



### 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  
pneumatics



**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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## 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
Orifice	DN 0.6
Circuit function	Monostable Detailed information can be found in chapter "3. Circuit functions" on page 5.
Performance data	
Nominal operating mode	Continuous operation 100 %
Switching times <sup>1.)</sup>	
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	
Electrical control	With SPS possible
Operating voltage <sup>2.)</sup>	24 V DC, 12 V DC (further voltages on request)
Voltage tolerance <sup>3.)</sup>	± 10 %
Switching frequency <sup>4.)</sup>	approx. 17 Hz
Nominal power	0.8 W
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	
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
Electrical connection	Rectangular plug Type 2505 2 FEP-flying leads 0.2 mm <sup>2</sup> , AWG 24, length 500 mm (round plug M8 x 1 or PCB plug RM 5.08 mm on request)
Approvals and certificates	
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
Protection class	3 acc. VDE 0580
Degree of protection	IP30 IP65 with flying leads
Environment and installation	
Installation position	As required, preferably with actuator upright (5 mm minimum distance to ferromagnetic materials)
Ambient temperature	- 10 °C...+ 55 °C
Minimum bending radius for flying leads version	Single bending: 8.5 mm radius

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

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

3.) Max. allowed ripple

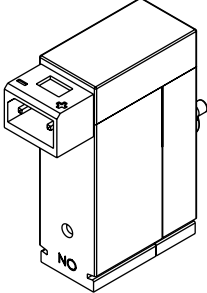
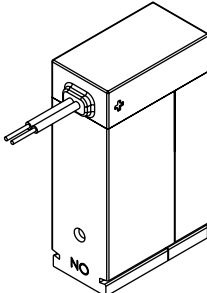
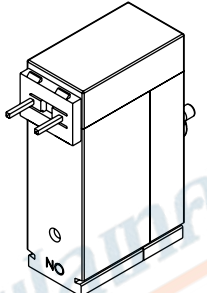
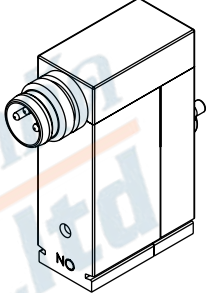
4.) At ambient temperature 20 °C

## 2. Product versions

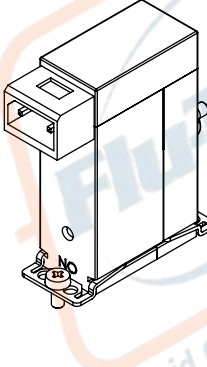
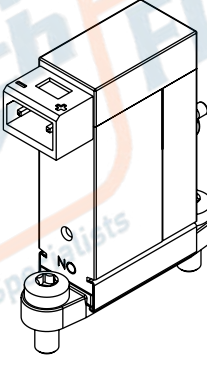
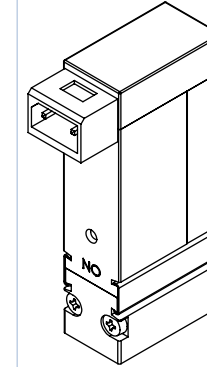
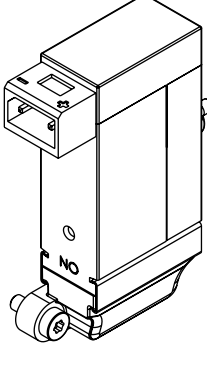
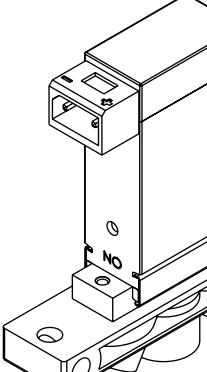
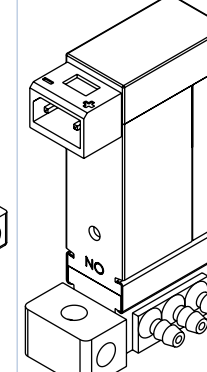
### 2.1. Electrical connection versions

