






## Plunger valve 2/2 way direct-acting

- Direct-acting and compact valve up to diameter of DN 6.0
- Vibration-proof, bolted coil system
- Increased leak-tightness with welded plunger guide tube
- Explosion proof versions
- Energy-saving pulse versions



Product variants described in the data sheet may differ from the product presentation and description.

### Can be combined with

	<b>Type 1087</b> Timer	▶
	<b>Type 2518</b> Cable Plug DIN EN 175301-803 - Form A	▶
	<b>Type 2513</b> Cable plug acc. to DIN EN 175301-803 Form A	▶

### Type description

Valve 6013 is a direct-acting plunger valve. The stopper and plunger guide tube are welded together to enhance pressure resistance and leak-tightness. Various seal material combinations are available depending on the application. A Bürkert-specific flange design (SFB) enables space-saving arrangement of valves on a manifold. The coils are moulded with polyamide or with chemically resistant epoxy. Pulse coils and 'Kick and Drop' electronics are available for overexcitation (plug 2511) for the reduction of electrical power consumption during operation. Optional manual actuation enables quick commissioning and easy maintenance. In combination with a plug in accordance with DIN EN 175301-803 Form A, the valves satisfy protection class IP65. Stainless steel valves satisfy NEMA 4X.

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## 1. General Technical Data

Product properties	
Dimensions	Detailed information can be found in chapter <a href="#">“6. Dimensions” on page 9.</a>
Material	
Body	Brass, stainless steel 1.4305
Seal	FKM, PTFE/Graphite (EPDM on request)
Thermal insulation class of solenoid	Polyamide class B Epoxy class H
Performance data	
Duty cycle/single valve with block assembly on manifold	100 % continuous rating Intermittent operation 60 % (30 min) or with 5 W coil (on request)
Circuit function	A and B
Electrical data	
Operating voltage	
Standard version	24 V DC, 24 V/50 Hz, 230 V/50 Hz
Analytical version	24 V DC, 230 V/50 Hz (other voltages on request)
Voltage tolerance	± 10%
Medium data	
Medium	
Standard version	Technical vacuum, neutral gases and liquids (e.g. compressed air, water, hydraulic oil)
Analytical version	Neutral medium, which does not attack the body and seal materials (see <a href="#">“5.1. Chemical Resistance Chart – Bürkert resistApp” on page 6</a> )
Viscosity	Max. 21 mm <sup>2</sup> /s
Medium temperature	
With FKM	-10 °C...+100 °C (PA coil), -10 °C...+120 °C (Epoxy coil)
With PTFE/Graphite	-40 °C...+180 °C (see <a href="#">“5.1. Chemical Resistance Chart – Bürkert resistApp” on page 6</a> )
With FKM, circuit function B	-10 °C...100 °C (AC),...10 °C...120 °C (DC)
Product connection	
Port connection	
Standard version	G 1/8, G 1/4, G 3/8, sub-base (SFB)
Analytical version	G 1/8, G 1/4
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A for cable plug Type 2518 (see <a href="#">“10.5. Ordering chart accessories” on page 20</a> ) ATEX/IECEx version with 3 m moulded cable
Approvals and certificates	
Degree of protection	IP65 with cable plug, ATEX/IECEx junction box version and cable connection version
Environment and installation	
Installation position	As required, preferably with actuator upright
Ambient temperature (max.)	+ 55 °C
Installation instructions	No oils, fats or silicone to be used during installation

## 2. Product versions

### 2.1. Analytical version

#### Solenoid valves for higher requirements

This version is particularly suitable for switching from extremely pure gaseous medium. All medium-affected parts are submitted to additional purification processes, so that the medium is not contaminated under any circumstances.

The tightness test takes place at the Helium leak detector from a min. of  $10^{-4}$  mbar l/sec.

Product properties	
<b>Material</b>	
Body	Brass, stainless steel 1.4305
Seal	Silicon, oil and fat free version Tightness $< 10^{-4}$ mbar l/s
<b>Medium data</b>	
Medium	Neutral medium, which does not attack the body and seal materials (see <a href="#">“5.1. Chemical Resistance Chart – Bürkert resistApp”</a> on page 6)
<b>Product connection</b>	
Port connection	G 1/8, G 1/4
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A for cable plug Type 2518 (see <a href="#">“10.5. Ordering chart accessories”</a> on page 20)
<b>Environment and installation</b>	
Installation instructions	No oils, fats or silicone to be used during installation

### 2.2. DVGW version

The Type 6013 DVGW solenoid valve is designed primarily as an automatic safety shut-off valve for flammable gases. A strainer is installed in the inlet of the valve.

