bürkert
FLUID CONTROL SYSTEMS

Type 8922

Batch Controller
ME43, ME63

Software for dosing liquids

Operating instructions - Software

MAN 1000578940 EN Version: C Status: RL (released | freigegeben) printed: 25.03.2024

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Operating Instructions 2403/03_EUen_00815433 / Original DE

Content

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1 ABOUT THESE INSTRUCTIONS

The instructions describe the basic operation of the batch controller. Store the instructions and keep them available for consultation, and forward them on to the next user.

Safety information.

You can find safety information and information about the use of communication devices or products in the relevant operating instructions.

Failure to observe these instructions may result in hazardous situations.

▸ The operating instructions must be read and understood.

1.1 Validity of the instructions

These instructions are valid for the batch controller.

1.2 Symbols

DANGER!

Warns about a danger that will result in death or serious injuries.

WARNING!

Warns about a danger that may result in death or serious injuries.

CAUTION!

Warns about a danger that may result in mild or minor injuries.

ATTENTION!

Warns about material damage that may damage the product or system.

Indicates important additional information, tips and recommendations.

Refers to information in these operating instructions or in other documentation.

▶ Designates instructions to avoid a danger.

→ Designates a procedure which you must carry out.

Designates a result.

Menu Symbol for software interface texts.

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1.3 Terms and abbreviations

The terms and abbreviations in these instructions represent the following definitions.

Device/product	Batch Controller Type 8922
büS	Bürkert system bus; a communication bus developed by Bürkert, based on the CANopen protocol
EDIP	Efficient Device Integration Platform is a modular digital device platform developed by Bürkert that enables intelligent networking of devices and industrial processes

The terms batch and dosing are used synonymously in these instructions.

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2 INTENDED USE

The software has been designed for controlling and regulating liquid media, in combination with Bürkert devices. Improper use of the batch controller may be hazardous to people, nearby equipment and the environment.

- When using the device, observe the authorised data, operating conditions and usage conditions for the relevant devices or products specified in the contract documents and in the operating instructions.
- Only use the software in connection with third-party devices and components that have been recommended and approved by Bürkert beforehand.
- Correct installation, and careful operation and maintenance, are essential to ensure safe and trouble-free operation.
- Only use software as intended.

3 GENERAL NOTES

3.1 Contact address

Germany

Bürkert Fluid Control Systems
Sales Centre
Christian-Bürkert-Str. 13-17
D-74653 Ingelfingen
Tel. +49 (0) 7940 - 10-91 111
Fax +49 (0) 7940 - 10-91 448
Email: info@burkert.com

International

You can find the contact addresses at country.burkert.com in the “Contact” menu.

3.2 Information online

Further product-related information at country.burkert.com

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4 PRODUCT DESCRIPTION

4.1 General description

The batch controller is exclusively configured using the Bürkert Communicator.

The batch controller is used to detect and calculate flow signals as well as other input and output signals.

For example, the input signal for starting, pausing and cancelling the process, and the quantity selection, can be coupled via IO module, an EDIP display or a PLC.

4.2 Intended area of application

The “Batch Controller” software extension was specially developed for dosing liquids and is compatible with the ME43 and ME63 gateways.

It is important to ensure that the ME43 or ME63 gateway has the required technical prerequisites and the corresponding version of firmware so that the batch controller software extension can be used successfully, see chapter “6 Batch software activation (ME43, ME63)”.

ME63
Only devices that have the following laser marking can use the specific software extension.

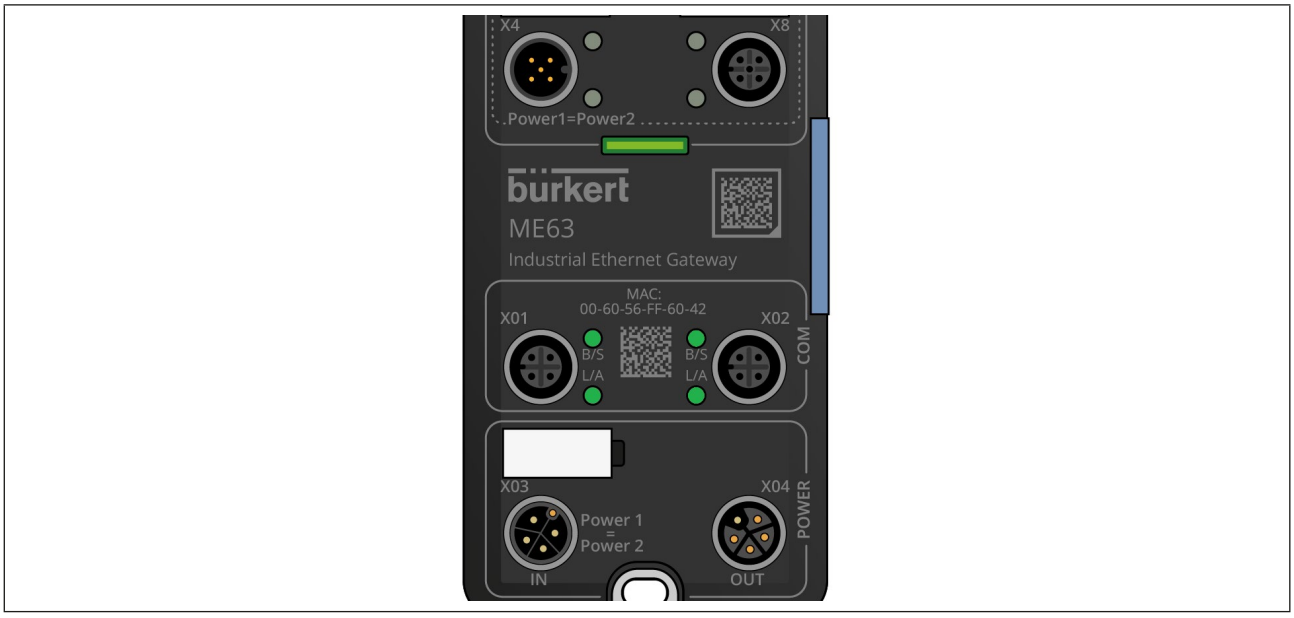

Fig. 1: Laser marking ME63

4.3 Functions

ME4x output modules or valves with büS connection are required to control valves for exact dosing of the predetermined quantities.

The calculation is based on a precise recording of the current flow and the totalling or recording of the quantity using büS-compatible sensors (FLOWave) or via IO module (Impulse). For example, dosing can be performed in grams or kilograms if the FLOWave is used with active mass flow measurement.

It is possible to save max. 30 logs thanks to an update to the batch controller (see chapter “11 Batch Controller update”). Using a memory card makes it possible to increase the number of logs (see chapter “13 Batch logs”).

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5 BÜRKERT COMMUNICATOR PRINCIPLES

5.1 General

The Bürkert Communicator software allows the comfortable configuration and monitoring of application-specific parameters.

When a device is connected to the Bürkert Communicator, it is displayed in the navigation area of the Communicator. Every device has a device menu, via which the device is configured.

The Bürkert Communicator can be downloaded free of charge from the Bürkert home page.
In addition to the Bürkert Communicator, the "USB büS interface set", which is available as an accessory, is also required.

The operating instructions for the basic functions of the software can be found on the Bürkert home page: country.burkert.com → Type 8920.

5.2 Connecting the device to the Bürkert Communicator

→ Install Bürkert Communicator on the PC.

→ Set the terminating resistor (on the büS stick, device or external terminating resistor).

→ Use the USB-büS-interface set to establish the connection between the device and the PC.

→ Start Bürkert Communicator.

→ In the menu bar, click the symbol for **Add interface**.

→ Select the **büS stick**.

→ **Click** finish.

The connection between the device and Bürkert Communicator is established, the device is displayed in the navigation area.

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6 BATCH SOFTWARE ACTIVATION (ME43, ME63)

The batch software is an integral part of the ME43 gateway software **(from version A.9.2 onwards)** and ME63 gateway software **(from version A.2.1 onwards)**. The software can be enabled via Bürkert Communicator **(from version 6.2.3 onwards)** at any time, even for test purposes.