**Note:**

- Rectangular plug as standard
- Other connections on request

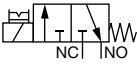
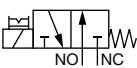
Rectangular plug Type 2505	2 FEP flying leads 0.2 mm <sup>2</sup> , AWG 24, length on request	PCB plug (RM 5.08 mm) (e.g. for PCB mounting 0.63×0.63)	Round plug M8×1
			

### 2.2. Fluidic connection versions

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
		


DTS 1000090355 EN Version: H Status: RL (released | freigegeben | valide) printed: 07.10.2020

### 3. Circuit functions

Circuit function	Description
	<b>Type: C, solenoid valve</b> 3/2 way Direct-acting, with manual mode Normally closed
	<b>Type: D, solenoid valve</b> 3/2 way Direct-acting, with manual mode 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.

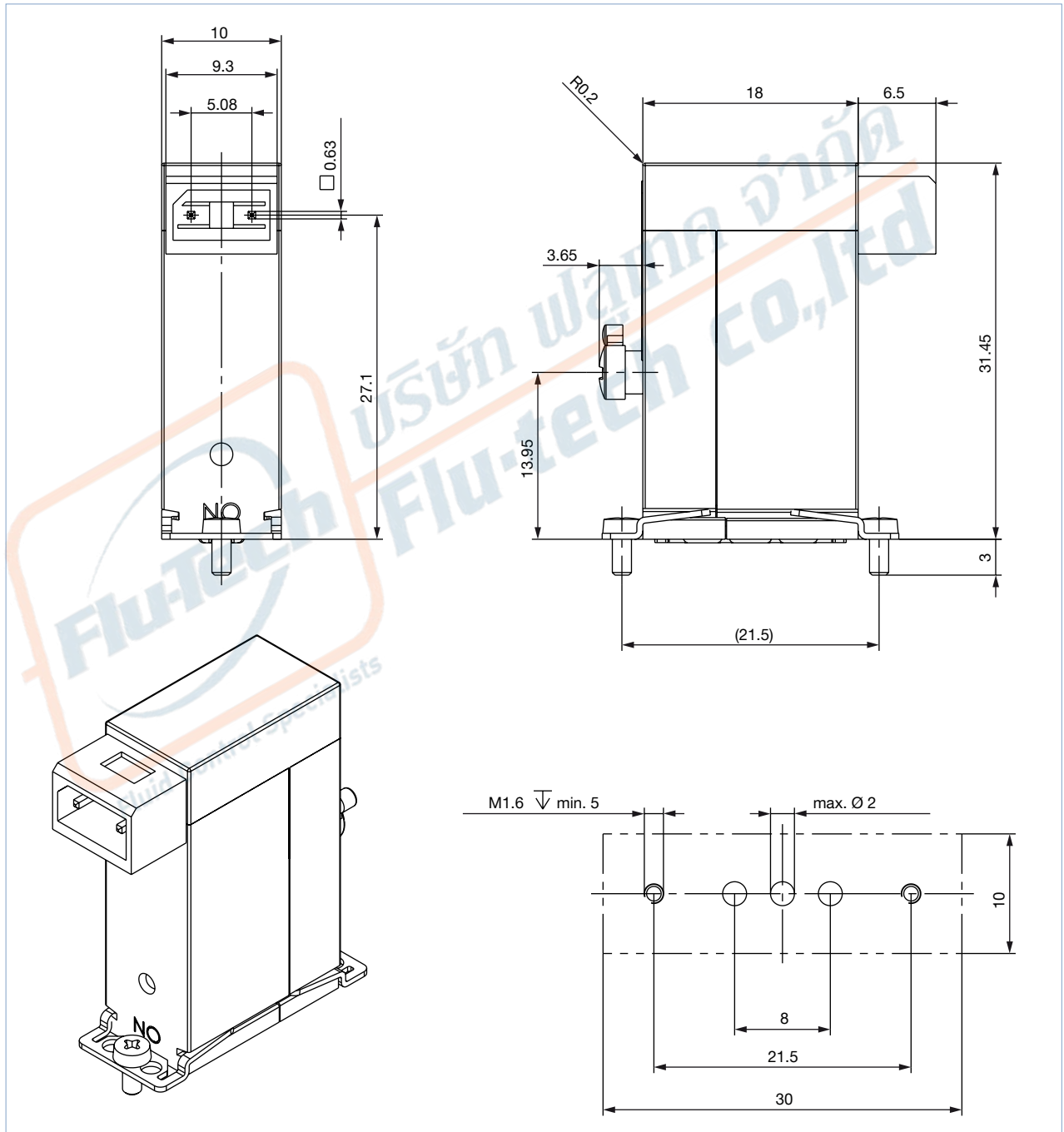
[Start Chemical Resistance Check](#)