Product properties	
<b>Material</b>	
Body	Brass, stainless steel 1.4305
Seal	NBR
Circuit function	A
<b>Performance data</b>	
Operating pressure (max.)	0...5 bar
<b>Medium data</b>	
Medium	Flammable gases such as town gas, district gas, liquid gas, hydrogen (see <a href="#">“5.1. Chemical Resistance Chart – Bürkert resistApp”</a> on page 6)
Medium temperature	0 °C...+80 °C
<b>Approvals and certificates</b>	
Standards	DIN EN 161:2013; DIN EN 13611:2015
<b>Environment and installation</b>	
Ambient temperature (max.)	0 °C...+55 °C

## 3. Circuit functions

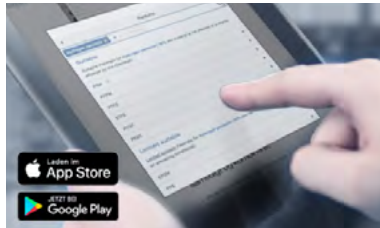
Circuit functions	Description
	<b>Type A, solenoid valve</b> 2/2 way Direct-acting Normally closed
	<b>Type B, solenoid valve</b> 2/2 way Direct-acting Normally opened

## 4. Approvals

ATEX and IECEx approval for coils with fixed cable outlet	
ATEX: EPS 18 ATEX 1232 X II 2G Ex mb IIC T4 Gb II 2D Ex mb IIIC T130 °C Db	IECEx: IECEx EPS 18.0110X Ex mb IIC T4 Gb Ex mb IIIC T130 °C Db

## 5. Materials

### 5.1. Chemical Resistance Chart – Bürkert resistApp



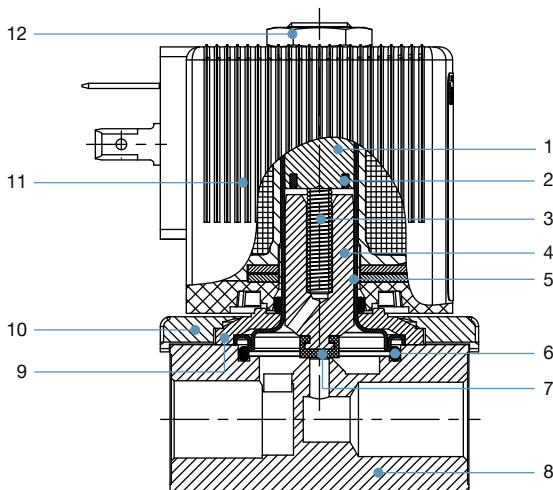
#### Bürkert resistApp – Chemical Resistance Chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

[Start Chemical Resistance Check](#)

