bürkert
FLUID CONTROL SYSTEMS

Mass Dosing Controller (MDC) for liquids

- Dosing quantities 0.05 g...1000 g
- Highest dosing accuracy
- High long-term stability, no zero-point adjustment necessary
- Highly resistant materials in contact with the medium
- Suitable for numerous liquids

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

Can be combined with

	Type ME63 ▶ Industrial Ethernet gateway, IP65/ IP67/ IP69k	
	Type ME43 ▶ Fieldbus gateway	
	Type 6013 ▶ Plunger valve 2/2-way direct-acting	
	Type 6724 ▶ 2/2 or 3/2-way whisper valve with media separation	
	Type 6757 ▶ 2/2 or 3/2-way whisper valve with media separation	

Type description

The mass dosing controller (MDC) Type 8756 is especially suitable for dosing small quantities of liquids with the highest accuracy. The measuring principle is based on the Coriolis effect and is completely independent of the medium. Pressure and temperature deviations have no influence on the dosing accuracy.

In addition to the flow rate, the density and temperature of the liquid are measured. The device design enables stable batch dosing which is robust against external influences and does not require zero adjustments when process conditions change. All wetted materials are highly resistant and allow use for a wide range of liquids, aggressive or not.

Type 8756 in the batch variant is available in the following variants
- MDC with integrated solenoid valve Type 6013
- MDC with integrated solenoid valve Type 6724
- MDC with integrated solenoid valve Type 6757
- MDC with interface for a modular actuator.

The Bürkert Communicator software is available for easy parameterisation of the batch controller.

Visit product website ▶

Table of contents

1. General Technical Data

Product properties		
Dimensions	Further information can be found in chapter **"4. Dimensions" on page 7**.	
Material [1]		
Housing	Aluminium	
Base block (wetted)	Stainless steel 1.4404/316L (optionally with inspection certificate 3.1 according to EN 10204)	
Sensor (wetted)	Stainless steel 1.4404/316L (optionally with inspection certificate 3.1 according to EN 10204)	
Actuator (wetted)	Further information can be found in the table section Actuator (see below).	
Seal (wetted)	FFKM or PCTFE, metal possible in the modular variant. Further information on the sealing materials can be found in the table section Actuator (see below).	
Configuration management	Further information can be found in chapter **"8.3. Configuration management for easy device replacement" on page 21**.	
Total weight	> 2 kg	
LED display [2]	RGB-LED according to NAMUR NE107	
Performance data	**Size 1** [3]	**Size 2** [3]
Nominal flow rate	≤ 30 kg/h	≤ 150 kg/h
Dosing characteristics		
Dosing range	0.05 g...100 g	0.5 g...1000 g
Dosing time	0.05 s...7 s	0.05 s...7 s
Dosing precision	0.2 % of reading for dosing quantity ≥ 0.2 g	0.2 % of reading for dosing quantity ≥ 5 g
	(under calibration conditions and after 1 min warm-up time to achieve the best measuring conditions)	
Temperature		
Measuring accuracy	± 1.0 K with flow > 1.5 kg/h	± 1.0 K with flow > 5.7 kg/h
Repeatability	± 0.5 K with flow > 1.5 kg/h	± 0.5 K with flow > 5.7 kg/h
Tightness to the outside (helium)	< 10^{-6} mbar*l/s (depending on seal material)	< 10^{-6} mbar*l/s (depending on seal material)
Actuator	**Size 1** [3]	**Size 2** [3]
Valve Type 6724		
Dosing amount	≥ 50 mg	–
Pressure	≤ 5 bar	–
Viscosity (dynamic)	≤ 40 mPas	–
Wetted parts	EPDM, PEEK	–
Protection class	IP10 (IP65 on request)	–
Valve Type 6013		
Dosing amount	≥ 50 mg	≥ 500 mg
Pressure	≤ 16 bar (higher pressure on request)	
Viscosity (dynamic)	≤ 350 mPas (higher viscosity on request)	
Wetted parts	EPDM, stainless steel 1.4305/303, 1.4113/434, 1.4310/301, 1.4303/305L	
Protection class	IP65	
Valve Type 6757		
Dosing amount	–	≥ 100 mg
Pressure	–	≤ 10 bar
Viscosity (dynamic)	–	≤ 40 mPas
Wetted parts	–	FFKM, PEEK
Protection class	–	IP30
Further actuators		
In the modular variant, further actuators can be connected. The internal dosing algorithm is capable of dosing with different actuators.		
Electrical data		
Operating voltage	24 V DC	
Power consumption	< 2 W + < 30 W (as MDC with modular actuator) 3 W (as MDC with actuator Type 6724/ 12 W (as MDC with actuator Type 6013/) 8 W (as MDC with actuator Type 6757)	
Voltage tolerance	± 10 %	
Medium data		
Operating medium	Further information can be found in chapter **"3.1. Bürkert resistApp" on page 6**.	

Calibration medium	Water
Medium temperature	0 °C...+ 50 °C (higher on request)
Viscosity (dynamic)	0.3...350 mPas (higher on request)
Process/Port connection and communication	
Process connection	G ⅛, NPT ⅛, VCR® ⅛, VCR® ¼, double compression fitting ⅛", ¼", 4 mm, 6 mm, tri-clamp
Electrical connection	
büS/CANopen variant	1x M12 plug, 5-pin
Industrial Ethernet variant	1x M12 plug, 5-pin, 2x M8 socket, 4-pin
Approvals and conformities	
Certificate	Material certificate 3.1 (optionally)
North America (USA/Canada)	Further information can be found in chapter **"2.4. North America (USA/Canada)" on page 5**.
Foods and Beverages/Hygiene	Further information can be found in chapter **"2.5. Foods and beverages/Hygiene" on page 6**.
Environment and installation	
Installation position	Any, to prevent the accumulation of gas bubbles in the medium: horizontal upright/horizontal overhead
Ambient temperature	0 °C...+ 50 °C (deviating temperature ranges on request)
Storage temperature	- 10 °C...+ 70 °C
Relative air humidity	Max. 95 % at + 55 °C, non-condensing
Accessories	
Software	Bürkert Communicator Further information can be found in chapter **"8.1. Bürkert Communicator software" on page 20**.

1.) The formulations of the wetted parts do not contain any silicone components.

2.) For a detailed description of LED colours see **operating instructions Type 8756** ▶

3.) For highly viscous media, this value may not be achieved.

2.   Approvals and conformities

2.1.   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.

2.2.   Conformity

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

2.3.   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.

2.4.   North America (USA/Canada)

Approval	Description
c(UL)us LISTED	**Optional: UL Listed for the USA and Canada** The products are UL Listed for the USA and Canada according to: • UL 61010-1 (ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE – Part 1: General Requirements) • CAN/CSA-C22.2 No. 61010-1

2.5. Foods and beverages/Hygiene

Conformity	Description
FDA	**FDA – Code of Federal Regulations (valid for variable code PL02, P03)** All wetted materials are compliant with the Code of Federal Regulations published by the FDA (Food and Drug Administration, USA) according to the manufacturer's declaration.
USP	**United States Pharmacopeial Convention (USP) (valid for variable code PL04)** All wetted materials are biocompatible according to the manufacturer's declaration.
⚗	**EC Regulation 1935/2004 of the European Parliament and of the Council (valid for variable code PL01, P02)** All wetted materials are compliant with EC Regulation 1935/2004/EC according to the manufacturer's declaration.

