



# SOLENOID VALVES

intrinsically safe

II 1G Ex ia IIC T6 Ga, II 2D Ex ib IIC T85°C Db IP67  
ISO 15218 (CNOMO, size 30) interface  
direct operated, pad mounting body

3/2  
Series  
195/LISC

(LISC prefix)

## FEATURES

- Low consumption valves for use in potentially explosive atmospheres according to ATEX-Directive 2014/34/EU
- EC type examination certificate (DEKRA 11 ATEX 0091 X) and IECEx certificate (IECEx DEK 11.0038X) are in compliance with the International and European Standards IEC and EN: 60079-0 and 60079-11
- The valve's Ex ia protection allows it to be installed in explosive atmospheres up to zone 1. It can be used in the chemical, oil and pharmaceutical industries, or in processing and packaging plants for flammable products (paints, solvents)
- Compact, monobloc pilot valve with spade plug connection according to ISO 4400 / EN 175301-803, form A (3 pins)
- The valves are certified according to IEC 61508 Functional Safety data and have SIL-3 capability (Exida approval) [Pilot certified with 551-553 series]

## GENERAL

### Differential pressure

### Flow

conforming to ISO 6358

2 - 10 bar [1 bar = 100 kPa]

See «SPECIFICATIONS»

C =  $3 \times 10^{-10}$  m<sup>3</sup>/s.Pa (sonic conductance)

b = 0.4 (critical pressure ratio)

ISO 15218 (CNOMO E06.05.80N, size 30)

11 ms

### Pneumatic base

### Response time

| fluids (*)                                                                      | temperature range (TS) | seal materials (*)    |
|---------------------------------------------------------------------------------|------------------------|-----------------------|
| air or inert gas<br>dry, filtered (50 µm), without condensate, dew point: -20°C | - 40°C to + 65°C       | FPM (fluoroelastomer) |

## MATERIALS IN CONTACT WITH FLUID

(\*) Ensure that the compatibility of the fluids in contact with the materials is verified

### Body

Aluminium

### Internal parts, core tube

Stainless steel

### Seals

FPM

### Subbase

PA or zamak

## OTHER MATERIALS

### Coil

Thermoplastic resin

## ELECTRICAL CHARACTERISTICS

### Coil insulation class

F

## SAFETY CODE

II 1G Ex ia IIC T6 Ga

II 2D Ex ib IIC T 85°C Db IP67

⚠ (1) For use in zone 0 locations, see the installation conditions given in the I&M instructions.

### Connector

### Connector specification

### Electrical safety

### Electrical enclosure protection

### Standard voltages

Spade plug (cable Ø 6-8 mm)

ISO 4400 / EN 175301-803, form A

IEC 335

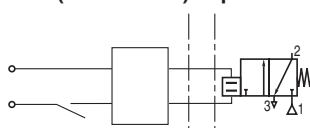
Moulded IP65 (EN 60529)

DC (=) : 12V .. 24V

| voltage (U <sub>n</sub> )<br>(max. ripple 10%) | typical functional ratings |                           |                           | R<br>20°C | operator<br>ambient<br>temperature<br>range (TS) | type<br>(3) |
|------------------------------------------------|----------------------------|---------------------------|---------------------------|-----------|--------------------------------------------------|-------------|
|                                                | I <sub>(ON)</sub><br>min.  | U <sub>(ON)</sub><br>min. | P <sub>(ON)</sub><br>min. |           |                                                  |             |
| (V)                                            | (mA)                       | (V)                       | (W)                       | (Ω)       | (°C)                                             |             |
| <b>Low power (LP)</b>                          |                            |                           |                           |           |                                                  |             |
| 24                                             | 36                         | 12,8                      | 0,46                      | 240       | -40 to +65                                       | 01          |

| safety parameters        |                |                |                |                |
|--------------------------|----------------|----------------|----------------|----------------|
| U <sub>i</sub><br>= (DC) | I <sub>i</sub> | P <sub>i</sub> | L <sub>i</sub> | C <sub>i</sub> |
| (V)                      | (mA)           | (W)            | (H)            | (µF)           |
| 30                       | 300            | 1,6            | 0              | 0              |