The function on the device can only be used for one hour without a valid licence key. After this period, the function is disabled. The device must be restarted.
When a valid licence key is obtained, the function can be enabled via the Communicator for the device (see chapter “18 Licence activation”).

Before you start setting up and configuring the batch controller, it is important that you connect all the required devices to the büS, pre-configured and supplied with power.

6.1 Input devices

- ME61 Process Control Display **(from version A.4.0)**
- PLC
- DI module for gateway used (if necessary for connecting push-buttons)

For example, the Communicator itself can also be used as an input device for start-up.

Important
Only 1 input device can be used at any time.

6.2 Flow sensors

- büS-capable flowmeter
- Configured DI module for gateway used with connected flow sensor (e.g. Bürkert paddle wheel)

6.3 Output signals

- Pre-configured valves that can be controlled via büS
- Configured DO modules (to which valves are connected)

If all prerequisites have been fulfilled, all required devices are displayed in the Communicator (see “Fig. 2: Illustration of the connected devices”).

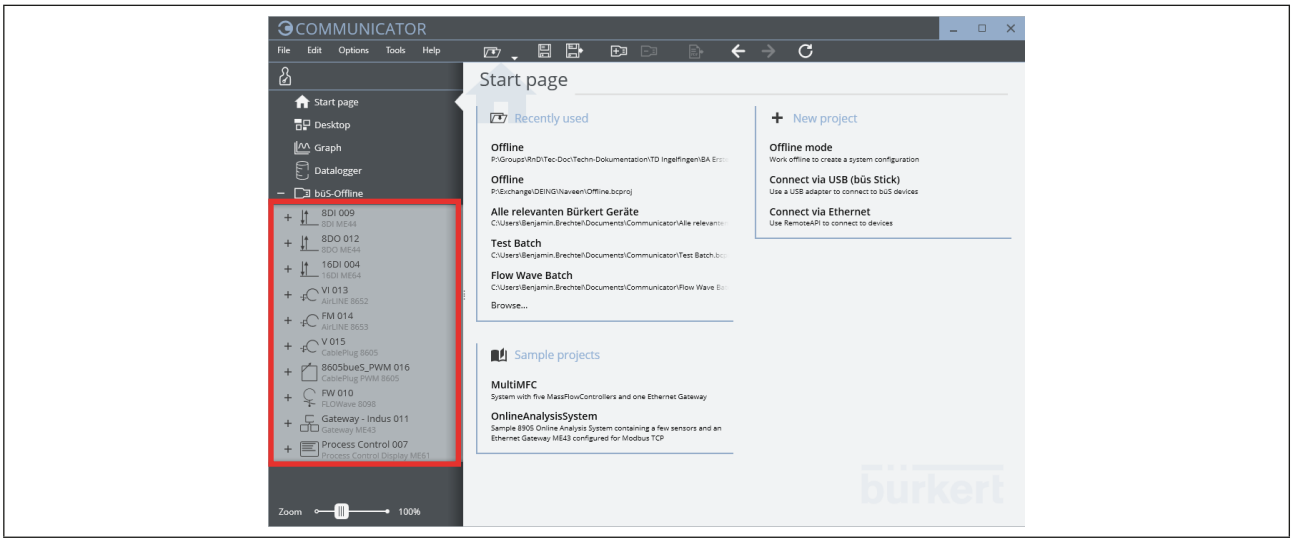

Fig. 2: Illustration of the connected devices

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6.4 Enable the batch function

The batch function is part of the firmware on the ME43 and ME63 gateways. The batch function is enabled and configured in Communicator via the device menu on the gateway.

→ Select gateway and click on *"f(x) configuration"*.

→ If f(x) function is still not displayed, select *"New function f(x)"* and then *"Batch"* (see "Fig. 3: f(x) configuration").

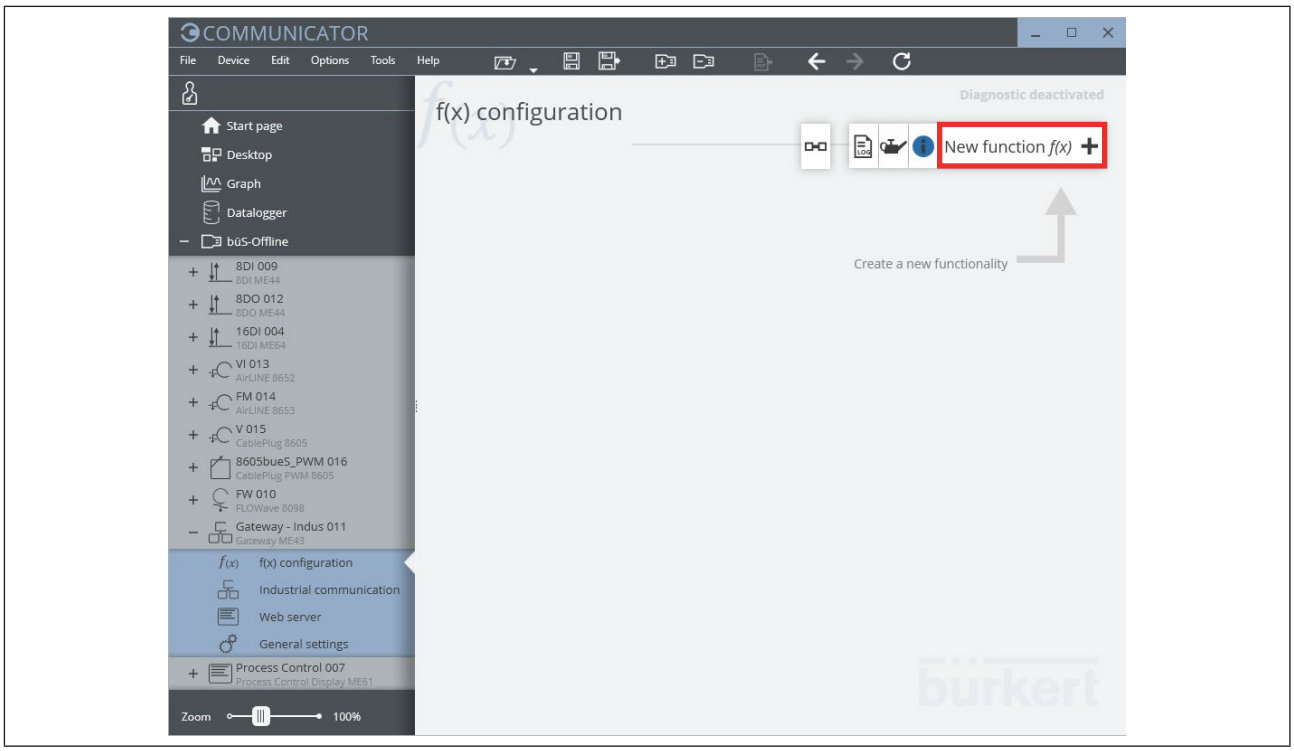

Fig. 3: f(x) configuration

→ The name of the f(x) function is preassigned with the designation *"Batch"*.

Assignment of a specific name allows for precise allocation and management of data, particularly if several batches are present in the system.

→ Click **continue.**

→ Perform **device restart.**

→ **Click** finish.

