



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 $\pm 3.5\%$
- Self priming
- Integrated electronics, easy to use

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.

Technical Data	
Body Material	PEEK
Seal Material	FFKM; EPDM-pump diaphragm on request
Fluids	Neutral and aggressive liquids (see Chemical Resistance Chart)
Fluid Temperatures	+15...60 °C (FFKM) / +5...60 °C (EPDM) ¹⁾
Ambient Temperature	+10...+55 °C ¹⁾
Dosing Quantity	Adjusted to 5 µl/stroke $\pm 1.5\%$ ²⁾ ; max. ca. 8 ml/min; at 40 Hz both directions
Dosing accuracy	$\pm 3.5\%$ ⁴⁾
Repetition accuracy	$\pm 2\%$ ²⁾
Max. Outlet Pressure	1.0 bar ³⁾
Max. Suction Lift	>2 m (dry); >4 m (wet)
Duty Cycle	100 %
Voltage	12 V DC, 24 V DC
Voltage Tolerance	$\pm 10\%$
Power Consumption	11 W (short term); 5 W
Electrical Connection	e.g. suitable for connection to Molex plug no. 50-57-9404
Installation	Variable, unit with two holes for M3 fixing screws
Fluid Connection	Sub-base connection; UNF 1/4-28
Protection class	IP40
Lifetime	Approx. 20 Mio cycles (at 20 °C; 10 Hz; water)
Dimensions (L x W x H)	50 x 28.5 x 70 mm (UNF 1/4-28) 44 x 39.5 x 70 mm (sub-base)
Max. Viscosity	<math>< 250\text{ mm}^2/\text{s}</math>
Weight	ca. 120 g

¹⁾ For lower temperatures the unit can be electrically preheated (heating mode without media feed).

²⁾ At 20 °C ambient temperature, medium degassed DI water, 5 Hz, no backpressure.

³⁾ Relative pressure

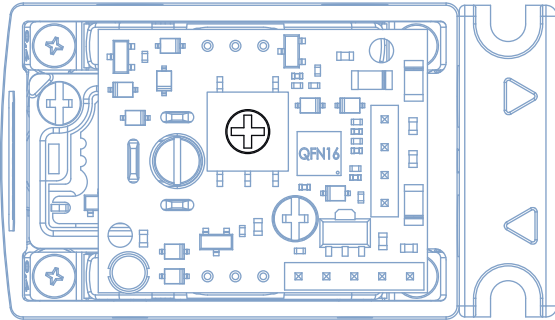
⁴⁾ Typical value under Burkert test conditions see³⁾. The typical repetition accuracy is $\pm 2\%$. This is a guiding value only!

Function Mode

Different modes allow for a high level of customisation:

Impulse mode: An electrical power signal of 120 ms length creates a dosing of 5 µl at a time. Higher volumes can be dosed by repeating the signal.

Frequency mode: The unit runs with a predefined frequency. Frequencies between 5 Hz and 40 Hz can be selected. The standard setting is 5 Hz.



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)

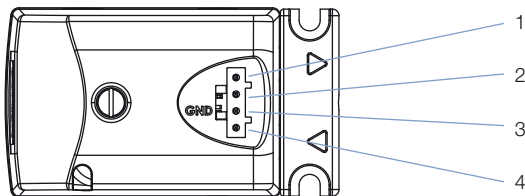
5 = Service Mode 5 Hz (pump stops after 100 cycles).

6 = Quick Impulse Mode, >50 ms

Refer to the instruction manual for further informations.

Electrical Connection

PI _N	Forward dosing	Reverse dosing	Flush Mode (all valves open)	Heating Up Mode (Heat up unit at low temperatures)
1 (Supply)	+	+	not connected	+
2 (Reverse)	not connected	+	+	+
3 (Ground)	-	-	-	-
4 (Forward)	+	not connected	+	+



Materials







Body:	PEEK
Seal material:	FFKM (EPDM on request)
Cover:	PPS
Ground plate, screws:	Stainless steel
Sub-base plate, threaded plate UNF ¼-28:	PEEK

Dosing

Function mode	Dosing per stroke	Dosing accuracy	Max. possible dosing
0 = Impulse 120 ms	5 µl	±3.5 % ¹⁾	2.4 ml/min
1 = Frequency 40 Hz	ca. 3.8 µl	-	>8 ml/min
2 = Frequency 25 Hz	4.6 µl	ca. ±6 %	7 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

