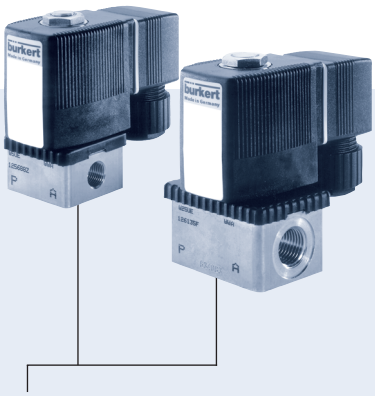
burkert
FLUID CONTROL SYSTEMS

2/2-way direct acting Solenoid Valve, normally closed



- High quality seal material
- High cycling rate
- Special versions up to +180°C
- Threaded port and sub-base connections
- Compact design

Type 6013 can be combined with…

Type 2508
Cable plug

Type 1078
Timer unit

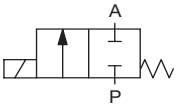
Type 2511
ASI cable plug

This direct-acting 2/2-way miniature solenoid valve is available in two versions.

Standard version:
Type 6013 is a small direct acting solenoid valve for general purpose used for shut-off, dosing, filling, ventilating and for technical vacuum. It is of modular design and may be mounted individually or as a block on a multiple manifold.

Analysis and vacuum technology:
Type 6013 A is a high-quality small solenoid valve for analysis and vaccum technology. It is manufactured under clean-room conditions. This includes thorough cleaning of all parts in contact with media from organic and inorganic substances. The limit for residual hydrocarbons is below 0.2 mg/dm². 100 % of the valves are subjected to a special leakage test with regard to tight seating and tightness to the exterior. The permissible leakage rate is 10^{-4} mbar l/s. The valve is used for shut-off, dosing, filling, ventilating and particularly for analysis technology.

Circuit function A



2/2-way valve, normally closed by spring force

Technical data	
Body materials Type 6013 Type 6013 A	 Brass, Stainless steel 1.4305 Brass, Stainless steel 1.4305
Seal material	FKM, PTFE/Graphite (EPDM on request)
Analysis version (Type 6013 A)	silicon, oil and fat free version Tightness <10^{-4} mbar l/s
Limit value for risidual carbon (Type 6013 A)	<0,2 mg/dm²
Media Type 6013 Type 6013 A	 ▪ technical vacuum ▪ neutral gases and liquids (e.g. compressed air, water, hydraulic oil) ▪ neutral media, which do not attack the body and seal materials (see chemical resistance chart)
Media temperature FKM PTFE/Graphite	 -10 to +100 °C (PA coil) till 120°C (Epoxy coil) to +180 °C (see chemical resistance chart)
Ambient temperature	max. +55 °C
Viscosity	max. 21 mm²/s
Port connection Type 6013 Type 6013 A	 G1/8, G1/4, G3/8, sub-base G1/8, G1/4
Operating voltage Type 6013 Type 6013 A	 24 V DC, 24 V/50 Hz, 230 V / 50 Hz 24 V DC, 230 V / 50 Hz (other voltages on request)
Voltage tolerance	± 10%
Duty cycle/Single valve with block assembly on manifold	100% Continuous rating Intermittent operation 60% (30 min)
Electrical connection	Tag connector acc. to DIN EN 175301-803 Form A (previously DIN 43650) for cable plug Type 2508 (see Accessories)
Installation	As required, preferably with actuator upright
Assembly	no oils, fats or silicone to be used during assembly
Protection class	IP65 with cable plug
Insulation class	Polyamide coil B Epoxy coil H

