



## Micro Dosing Unit for precise dosing in microlitre-range

- Diaphragm pump for high chemical resistance
- Dosing volume 5 µl/stroke up to 8 ml/min. in both directions
- Dosing accuracy < +/- 3,5 %
- Self priming
- Integrated electronics, easy to use

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

### Type description

Bürkert's Micro Dosing Unit has been designed for precise dosing applications in the microliter range. It combines high dosing accuracy and precision with excellent chemical inertness. The unit is comprised of three valves which can be opened simultaneously for flushing. Active inlet and outlet valves enable the device to pump liquid in two directions. This feature can be used to mix fluids inside a tube or channel or to constantly keep them in motion. Reagents can be sucked back from the dispensing tip to prevent drying out after dosing. The integrated heating function heats up the valves and the medium, and the unit comes with dry running capabilities.

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## 1. General Technical Data

Product properties	
Dimensions	Detailed information can be found in chapter "4. Dimensions" on page 5.
Material	
Seal	FFKM, EPDM pump diaphragm on request
Body	PEEK
Fluidics	PEEK
Cover	PPS (not in contact with media)
Base plate	Stainless steel (not in contact with media)
Dosing quantity	Adjusted to 5 µl/stroke ± 1.5 % <sup>1.)</sup> , max. approx. 8 ml/min; at 40 Hz bidirectional
Dosing accuracy	± 3.5 % <sup>2.)</sup>
Repeatability	± 2 % <sup>1.)</sup>
Max. suction Lift	> 0.7 m (dry) > 4 m (wet)
Weight	Ca. 120 g
Typical product service life	Approx. 20 M cycles (at 20 °C, 10 Hz, water)
Performance data	
Max. outlet Pressure	1.0 bar <sup>3.)</sup>
Electrical data	
Operating voltage	12 V DC, 24 V DC
Power consumption	11 W (short term), 5 W
Duty cycle	100 %
Voltage tolerance	± 10 %
Medium data	
Medium temperature	+ 15 °C...+ 60 °C (FFKM) + 5 °C...+ 60 °C (EPDM) <sup>4.)</sup>
Operating medium	Neutral and aggressive liquids See also chapter "3.1. Chemical Resistance Chart – Bürkert resistApp" on page 4.
Viscosity (max.)	< 250 mm <sup>2</sup> /s
Process/Port connection & communication	
Port connection	Sub-base connection, UNF ¼"- 28
Electrical connection	E.g. suitable for connection to Molex plug no. 50-57-9404 See also chapter "9.4. Ordering chart accessories" on page 9.
Environment and installation	
Installation	Variable, unit with two holes for M3 fixing screws
Degree of protection	IP40
Ambient temperature	+ 10 °C...+ 55 °C <sup>4.)</sup>

1.) At 20 °C, 5 Hz, medium deionised, degassed water without backpressure

2.) Typical value under Bürkert test conditions see 1.). The typical repeatability is ± 2%. This is a guiding value only!

3.) Overpressure above atmospheric pressure


4.) For lower temperatures the unit can be electrically preheated (heating mode without media feed).

