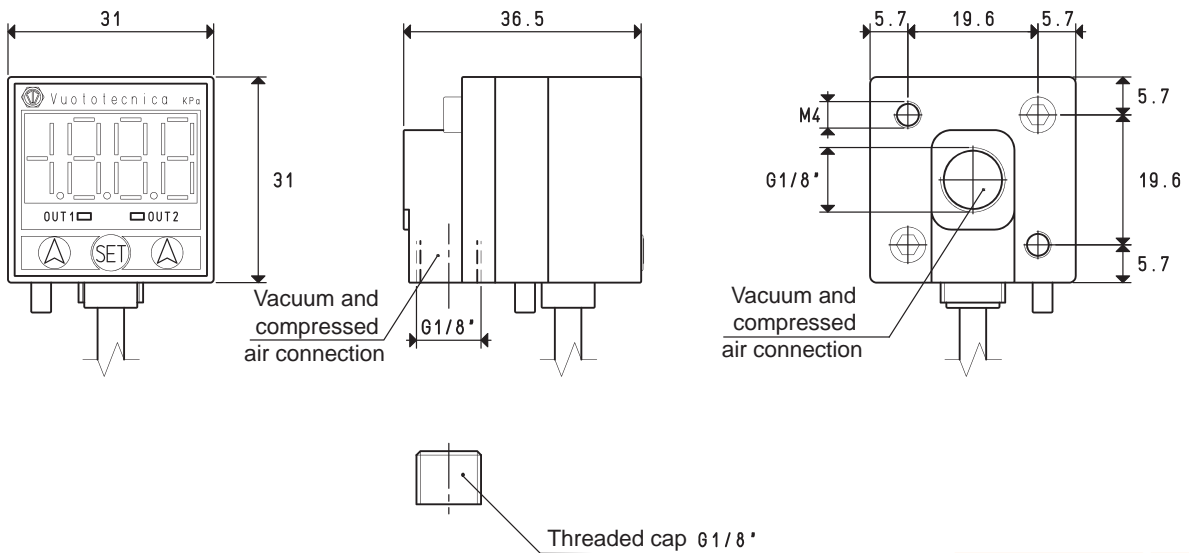
These digital switches, accurately calibrated and compensated for temperatures, is able to give very precise measurements values. The measured values are shown on the display, making the vacuum gauge redundant. The two LEDs, one red and one green, built-in the control panel, indicate the commutation status of the two digital output signals.

The two commutation outputs are completely independent. The switch point between the scale values as well as the hysteresis can be easily programmed via the push buttons on the control panel.

Other additional functions can be configured, such as the comparison between two values, NO and NC contacts, choice of the measurement unit, locking the programmed values and functions, display reversal, etc.

The vacuum or the pressure connections can be carried out via a dual connection with female G 1/8" thread, while the electrical connection is carried out through the 4-conductor cable which they are equipped with. Digital vacuum and pressure switches are suited for measuring and controlling dry air and non-corrosive gasses.

They are recommended in all those cases that require a signal when a certain vacuum level is reached, for safety, for starting a cycle, for checking the cup grip, etc. Moreover, the hysteresis function allows managing the vacuum generator compressed air supply, allowing considerable energy saving.



3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

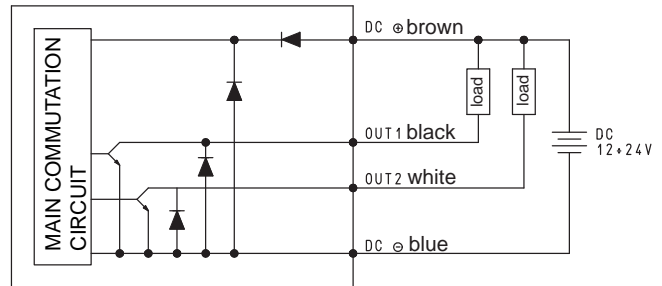
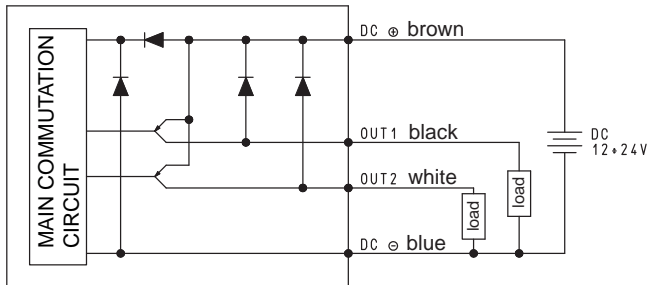
3.15



DIGITAL VACUUM AND PRESSURE SWITCHES

PNP

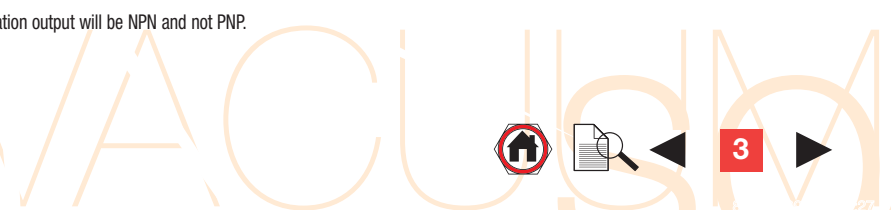
NPN



| Electrical features and specifications | Art. 12 20 10 P Vacuum switch | Art. 12 35 10 P Pressure switch |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Adjustment range | da 0 a -101.3 KPa | da 0 a 1 MPa |
| maximum overpressure | 500 KPa | 1.5 MPa |
| Minimum detected values | 0.1 KPa -- 0.001 Kgt/cm ² 0.001 bar (g) 0.01 psi 0.1 InHg 1 mmHg 10 mmH ₂ O | -- 0.001 MPa 0.01 Kgt/cm ² 0.01 bar (g) 0.1 psi -- -- -- |
| Operating voltage | 12 ÷ 24 VDC, ±10% (Protection against polarity reversal) | |
| Electrical absorption | ≤55 mA | |
| Commutation output | 2 digital PNP, NO or NC, max. commutation power 80 mA | |
| Display tolerance | ≤ ±2% F.S. ±1 digit | |
| Reaction time | ≤2.5 ms | |
| Hysteresis | Adjustable | |
| Repeatability | ±0.2% of the measuring range | |
| Display | 3 1/2 digit, 7-segment LED | |
| Insulation resistance | 50 MΩ a 500 VDC | |
| Proof voltage | 1000 VDC, 1 min | |
| Protection class | IP 40 | |
| Working environment conditions | | |
| Installation position | Any | |
| Measurable fluids | Non-corrosive gasses and dry air | |
| Operating temperature | 0 ÷ +50 °C | |
| Storage temperature | -20 ÷ +60 °C | |
| Emitted interference | In compliance with EN 55011 Group 1, class B | |
| Interference immunity | In compliance with EN 61326 - 1 | |
| Mechanical features and specifications | | |
| Container material | ABS/PC plastic | |
| Connection material | Nickel-plated brass | |
| Weight | 105 g, electric cable included | |
| Electrical connection | With 4-conductor cable | |
| Connection to fluid | Female G1/8" thread | |
| Accessories | | |
| Fixing kit | wall plane panel | - Art. 00 12 30 - Art. 00 12 31 - Art. 00 12 32 |

Note: By adding the letter N after the art. (e.g. 12 20 10 N), the commutation output will be NPN and not PNP.

3.16



ACCESSORIES FOR DIGITAL VACUUM AND PRESSURE SWITCHES

Cable with axial connector



| Art. | Description |
|----------|-------------------------------------------------------------------------------------------|
| 00 12 20 | Electrical connection cable with axial connector for digital vacuum and pressure switches |

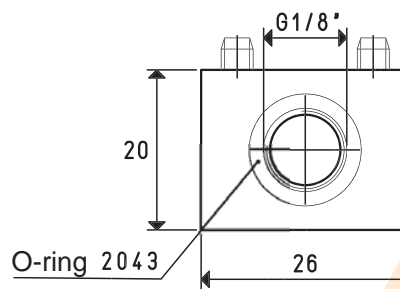
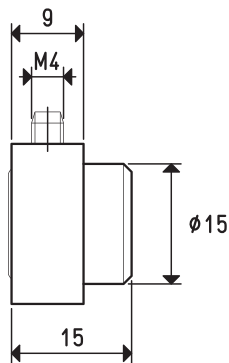
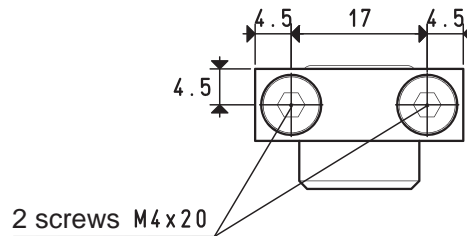
3

Cable with radial connector



| Art. | Description |
|----------|--------------------------------------------------------------------------------------------|
| 00 12 21 | Electrical connection cable with radial connector for digital vacuum and pressure switches |

Wall-mounting kit



| Art. | Description |
|----------|------------------------------------------------------------|
| 00 12 22 | Wall-mounting kit for digital vacuum and pressure switches |

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

3.17

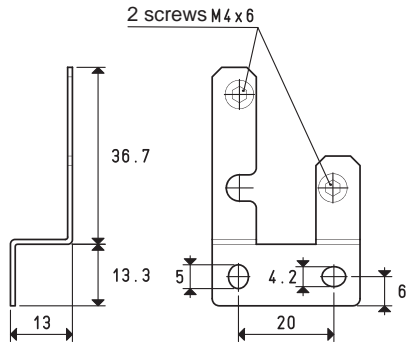


3

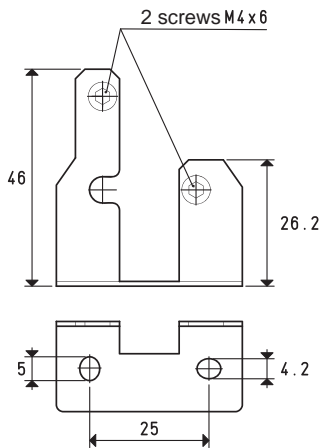


FIXING KIT

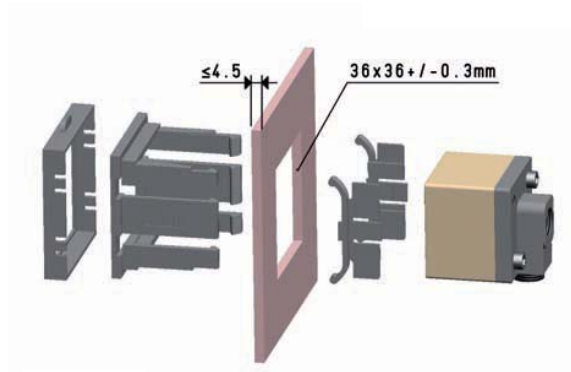
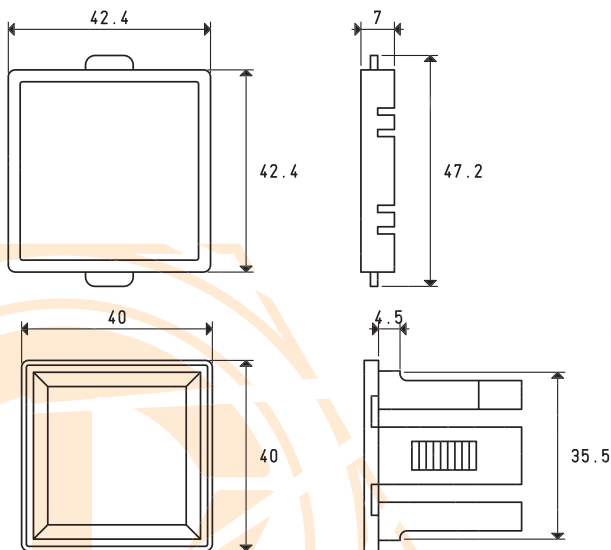
Wall-mounted Art. 00 12 30



Plane Art. 00 12 31



Panel-mounted Art. 00 12 32



3D drawings available at www.vuototecnica.net

3.18

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$, pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$



VACUUM REGULATORS



Vacuum regulators are used to adjust the pre-set vacuum level, keeping it constant (secondary vacuum), regardless of the capacity and the oscillations of the network vacuum level (primary vacuum). Their operation is with a membrane-piston and they exploit the pressure differential between the secondary vacuum and the atmospheric pressure. Unlike the vacuum adjusting valves, regulators do not introduce air into the circuit, thus producing more gripping points with different vacuum values, from only one vacuum source.

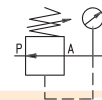
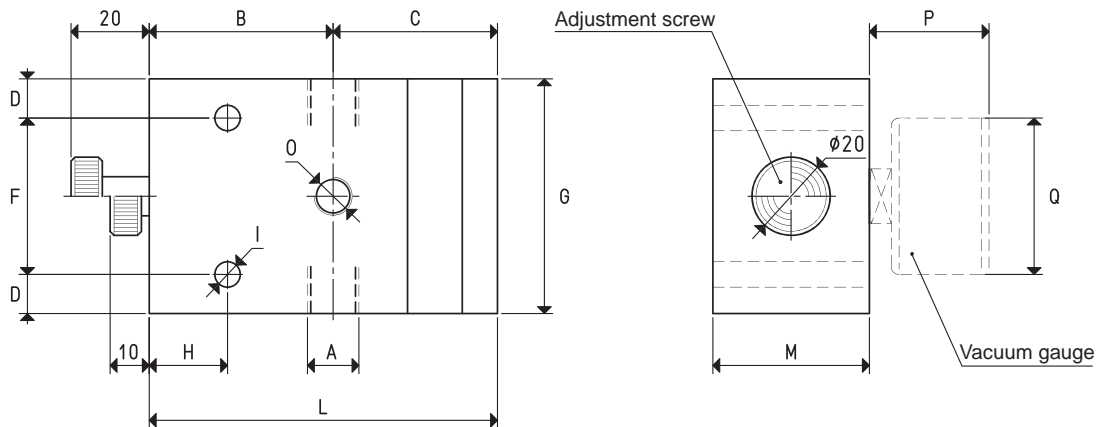
The vacuum level is adjusted by rotating the special reeded screw clockwise to increase it, and anti-clockwise to reduce it.

Technical features

- Operation: membrane-piston regulator.
- Adjustable operating pressure: from 800 to 1 mbar abs.
- Capacity: from 2 to 160 cum/h.
- Room temperature: from -10 to +80 °C.
- Installation position: any.

Use

Vacuum regulators are mainly used on centralised plants where, regardless of the plant vacuum level, each grip can be adjusted within that value. Moreover, they are necessary whenever the working vacuum must be lower than the primary vacuum.



| Art. | A Ø | Max. capacity cum/h | B | C | D | F | G | H | I Ø | L | M | O Ø | P | Q Ø | Art. pressure gauge | Weight Kg |
|----------|---------|------------------------|----|------|----|-----|-----|----|--------|-------|----|--------|----|--------|---------------------|--------------|
| 11 01 10 | G1/4" | 6 | 47 | 42.0 | 10 | 40 | 60 | 20 | 6.5 | 89.0 | 40 | G1/8" | 30 | 40 | 09 03 15 | 0.60 |
| 11 02 10 | G3/8" | 10 | 47 | 42.0 | 10 | 40 | 60 | 20 | 6.5 | 89.0 | 40 | G1/8" | 30 | 40 | 09 03 15 | 0.58 |
| 11 03 10 | G1/2" | 20 | 53 | 52.0 | 15 | 55 | 85 | 25 | 8.5 | 105.0 | 50 | G1/4" | 36 | 63 | 09 03 10 | 1.15 |
| 11 04 10 | G3/4" | 40 | 55 | 55.5 | 15 | 70 | 100 | 30 | 8.5 | 110.5 | 50 | G1/4" | 36 | 63 | 09 03 10 | 1.39 |
| 11 05 10 | G1" | 80 | 60 | 58.0 | 15 | 90 | 120 | 30 | 8.5 | 118.0 | 60 | G1/4" | 36 | 63 | 09 03 10 | 2.08 |
| 11 06 10 | G1" 1/2 | 160 | 54 | 77.5 | 15 | 130 | 160 | 20 | 8.5 | 131.5 | 99 | G1/4" | 36 | 63 | 09 03 10 | 5.49 |

Note: Pressure gauges are not integral part of the regulators, therefore, they must be ordered separately.

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

3.19



REGULATORS FOR LOW VACUUM LEVELS

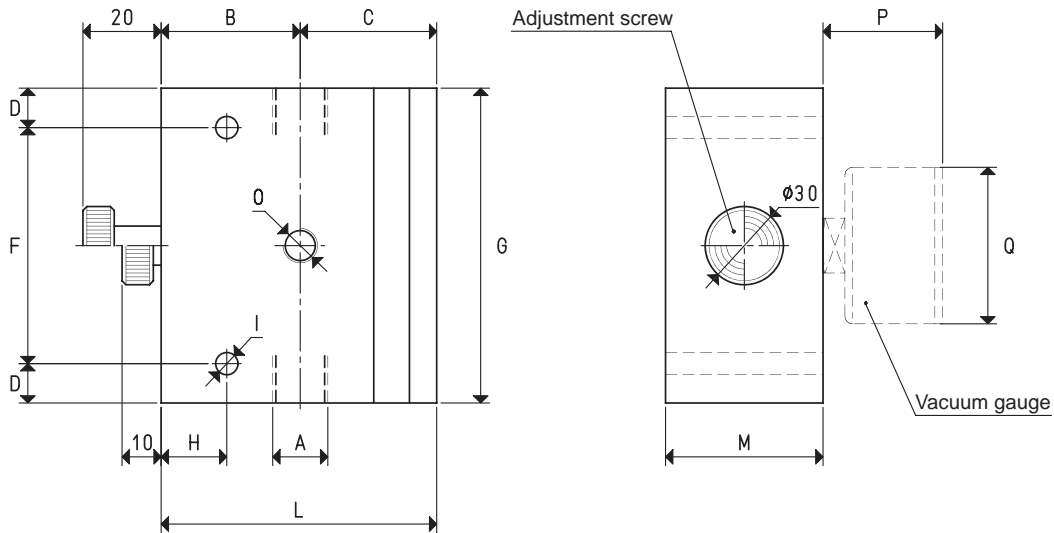
The regulators described in this page are based on the same operation principle as the ones described in the previous page and have the same function. The only difference is that in these ones the minimum adjustable vacuum level is close to the atmospheric pressure value. The vacuum level is adjusted by rotating the special reeded screw clockwise to increase it, and anti-clockwise to reduce it.

Technical features

- Operation: membrane-piston regulator.
- Adjustable operating pressure: from 980 to 1 mbar abs.
- Capacity: from 20 to 160 cum/h.
- Room temperature: from -10 to +80 °C.
- Installation position: any.

Use

These regulators are used as the previously described ones, but they offer the additional advantage of regulating even vacuum levels close to the atmospheric pressure.



3D drawings available at www.vuototecnica.net

| Art. | A Ø | Max. capacity cum/h | B | C | D | F | G | H | I Ø | L | M | O Ø | P | Q | Art. | Weight Kg |
|----------|---------|------------------------|----|------|----|-----|-----|----|--------|-------|-----|--------|----|----|----------|--------------|
| 11 03 50 | G1/2" | 20 | 53 | 52.0 | 15 | 90 | 120 | 25 | 8.5 | 105.0 | 60 | G1/4" | 36 | 63 | 09 03 10 | 2.07 |
| 11 05 50 | G1" | 80 | 60 | 58.0 | 15 | 90 | 120 | 30 | 8.5 | 118.0 | 100 | G1/4" | 36 | 63 | 09 03 10 | 3.74 |
| 11 06 50 | G1" 1/2 | 160 | 54 | 77.5 | 15 | 130 | 160 | 20 | 8.5 | 131.5 | 99 | G1/4" | 36 | 63 | 09 03 10 | 5.54 |

Note: Pressure gauges are not integral part of the regulators, therefore, they must be ordered separately

3.20

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



3



VACUUM REGULATORS WITH PNEUMATIC ADJUSTMENT

Vacuum regulators with pneumatic adjustment differ from the previous ones for the way they adjust the vacuum level; in fact, instead of acting manually on the adjustment screw, it is necessary to act on the pneumatic cylinder compressed air supply: the higher the pressure, and the higher the vacuum level and viceversa.

Vacuum regulators are used to adjust the pre-set vacuum level and keep it constant (secondary vacuum), regardless of the pump vacuum level (primary vacuum).

Unlike the vacuum adjusting valves, regulators do not introduce air into the circuit, thus producing more gripping points with different vacuum values, from only one vacuum source.

Their operating principle is based on the contrasting action between a pneumatic cylinder with short stroke and a fluctuating piston driven by the pressure differential existing between the secondary vacuum and the atmospheric pressure

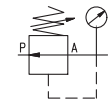
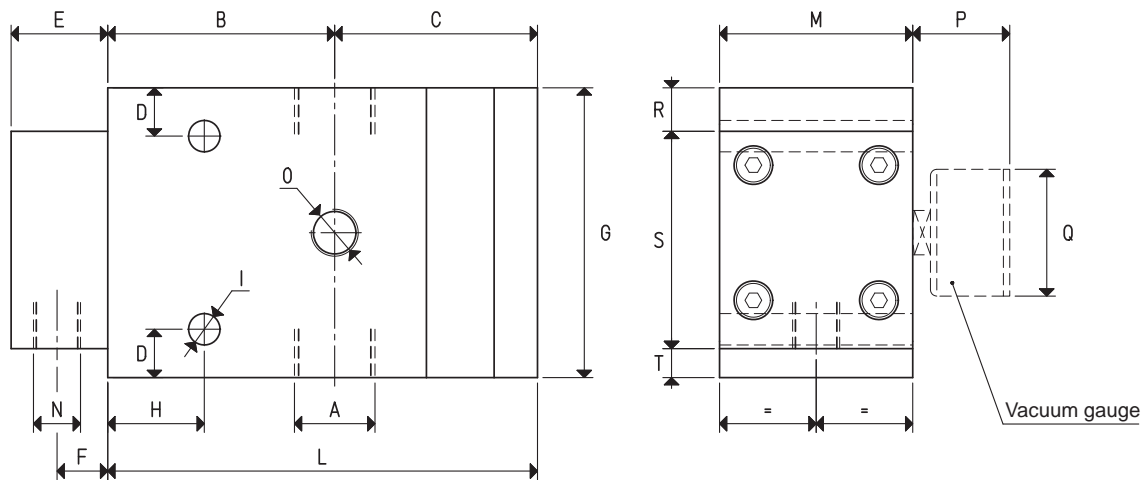
Technical features

- Operation: membrane-piston regulator.
- Supply pressure: from 0 to 3 bar (g) for regulators art. 11 .. 30;
from 0 to 5 bar (g) for regulators art. 11 .. 80.
- Adjustable working pressure: from 800 to 1 mbar abs. for regulators art. 11 .. 30;
from 980 to 1 mbar abs. for regulators art. 11 .. 80:
 - Capacity: from 2 to 160 cum/h.
 - Room temperature: from -10 to +80 °C.
 - Installation position: any.