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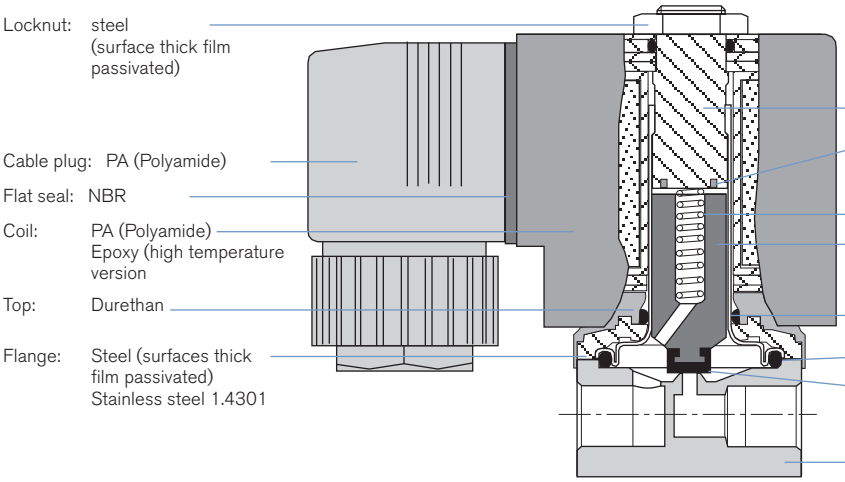
Technical data, continued

Orifice [mm]	Port connection	Kv value water [m³/h]	Pressure range AC [bar]	Pressure range DC [bar]	Power consumption [1] [W]	Elec. power Inrush (AC)	Elec. power Hold (AC)	Coil size	Response times opening [ms]	Response times closing [ms]
2.0	G1/8	0.12	0-25	0-12	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.0	G1/4	0.12	0-25	0-12	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.0	sub-base	0.12	0-25	0-12	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.5	G1/8	0.16	0-16	0-10	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.5	G1/4	0.16	0-16	0-10	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	G1/8	0.23	0-10	0-6	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	G1/4	0.23	0-10	0-6	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	G3/8	0.23	0-14	0-8	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30
4.0	G1/4	0.30	0-4	0-1.5	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
4.0	G3/8	0.30	0-6	0-2.5	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30
6.0	G1/4	0.55	0-1.5	0-0.5	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
6.0	G3/8	0.55	0-2.5	0-0.75	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30

[1] Values in brackets at coil temperature 20°C

Material



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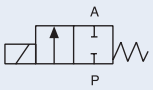
Ordering chart for valves (Further versions on request)

6013 Universal valve with FKM seal, brass and stainless steel body (Polyamide coil)

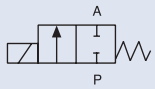
Delivered without cable plug (see accessories)

Circuit function	Orifice [mm]	Port connection	Kv value water [m³/h]	Coil power [W]	Pressure range [bar]	Voltage/ Frequency [V/Hz]	Weight [g]	Item no. brass body FKM seal	Item no. stainless steel body, FKM seal
A 2/2-way Valve NC 	2.0	G 1/8	0.12	8	0 - 12	024/DC	325	134 237	134 233
					0 - 25	024/50		132 865	134 234
					0 - 25	230/50		134 239	134 236
		G 1/4	0.12	8	0 - 12	024/DC	325	137 537	137 533
					0 - 25	024/50		137 538	137 534
					0 - 25	230/50		137 540	137 536
		sub-base	0.12	8	0 - 12	024/DC	280	134 244	–
					0 - 25	024/50		134 245	–
					0 - 25	230/50		134 247	–
	2.5	G 1/8	0.16	8	0 - 10	024/DC	325	134 240	–
					0 - 16	024/50		134 241	–
					0 - 16	230/50		134 243	–
	3.0	G 1/8	0.23	8	0 - 6	024/DC	325	126 091	126 078
					0 - 10	024/50		126 092	126 079
					0 - 10	230/50		126 094	126 081
		G 1/4	0.23	8	0 - 6	024/DC	430	125 301	125 317
					0 - 10	024/50		125 302	126 082
					0 - 10	230/50		125 304	126 084
	4.0	G 1/4	0.30	8	0 - 1.5	024/DC	430	125 306	125 318
					0 - 4	024/50		125 307	125 319
					0 - 4	230/50		125 309	125 320
	6.0	G 1/4	0.55	8	0 - 0.5	024/DC	430	125 311	125 086
					0 - 1.5	024/50		125 312	125 087
					0 - 1.5	230/50		125 314	125 189