## 2. Product versions



## 3. Materials

### 3.1. 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.

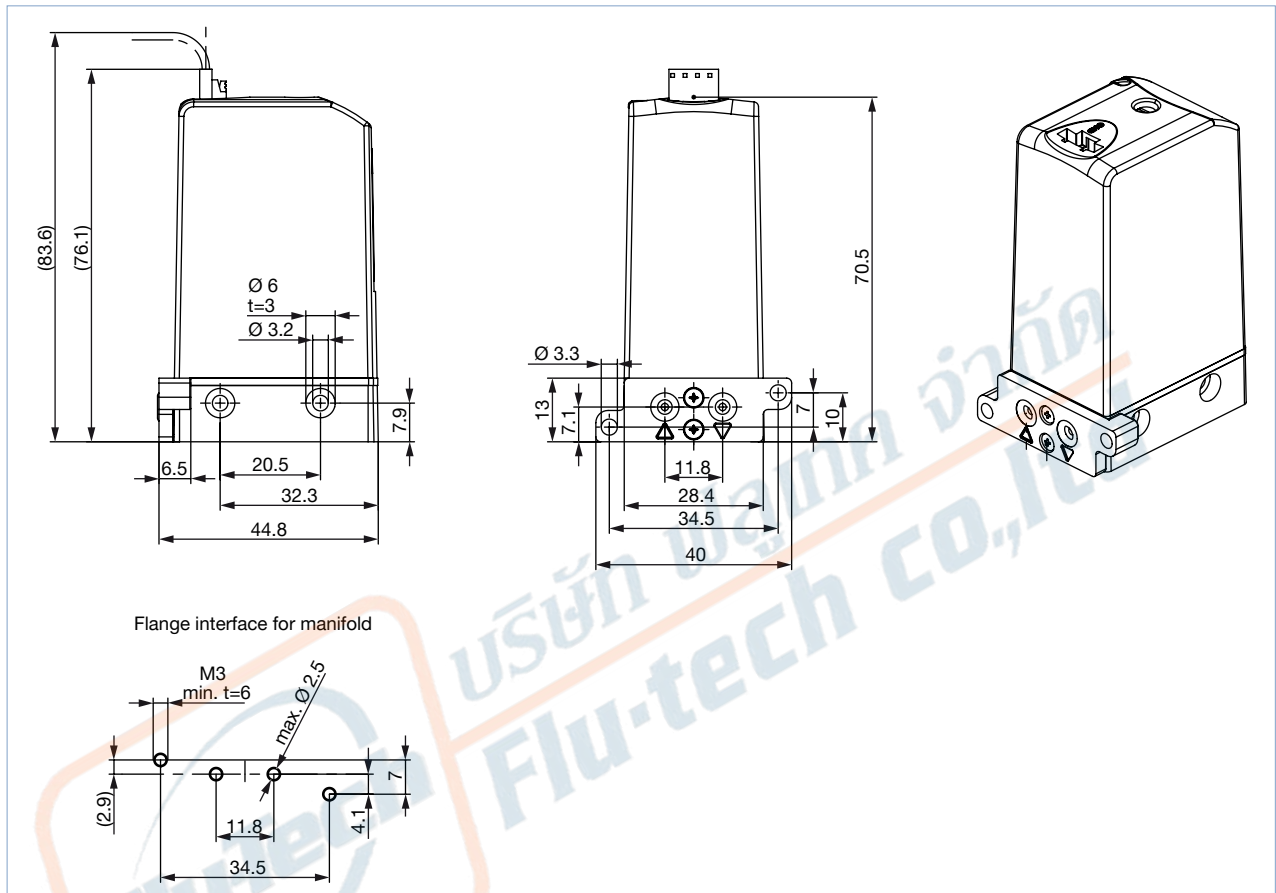
[Start Chemical Resistance Check](#)

