



3/2-way flipper solenoid valve, direct-acting

- Direct-acting
- 0 to 10 bar
- Low power consumption
- Standard, Ex ia version
- 10 mm installation width / 11 mm width/station



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

Can be combined with



Type 6524 ▶
3/2-way or 2 x 3/2-way solenoid valve for pneumatic applications



Type 2505 ▶
10 mm socket for Bürkert small solenoid valves

Type description

Type 6144 is a direct-acting 3/2-way solenoid valve designed for neutral gases and liquids. Through the movement between the two end positions, the switching element (flipper) seals one of the two opposing valve seats and connects the other to the working port. This movement is caused by the magnetic field pushing a permanent magnet, which is fixed to the flipper element, when switching the solenoid. In addition to its exceptional performance characteristics, the flipper principle is especially marked by its very low switching noise and low wear level. Furthermore, integrated medium separation enables use above and beyond pneumatic applications. Depending on the application, various flange connections are available that are suitable for both individual and block installation. Installation advice: The valve must be at least 5 mm away from other ferromagnetic materials in order to avoid malfunctioning during operation.



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Table of contents

1. General technical data	3
2. Product versions	4
2.1. Electrical connection versions	4
2.2. Fluidic connection versions	4
3. Circuit functions	5
4. Materials	5
4.1. Chemical Resistance Chart – Bürkert resistApp.....	5
4.2. Material specifications	5
5. Dimensions	6
5.1. Bürkert flange (10 x 18 mm).....	6
5.2. Single manifold for Bürkert flange (10 x 18 mm).....	7
5.3. Multiple manifold for Bürkert flange (10 x 18 mm).....	7
5.4. Bürkert flange vertical (10 x 32 mm)	8
5.5. Bürkert flange lateral (10 x 42 mm)	9
5.6. Single manifold for Bürkert flange lateral (10 x 42 mm).....	10
5.7. Multiple manifold for Bürkert flange lateral (10 x 42 mm)	11
5.8. Bürkert flange horizontal (26 x 41 mm).....	12
6. Performance specifications	13
6.1. Electrical data ATEX/IECEx ia version.....	13
7. Ordering information	13
7.1. Bürkert eShop – Easy ordering and quick delivery	13
7.2. Bürkert product filter	13
7.3. Ordering chart.....	14
Standard version.....	14
ATEX/IECEx ia version	15
7.4. Ordering chart accessories.....	16
Single manifold for Bürkert flange (10 x 18 mm).....	16
Multiple manifold for Bürkert flange (10 x 18 mm).....	16
Single manifold for Bürkert flange lateral (10 x 42 mm).....	16
Multiple manifold for Bürkert flange lateral (10 x 42 mm)	16
Rectangular cable plug Type 2505	16

1. General technical data

Product properties	
Dimensions	Detailed information can be found in chapter "5. Dimensions" on page 6.
Material	
Seal	FKM (other materials on request)
Fluid housing	PPS
Minimum bending radius for flying leads version	Single bending: 8.5 mm radius
Orifice	DN 0.6
Circuit function	Monostable Detailed information can be found in chapter "3. Circuit functions" on page 5.
Performance data	
Duty cycle	Continuous operation 100 %
Switching time¹⁾	
Standard version	Opening: approx. 8 ms (pressure rise 0...10%) Closing: approx. 10 ms (pressure drop 100...90%)
Explosion-proof version	Opening: approx. 14 ms (pressure rise 0...10%) Closing: approx. 18 ms (pressure drop 100...90%)
Electrical data	
Operating voltage ²⁾	24 V DC, 12 V DC (further voltages on request)
Electrical control	With SPS possible
Nominal power	0.8 W
Voltage tolerance ³⁾	± 10 %
Switching frequency ⁴⁾	Approx. 17 Hz
Medium data	
Operating medium	Compressed air lubricated, oil-free or dry, neutral gases and liquids (5 µm filtering) See chapter "4.1. Chemical Resistance Chart – Bürkert resistApp" on page 5
Medium temperature	- 10 °C...+ 55 °C
Process/Port connection & communication	
Electrical connection	Rectangular plug Type 2505 2 FEP-flying leads 0.2 mm ² , AWG 24, length 500 mm (round plug M8 x 1 or PCB plug RM 5.08 mm on request)
Port connection	Bürkert flange (10 x 18 mm) Bürkert flange vertical (10 x 32 mm) Bürkert flange lateral (10 x 42 mm) Bürkert flange horizontal (26 x 41 mm) UNF ¼"-28 Hose connector
Approvals and certificates	
Degree of protection	IP30 IP65 with flying leads
Protection class	3 acc. VDE 0580
Type of protection	
Standard version	Without
Explosion-proof version	PTB 07 ATEX 2048 X, II 2G Ex ia IIC T4...T6 Gb IECEX PTB 07.0063X, Ex ia IIC T4...T6 Gb
Environment and installation	
Installation position	As required, preferably with actuator upright (5 mm minimum distance to ferromagnetic materials)
Ambient temperature	- 10 °C...+ 55 °C