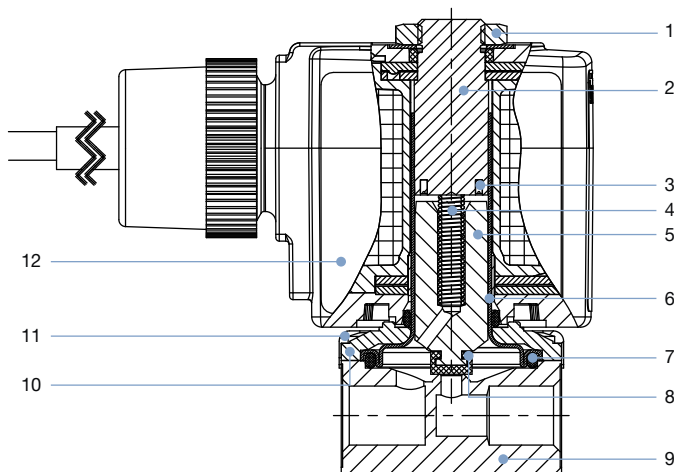
### 5.2. Material specifications

#### Standard version



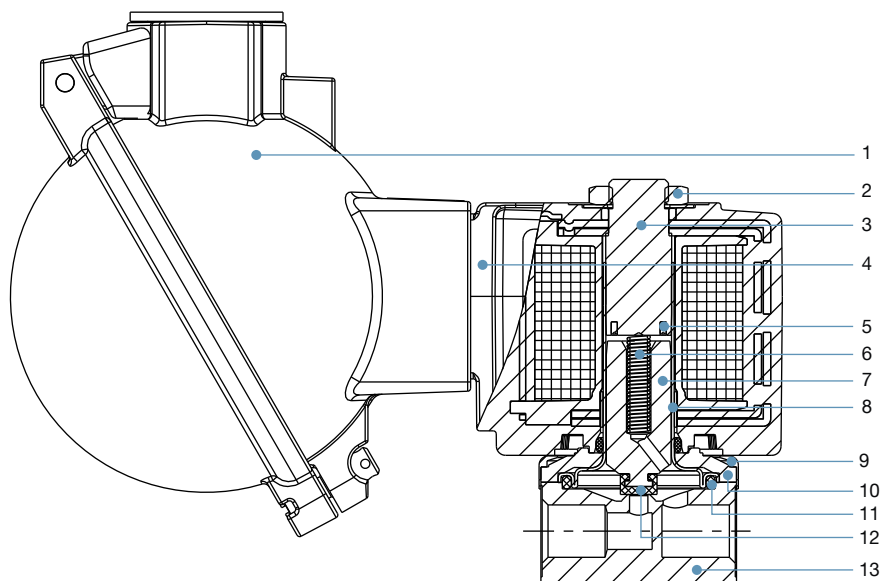
No.	Element	Material
1	Stopper	Stainless steel 1.4105
2	Shading ring	Cu (brass version) Ag (stainless steel version)
3	Spring	Stainless steel 1.4310
4	Magnetic core	Stainless steel 1.4105
5	Armature guide tube	Stainless steel 1.4303
6	Seal	FKM Graphite (high temp. version)
7	Armature seal	FKM PTFE (high temp. version)
8	Valve body	Brass Stainless steel 1.4305
9	Sub-base	Steel, surface finish thick-film passivated (brass version) Stainless steel 1.4301 (stainless steel version)
10	Cover	Polyamide
11	Coil	PA (polyamide) Epoxy (high temp. version)
12	Locknut	Steel, surface finish thick-film passivated (brass version) Stainless steel 1.4305 PTFE coated (stainless steel version)

ATEX/IECEx cable version



No.	Element	Material
1	Locknut	Steel, surface finish thick-film passivated (brass version) Stainless steel 1.4305 PTFE coated (stainless steel version)
2	Stopper	Stainless steel 1.4105
3	Shading ring	Cu (brass version) Ag (stainless steel version)
4	Spring	Stainless steel 1.4310
5	Magnetic core	Stainless steel 1.4105
6	Armature guide tube	Stainless steel 1.4303
7	Seal	FKM Graphite (high temp. version)
8	Armature seal	FKM PTFE (high temp. version)
9	Valve body	Brass Stainless steel 1.4305
10	Sub-base	Steel, surface finish thick-film passivated (brass version) Stainless steel 1.4301 (stainless steel version)
11	Cover	Polyamide
12	Coil	Epoxy

ATEX/IECEx version with junction box



No.	Element	Material
1	Junction box	Aluminium
2	Locknut	Steel, surface finish thick-film passivated (brass version) Stainless steel 1.4305 PTFE coated (stainless steel version)
3	Stopper	Stainless steel 1.4105
4	Coil	Epoxy
5	Shading ring	Cu (brass version) Ag (stainless steel version)
6	Spring	Stainless steel 1.4310
7	Magnetic core	Stainless steel 1.4105
8	Armature guide tube	Stainless steel 1.4303
9	Cover	Polyamide
10	Sub-base	Steel, surface finish thick-film passivated (brass version) Stainless steel 1.4301 (stainless steel version)
11	Seal	FKM Graphite (high temp. version)
12	Armature seal	FKM PTFE (high temp. version)
13	Valve body	Brass Stainless steel 1.4305