## 4. Dimensions

### 4.1. Sub-base version

#### Note:

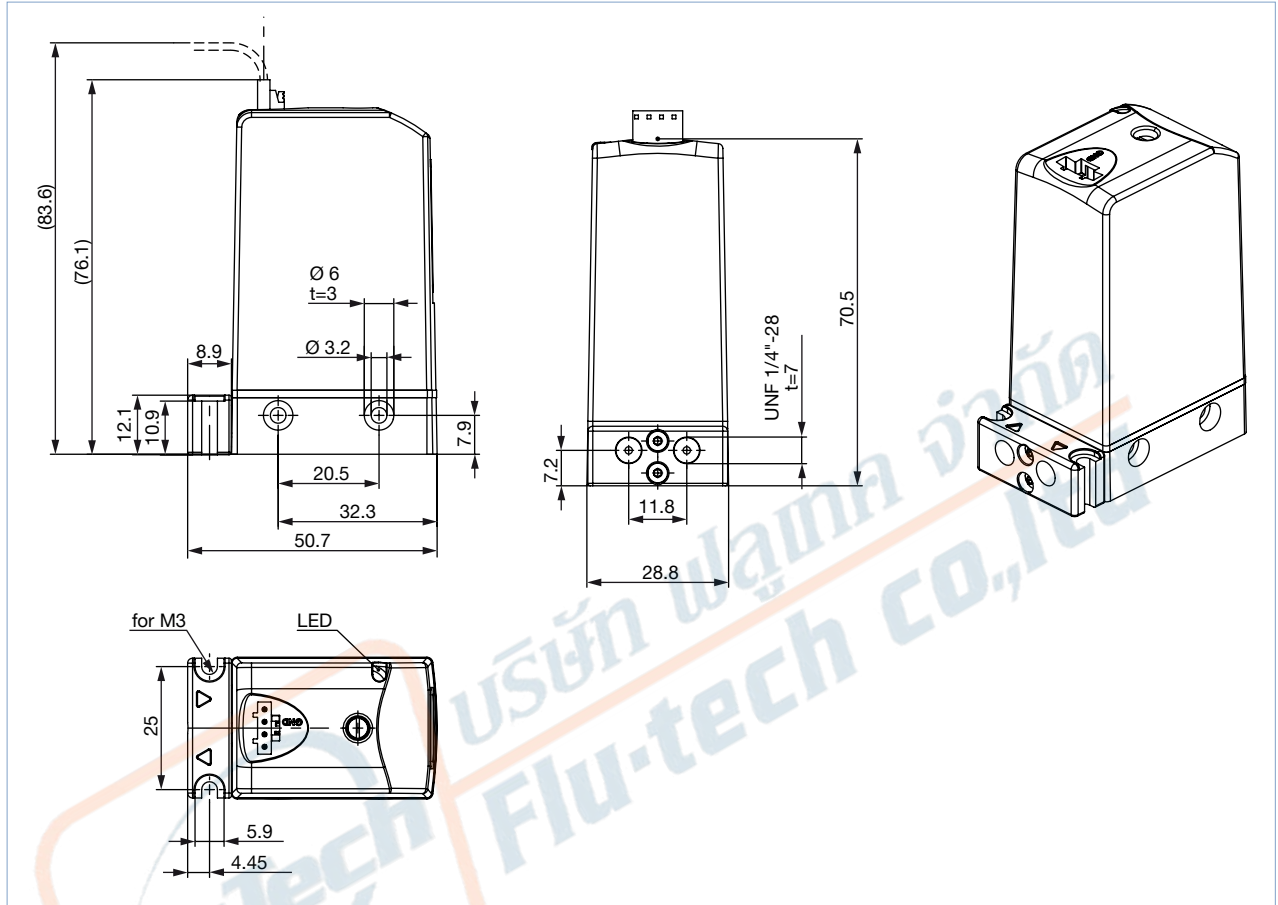
- Dimensions in mm
- Connection cable not included in delivery



4.2. Threaded version (UNF 1/4"-28)

Note:

- Dimensions in mm
- Connection cable not included in the delivery

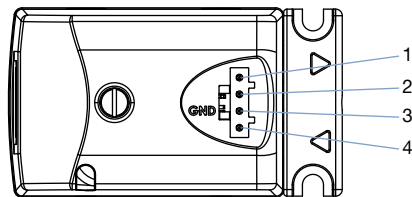


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## 5. Device/Process connections

### 5.1. Electrical connection



PI <sub>N</sub>	Forward dosing	Reverse dosing	Flush mode (all valves open)	Heating Up mode
1 (Supply)	+	+	not connected	+
2 (Reverse)	not connected	+	+	+
3 (Ground)	-	-	-	-
4 (Forward)	+	not connected	+	+

## 6. Performance specifications

### 6.1. Dosing

Function mode	Dosing per stroke	Dosing accuracy	Max. possible dosing
0 = Impulse 120 ms	5 µl	± 3.5 % <sup>1.)</sup>	2.4 ml/min
1 = Frequency 40 Hz	approx. 3.8 µl	-	> 8 ml/min
2 = Frequency 25 Hz	4.6 µl	approx. ± 6 %	7.0 ml/min
3 = Frequency 10 Hz	4.95 µl	± 4 %	3.0 ml/min
4 = Frequency 5 Hz	5 µl	± 3.5 % <sup>1.)</sup>	1.5 ml/min
5 = Service mode 5 Hz	5 µl	± 3.5 % <sup>1.)</sup>	500 µl
6 = Impulse 50 ms	4.8 µl	± 4 %	5.8 ml/min

1.) The typical repeatability is ± 2 %. This is a guiding value only!