Ordering chart for valves

6013 Universal valve with FKM seal, G 3/8, brass body (Polyamide coil)

Delivered without cable plug (see accessories)

Circuit function	Orifice [mm]	Port connection	Kv value water [m³/h]	Coil power [W]	Pressure range [bar]	Voltage/ Frequency [V/Hz]	Weight [g]	Item no. brass body, FKM seal	Item no. stainless steel body, FKM seal
A 2/2-way Valve NC 	3.0	G 3/8	0.23	10	0 – 8	024/DC	500	134 248	135 430
					0 – 14	024/50		134 249	135 431
					0 – 14	230/50		134 251	135 433
	4.0	G 3/8	0.30	10	0 – 2.5	024/DC	500	134 252	135 434
					0 – 6	024/50		134 253	135 435
					0 – 6	230/50		134 255	135 437
	6.0	G 3/8	0.55	10	0 – 0.75	024/DC	500	134 256	135 438
					0 – 2.5	024/50		134 257	135 439
					0 – 2.5	230/50		134 259	135 441

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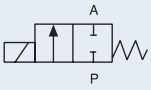
Ordering chart for valves

6013 Valves for high temperature applications (to ±180°C), PTFE seat seal, Brass body

Delivered without cable plug (see accessories)
Brass body with Stainless steel seat
(Epoxy coil)

Circuit function	Orifice [mm]	Port connection	Kv value water [m³/h]	Coil power [W]	Pressure range [bar]	Voltage/ Frequency [V/Hz]	Item no.
A 2/2-way valve NC	2,0	G 1/4	0,12	8	0 – 12	024/DC	136 015
					0 – 25	024/50	136 016
					0 – 25	230/50	136 018
	3,0	G 1/4	0,23	10	0 – 6	024/DC	136 019
					0 – 10	024/50	136 020
					0 – 10	230/50	136 022
		G 3/8	0,23	10	0 – 8	024/DC	136 023
					0 – 14	024/50	136 024
					0 – 14	230/50	136 026

6013 Analytical valve see page 5

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Technical Data - Analytical version

Analytical version	Media flowing through are not contaminated
Limit value for risidual carbon	< 0,2 mg/dm²
Permissible leakage rate media	10^{-4} mbar l/sec ▪ neutral media, which do not attack the body and seal materials ▪ technical vacuum
Elec. connection	tag connector acc. to DIN EN 175301-803 A (previoulsy DIN43650) for cable plug Type 2508 (see accessories)
Assembly note	no oils, fats or silicone used during the assembly

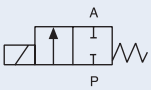
Solenoid valves for higher Requirements
This version is suitable particularly for highly pure gaseous and liquid media. All media-affected parts are submitted to additional purification processes, so that the media is not contaminated under any circumstances. The assembly takes place under clean-room conditions.

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

Ordering chart for valves (further versions on request)

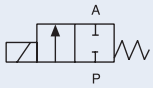
6013A Analytical valve with brass body and FKM seal, (Polyamide coil)

Delivered without cable plug (see accessories)

Circuit function	Orifice [mm]	Port connection	Kv value water [m³/h]	Pressure range [bar]	Coil power [W]	Weight [g]	Voltage/ Frequency [V/Hz]	Item no.
A 2/2-way valve NC 	2.0	G 1/8	0.12	0-12	8	325	24/DC	137 826
				0-25			230/50	137 827
	2.5	G1/8	0.16	0-10	8	325	24/DC	137 828
				0-16			230/50	137 829
	3.0	G 1/4	0.23	0-6	8	430	24/DC	137 830
				0-10			230/50	137 831
	4.0	G 1/4	0.30	0-2	8	430	24/DC	137 132
				0-4			230/50	137 833