## 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).

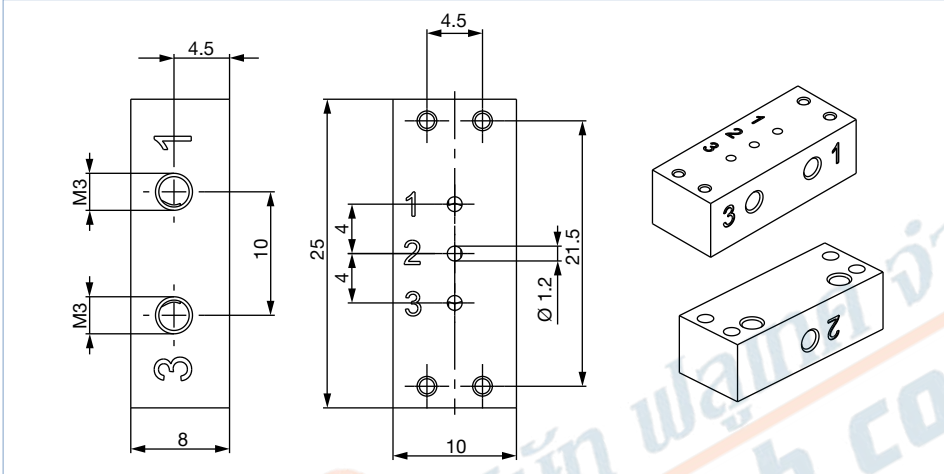


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### 5.2. Single manifolds for Bürkert flange (10 x 18 mm)

**Note:**

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

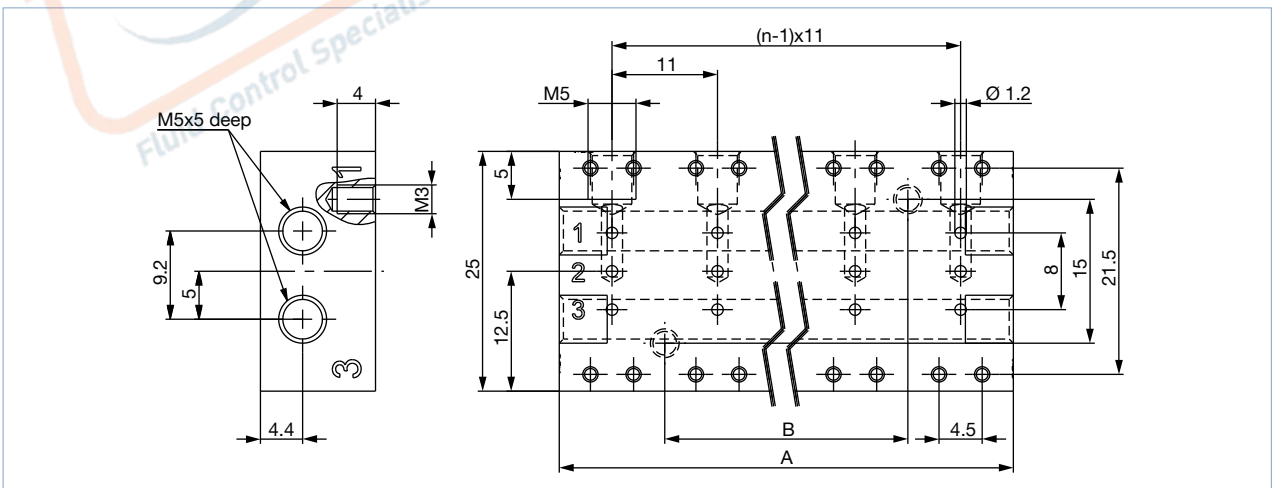


Description	Article no.
Single manifolds for Bürkert flange	639873

### 5.3. Multiple manifolds 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 <sup>1)</sup>	641911
4 valves	44	22	641912
6 valves	66	44	639874
Blanking plate kit			645512

1.) Drill holes are at the same level.