1.) Measurement at 6 bar and +20 °C at the valve outlet acc. to DIN ISO 12238:2001

2.) Battery voltage, observe polarity as shown on top of the valve

3.) Max. allowed ripple

4.) At ambient temperature +20 °C

2. Product versions

2.1. Electrical connection versions

Note:

- Rectangular plug as standard
- Other connections on request

Rectangular plug Type 2505	2 FEP flying leads 0.2 mm ² , AWG 24, length on request	PCB plug (RM 5.08 mm) (e.g. for PCB mounting 0.63 x 0.63)	Round plug M8 x 1

2.2. Fluidic connection versions

Note:

The materials of the fluidic connections may differ from the fluid housing material mentioned in chapter "1. General technical data".

Bürkert flange (10 x 18 mm)	Bürkert flange vertical (10 x 32 mm)	Bürkert flange lateral (10 x 42 mm)
Bürkert flange horizontal (26 x 41 mm)	UNF 1/4"-28	Hose connector

3. Circuit functions

Symbol	Description
	Circuit function C (CF C) 3/2-way solenoid valve Direct-acting, with manual override Normally closed
	Circuit function D (CF D) 3/2-way solenoid valve Direct-acting, with manual override Normally open

4. Materials

4.1. Chemical Resistance Chart – Bürkert resistApp

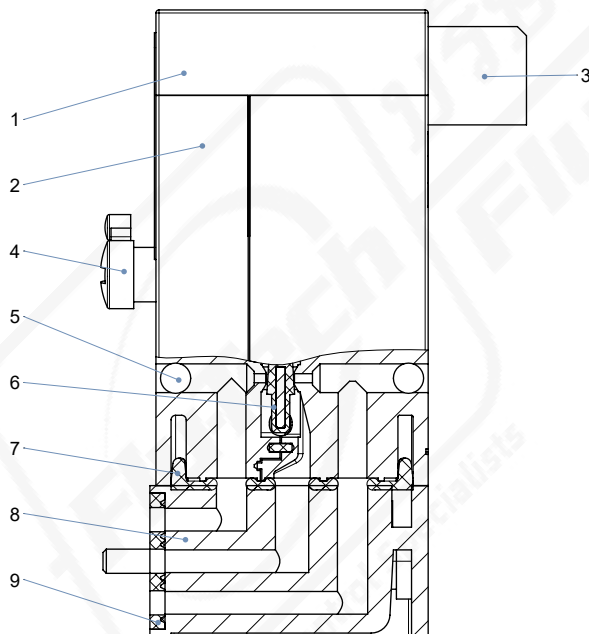


Bürkert resistApp – Chemical Resistance Chart

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](#)