Use

Vacuum regulators are mainly used on centralised plants where, regardless of the plant vacuum level, each grip can be adjusted within that value. Moreover, they are necessary whenever the working vacuum must be lower than the primary vacuum and kept constant.

Vacuum regulators with pneumatic adjustment can be installed away from the control point, since it is sufficient to have a pressure regulator on the control panel to act on them.



| Art. | A Ø | Max. capacity, cum/h | B | C | D | E | F | G | H | I Ø | L | M | N Ø | O Ø | P Ø | Q | R | S | T | Art. | Weight Kg |
|----------|---------|-------------------------|----|------|----|----|------|-----|----|--------|-------|-----|--------|--------|--------|----|------|----|------|----------|--------------|
| 11 01 30 | G1/4" | 6 | 47 | 42.0 | 10 | 20 | 10.5 | 60 | 20 | 6.5 | 89.0 | 40 | G1/8" | G1/8" | 30 | 40 | 9.0 | 45 | 6.0 | 09 03 15 | 0.71 |
| 11 02 30 | G3/8" | 10 | 47 | 42.0 | 10 | 20 | 10.5 | 60 | 20 | 6.5 | 89.0 | 40 | G1/8" | G1/8" | 30 | 40 | 9.0 | 45 | 6.0 | 09 03 15 | 0.69 |
| 11 03 30 | G1/2" | 20 | 53 | 52.0 | 15 | 26 | 16.5 | 85 | 25 | 8.5 | 105.0 | 50 | G1/8" | G1/4" | 36 | 63 | 16.5 | 58 | 10.5 | 09 03 10 | 1.32 |
| 11 04 30 | G3/4" | 40 | 55 | 55.5 | 15 | 26 | 16.5 | 100 | 30 | 8.5 | 110.5 | 50 | G1/8" | G1/4" | 36 | 63 | 24.0 | 58 | 18.0 | 09 03 10 | 1.94 |
| 11 05 30 | G1" | 80 | 60 | 58.0 | 15 | 26 | 16.5 | 120 | 30 | 8.5 | 118.0 | 60 | G1/8" | G1/4" | 36 | 63 | 34.0 | 58 | 28.0 | 09 03 10 | 2.35 |
| 11 06 30 | G1" 1/2 | 160 | 54 | 77.5 | 15 | 30 | 19.5 | 160 | 20 | 8.5 | 131.5 | 99 | G1/4" | G1/4" | 36 | 63 | 37.5 | 80 | 42.5 | 09 03 10 | 5.56 |
| 11 03 80 | G1/2" | 20 | 53 | 52.0 | 15 | 26 | 16.5 | 120 | 25 | 8.5 | 105.0 | 60 | G1/8" | G1/4" | 36 | 63 | 34.0 | 58 | 28.0 | 09 03 10 | 2.28 |
| 11 05 80 | G1" | 80 | 60 | 58.0 | 15 | 26 | 16.5 | 120 | 30 | 8.5 | 118.0 | 100 | G1/8" | G1/4" | 36 | 63 | 34.0 | 58 | 28.0 | 09 03 10 | 3.96 |
| 11 06 80 | G1" 1/2 | 160 | 54 | 77.5 | 15 | 30 | 19.5 | 160 | 20 | 8.5 | 131.5 | 99 | G1/4" | G1/4" | 36 | 63 | 37.5 | 80 | 42.5 | 09 03 10 | 5.60 |

Note: Pressure gauges are not integral part of the regulators, therefore, they must be ordered separately.

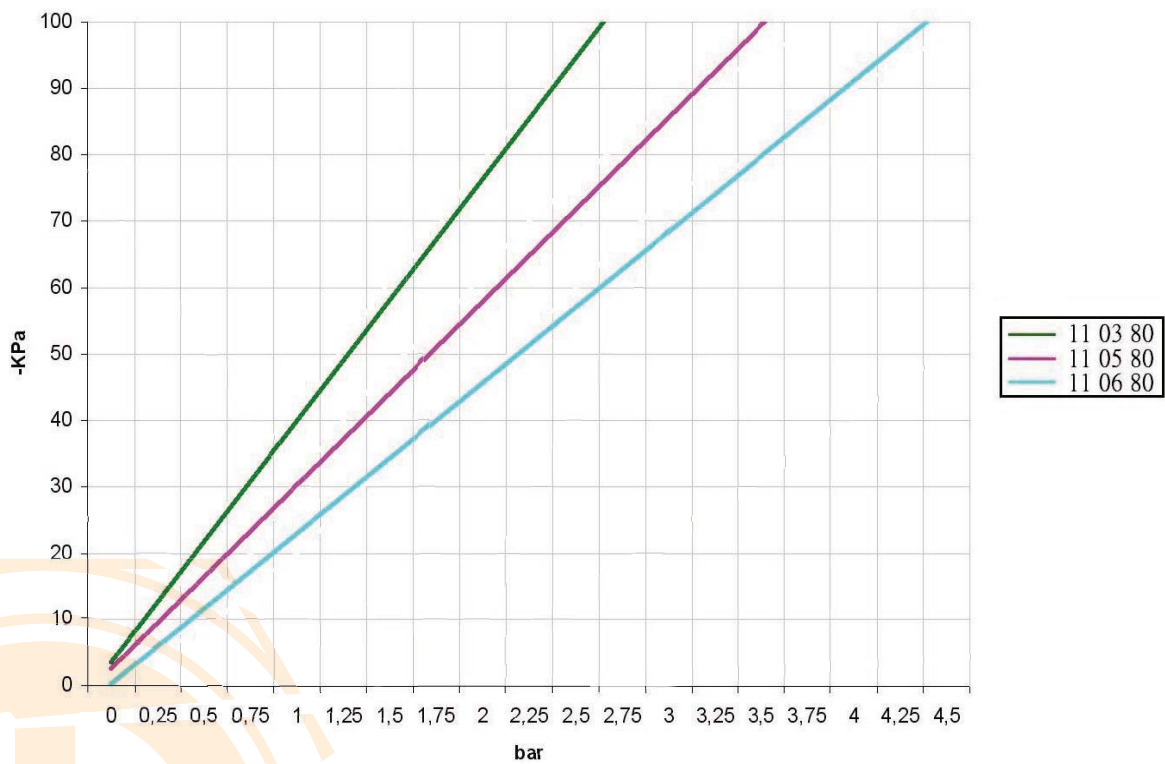
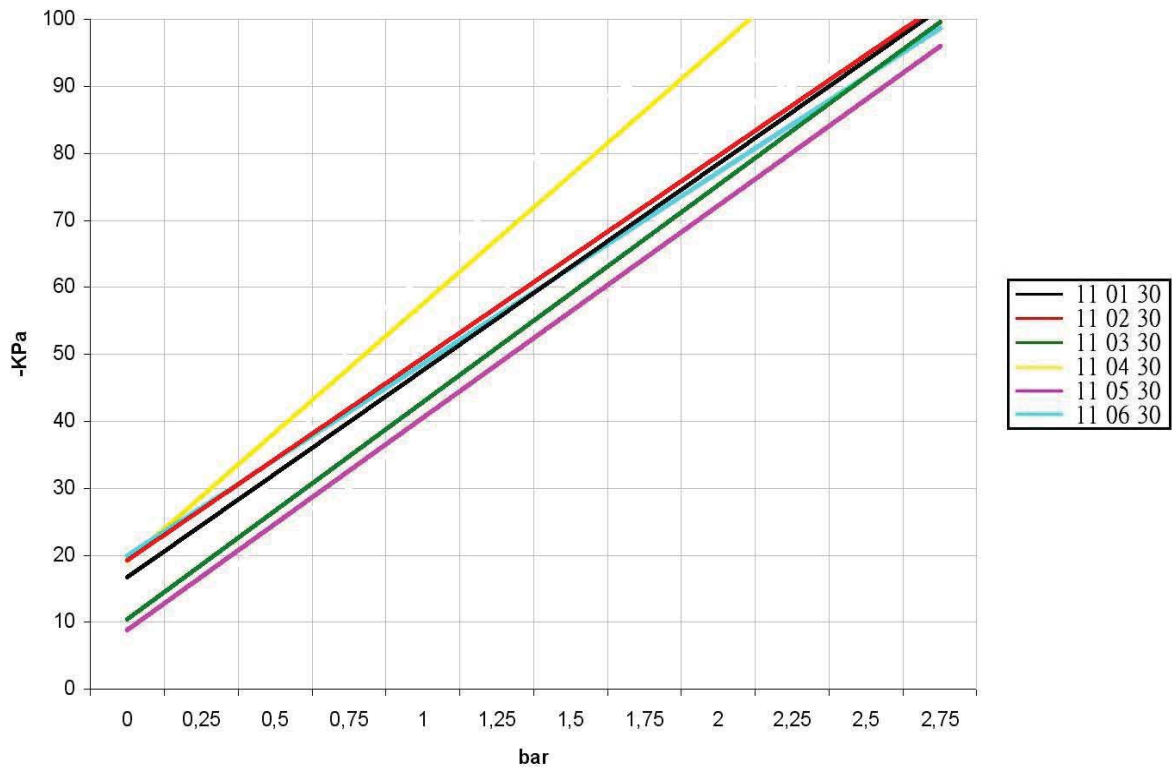
Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

3D drawings available at www.vuototecnica.net



DIAGRAMS REFERRING TO THE VACUUM LEVEL ACCORDING TO THE SERVO-CONTROL SUPPLY PRESSURE



3D drawings available at www.vuototecnica.net

Note: The values shown in these tables are purely indicative, since they depend on the atmospheric pressure, on the capacity of the vacuum source and on the quality of the compressed air supply.

VACUUM ADJUSTMENT VALVES

When these valves reach a certain precalibrated vacuum degree, they introduce atmospheric air into the circuit to prevent the increase of the set value and to keep it constant.

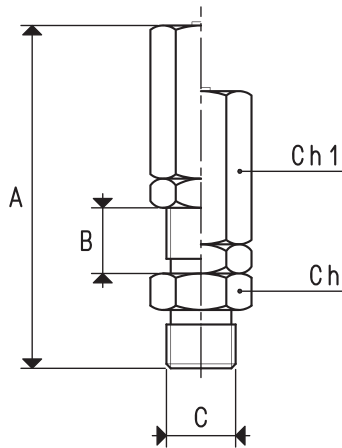
They can be used as regulators only on circuits having only one vacuum pump and only one use (or more uses but all working at the same vacuum degree)

In most cases they are used as safety valves on non-commissioned tanks or containers at high vacuum levels and on vacuum cup lifting systems.

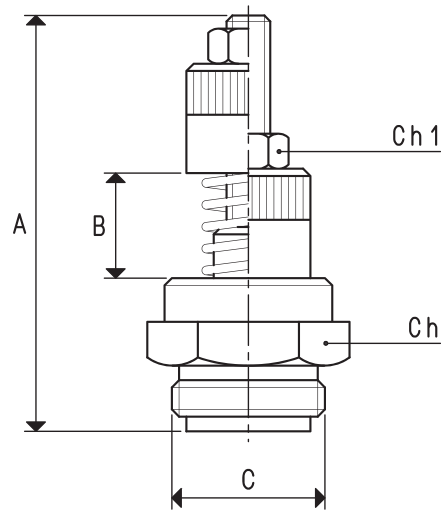
The vacuum level is adjusted by rotating the knurled bush in both directions. The fine thread with which the valve is provided ensures a very accurate calibration.



3

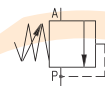


Art. 04 01 10



Art. 04 02 10
04 03 10
04 04 10

3D drawings available at www.vuototecnica.net



| Art. | Vacuum adj. mbar abs. | A | B | C Ø | Ch | Ch1 | Max. capacity cum/h | Weight g |
|----------|--------------------------|----|------|--------|----|-----|------------------------|-------------|
| 04 01 10 | 670 ÷ 1 | 45 | 6.5 | G1/8" | 12 | 12 | 4 | 30 |
| 04 02 10 | 670 ÷ 1 | 57 | 15.0 | G1/2" | 24 | 10 | 20 | 78 |
| 04 03 10 | 670 ÷ 1 | 60 | 12.0 | G3/4" | 30 | 17 | 40 | 150 |
| 04 04 10 | 670 ÷ 1 | 65 | 12.0 | G1" | 35 | 17 | 70 | 210 |

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

3.23



3



VACUUM VALVES AND SOLENOID VALVES

| | |
|--------------------------------------------------------------------------------------------------------------------------------|------------------|
| SUCTION VALVES FOR VACUUM PRESS BAGS | PAG. 4.01 |
| SUCTION VALVES FOR RESIN INFUSION MOULD | PAG. 4.02 |
| PLUNGER VALVES | PAG. 4.03 |
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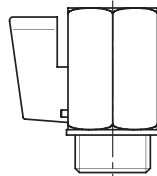
SUCTION VALVES FOR VACUUM PRESS BAGS



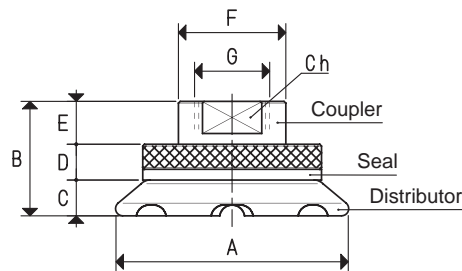
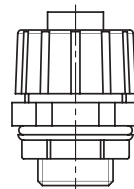
The suction valves described in this page have been designed for a quick vacuum connection on press bags for composite fibre products. These valves are composed of a steel distributor, to be inserted inside the bag, equipped with a cam housing suitable for the quick coupler for the vacuum connection. The latter is made with reeded and anodised aluminium and is easily coupled with the distributor by simply rotating it on its axis by 90°, once it's been inserted. A silicon seal to be placed between the two elements and the press bag, guarantees a perfect vacuum seal. Manual 2-way valves, quick couplers or simply flexible pipe fittings can be assembled onto these valves. They are currently available in the two versions indicated in the table, but can be provided in different sizes and shapes upon request for a minimum amount.

Quick coupling

2-way manual valve



TPR pipe fitting



| Art. | Max. capacity recommended cum/h | Hole to be made on the sack Ø | Manual 2-way valve art. | Quick Coupler art. | TPR pipe fitting art. | Weight g | A Ø | B | C | D | E | F Ø | G Ø | Ch |
|----------|---------------------------------|-------------------------------|-------------------------|--------------------|-----------------------|----------|-----|----|----|----|----|-----|-------|----|
| VSS 3/8" | 10 | 16 | 13 02 11 | RR3/8" | RTPR3/8" | 178 | 60 | 32 | 10 | 13 | 9 | 24 | G3/8" | 19 |
| VSS 1/2" | 20 | 19 | 13 03 11 | RR1/2" | RTPR1/2" | 218 | 65 | 35 | 10 | 13 | 12 | 30 | G1/2" | 25 |

Note: 2-way valves are not integral part of the suction valve and therefore, must be ordered separately.

3D drawings available at www.vuototecnica.net

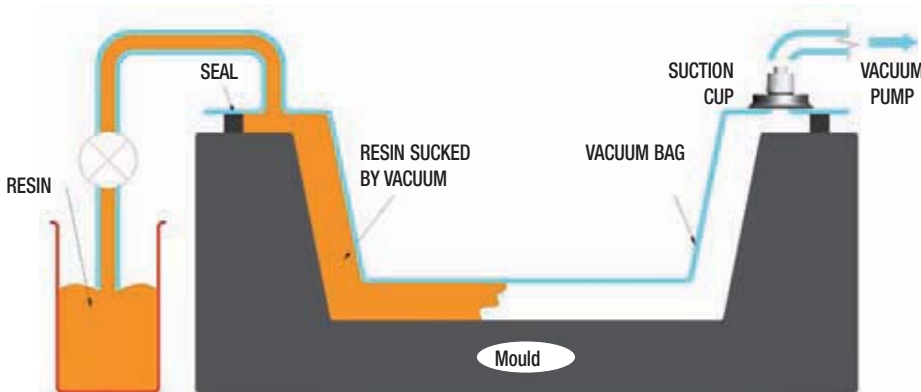
Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



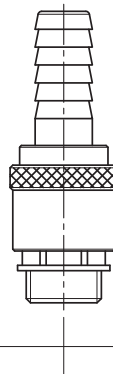
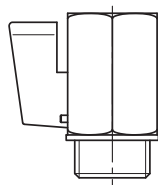
SUCTION VALVES FOR RESIN INFUSION MOULD

These suction valves, once laid on the resin infusion mould connections, allow a quick vacuum connection and guarantee a perfect seal. They are made with silicon rubber, while their support is made with anodised aluminium. Manual 2-way valves, quick couplers or simply flexible pipe fittings can be assembled onto these valves. They are available in the two versions shown below, but can be supplied in different sizes and shapes upon request.

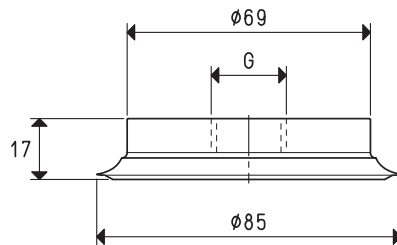
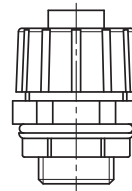


Quick coupling

2-way manual valve



TPR pipe fitting



| Art. | Max. capacity recommended cum/h | Manual 2-way valve art. | Quick coupler art. | TPR pipe fitting art. | Weight g | G |
|-----------------|---------------------------------|-------------------------|--------------------|-----------------------|----------|-------|
| 08 85 15 S 1/2" | 20 | 13 03 11 | RR1/2" | RTPR1/2" | 108 | G1/2" |
| 08 85 15 S 3/4" | 40 | 13 03 11 | RR3/4" | RTPR3/4" | 103 | G3/4" |

Note: 2-way valves and couplers are not integral part of the suction valve and therefore, must be ordered separately..

4.02

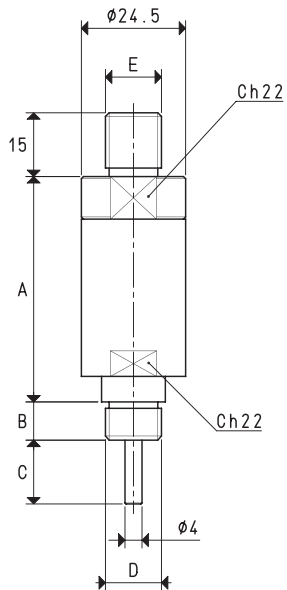
$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



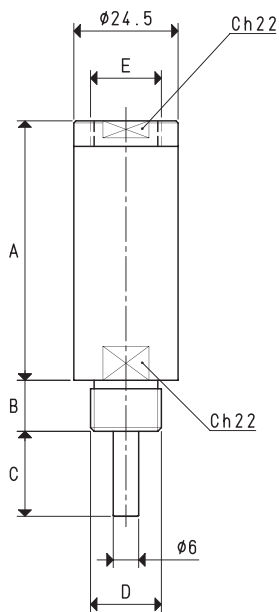
PLUNGER VALVES

Plunger valves are composed of a cylindrical brass body, a steel plunger with a conical valve and a thrust spring. Connected to vacuum, they are normally closed. They activate suction, thus creating vacuum, only when the plunger is in contact with the gripping surface. They are available in various versions, all suitable for our vacuum cups.



4

| Art. | A | B | C | D Ø | E Ø | Weight g | Cup art. |
|----------|----|---|------|--------|--------|-------------|-------------|
| 19 01 10 | 53 | 9 | 15.0 | G1/4" | G1/4" | 160 | 08 150 16 |
| 19 01 11 | 53 | 9 | 15.0 | M12 | G1/4" | 166 | 08 80 20 |
| 19 01 12 | 53 | 9 | 20.0 | M12 | G1/4" | 152 | 08 127 15 |



| Art. | A | B | C | D Ø | E Ø | Weight g | Cup art. |
|----------|----|----|------|--------|--------|-------------|-------------------------------------|
| 19 02 10 | 61 | 12 | 20 | G3/8" | G3/8" | 164 | 08 150 15 08 200 10 08 250 10 |
| 19 03 10 | 61 | 10 | 22.5 | G1/2" | G3/8" | 172 | 08 300 10 08 350 10 |
| 19 04 10 | 68 | 10 | 40 | G1/2" | G3/8" | 182 | 08 360 10 |

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

4.03

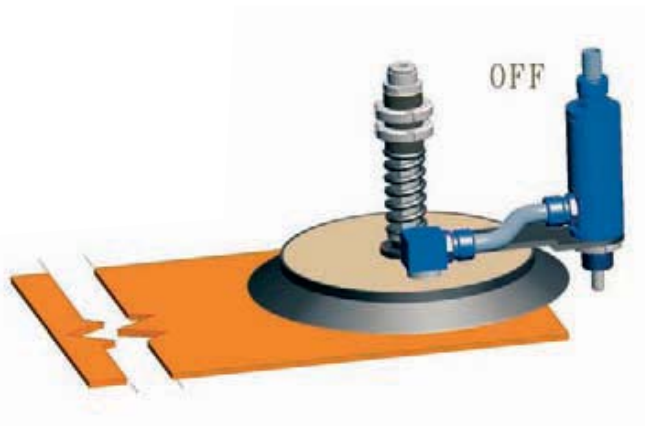
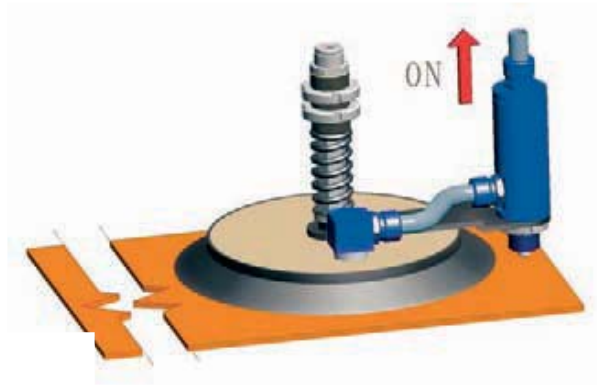
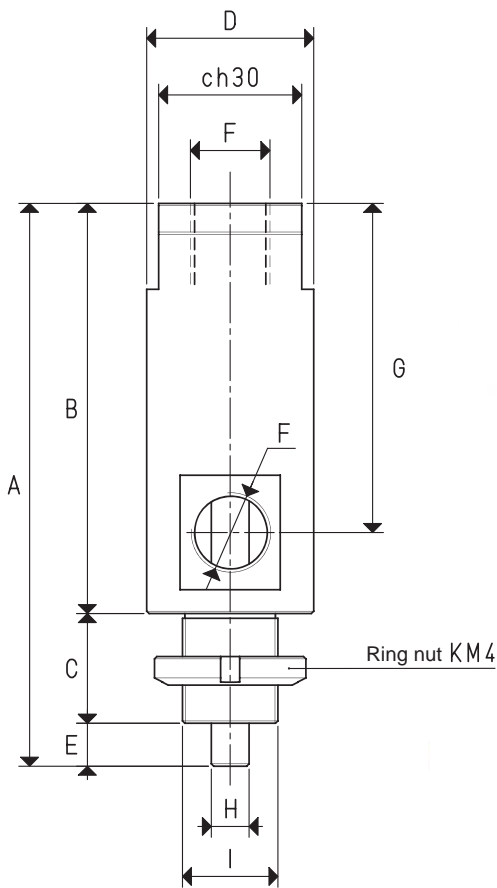


4



MECHANICALLY OPERATED VALVES

These valves are composed of an anodised aluminium body, a steel pin solidly connected to a conical shutter and of a thrust spring. Connected to vacuum, they are normally closed. They activate suction, thus creating vacuum, only when the pin is activated by the cams or any other mechanical device. They can be used as an alternative to plunger valves when these cannot be assembled onto the vacuum cups.