✔ Batch function enabled

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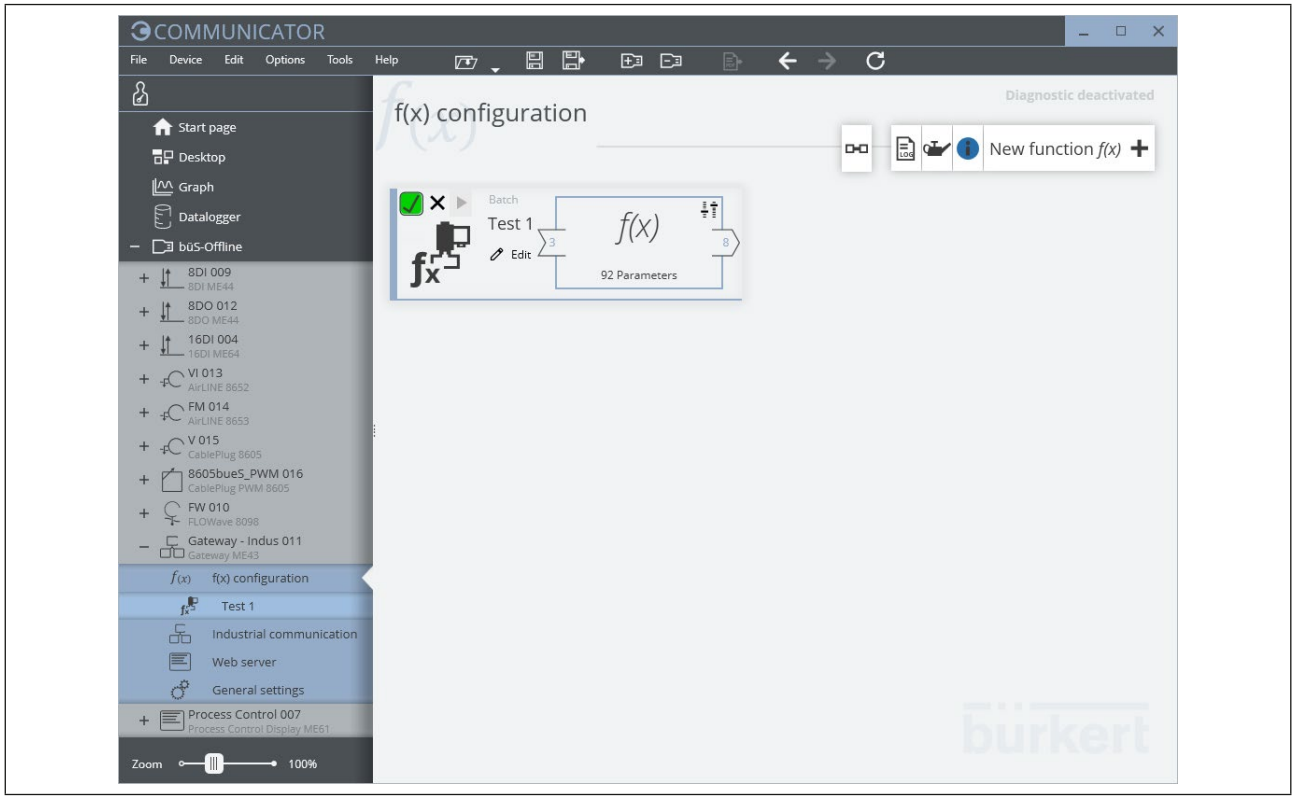

Fig. 4: Batch function enabled

7 OBJECT OVERVIEW

7.1 Use the controller commands

The batch controller can save up to 7 recipes. If the target volume is larger than 0, it will be shown on the ME61 Display.

Controller commands:

Function	Batch control hex	Batch control decimal	Bit0 0x01 Start	Bit1 0x02 Pause	Bit2 0x04 Stop	Bit3 0x08 (Recipe bit 0)	Bit4 0x10 (Recipe bit 1)	Bit5 0x20 (Recipe bit 2)	Bit6 0x40 (not used)	Bit7 0x80 (not used)
Start/Resume selected recipe	0x01	1	1	0	0	0	0	0	x	x
Pause batch	0x02	2	x	1	0	x	x	x	x	x
Stop batch	0x04	4	x	x	1	x	x	x	x	x
Start recipe 1	0x09	9	1	0	0	1	0	0	x	x
Start recipe 2	0x11	17	1	0	0	0	1	0	x	x
Start recipe 3	0x19	25	1	0	0	1	1	0	x	x
Start recipe 4	0x21	33	1	0	0	0	0	1	x	x
Start recipe 5	0x29	41	1	0	0	1	0	1	x	x
Start recipe 6	0x31	49	1	0	0	0	1	1	x	x
Start recipe 7	0x39	57	1	0	0	1	1	1	x	x
x=reserved (=0)										

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7.2 Process control of the batch

Description of process automation/process control **and the transitions**

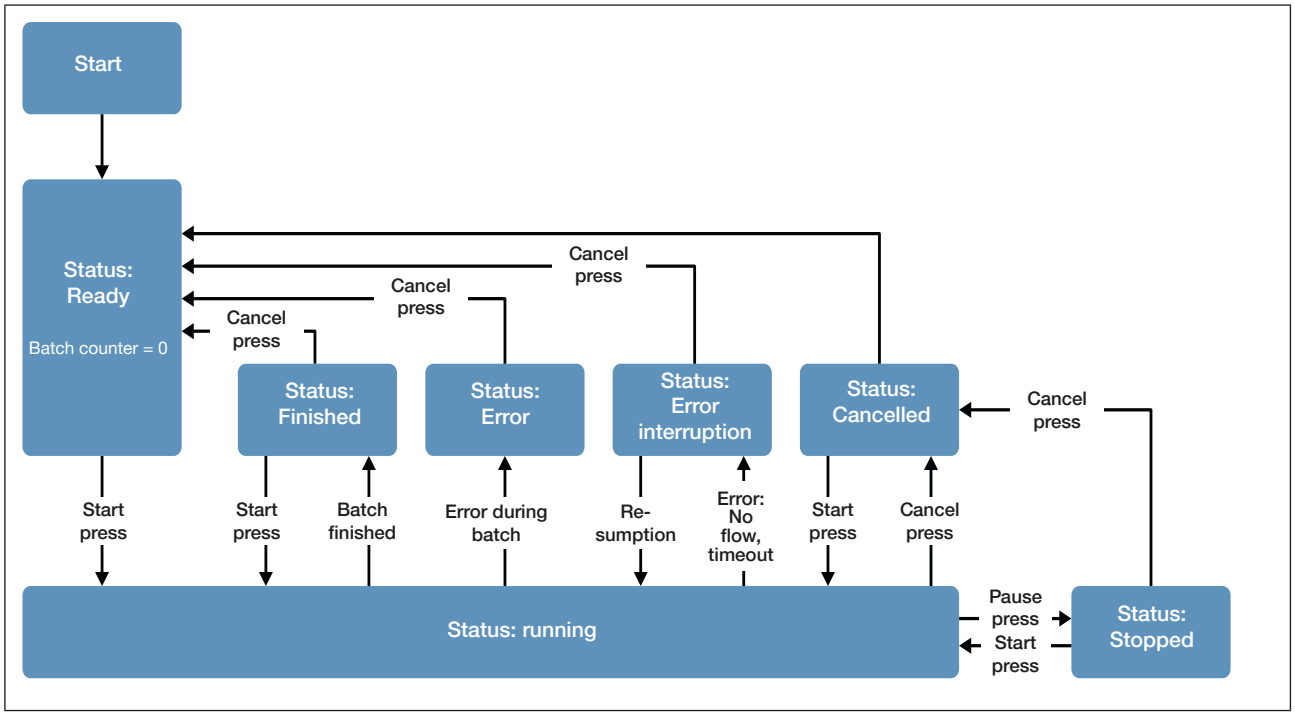

Fig. 5: **Description of** *process automation/process control* **and the transitions**

Status	Description
Initialisation	Initial state of process automation/process control **and** the transition to standby as soon as all producers have been found and f(x) is running.
Ready	Batch controller normal state Indication that no errors have occurred. Dosing can be initiated.
Running	Dosing process active.
Stopped	Dosing process paused by user. Dosing process can be resumed.
Error	Serious error during the dosing process. Dosing process cannot be continued (f(x) General Error, Invalid Parameter, Backflow, Unexpected Flow).
Interrupted	Dosing process interrupted by error (Producer not found, no flow, timeout during dosing). Remedy error. Dosing process can be resumed with the start command.
Cancelled	Dosing process cancelled by user. Dosing process can be resumed.
Finished	Dosing process completed. All valves closed.