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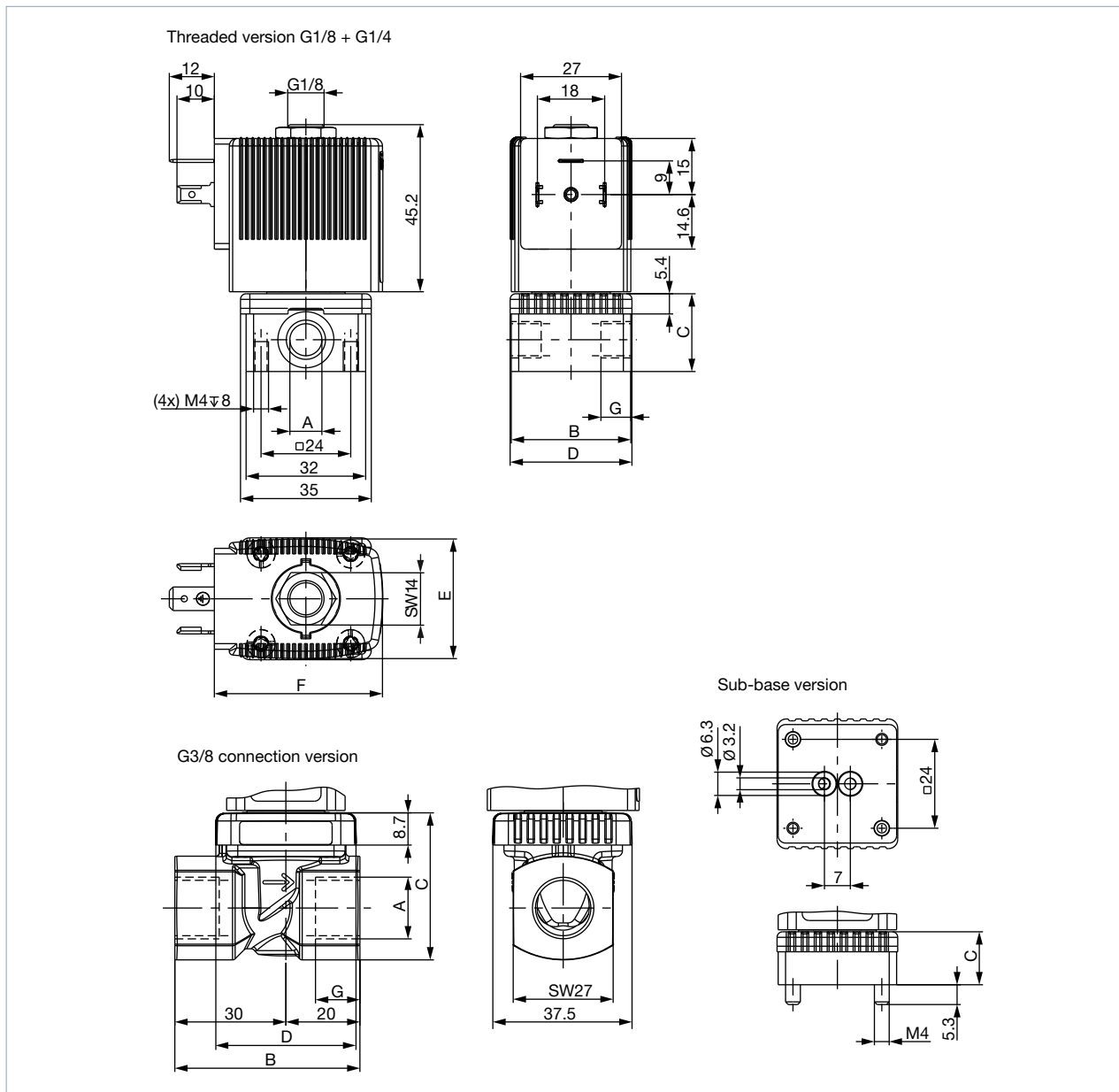