3D drawings available at www.vuototecnica.net

| Art. | A | B | C | D | E | F | G | H | I | Weight |
|-----------------|-----|----|----|----|---|-------|----|---|---------|--------|
| 19 02 30 | 112 | 80 | 23 | 35 | 9 | G3/8" | 63 | 8 | M20 x 1 | 252 |

4.04

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$, pounds = $\frac{\text{g}}{453.6} = 0.4536$ Kg

GAS-NPT thread adapters available at page 1.117



4

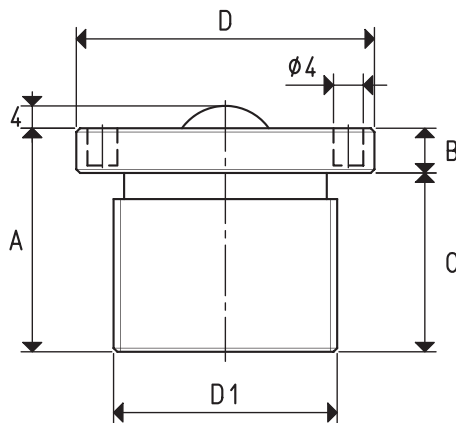


VALVES WITH BALL SHUTTER

Valves with ball shutters activate suction, creating vacuum in the cups on which they are applied, only when the load to be held activates the sealing shutter.

They are made of an anodised aluminium body, a nylon ball shutter, a calibrated thrust spring and a threaded brass closing plug.

When properly calibrated, they guarantee a perfect vacuum seal. They are recommended for making vacuum operated clamping surfaces. They can be supplied in different sizes and shapes upon request and for a minimum quantity to be defined in the order.



3D drawings available at www.vuototecnica.net

| Art. | A | B | C | D | D1 | Weight |
|----------|----|---|----|----|-----------|--------|
| 22 01 10 | 30 | 6 | 24 | 40 | M30 x 1.5 | 70 |

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

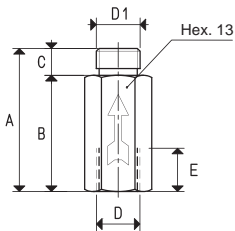


SHUT-OFF VALVES

They are special unidirectional valves that, when properly calibrated, allow a certain quantity of fluid to go through, afterwards, if the fluid continues to go through, they automatically close.

These shut-off valves have been specially designed to be applied on the cups and, in case of lack of objects to be gripped, of defective grips or leaks, they automatically deactivate suction, thus preventing any reduction of the vacuum level on the other gripping cups.

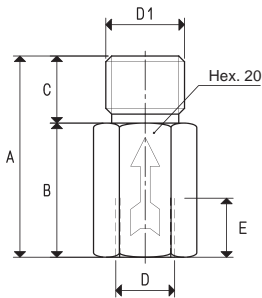
They are provided calibrated and commissioned, ready to be installed. They are made with anodised aluminium and can be supplied in different shapes and sizes upon request and for a minimum quantity to be defined in the order.



| Art. | A | B | C | D | D1 | E | Weight |
|----------|----|----|---|-------|-------|---|--------|
| 14 01 05 | 32 | 26 | 6 | G1/8" | G1/8" | 8 | 8 |

Minimum ignition capacity = 1.5 cum/h

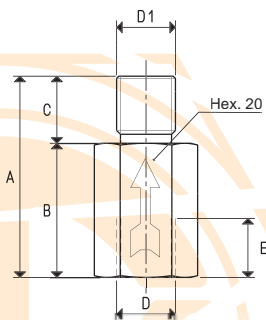
Minimum vacuum level = -250 mbar



| Art. | A | B | C | D | D1 | E | Weight |
|----------|----|----|----|-------|-------|----|--------|
| 14 01 10 | 45 | 30 | 15 | G1/4" | G3/8" | 14 | 28 |

Minimum ignition capacity = 4 cum/h

Minimum vacuum level = -250 mbar



| Art. | A | B | C | D | D1 | E | Weight |
|----------|----|----|----|-------|-------|----|--------|
| 14 01 15 | 45 | 30 | 15 | G1/4" | G1/4" | 14 | 29 |

Minimum ignition capacity = 4 cum/h

Minimum vacuum level = -250 mbar

3D drawings available at www.vuototecnica.net

4.06

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$ pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



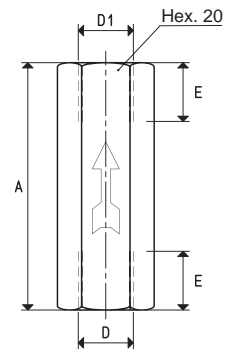
SHUT-OFF VALVES



| Art. | A | D | D1 | E | Weight |
|-----------------|----|-------|-------|----|--------|
| | | ∅ | ∅ | | g |
| 14 02 10 | 59 | G1/4" | G1/4" | 14 | 42 |

Minimum ignition capacity = 4 cum/h

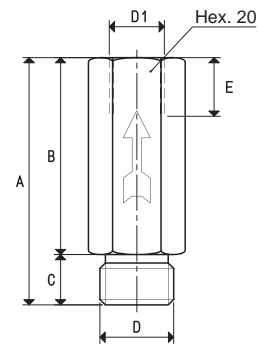
Minimum vacuum level = -250 mmba



| Art. | A | B | C | D | D1 | E | Weight |
|-----------------|----|----|----|-------|-------|----|--------|
| | | | | ∅ | ∅ | | g |
| 14 03 10 | 59 | 47 | 12 | G3/8" | G1/4" | 14 | 36 |

Minimum ignition capacity = 4 cum/h

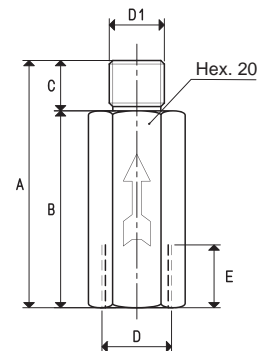
Minimum vacuum level = -250 mbar



| Art. | A | B | C | D | D1 | E | Weight |
|-----------------|----|----|----|-------|-------|----|--------|
| | | | | ∅ | ∅ | | g |
| 14 05 10 | 59 | 47 | 12 | G3/8" | G1/4" | 14 | 34 |

Minimum ignition capacity = 4 cum/h

Minimum vacuum level = -250 mbar



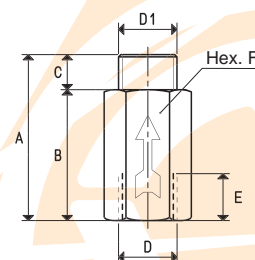
SHUT-OFF VALVES WITH CONTROLLED LEAK

These shut-off valves are based on the same operating principle as the others, only their sealing shutter allows the vacuum source a minimum suction even when completely closed. This feature allows the cup that has not gripped the object to be handled, for example for the anticipated suction activation, to recreate vacuum inside and, therefore, to grip the object without having to repeat the work cycle. If, on the other hand, there is a lack of an object to be handled, the valve does not prevent the vacuum level reduction on the remaining gripping cups, but the slight leak is easy to control and, therefore, to restore. They are fully made with anodised aluminium.



| Art. | Max. leak NI/min | Minimum ignition capacity cum/h | A | B | C | D | D1 | E | F | Weight |
|-----------------|---------------------|---------------------------------------|------|------|-----|-------|-------|----|----|--------|
| | | | | | | ∅ | ∅ | | | g |
| 14 01 11 | 7.5 | 1 | 36.0 | 29.5 | 6.5 | G1/8" | G1/8" | 10 | 13 | 8 |
| 14 02 11 | 7.5 | 1 | 37.5 | 29.5 | 8.0 | G1/4" | G1/4" | 15 | 17 | 16 |
| 14 03 11 | 24.0 | 3 | 42.0 | 32.5 | 9.5 | G3/8" | G3/8" | 17 | 22 | 28 |

Minimum vacuum level = -250 mbar



3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

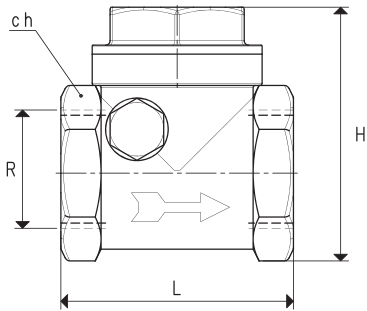


CHECK VALVES

These unidirectional valves are made with bronze and brass with a seal in NBR nitrile rubber or, upon request, in Viton®.

To ensure a practical assembly they are available in two versions: horizontal and vertical.

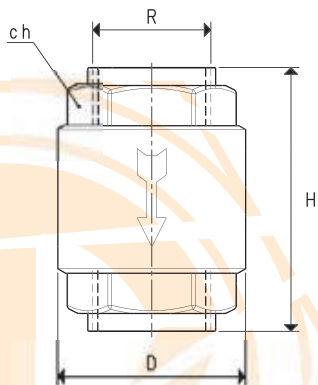
Fitted on the vacuum pump suction inlet, as soon as the latter stop, these valves prevent the air from returning in the plant (piping, tanks, autoclaves, vacuum gripping systems, vacuum cups, etc.), guaranteeing a perfect seal and preventing the oil from returning into the pump stator, which would cause considerable damages. Therefore, check valves are mandatory on all vacuum pumps with lubrication that do not have them built-in.



HORIZONTAL

| Art. | R Ø | Ch | H | L | Weight Kg |
|-----------------|---------|----|----|----|--------------|
| 10 02 10 | G3/8" | 27 | 49 | 43 | 0.19 |
| 10 03 10 | G1/2" | 27 | 49 | 43 | 0.17 |
| 10 04 10 | G3/4" | 34 | 58 | 52 | 0.27 |
| 10 05 10 | G1" | 42 | 66 | 62 | 0.43 |
| 10 06 10 | G1" 1/4 | 50 | 75 | 72 | 0.59 |
| 10 07 10 | G1" 1/2 | 57 | 86 | 80 | 0.79 |
| 10 08 10 | G2" | 69 | 99 | 94 | 1.08 |

Note: To order the valve with Viton® seal, add the letter V to the article (E.g.: 10 02 10 V)



VERTICAL

| Art. | R Ø | Ch | D Ø | H | Weight Kg |
|-----------------|---------|----|--------|-----|--------------|
| 10 01 11 | G1/4" | 21 | 28 | 47 | 0.10 |
| 10 02 11 | G3/8" | 25 | 35 | 59 | 0.17 |
| 10 03 11 | G1/2" | 26 | 35 | 48 | 0.12 |
| 10 04 11 | G3/4" | 33 | 42 | 65 | 0.28 |
| 10 05 11 | G1" | 40 | 48 | 74 | 0.42 |
| 10 06 11 | G1" 1/4 | 50 | 61 | 82 | 0.64 |
| 10 07 11 | G1" 1/2 | 55 | 71 | 92 | 0.87 |
| 10 08 11 | G2" | 70 | 87 | 100 | 2.70 |

Note: To order the valve with Viton® seal, add the letter V to the article (E.g.: 10 02 11 V)

3D drawings available at www.vuototecnica.net

4.08

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$ pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



4



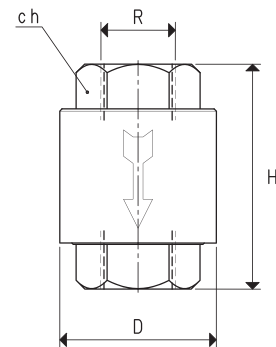
MEMBRANE CHECK VALVES

These valves have the same features of the other check valves, but they are made with anodised aluminium, which makes them particularly light. The seal is guaranteed by a EPDM membrane instead of the metal shutter with NBR seal.

For these features and for their modern design, they are recommended for pneumatic vacuum generators and, of course, on vacuum pumps.



| Art. | R Ø | Ch | D Ø | H | Weight g |
|----------|--------|----|--------|----|-------------|
| 10 01 15 | G1/4" | 20 | 30 | 42 | 46 |
| 10 02 15 | G3/8" | 24 | 35 | 50 | 74 |
| 10 03 15 | G1/2" | 24 | 37 | 55 | 86 |
| 10 04 15 | G3/4" | 33 | 42 | 64 | 110 |
| 10 05 15 | G1" | 40 | 49 | 74 | 162 |

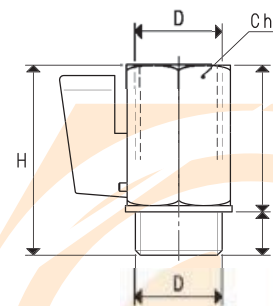


MANUAL 2-WAY MINIATURE VACUUM VALVES

These small manual valves are suited for intercepting vacuum on vacuum cup holders and any small utility in which solenoid valves cannot be installed. They feature a hexagonal nickel-plated brass body, a chromed brass ball shutter and a seal in plastic material to guarantee a perfect seal. A lever on the ball shutter, rotated by 90°, allows opening or closing the valve with no effort.



| Art. | D Ø | Ch | E | F | H | Weight g |
|----------|--------|----|----|----|----|-------------|
| 13 01 11 | G1/4" | 21 | 7 | 32 | 39 | 80 |
| 13 02 11 | G3/8" | 21 | 10 | 30 | 40 | 74 |
| 13 03 11 | G1/2" | 25 | 12 | 33 | 45 | 110 |



3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

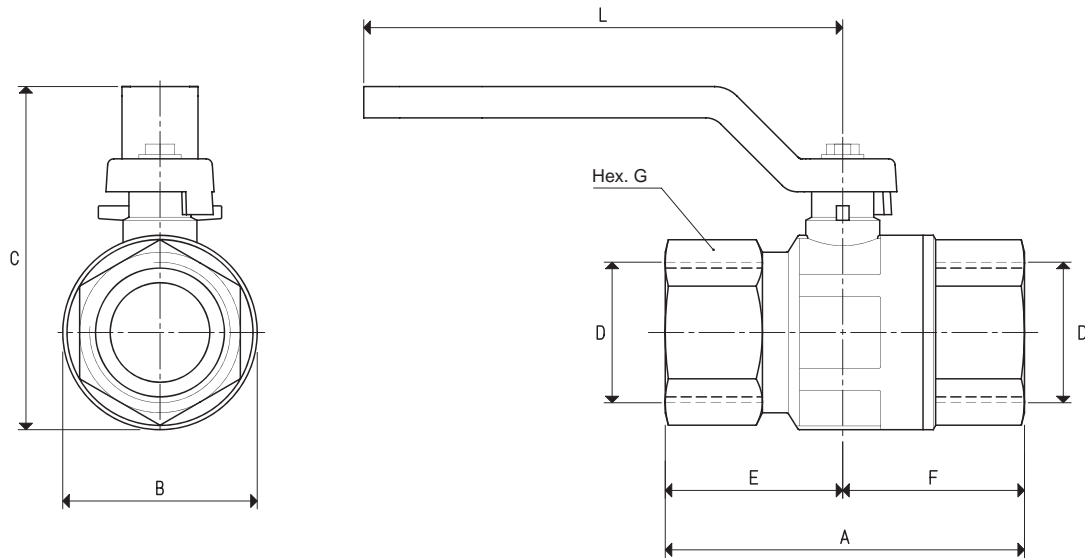


MANUAL 2-WAY VACUUM VALVES

These manual valves are used for intercepting vacuum in all those plants where solenoid valves cannot be installed.

They feature a die-cast nickel-plated brass body, a chromed brass ball shutter and teflon seals to guarantee perfect seal even at high temperatures.

A lever on the ball shutter, rotated by 90°, allows opening or closing the valve with no effort.



3D drawings available at www.vuototecnica.net

MANUAL 2-WAY VALVES

| Art. | A | B | C | D Ø | E | F | G | L | Weight Kg |
|----------|-----|-----|-----|---------|----|----|----|-----|--------------|
| 13 01 10 | 49 | 23 | 48 | G1/4" | 24 | 25 | 18 | 80 | 0.13 |
| 13 02 10 | 52 | 23 | 56 | G3/8" | 23 | 29 | 20 | 80 | 0.13 |
| 13 03 10 | 61 | 30 | 63 | G1/2" | 30 | 31 | 25 | 88 | 0.21 |
| 13 04 10 | 68 | 36 | 72 | G3/4" | 33 | 35 | 31 | 114 | 0.32 |
| 13 05 10 | 85 | 44 | 80 | G1" | 42 | 43 | 38 | 113 | 0.47 |
| 13 06 10 | 99 | 57 | 105 | G1" 1/4 | 50 | 49 | 47 | 137 | 0.74 |
| 13 07 10 | 109 | 70 | 126 | G1" 1/2 | 55 | 54 | 54 | 156 | 1.26 |
| 13 08 10 | 130 | 83 | 135 | G2" | 62 | 68 | 66 | 156 | 1.77 |
| 13 09 10 | 168 | 140 | 210 | G3" | 84 | 84 | 99 | 246 | 7.09 |

4.10

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$ pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

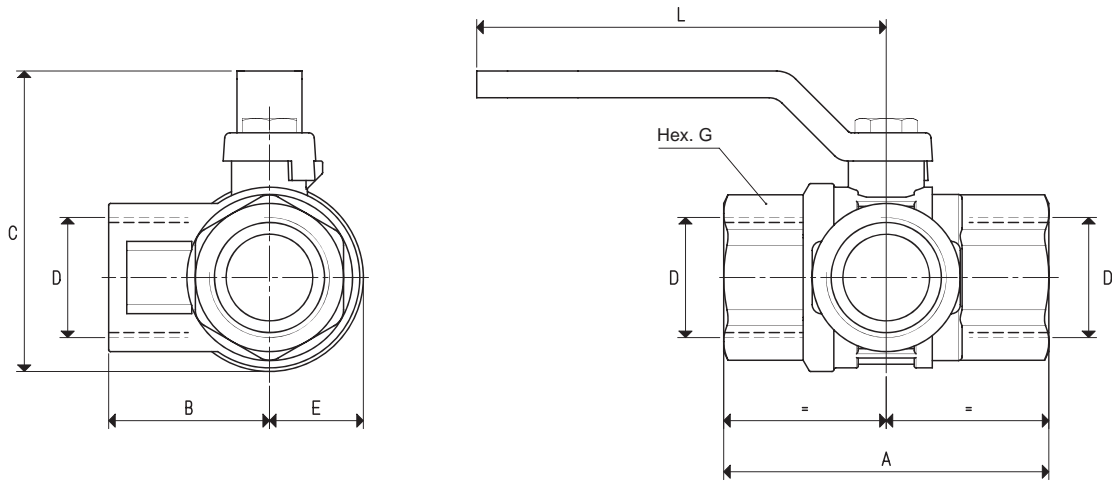
GAS-NPT thread adapters available at page 1.117



4



MANUAL 3-WAY VACUUM VALVES



MANUAL 3-WAY VALVES

| Art. | A | B | C | D | E | G | L | Weight Kg |
|-----------------|-----|----|-----|---------|----|----|-----|--------------|
| 13 01 15 | 46 | 23 | 58 | G1/4" | 11 | 19 | 109 | 0.16 |
| 13 02 15 | 52 | 26 | 59 | G3/8" | 12 | 22 | 109 | 0.19 |
| 13 03 15 | 67 | 33 | 66 | G1/2" | 17 | 27 | 109 | 0.30 |
| 13 04 15 | 76 | 39 | 79 | G3/4" | 17 | 32 | 130 | 0.49 |
| 13 05 15 | 90 | 45 | 88 | G1" | 22 | 41 | 130 | 0.85 |
| 13 06 15 | 118 | 65 | 134 | G1" 1/4 | 27 | 50 | 170 | 1.76 |
| 13 07 15 | 114 | 62 | 138 | G1" 1/2 | 43 | 55 | 150 | 2.45 |

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

GAS-NPT thread adapters available at page 1.117



PILOT-OPERATED 3-WAY VACUUM VALVES

These 2-position, 3-way valves feature pneumatically activated conical shutters.

They can be normally used either open or closed.

They are recommended in all the cases that require a quick exchange between the vacuum pump suction and the air inlet into the circuit for a quick restoration of the atmospheric pressure.

They are composed of an anodised aluminium body, two vulkollan® shutters assembled onto a stainless steel stem, a membrane for servo-control made with special compounds and a thrust spring for the shutter return.

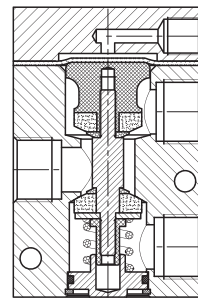
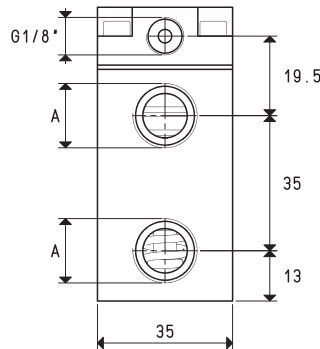
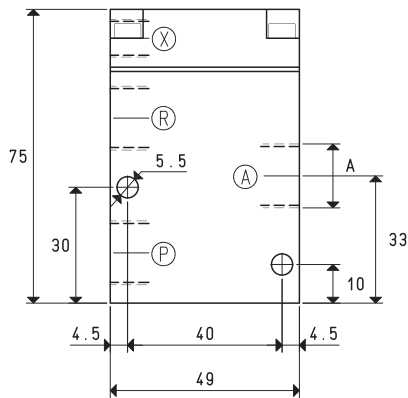
These valves allow reducing frictions and internal dynamic stresses to the minimum. The result being a high response speed and a guarantee of long lasting duration.

Technical features

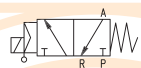
Working pressure: from 0.5 to 3000 mbar abs.

