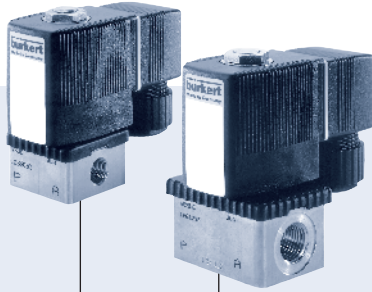
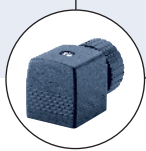


## 2/2-way direct acting Solenoid Valve, normally closed



- High quality seal material
- High cycling rate
- Special versions up to 356°F (+180°C)
- Threaded port and sub-base connections
- Compact design

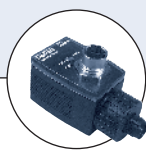
Type 6013 can be combined with...



**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.

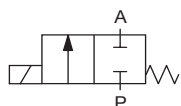
### Standard version:

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 vacuum 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/dm<sup>3</sup>. 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<sup>-4</sup> 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

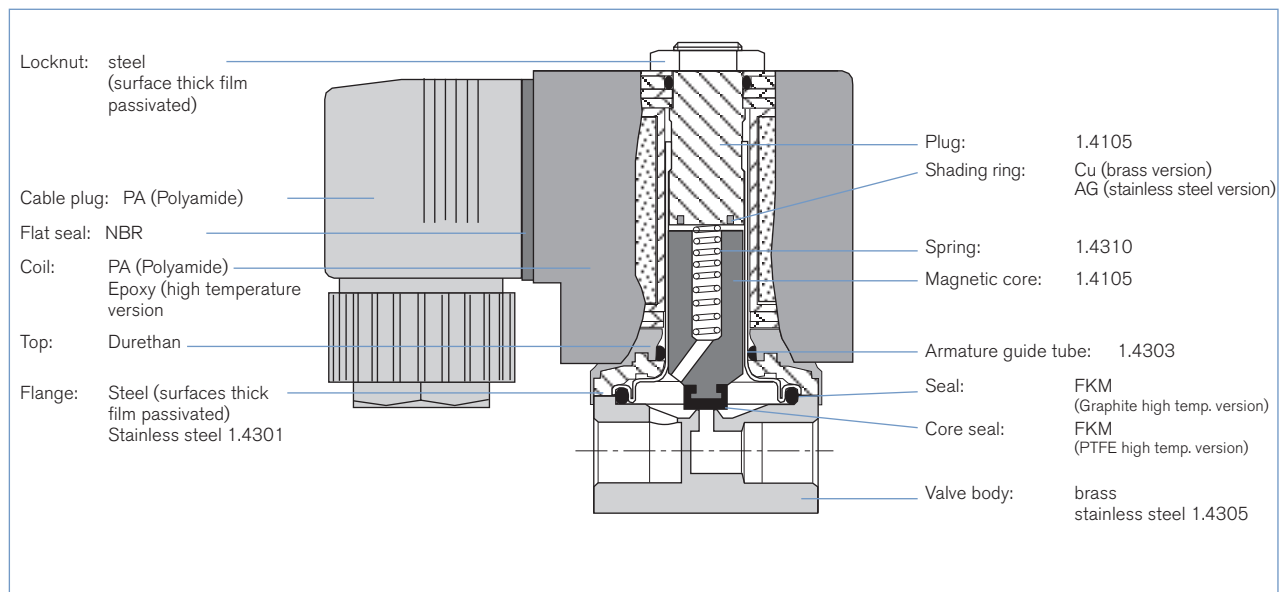
Technical data	
<b>Body materials</b> Type 6013 Type 6013 A	Brass, Stainless steel 1.4305 Brass, Stainless steel 1.4305
<b>Seal material</b>	FKM, PTFE/Graphite (EPDM on request)
<b>Analysis version</b> (Type 6013 A)	silicon, oil and fat free version Tightness < 10 <sup>-4</sup> mbar l/s
<b>Limit value for residual carbon</b> (Type 6013 A)	< 0,2 mg/dm <sup>3</sup>
<b>Media</b> Type 6013  Type 6013 A	<ul style="list-style-type: none"> <li>▪ technical vacuum</li> <li>▪ neutral gases and liquids (e.g. compressed air, water, hydraulic oil)</li> <li>▪ neutral media, which do not attack the body and seal materials (see chemical resistance chart)</li> </ul>
<b>Media temperature</b> FKM  PTFE/Graphite	14°F to 212°F (-10°C to +100°C) (PA coil) till 248°F (120°C) (Epoxy coil) to 356°F (+180°C) (see chemical resistance chart)
<b>Ambient temperature</b>	max. 131°F (+55°C)
<b>Viscosity</b>	max. 21 cSt
<b>Port connection</b> Type 6013 Type 6013 A	NPT 1/8, NPT 1/4, NPT 3/8, sub-base G1/8, G1/4
<b>Operating voltage</b> Type 6013 Type 6013 A	24 V DC, 24 V/60 Hz, 120 V / 60 Hz, 240 V / 60 Hz 24 V DC, 230 V / 50 Hz (other voltages on request)
<b>Voltage tolerance</b>	± 10%
<b>Duty cycle/Single valve</b> with block assembly on manifold	100% Continuous rating Intermittent operation 60% (30 min)
<b>Electrical connection</b>	Tag connector acc. to DIN EN 175301-803 Form A (previously DIN 43650) for cable plug Type 2508 (see Accessories)
<b>Installation</b>	As required, preferably with actuator upright
<b>Assembly</b>	no oils, fats or silicone to be used during assembly
<b>Protection class</b>	IP65 with cable plug
<b>Insulation class</b>	Polyamide coil B Epoxy coil H