4.2. Material specifications



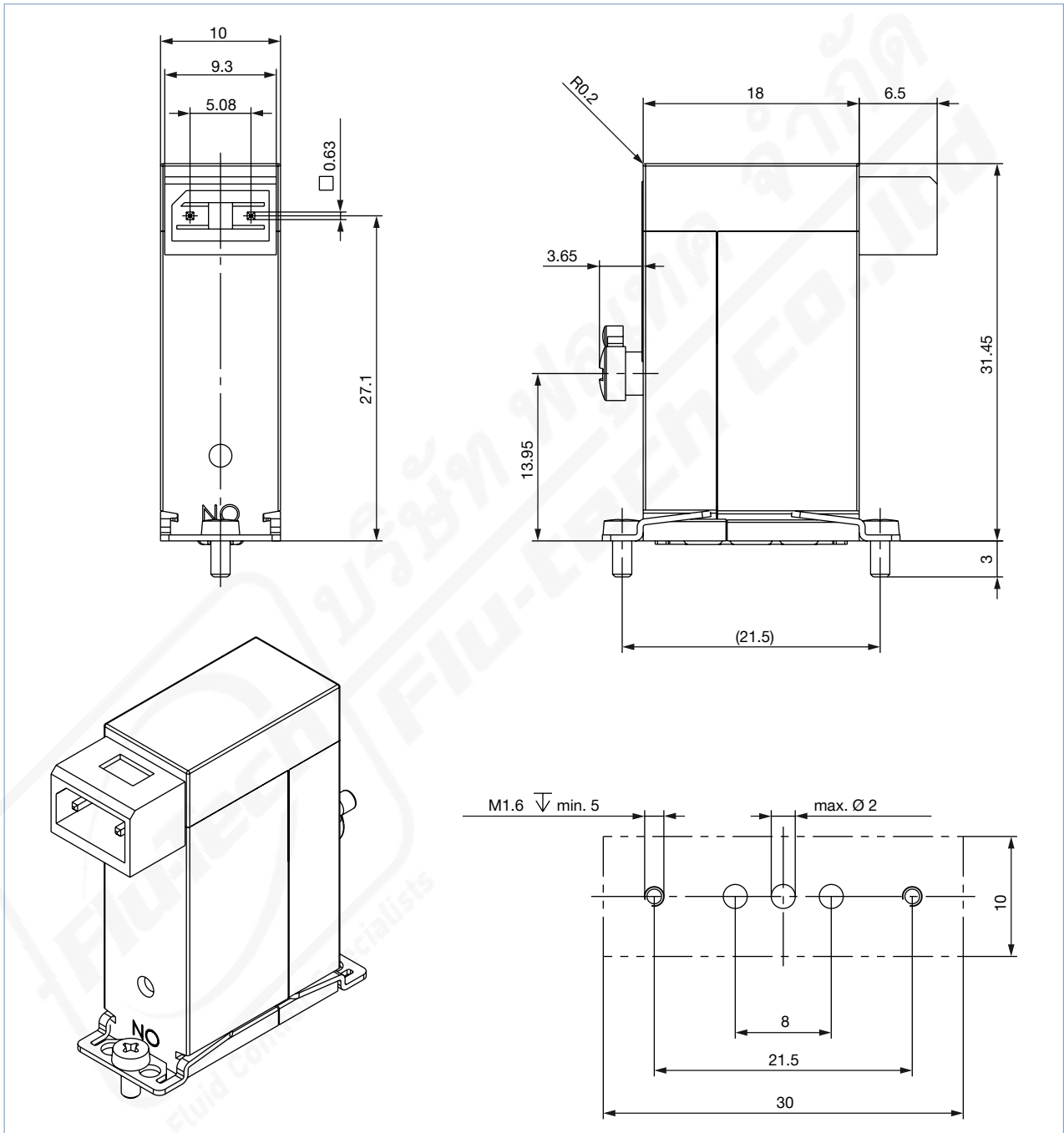
No.	Element	Material
1	Casting compound	Thermelt
2	Housing	PPS
3	Plug (symbolic illustration for all cable connections; other versions on request)	PA
4	Manual override	PA
5	Ball	1.4301
6	Sealing element	FKM, EPDM
7	Sealing mat	FKM, EPDM
8	Port connection (symbolic illustration for all port connections; other versions on request)	PA, PPS, PEEK
9	Seal	FKM

5. Dimensions

5.1. Bürkert flange (10 x 18 mm)

Note:

- Dimensions in mm
- The valve can be supplied with or without manual override (left or right hand side) (Standard position: opposite electrical connection).

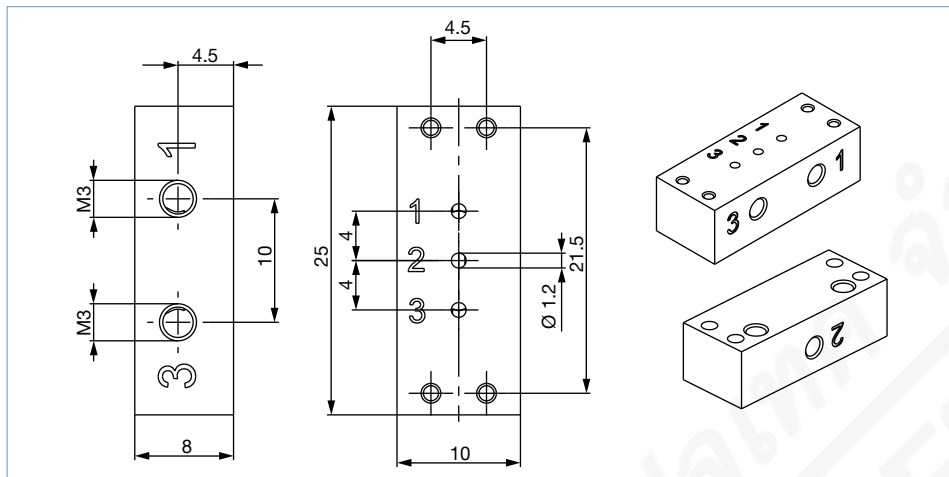


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5.2. Single manifold for Bürkert flange (10 x 18 mm)

Note:

- Dimensions in mm
- Port connection: M3
- Material: aluminium (black anodised)