Servo-control pressure: see table

Temperature of the sucked fluid: from -5 to +60 °C

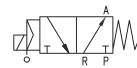


NC



X = Compressed air supply
P = Pump
A = Service
R = Passage

N0



X = Compressed air supply
P = Passage
A = Service
R = Pump

| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure bar (g) | Weight g |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|--------------------------------------|-------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 01 31 | G1/4" | 6 | 1000 | 0.5 | 5 | 10 | 8.5 | 56.8 | 4 ÷ 7 | 318 |
| 07 02 31 | G3/8" | 10 | 1000 | 0.5 | 5 | 10 | 11.5 | 103.8 | 4 ÷ 7 | 308 |

3D drawings available at www.vuototecnica.net

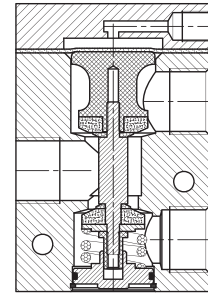
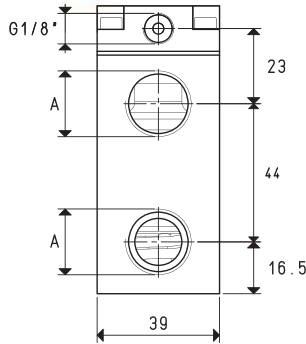
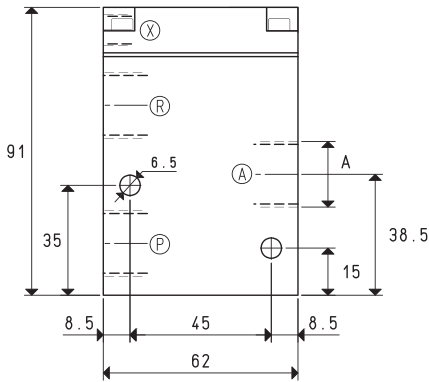
4.12

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$ pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

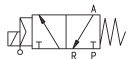
GAS-NPT thread adapters available at page 1.117



3-WAY VACUUM SOLENOID PILOT VALVES

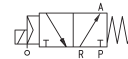


NC



X = Compressed air supply
P = Pump
A = Service
R = Passage

N0

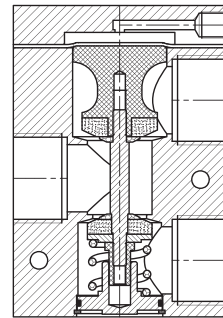
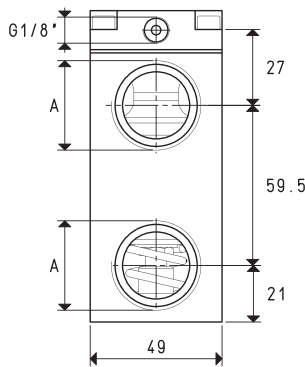
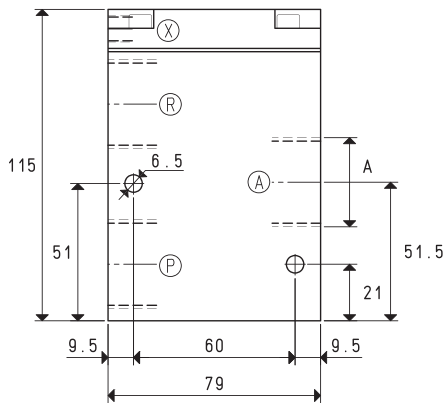


X = Compressed air supply
P = Passage
A = Service
R = Pump

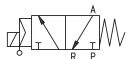
4

| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 03 31 | G1/2" | 20 | 1000 | 0.5 | 6 | 15 | 15.0 | 176 | 6 ÷ 8 | 0.490 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

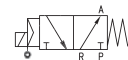


NC



X = Compressed air supply
P = Pump
A = Service
R = Passage

N0



X = Compressed air supply
P = Passage
A = Service
R = Pump

| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 04 31 | G3/4" | 40 | 1000 | 0.5 | 7 | 16 | 20 | 314 | 6 ÷ 8 | 1.060 |
| 07 05 31 | G1" | 90 | 1000 | 0.5 | 7 | 16 | 25 | 490 | 6 ÷ 8 | 0.964 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

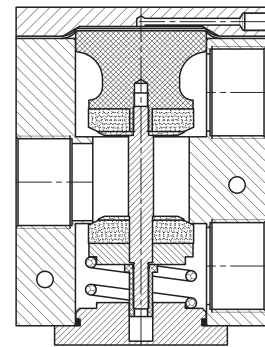
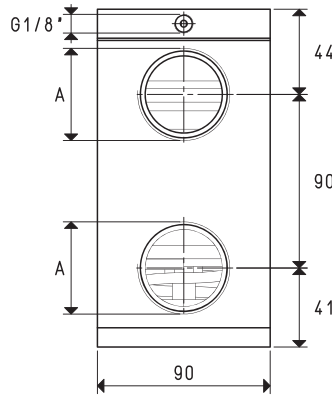
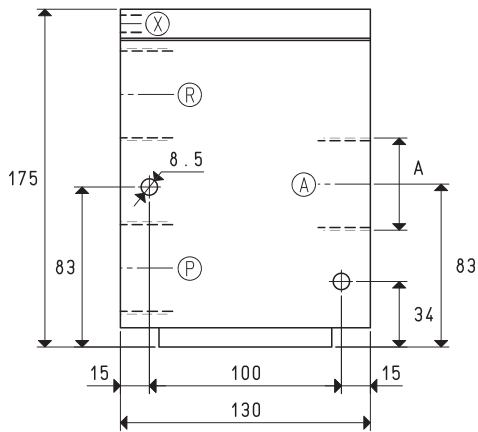
3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

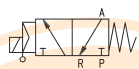


3-WAY VACUUM SOLENOID PILOT VALVES



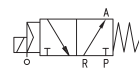
3D drawings available at www.vuototecnica.net

NC



X = Compressed air supply
P = Pump
A = Service
R = Passage

NO



X = Compressed air supply
P = Pump
A = Service
R = Passage

| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|-----------------|---------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 06 31 | G1" 1/2 | 180 | 1000 | 0.5 | 65 | 30 | 40 | 1256 | 6 ÷ 8 | 4.456 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

4.14

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$ pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



4



2 AND 3-WAY VACUUM SOLENOID PILOT VALVES



These direct-drive valves have been specially designed for vacuum and are normally closed. They are composed of an anodised aluminium body, where the connections and the passage orifices are located, and of an actuator which is activated by an electric coil. The solenoid pilot valve shutter in NBR nitrile rubber or Vulkollan®, is an integral part of the actuator mobile core. Both the orifices of the 2-way solenoid pilot valves have the same size, while those of the 3-way ones have a 3mm outlet diameter, obtained through the tube. The very low reaction time allow carrying out a very high number of cycles per minute.

The standard electric coil is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 6.3 mm 3-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650). Protection degree IP 54; IP 65 for inserted connector.

Allowed tolerance on the voltage nominal value: $\pm 10\%$.

Max. absorption: 16.5 V.A. with AC and 16 W with DC.

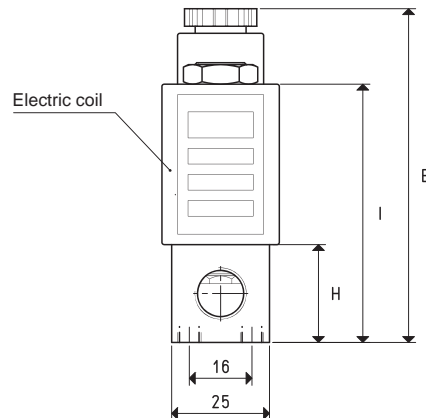
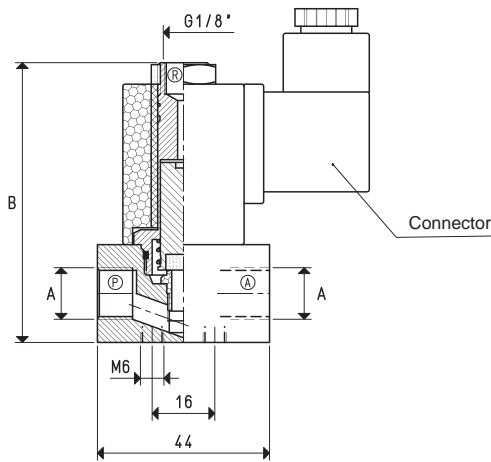
The electric coil can be rotated by 360°.

The connector can be rotated by 180° on the coil and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal.

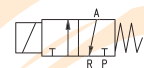
Technical features:

Working pressure: from 1 to 1500 mbar abs.

Temperature of the sucked fluid: from -5 to +60 °C



3 / 2 NC



P = Pump
A = Service
R = Passage

3-WAY SOLENOID PILOT VALVE

| Art. | A | Max. capacity | Vacuum level | | Reaction time | | Ø orifice | Passage section | B | E | H | I | Weight |
|----------|-------|---------------|--------------|-----|---------------|--------|-----------|-----------------|----|----|----|----|--------|
| | | | min | max | exc. | deexc. | | | | | | | |
| 07 01 16 | G1/4" | 4 cum/h | 1000 | 0.5 | 15 | 8 | 6 | 28.3 | 73 | 86 | 25 | 67 | 248 |

Note: The coil and the connectors are not integral part of the solenoid pilot valves, therefore, they must be ordered separately (See solenoid valve accessories).

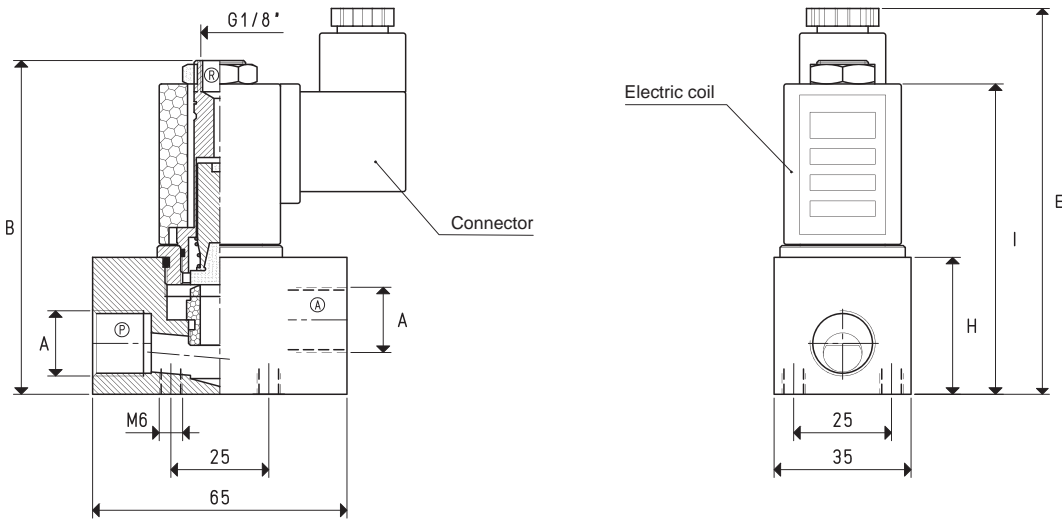
Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

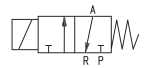
3D drawings available at www.vuototecnica.net



3-WAY VACUUM SOLENOID PILOT VALVES



3 / 2 NC



P = Pump
A = Service
R = Passage

3-WAY SOLENOID PILOT VALVE

| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | B | E | H | I | Weight g |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|----|----|----|----|-------------|
| | | | min | max | exc. | deexc. | | | | | | | |
| 07 02 16 | G3/8" | 8 | 1000 | 0.5 | 22 | 10 | 10 | 78.5 | 85 | 98 | 35 | 79 | 392 |
| 07 03 16 | G1/2" | 10 | 1000 | 0.5 | 28 | 10 | 12 | 113.0 | 85 | 98 | 35 | 79 | 377 |

Note: The coil and the connectors are not integral part of the solenoid pilot valves, therefore, they must be ordered separately (See solenoid valve accessories).

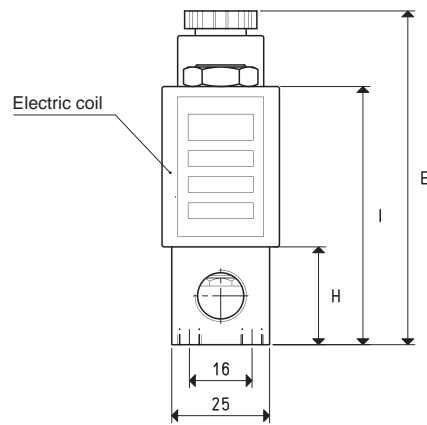
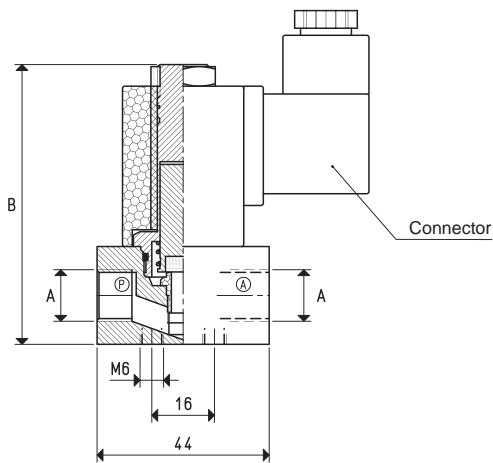
4.16

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$, pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

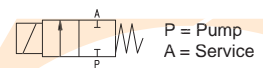
GAS-NPT thread adapters available at page 1.117



2-WAY VACUUM SOLENOID PILOT VALVES



2 / 2 NC



2-WAY SOLENOID PILOT VALVE

| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | B | E | H | I | Weight g |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|----|----|----|----|-------------|
| | | | min | max | exc. | deexc. | | | | | | | |
| 07 01 20 | G1/4" | 4 | 1000 | 0.5 | 15 | 8 | 6 | 28.3 | 73 | 86 | 25 | 67 | 244 |

Note: The coil and the connectors are not integral part of the solenoid pilot valves, therefore, they must be ordered separately (See solenoid valve accessories).

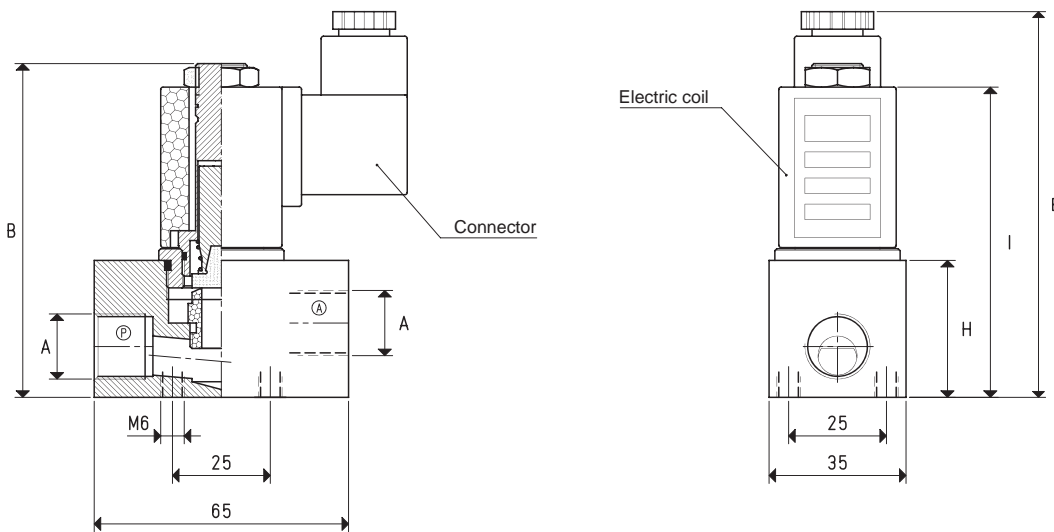
3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



2-WAY VACUUM SOLENOID PILOT VALVES



2 / 2 NC



2-WAY SOLENOID PILOT VALVE

| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | B | E | H | I | Weight g |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|----|----|----|----|-------------|
| | | | min | max | exc. | deexc. | | | | | | | |
| 07 02 20 | G3/8" | 8 | 1000 | 0.5 | 22 | 10 | 10 | 78.5 | 85 | 98 | 35 | 79 | 384 |
| 07 03 20 | G1/2" | 10 | 1000 | 0.5 | 28 | 10 | 12 | 113.0 | 85 | 98 | 35 | 79 | 372 |

Note: The coil and the connectors are not integral part of the solenoid pilot valves, therefore, they must be ordered separately (See solenoid valve accessories).

4.18

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



DIRECT DRIVE 2-WAY VACUUM SOLENOID VALVES

These state of the art solenoid valves feature minimal overall dimensions and high volumetric efficiency and high response speed at any vacuum level. They are the result of an attentive choice of materials, state of the art constructive techniques and of the in-depth knowledge of our technicians.

This series of solenoid valves is patented.

The DDN solenoid valves are direct drive, 2-way, 2-position valves with direct drive, double shutter and they are normally closed. They are composed of hot pressed brass body where the connections are located, an internal mechanism with double shutter and of an actuator activated by an electric coil. The standard electric coil is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 6.3 mm 3-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650). Protection degree IP 54; IP 65 with inserted connector.

Allowed tolerance on the voltage nominal value: $\pm 10\%$.

Max. absorption: 16.5 V.A. with AC and 16 W with DC (except for DDN 25 which cannot be activated with DC).

The electric coil can be rotated by 360°. The connector can be rotated by 180° on the coil and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal.

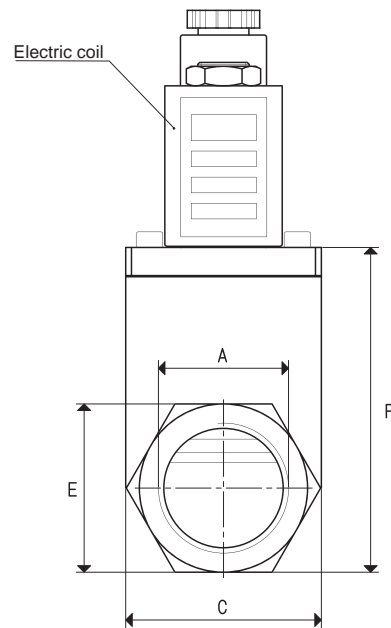
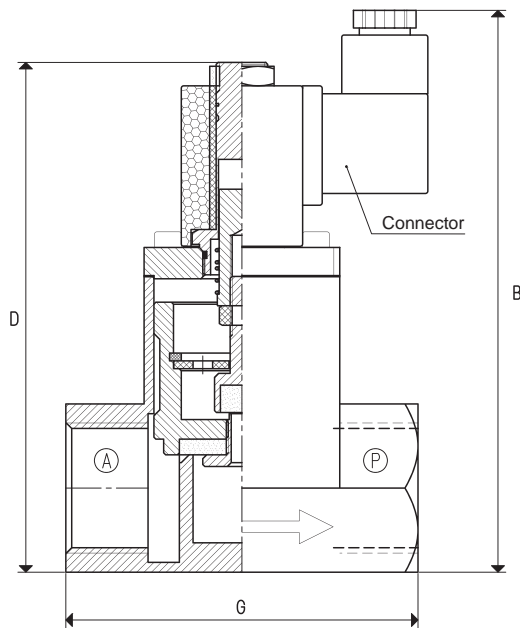
For a correct operation, we recommend installing the solenoid valve upside-down.

DDN solenoid valves are particularly indicated for degassers, autoclaves, vacuum thermo-welders and in all applications where suction has to be controlled separately from the air inlet into circuit.

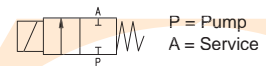
Technical features

Working pressure: from 0.5 to 1500 mbar abs.

Temperature of the sucked fluid: from -5 to +60 °C



2 / 2 NC



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | B | C | D | E | F | G | Weight Kg |
|--------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|-----|----|-----|----|----|----|--------------|
| | Ø | | min | max | exc. | deexc. | | | | | | | | | |
| DDN 14 | G1/2" | 20 | 1000 | 0.5 | 30 | 15 | 14 | 154 | 127 | 35 | 110 | 30 | 63 | 75 | 0.83 |
| DDN 25 | G1" | 90 | 1000 | 0.5 | 55 | 33 | 25 | 490 | 142 | 50 | 128 | 43 | 82 | 90 | 1.56 |

Note: The coil and the connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

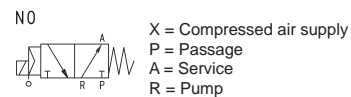
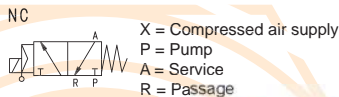
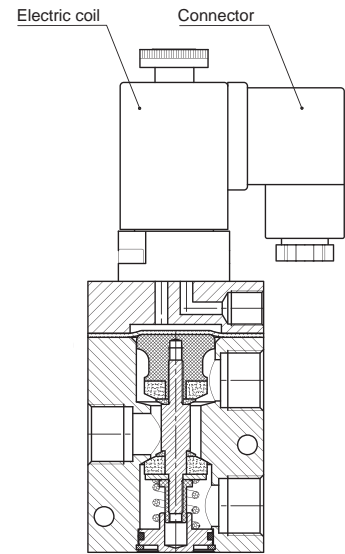
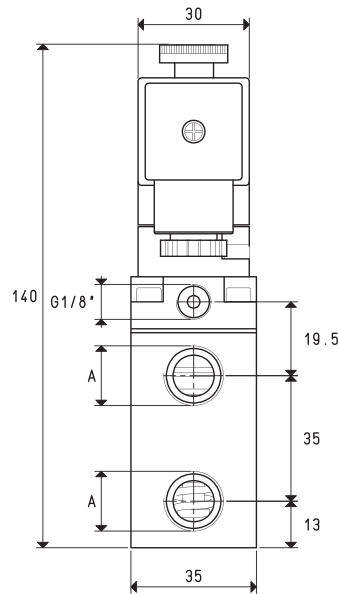
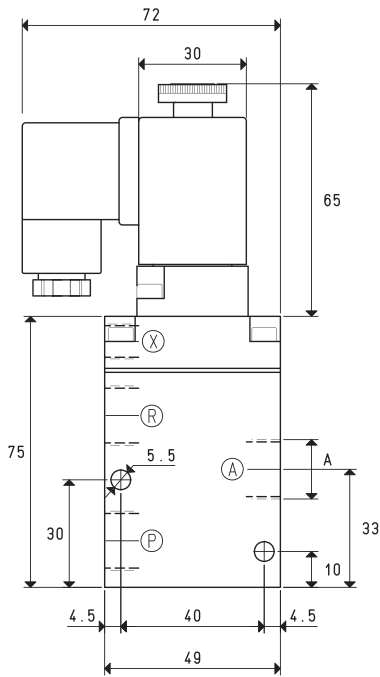
GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES

The 3-way vacuum solenoid valves in this series are 2-position valves with pneumatically servo-controlled conical shutters. They can normally be used either open or closed. They are composed of an anodised aluminium body, two vulkollan® shutters assembled onto a stainless steel stem, a membrane for servo-control made with special compounds and a thrust spring for the shutter return; an actuator activated by an electric coil managed the compressed air supply. These valves allow reducing frictions and internal dynamic stresses to the minimum. The result being a high response speed and a guarantee of long lasting duration. The standard electric coil is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 6.3 mm 3-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650). Protection degree IP 54; IP 65 for inserted connector. Allowed tolerance on the voltage nominal value: ±10%. Max. absorption: 16.5 V.A. in c.a. e 16 W in c.c. The electric coil can be rotated by 360°. The connector can be rotated by 180° on the coil and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal. 3-way vacuum solenoid valves are usually used for intercepting vacuum on feeders and cup stackers, robots, sheet feeders, sack openers and in all those cases where a quick response is needed between suction and the air inlet into the circuit, for a quick restoration of the atmospheric pressure. They can be supplied upon request with an SM device for manually opening and closing the solenoid valves already installed.