## Technical data, continued

Orifice [mm]	Port connection	C <sub>v</sub> value water [GPM]	Pressure range		Power consumption <sup>1)</sup> [W]	Elec. power		Coil size	Response times	
			AC [PSI]	DC [PSI]		Inrush (AC)	Hold (AC)		opening [ms]	closing [ms]
2.0	1/8	0.14	0 – 362.5	0 – 174	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.0	1/4	0.14	0 – 362.5	0 – 174	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.0	sub-base	0.14	0 – 362.5	0 – 174	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.5	1/8	0.18	0 – 232	0 – 145	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
2.5	1/4	0.18	0 – 232	0 – 145	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	1/8	0.26	0 – 145	0 – 87	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	1/4	0.26	0 – 145	0 – 87	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
3.0	3/8	0.26	0 – 203	0 – 116	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30
4.0	1/4	0.35	0 – 58	0 – 21.75	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
4.0	3/8	0.35	0 – 87	0 – 36.25	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30
6.0	1/4	0.64	0 – 21.75	0 – 7.25	8W AC or 8W DC (9)	24 VA	17 VA	5 (32mm)	20	30
6.0	3/8	0.64	0 – 36.25	0 – 10.875	10W AC or 10WDC (11)	30 VA	22 VA	6 (40mm)	20	30

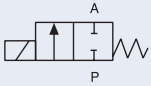
<sup>1)</sup> Values in brackets at coil temperature 68°F (20°C)

## Material



## Ordering chart for valves (other versions on request)

### General purpose valves with brass body and FKM seals

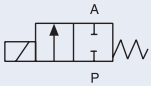
Circuit function	Orifice [mm]	Port connection [NPT]	C <sub>v</sub> value [GPM]	Wattage	Pressure range [PSI]	Voltage/Frequency [V/Hz]	Item no. <sup>1)</sup> UL listed FM Class 1 Div 2 CSA / CE	Item no. <sup>2)</sup> UL recognized CSA / CE
<b>A</b> 2/2-way Valve NC 	2.0	NPT 1/8"	0.14	8	0 – 174	024/DC	457 314	457 294
					0 – 362	024/60	457 315	457 295
					0 – 362	120/60	457 316	457 296
					0 – 362	240/60	457 317	457 297
	2.5	NPT 1/8"	0.19	8	0 – 145	024/DC	457 318	457 298
					0 – 232	024/60	457 319	457 299
					0 – 232	120/60	457 320	457 300
					0 – 232	240/60	457 321	457 301
	3.0	NPT 1/8"	0.27	8	0 – 87	024/DC	456 506	456 315
					0 – 145	024/60	456 507	456 316
					0 – 145	120/60	456 508	456 317
					0 – 145	240/60	456 509	456 318
		NPT 1/4"	0.27	8	0 – 87	024/DC	456 510	456 319
					0 – 145	024/60	456 511	456 320
					0 – 145	120/60	456 512	456 321
					0 – 145	240/60	456 513	456 322
	4.0	NPT 1/4"	0.35	8	0 – 22	024/DC	456 514	456 323
					0 – 58	024/60	456 515	456 324
					0 – 58	120/60	456 516	456 325
					0 – 58	240/60	456 517	456 326
6.0	NPT 1/4"	0.64	10	0 – 11	024/DC	–	456 848	
				0 – 36	024/60	–	456 849	
				0 – 36	120/60	–	456 850	
				0 – 36	240/60	–	456 851	