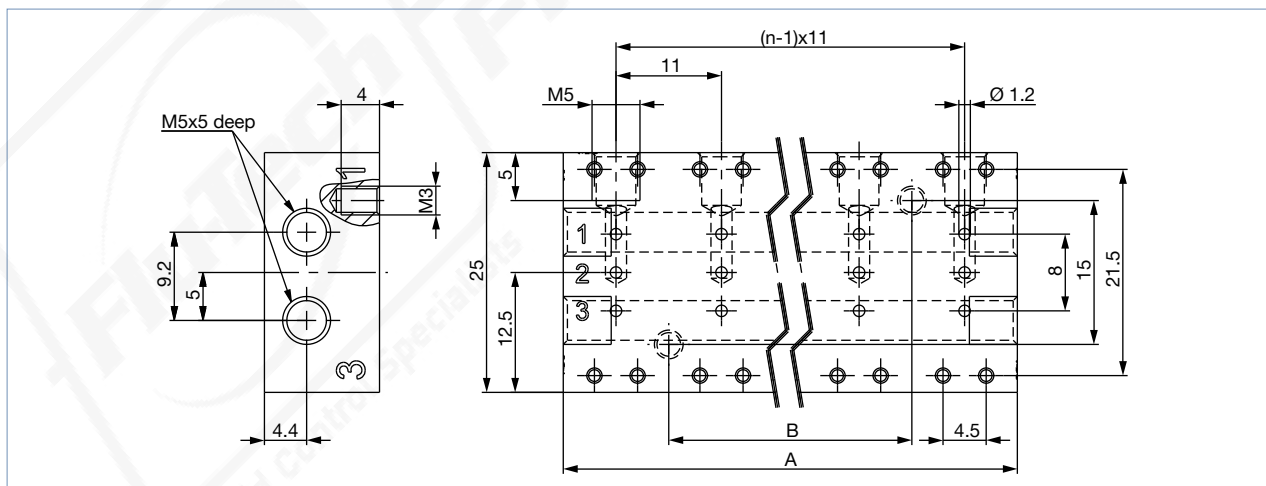


Description	Article no.
Single manifold for Bürkert flange	639873

5.3. Multiple manifold for Bürkert flange (10 x 18 mm)

Note:

- Dimensions in mm
- Port connection: M5
- Material: aluminium (black anodised)



n	A	B	Article no.
2 valves	22	0 ^{1.)}	641911
4 valves	44	22	641912
6 valves	66	44	639874
Blanking plate kit			645512

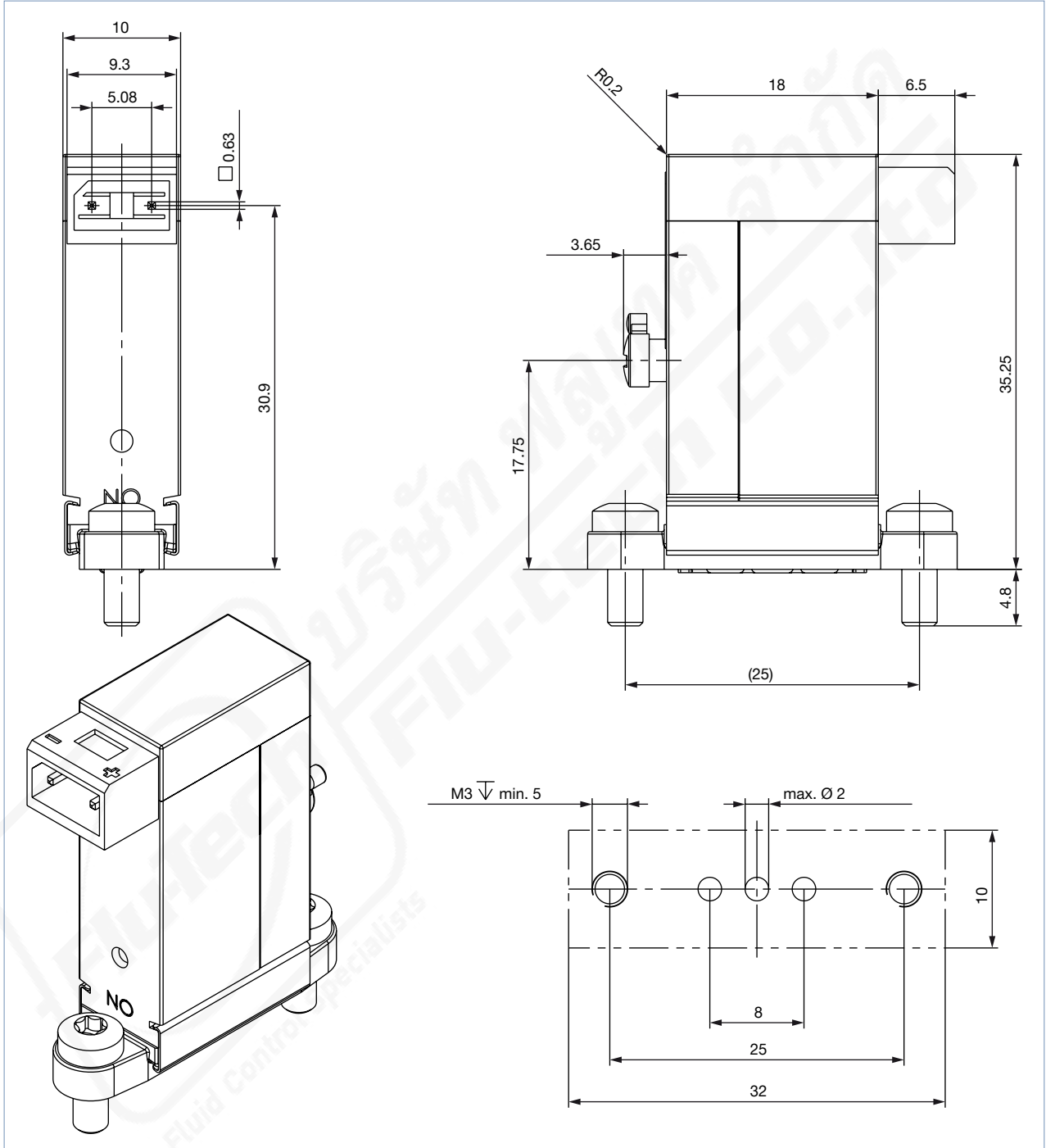
1.) Drill holes are at the same level.

