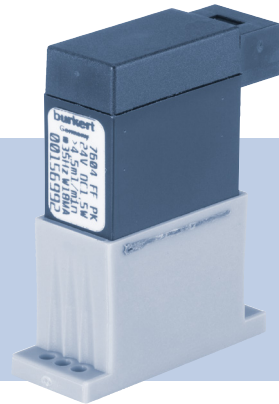


Type 7604

Micro diaphragm pump 11 mm



Operating Instructions

Contents

1	Operating instructions.....	2
2	Intended use	3
3	Basic safety instructions	3
4	Product description	5
5	Technical data	5
6	Installation	6
7	Electrical connection	9
8	Maintenance, troubleshooting	9
9	Accessories.....	10
10	Transportation, storage, disposal.....	10



The data sheet and further information on the device type can be found online at: <https://country.burkert.com>.

If you have any questions, please contact your Bürkert sales department.

1 OPERATING INSTRUCTIONS

The operating instructions contain important information.

- ▶ Carefully read these instructions and follow the safety information.
- ▶ Keep the manual and make it available to every user.
- ▶ There is no liability or guarantee for Type 7604 if the instructions are not followed.

1.1 Symbols



DANGER!

Immediate danger! Fatal or serious injuries.



WARNING!

Potential danger! Fatal or serious injuries.



CAUTION!

Danger! Moderate or minor injuries.

NOTE!

Warns of damage.

- ▶ Indicates instructions to avoid danger.
- Designates a procedure which you must carry out.

2 INTENDED USE

Micro diaphragm pump Type 7604 solely serves as a micro diaphragm pump for the media permitted as per the data sheet.

- ▶ Use the device only in conjunction with third-party devices and components recommended and authorized by Bürkert.
- ▶ Prerequisites for safe and trouble-free operation include correct transportation, correct storage, installation, start-up, operation and maintenance.
- ▶ Observe the permissible data, operating conditions and conditions of use of the respective devices or products. These specifications can be found in the contract documents, operating instructions and on the type label.
- ▶ Use the device only as intended. Non-intended use of the device may be dangerous to people, nearby equipment and the environment.
- ▶ Do not operate the device without suitable filtration of the input medium.

2.1 Definition of terms

Term	Definition for these instructions
Device	Micro diaphragm pump Type 7604

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not take into account any unforeseen circumstances and events which occur during installation, operation and maintenance. The operator is responsible for observing the location-specific safety regulations, also with reference to the personnel.



Risk of injury due to high pressure and escaping medium.

- ▶ Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

Risk of injury due to electric shock.

- ▶ Before working on the device or system, switch off the power supply. Secure against reactivation.
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices.

Risk of burns or fire from hot device surfaces due to longer duty cycles.

- ▶ Only touch the device when wearing protective gloves.
- ▶ Keep the device away from highly flammable substances and media.

Risk of short-circuit

Escape of medium due to leaking fittings.

- ▶ Make sure seals are properly seated.
- ▶ Carefully screw together the micro diaphragm pump and manifold.

General hazardous situations.

Ensure the following to prevent injuries:

- ▶ Observe the general rules of technology.
- ▶ Do not use the device in an area prone to explosion.
- ▶ Use the device only when it is in perfect condition and in accordance with the operating instructions.
- ▶ Secure the device or system to prevent unintentional activation.
- ▶ After an interruption in the power supply, ensure that the process is restarted in a controlled manner.
- ▶ Do not modify the device. The micro pump cannot be dismantled.
- ▶ Do not mechanically load the device.
- ▶ Only trained technicians may perform installation and maintenance work.
- ▶ Install the device according to the regulations applicable in the respective country.
- ▶ Check the durability of the parts in contact with media before using aggressive media.

NOTE!

Electrostatically sensitive components / assemblies!

The device contains electronic components that are susceptible to the effects of electrostatic discharging (ESD). Components are at risk if they come into contact with electrostatically charged persons or objects. In the worst-case scenario, they will be destroyed immediately or will fail after start-up.