3. Materials

3.1. Bürkert resistApp
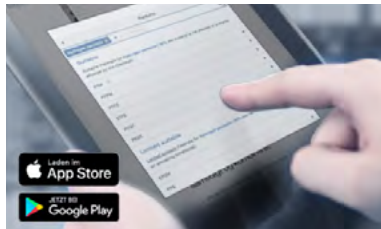
Bürkert resistApp – Chemical Resistance Chart

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.
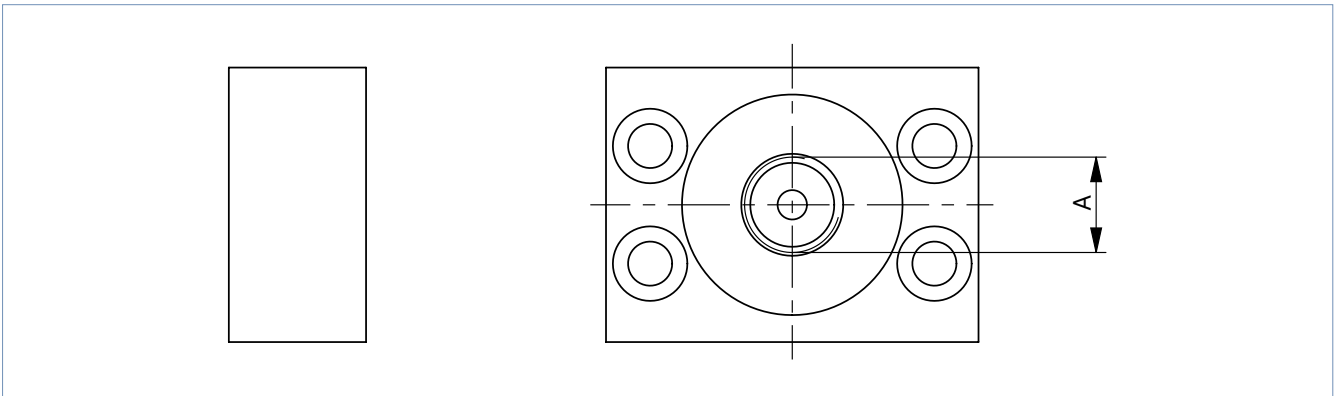
Start Chemical Resistance Check

4. Dimensions

4.1. Flange plates
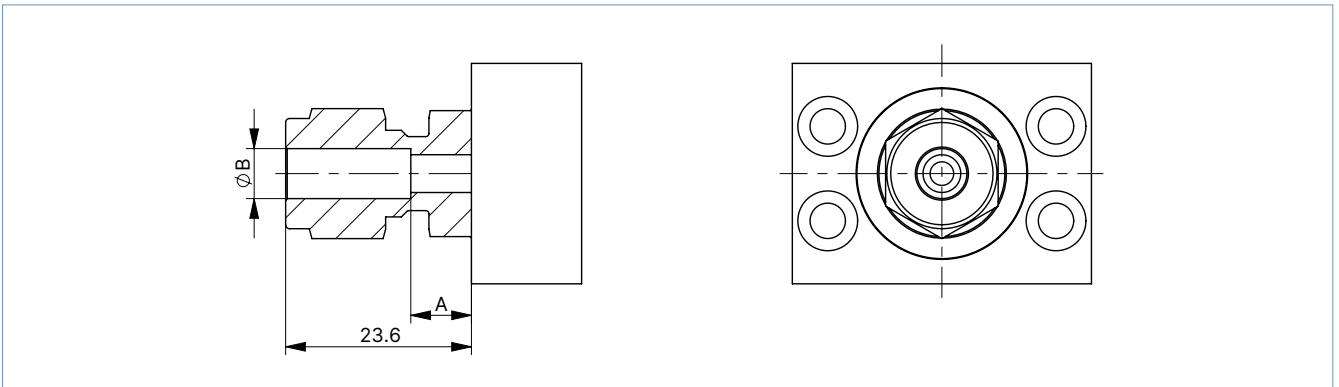
Internal-threaded connection

Note:
- Dimensions in mm
- A corresponds to G ⅛ and NPT ⅛

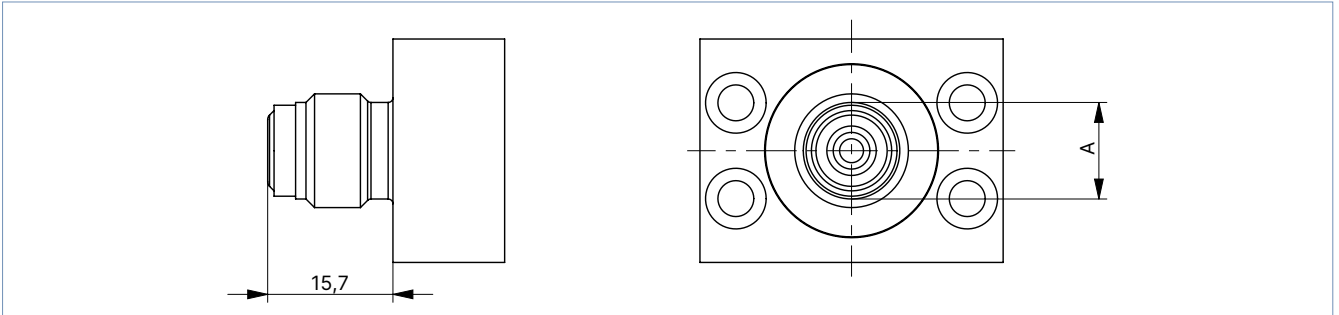**Double compression fitting**

Note:
Dimensions in mm

Variant	Size A	Size B
Double ferrule 4 mm	8.6 mm	4 mm
Double ferrule 6 mm	7.7 mm	6 mm
Double ferrule ⅛"	8.6 mm	⅛"
Double ferrule ¼"	7.7 mm	¼"

Fitting with metal gasket

Note:

- Dimensions in mm

- A corresponds to G ⅛ and NPT ⅛

15,7

A

Tri-clamp

Note:
Dimensions in mm

⌀ 25

20

⌀ 4.6
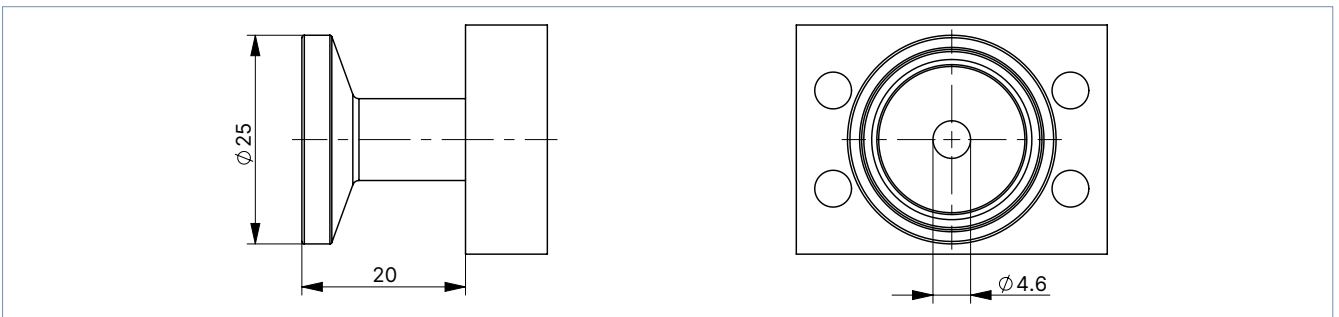
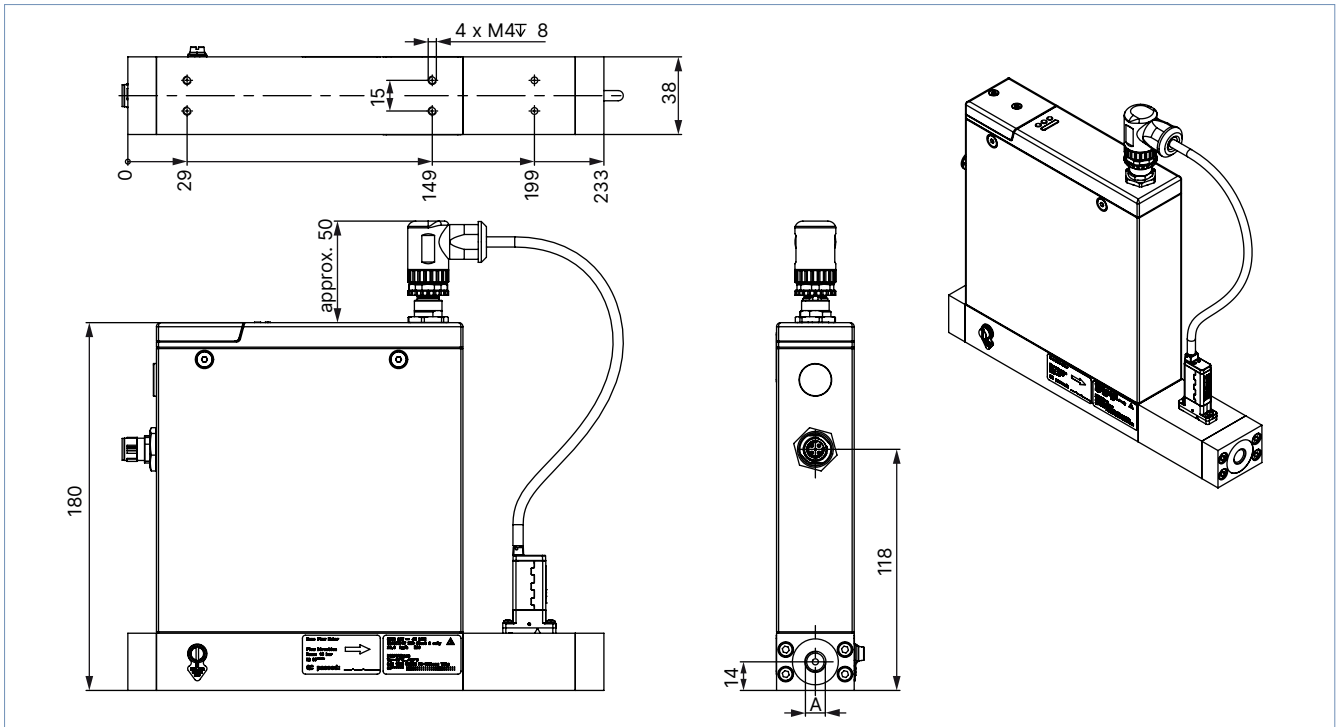## 4.2. MDC variant with valve Type 6724 (size 1)