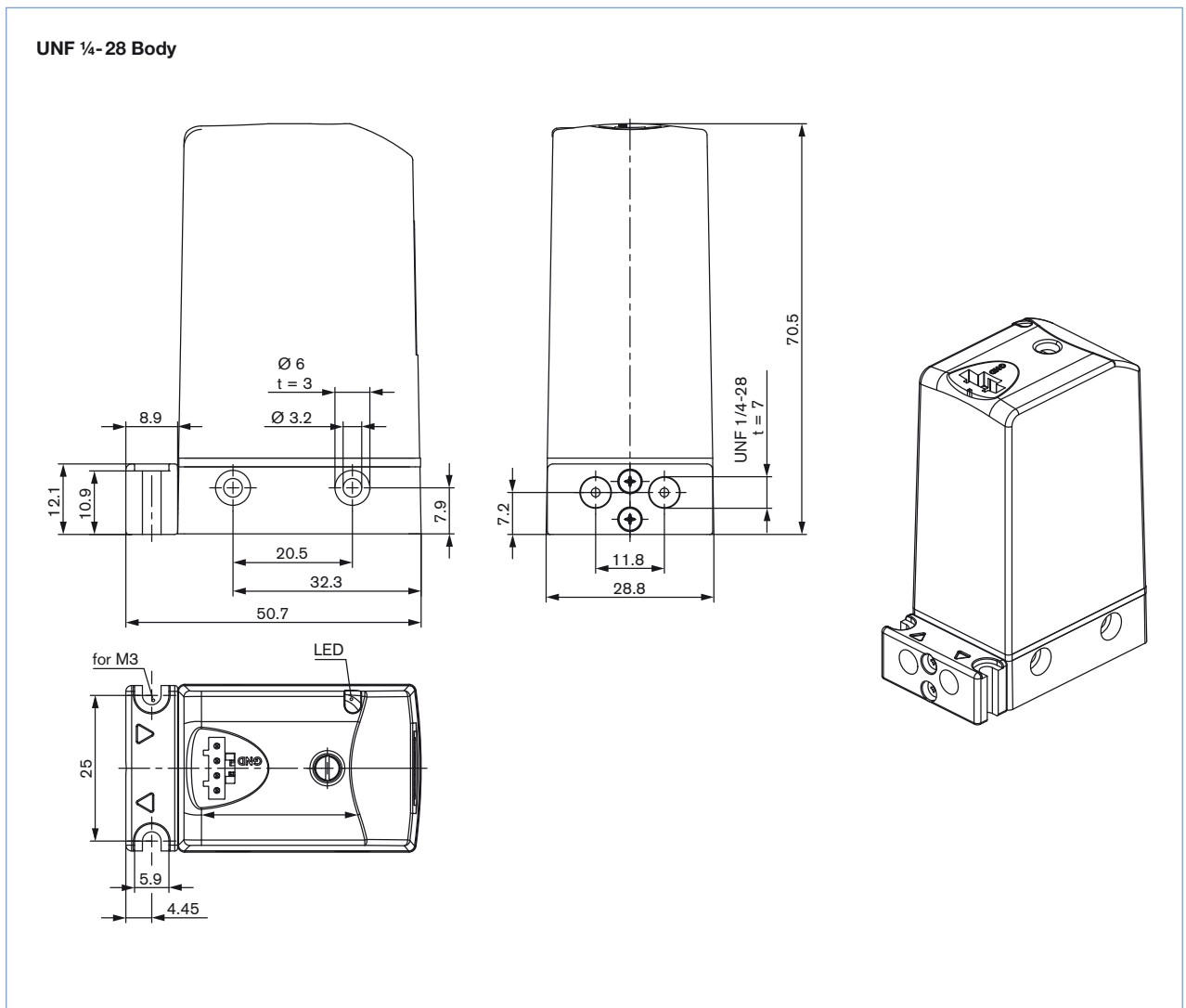
¹⁾ The typical repetition accuracy is ±2%. This is a guiding value only!