6013A Analytical valve with stainless steel body and FKM seal, (Polyamide coil)

Delivered without cable plug (see accessories)

Circuit function	Orifice [mm]	Port connection	Kv value water [m³/h]	Pressure range [bar]	Coil power [W]	Weight [g]	Voltage/ Frequency [V/Hz]	Item no.
A 2/2-way valve NC 	2.0	G 1/8	0.12	0-12	8	325	24/DC	137 818
				0-25			230/50	137 819
	2.0	G1/4	0.12	0-12	8	430	24/DC	137 820
				0-25			230/50	137 821
	3.0	G 1/4	0.23	0-6	8	430	24/DC	137 822
				0-10			230/50	137 823
	4.0	G 1/4	0.30	0-2	8	500	24/DC	137 824
				0-4			230/50	137 825

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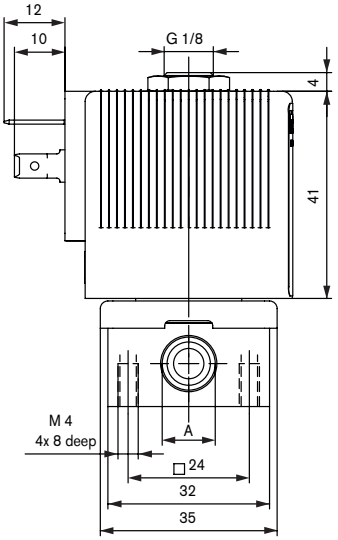
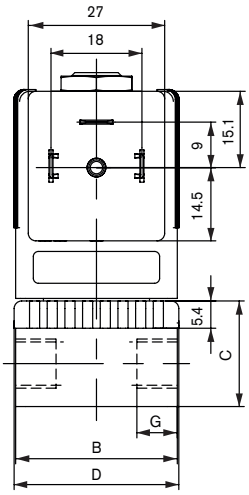
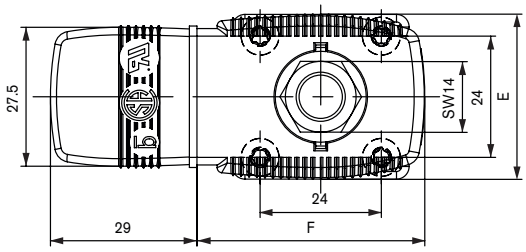
Dimensions [mm]

View without cable plug

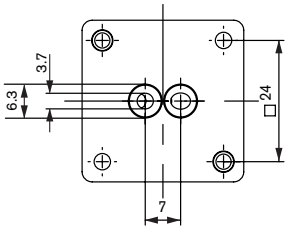


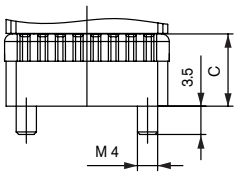




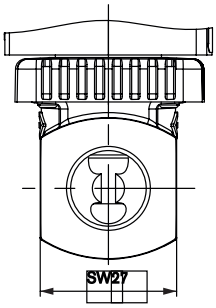
Sub-base version

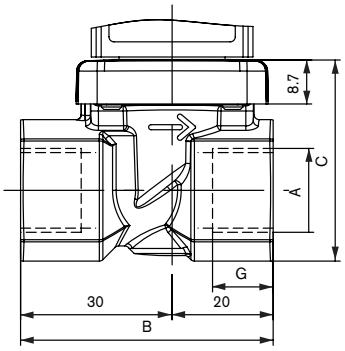
underside view





G3/8 connection





Port connection	Body dimensions [mm]					Coil width	Coil depth
	A	B	C	D	G	E [mm]	F [mm]
G1/8	G1/8	32	20.8	32.6	8	32 (8W)	45 (8W)
G1/4	G1/4	46	26.8	49	12	32 (8W)	45 (8W)
G3/8	G3/8	50	39.8	49	12	40 (10W)	51 (10W)
sub-base	–	32	14.3	32.6	–	32 (8W)	45 (8W)