Technical features
 Working pressure: from 0.5 to 3000 mbar abs.
 Servo-control pressure: see table
 Temperature of the sucked fluid: from -5 to +60 °C



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm² | Servo-control pressure *bar (g) | Weight Kg |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 01 11 | G1/4" | 6 | 1000 | 0.5 | 16 | 27 | 56.8 | 8.5 | 4 ÷ 7 | 0.56 |
| 07 02 11 | G3/8" | 10 | 1000 | 0.5 | 16 | 27 | 103.8 | 11.5 | 4 ÷ 7 | 0.54 |

Note: The coil and the connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

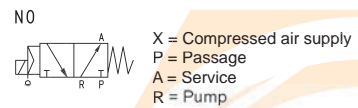
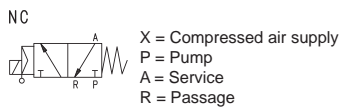
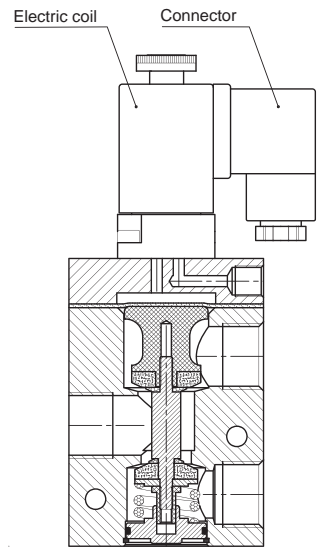
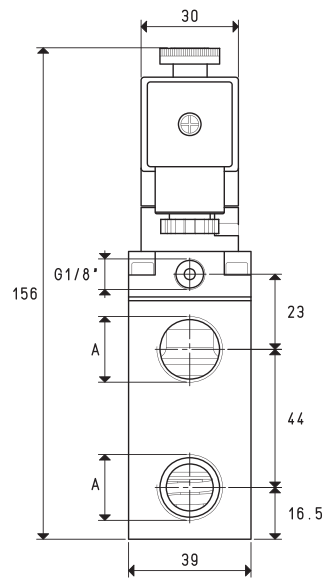
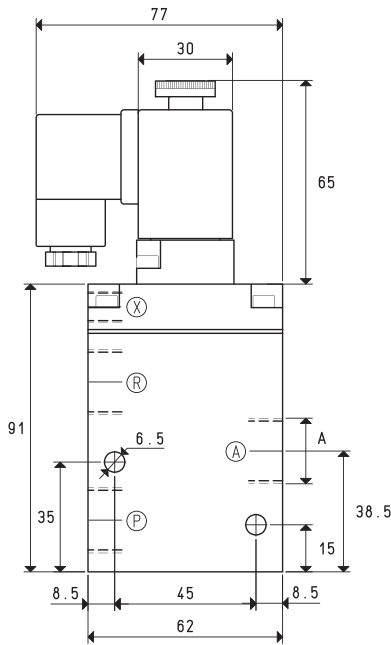
4.20

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$ pounds = $\frac{\text{g}}{453.6} = 0.4536$ Kg

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES



| Art. | A Ø | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|--------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 03 11 | G1/2" | 20 | 1000 | 0.5 | 16 | 40 | 15.0 | 176 | 6 ÷ 8 | 0.73 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: The coil and the connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

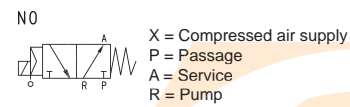
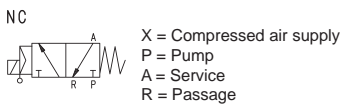
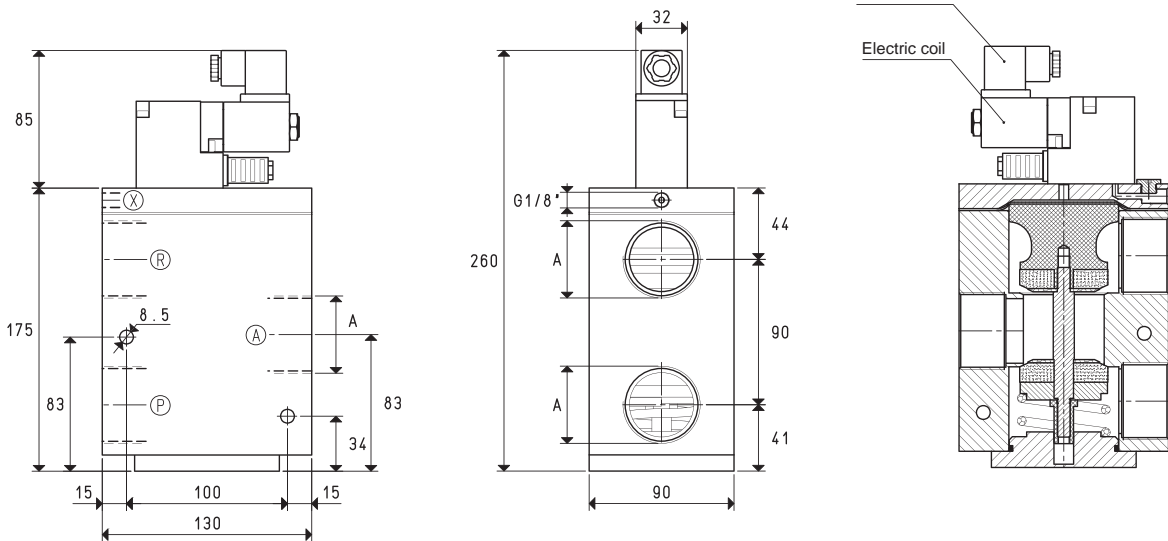
3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES



| Art. | A Ø | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|---------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 06 11 | G1" 1/2 | 180 | 1000 | 0.5 | 60 | 38 | 40 | 1256 | 6 ÷ 8 | 4.79 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: The coil and the connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

GAS-NPT thread adapters available at page 1.117

SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH 2 ELECTRIC COILS

These solenoid valves have the same function and the same structure as the previous ones. Their distinctive features are the two coils that with a simple electric impulse, exchange the shutter positions and keep them in this position till the next impulse even in absence of compressed air at the servo control and of electric current.

For this feature, they are especially indicated in all those cases which require a safe connection to the vacuum source, even in absence of electric or pneumatic supply. The standard electric coils are fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 6.3 mm 3-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650). Protection degree IP 54; IP 65 for inserted connector.

Allowed tolerance on the voltage nominal value: $\pm 10\%$.

Max. absorption: $8 \div 16.5$ V.A. with AC and $6.5 \div 16$ W with DC.

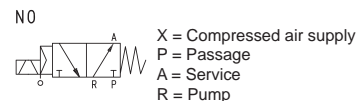
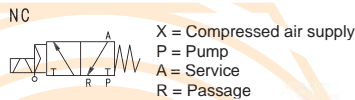
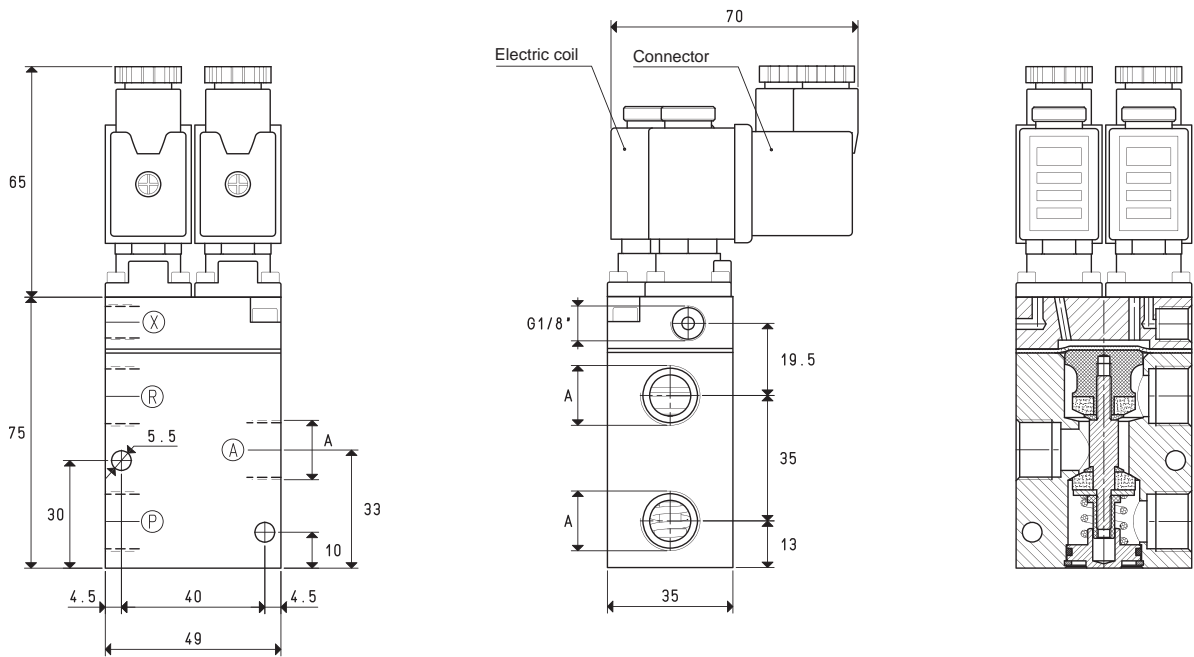
The electric coils can be rotated by 360°. The connector can be rotated by 180° on the coils and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal.

Technical features

Working pressure: from 0.5 to 3000 mbar abs.

Servo-control pressure: see table

Temperature of the sucked fluid: from -5 to +60 °C



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure bar (g) | Weight Kg |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|--------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 01 51 | G1/4" | 6 | 1000 | 0.5 | 16 | 27 | 8.5 | 56.8 | 4 ÷ 7 | 0.59 |
| 07 02 51 | G3/8" | 10 | 1000 | 0.5 | 16 | 27 | 11.5 | 103.8 | 4 ÷ 7 | 0.58 |

Note: Coils and connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

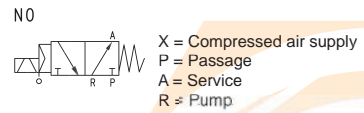
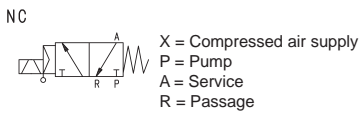
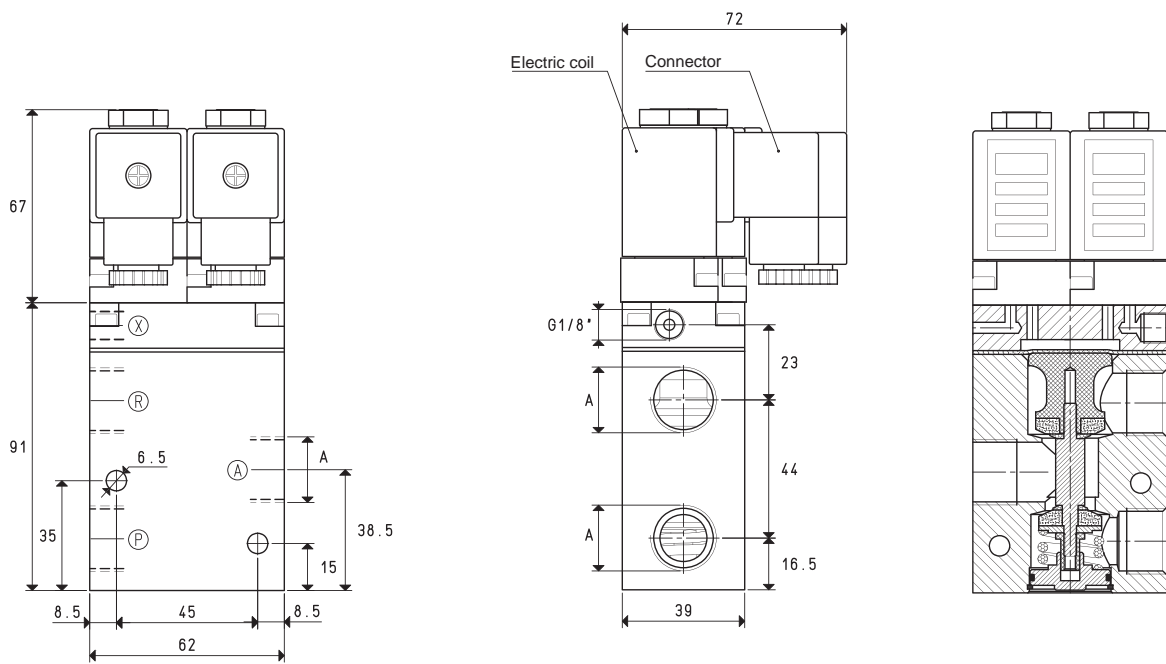
4.24

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH 2 ELECTRIC COILS



| Art. | A Ø | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|--------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 03 51 | G1/2" | 20 | 1000 | 0.5 | 16 | 40 | 15.0 | 176 | 6 ÷ 8 | 0.97 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

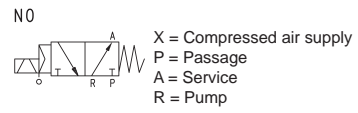
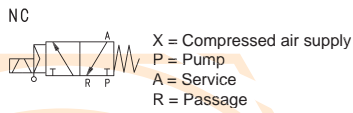
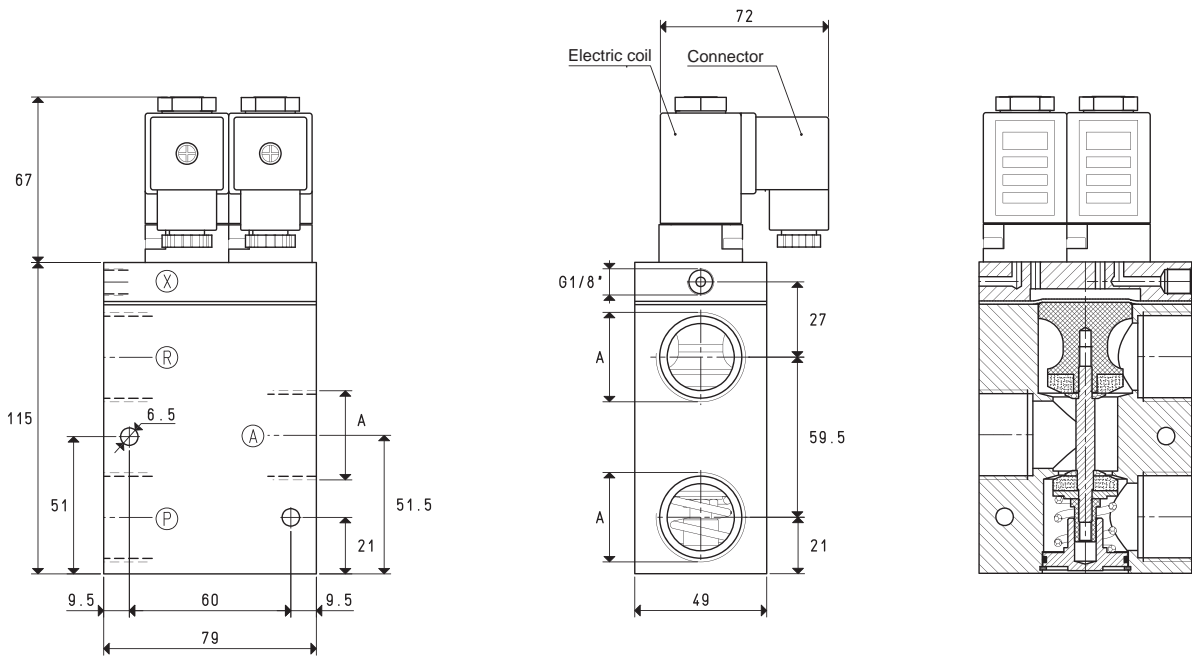
Note: Coils and connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

Conversion ratio: $\text{inch} = \frac{\text{mm}}{25.4}$; $\text{pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117

SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH 2 ELECTRIC COILS



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 04 51 | G3/4" | 40 | 1000 | 0.5 | 16 | 40 | 20 | 314 | 6 ÷ 8 | 1.51 |
| 07 05 51 | G1" | 90 | 1000 | 0.5 | 18 | 42 | 25 | 490 | 6 ÷ 8 | 1.41 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: Coils and connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

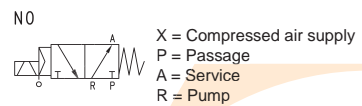
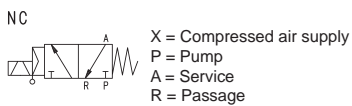
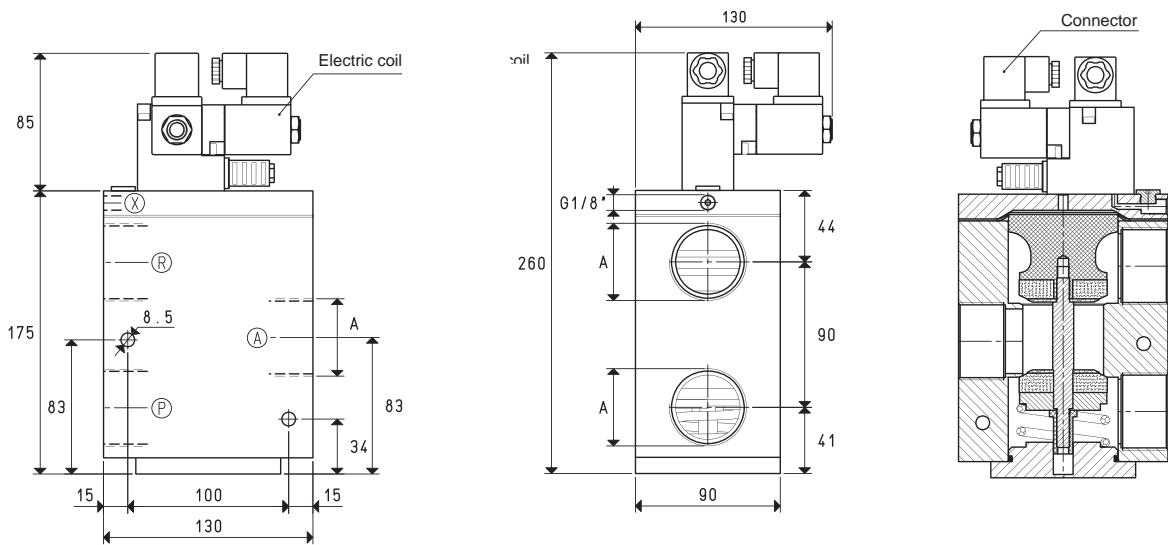
4.26

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH 2 ELECTRIC COILS



| Art. | A Ø | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|---------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 06 51 | G1" 1/2 | 180 | 1000 | 0.5 | 60 | 38 | 40 | 1256 | 6 ÷ 8 | 5.24 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: Coils and connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

GAS-NPT thread adapters available at page 1.117



DIRECT DRIVE 3-WAY VACUUM SOLENOID VALVES

These direct drive 3-way, 2-position vacuum solenoid valves feature conical shutters servo-controlled by the vacuum.

As a standard they are normally closed, but they can be supplied normally open upon request. They are composed of an anodised aluminium body where the connections are located, two silicon shutters assembled onto a stainless steel stem and a membrane in special reinforced compound. An actuator activated by an electric coil manages the vacuum at the servo-control. The operating principle of these solenoid valves is based on the pressure differential between the vacuum pump or generator and the pressure of the sucked air.

By addressing this "differential pressure" to the servo-control via the actuator, the shutters can be controlled without compressed air or springs.

Due to their operating principle, they are not recommended on plants with low vacuum levels (below 850 mbar abs., equal to 15 % of vacuum).

The lack of springs, frictions and internal dynamic stresses favours a high response speed and guarantees long lasting operation.

The standard electric coil is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 6.3 mm 3-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650). Protection degree IP 54; IP 65 for inserted connector.

Allowed tolerance on the voltage nominal value: ±10%.

Max. absorption: 16.5 V.A. with AC and 16 W with DC.

The electric coil can be rotated by 360°. The connector can be rotated by 180° on the coil and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal.

The solenoid valves in this series, along with the uses described for the 07 .. 11 series can be used on plants with no compressed air.

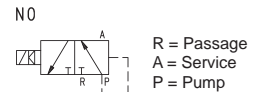
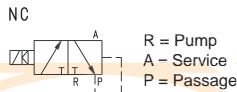
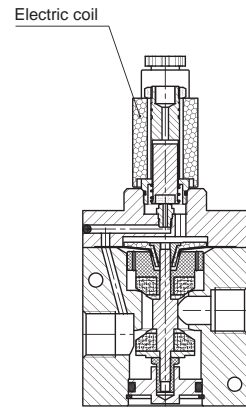
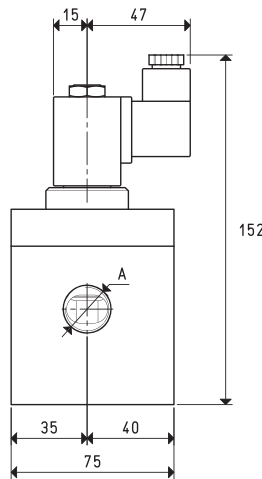
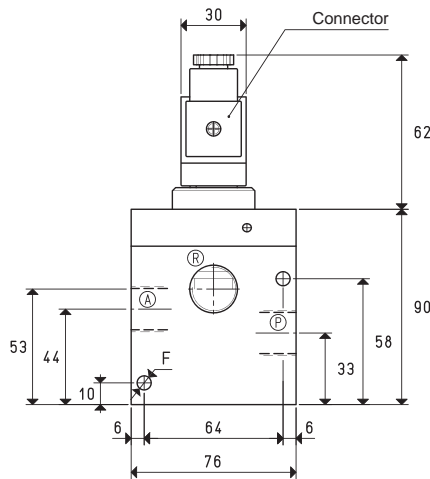
They can be provided, upon request, with SM device for manually opening or closing the solenoid valve already installed.