## 6. Dimensions

### 6.1. Standard version

**Note:**

Dimensions in mm



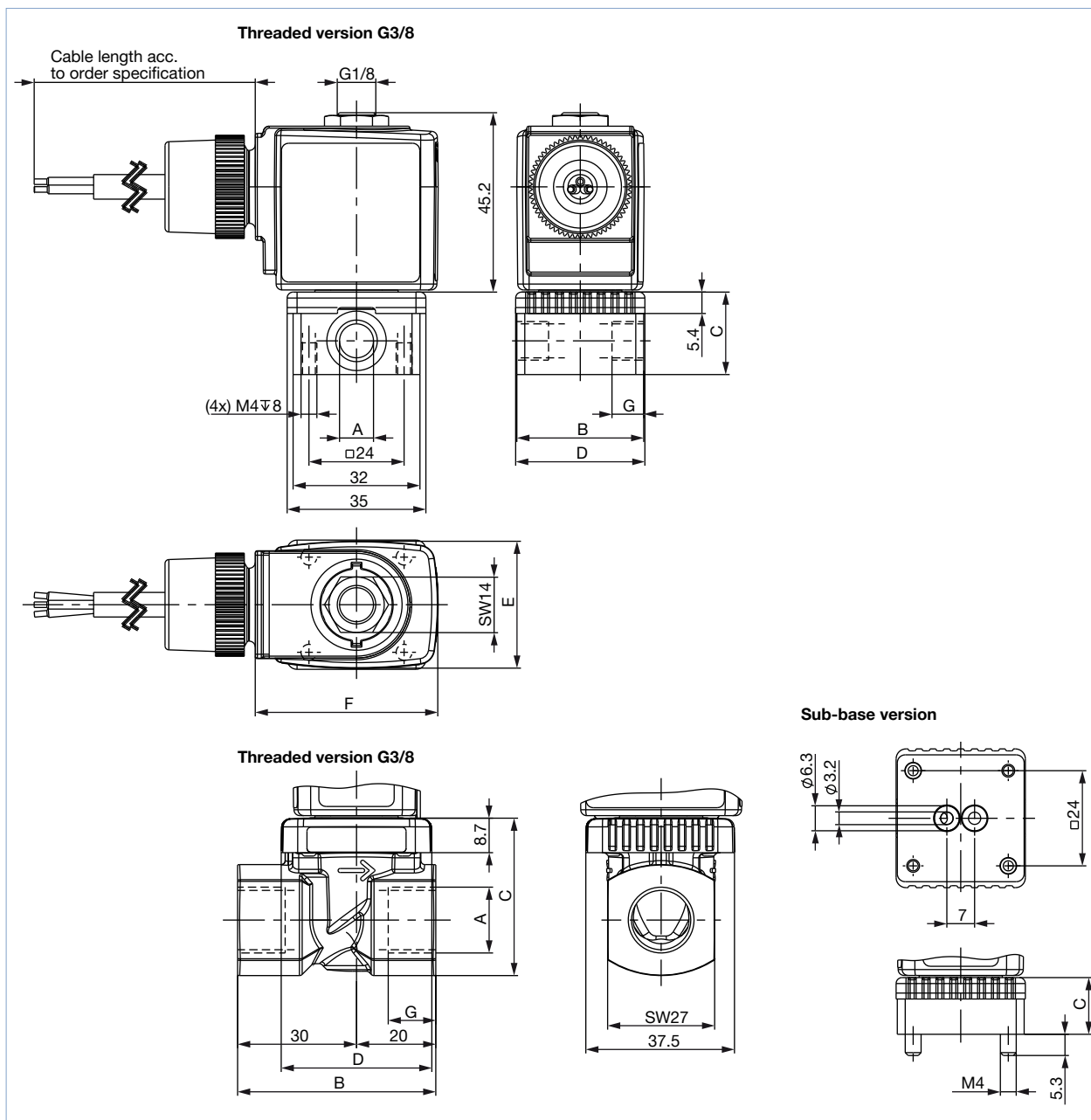
Port connection	A	B	C	D	G
	[inch]	[mm]	[mm]	[mm]	[mm]
Threaded version	G 1/8	32	20.8	32.6	8
	G 1/4	46	26.8	49	12
	G 3/8	50	39.8	38	12
Sub-base version	-	32	14.3	32.6	-

Coil size	E	F
	[mm]	[mm]
8	32	45
10	40	51

### 6.2. ATEX/IECEX cable version

**Note:**

Dimensions in mm



Port connection	A	B	C	D	G
	[inch]	[mm]	[mm]	[mm]	[mm]
Threaded version	G 1/8	32	20.8	32.6	8
	G 1/4	46	26.8	49	12
	G 3/8	50	39.8	38	12
Sub-base version	–	32	14.3	32.6	–