Visit product website

5.4. Bürkert flange vertical (10 x 32 mm)

Note:

- Dimensions in mm
- The valve can be supplied with or without manual override (left or right hand side) (Standard position: opposite electrical connection).

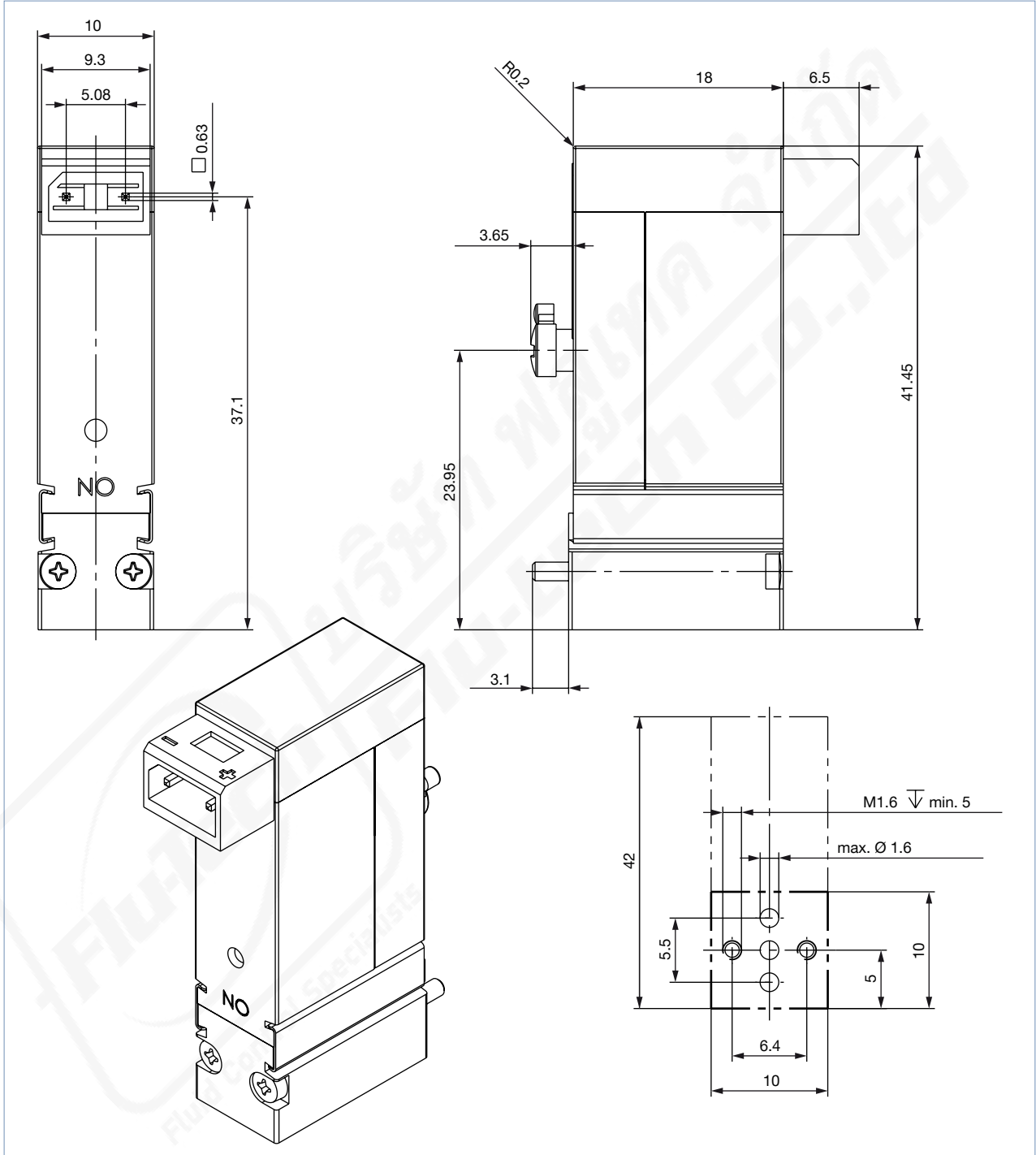


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5.5. Bürkert flange lateral (10 x 42 mm)

Note:

- Dimensions in mm
- The valve can be supplied with or without manual override (left or right hand side) (Standard position: opposite electrical connection).