Note:

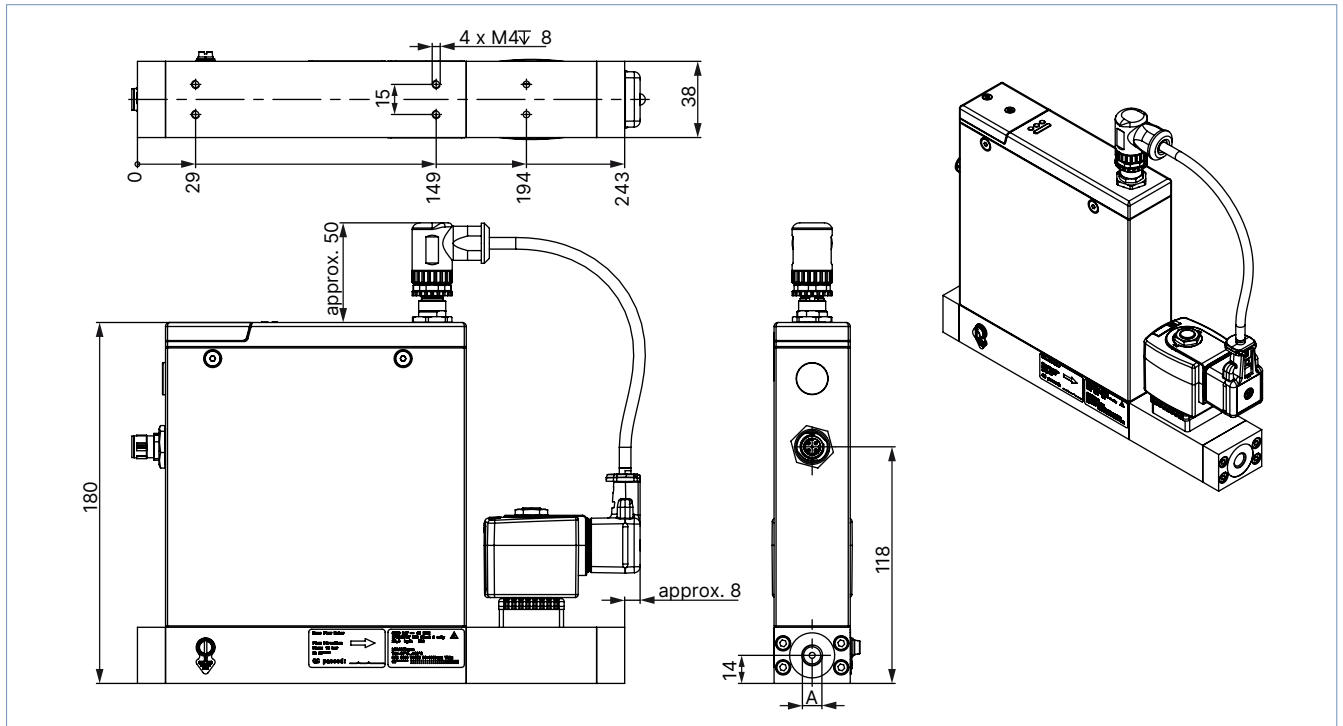- Dimensions in mm
- Shown connection: G ⅛ (A)