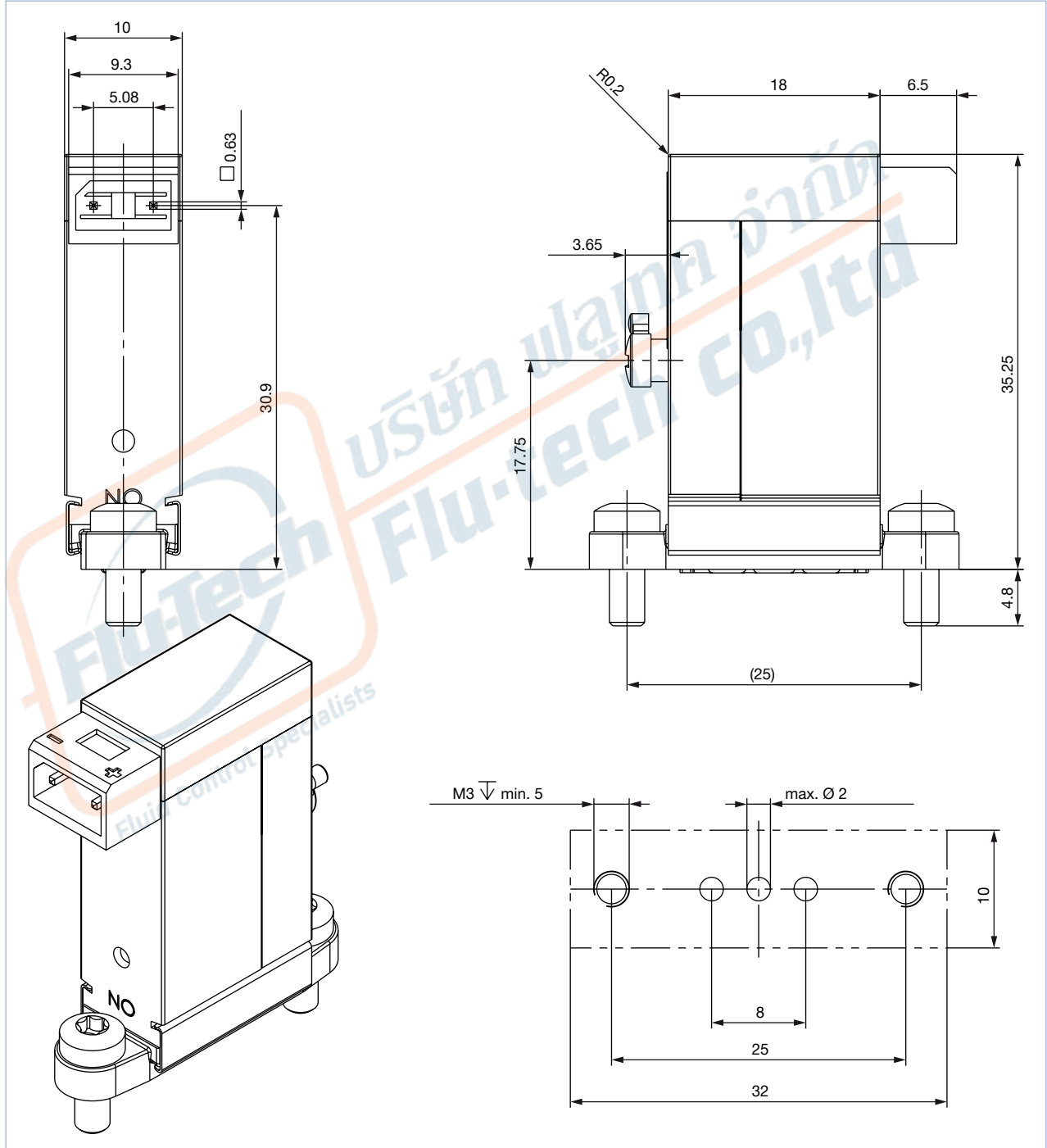
Visit product website ►



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).