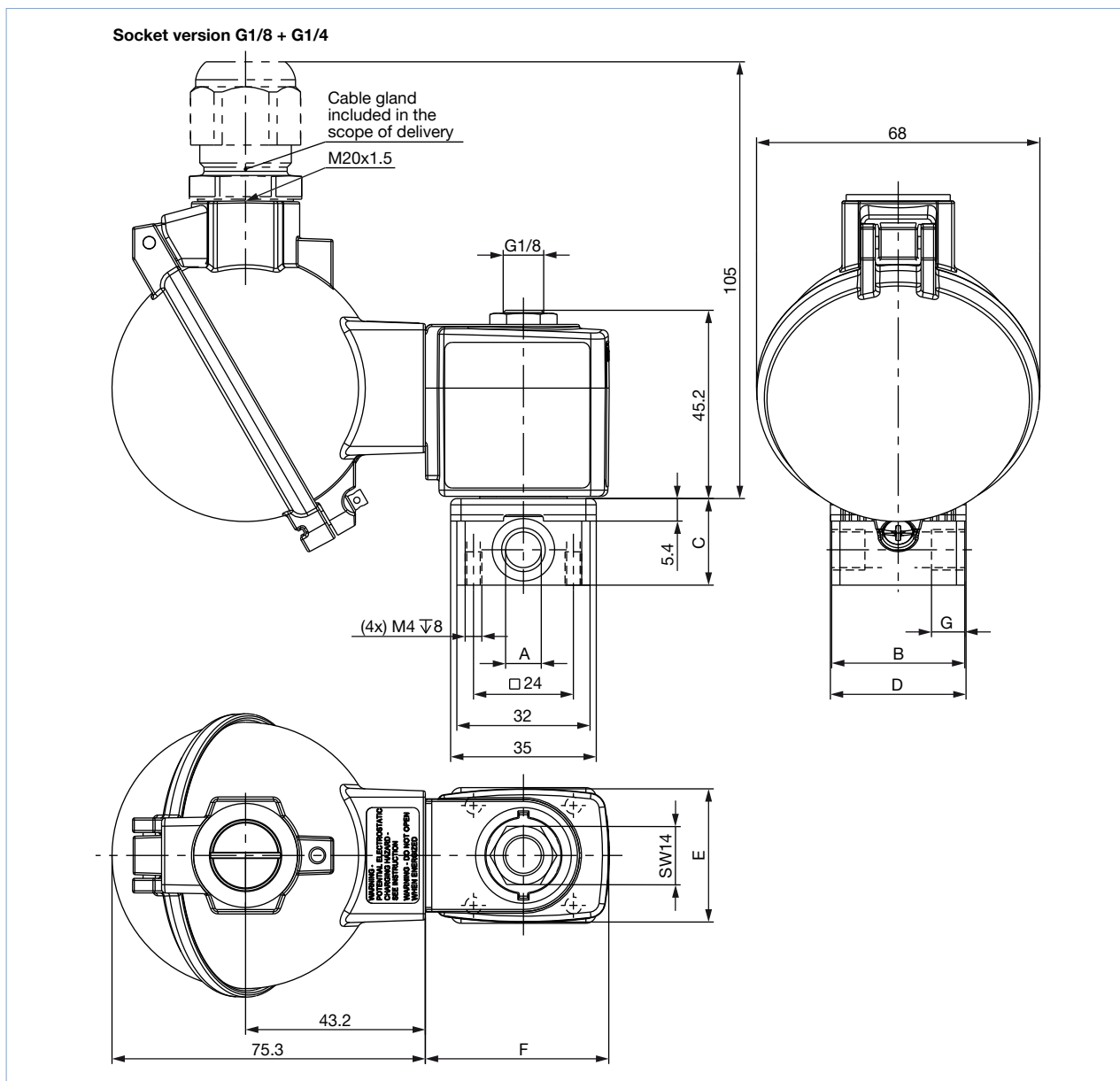
Coil size	E	F
	[mm]	[mm]
5	32	46
6	40	52

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### 6.3. ATEX/IECEx junction box version

**Note:**

Dimensions in mm



Port connection	A	B	C	D	H
	[inch]	[mm]	[mm]	[mm]	[mm]
Threaded version	G 1/8	32	20.8	32.6	8
	G 1/4	46	26.8	49	12
	G 3/8	50	39.8	38	12
Sub-base version	-	32	14.3	32.6	-

Coil size	E	F
	[mm]	[mm]
5	32	44
6	40	51

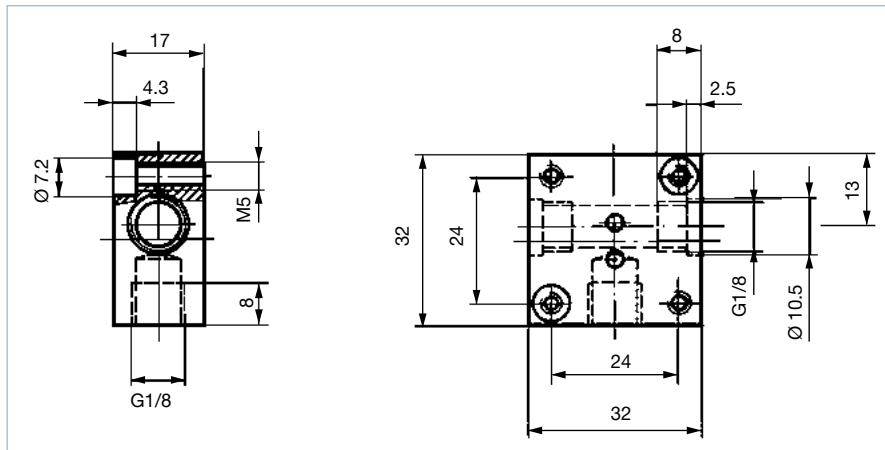
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### 6.4. Manifold mounting

