DATA SHEET

Type 7615

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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Visit product website

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1. General technical data

Product properties	
Dimensions	Further information can be found in chapter "5. Dimensions" on page 5.
Material	
Seal	FFKM, EPDM pump diaphragm on request
Valve body	PEEK
Housing cover	PPS (non-wetted)
Base plate	Stainless steel (non-wetted)
Weight	Approx. 120 g
Typical product service life	Approx. 20 M cycles (at + 20 °C, 10 Hz, water)
Performance data	
Dosing accuracy	± 3.5 % [1.)]
Dosing quantity	Adjusted to 5 µl/stroke ± 1.5 % [2.)], max. approx. 8 ml/min; at 40 Hz bidirectional
Duty cycle	100 % continuous operation
Maximum suction lift	> 0.7 m (unit dry) > 4 m (unit filled)
Maximum pressure at the outlet	1.0 bar [3.)]
Repeat accuracy	± 2 % [2.)]
Electrical data	
Operating voltage	12/24 V DC
Power consumption	11 W (short term), 5 W
Voltage tolerance	± 10 %
Medium data	
Operating medium	Neutral and aggressive liquids Further information can be found in chapter "4.1. Bürkert resistApp" on page 5.
Medium temperature	+ 15 °C...+ 60 °C (FFKM) + 5 °C...+ 60 °C (EPDM) [4.)]
Viscosity	< 250 mm^2/s
Product connections	
Electrical connection	E.g. suitable for connection to Molex plug no. 50 - 57 - 9404 Further information can be found in chapter "10.4. Ordering chart accessories" on page 9.
Port connection	Sub-base, UNF ¼"- 28 internal thread
Approvals and conformities	
Degree of protection	IP40
Environment and installation	
Installation position	As required, unit with two holes for M3 fastening screws
Ambient temperature	+ 10 °C...+ 55 °C [4.)]

1.) Typical value for Bürkert test conditions, see [2.)]. The typical repeat accuracy is approx. ± 2 %. This specification must be viewed as a benchmark.
2.) At + 20 °C, 5 Hz, medium deionised, degassed water with no back pressure
3.) Pressure data: overpressure to atmospheric pressure
4.) For lower temperatures the unit can be electrically preheated (heating mode without media feed).

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2. Product variants

Sub-base variant	Threaded variant (UNF ¼"- 28)

3. Approvals and conformities

3.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants can be supplied with the below mentioned approvals or conformities.

3.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

3.3. Standards

The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

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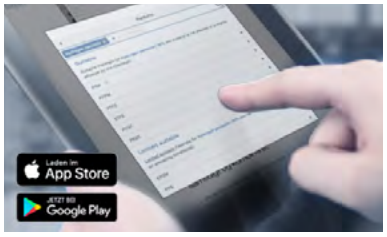
4. Materials

4.1. 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.

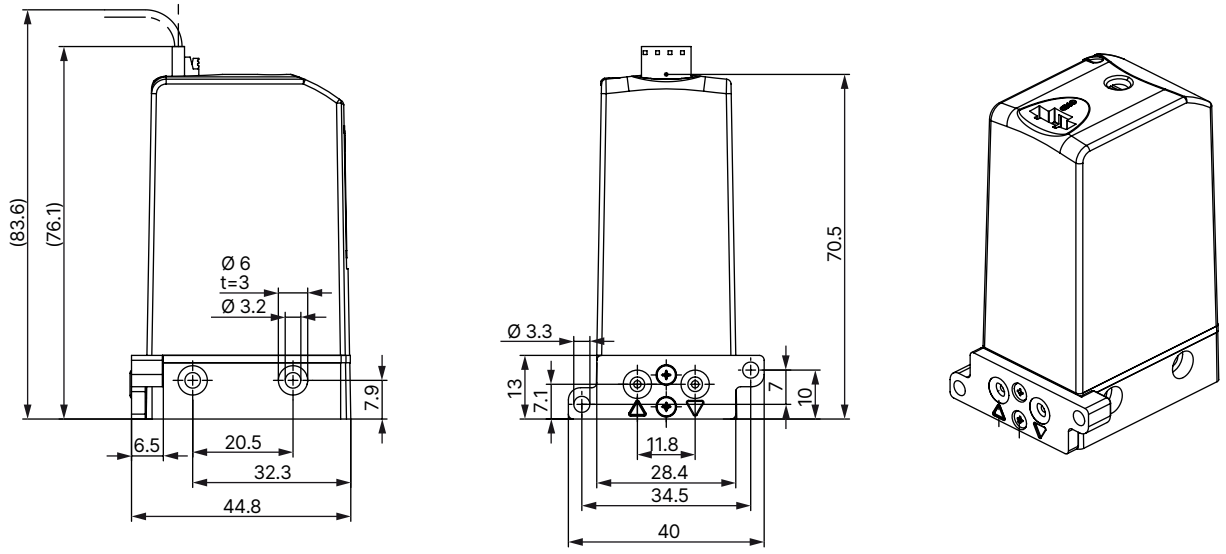
Start chemical resistance check

5. Dimensions

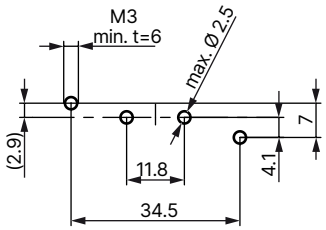
5.1. Sub-base variant

Note:

- Dimensions in mm
- The connection cable is not included in the scope of delivery, see "Connection cable" on page 9.