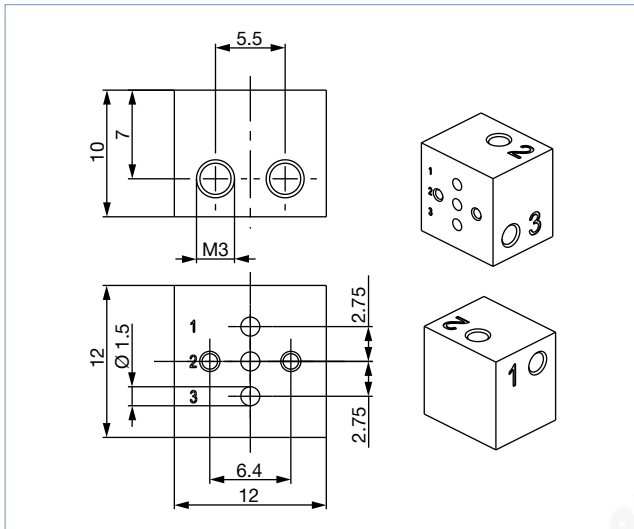


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5.6. Single manifold for Bürkert flange lateral (10 x 42 mm)

Note:

- Dimensions in mm
- Port connection: M3
- Material: aluminium (black anodised)



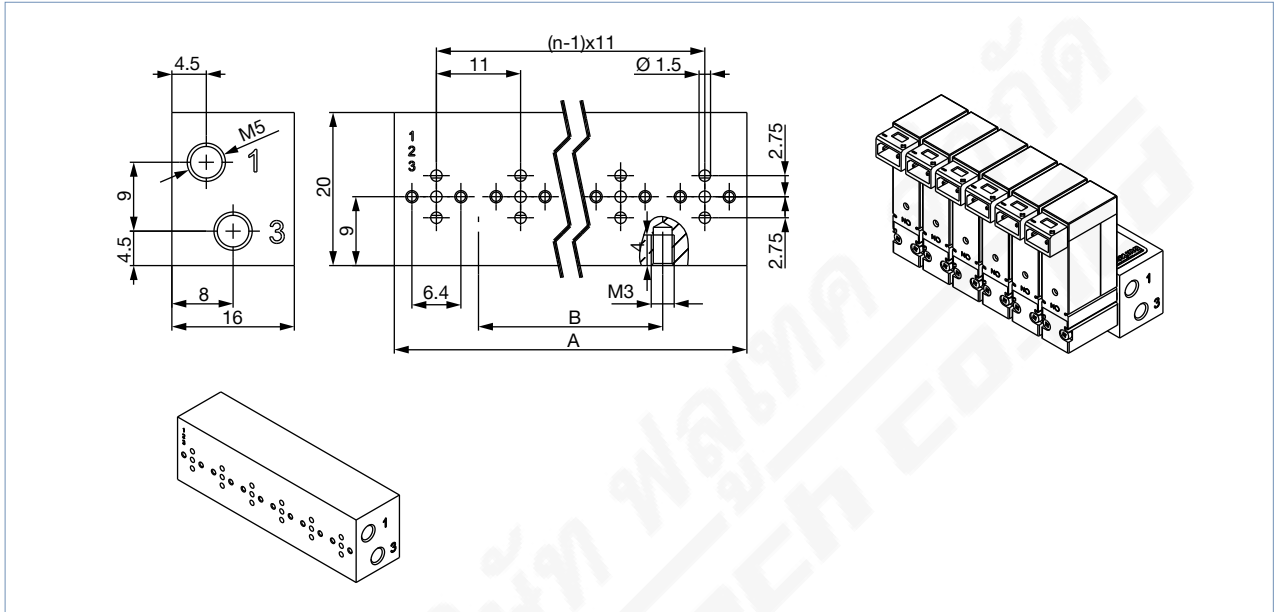
Description	Article no.
Single manifold for Bürkert flange lateral (10 x 42 mm)	639234

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5.7. Multiple manifold for Bürkert flange lateral (10 x 42 mm)

Note:

- Dimensions in mm
- Port connection: M5
- Material: aluminium (black anodised)
- Mounting hole: M3x4 thread