1) Includes Type 2509 series 1/2" conduit plug

2) Includes Type 2508 series standard cable plug

## Ordering chart for valves (other versions on request)

### General purpose valves with stainless steel body and FKM seals

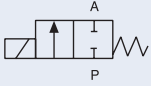
Circuit function	Orifice [mm]	Port connection [NPT]	C <sub>v</sub> value [GPM]	Wattage	Pressure range [PSI]	Voltage/Frequency [V/Hz]	Item no. <sup>1)</sup> UL listed FM Class 1 Div 2 CSA / CE	Item no. <sup>2)</sup> UL recognized CSA / CE
<b>A</b> 2/2-way Valve NC 	2.0	NPT 1/8"	0.14	8	0 – 174	024/DC	457 322	457 302
					0 – 362	024/60	457 323	457 303
					0 – 362	120/60	457 324	457 304
					0 – 362	240/60	457 325	457 305
	3.0	NPT 1/8"	0.27	8	0 – 87	024/DC	456 522	456 331
					0 – 145	024/60	456 523	456 332
					0 – 145	120/60	456 524	456 333
					0 – 145	240/60	456 525	456 334
		NPT 1/4"	0.27	8	0 – 87	024/DC	456 526	456 335
					0 – 145	024/60	456 527	456 336
					0 – 145	120/60	456 528	456 337
					0 – 145	240/60	456 529	456 338
	4.0	NPT 1/4"	0.35	8	0 – 22	024/DC	456 530	456 494
					0 – 58	024/60	456 531	456 495
					0 – 58	120/60	456 532	456 496
					0 – 58	240/60	456 533	456 497

1) Includes Type 2509 series 1/2" conduit plug

2) Includes Type 2508 series standard cable plug

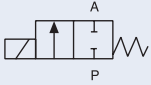
Ordering chart for valves (other versions on request)

Valves for high temperatures (up to 356°F), PTFE/graphite seal, brass body, stainless steel seat

Circuit function	Orifice [mm]	Port connection [NPT]	C <sub>v</sub> value [GPM]	Wattage	Pressure range [PSI]	Voltage/Frequency [V/Hz]	Item no. CE
	2.0	NPT 1/4"	0.14	8	0 - 174	024/DC	457 376
					0 - 362	024/60	457 377
					0 - 362	120/60	457 378
					0 - 362	240/60	457 379
	3.0	NPT 1/4"	0.27	10	0 - 115	024/DC	457 380
					0 - 203	024/60	457 381
					0 - 203	120/60	457 382
					0 - 203	240/60	457 383

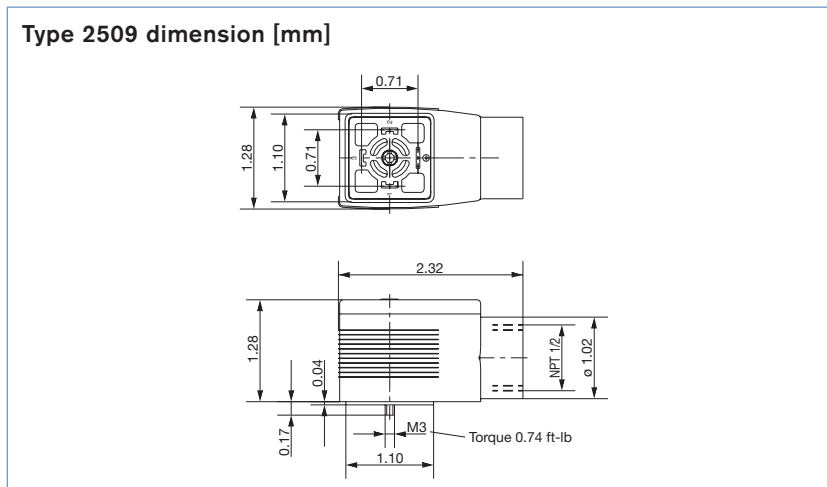
Ordering chart for valves (other versions on request)