4.3.   MDC variant with valve Type 6013

Size 1

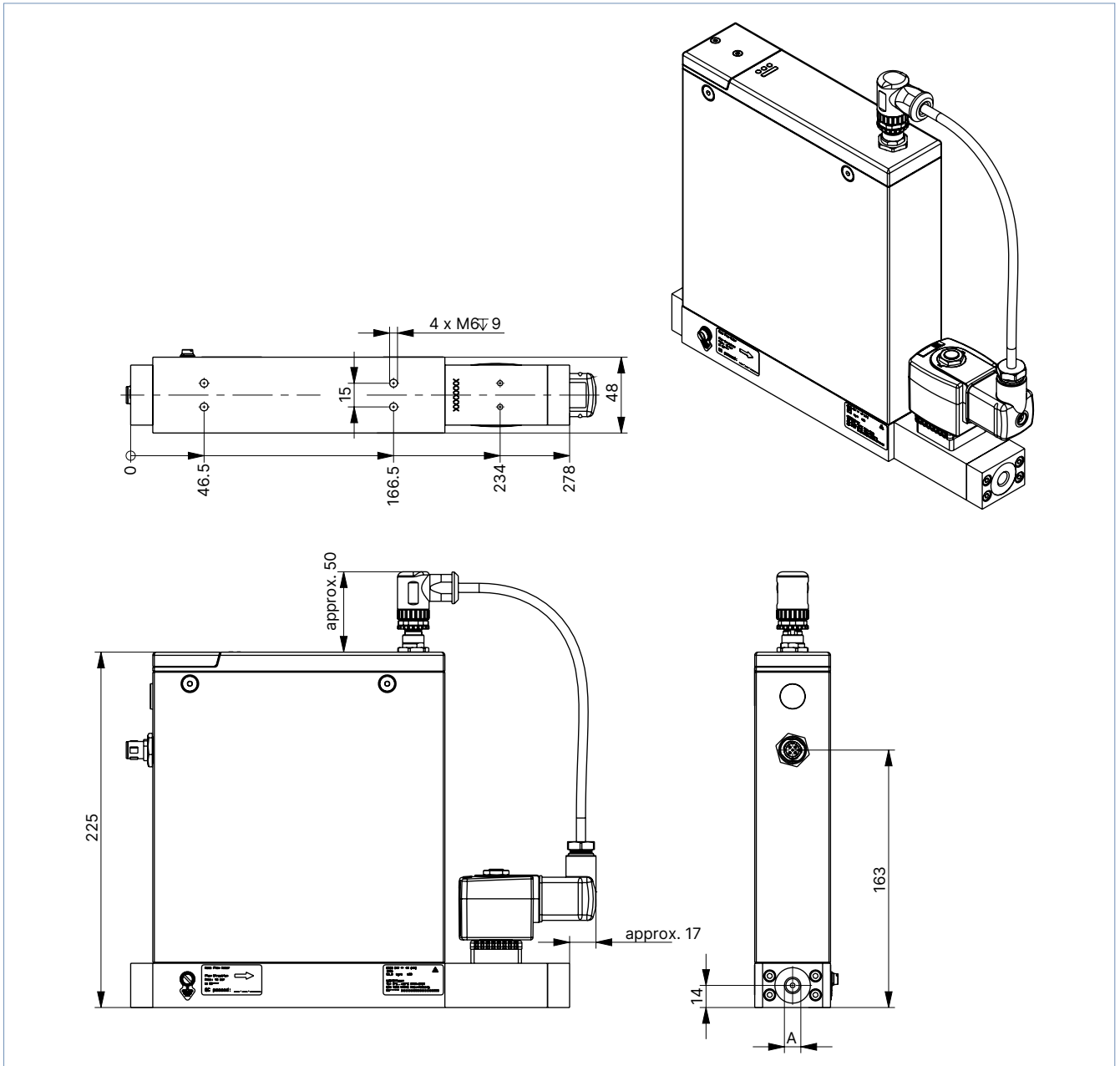**Note:**

- Dimensions in mm

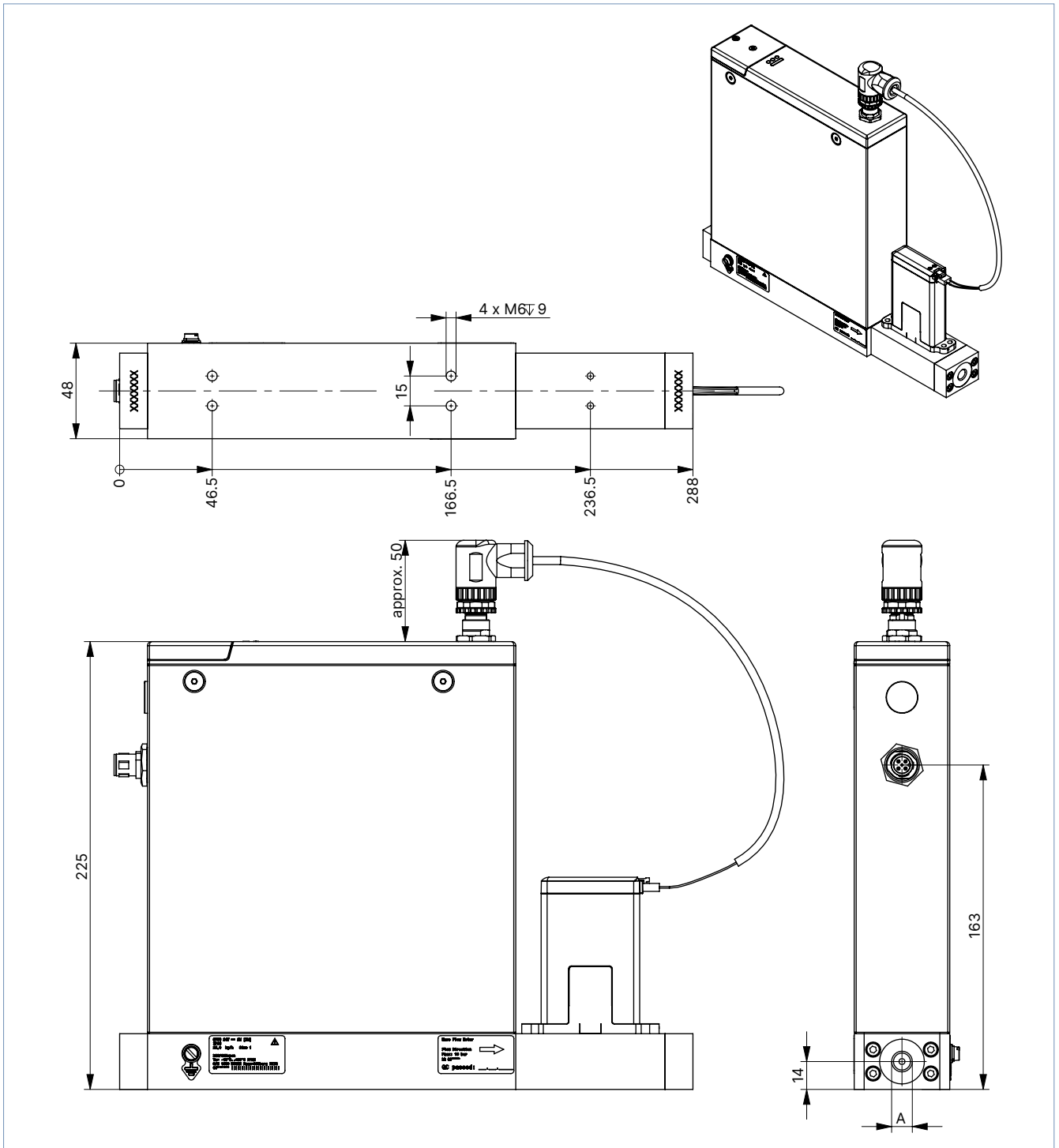- Shown connection: G ⅛ (A)

Size 2

Note:

- Dimensions in mm

- Shown connection: G ⅛ (A)

4.4.   MDC variant with valve Type 6757 (size 2)
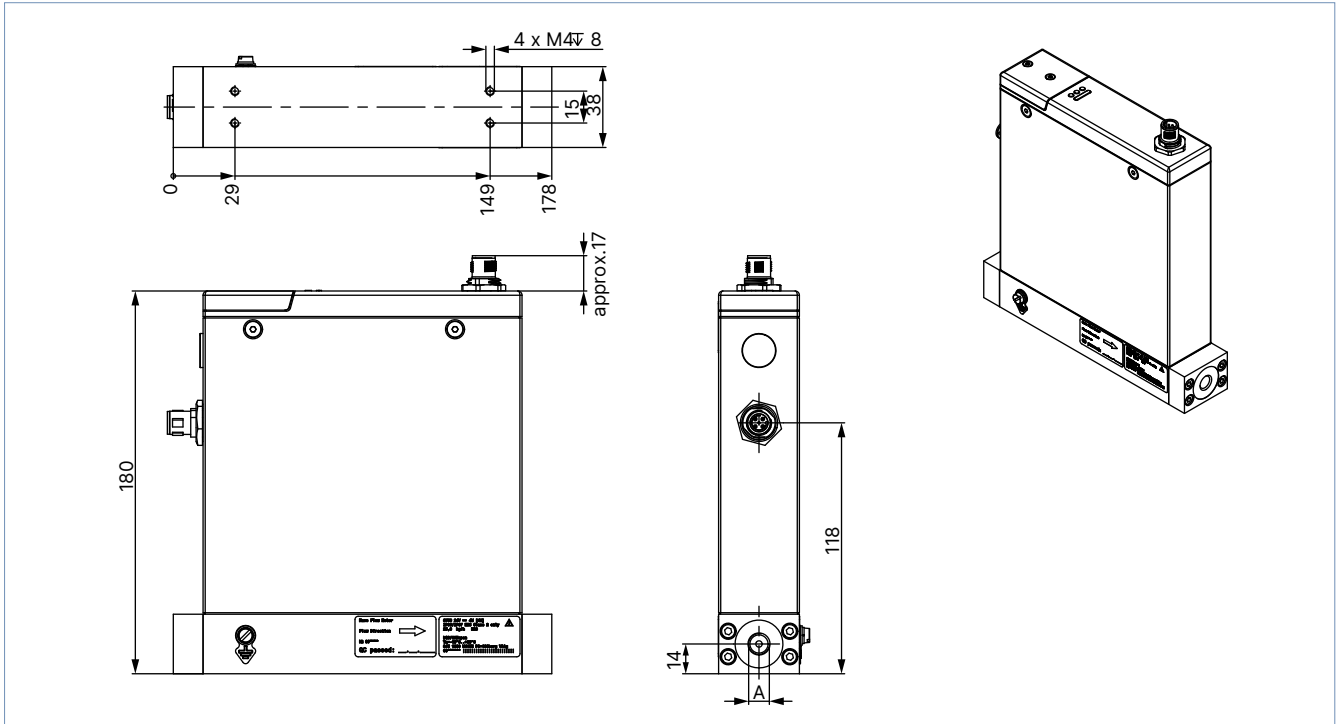
- Dimensions in mm
- Shown connection: G ⅛ (A)

4.5. MDC variant with modular actuator interface

Size 1

Note:

- Dimensions in mm
- Shown connection: G ⅛ (A)