Flange interface for manifold



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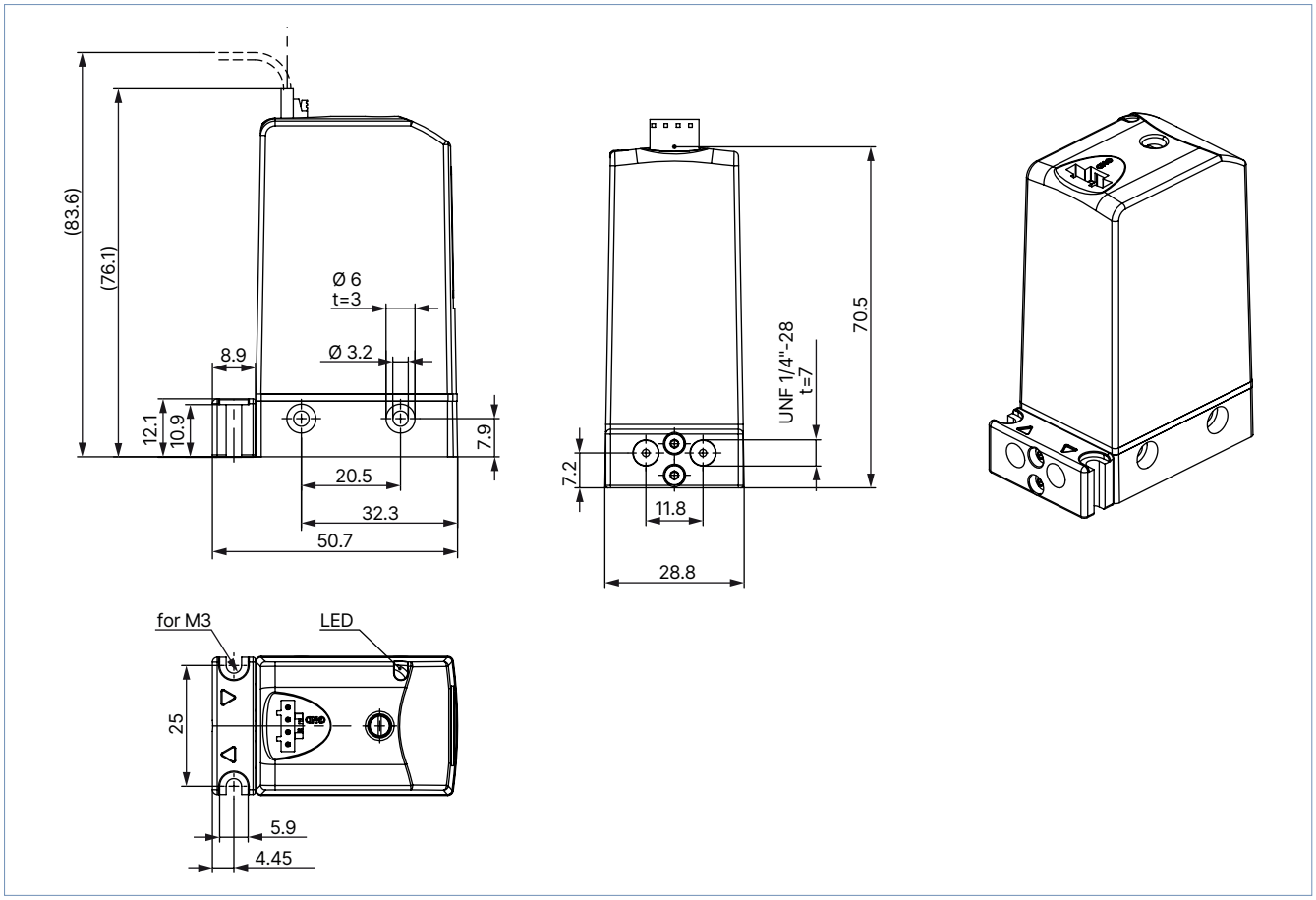
5.2. Threaded variant (UNF ¼"- 28)

Note:

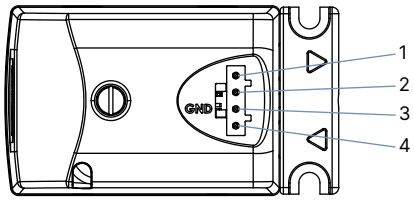
- Dimensions in mm
- The connection cable is not included in the scope of delivery, see "Connection cable" on page 9.