#### Single manifold

**Note:**

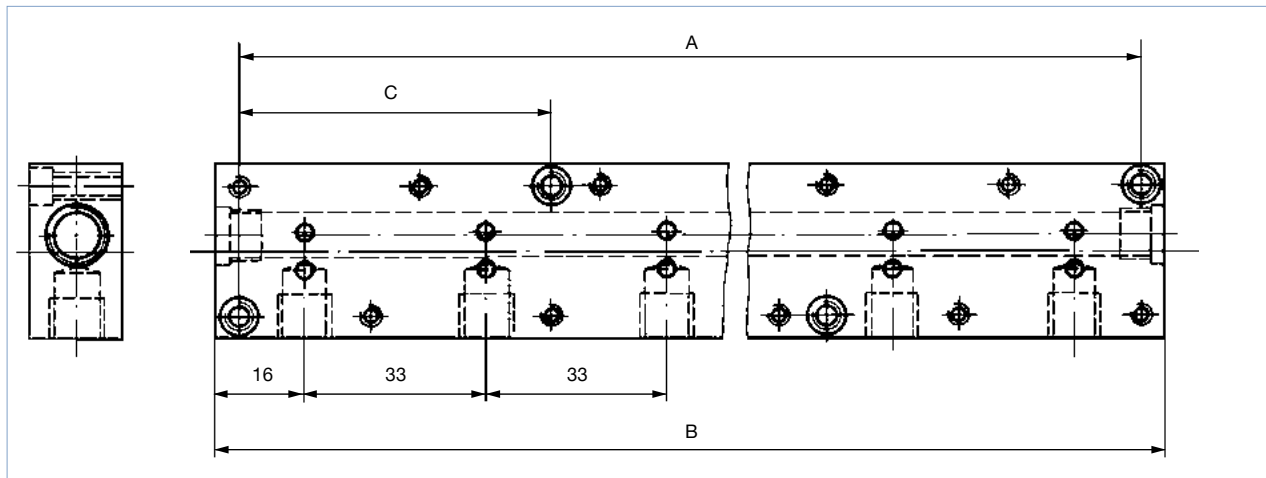
- Dimensions in mm
- For detailed information on the installation of manifolds, see [“Manifolds for block mounting”](#) on page 14.



#### Multiple manifold

**Note:**

Dimensions in mm



Accessory part	Quantity of valve places	Hole spacing A [mm]	Total length B [mm]	Hole spacing C [mm]	Article no.
Multiple manifold (in aluminium)	2	57	65	-	005023
	3	90	98	-	005286
	4	123	131	-	005287
	5	156	164	57	005035
	6	189	197	57	005038
	8	255	263	90	005386
	10	321	329	90	005764
Single manifold (in aluminium)					005020
Connector nipple with O-ring to connect from manifold					005040
Covering plate with screws and O-ring for locking unoccupied valve positions					005630

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## 7. Performance specifications

### 7.1. Power consumption

#### Circuit function A

Orifice [mm]	Port connection	K <sub>v</sub> value water [m <sup>3</sup> /h]	Weight [g]	Power consumption <sup>1.)</sup> [W]	Electr. power		Coil size	Response times	
					Inrush (AC)	Hold (AC)		Opening [ms]	Closing [ms]
2.0	G 1/8	0.12	325	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
2.0	G 1/4	0.12	465	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
2.0	Sub-base	0.12	290	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
2.5	G 1/8	0.16	325	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
2.5	G 1/4	0.16	465	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
3.0	G 1/8	0.23	325	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
3.0	G 1/4	0.23	465	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
3.0	G 3/8	0.23	550	10 W AC or 10 W DC (11)	30 VA	22 VA	6 (40 mm)	20	30
4.0	G 1/4	0.30	465	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
4.0	G 3/8	0.30	550	10 W AC or 10 W DC (11)	30 VA	22 VA	6 (40 mm)	20	30
6.0	G 1/4	0.55	465	8 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
6.0	G 3/8	0.55	550	10 W AC or 10 W DC (11)	30 VA	22 VA	6 (40 mm)	20	30

1.) Values in brackets correspond to a coil temperature of 20 °C.

#### Circuit function B

Orifice [mm]	Port connection	K <sub>v</sub> value water [m <sup>3</sup> /h]	Weight [g]	Power consumption <sup>1.)</sup> [W]	Electr. power		Coil size	Response times	
					Inrush (AC)	Hold (AC)		Opening [ms]	Closing [ms]
2.00	G 1/8	0.12	325	7 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
2.00	G 1/4	0.12	465	7 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
2.00	Sub-base	0.12	290	7 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
3.00	G 1/8	0.23	325	7 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
3.00	G 1/4	0.23	465	7 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
3.00	Sub-base	0.23	290	7 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
4.00	G 1/4	0.3	465	7 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30
6.00	G 1/4	0.55	465	7 W AC or 8 W DC (9)	24 VA	17 VA	5 (32 mm)	20	30

1.) Values in brackets correspond to a coil temperature of 20 °C.