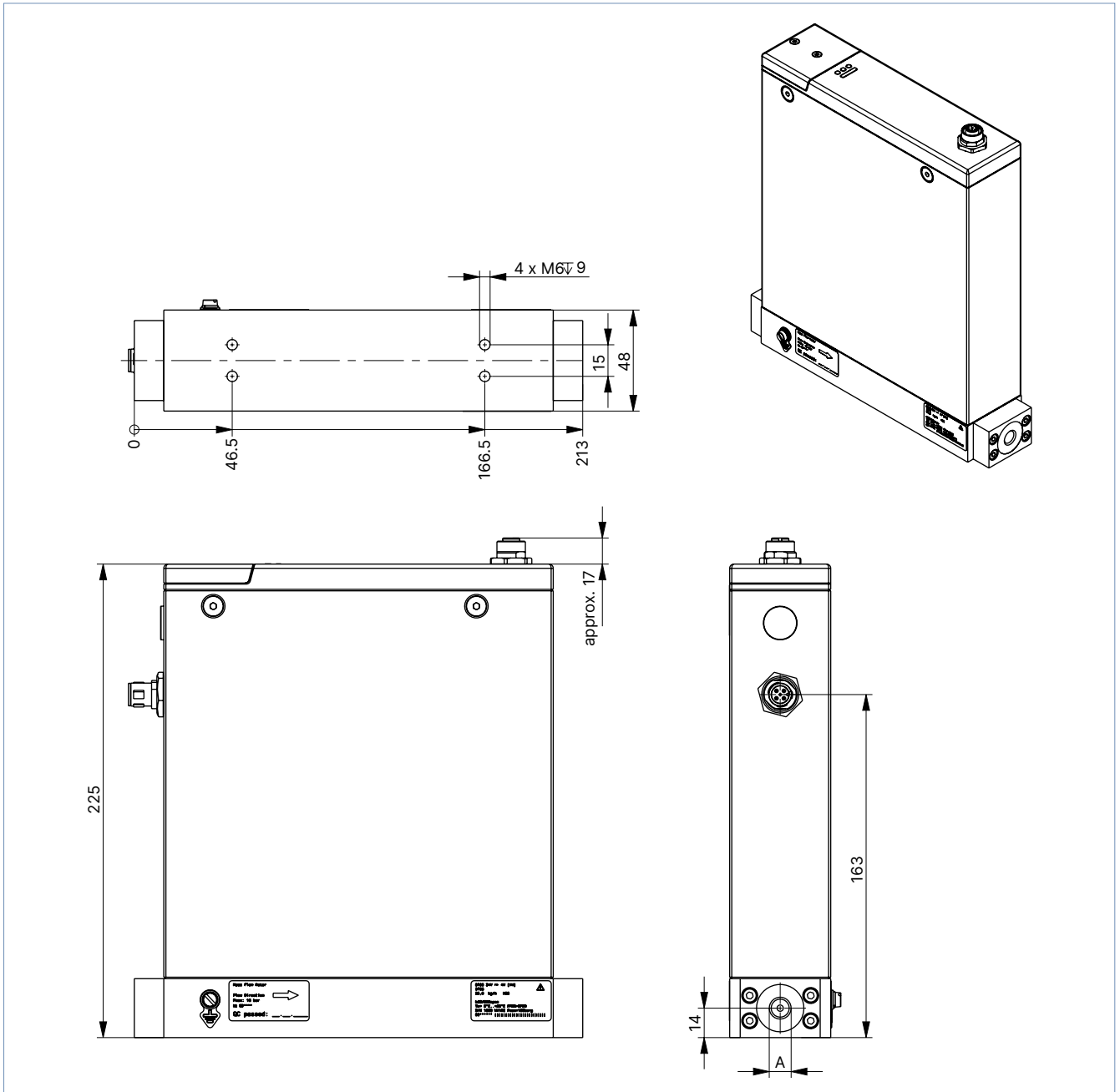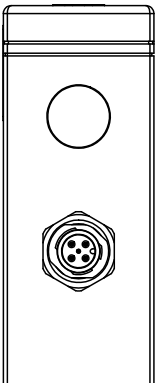**Size 2**

Note:

- Dimensions in mm

- Shown connection: G ⅛ (A)

5. Device/Process connections

5.1. büS/CANopen

M12 plug, 5-pin (A-coded)	Pin	Assignment
	1	Shielding
	2	24 V
	3	DGND
	4	CAN_H
	5	CAN_L

5.2. MDC with modular actuator interface

External actuators (e.g. solenoid valves) can be connected directly to Type 8756 Batch via the modular actuator interface. Thus, a closed control loop with sensor, actuator and integrated Batch controller can be realised in a modular way. Before initial commissioning, the Batch controller must be parameterised accordingly. The Bürkert Communicator software with its simple commissioning script can be used for this purpose, see.

M12 socket, 8-pin (A-coded)	Pin	Assignment
	1	24 V
	2	GND
	3	Not used
	4	Not used
	5	Not used
	6	PWM (open collector)
	7	Do not connect (internal use)
	8	Not used

6. Performance specifications

Note:

The following diagrams show the dosing range of the MDC. The dosing quantity can be freely selected from 0.05 g to 1000 g.
With different pressures and viscosities, the switch-on time of the actuator varies depending on the application, see **"6.5. Reading sample" on page 18**.

6.1. Dosing quantity depending on pressure and valve opening time < 50 g (size 1)
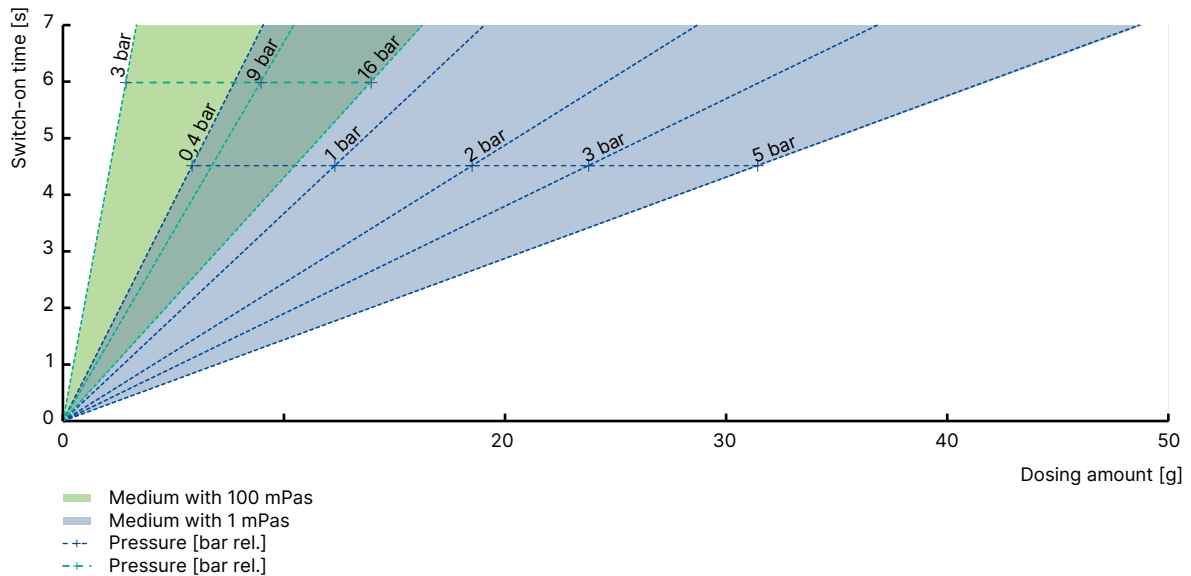
6.2. Dosing quantity depending on pressure and valve opening time < 1 g (size 1)
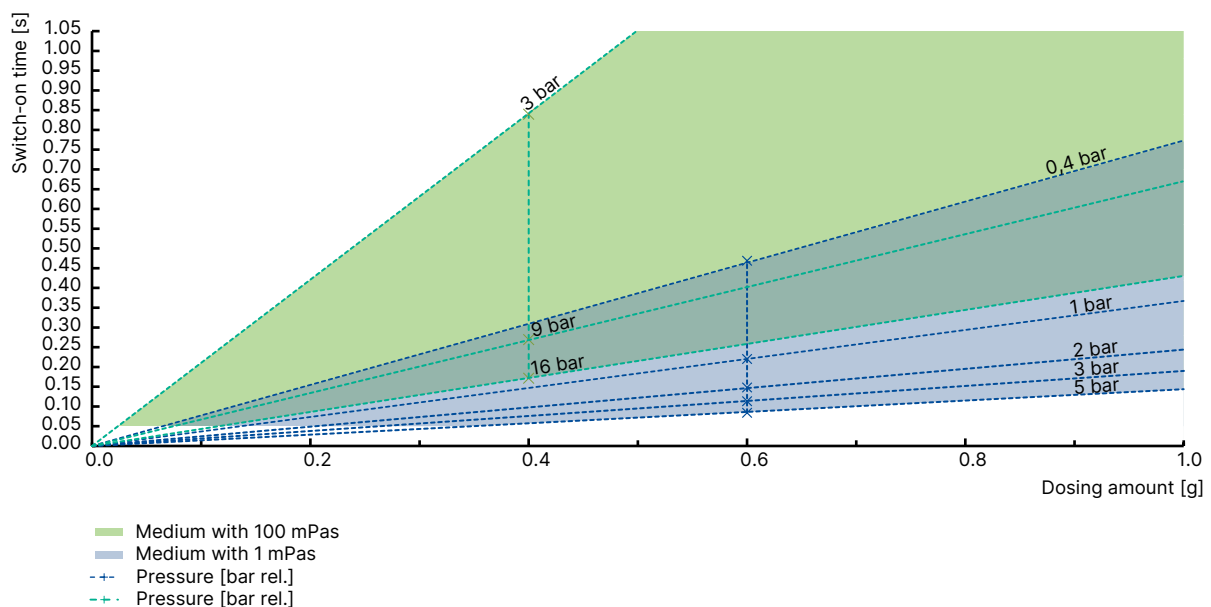
6.3. Dosing quantity depending on pressure and valve opening time < 300 g (size 2)