### safe area (RS interface) explosive area



Example of use with a Zener barrier installed in a non-hazardous zone

## TEMPERATURE CLASSIFICATION TABLES DC (=)

| Pi<br>(watt)                             | maximum ambient °C (1)            |
|------------------------------------------|-----------------------------------|
|                                          | surface temperature<br>T6<br>85°C |
| Insulation class F (155°C) 100% E.D. (2) |                                   |
| 1,6                                      | 65                                |

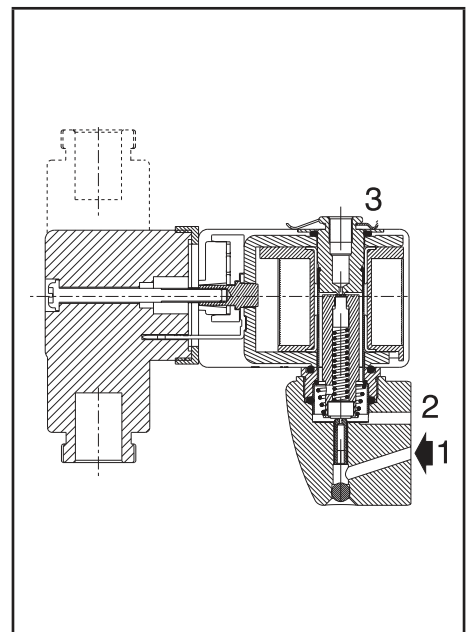
(1) The minimum allowable ambient temperature is -40°C

(2) This intrinsically safe valve must be connected to a specific, approved power supply (safety barrier or interface) located in a safe area. See list of safety barriers/interfaces on page 2.

(3) Refer to the dimensional drawings on the following page.

## SPECIFICATIONS

| pipe size            | orifice size |       | flow                    |       |                              |       | operating pressure differential (bar) |           | power coil (W) | catalogue number        |
|----------------------|--------------|-------|-------------------------|-------|------------------------------|-------|---------------------------------------|-----------|----------------|-------------------------|
|                      |              |       | at 6 bar<br>l/min (ANR) |       | coefficient<br>Kv<br>(l/min) |       | min.                                  | max. (PS) |                | without manual operator |
|                      | 1 → 2        | 2 → 3 | 1 → 2                   | 2 → 3 | 1 → 2                        | 2 → 3 |                                       | air (*)   |                |                         |
|                      | (mm)         | (mm)  |                         |       |                              |       |                                       | =         |                |                         |
| NC - Normally closed |              |       |                         |       |                              |       |                                       |           |                |                         |
| pad mounting         | 0.5          | 0.7   | 8                       | 15    | 0.11                         | 0.26  | 2                                     | 10        | 0.46           | 19500036                |



| LP        | RP            | MP            | BP            |
|-----------|---------------|---------------|---------------|
| 0,5W      | Not available | Not available | Not available |
| Low power | Reduced power | Medium power  | Basic power   |

POWER LEVELS - cold electrical holding values (watt)



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## SUBBASES

| pipe size                       | designation                               | safety code                   | catalogue number |
|---------------------------------|-------------------------------------------|-------------------------------|------------------|
| <b>6/6 polyamide subbases</b>   |                                           |                               |                  |
| instant fittings <sup>(1)</sup> | single subbase (instant fittings OD 4 mm) | II 2 GD c Ta 50°C T 85°C (T6) | <b>35300069</b>  |
| <b>Zamak subbases</b>           |                                           |                               |                  |
| G 1/8 <sup>(1)</sup> , tapped   | laterally-connected single subbase        | II 2 GD c Ta 50°C T 85°C (T6) | <b>35300047</b>  |

<sup>(1)</sup> These subbases can be mounted on omega rail to EN 50022 using 2 clips (clips sold in packs of 10, catalogue number: **33400036** ).