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7.3 Batch object description

7.3.1 Batch inputs

Object 0x254X Batch control

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Batch control	Unsigned8	0	x	x	x

A recipe can be selected, the dosing process started, paused/resumed and stopped via “Batch control”.

Batch control							
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
Start	Pause	Stop	Recipe bit 0	Recipe bit 1	Recipe bit 2	Not used	Not used

Important
Detailed information at: chapter “7.1 Use the controller commands”

Object 0x254X Flow

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Flow	Real32	0	x	x	x

Flow rate value in l/min or kg/min (depending on the sensor).

Object 0x254X Target quantity manual

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Target quantity manual	Real32	0	x	x	x

For a manual recipe (freely chosen target quantities), the previously saved value will be overwritten by this value.

This value/(the unit) is transferred in litres or kg (depending on the sensor).

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7.3.2 Batch outputs

Object 0x250X NAMUR Status

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	NAMUR status	Unsigned8	0	x		x

NAMUR status	
0 – Diagnostics active	3 – Out of specification
1 – Error diagnostics active	4 – Function check
2 – Maintenance required	5 – Fault or error

Object 0x250X Valve output

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Valve output	Unsigned8	0	x		x

Output for controlling all on/off valves (control depends on configuration in the wizard and connected valves).

Object 0x250X Totaliser

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Totaliser	Real32	0	x		x

Totaliser of the current dosing process in l or kg (depending on the sensor).

Object 0x250X Batch state

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Batch state	Unsigned8	0	x		x

Status of current dosing process

Batch state	
0 – Initialisation	4 – Error
1 – Ready	5 – Interrupted
2 – Running	6 – Cancelled
3 – Stopped	7 – Finished

Important
Detailed information at: chapter “7.2 Process control of the batch”

Object 0x250X Batch error state

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Batch error state	Unsigned8	0	x		x

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Batch error state							
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 7
General error	Producer not found	Dosing timeout	Recipe parameter invalid	No flow	Reverse flow	Unexpected flow	Not used

Object 0x250X Proportional valve 1

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Proportional valve 1	Real32	0	x		x

Output for controlling proportional valve 1 (actuating variable [0–100%] can be set via this object)

Object 0x250X Proportional valve 2

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Proportional valve 2	Real32	0	x		x

Output for controlling proportional valve 2 (actuating variable [0–100%] can be set via this object)

Object 0x250X Proportional valve 3

Sub-index	Name	Data type	Default	Access		PDO mappable
				Read	Write	
0x01	Proportional valve 3	Real32	0	x		x

Output for controlling proportional valve 3 (actuating variable [0–100%] can be set via this object)

7.4 Batch controller integration into a PLC/process control system

Observe sequence:

→ Create gateway configuration or download from the website.
Note: The current gateway configuration will be overwritten when importing the batch gateway configuration.

→ Run batch wizard. Select inputs and outputs required.
→ Manually map further optional batch objects.

7.5 Configuration examples

Example	Predefined recipe	Manual recipe
Task	Start recipe 3.	Set individual dosing quantity and initiate dosing process.
Precondition	Recipe 3 is configured. Batch setup has been successfully completed.	Batch setup has been successfully completed.
Procedure	→ Set batch control 0x19 (0b00011001).	→ Enter desired target quantity in “TargetQuantityManual”. → Set batch control 0x39 (0b00111001).
Result	✔ Dosing started using recipe 3.	✔ Dosing started using manual recipe.

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8 VALVES AND THEIR FUNCTION

8.1 Valve arrangements

Overview of valve arrangements (called scenarios below) supported by the batch controller.

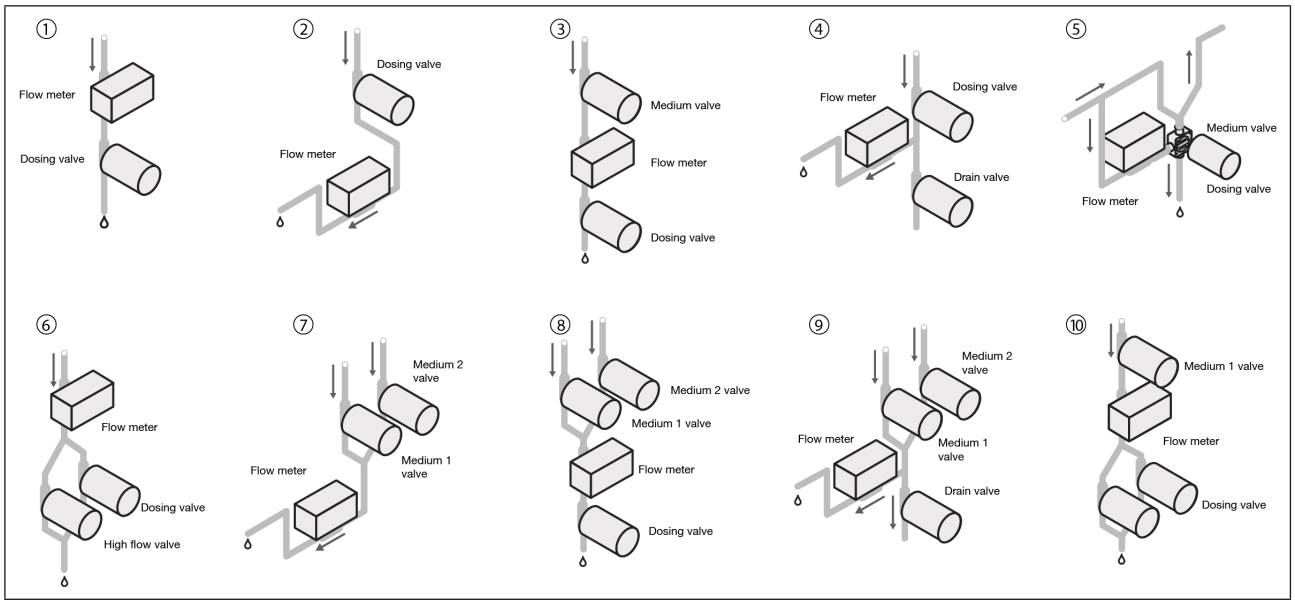


Fig. 6: Overview of possible scenarios

Depending on the application, the valves can be connected via a DO extension module or a büS network. The wizard helps make setup easier (see chapter "10.1 Batch setup – run wizard")

The following section describes the valve arrangements for the batch applications being considered and how they work.

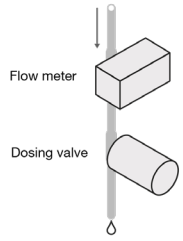
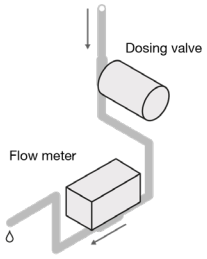
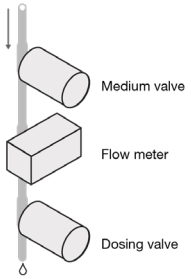
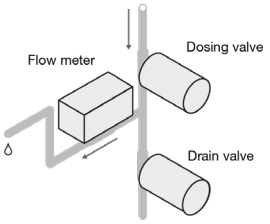
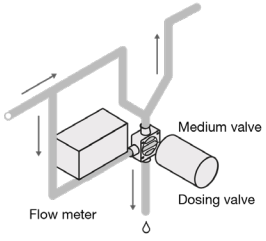
- x = valve available
- - = valve not available

Valve scenarios	Dosing valves		Selection valves [1]		Drain valve
	Dosing valve	Dosing valve with high flow	Medium valve 1	Medium valve 2	
1	x	-	-	-	-
2	x	-	-	-	-
3	x	-	x	-	-
4	x	-	-	-	x
5	x	-	x[2]	-	-
6	x	x	-	-	-
7	-	-	x[3]	x[3]	-
8	-	-	x	x	-
9	-	-	x	x	x
10	x	x	x	-	-

With **valve scenarios 6 and 10** it is possible to use 1 proportional valve, e.g. an electromotive valve, and configure it accordingly instead of 2 on/off valves for a large or a small flow.