Medium with 100 mPas
Medium with 1 mPas
-+- Pressure [bar rel.]
-+- Pressure [bar rel.]

Dosing amount [g]
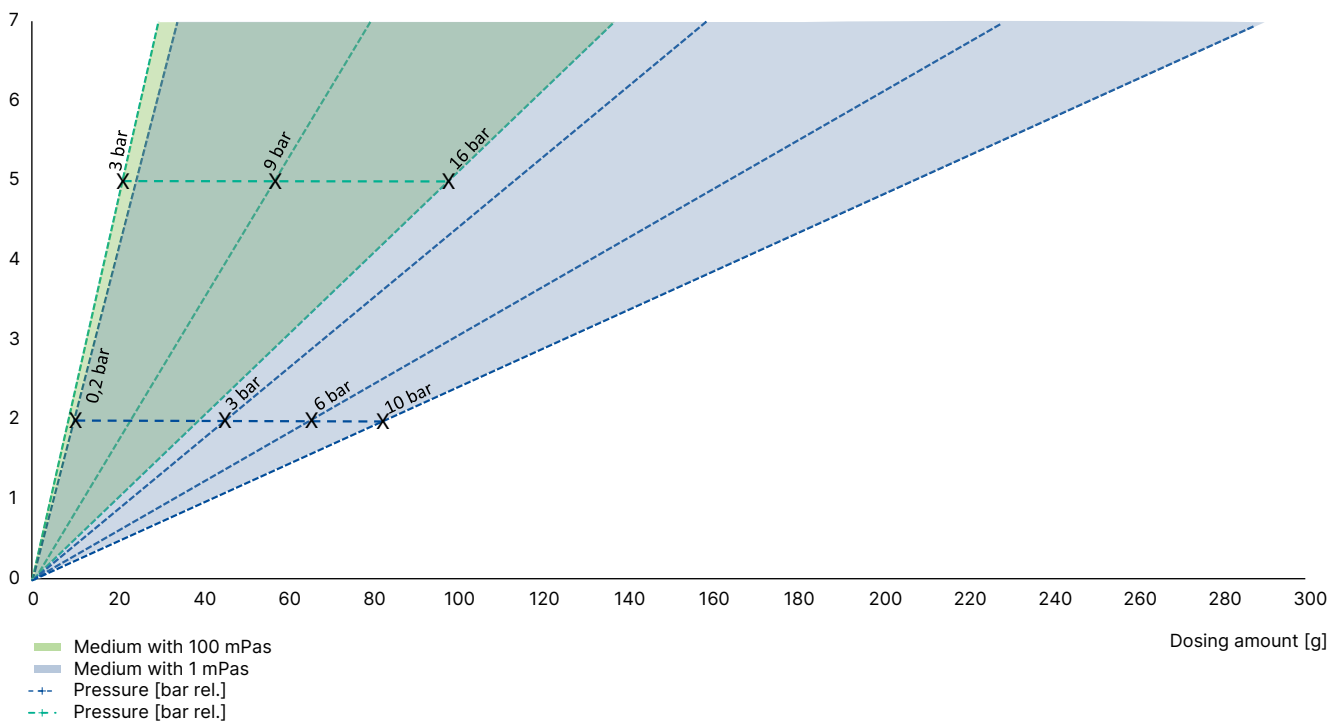
6.4. Dosing quantity depending on pressure and valve opening time < 20 g (size 2)

Medium with 100 mPas
Medium with 1 mPas
-+- Pressure [bar rel.]
-+- Pressure [bar rel.]

Dosing amount [g]
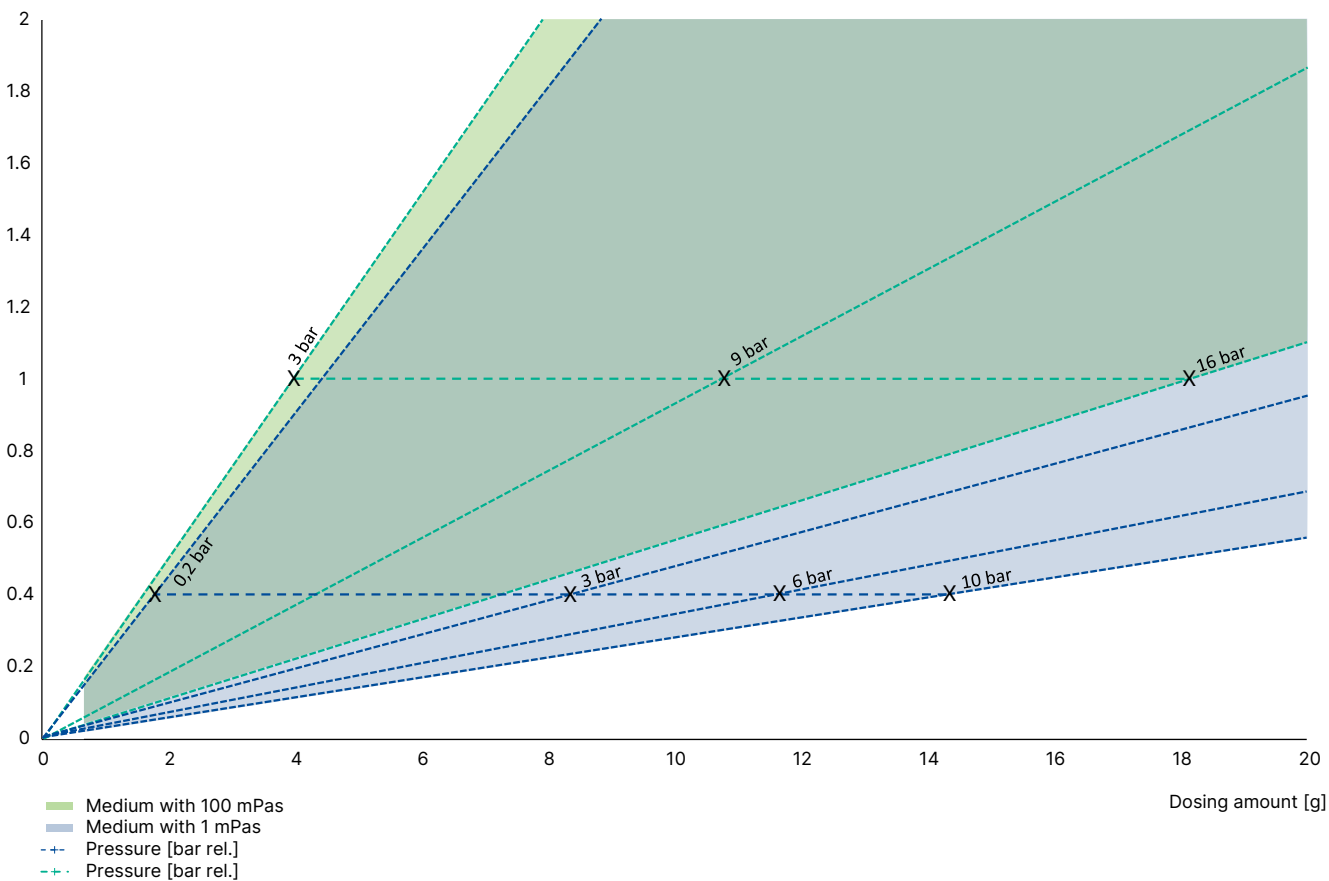
DTS 1000497674 EN Version: J Status: RL (released | freigegeben | valide) printed: 15.04.2025