Valves for flange versions with brass body and FKM seals

Circuit function	Orifice [mm]	Port connection	C <sub>v</sub> value [GPM]	Wattage	Pressure range [PSI]	Voltage/Frequency [V/Hz]	Item no. UL listed	Item no. UL recognized
	2.0	Flange	0.14	8	0 - 174	024/DC	457 326	457 310
					0 - 362	024/60	457 327	457 311
					0 - 362	120/60	457 328	457 312
					0 - 362	240/60	457 329	457 313
	3.0	Flange	0.27	8	0 - 87	024/DC	456 696	456 675
					0 - 145	024/60	456 697	456 676
					0 - 145	120/60	456 698	456 677
					0 - 145	240/60	456 699	456 678

Coils acc. EEx. Approvals on request.

6013 Analytical valve see page 5



## Technical Data - Analytical version

<b>Analytical version</b>	Media flowing through are not contaminated
<b>Limit value for residual carbon</b>	< 0,2 mg/dm <sup>2</sup>
<b>Permissible leakage rate media</b>	10 <sup>-4</sup> mbar l/sec <ul style="list-style-type: none"> <li>▪ neutral media, which do not attack the body and seal materials</li> <li>▪ technical vacuum</li> </ul>
<b>Elec. connection</b>	tag connector acc. to DIN EN 175301-803 A (previously DIN43650) for cable plug Type 2508 (see accessories)
<b>Assembly note</b>	no oils, fats or silicone used during the assembly

**Solenoid valves for higher Requirements**

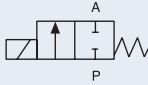
This version is suitable particularly for highly pure gaseous and liquid media. All media-affected parts are submitted to additional purification processes, so that the media is not contaminated under any circumstances. The assembly takes place under clean-room conditions.

The tightness test takes place at the Helium leak detector from a min. of 10<sup>-4</sup> mbar l/sec.

## Ordering chart for valves (further versions on request)

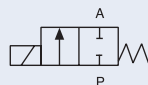
**6013A Analytical valve with brass body and FKM seal, (Polyamide coil)**

Delivered without cable plug (see accessories)

Circuit function	Orifice [mm]	Port connection	C <sub>v</sub> value water [GPM]	Pressure range [PSI]	Coil power [W]	Weight [g]	Voltage/Frequency [V/Hz]	Item no.
A 2/2-way valve NC 	2.0	G 1/8	0.14	0 – 174	8	325	24/DC	137 826
				0 – 362.5			230/50	137 827
	2.5	G1/8	0.18	0 – 145	8	325	24/DC	137 828
				0 – 232			230/50	137 829
	3.0	G 1/4	0.26	0 – 87	8	430	24/DC	137 830
				0 – 145			230/50	137 831
	4.0	G 1/4	0.35	0 – 29	8	430	24/DC	137 132
				0 – 58			230/50	137 833

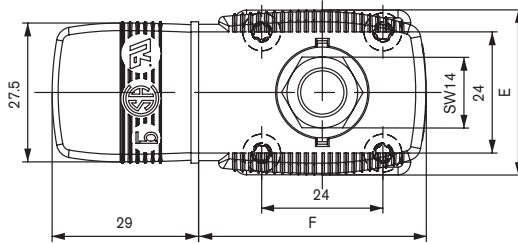
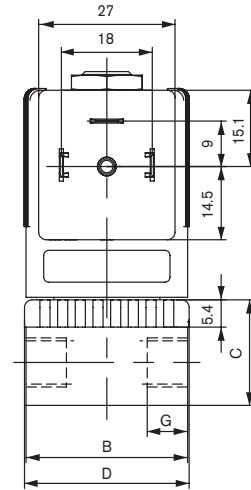
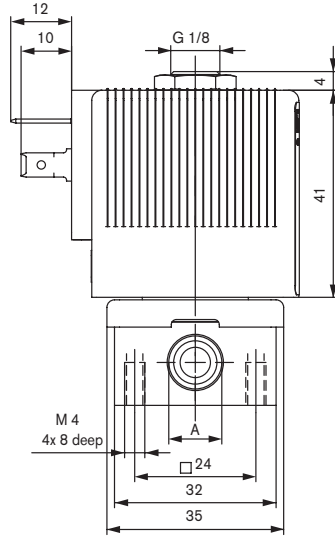
**6013A Analytical valve with stainless steel body and FKM seal, (Polyamide coil)**