1) *Medium selection*
2) *Robolux*
3) *Selection valve = dosing valve*

8.2 Description of the valve scenarios

Scenario	Description	Figure
1	The **dosing valve** is installed after the flow sensor. The flow sensor is permanently filled with medium.	
2	The **dosing valve** is installed before the flow sensor. The flow sensor is permanently filled with medium.	
3	The line with the flow sensor is filled via the **medium valve 1**. The **dosing valve** is installed after the flow sensor.	
4	The **dosing valve** is installed before the flow sensor. The flow sensor is permanently filled with medium until the **drain valve** is opened.	
5	This scenario is tailored to suit Robolux valves [4]. If no dosing occurs, the **medium valve 1** is opened so that the flow sensor permanently has medium flowing through. During dosing, the **medium valve 1** is closed and the **dosing valve** opened.	

[4] *The valve programme is based on the patented Robolux technology, wherein the diaphragm actuates two crossbars. With this concept, dead spaces are avoided and the flow volume is reduced.*

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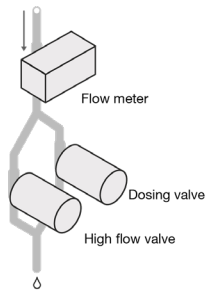
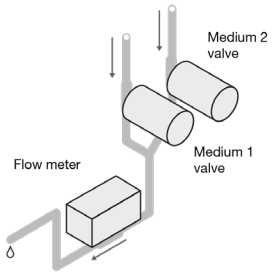
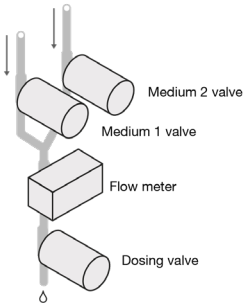
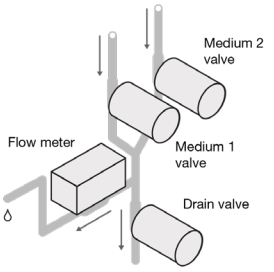
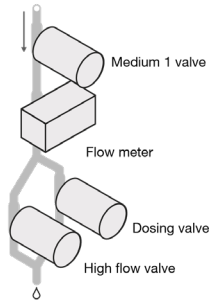
6	**Dosing valve** and **dosing valve with high flow** are valves with different nominal diameters or openings. Both are installed after the flow sensor. This scenario can also be performed with a single proportional valve.	
7	**Medium valve 1** and **medium valve 2** are the dosing and selection valves. Both are installed before the flow sensor. An in-house recipe/dosing quantity is required for each medium.	
8	**Medium valve 1** and **medium valve 2** are selection valves. Both are installed before the flow sensor. The **dosing valve** is installed after the flow sensor.	
9	**Medium valve 1** and **medium valve 2** are the dosing and selection valves. Both are installed before the flow sensor. An in-house recipe/ dosing quantity is required for each medium. The flow sensor is permanently filled with medium until the **drain valve** is opened.	
10	**Dosing valve** and **dosing valve with high flow** are valves with different nominal diameters or openings. Both are installed after the flow sensor. By closing **medium valve 1** and opening the **dosing valve** with low flow, or the **dosing valve with high flow,** the line can be drained via the dosing valve, including the flow sensor.	

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9 BATCH MODE SEQUENCE DIAGRAM

9.1 Description of batch modes

Mode	Description
Automatic	In this mode, the batch controller automatically corrects the dosed volume, starting with the first batch. Dosing is briefly interrupted during initial dosing for this purpose (first batch), then the overrun volume is automatically calculated and taken into consideration with all further dosing. It is also possible in this mode to configure a manual correction volume. This enables consistent deviations to be corrected (see chapter “9.3 Automatic – first batch”)
Teach-In	In this mode, automatic correction of the measured flow volume does not take place. Only the manually set correction quantity is taken into consideration. This mode is mainly advisable when the system conditions (pressure, flow) remain constant and the overrun volume is known, or when the dosing time is too short and the automatic corrections therefore cannot be made (see chapter “9.2 Automatic and Teach-In”)
Manual	Regardless of the recipe used in this operation mode, all valves that are required for dosing are manually opened as soon as the start command is received (e.g. the “Start” key is briefly pressed on the display). The valves are closed again when the stop command is received (e.g. via the display). The system can be cleaned, tested or dosed “by hand” in this mode. The volume that is part of the recipe and the dosing time limit are not taken into account (see chapter “9.4 Manual”)

9.2 Automatic and Teach-In

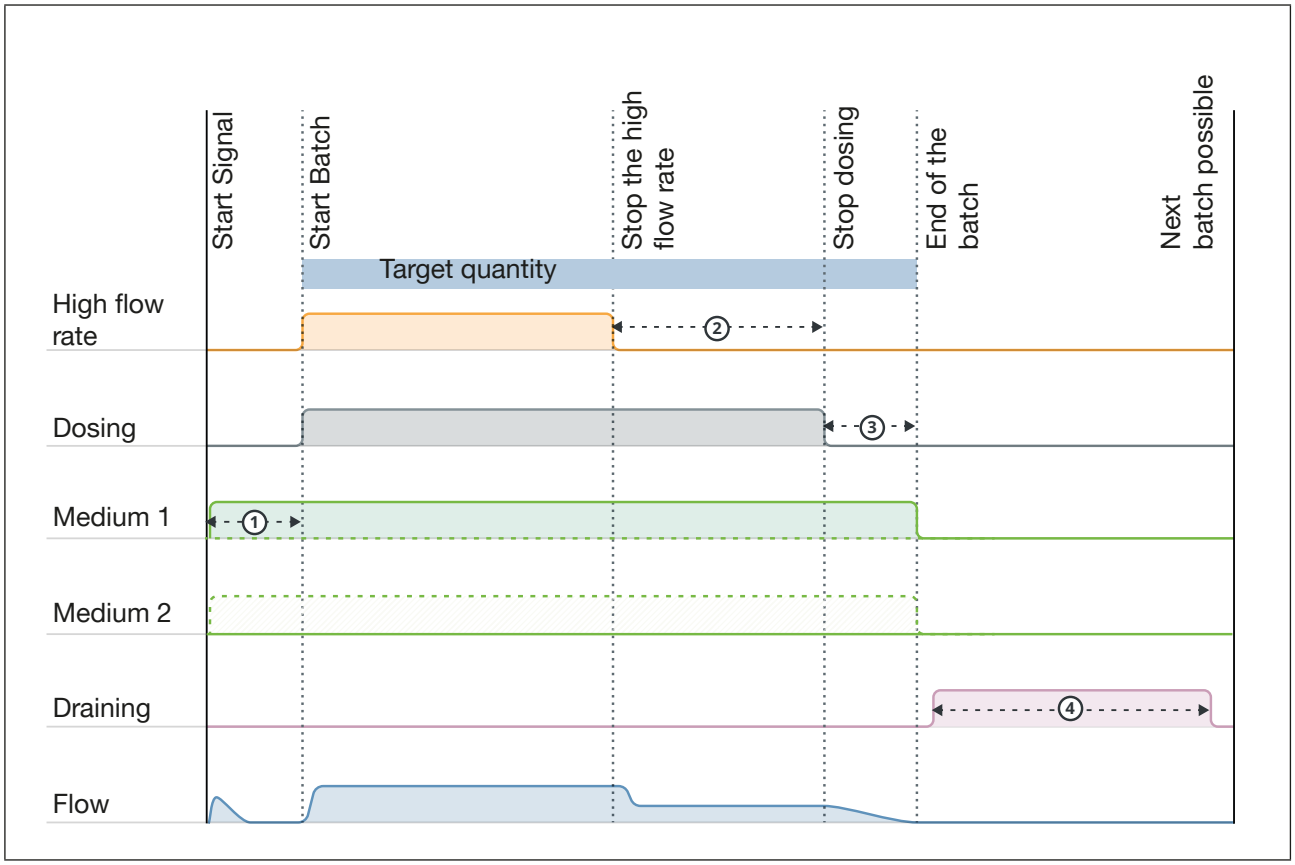

Fig. 7: Sequence diagram – Automatic and Teach-In

→ Start batch.

