

## Valves for safety systems up to SIL 4 (IEC 61508)

Valve switches at power failure into starting position (mechanical spring return)

Suited for outdoor use under critical environment conditions (see solenoid list)

These solenoid valves are applicable in Ex protection class ATEX (categories II 2 GD and II 3 GD) and other international approvals



### Technical features

#### Medium:

Compressed air, filtered, non-lubricated and dry

#### Operation:

Direct solenoid operated poppet valves

#### Mounting position:

Any, but preferably with solenoid vertical

#### Orifice:

8 mm

#### Port size:

1/4 NPT

#### Operating pressure:

0 ... 10 bar (0 ... 145 psi)

#### Flow:

900 l/min  
(1 bar pressure differential)

#### Flow direction:

Optional

#### Fluid/Ambient temperature:

-40 ... +60°C (-40 ... +140°F)

Depending on solenoid system  
Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).  
For outdoor installation please protect all connections against the penetration of moisture!

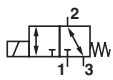
#### Materials:

Housing: stainless steel 1.4404 (316L),

Seal: NBR (special perbunan)

Inner parts: stainless steel


### Technical data

| Symbol  | Port size |         | Operating pressure (bar) | Materials       | Test certificate IEC 61 508 *2) | Weight (kg) | Model *1) |
|---|-----------|---------|--------------------------|-----------------|---------------------------------|-------------|-----------|
|   | 1, 3      | 2       |                          |                 |                                 |             |           |
|  | 1/4 NPT   | 1/4 NPT | 0 ... 10                 | Stainless steel | x                               | 0,9         | 9801745   |

\*1) When ordering please indicate solenoid, voltage and current Modele (frequency).

\*2) For operation in plants according to IEC 61511/61508 (-25 ... +60°C)

### Solenoid operators

|   | Power consumption |                 | Rated current  |                 | ATEX-Category | Protection class *7)/<br>Ex-Protection class  | Temperature Ambient/<br>Fluid (°C)              | Electrical connection | Weight (kg) | Dimension No. | Circuit diagram No. | Model    |
|---|-------------------|-----------------|----------------|-----------------|---------------|---|---|-----------------------|-------------|---------------|---------------------|----------|
|   | 24 V d.c. (W)     | 230 V a.c. (VA) | 24 V d.c. (mA) | 230 V a.c. (mA) |               |   |   |                       |             |               |                     |          |
|  | 8,9               | —               | 369            | —               | II2G<br>II2D  | Ex mb d IIC T4/T6<br>Ex mb e II T4/T6<br>Ex mb D 21 tD A21 IP66 T100°C<br>Ex tD A21 IP66 T100°C *11) *12) | -40 ... +50 T4<br>-40 ... +40 T6<br>-40 ... +50 | M20x1,5 *6)           | 1,2         | 10            | 4                   | 4872 *8) |

Standard voltages 24 V d.c., 230 V a.c., other voltages on request.  
Design according to VDE 0580, EN 50014/50028. 100% duty cycle.

\*6) Connector cable gland not supplied, see table »Accessories«

\*7) IP-Protection class according to EN60529

\*8) Suitable for outdoor installation

\*11) EG-Type-Examination-Certificate PTB 06 ATEX 2054 X

\*12) IECEx Certificate of Conformity IECEx PTB 07.0039X

Attention: The protection class for coil series 48xx is determined by

the choice of cable gland.

Example: if an ATEX-certified cable gland is used that has Ex d type of protection, the solenoid will have the protection class Ex dmb; if a cable gland with Ex e type of protection is used, the solenoid will have protection class Ex emb.

## Accessories

Cable gland  
Protection class Ex e, Ex d  
(ATEX),  
Nickel plated brass/stainless  
steel



| Thread   | Cable Ø     | Material               | Protection class (ATEX) | Model   |
|----------|-------------|------------------------|-------------------------|---------|
| M 20x1,5 | 9,0...13 mm | Stainless steel 1.4571 | II2GD Ex e              | 0589385 |
| M 20x1,5 | 7,0...12 mm | Stainless steel 1.4404 | II2GD Ex d              | 0589395 |
| M 20x1,5 | 10...14 mm  | Stainless steel 1.4404 | II2GD Ex d              | 0589387 |

Silencer \*1)



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C/S2 (1/4 NPT)

Exhaust guard \*2)



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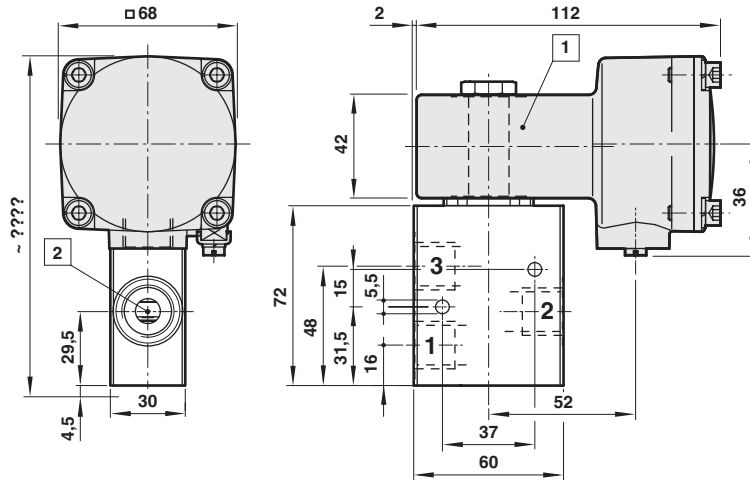
0613422 (G1/4, 1/4NPT)

\*1) For indoors use

\*2) For outdoors use

## Dimensions

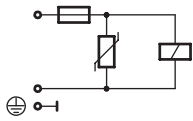
### Valves



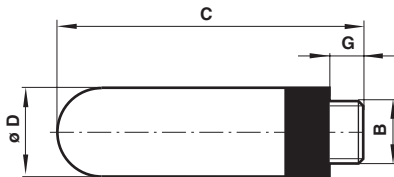
- 1 Solenoid optional turnable
- 2 Working port 1/4 NPT

## Circuit diagrams

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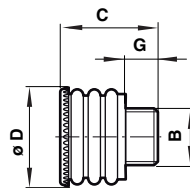


### Silencer Model: C/S2



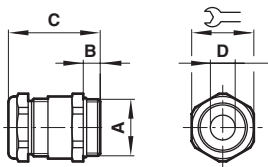
| B       | G | C    | Ø D  | Weight (g) | Model |
|---------|---|------|------|------------|-------|
| 1/4 NPT | 7 | 35,5 | 15,5 | 2,9        | C/S2  |

### Exhaust guard Model: 0613422



| B    | Suitable for | G  | C    | Ø D | Weight (g) | Model   |
|------|--------------|----|------|-----|------------|---------|
| 1/4" | 1/4 NPT      | 10 | 26,5 | 21  | 5          | 0613422 |

### Cable gland



| A         | B   | C    | Ø D       | ⌀  | Model   |
|-----------|-----|------|-----------|----|---------|
| M20 x 1,5 | 6,5 | 27,5 | 9 ... 13  | 22 | 0589385 |
| M20 x 1,5 | 14  | 39   | 7 ... 12  | 24 | 0589395 |
| M20 x 1,5 | 10  | 34   | 10 ... 14 | 24 | 0589387 |

## Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features**«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in pneumatic systems and to provide adequate safeguards to prevent personal injury or damage to

equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

Functional safety (SIL):

Suitable for certain applications can only be evaluated through examination of each safety-related overall system with regard to the requirements of IEC 61508/61511.