Delivered without cable plug (see accessories)

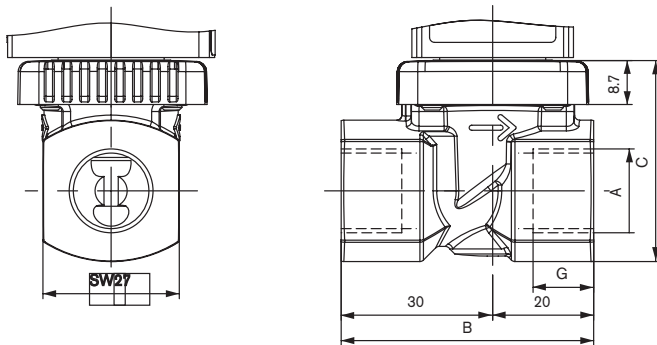
Circuit function	Orifice [mm]	Port connection	C <sub>v</sub> value water [GPM]	Pressure range [PSI]	Coil power [W]	Weight [g]	Voltage/Frequency [V/Hz]	Item no.
A 2/2-way valve NC 	2.0	G 1/8	0.14	0 – 174	8	325	24/DC	137 818
				0 – 362.5			230/50	137 819
	2.0	G1/4	0.14	0 – 174	8	430	24/DC	137 820
				0 – 362.5			230/50	137 821
	3.0	G 1/4	0.26	0 – 87	8	430	24/DC	137 822
				0 – 145			230/50	137 823
	4.0	G 1/4	0.35	0 – 29	8	500	24/DC	137 824
				0 – 58			230/50	137 825

Dimensions [mm]

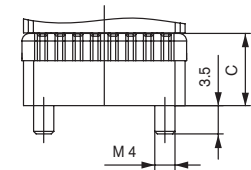
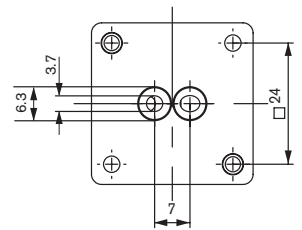
View without cable plug