If a **medium valve** is present:

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- Selected medium valve (medium valve 1 or medium valve 2) opens.
- After the delay in selecting the medium (**medium selection delay**), the dosing valves are opened (1).

The medium valve has different functions, depending on the scenario

- Scenario 3, 8, 10:
  Valve is exclusively used for selecting the medium (pure closing/opening function).
- Scenario 2, 4, 7, 9:
  Medium valve is used for dosing.

If no medium valve is available, the dosing valves are opened directly and the flow rises to the maximum value.

If a **dosing valve with high flows** is available:

- User defines a volume which should only be dosed by the **dosing valve** at the end.
- If the quantity from which only the **dosing valve** should be used is reached in the totaliser, the **dosing valve with high flow** (target quantity – residual volume for **dosing valve**) (2) is closed.

Only applies to Automatic mode

If the target quantity – excluding the automatically set correction volume – is reached, the **dosing valve** is closed (3). If a manual correction volume is configured, this is also taken into account.

Only applies to Teach-In mode

Only the manual correction volume is used, automatic correction does not take place. After the flow has been reset to 0, the medium valve is closed.

If a **drain valve** is available:

- The **drain valve** can be opened for a certain time after the batch has been completed. (*"Draining"* parameter in the recipe) (4)
- If the **drain valve** is closed then the batch procedure is ended.
- A new batch procedure can then be started.

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9.3 Automatic – first batch

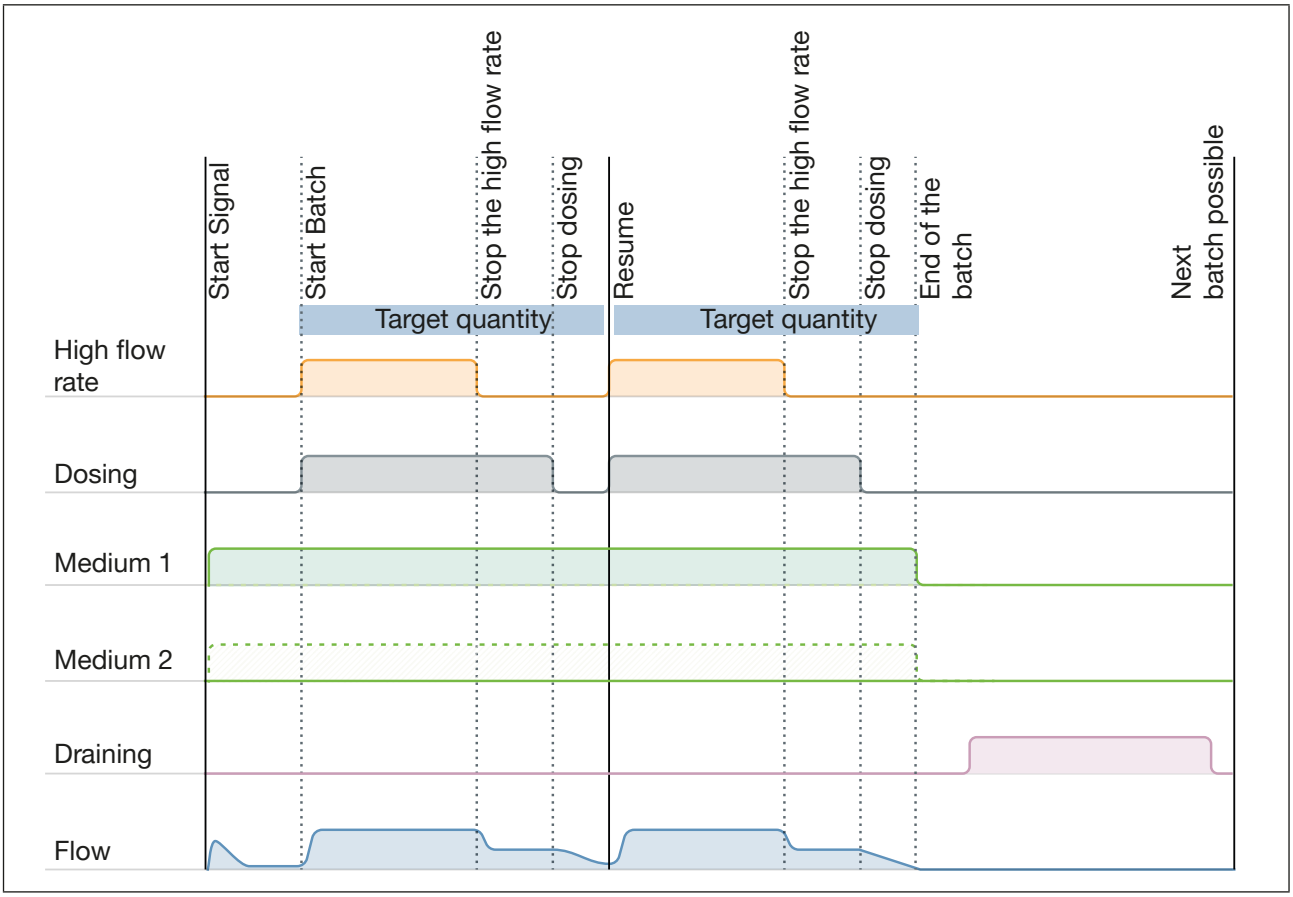

Fig. 8: Sequence diagram – first batch

There is an option to perform a **"first batch"** in *"Automatic" batch mode*. This is performed when the automatic correction volume has a value of 0 (when the system starts for the first time, can be reset via Communicator).

Essentially, this functions like a "normal batch". The difference is that the "first batch" temporarily closes the dosing valves at half of the target volume. The correction volume is not known during initial start-up. The correction volume can be determined and used by closing at half of the target quantity. This makes the first dosing process more accurate.

The **dosing valve with high flow** is closed before the **dosing valve** in this process.

The automatic correction volume can be calculated by closing, if there is none available.