## 8. Product installation

### 8.1. Installation notes

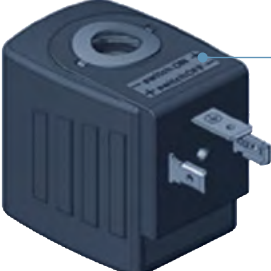
#### Control for impulse version with polarity reversal control

**Note:**

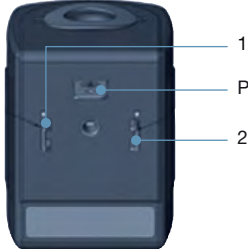
- Please use only the cable plug without electrical circuitry for the impulse version!
- Pulse duration at least 50 ms

Polarity (is marked on the coil with a label)	Features	Terminal connections
- switch ON +	valve open	(+) on terminal 2 and (-) on terminal 1 (see below)
+ switch OFF -	valve closed	(+) on terminal 1 and (-) on terminal 2 (see below)



Polarity is marked on the coil with a label:  
- switch ON +  
+ switch OFF -



1  
Protective conductor port  
2

#### Manifolds for block mounting

**Note:**

- Unused, open valve ports must be closed off with covering plates (see accessories).
- Manifold should be fixed on to a rail.
- For detailed information on dimensions [“6.4. Manifold mounting” on page 12.](#)

With manifold mounting, please comply with the permissible duty cycle (5 W models with 100 % continuous rating or standard 8 W model with 60 % duty cycle). The pressure port for the manifold is designated with P (R), and the outlet port with A (B). Only connect together ports with the same designation.

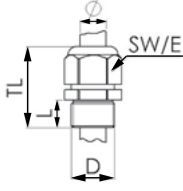
2/2 way valves of Type 6013 can be operated together on a manifold with 3/2 way valves of Type 6014, circuit function C (not D or T!) if the operating pressures matches according to the rating plates. The manifolds can also be expanded if the valve functions are taken into consideration. Connector nipples with O-rings are used to connect the P (R) ports.


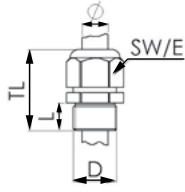
## 9. Product accessories

### 9.1. Cable glands for ATEX/IECEX terminal box

**Note:**

- A cable gland in polyamide version is included in the delivery. A nickel-plated brass version can be ordered at a surcharge.
- This special tool is not supplied with the valve (see [“10.5. Ordering chart accessories” on page 20.](#))

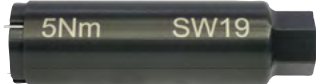
Description	Ex approvals		Dimensions										
	Certification	Identification											
Ex cable gland, Brass, nickel-plated, 6...13 mm	PTB 04 ATEX 1112 X, IECEX PTB 13.0027X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	 <table border="1" style="float: right;"> <tr> <td>TL</td> <td>29...37 mm</td> </tr> <tr> <td>L</td> <td>6 mm</td> </tr> <tr> <td>D</td> <td>20 mm</td> </tr> <tr> <td>SW</td> <td>24 mm</td> </tr> <tr> <td>E</td> <td>27 mm</td> </tr> </table>	TL	29...37 mm	L	6 mm	D	20 mm	SW	24 mm	E	27 mm
TL	29...37 mm												
L	6 mm												
D	20 mm												
SW	24 mm												
E	27 mm												

Description	Ex approvals		Dimensions										
	Certification	Identification											
Ex cable gland, Polyamide, 7...13 mm 	PTB 13 ATEX 1015 X, IECEx PTB 13.0034X	II 2 G Ex e IIC Gb, II 2 D Ex tb IIIC Db IP68	 <table border="1"> <tr> <td>TL</td> <td>36...45 mm</td> </tr> <tr> <td>L</td> <td>10 mm</td> </tr> <tr> <td>D</td> <td>20 mm</td> </tr> <tr> <td>SW</td> <td>24 mm</td> </tr> <tr> <td>E</td> <td>28 mm</td> </tr> </table>	TL	36...45 mm	L	10 mm	D	20 mm	SW	24 mm	E	28 mm
TL	36...45 mm												
L	10 mm												
D	20 mm												
SW	24 mm												
E	28 mm												

### 9.2. Special tool to turn the junction box


**Note:**

- This special tool is not supplied with the valve (see “10.5. Ordering chart accessories” on page 20).
- This special tool can only be used with ATEX AC10 coils.

Description	Components of the set
Set SC02-AC10 	<ul style="list-style-type: none"> <li>• Special wrench</li> <li>• Service manual</li> </ul>

## 10. Ordering information

### 10.1. Bürkert eShop – Easy ordering and quick delivery




**Bürkert eShop – Easy ordering and fast delivery**

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

[Order online now](#)

### 10.2. Bürkert product filter



**Bürkert product filter – Get quickly to the right product**

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

[Try out our product filter](#)

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