NPT 3/8 connection

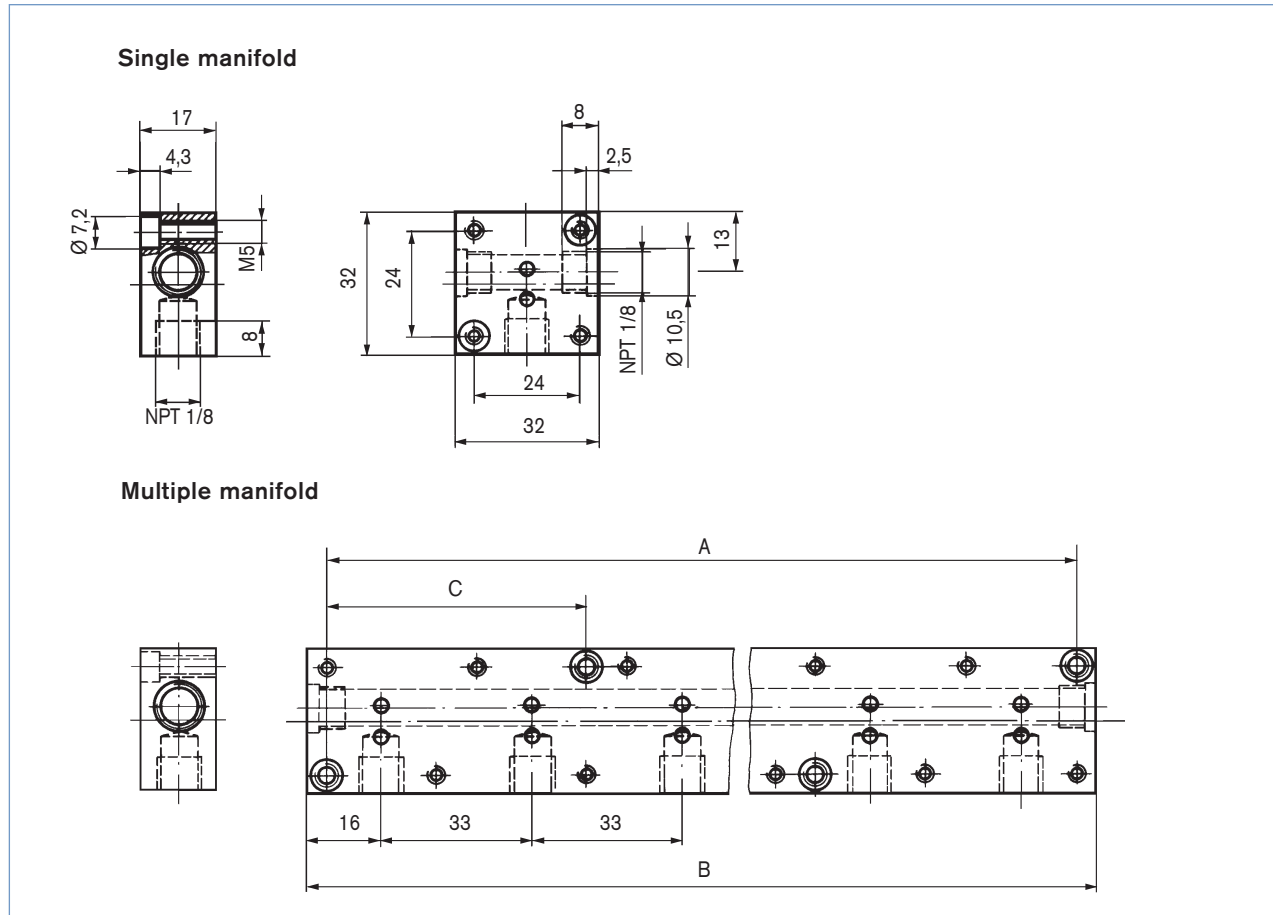


Sub-base version  
underside view



Port connection	Body dimensions [mm]					Coil width E [mm]	Coil depth F [mm]
	A	B	C	D	G		
NPT 1/8	NPT 1/8	32	20.8	32.6	8	32 (8W)	45 (8W)
NPT 1/4	NPT 1/4	46	26.8	49	12	32 (8W)	45 (8W)
NPT 3/8	NPT 3/8	50	39.8	49	12	40 (10W)	51 (10W)
sub-base	-	32	14.3	32.6	-	32 (8W)	45 (8W)

## Block assembly



## Ordering chart for assembly

Accessory part	Quantity of valve places				Item no.
Single manifold	in Aluminium				613 827
Multiple manifold	in Aluminium	Hole spacing A [mm]	Total length B [mm]	Hole spacing C [mm]	
	2	57	65	–	006 104
	3	90	98	–	613 828
	4	123	131	–	006 106
	5	156	164	57	613 829
	6	189	197	57	613 598
	8	255	263	57	613 831
Connector nipple	with O-Ring, to connect multiple manifolds				005 040
Covering plate	with screws and FKM O-ring for covering unoccupied valve positions				006 193

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.

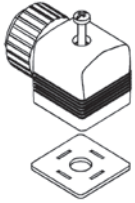
2/2-way valves of Type 6013 can be operated together on a manifold with 3/2-way valves of Type 6014, circuit function C (not D or TI) if the operating pressures agree according to the rating plates. The manifolds can also be expanded if the valve functions are taken into consideration. Connector nipples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

## 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	

### i Further versions on request



#### Approvals

Ex version  
ATEX  
European gas approval Class A, Group 2



#### Voltage

Further voltages



#### Materials

Sealing material EPDM, NBR



#### Pressure

Variants with increased coil power for higher media pressure