## 7. Product operation

### 7.1. Function modes

#### Note:

Further information can be found in the operating instructions, see **Type 7615** ▶.

Different modes can be preselected via a rotary switch on the electronics:

- **Impulse mode:** An electrical power signal of min. 50 ms (mode 6) resp. 120 ms (mode 0) length creates a dosing of 5 µl at a time. Higher volumes (multiples of 5 µl) can be dosed by repeating the signal.
- **Frequency mode:** The unit runs with a predefined frequency. Different frequencies can be selected (see following description). The standard setting is 5 Hz.

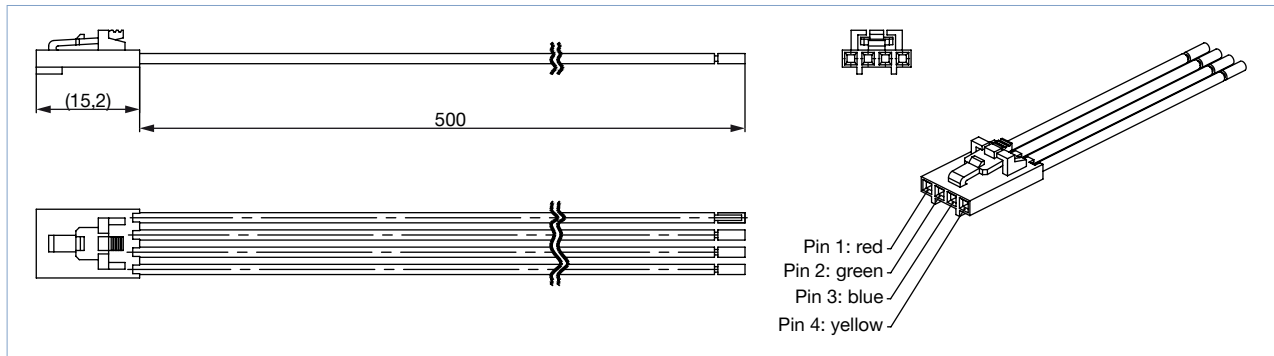
Function modes	Description
	Rotary switch to select mode  0 = Impulse mode > 120 ms 1 = Frequency mode 40 Hz 2 = Frequency mode 25 Hz 3 = Frequency mode 10 Hz <b>4 = Frequency mode 5 Hz (Standard)</b> 5 = Service mode 5 Hz (pump stops after 100 cycles) 6 = Quick impulse mode > 50 ms

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## 8. Product accessories

### 8.1. Connection cable



## 9. Ordering information

### 9.1. 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.

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### 9.2. 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.

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### 9.3. Ordering chart

**Note:**

- Two stainless steel screws M3 x 12 are included in the scope of delivery of the flange version.
- The connection cable is not included in the scope of delivery and must be ordered separately, see “9.4. Ordering chart accessories” on page 9.





Version	Voltage	Connection	Seal material	Function mode <sup>1.)</sup>	Article no.
Standard	24 V DC	Sub-base	FFKM	5 Hz	238190
Standard	24 V DC	UNF ¼"-28	FFKM	5 Hz	215793
Standard	24 V DC	Sub-base	FFKM/EPDM	5 Hz	238193
Standard	24 V DC	UNF ¼"-28	FFKM/EPDM	5 Hz	238194
Standard	12 V DC	UNF ¼"-28	FFKM/EPDM	5 Hz	238195

1.) Mode can be changed, please see “7.1. Function modes” on page 7 or Operating Instructions.



## 9.4. Ordering chart accessories

## Connection cable, fittings and hoses

Accessories	Description	Article no.
	Connection cable (4 pin) with 500 mm wire length	683613 
	Fittings and hoses <sup>1.)</sup>	see data sheet <b>TVU003</b> 

1.) We recommend hard (e.g. PTFE) hoses with an inner diameter of 1.6 mm for maximum accuracy.