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9.4 Manual

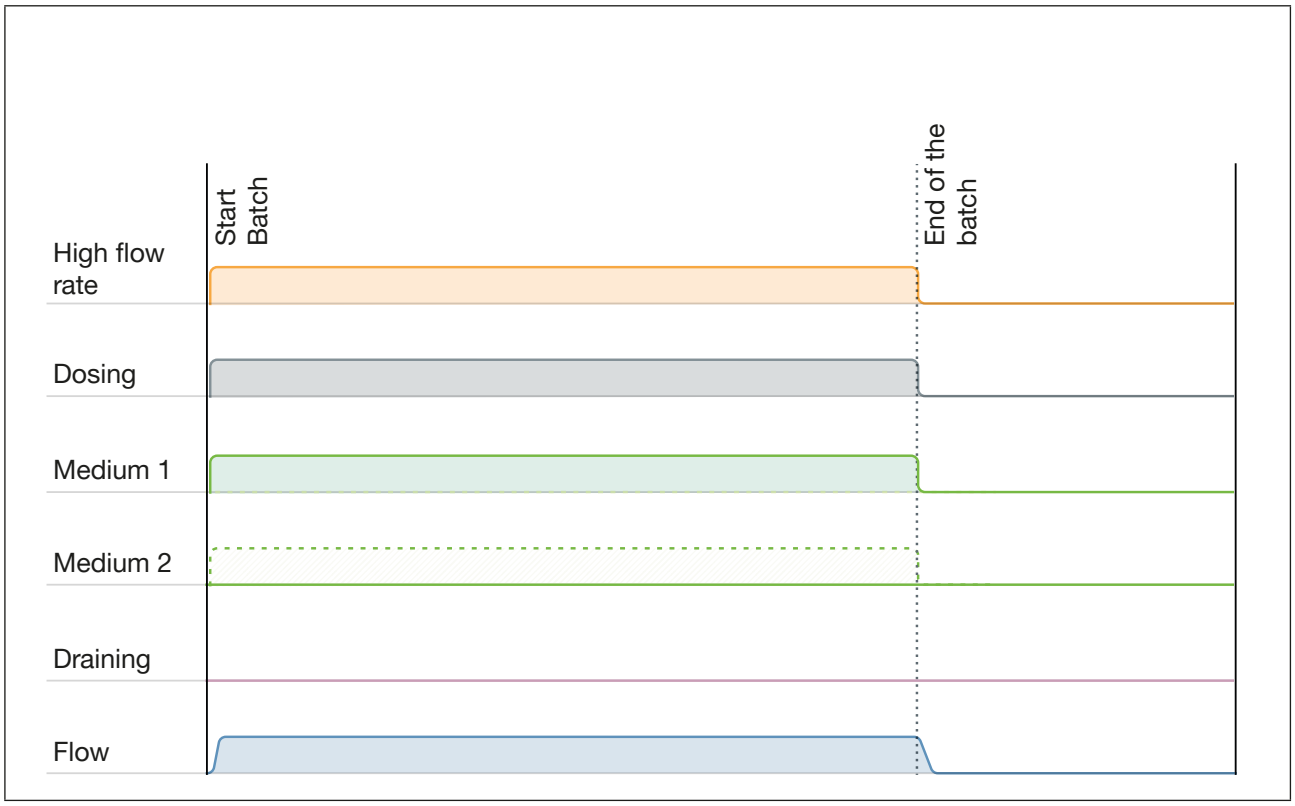

Fig. 9: Sequence diagram – manual

The medium valve (medium valve 1 or medium valve 2) is selected via the current recipe.

At the start of the batch, all valves, **the dosing valve with high flow** and the **dosing valve** are opened directly and the totaliser totals the flow.

All valves are closed with the next control signal and the batch is finished.

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9.5 Troubleshooting

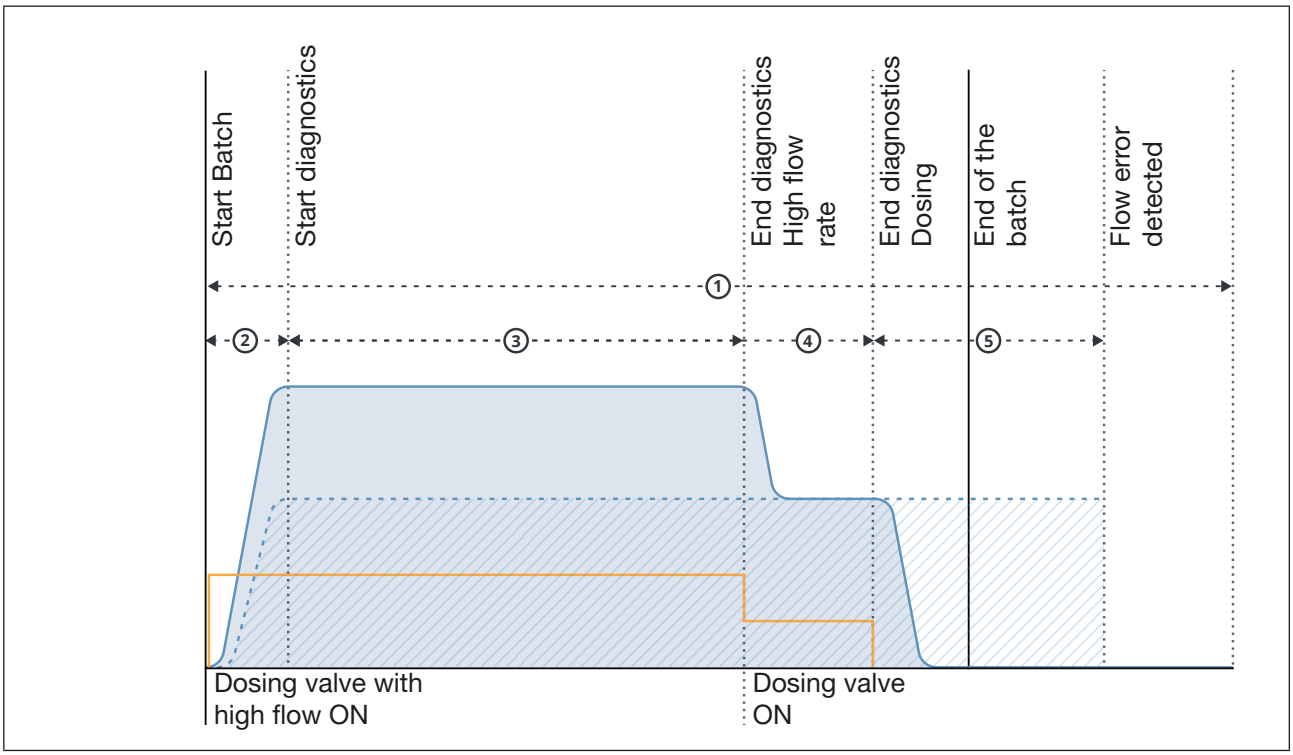

Fig. 10: Sequence diagram – troubleshooting

Error name	Description
General error	f(x)/f(x) licence error
Producer not found	Connected device is no longer in büS network
Dosing time limit	**Maximum valve opening duration** Knowledge of the flow and target quantity can be used to estimate how long a maximum dosing period should last. If the dosing time is exceeded, an error occurs and the valves are closed.
Invalid recipe parameter	Target quantity = 0
	Dosing time limit = 0
	Target quantity and **dosing time limit** = 0
No flow	System detects that no medium is flowing
Reverse flow direction	System detects that the medium is flowing in the wrong direction
Unexpected flow	After closure of the valves, the flow does not fall back to 0

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Section 1

A maximum valve opening time is configured via *“Dosing time limit”* . If the target quantity is not reached within this time, all valves are closed after the period has ended and the error message *“Dosing time limit”* displayed.

Section 2

Diagnostics start after

- the *“start fill level diagnostics”* (default value: 10%) of the target quantity or
- the *“flow validation time”* (default value: 10 s)

has been reached. Both limits can be set specifically for the application in the scenario settings.

Start fill level diagnostics

The fill level diagnostics starts after a stable flow rate has been established during the batch process.

The value is set in per cent depending on the volume to be dosed.

Assuming a dosing volume of one litre, the flow rate is stable after 100 ml (depending on the application). In this case, the controller is set to 10 %. The more that is filled, the smaller the proportion to be adjusted.

Flow validation time

If after the flow validation time:

- no flow or
- Flow in the opposite direction

is measured, the batch process is cancelled and an error is output.

Section 3

At the *“Start Diagnosis”* time, the system inspects the current flow and can therefore detect the **No flow** or **Reverse flow direction** errors. The following diagnostic calculations are made during the dosing process:

- Determination of the minimum and maximum flow
- Inspection whether the target quantity can be reached with the current flow
- Automatically determined correction volume adjusted depending on the flow

Section 4

When using a **dosing valve with high flow** then the diagnostics is ended upon closure of the **dosing valve with high flow**. If only one valve is used for the dosing, the diagnostics are finished when this valve closes.

Section 5

If the flow does not drop back down to 0 after the valves close, the error **Unexpected flow** is recognised and displayed after 10 seconds at the earliest.