6.5. Reading sample
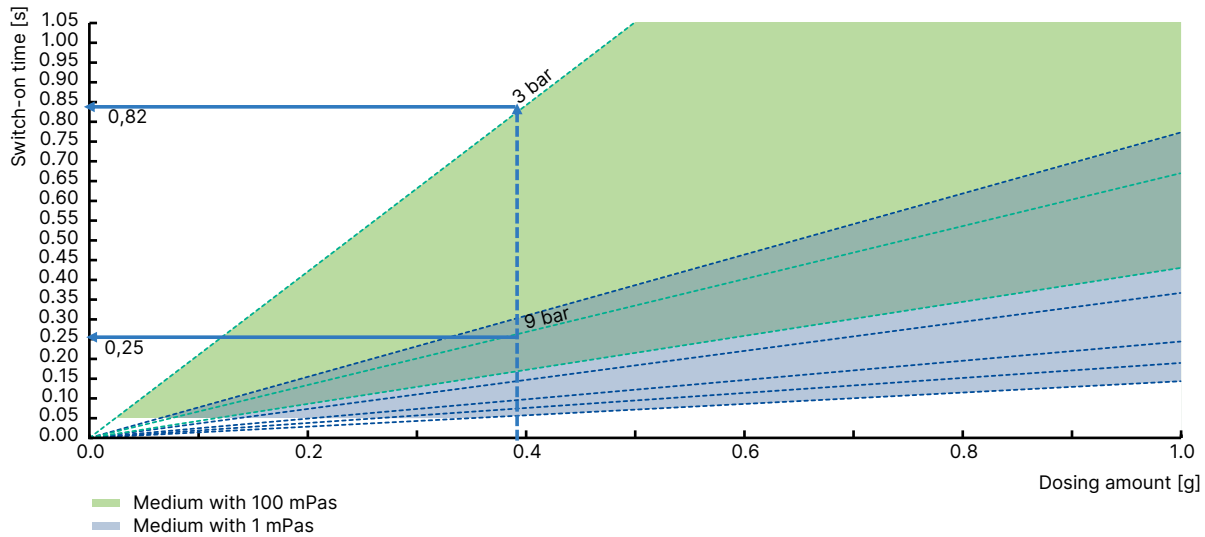
The diagram serves as an exemplary illustration of the dosing quantities to be achieved. Reference set-ups were defined which correspond to the typical use of this unit.

For example, you want to dispense 0.39 g in your application. You can see from the diagram above that you need a switch-on time of 0.82 s with an inlet pressure of 3 bar. If you have an inlet pressure of 9 bar in your system, this time is reduced to 0.25 seconds. Depending on the application and requirements, different cycle times can be realised. The accuracy of the dosing quantity is 0.2 % which is independent of the selected inlet pressure.
The switch-on time of the actuator is the opening time of the valve that is required to dose the desired dosing quantity.

6.6. Reference setup

The reference setup is a defined measurement setup under which the graphs in **"6. Performance specifications" on page 16** were recorded. The pre-pressure of the medium was generated via an air cushion. A scale was used as a reference for checking the set-point value.

7. Product operation

7.1. Measuring principle

The measuring principle of this flow sensor is based on the Coriolis effect. The core of the measuring system is a thin, S-shaped measuring tube which is set in high-frequency vibration by an external exciter coil. The measuring tube can vibrate freely between two fixed points. If a liquid flows through the vibrating measuring tube, the Coriolis force acts on the medium and leads to a change in the tube vibration (see figure). [1] This phase shift is dependent on the mass flow of the medium and is directly proportional to it. With the help of sensors, the pipe vibrations are continuously recorded and electronically evaluated. In addition to the flow rate, information on the density and temperature of the medium is also available in the Bürkert Communicator software.
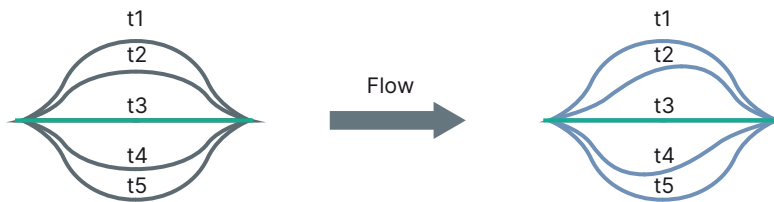
Pipe vibrations without medium

Flow

Pipe vibrations at fluid flow

[1] t1...t5: deflections of the measuring tube at the respective point in time

8. Product accessories
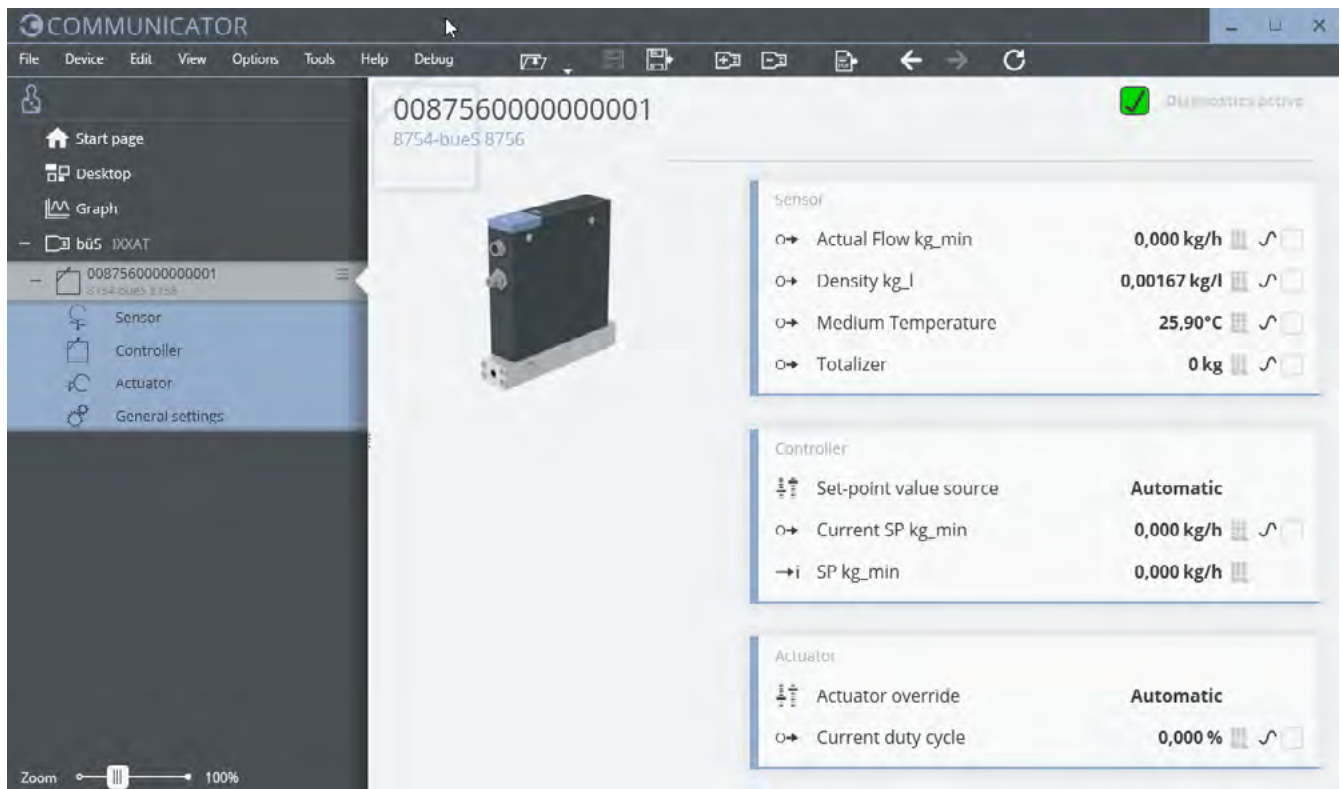
8.1. Bürkert Communicator software

Note:
The corresponding communication software can be downloaded from the website **Type 8920 ▶**.