The solenoid valve must be always chosen according to the capacity and, therefore, to the vacuum pump or generator suction connection.

Technical features

Working pressure: from 0.5 to 850 mbar abs.

Temperature of the sucked fluid: from -5 to +60 °C



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | F | Weight Kg |
|-------------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|-----|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 03 40 NC | G1/2" | 20 | 850 | 0.5 | 30 | 15 | 15 | 176 | 6.5 | 1.53 |
| 07 03 40 NO | | | | | 20 | 18 | | | | |
| 07 04 40 NC | G3/4" | 40 | 850 | 0.5 | 30 | 15 | 20 | 314 | 6.5 | 1.50 |
| 07 04 40 NO | | | | | 20 | 18 | | | | |

Note: The coil and the connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

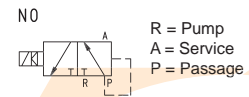
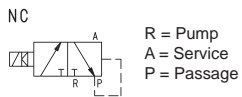
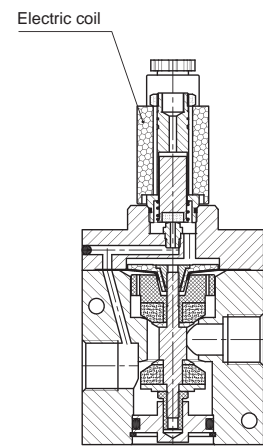
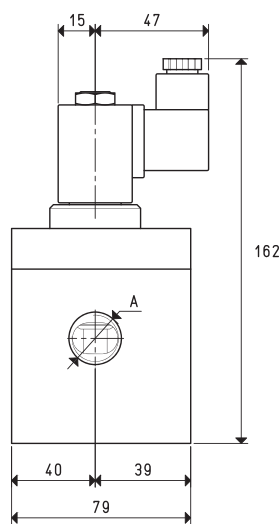
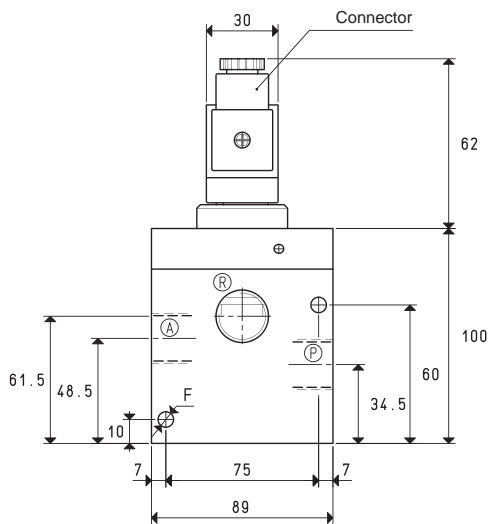
4.28

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



DIRECT DRIVE 3-WAY VACUUM SOLENOID VALVES



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | F Ø | Weight Kg |
|-------------|-----|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|--------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 05 40 NC | G1" | 90 | 850 | 0.5 | 38 | 18 | 25 | 490 | 6.5 | 1.91 |
| 07 05 40 NO | | | | | 25 | 20 | | | | |

Note: The coil and the connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

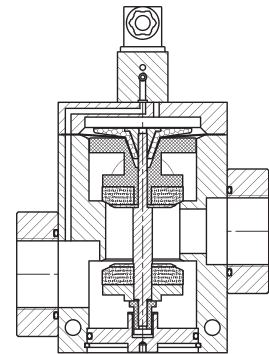
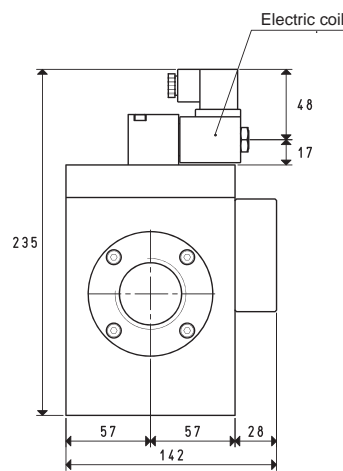
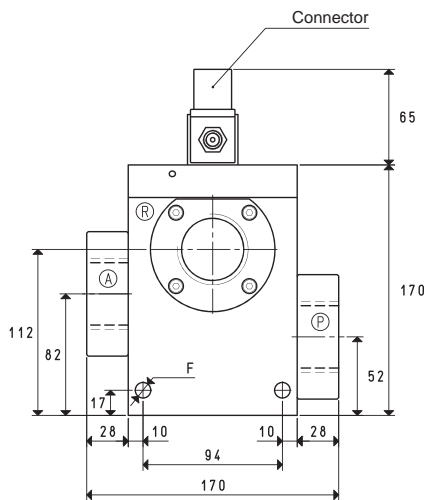
3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

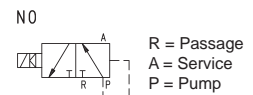
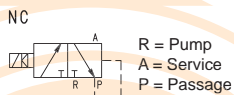
GAS-NPT thread adapters available at page 1.117



DIRECT DRIVE 3-WAY VACUUM SOLENOID VALVES



3D drawings available at www.vuototecnica.net



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Passage section mm ² | Ø orifice | F Ø | Weight Kg |
|-------------|---------|------------------------|---------------------------|-----|-----------------------|--------|---------------------------------------|--------------|--------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 06 40 NC | G1" 1/2 | 180 | 850 | 0.5 | 75 | 50 | 1256 | 40 | 10.5 | 5.90 |
| 07 06 40 NO | | | | | 70 | 60 | | | | |

Note: The coil and the connectors are not integral part of the solenoid valves, therefore, they must be ordered separately (See solenoid valve accessories).

4.30

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



SOLENOID VALVE ACCESSORIES AND SPARE PARTS

Electric coils

Electric coils are windings of copper wire on nylon coils fully plasticised in synthetic resin which activate the electromagnetic actuators with which the solenoid valves are provided. Crossed by an electric current, these coils generate a magnetic field which activates the mobile core inside the actuators; the mobile core features a built-in or fixed shutter which cause the valve commutation by opening and closing their orifices.

The standard electric coil is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 6.3 mm 3-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650). Protection degree IP 54; IP 65 with inserted connector.

Allowed tolerance on the voltage nominal value: $\pm 10\%$.

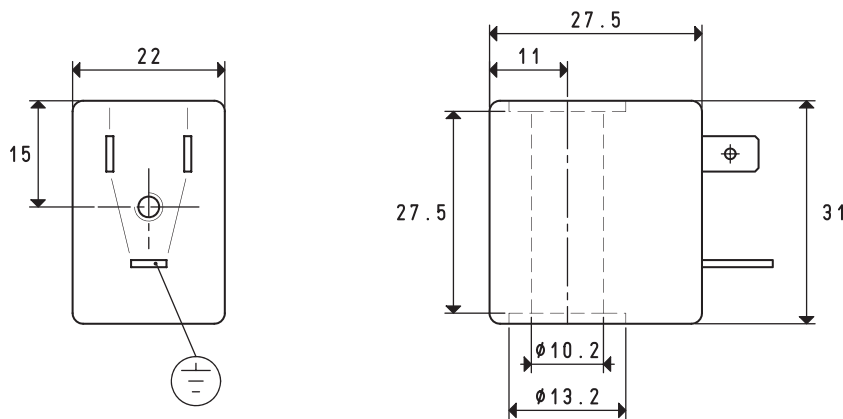
Allowed tolerance on the frequency value: $\pm 5\%$

Room temperature: from -10 to +45 °C

Fluid temperature: from -10 to +95 °C

Electric absorption: 8 ÷ 16.5 V.A. with AC and 6.5 ÷ 16 W with DC.

Electric coils can be rotated by 360°.



AC AND DC COILS

| Art. | Duty cycle | Absorption | Nominal voltage | Weight g | Solenoid valves art. |
|-----------|------------|------------|-----------------|----------|----------------------|
| 00 07 172 | 100% | 6.5 W | V24 CC | 54 | 07 01 51 - 07 02 51 |
| 00 07 173 | 100% | 8 V.A. | V24 / 50 - 60Hz | 54 | 07 01 51 - 07 02 51 |

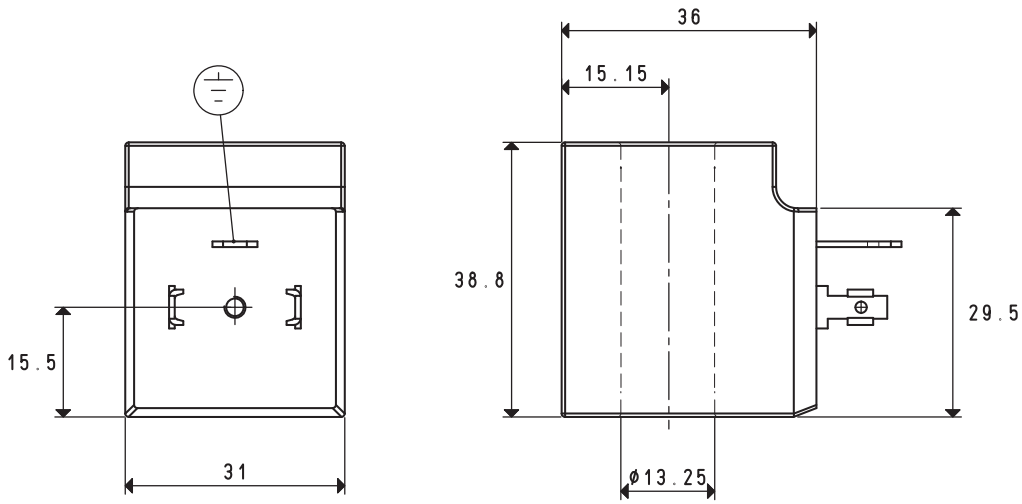
3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

GAS-NPT thread adapters available at page 1.117



SOLENOID VALVE ACCESSORIES AND SPARE PARTS



AC AND DC COILS

| Art. | Duty cycle | Absorption | Nominal voltage | Weight g |
|-----------------------------------------------------------------|------------|------------|-----------------|-------------|
| 00 07 03 N | 100% | 16 W | V12 CC | 100 |
| 00 07 04 N | 100% | 16 W | V24 CC | 100 |
| 00 07 05 N | 100% | 16 W | V48 CC | 100 |
| 00 07 06 N | 100% | 16 W | V110 CC | 100 |
| Solenoid valves art. | | | | |
| 07 01 11 - 07 02 11 - 07 03 11 - 07 04 11 - 07 05 11 - 07 06 11 | | | | |
| 07 01 16 - 07 02 16 - 07 03 16 | | | | |
| 07 01 20 - 07 02 20 - 07 03 20 | | | | |
| 07 03 40 - 07 04 40 - 07 05 40 - 07 06 40 | | | | |
| 07 03 51 - 07 04 51 - 07 05 51 - 07 06 51 | | | | |
| DDN 14 | | | | |
| 00 07 256 N | 100% | 16.5 V.A. | V24/50 - 60 Hz | 100 |
| 00 07 257 N | 100% | 16.5 V.A. | V48/50 - 60 Hz | 100 |
| 00 07 258 N | 100% | 16.5 V.A. | V110/50 - 60 Hz | 100 |
| 00 07 259 N | 100% | 16.5 V.A. | V220/50 - 60 Hz | 100 |
| Solenoid valves art. | | | | |
| 07 01 11 - 07 02 11 - 07 03 11 - 07 04 11 - 07 05 11 - 07 06 11 | | | | |
| 07 01 16 - 07 02 16 - 07 03 16 | | | | |
| 07 01 20 - 07 02 20 - 07 03 20 | | | | |
| 07 03 40 - 07 04 40 - 07 05 40 - 07 06 40 | | | | |
| 07 03 51 - 07 04 51 - 07 05 51 - 07 06 51 | | | | |
| DDN 14 - DDN 25 | | | | |

3D drawings available at www.vuototecnica.net



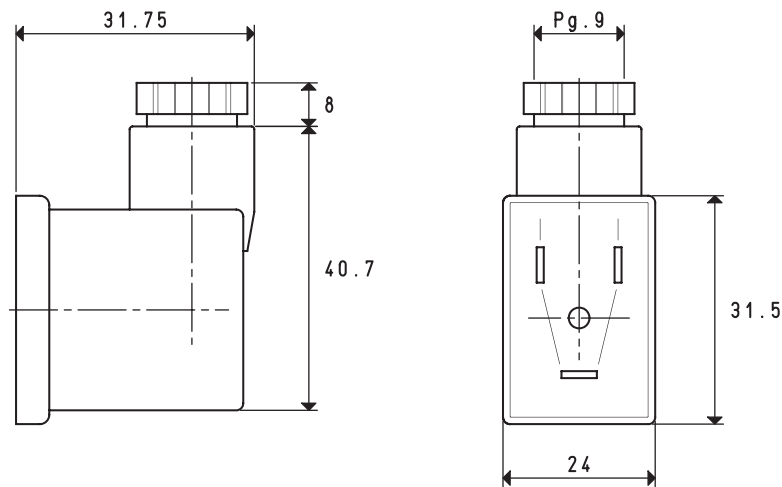
SOLENOID VALVE ACCESSORIES AND SPARE PARTS



Connectors are fundamental for bringing electric current to the solenoid valve coils. They are available in the simple plug version installed as standard and, upon request, with LEDs to signal the presence of voltage, with anti-interference circuits, protection devices against overvoltage and polarity reversal. When correctly installed, all connectors provide full protection against water jets, according to EN 60529 standards (protection class IP 65). Moreover, they meet VDE 0110-1 /89 standards, working voltage up to 250 V, overvoltage category II, Degree of use 3, regarding insulation class.

In all contacts, a snap joint between contact holders and the external protection guarantees a safe locking and easy assembly. A safe locking is essential for guaranteeing the operator full protection when handling the connector.

The contact holder can be easily extracted from its casing simply using a screwdriver. This operation also allows orienting the earthing contact in the desired direction.



COIL CONNECTORS

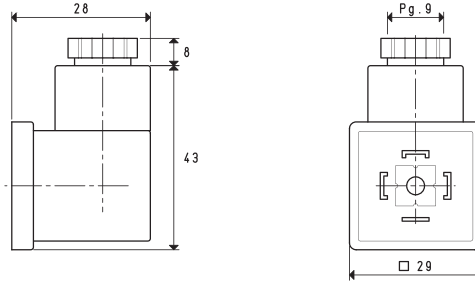
| Art. | Contact nominal capacity | | Conductor max. section | Operating temperature | Ø cable | Weight | Notes | Coil art. |
|-----------|--------------------------|--------|------------------------|-----------------------|---------|--------|----------|-----------|
| | A | | mm ² | °C | mm | g | | |
| 00 07 174 | 10 | max 16 | 1.5 | -40 ÷ +90 | 6 ÷ 8 | 24 | Standard | 00 07 172 |
| 00 07 260 | 10 | max 16 | 1.5 | -40 ÷ +90 | 6 ÷ 8 | 24 | with LED | 00 07 173 |

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$



SOLENOID VALVE ACCESSORIES AND SPARE PARTS

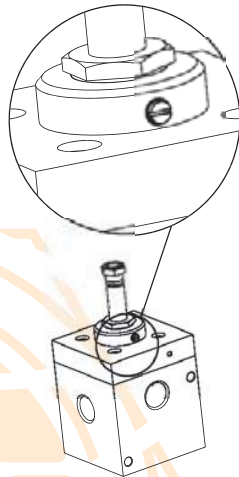


COIL CONNECTORS

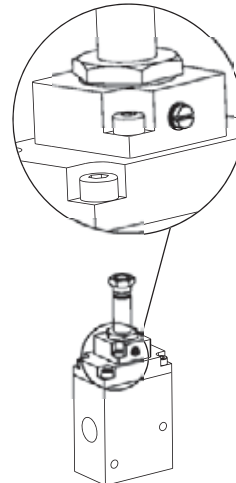
| Art. | Contact nominal capacity | | Conductor max. section mm ² | Operating temperature °C | Ø cable mm | Weight g | Notes |
|-------------------------------------------------------------------------------------------------------|--------------------------|--------|-------------------------------------------|-----------------------------|---------------|-------------|---------------------|
| | A | | | | | | |
| 00 07 63 | 10 | max 16 | 1.5 | -40 ÷ +90 | 6 ÷ 8 | 24 | Standard |
| 00 07 101 | 10 | max 16 | 1.5 | -40 ÷ +90 | 6 ÷ 8 | 24 | with LED |
| 00 07 186 | 10 | max 16 | 1.5 | -40 ÷ +90 | 6 ÷ 8 | 24 | with LED and filtre |
| Coil art. | | | | | | | |
| 00 07 03 - 00 07 04 - 00 07 05 - 00 07 06 - 00 07 215 - 00 07 216 - 00 07 217 - 00 07 218 - 00 07 219 | | | | | | | |
| 00 07 256 - 00 07 257 - 00 07 258 - 00 07 259 | | | | | | | |

SM DEVICE FOR MANUALLY OPENING AND CLOSING THE SOLENOID VALVES

This small cam, which can be activated by a screwdriver, acts on the mobile core of the actuators causing their commutation. This device is installed, upon request, on compressed-air pilot-operated 3-way solenoid valves art. 07 .. 11 or vacuum solenoid valves art. 07 .. 40, to allow their opening and closing in absence of electricity. To order it, all you have to do is add the letters SM to the article of the solenoid valve.



SM device installation on solenoid valve art. 07 .. 40



SM device installation on solenoid valve art. 07 .. 11

3D drawings available at www.vuototecnica.net

4.34

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = 0.4536 Kg



VACUUM VALVE AND SOLENOID VALVE SEALING KIT

Sealing kits are composed of a membrane, shutters and standard O-rings installed on our compressed air and vacuum 3-way valves and solenoid valves.

In presence of very hot fluids (up to 250 °C) or corrosive fluids, we can supply sealing kits in special compounds. Please contact our technical department.

Complete kit for valves:



| | |
|---------------------------|----------------|
| 07 01 31 e 07 02 31 | art. 00 07 267 |
| 07 03 31 | art. 00 07 268 |
| 07 03 31 LP | art. 00 07 287 |
| 07 04 31 e 07 05 31 | art. 00 07 269 |
| 07 04 31 LP e 07 05 31 LP | art. 00 07 288 |
| 07 06 31 | art. 00 07 270 |
| 07 06 31 LP | art. 00 07 289 |

Complete kit for solenoid valves:



| | |
|---------------------------|----------------|
| 07 01 11 e 07 02 11 | art. 00 07 271 |
| 07 03 11 | art. 00 07 272 |
| 07 03 11 LP | art. 00 07 290 |
| 07 04 11 e 07 05 11 | art. 00 07 273 |
| 07 04 11 LP e 07 05 11 LP | art. 00 07 291 |
| 07 06 11 | art. 00 07 274 |
| 07 06 11 LP | art. 00 07 292 |

Complete kit for solenoid valves:



| | |
|---------------------------|----------------|
| 07 01 51 e 07 02 51 | art. 00 07 275 |
| 07 03 51 | art. 00 07 276 |
| 07 03 51 LP | art. 00 07 293 |
| 07 04 51 e 07 05 51 | art. 00 07 277 |
| 07 04 51 LP e 07 05 51 LP | art. 00 07 294 |
| 07 06 51 | art. 00 07 278 |
| 07 06 51 LP | art. 00 07 295 |

Complete kit for solenoid valves:



| | |
|---------------------|----------------|
| 07 03 40 e 07 04 40 | art. 00 07 279 |
| 07 05 40 | art. 00 07 280 |
| 07 06 40 | art. 00 07 281 |



VACUUM VALVE AND SOLENOID VALVE PILOTING MEMBRANE

| Art. | Valves art. | Connections | Material | Colour | Dimensions mm |
|-----------|------------------------------------------------------------------------------------|---------------|----------------|---------------|---------------|
| 00 07 104 | 07 03 40 - 07 04 40 | G1/2" - G3/4" | reinforced NBR | Black | Ø 65 |
| 00 07 105 | 07 05 40 | G1" | reinforced NBR | Black | Ø 76 |
| 00 07 177 | 07 06 40 | G1" 1/2 | reinforced NBR | Black | Ø 110 |
| 00 07 229 | 07 01 11 - 07 01 31 - 07 01 51 07 02 11 - 07 02 31 - 07 02 51 | G1/4" - G3/8" | Vulkollan® | Beige | 49 x 35 |
| 00 07 230 | 07 03 11 - 07 03 31 - 07 03 51 | G1/2" | Urepan® 65 | Grey - orange | 62 x 39 |
| 00 07 296 | 07 03 11 LP - 07 03 31 LP - 07 03 51 LP | G1/2" | Vulkollan® | Beige | 62 x 39 |
| 00 07 231 | 07 04 11 - 07 04 31 - 07 04 51 07 05 11 - 07 05 31 - 07 05 51 | G3/4" - G1" | Urepan® 65 | Grey - orange | 79 x 49 |
| 00 07 297 | 07 04 11 LP - 07 04 31 LP - 07 04 51 LP 07 05 11 LP - 07 05 31 LP - 07 05 51 LP | G3/4" - G1" | Vulkollan® | Beige | 79 x 49 |
| 00 07 232 | 07 06 11 - 07 06 31 - 07 06 51 | G1"1/2 | Urepan® 65 | Grey - orange | 129 x 89 |
| 00 07 298 | 07 06 11 LP - 07 06 31 LP - 07 06 51 LP | G1"1/2 | Vulkollan® | Beige | 129 x 89 |

3D drawings available at www.vuototecnica.net

SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH LOW ABSORPTION ELECTRIC COIL

The 3-way vacuum solenoid valves in this series feature two positions with pneumatically pilot-operated conical shutters.

They can normally be used either open or closed.

They are composed of an anodised aluminium body where the connections are located, two shutters in vulkollan® assembled onto a stainless steel stem, a special compound membrane for the servo-control and a spring for the shutter return. A solenoid pilot valve activated by a built-in electric coil, manages the compressed air supply.

The particular execution of these valves allows reducing frictions and internal dynamic stresses to the minimum, which results in a high response speed and a guarantee of long lasting operation.

The electric coil of the solenoid pilot valve is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 3 mm 2-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650)-C. Protection degree IP 54; IP 65 for inserted connector.

Available for voltages of 12-24V/50-60Hz and 12-24V/CC.

Allowed tolerance on the voltage nominal value: ±10%.

Maximum electric power: 2 W

The connector can be rotated by 180° on the coil and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal.