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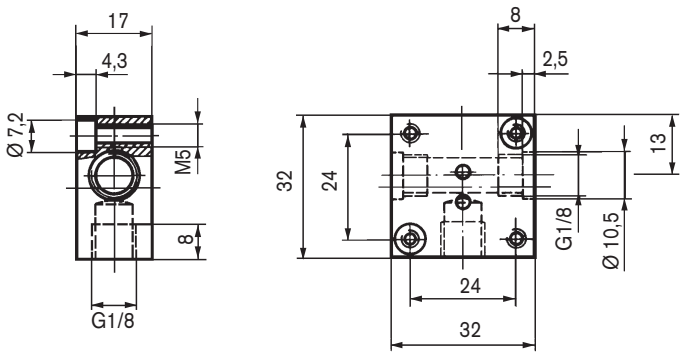
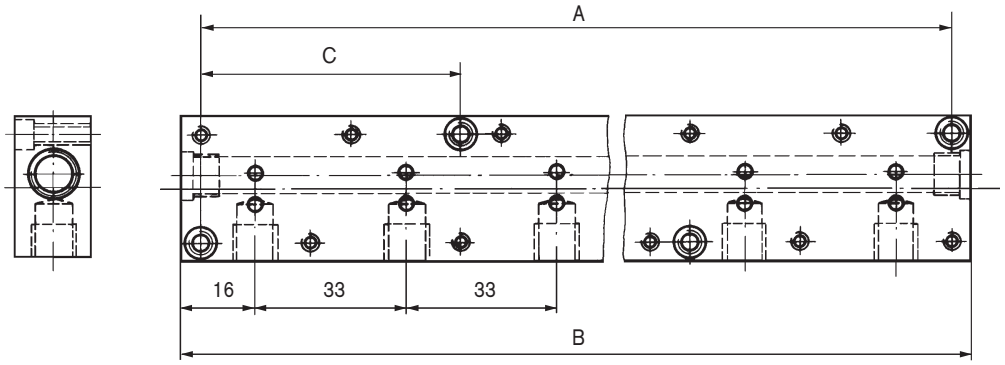
Block assembly

Single manifold



Multiple manifold



Ordering chart for assembly

Accessory part	Quantity of valve places				Item no.
Single manifold	in Aluminium				005 020
Multiple manifold	in Aluminium	Hole spacing A [mm]	Total length B [mm]	Hole spacing C [mm]	
	2	57	65	–	005 023
	3	90	98	–	005 286
	4	123	131	–	005 287
	5	156	164	57	005 035
	6	189	197	57	005 038
	8	255	263	57	005 386
	10	321	329	90	005 764
Connector nipple	with O-Ring, to connect from manifold				005 040
Covering plate	with screws and O-ring for locking unoccupied valve positions				005 630

With manifold mounting, please comply with the permissible duty cycle (5 W models with 100% continuous rating or 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 agree 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.

Caution!
Unused, open valve ports must be closed off with covering plates (see Accessories).

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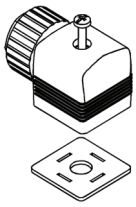
Ordering chart for accessories

The flat seal and the fixing screw are included in the delivery.
Other versions with cable plug acc. to DIN EN 175301-803
(previously DIN43650), see Datasheet: Type 2508.



Type 2508 Cable plug
acc. to DIN EN 175301-803
(previously DIN 43650)

Circuitry	Voltage	Item no.
without circuitry	0-250 V	008 376
with LED	12-24 V	008 360
with LED and Varistor	12-24 V	008 367
with LED and Varistor	200-240 V	008 369
further versions	see Datasheet: Type 2508	

Further versions on request

Approvals
Ex version
UL / UR / CSA
ATEX
FM / CSA-EX Div 1/2
European gas approval Class A, Group 2

Port Connection
Threaded port NPT, Rc

Voltage
Further voltages

Materials
Sealing material EPDM

Pressure
Variants with increased coil power for higher media pressure

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