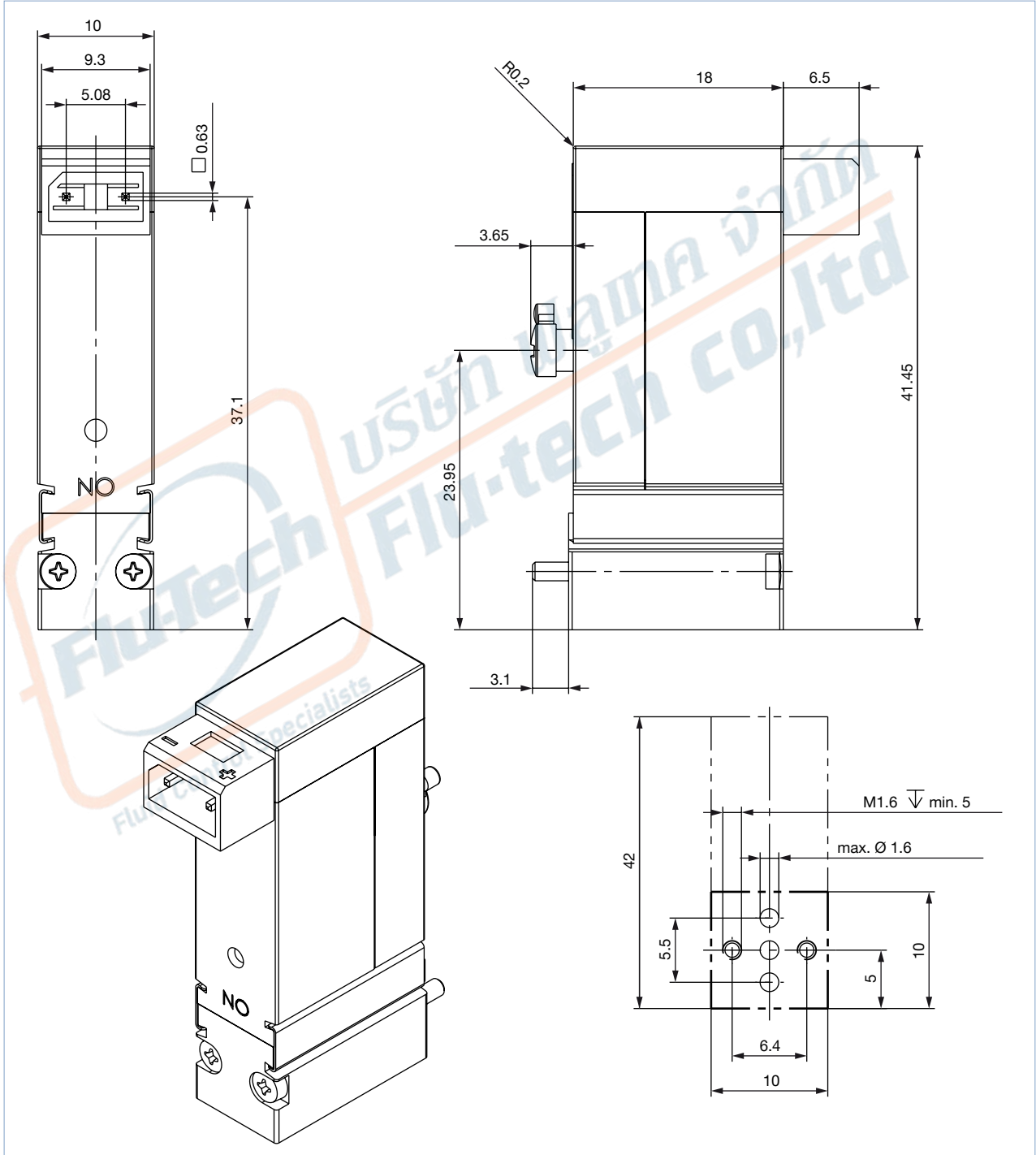
DTS 1000090355 EN Version: H Status: RL (released | freigegeben | validé) printed: 07.10.2020



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).