Ordering Chart

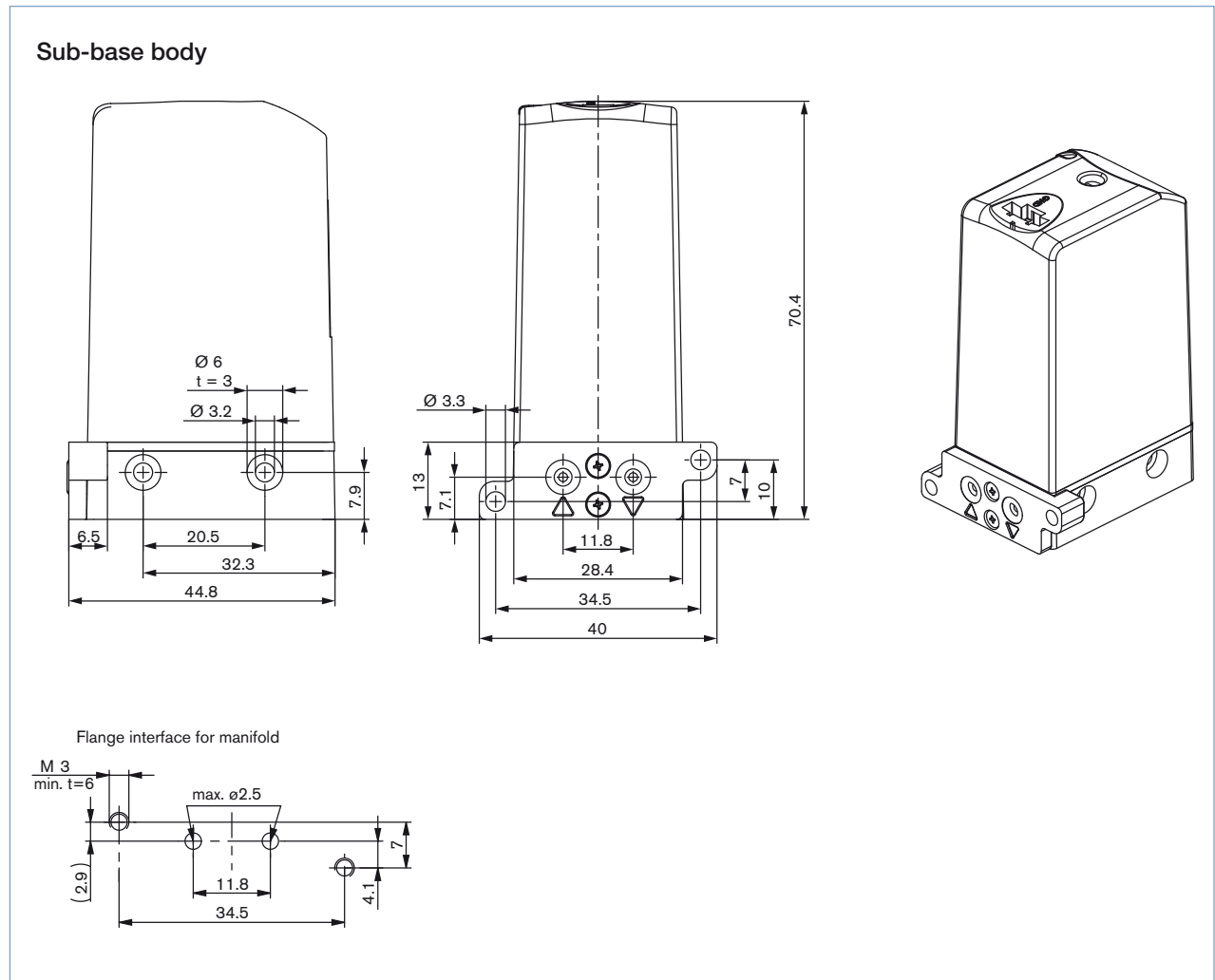
Version	Voltage	Connection	Seal material	Function mode ⁴⁾	Article no.
Standard	24 V DC	Sub-base	FFKM	5 Hz	238190 
Standard	24 V DC	UNF 1/4-28	FFKM	5 Hz	215793 
Standard	24 V DC	Sub-base	FFKM/EPDM	5 Hz	238193 
Standard	24 V DC	UNF 1/4-28	FFKM/EPDM	5 Hz	238194 
Standard	12 V DC	UNF 1/4-28	FFKM/EPDM	5 Hz	238195 
FEP-Leads 500 mm with 4 pin connector	12-24 V				683613 

⁴⁾ Mode can be changed please see manual

Dimensions [mm]



Dimensions [mm], continued



patented technology

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please consult for advice.Subject to alteration.
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