The Bürkert Communicator is the most important software component of the EDIP (Efficient Device Integration Platform). Various features of this universal tool simplify the configuration and parametrisation of devices equipped with a digital CANopen-based interface. With this tool, the user has a complete overview of cyclic process values as well as acyclic diagnostic data. The integrated graphical programming environment enables the creation of decentralised sub-system control functions. The connection to the PC is established with a USB büS interface set. The adapter is available as an accessory (see **"9.6. Ordering chart accessories" on page 22**).

The Bürkert Communicator enables:

- Configuration, parametrisation and diagnosis of EDIP devices / networks
- Switching between defined gases
- Easy and comfortable mapping of cyclic values
- Graphic display, monitoring and storage of process values
- Firmware update of the connected EDIP devices
- Saving and restoring device configurations
- Zero-point adjustment in case of changed ambient conditions
- Guided re-calibration routine

8.2. Connecting Type 8756 Batch with the Bürkert Communicator software

The Bürkert Communicator interface is based on CANopen. The appropriate bus termination is mandatory. Activate the termination resistor switch on the büS stick.
The connection is established via the device's micro USB socket (USB büS interface set 2 contains the necessary accessories).
Please note: no external power supply may be connected to the micro USB socket. The device must be provided with power as described in chapter **"5. Device/Process connections" on page 15**.

8.3. Configuration management for easy device replacement

If a device needs to be replaced, the memory card can be removed from the defective device and inserted into the new one. This transfers all data of the device to be replaced to the new device. The memory card is available as an accessory and must be ordered separately (see **"9.6. Ordering chart accessories" on page 22**).
In order to successfully exchange the device, it is necessary that both the new device and the device to be replaced possess the same device ID.

9. Ordering information

9.1. Bürkert eShop

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

9.2. Recommendation regarding product selection

Note:
Use the Product Enquiry Form (see **"9.4. Bürkert Product Enquiry Form" on page 22**) for the device details and send it to us once completed.

For optimum design of the actuator in the MDC (nominal valve size), the pressure values immediately before and after the MDC (p_1, p_2) at the Q_N flow rate should be known in addition to the required maximum Q_N flow rate. These are not identical with the inlet and outlet pressure of the entire system, because there are usually additional flow resistances (pipelines, additional shut-off valves, nozzles, etc.) both upstream and downstream of the MDC.

In the Product Enquiry Form, the pressure values immediately before and after the MDC must always be indicated. If these are not known or accessible by measurement, an estimate must be made taking into account the approximate pressure drops across the flow resistances before and after the MDC at Q_N. The specification of the maximum expected inlet pressure p_{1max} is necessary to ensure the leak-tight function of the actuator in all operating conditions.

9.3. 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

9.4. Bürkert Product Enquiry Form

Bürkert Product Enquiry Form – Your enquiry quickly and compactly

Would you like to make a specific product enquiry based on your technical requirements? Use our Product Enquiry Form for this purpose. There you will find all the relevant information for your Bürkert contact. This will enable us to provide you with the best possible advice.

Fill out the form now

9.5. Ordering chart

Note:
Other variants on request

Variant	Size	Seal material	Port connection	Article no.
				büS/CANopen
Mass Dosing Controller with valve Type 6724	Size 1	FFKM, EPDM	G ⅛	20009219 🛒
Mass Dosing Controller with valve Type 6724	Size 1	FFKM, EPDM	Swagelok VCR ¼, male	572124 🛒
Mass Dosing Controller with valve Type 6724	Size 1	FFKM, EPDM	VCR ⅛ male, compatible to Swagelok	572125 🛒
Mass Dosing Controller with valve Type 6013	Size 1	FFKM, EPDM	G ⅛	572137 🛒
Mass Dosing Controller with valve Type 6013	Size 1	FFKM, EPDM	Swagelok VCR ¼, male	572138 🛒
Mass Dosing Controller with valve Type 6013	Size 1	FFKM, EPDM	VCR ⅛ male, compatible to Swagelok	572139 🛒
Mass Dosing Controller Modular	Size 1	PCTFE	G ⅛	572130 🛒
Mass Dosing Controller Modular	Size 1	FFKM	Swagelok VCR ¼, male	572131 🛒
Mass Dosing Controller Modular	Size 1	FFKM	VCR ⅛" male, compatible to Swagelok	572132 🛒
Mass Dosing Controller Modular	Size 2	FFKM	G ⅛	575252 🛒
Mass Dosing Controller Modular	Size 2	FFKM	Swagelok VCR ¼, male	575254 🛒
Mass Dosing Controller Modular	Size 2	FFKM	VCR ⅛ male, compatible to Swagelok	575255 🛒
Mass Dosing Controller with valve Type 6013	Size 2	PCTFE + EPDM	G ⅛	575300 🛒
Mass Dosing Controller with valve Type 6013	Size 2	PCTFE + EPDM	Swagelok VCR ¼, male	575302 🛒
Mass Dosing Controller with valve Type 6013	Size 2	PCTFE + EPDM	VCR ⅛ male, compatible to Swagelok	575303 🛒

9.6. Ordering chart accessories

Description	Article no.
General accessories	
Power supply unit Phoenix Class2 (Type 1573), 85...240 V AC/24 V DC, 1.25 A, NEC Class 2 (UL 1310)	772438 🛒
Power supply for standard rail (Type 1573), 100...240 V AC / 24 V DC, 1 A, NEC Class 2 (UL 1310)	772361 🛒
Power supply for standard rail (Type 1573), 100...240 V AC / 24 V DC, 2 A, NEC Class 2 (UL 1310)	772362 🛒
Power supply for standard rail (Type 1573), 100...240 V AC / 24 V DC, 4 A	772363 🛒
USB büS interface set 2 (Type 8923) for connection to the Bürkert Communicator software: including büS stick, connection cable to M12 plug, M12 connection cable on micro USB for the büS service interface and Y distributor, cable length: 0.7 m	772551 🛒
Memory card	On request
Software Bürkert Communicator	Download from **Type 8756 ▶**
For Type 8756 Batch CANopen/büS	
büS cable extension, M12, cable length: 0.1 m	772492 🛒
büS cable extension, M12, cable length: 0.2 m	772402 🛒
büS cable extension, M12, cable length: 0.5 m	772403 🛒
büS cable extension, M12, cable length: 1 m	772404 🛒
büS cable extension, M12, cable length: 3 m	772405 🛒
büS socket, M12, straight, A-coded [1.]	772416 🛒
büS plug, M12, straight, A-coded [1.]	772417 🛒

Description	Article no.
büS socket, M12, angled, A-coded [1]	772418 🛒
büS plug, M12, angled, A-coded [1]	772419 🛒
büS Y plug	772420 🛒
büS Y plug for networking of 2 separately supplied segments of a büS network	772421 🛒
büS terminating resistor, M12 plug, 120 Ω	772424 🛒
büS terminating resistor, M12 socket, 120 Ω	772425 🛒
LabVIEW device driver	On request
EDS file	Download from **Type 8756** ▶

[1] For space reasons, M12 individual push-in connectors may not be suitable for simultaneous use on the same side as a Y distributor. Use a commercially available covered cable in this case..