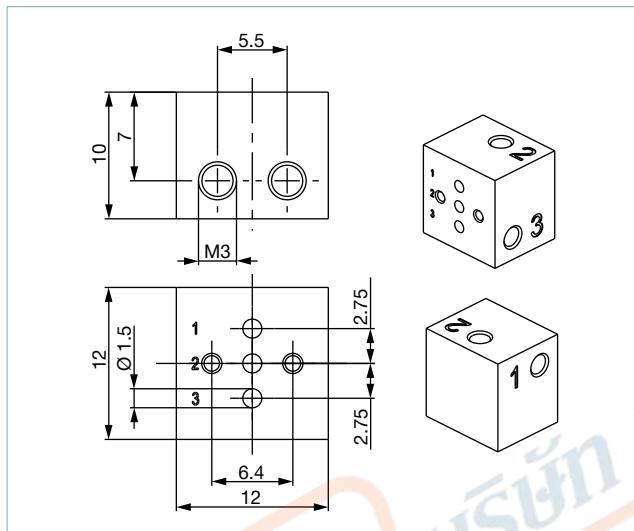


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5.6. Single manifolds for Bürkert flange lateral (10 x 42 mm)

Note:

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



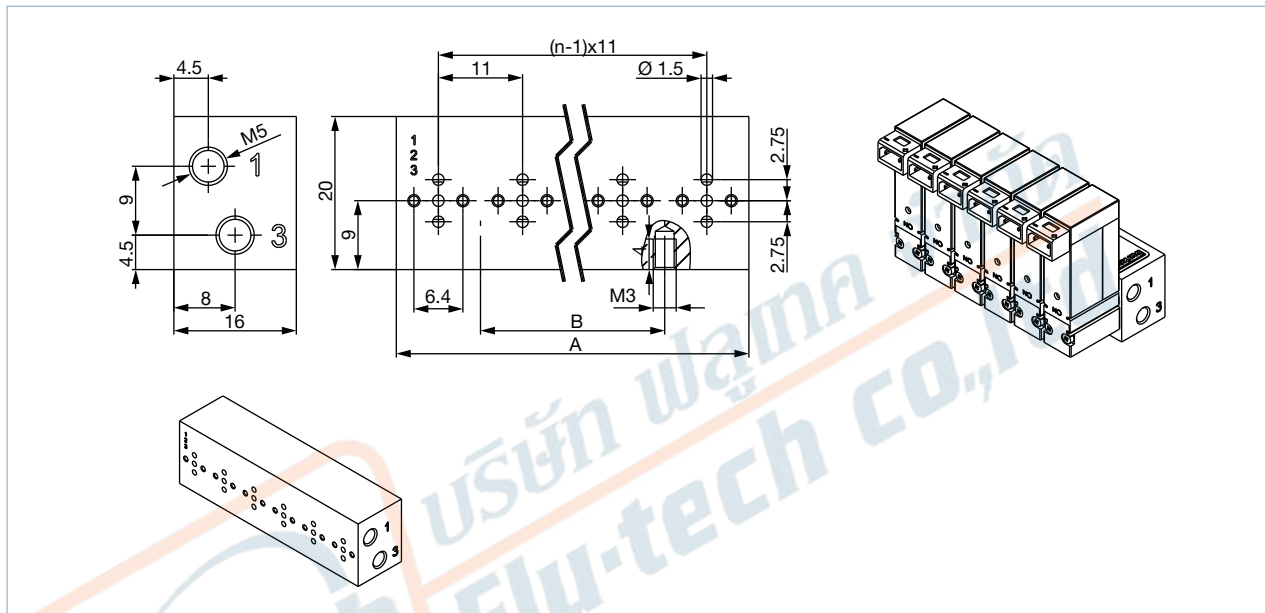
Description	Article no.
Single manifolds for Bürkert flange lateral (10 x 42 mm)	639234

DTS 1000090355 EN Version: H Status: RL (released | freigegeben | validé) printed: 07.10.2020