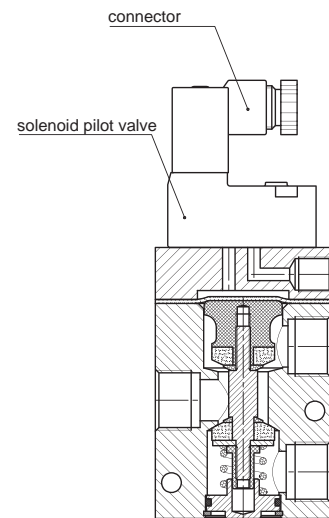
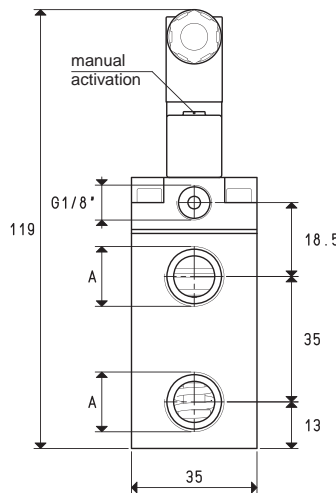
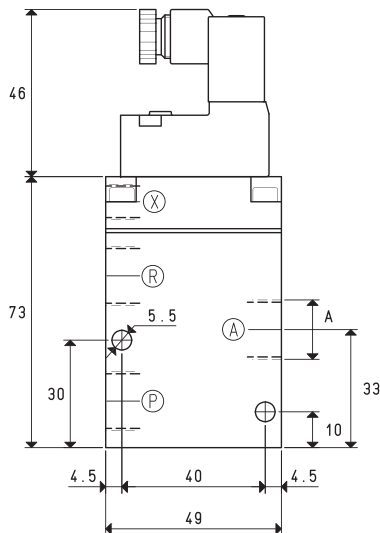
A push-button device, built-in the solenoid pilot valve, allows manually opening and closing the solenoid valve. 3-way vacuum solenoid valves are usually used for intercepting the vacuum in vacuum cup feeders and paletisers, robots, bag openers and in all those cases which require a quick exchange between the vacuum pump suction and the air inlet in the circuit, for a quick restoration of the atmospheric pressure.

Technical features

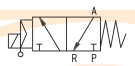
Working pressure: from 0.5 to 3000 mbar abs.

Servo-control pressure: see table

Temperature of the sucked fluid: from -5 to +60 °C



NC



X = Compressed air supply
P = Pump
A = Service
R = Passage

NO



X = Compressed air supply
P = Passage
A = Service
R = Pump

| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm² | Servo-control pressure bar (g) | Weight Kg |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------|--------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 01 13 | G1/4" | 6 | 1000 | 0.5 | 16 | 27 | 8.5 | 56.8 | 4 ÷ 7 | 0.44 |
| 07 02 13 | G3/8" | 10 | 1000 | 0.5 | 16 | 27 | 11.5 | 103.8 | 4 ÷ 7 | 0.43 |

Note: Please specify the electric coil voltage in the order (E.g.: 07 01 13 V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

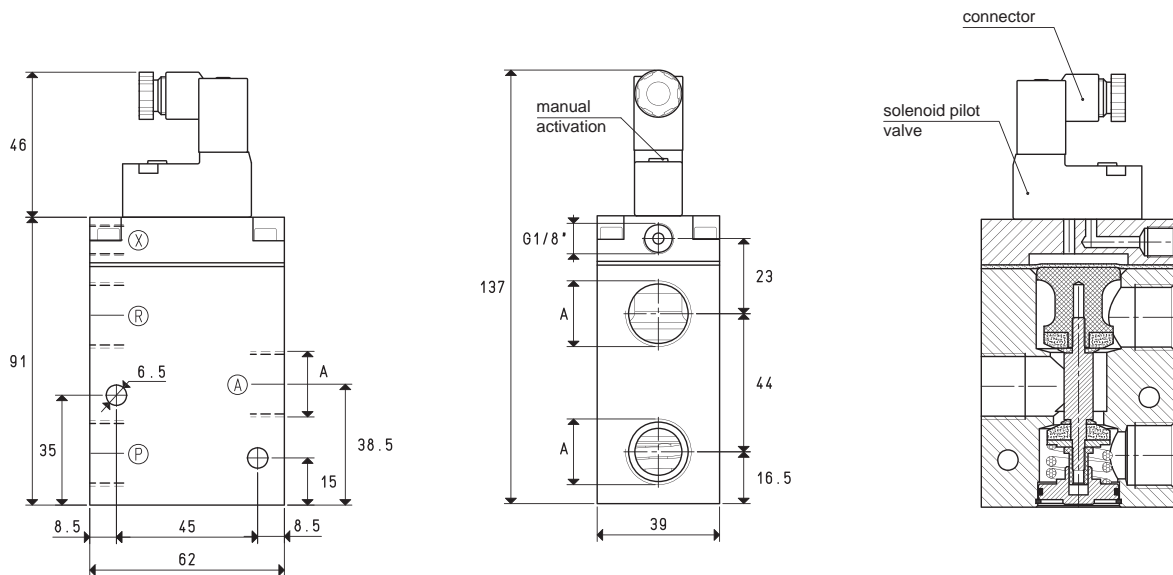
4.36

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

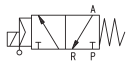
GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH LOW ABSORPTION ELECTRIC COIL

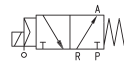


NC



X = Compressed air supply
P = Pump
A = Service
R = Passage

NO



X = Compressed air supply
P = Passage
A = Service
R = Pump

| Art. | A Ø | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|--------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 03 13 | G1/2" | 20 | 1000 | 0.5 | 16 | 40 | 15.0 | 176 | 6 ÷ 7 | 0.52 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: Please specify the electric coil voltage in the order (E.g.: 07 03 13 V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

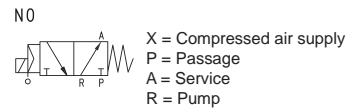
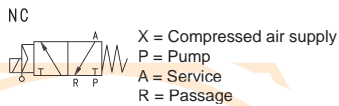
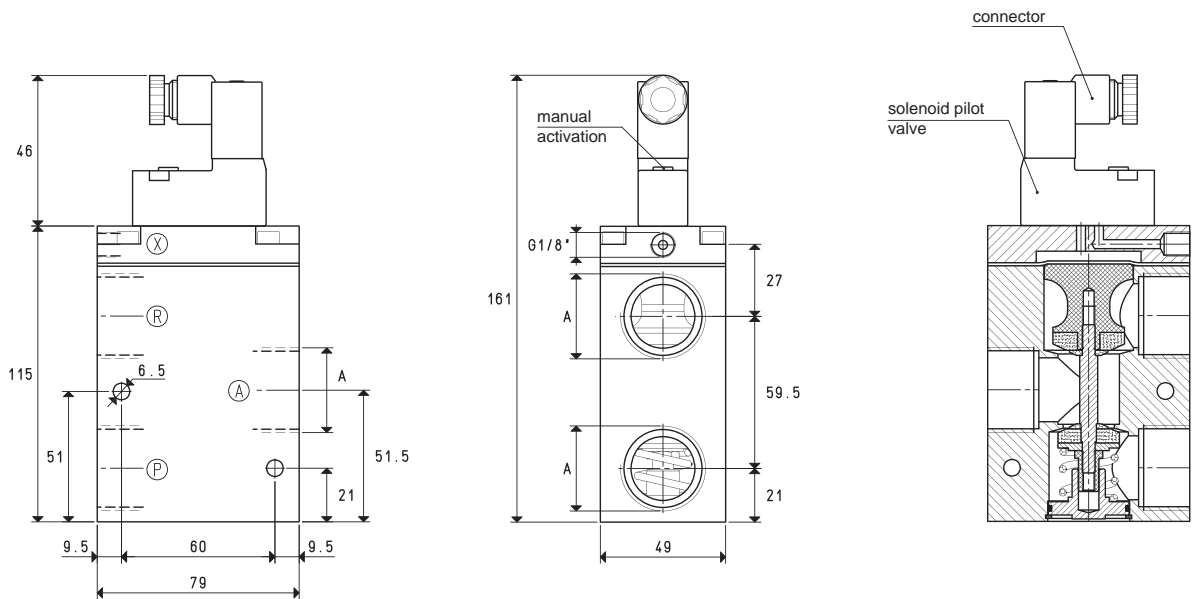
3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH LOW ABSORPTION ELECTRIC COIL



| Art. | A Ø | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|--------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 04 13 | G3/4" | 40 | 1000 | 0.5 | 16 | 40 | 20 | 314 | 6 ÷ 7 | 1.00 |
| 07 05 13 | G1" | 90 | 1000 | 0.5 | 18 | 42 | 25 | 490 | 6 ÷ 7 | 0.94 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: Please specify the electric coil voltage in the order (E.g.: 07 04 13 V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

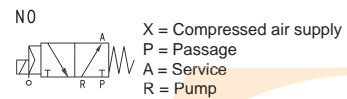
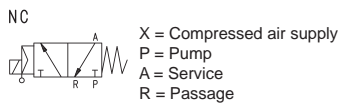
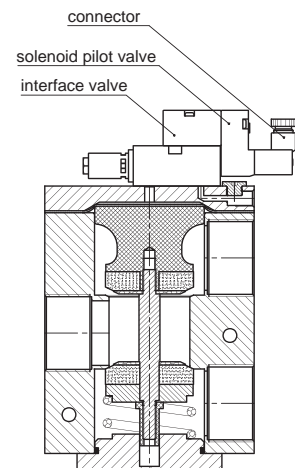
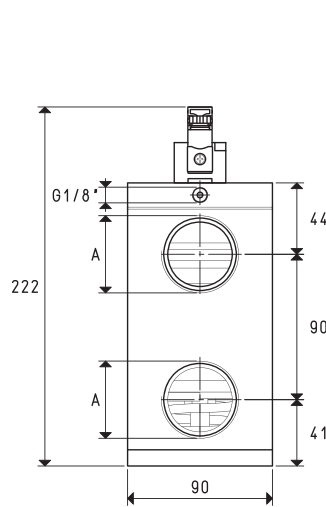
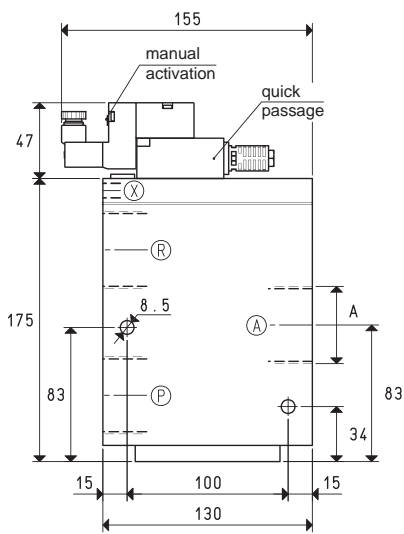
4.38

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH LOW ABSORPTION ELECTRIC COIL



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|--------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | Ø | | min | max | exc. | deexc. | | | | |
| 07 06 13 | G1"1/2 | 180 | 1000 | 0.5 | 60 | 38 | 40 | 1256 | 6 ÷ 7 | 4.50 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: Please specify the electric coil voltage in the order (E.g.: 07 06 13 V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH BISTABLE IMPULSE SOLENOID PILOT VALVE AND WITH LOW ABSORPTION ELECTRIC COIL

These solenoid valves have the same functions and structure as the previously described ones.

Their distinctive feature is a bistable impulse solenoid valve activated by a built-in low absorption electric coil which, at a simple electric impulse, exchanges the shutter position even in absence of electricity, until it receives a new impulse of opposite polarity. For this reason, they can only be supplied with DC electric coils.

They are particularly recommended in all those cases that require a safe connection to the vacuum source, even in absence of electricity.

The electric coil of the solenoid pilot valve is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 3 mm 2-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650)-C. Protection degree IP 54; IP 65 for inserted connector.

Available for voltages of 12-24V/CC.

Allowed tolerance on the voltage nominal value: $\pm 10\%$.

Maximum electric power: 1 W

The connector can be rotated by 180° on the coil and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal.

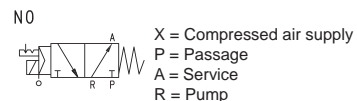
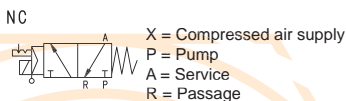
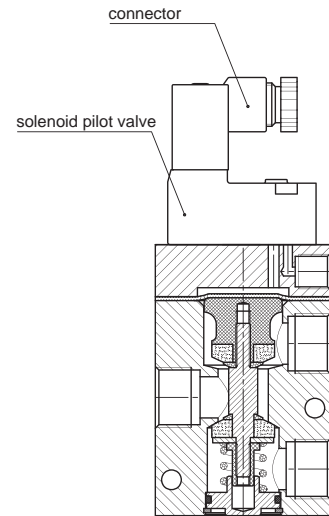
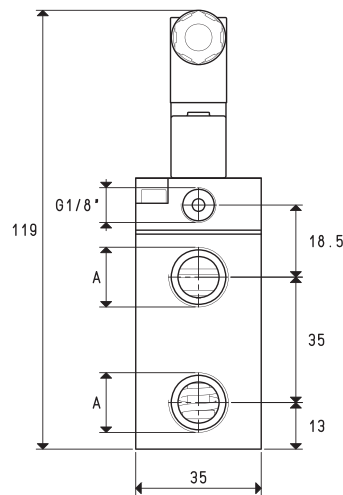
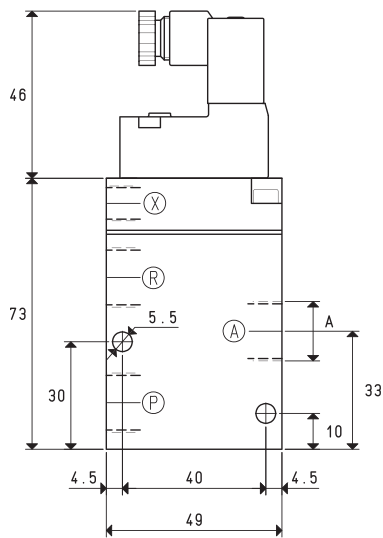
The push-button device for their manual activation cannot be installed on these solenoid valves.

Technical features

Working pressure: from 0.5 to 3000 mbar abs.

Servo-control pressure: see table

Temperature of the sucked fluid: from -5 to +60 °C



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure bar (g) | Weight Kg |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|--------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 01 53 | G1/4" | 6 | 1000 | 0.5 | 16 | 27 | 8.5 | 56.8 | 4 ÷ 7 | 0.44 |
| 07 02 53 | G3/8" | 10 | 1000 | 0.5 | 16 | 27 | 11.5 | 103.8 | 4 ÷ 7 | 0.43 |

Note: Please specify the electric coil voltage in the order (E.g.: 07 01 53 V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

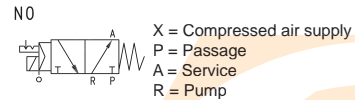
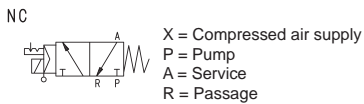
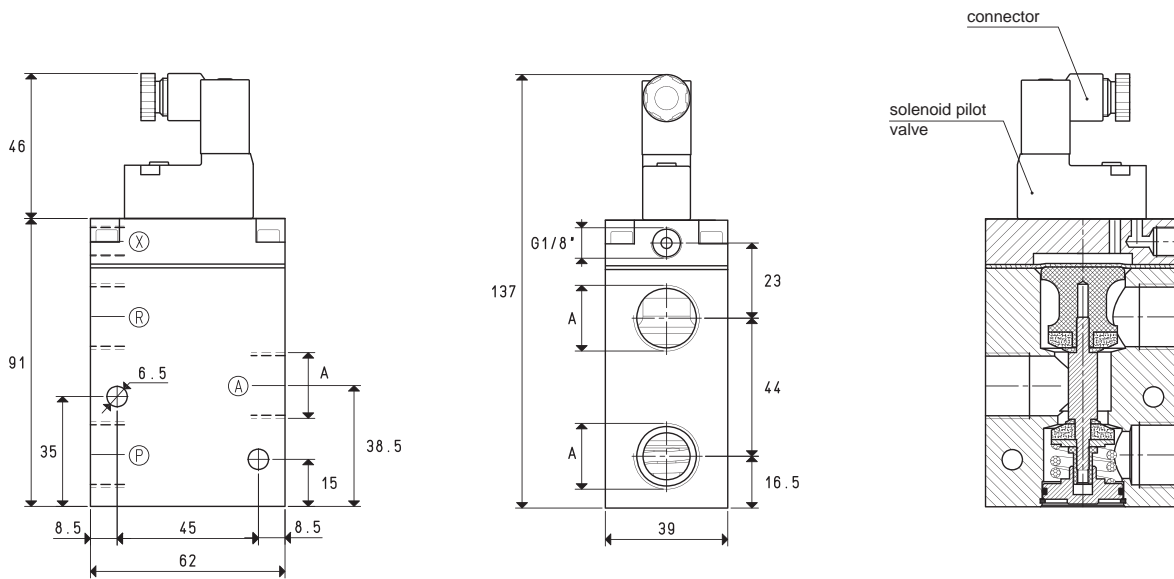
4.40

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH BISTABLE IMPULSE SOLENOID PILOT VALVE AND WITH LOW ABSORPTION ELECTRIC COIL



| Art. | A Ø | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|-----------------|--------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 03 53 | G1/2" | 20 | 1000 | 0.5 | 16 | 40 | 15.0 | 176 | 6 ÷ 8 | 0.52 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: Please specify the electric coil voltage in the order (E.g.: 07 03 53 V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

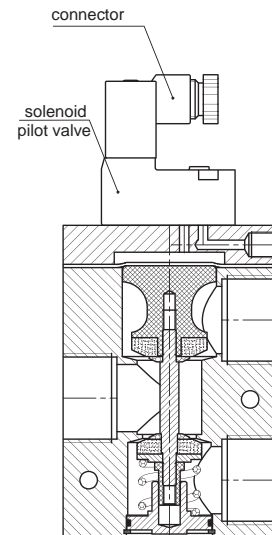
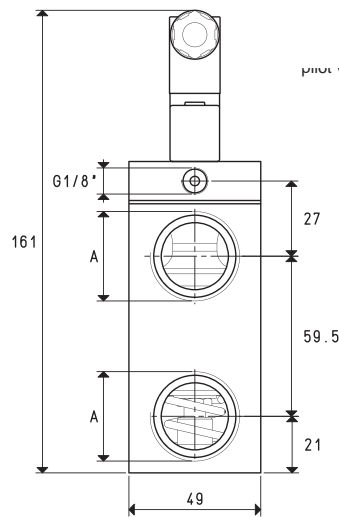
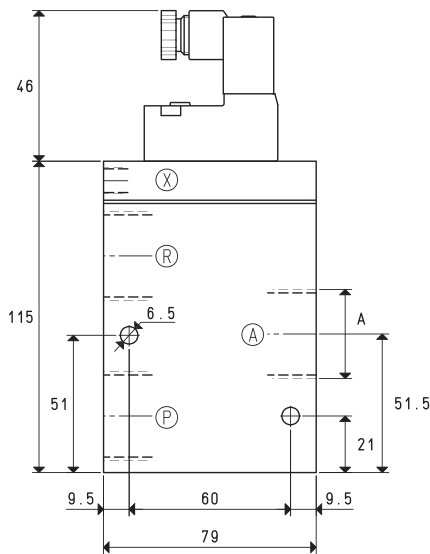
3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

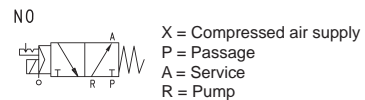
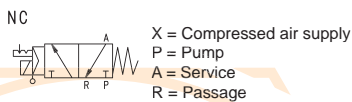
GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH BISTABLE IMPULSE SOLENOID PILOT VALVE AND WITH LOW ABSORPTION ELECTRIC COIL



3D drawings available at www.vuototecnica.net



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|-------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 04 53 | G3/4" | 40 | 1000 | 0.5 | 16 | 40 | 20 | 314 | 6 ÷ 8 | 1.00 |
| 07 05 53 | G1" | 90 | 1000 | 0.5 | 18 | 42 | 25 | 490 | 6 ÷ 8 | 0.94 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: Please specify the electric coil voltage in the order (E.g.: 07 04 53 V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

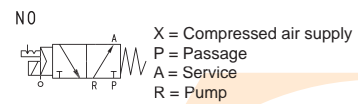
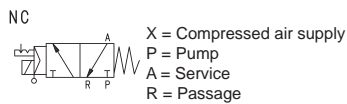
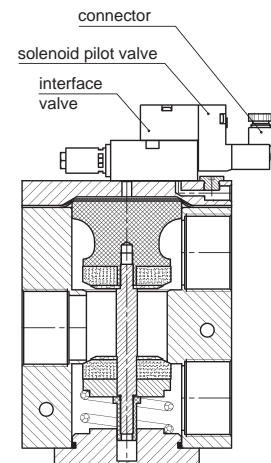
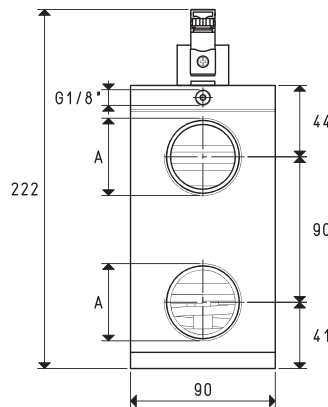
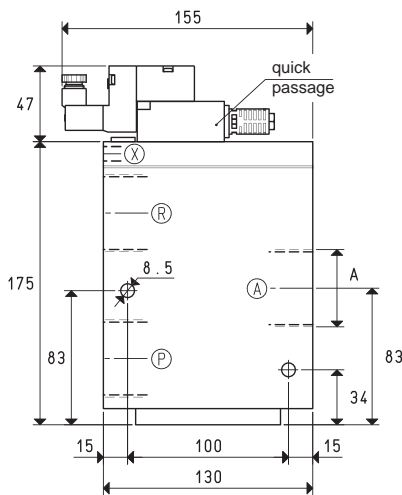
4.42

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \quad \text{pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



SERVO-CONTROLLED 3-WAY VACUUM SOLENOID VALVES WITH BISTABLE IMPULSE SOLENOID PILOT VALVE AND WITH LOW ABSORPTION ELECTRIC COIL



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | Servo-control pressure *bar (g) | Weight Kg |
|----------|--------|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|---------------------------------------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 06 53 | G1"1/2 | 180 | 1000 | 0.5 | 60 | 38 | 40 | 1256 | 6 ÷ 8 | 4.5 |

* Add the letters LP to the article for servo-control pressure 4 ÷ 6 bar (g).