6. Product connections

6.1. Electrical connection

Pin assignment



Pin	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	+	+

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7. Performance specifications

7.1. Dosing

Function mode	Dosing quantity per stroke	Dosing accuracy	Max. possible dosing quantity
0 = Impulse 120 ms	5 µl	± 3.5 % [1)]	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 % [1)]	1.5 ml/min
5 = Service mode 5 Hz	5 µl	± 3.5 % [1)]	500 µl
6 = Impulse 50 ms	4.8 µl	± 4 %	5.8 ml/min

1.) The typical repeat accuracy is approx. ± 2 %. This specification must be viewed as a benchmark.

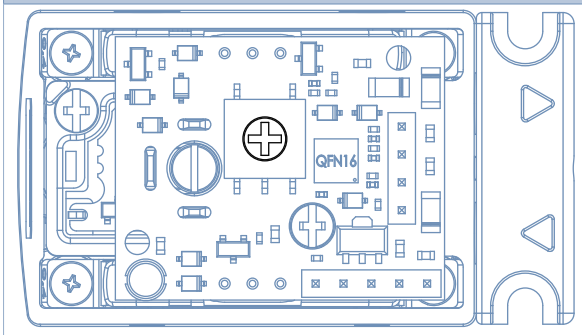
8. Product operation

8.1. Function modes

Note:
Further information can be found in the operating instructions **Type 7615** ▶.

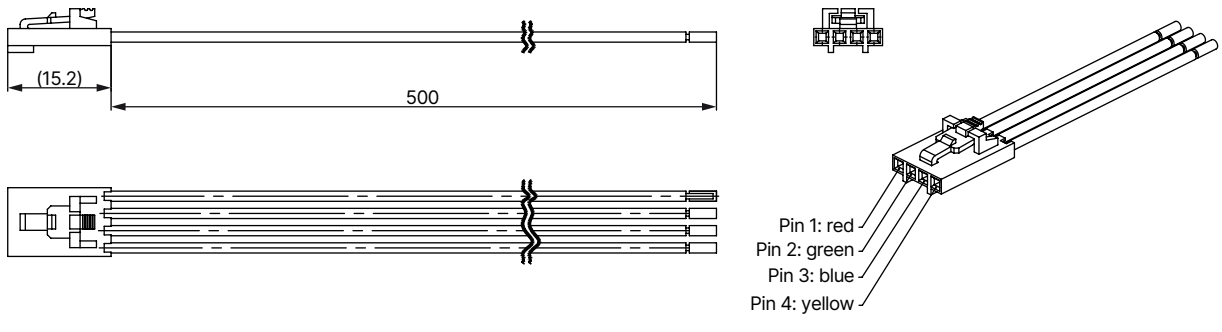
Different modes can be preselected via a rotary switch on the electronics:

- **Impulse mode:** An electrical power signal of min. 50 ms (mode 6) resp. 120 ms (mode 0) in 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 **4 = Frequency mode 5 Hz (Standard)** 5 = Service mode 5 Hz (unit stops after 100 cycles) 6 = Quick impulse mode > 50 ms

9. Product accessories

9.1. Connection cable



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10. Ordering information

10.1. Bürkert eShop

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.

Order online now

10.2. 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

10.3. Ordering chart

Note:

- Two stainless steel screws M3 × 12 are included in the scope of delivery for the sub-base variant.
- The connection cable is not included in the scope of delivery and must be ordered separately, see "10.4. Ordering chart accessories" on page 9.

Variant	Port connection	Voltage	Seal material	Function mode [1.)]	Article no.
Standard	Sub-base	24 V DC	FFKM	5 Hz	238190
Standard	UNF ¼"- 28	24 V DC	FFKM	5 Hz	215793
Standard	Sub-base	24 V DC	FFKM/EPDM	5 Hz	238193
Standard	UNF ¼"- 28	24 V DC	FFKM/EPDM	5 Hz	238194
Standard	UNF ¼"- 28	12 V DC	FFKM/EPDM	5 Hz	238195

1.) The function mode can be changed, see "8.1. Function modes" on page 7 or **operating instructions Type 7615**.

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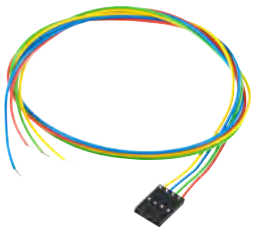
10.4. Ordering chart accessories

Connection cable

Accessories	Description	Article no.
	Connection cable (4-pin) with 500 mm wire length	683613

Fittings and hoses

Accessories	Description	Article no.
	Fittings and hoses [1.] for UNF connections and hoses see type **Type TVU003** ▶.	see data sheet **TVU003** ▶

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

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