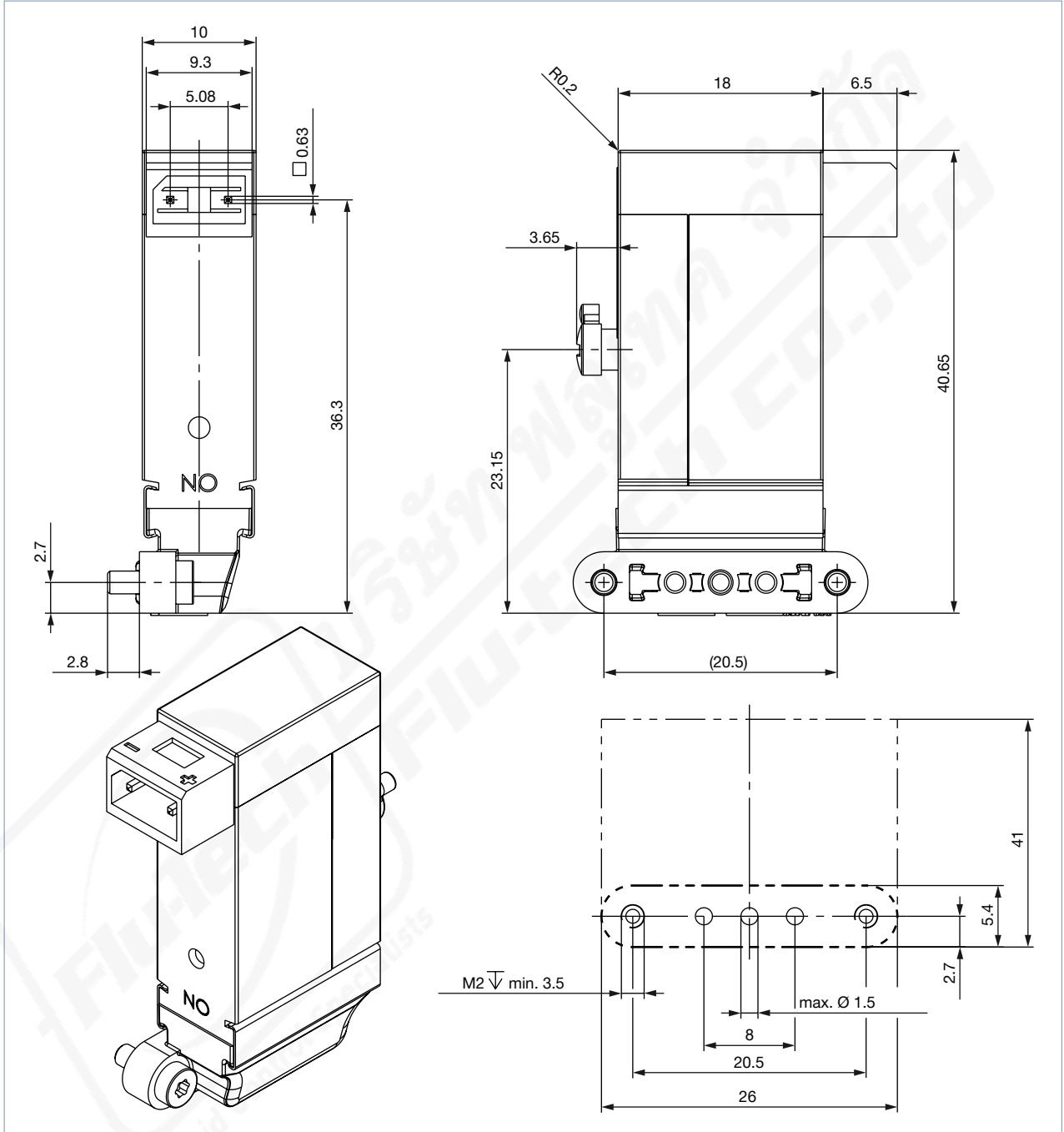
n	A	B	Article no.
2 valves	22	0 ¹⁾	641915
4 valves	44	22	641916
6 valves	66	44	639235
Blanking plate kit			645513

1.) Drill holes are at the same level.

5.8. Bürkert flange horizontal (26 x 41 mm)

Note:

- Dimensions in mm
- The valve can be supplied with or without manual override (left or right hand side) (Standard position: opposite electrical connection).



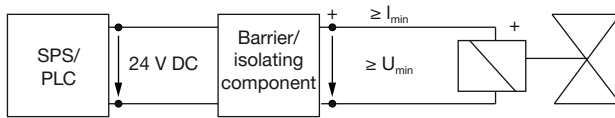
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6. Performance specifications

6.1. Electrical data ATEX/IECEx ia version

Note:


- The valve is designed to operate on 24 V DC outputs through an intermediary intrinsically safe apparatus (isolating block or barrier).
- Please refer to the **Type 6144** ► additional instructions for the permissible maximum values/value pairs.
- Type of protection: PTB 07 ATEX 2048 X, II 2G Ex ia IIC T4...T6 Gb
IECEx PTB 07.0063X, Ex ia IIC T4...T6 Gb



Version	Resistance at 20 °C ± 4 % [Ω]	Minimum terminal voltage [V]	Minimum current [mA]
For use with a 30 Ω supply module	320	9.3	29
High resistance version	510	11.7	23

7. Ordering information

7.1. Bürkert eShop – Easy ordering and quick delivery




Bürkert eShop – Easy ordering and quick 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.

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7.2. 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.