- ▶ Observe the requirements for minimizing or avoiding the possibility of damage caused by sudden electrostatic discharge in accordance with EN 61340-5-1.
- ▶ Do not touch electronic components while the supply voltage is switched on!

4 PRODUCT DESCRIPTION

Micro diaphragm pump Type 7604 functions on the basis of the function principle of a self-priming diaphragm pump. It is suitable for the continuous conveyance of small quantities of aggressive, inorganic and biological materials.

Integrated impulse generator

The micro diaphragm pump can optionally be equipped with an integrated impulse generator. The impulse generator is integrated into the cover of the device. The desired frequency can be set with a rotary potentiometer.

4.1 Conformity

The device conforms to the EU directives as per the EU Declaration of Conformity.

4.2 Standards

The applied standards as used to verify compliance with the Directives can be found in the EU type examination certificate and/or the EU Declaration of Conformity.

5 TECHNICAL DATA

5.1 Operating conditions

NOTE!

Malfunction

- ▶ Do not use Type 7604 outdoors without the appropriate housing and avoid heat sources that may cause the permissible temperature range to be exceeded.

The conveyance rate of the micro diaphragm pump depends on:

- the viscosity of the medium being conveyed,
- the flow resistance values in front of and behind the pump (e.g. piping, height difference),
- the frequency of the supply voltage.
- the temperature

Ambient temperature	+10 to +55 °C
Medium temperature	+10 to +60 °C
Degree of protection	IP40 (IP30 for rectangular plug Type 2505)
Installation position	arbitrary, preferably with flange facing downwards.

5.1.1 Electrical data

Electrical connection	Rectangular plug Type 2505, stranded wire
Operating voltage	12/24 V DC
Voltage tolerance	±10%
Power consumption	1.5 W

5.2 Type label (example)

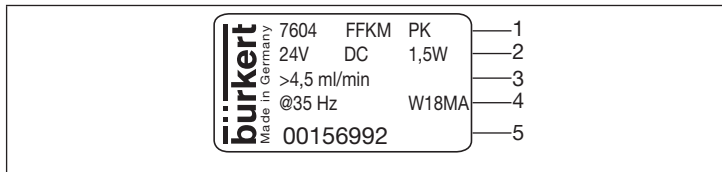


Fig. 1: Location and description of the type label

Item	Text	Description
1	7604	Device type
	FFKM	Seal material
	PK	Body material
2	24 V DC	Voltage (direct current, 10% residual ripple)
	1.5 W	Power

Item	Text	Description
3	>4.5 ml/min	Flow rate (duty cycle 50:50)
4	@35 Hz	Frequency
	W18MA	Manufacture code (encrypted)
5	00156992	Identification number of the device

6 INSTALLATION



CAUTION!

Risk of injury due to high pressure and escaping medium.

- ▶ Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

Risk of injury due to electric shock.

- ▶ Before working on the device or system, switch off the power supply. Secure against reactivation.
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices.



WARNING!

Risk of injury due to improper installation

- ▶ Only trained technicians may perform installation work.
- ▶ Only carry out installations with suitable tools.
- ▶ Secure the system against unintentional activation. Following installation, ensure a controlled restart.

6.1 Preparatory work

NOTE!

Particles in the medium can lead to impaired function and device failure. Media that tend to crystallise are also critical.