## OPTIONS

|                     |
|---------------------|
| • Joinable subbases |
|---------------------|

## INSTALLATION

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>The solenoid valves can be mounted in any position without affecting operation</li> <li>Solenoid valve supplied with mounting screws</li> <li>Pipe connections G 1/8 have standard thread according to ISO 228/1</li> <li>Electrical connection between solenoid valve and barrier/interface with cable type A or B according to EN 50039</li> <li>Installation/maintenance instructions are included with each valve</li> </ul> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## RECOMMENDED INTERFACES

Located in safe areas, these interfaces allow to feed the intrinsically safe solenoid valves located in explosive areas. This equipment must be ordered from its respective manufacturers, specifying that they are intended to feed intrinsically safe solenoid valves 19500036/LISC: II 1G Ex ia IIC T6 Ga, II 2D Ex ib IIIC T85°C Db IP67

| INTERFACES         |                           |            |
|--------------------|---------------------------|------------|
| manufacturer       | module type               | IIC / IIIC |
| Bartec             | 07-7331-2301/1001         | x          |
| ABB                | DO910S                    | x          |
| GEORGIN            | BXNE711002                | x          |
|                    | BXNE71100E                | x          |
| G.M. International | D1040Q-2                  | x          |
|                    | D1042Q-2                  | x          |
|                    | D1048S                    | x          |
|                    | D1049S                    | x          |
|                    | D5048S                    | x          |
|                    | D5049S                    | x          |
| MTL                | MTL5522                   | x          |
|                    | MTL5521                   | x          |
|                    | MTL4524S                  | x          |
| Pepperl + Fuchs    | KFD2-SD-Ex1.36            | x          |
|                    | KFD2-SL2-Ex1              | x          |
|                    | KFD2-SL2-Ex1.B            | x          |
|                    | KFD2-SL2-Ex1.LK           | x          |
|                    | KFD2-SL2-Ex2              | x          |
|                    | KFD2-SL2-Ex2.B            | x          |
|                    | KCD0-SD-Ex1.1245          | x          |
|                    | KFD0-SD2-Ex2.1245         | x          |
|                    | HIC2871                   | x          |
|                    | LB-2112                   | x          |
|                    | FB-2212                   | x          |
| Siemens            | 6ES7132-7RD11-0AB0 2 ways | x          |
|                    | 6ES7132-7RD22-0AB0 2 ways | x          |
|                    | 6ES7132-7GD10-0AB0 2 ways | x          |
|                    | 6ES7132-7GD20-0AB0 2 ways | x          |
|                    | ET200IS double            | x          |
|                    | 6ES7132-7RD10-0AB0 2 ways | x          |
|                    | 6ES7132-7RD20-0AB0 2 ways | x          |
| Stahl              | 9475/12-04-11             | x          |
|                    | 9475/12-04-21             | x          |
|                    | 9475/22-04-21             | x          |
|                    | 9475/32-04-12             | x          |
|                    | 9475/32-04-22             | x          |
|                    | 9475/32-04-72             | x          |
|                    | 9175/10-14-11             | x          |
|                    | 9175/20-14-11             | x          |
|                    | 9176/10-14-00             | x          |
|                    | 9176/20-14-00             | x          |
|                    | 9001/01-280-100-101       | x          |
|                    | MC72-41Ex-T/24VDC         | x          |
|                    | MC72-44Ex-T               | x          |
| Turck              |                           |            |
| WAGO               | 750-535                   | x          |

| ZENER BARRIERS  |                     |            |
|-----------------|---------------------|------------|
| manufacturer    | module type         | IIC / IIIC |
| CEAG            | SB-3722             | x          |
|                 | SB-2420             | x          |
|                 | SB-3729             | x          |
|                 | SB-3728             | x          |
| MTL             | MTL 728             | x          |
|                 | MTL 728P            | x          |
|                 | MTL 779             | x          |
| Pepperl + Fuchs | Z728                | x          |
|                 | Z728.H              | x          |
|                 | Z728.CL             | x          |
| Stahl           | 9001/01-280-085-101 | x          |
|                 | 9001/01-280-100-101 | x          |
|                 | 9001/01-280-110-101 | x          |

In accordance with the zone classification and the national legislation of each country, apply the certification procedures for the connection of IS-rated products with associated equipment.  
All information subject to change without notice. All responsibility for the use of products from other suppliers and the possible modifications of their characteristics is disclaimed.