Note: Please specify the electric coil voltage in the order (E.g.: 07 06 53 V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

GAS-NPT thread adapters available at page 1.117



DIRECT DRIVE 3-WAY VACUUM SOLENOID VALVES WITH LOW ABSORPTION ELECTRIC COIL

The direct drive 3-way vacuum solenoid valves of this series feature two positions with conical shutters servo-controlled by the vacuum.

As a standard they are normally supplied closed, but upon request they can also be provided as normally open.

They are composed of an anodised aluminium body where the connections are located, two silicon shutters assembled onto a stainless steel stem and a membrane in special reinforced compound. A solenoid pilot valve activated by a built-in electric coil manages the servo-control vacuum. The operating principle of these solenoid valves is based upon the pressure differential between the vacuum pump or generator and the pressure of the sucked air. By directing this differential pressure to the servo-control via the solenoid pilot valve, it is possible to control the shutters with no need for compressed air or springs.

Due to their operating principle, these solenoid valves are not recommended for low vacuum level plants (below 850 mbar abs., equal to 15 % of vacuum).

The absence of springs, frictions and internal dynamic stresses favours a high response speed and guarantees a long lasting operation.

The electric coil of the solenoid pilot valve is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 3 mm 2-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650) -C. Protection degree IP 54; IP 65 for inserted connector.

Available for voltages of 12-24V/50-60Hz and 12-24V/CC.

Allowed tolerance on the voltage nominal value: $\pm 10\%$.

Maximum electric power: 2 W

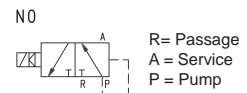
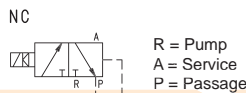
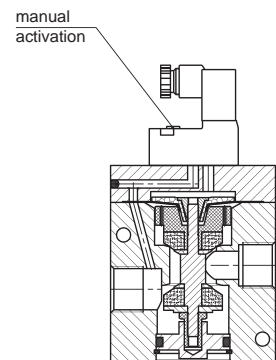
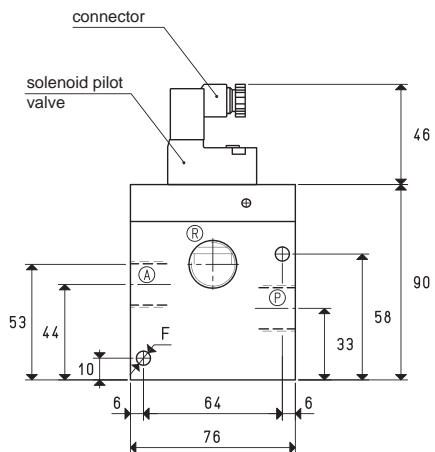
The connector can be rotated by 180° on the coil and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal. A push-button device built-in the solenoid pilot valve allows the manual opening and closing of the solenoid valve.

The solenoid valves of this series can be used in almost all the cases described for the 07 .. 11 series, and also on plants with no compressed air.

The solenoid valve must always be chosen according to the capacity and, therefore, to the vacuum pump or generator suction connection.

Working pressure: from 0.5 to 850 mbar abs.

Temperature of the sucked fluid: from -5 to +60 °C



| Art. | A | Max. capacity | Vacuum level | | Reaction time | | Ø | passage section | F | Weight |
|-------------|-------|---------------|--------------|-----|---------------|-----------|----|-----------------|-----|--------|
| | | | mbar abs. | | msec | | | | | |
| 07 03 43 NC | G1/2" | 20 | 850 | 0.5 | exc. 33 | deexc. 17 | 15 | 176 | 6.5 | 1.35 |
| 07 03 43 NO | | | | | 22 | 20 | | | | |
| 07 04 43 NC | G3/4" | 40 | 850 | 0.5 | exc. 33 | deexc. 17 | 20 | 314 | 6.5 | 1.30 |
| 07 04 43 NO | | | | | 22 | 20 | | | | |

Note: Please specify the electric coil voltage in the order (E.g.: 07 03 43 NC V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

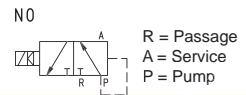
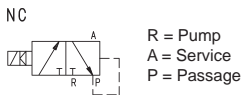
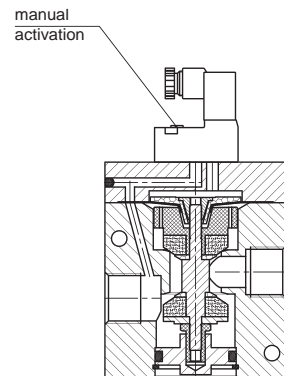
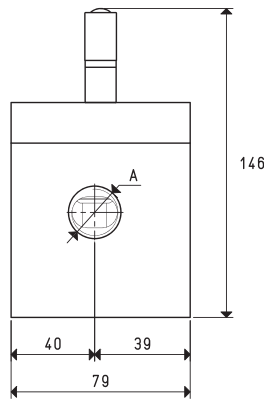
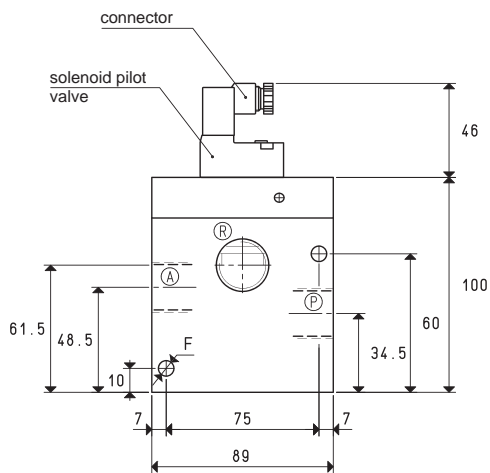
4.44

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



DIRECT DRIVE 3-WAY VACUUM SOLENOID VALVES WITH LOW ABSORPTION ELECTRIC COIL



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | F Ø | Weight Kg |
|-------------|-----|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|--------|--------------|
| | | | min | max | exc. | deexc. | | | | |
| 07 05 43 NC | G1" | 90 | 850 | 0.5 | 42 | 20 | 25 | 490 | 6.5 | 1.65 |
| 07 05 43 NO | | | | | 28 | 22 | | | | |

Note: Please specify the electric coil voltage in the order (E.g.: 07 05 43 NC V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

GAS-NPT thread adapters available at page 1.117



3-WAY VACUUM SOLENOID VALVES WITH BISTABLE IMPULSE SOLENOID PILOT VALVE AND WITH LOW ABSORPTION ELECTRIC COIL

These solenoid valves have the same functions and structure as the previously described ones.

Their distinctive feature is a bistable impulse solenoid valve activated by a built-in low absorption electric coil which, at a simple electric impulse, exchanges the shutter position even in absence of electricity, until it receives a new impulse of opposite polarity. For this reason, they can only be supplied with DC electric coils.

They are particularly recommended in all those cases that require a safe connection to the vacuum source, even in absence of electricity.

The electric coil of the solenoid pilot valve is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 3 mm 2-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650)-C. Protection degree IP 54; IP 65 for inserted connector.

Available for voltages of 12-24V/CC.

Allowed tolerance on the voltage nominal value: $\pm 10\%$.

Maximum electric power: 1 W

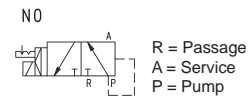
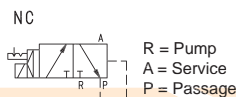
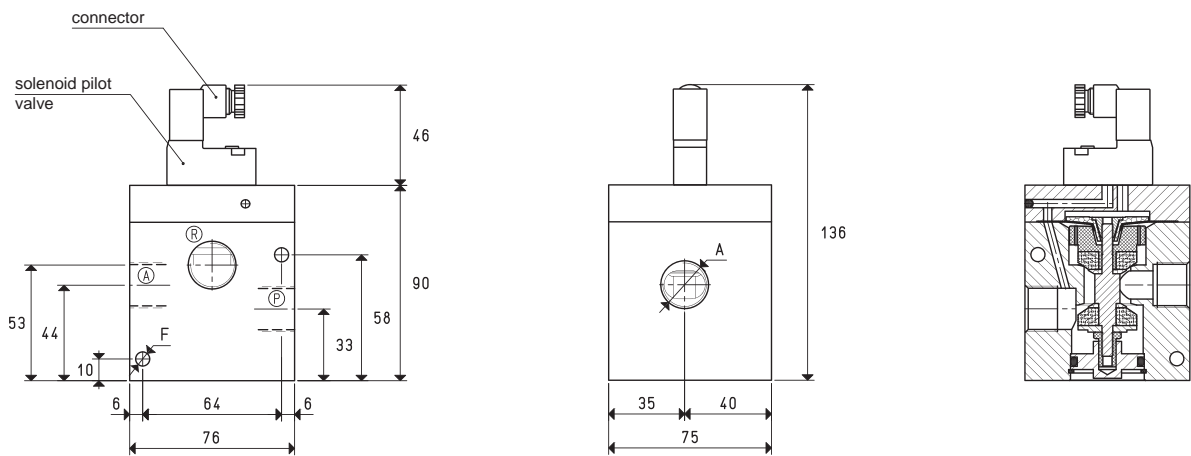
The connector can be rotated by 180° on the coil and can be supplied, upon request, with Led lights, anti-interference circuit and/or with protection devices against overvoltage and polarity reversal.

The push-button device for their manual activation cannot be installed on these solenoid valves.

Technical features

Working pressure: from 0.5 to 850 mbar abs.

Temperature of the sucked fluid: from -5 to +60 °C



| Art. | A | Max. capacity | Vacuum level | | Reaction time | | Ø | Passage section | F | Weight |
|-------------|-------|---------------|--------------|-----|---------------|--------|----|-----------------|-----|--------|
| | | | min | max | exc. | deexc. | | | | |
| 07 03 63 NC | G1/2" | 20 | 850 | 0.5 | 33 | 17 | 15 | 176 | 6.5 | 1.35 |
| 07 03 63 NO | | | | | 22 | 20 | | | | |
| 07 04 63 NC | G3/4" | 40 | 850 | 0.5 | 33 | 17 | 20 | 314 | 6.5 | 1.30 |
| 07 04 63 NO | | | | | 22 | 20 | | | | |

Note: Please specify the electric coil voltage in the order (E.g.: 07 03 63 NC V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

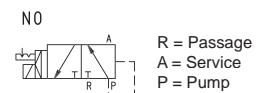
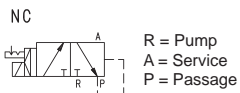
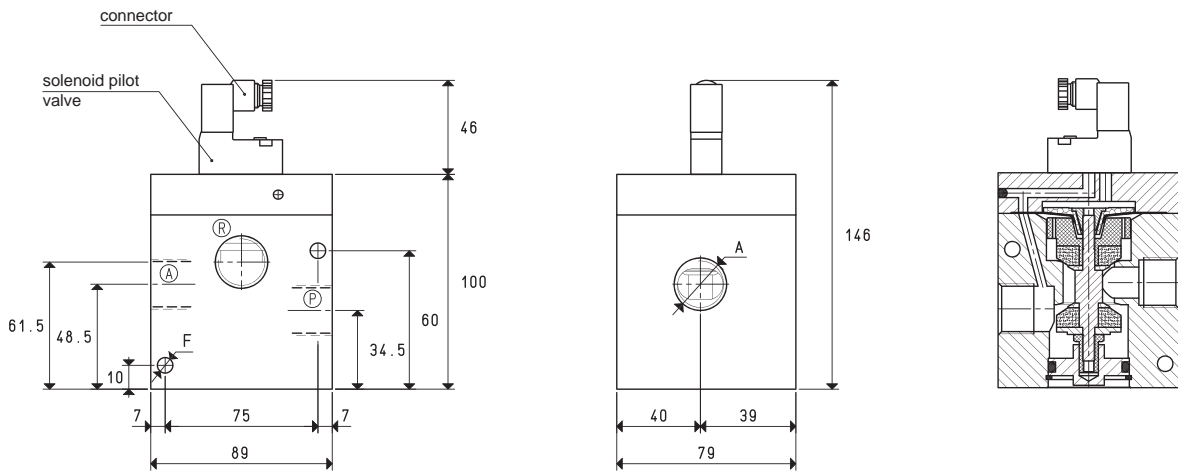
4.46

$$\text{Conversion ratio: inch} = \frac{\text{mm}}{25.4} \text{ pounds} = \frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$$

GAS-NPT thread adapters available at page 1.117



3-WAY VACUUM SOLENOID VALVES WITH BISTABLE IMPULSE SOLENOID PILOT VALVE AND WITH LOW ABSORPTION ELECTRIC COIL



| Art. | A | Max. capacity cum/h | Vacuum level mbar abs. | | Reaction time msec | | Ø orifice | Passage section mm ² | F | Weight Kg |
|-------------|-----|------------------------|---------------------------|-----|-----------------------|--------|--------------|---------------------------------------|-----|--------------|
| | Ø | | min | max | exc. | deexc. | | | | |
| 07 05 63 NC | G1" | 90 | 850 | 0.5 | 42 | 20 | 25 | 490 | 6.5 | 1.05 |
| 07 05 63 NO | | | | | 28 | 22 | | | | |

Note: Please specify the electric coil voltage in the order (E.g.: 07 05 63 NC V24-CC)

The connector is not integral part of the solenoid valve and, therefore, must be ordered separately (See solenoid valve accessories).

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{mm}{25.4}$; pounds = $\frac{g}{453.6}$ = $\frac{Kg}{0.4536}$

GAS-NPT thread adapters available at page 1.117



ACCESSORIES AND SPARE PARTS FOR SOLENOID VALVES WITH LOW ABSORPTION COILS

Solenoid pilot valves with built-in low absorption electric coil

Solenoid pilot valves are small 3-way valves activated by a built-in electric coil able to manage the compressed air or the vacuum for piloting the solenoid valves.

The electric coil of the solenoid pilot valve is fully plasticised with synthetic resin, tight execution, insulation class F (up to 155 °C) compliant with VDE standards, with 3 mm 2-terminal electrical connections in compliance with EN 175301-803 (ex DIN 43650)-C.

Protection degree IP 54; IP 65 for inserted connector.

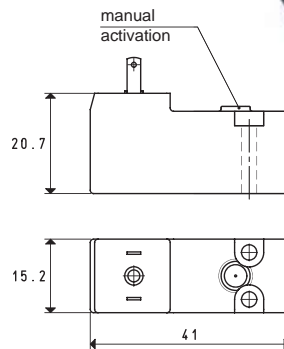
Allowed tolerance on the voltage nominal value: ±10%

Allowed tolerance on the frequency value: ±5%

Room temperature: from -10 to +45 °C

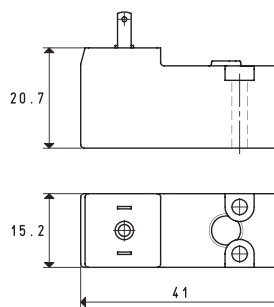
Fluid temperature: from -10 to +95 °C

Electric power: from 1 to 2 W



SOLENOID PILOT VALVES WITH BUILT-IN LOW ABSORPTION ELECTRIC COIL

| Art. | Duty cycle | Power W | Electric voltage Volt | Pressure bar (g) | | Weight g |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|-----------------------|------------------|-----|----------|
| | | | | min | max | |
| 00 07 301 | 100% | 1 | 12 / 50 - 60Hz | 0 | 7 | 32 |
| 00 07 302 | 100% | 1 | 24 / 50 - 60Hz | 0 | 7 | 32 |
| 00 07 303 | 100% | 2 | 12 / CC | 0 | 7 | 32 |
| 00 07 304 | 100% | 2 | 24 / CC | 0 | 7 | 32 |
| Solenoid valves art. 07 01 13 - 07 02 13 - 07 03 13 - 07 04 13 - 07 05 13 - 07 06 13 07 03 13 LP - 07 04 13 LP - 07 05 13 LP - 07 06 13 LP | | | | | | |
| 00 07 305 | 100% | 1 | 12 / 50 - 60Hz | 0 | 10 | 32 |
| 00 07 306 | 100% | 1 | 24 / 50 - 60Hz | 0 | 10 | 32 |
| 00 07 307 | 100% | 2 | 12 / CC | 0 | 10 | 32 |
| 00 07 308 | 100% | 2 | 24 / CC | 0 | 10 | 32 |
| Solenoid valves art. 07 03 43 - 07 04 43 - 07 05 43 | | | | | | |



BISTABLE IMPULSE SOLENOID PILOT VALVE WITH BUILT-IN ELECTRIC COIL

| Art. | Duty cycle | Power W | Electric voltage Volt | Pressure bar (g) | | Weight g |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|-----------------------|------------------|-----|----------|
| | | | | min | max | |
| 00 07 309 | 100% | 1 | 12 / CC | 0 | 8 | 30 |
| 00 07 310 | 100% | 1 | 24 / CC | 0 | 8 | 30 |
| Solenoid valves art. 07 01 53 - 07 02 53 - 07 03 53 - 07 04 53 - 07 05 53 - 07 06 53 07 03 53 LP - 07 04 53 LP - 07 05 53 LP - 07 06 53 LP | | | | | | |
| 00 07 311 | 100% | 1 | 12 / CC | 0 | 5 | 30 |
| 00 15 297 | 100% | 1 | 24 / CC | 0 | 5 | 30 |
| Solenoid valves art. 07 03 63 - 07 04 63 - 07 05 63 | | | | | | |

3D drawings available at www.vuototecnica.net

4.48

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6}$ = $\frac{\text{Kg}}{0.4536}$

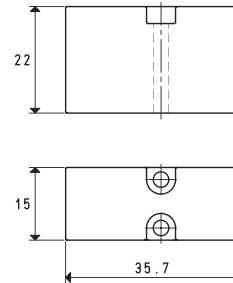


4





| VALVE - INTERFACE | | | | |
|-------------------|----------------|-----|-------------|--------------------------------------------------|
| Art. | Pressure (bar) | | Weight g | Solenoid valves art. |
| | min | max | | |
| 00 15 154 | 0 | 7 | 20 | 07 06 13 - 07 06 13 LP 07 06 53 - 07 06 53 LP |



MICRO CONNECTORS EN 175301 - 803 (EX DIN 43650) - C, FOR SOLENOID PILOT VALVE COILS

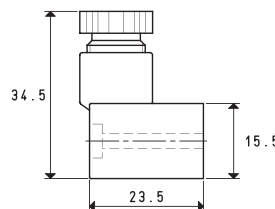
Connectors are essential elements for bringing electricity to solenoid pilot valves with built-in low absorption coil. They are available in the plug version, with a LED for signalling the presence of voltage and, upon request, with anti-interference circuits, with protection against overvoltage and polarity inversion. All connectors provide full protection against water jets, according to EN 60529 (protection class IP 65), when correctly installed.

They also meet VDE 0110-1 /89 standard, working voltage up to 250 V, overvoltage category II, degree of use 3 regarding insulation class.

In all contacts, a snap joint between contact holders and the external protection guarantees a safe locking and easy assembly.

A safe locking is essential for guaranteeing the operator full protection when handling the connector.

The contact holder can be easily extracted from its casing simply using a screwdriver. This operation also allows orienting the earthing contact in the desired direction.



| Art. | Contact nominal capacity A | Conductor max section mm | Operating temperature °C | Ø cable mm | Weight g | Notes | Solenoid pilot valve art. |
|-----------|-------------------------------|-----------------------------|-----------------------------|---------------|-------------|----------|---------------------------|
| 00 15 157 | 6 ÷ 10 | 0.75 | -40 ÷ +90 | 4 ÷ 6 | 8 | with LED | All |

3D drawings available at www.vuototecnica.net

Conversion ratio: inch = $\frac{\text{mm}}{25.4}$; pounds = $\frac{\text{g}}{453.6} = \frac{\text{Kg}}{0.4536}$



SEALING KIT FOR SOLENOID VALVES WITH LOW ABSORPTION ELECTRIC COILS

Sealing kits are composed of a membrane, shutters and standard O-rings installed on our compressed air and vacuum 3-way valves and solenoid valves.
In presence of very hot fluids (up to 250 °C) or corrosive fluids, we can supply sealing kits in special compounds. Please contact our technical department.

Complete kit for solenoid valves:



07 01 13 and 07 02 13
07 03 13
07 03 13 LP
07 04 13 and 07 05 13
07 04 13 LP and 07 05 13 LP
07 06 13
07 06 13 LP

art. 00 07 271
art. 00 07 272
art. 00 07 290
art. 00 07 273
art. 00 07 291
art. 00 07 274
art. 00 07 292

Complete kit for solenoid valves:



07 01 53 and 07 02 53
07 03 53
07 03 53 LP
07 04 53 and 07 05 53
07 04 53 LP and 07 05 53 LP
07 06 53
07 06 53 LP

art. 00 07 275
art. 00 07 276
art. 00 07 293
art. 00 07 277
art. 00 07 294
art. 00 07 278
art. 00 07 295

Complete kit for solenoid valves:



07 03 43 and 07 04 43
07 03 63 and 07 04 63
07 05 43 and 07 05 63

art. 00 07 279
art. 00 07 279
art. 00 07 280

PILOT MEMBRANE FOR SOLENOID VALVES WITH LOW ABSORPTION ELECTRIC COILS



3D drawings available at www.vuototecnica.net

| Art. | Valves art. | Connections | Material | Colour | Dimensions mm |
|------------------|--------------------------------------------------------|---------------|----------------|---------------|---------------|
| 00 07 104 | 07 03 43 - 07 04 43 07 03 63 - 07 04 63 | G1/2" - G3/4" | reinforced NBR | Black | Ø 65 |
| 00 07 105 | 07 05 43 - 07 05 63 | G1" | reinforced NBR | Black | Ø 76 |
| 00 07 229 | 07 01 13 - 07 01 53 07 02 13 - 07 02 53 | G1/4" - G3/8" | Vulkollan® | Beige | 49 x 35 |
| 00 07 230 | 07 03 13 - 07 03 53 | G1/2" | Urepan® 65 | Grey - orange | 62 x 39 |
| 00 07 296 | 07 03 13 LP - 07 03 53 LP | G1/2" | Vulkollan® | Beige | 62 x 39 |
| 00 07 231 | 07 04 13 - 07 04 53 07 05 13 - 07 05 53 | G3/4" - G1" | Urepan® 65 | Grey - orange | 79 x 49 |
| 00 07 297 | 07 04 13 LP - 07 04 53 LP 07 05 13 LP - 07 05 53 LP | G3/4" - G1 | Vulkollan® | Beige | 79 x 49 |
| 00 07 232 | 07 06 13 - 07 06 53 | G1" 1/2 | Urepan® 65 | Grey - orange | 129 x 89 |
| 00 07 298 | 07 06 13 LP - 07 06 53 LP | G1" 1/2 | Vulkollan® | Beige | 129 x 89 |

4.50



4