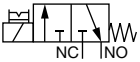
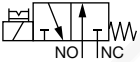
[Try out our product filter](#)

7.3. Ordering chart

Standard version

Note:

- Includes 2 x fixing screws for Bürkert flange: 4 x M1.6 x 3.5; Bürkert flange lateral: 2 x M1.6 x 20 and Bürkert flange horizontal: 2 x M2 x 6
- Rectangular cable plug Type 2505 is not included in the delivery (see "7.4. Ordering chart accessories" on page 16)
- Further versions available on request

Circuit function	Port connection	Orifice	Q _{Nn} value air	K _v value water	Voltage/ Frequency	Nominal power	Pressure range	Manual over- ride	Electrical connection	Article no.
		[mm]	[l/min] ^{1.)}	[m ³ /h] ^{2.)}						
CF C 3/2-way solenoid valve Direct-acting, with manual override Normally closed 	Bürkert flange	0.6	8.5	0.0075	12/DC	0.8	0...10 ^{4.)}	yes	Rectangular plug	182862 ☒
	Bürkert flange lateral								Flying leads 0.5 m	215686 ☒
					Bürkert flange horizontal				Rectangular plug	181367 ☒
									Flying leads 0.5 m	202578 ☒
					Bürkert flange horizontal				Rectangular plug	175682 ☒
	Flying leads 0.5 m								214196 ☒	
CF D 3/2-way solenoid valve Direct-acting, with manual override Normally open 	Bürkert flange	0.6	8.5	0.0075	24/DC	0.8	0...10	yes	Rectangular plug	175653 ☒
	Bürkert flange lateral								Flying leads 0.5 m	on request
									Bürkert flange horizontal	Rectangular plug
	Bürkert flange horizontal									Flying leads 0.5 m
									Bürkert flange horizontal	Rectangular plug
	Flying leads 0.5 m									on request

1.) Measurement at 6 bar and +20 °C at the valve inlet and 1 bar pressure difference

2.) Measurement at 1 bar and +20 °C at the valve inlet and free outlet

3.) Pressure data: Overpressure to atmospheric pressure

4.) Application with vacuum on request

ATEX/IECEx ia version

Note:

- Including fixing screws for Bürkert flange: M1.6×3.5
- Rectangular cable plug Type 2505 is not included in the delivery (see “7.4. Ordering chart accessories” on page 16).
- Approval according to PTB 07 ATEX 2048 X: II 2G Ex ia IIC T4...T6 Gb and IECEx PTB 07.0063X: Ex ia IIC T4...T6 Gb

Circuit function	Port connection	Orifice	Q _{Nn} value air	K _v value water	Pressure range	Manual override	Resistance at 20 °C ± 4 %	Minimum hold-ing current	Article no.
		[mm]	[l/min] ^{1.)}	[m ³ /h] ^{2.)}	[bar] ^{3.)}		[Ω]	[mA]	
CF C 3/2-way solenoid valve Direct-acting, with manual override Normally closed 	Bürkert flange	0.6	8.5	0.0075	0...7	yes	320	29	175657 𠄎
							510	23	175656 𠄎
CF D 3/2-way solenoid valve Direct-acting, with manual override Normally open 	Bürkert flange	0.6	8.5	0.0075	0...7	yes	320	29	183550 𠄎

1.) Measurement at 6 bar and +20 °C at the valve inlet and 1 bar pressure difference
 2.) Measurement at 1 bar and +20 °C at the valve inlet and free outlet
 3.) Pressure data: Overpressure to atmospheric pressure

Further versions on request	
Additional The valve can be supplied with a manual override on the left or right side, or without manual override on request.	Electrical connection Electrical connection can be supplied either on the left or right side. Possible electrical connections are 2 single flying leads, round plug M8 × 1 or plug for PCB contact.
Control function/Circuit function Circuit function A, B and T	

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7.4. Ordering chart accessories

Single manifold for Bürkert flange (10 x 18 mm)

The ordering information for this manifold can be found in chapter “5.2. Single manifold for Bürkert flange (10 x 18 mm)” on page 7.

Multiple manifold for Bürkert flange (10 x 18 mm)

The ordering information for this manifold can be found in chapter “5.3. Multiple manifold for Bürkert flange (10 x 18 mm)” on page 7.

Single manifold for Bürkert flange lateral (10 x 42 mm)

The ordering information for this manifold can be found in chapter “5.6. Single manifold for Bürkert flange lateral (10 x 42 mm)” on page 10.






Multiple manifold for Bürkert flange lateral (10 x 42 mm)

The ordering information for this manifold can be found in chapter “5.7. Multiple manifold for Bürkert flange lateral (10 x 42 mm)” on page 11.

Rectangular cable plug Type 2505

Note:

For further versions see data sheet [Type 2505](#) ▶.

Accessories	Description	Article no.
	Rectangular cable plug Type 2505 with 3 m cable	252572 
	Rectangular cable plug Type 2505 with 5 m cable	255194 
	Rectangular cable plug Type 2505 with 300 mm flying leads	644068 
	Rectangular cable plug Type 2505 with 600 mm flying leads	162144 