## ORDERING EXAMPLES:

|              |          |                |         |
|--------------|----------|----------------|---------|
| basic number | 19500036 | . 12..24V / DC | voltage |
|--------------|----------|----------------|---------|

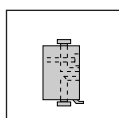
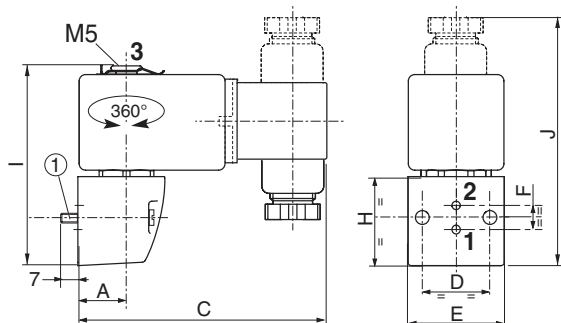
### DIMENSIONS (mm), WEIGHT (kg)



#### TYPE 01

Spade plug  
IEC 335 / DIN 43650  
II 1G Ex ia IIC T6 Ga  
II 2D Ex ib IIC T85°C Db IP67

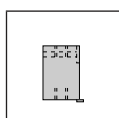
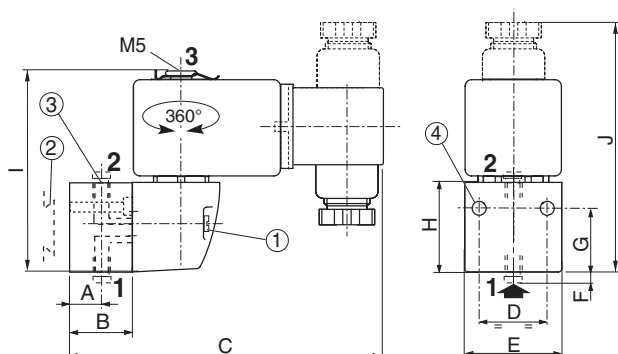
19500036



#### TYPE 02

Single instant fitting subbase  
Polyamide

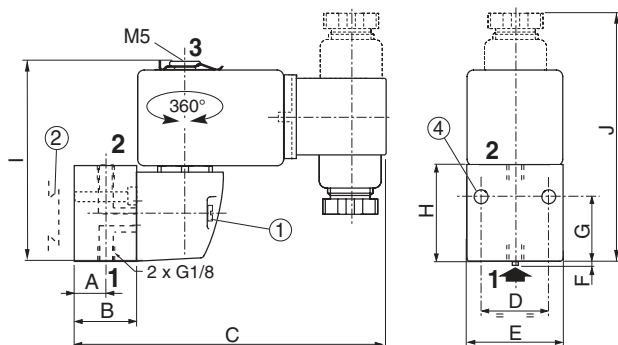
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#### TYPE 03

Single subbase  
Zamak

35300047

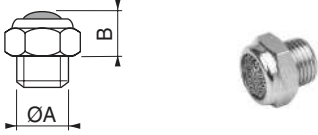


| type | catalogue number | A    | B  | C   | D  | E  | F   | G    | H  | I  | J  | weight <sup>(2)</sup> |
|------|------------------|------|----|-----|----|----|-----|------|----|----|----|-----------------------|
| 01   | 19500036         | 15,5 | -  | 79  | 21 | 30 | 7,5 | 15   | 30 | 63 | 75 | 0,22                  |
| 02   | 35300069         | 13   | 20 | 99  | 23 | 33 | 4   | 22,5 | 30 | 67 | 80 | 0,20                  |
| 03   | 35300047         | 15   | 25 | 104 | 21 | 31 | 3,5 | 30   | 36 | 70 | 83 | 0,20                  |

<sup>(2)</sup> Incl. coil(s) and connector(s).

- ① Mounting: two CM 4 x 35 screws
- ② Adaptable clips
- ③ Instant-fitting connection for OD 4 mm tube
- ④ Two dia. 3,5 mm securing holes

## ACCESSORIES

|                                                                                    |     |
|------------------------------------------------------------------------------------|-----|
|   |     |
| ØA                                                                                 | M5  |
| B                                                                                  | 4,5 |
| <b>exhaust protector</b><br>(stainless steel)<br>catalogue number: <b>34600484</b> |     |