5.7. Multiple manifolds 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 <sup>1)</sup>	641915
4 valves	44	22	641916
6 valves	66	44	639235
8 valves	88	66	672676
Blanking plate kit			645513

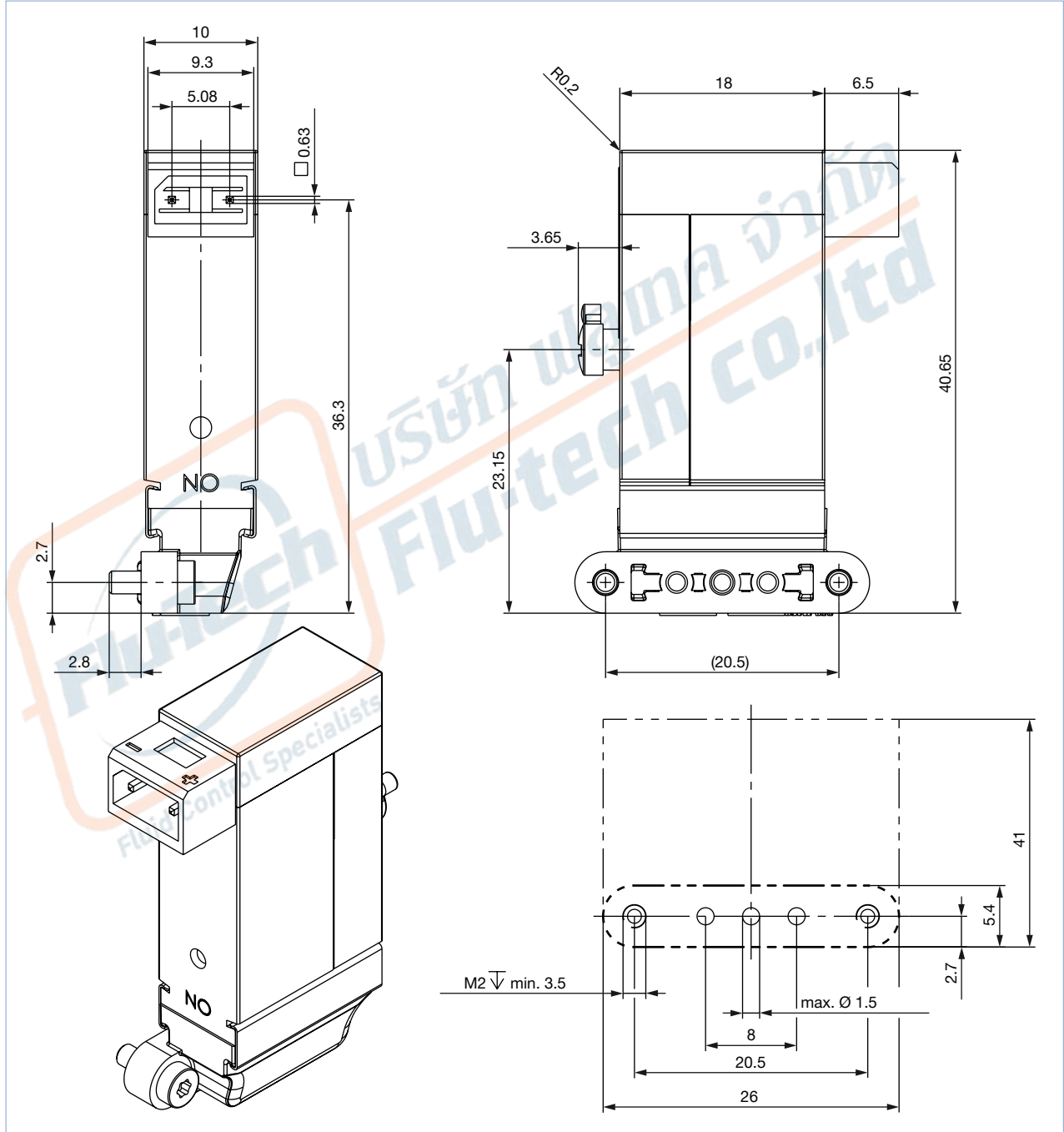
1.) Drill holes are at the same level.