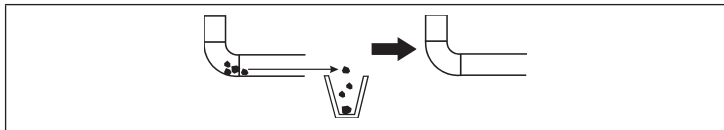


Fig. 2: Cleaning the connection line

- Clean contaminants from the connection line.
- Install the filter upstream.
Pore size max. 20 µm

6.2 Fluidic connection

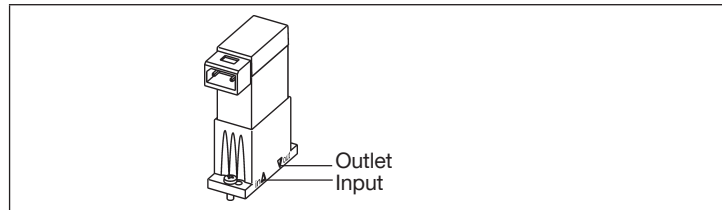


Fig. 3: Fluidic connection

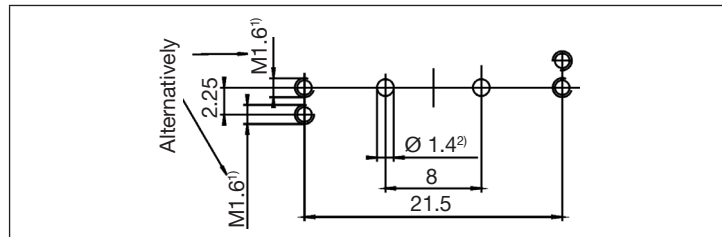


Fig. 4: Flange profile for manifold (mm)

1) at least 5 mm deep

2) maximum

6.3 Fluidic installation

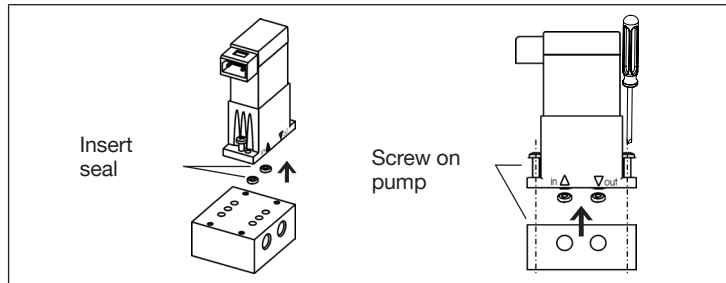


Fig. 5: Installation for flange design (F05)

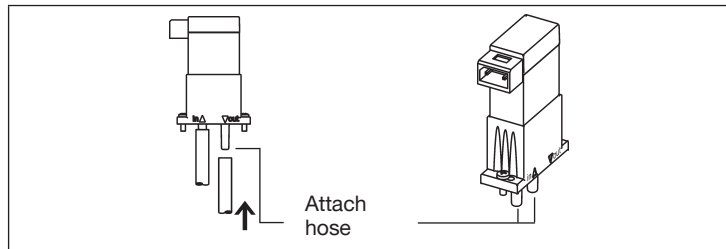


Fig. 6: Installation for hose connection

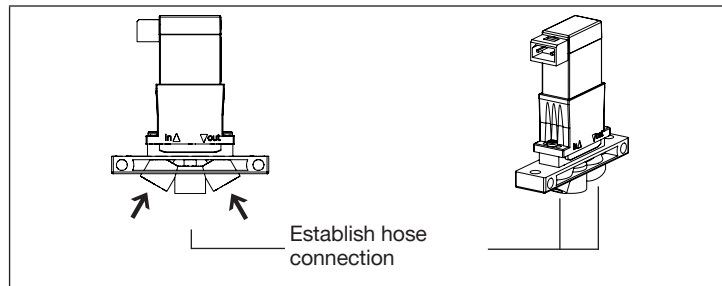


Fig. 7: Installation for UNF design (UNFB)

→ Install hose connection as shown in the image.