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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).



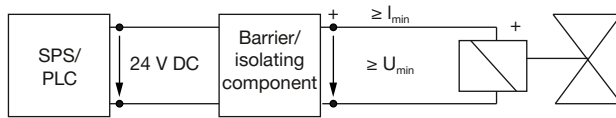
DTS 1000090355 EN Version: H Status: RL (released | freigegeben | validé) printed: 07.10.2020

## 6. Performance specifications

### 6.1. Electrical data explosion-proof version Ex ia

#### 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 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](#)

### 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.

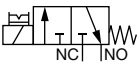

[Try out our product filter](#)

## 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 connector Type 2505 is not included in the delivery (see "7.4. Ordering chart accessories" on page 16)
- Further versions available on request



Circuit function	Orifice	Port connection	Q <sub>Nn</sub>	K <sub>v</sub>	Pressure range	Manual override	Electrical connection	Voltage/Frequency	Nominal power	Article no.									
	[mm]		value air	water				[V/Hz]			[W]								
<b>C, solenoid valve</b> 3/2 way Direct-acting, with manual mode Normally closed 	0.6	Bürkert flange	8.5	0.0075	0...10 <sup>4)</sup>	yes	Rectangular plug	12/DC	0.8	182862 ๙									
								Flying leads 0.5 m		215686 ๙									
								Rectangular plug		24/DC	181367 ๙								
										Flying leads 0.5 m	202578 ๙								
								Bürkert flange lateral		Rectangular plug	175682 ๙								
											Flying leads 0.5 m	214196 ๙							
								Bürkert flange horizontal		Rectangular plug	357406 ๙								
											Flying leads 0.5 m	on request							
								<b>D, solenoid valve</b> 3/2 way Direct-acting, with manual mode Normally open 		0.6	Bürkert flange	8.5	0.0075	0...10	yes	Rectangular plug	24/DC	0.8	175653 ๙
																	Flying leads 0.5 m		on request
Bürkert flange lateral	Rectangular plug	179098 ๙																	
		Flying leads 0.5 m	on request																
Bürkert flange horizontal	Rectangular plug	357407 ๙																	
		Flying leads 0.5 m	on request																

- 1.) Measurement at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference
- 2.) Measurement at +20 °C, 1 bar overpressure to atmospheric pressure at the valve inlet and free outlet
- 3.) Overpressure to atmospheric pressure
- 4.) Application with vacuum on request

## Explosion-proof version Ex ia

## 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	Orifice	Port connection	Q <sub>Nn</sub> value air [l/min] <sup>1.)</sup>	K <sub>v</sub> value water [m <sup>3</sup> /h] <sup>2.)</sup>	Pressure range [bar] <sup>3.)</sup>	Manual override	Resistance at 20 °C ± 4 %	Minimum holding current	Article no.
	[mm]						[Ω]	[mA]	
<b>C, solenoid valve</b> 3/2 way Direct-acting, with manual mode Normally closed 	0.6	Bürkert flange	8.5	0.0075	0...7	yes	320	29	175657 冫
							510	23	175656 冫
<b>D, solenoid valve</b> 3/2 way Direct-acting, with manual mode Normally open 	0.6	Bürkert flange	8.5	0.0075	0...7	yes	320	29	183550 冫

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

2.) Measurement at +20 °C, 1 bar overpressure to atmospheric pressure at the valve inlet and free outlet

3.) Overpressure to atmospheric pressure

## Further versions on request

	<b>Additional</b> The valve can be supplied with a manual override on the left or right side, or without manual override on request.		<b>Electrical connection</b> 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.
	<b>Control function/Circuit function</b> Circuit function A, B and T		

#### 7.4. Ordering chart accessories

##### Single manifolds for Bürkert flange (10 x 18 mm)

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

##### Multiple manifolds for Bürkert flange (10 x 18 mm)

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

##### Single manifolds for Bürkert flange lateral (10 x 42 mm)

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






##### Multiple manifolds for Bürkert flange lateral (10 x 42 mm)

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

##### Rectangular plug connector Type 2505

###### Note:

For further versions see data sheet **Type 2505** ▶.

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