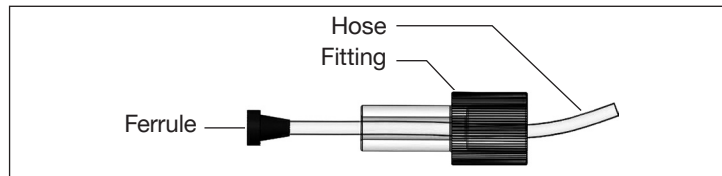


Fig. 8: Structure UNF 1/4-28 for fluidic connection

7 ELECTRICAL CONNECTION

7.1 Standard device (duty cycle 1:1)

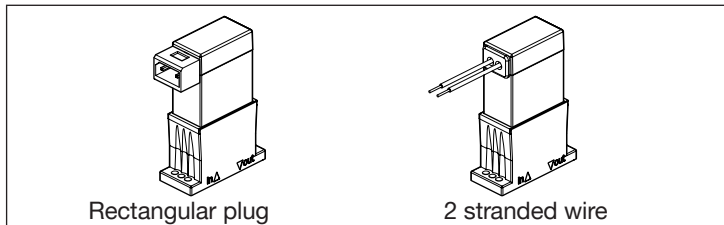


Fig. 9: Connection variants

7.2 Device with integrated impulse generator (optional)

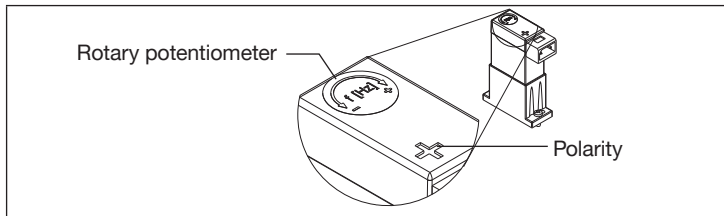


Fig. 10: Connecting a device with integrated impulse generator (electronic)

For these devices, the polarity of the electrical port is specified on the device cover.

→ Note polarity!

The service life of the potentiometer is limited.

The number of rotations is limited to 20, after which a stable frequency of the electronics assembly can no longer be guaranteed.

The sticker must be removed in order to change the frequency with the rotary potentiometer.

8 MAINTENANCE, TROUBLESHOOTING



CAUTION!

Risk of injury due to high pressure and escaping medium.

- ▶ Before working on the device or system, switch off the pressure. Exhaust or empty the lines.

Risk of injury due to electric shock.

- ▶ Before working on the device or system, switch off the power supply. Secure against reactivation.
- ▶ Observe the applicable accident prevention and safety regulations for electrical devices.



WARNING!

Risk of injury due to improper maintenance work!

- ▶ Only trained technicians may perform maintenance work.
- ▶ Secure the system against unintentional activation.
- ▶ Ensure a controlled restart after maintenance is completed.

8.1 Malfunctions

In case of malfunctions:

- check voltage, frequency and duty cycle.
- Check flow rate of connection lines (too much counter-pressure at outlet or too much negative pressure at input).
- Check connection lines for contamination.
- Check filter for contamination.

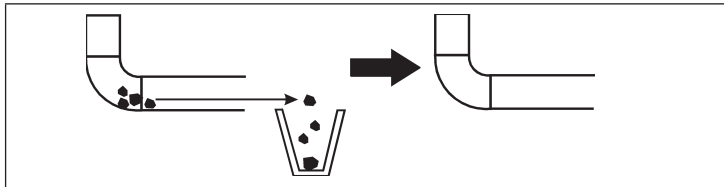


Fig. 11: Cleaning the connection line.

9 ACCESSORIES

For accessories, see data sheet.

10 TRANSPORTATION, STORAGE, DISPOSAL

NOTE!

Damage in transit due to inadequately protected devices.

- ▶ Protect the device against moisture and dirt in shock-resistant packaging during transportation.
- ▶ Observe permitted storage temperature.

Incorrect storage may damage the device.

- ▶ Store the device in a dry and dust-free location.

Permitted storage temperature: +10 to +55 °C.

Damage to the environment caused by device parts contaminated with media.

- ▶ Dispose of the device and packaging in an environmentally friendly manner.
- ▶ Observe applicable disposal and environmental regulations
- ▶ Observe national waste disposal regulations.

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