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9.6 Pause behaviour

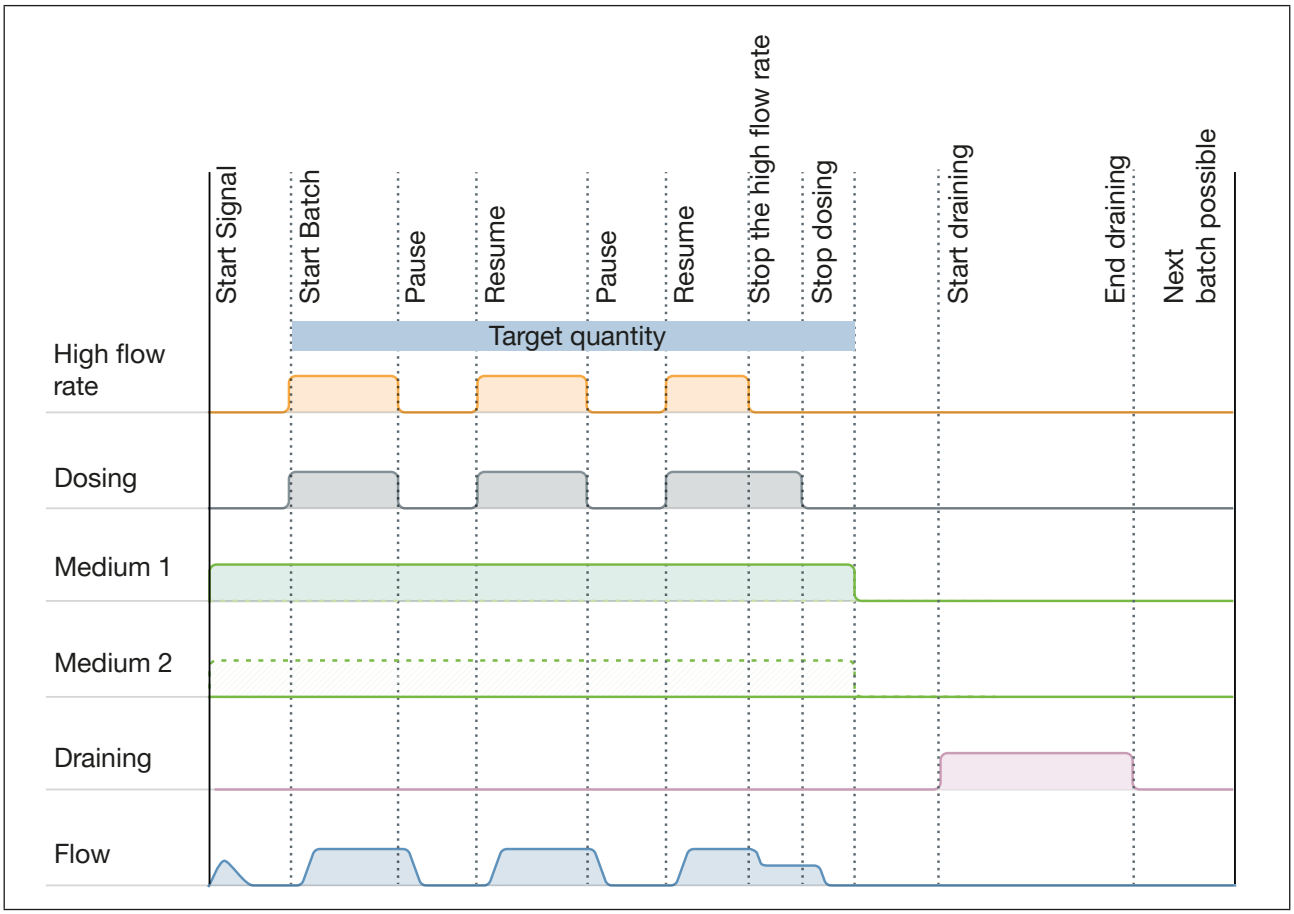

Fig. 11: Sequence diagram – pause behaviour

The pause behaviour in *"Automatic"* or *"Teach-In"* mode is identical. During a pause, both dosing valves are closed, while the medium valves remain open.

During a dosing process, dosing can be paused repeatedly and then restarted.

Pauses may be necessary when initial dosing takes several minutes and the ongoing process must be interrupted.

The following sequence steps of the dosing processes are not affected by this and run like a "normal dosing process".

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10 BATCH CONTROLLER CONFIGURATION

10.1 Batch setup – run wizard

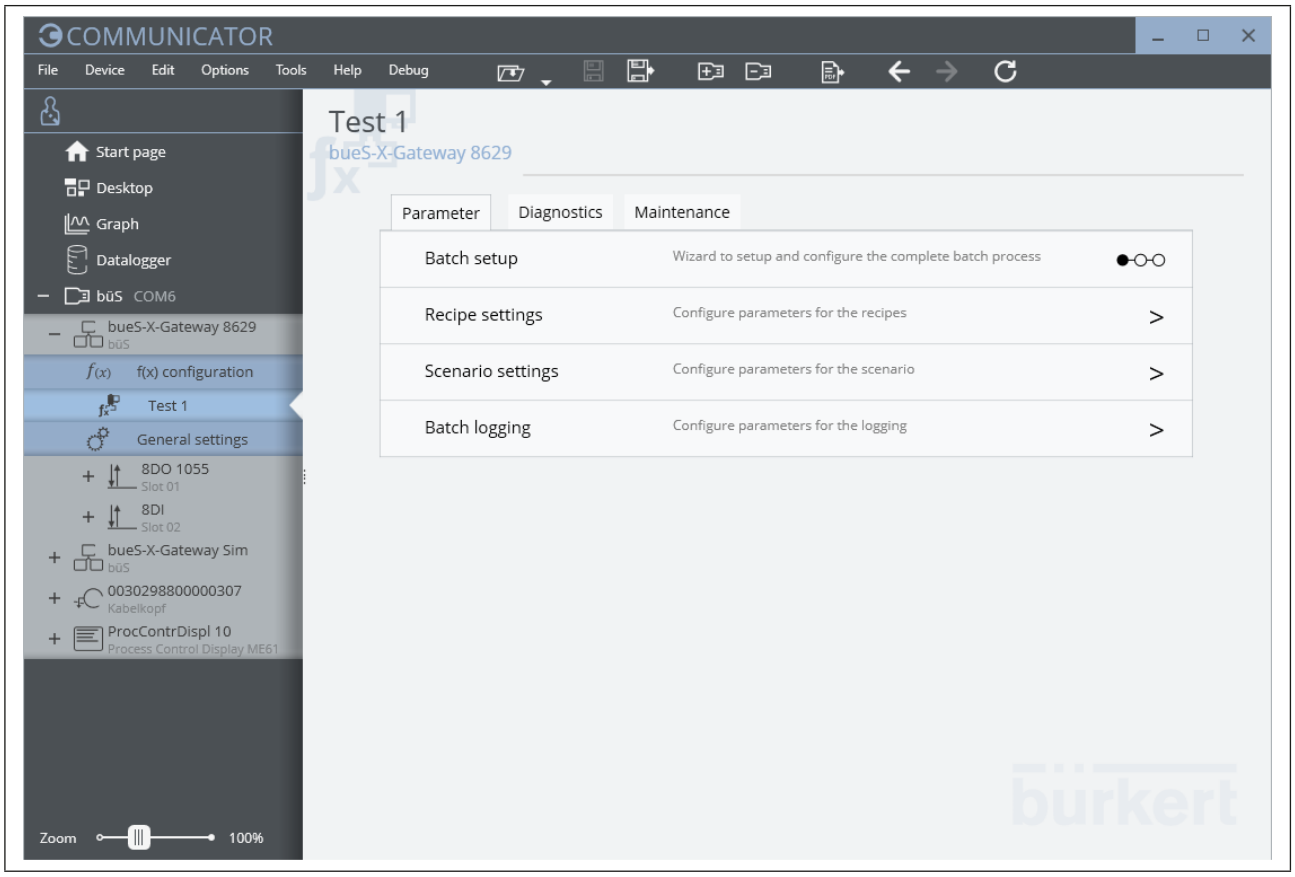

Fig. 12: Parameters

→ Select the batch to be configured (in this example, “Test 1”).

→ Start the wizard by clicking on **Batch setup**.

The wizard for performing the batch setup is described precisely below.
An example project with the following Bürkert devices is used for visualisation purposes, and for better understanding:

- **Type ME44** – I/O module
- **Type ME64** – I/O module
- **Type 8652** – AirLINE
- **Type 8653** – AirLINE Field
- **Type 8605** - PWM control electronics for electromagnetic proportional valves
- **Type 8098** – FLOWave SAW flowmeter
- **Type ME43** – fieldbus gateway
- **Type ME61** – EDIP process control display

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10.1.1 Valve scenario overview

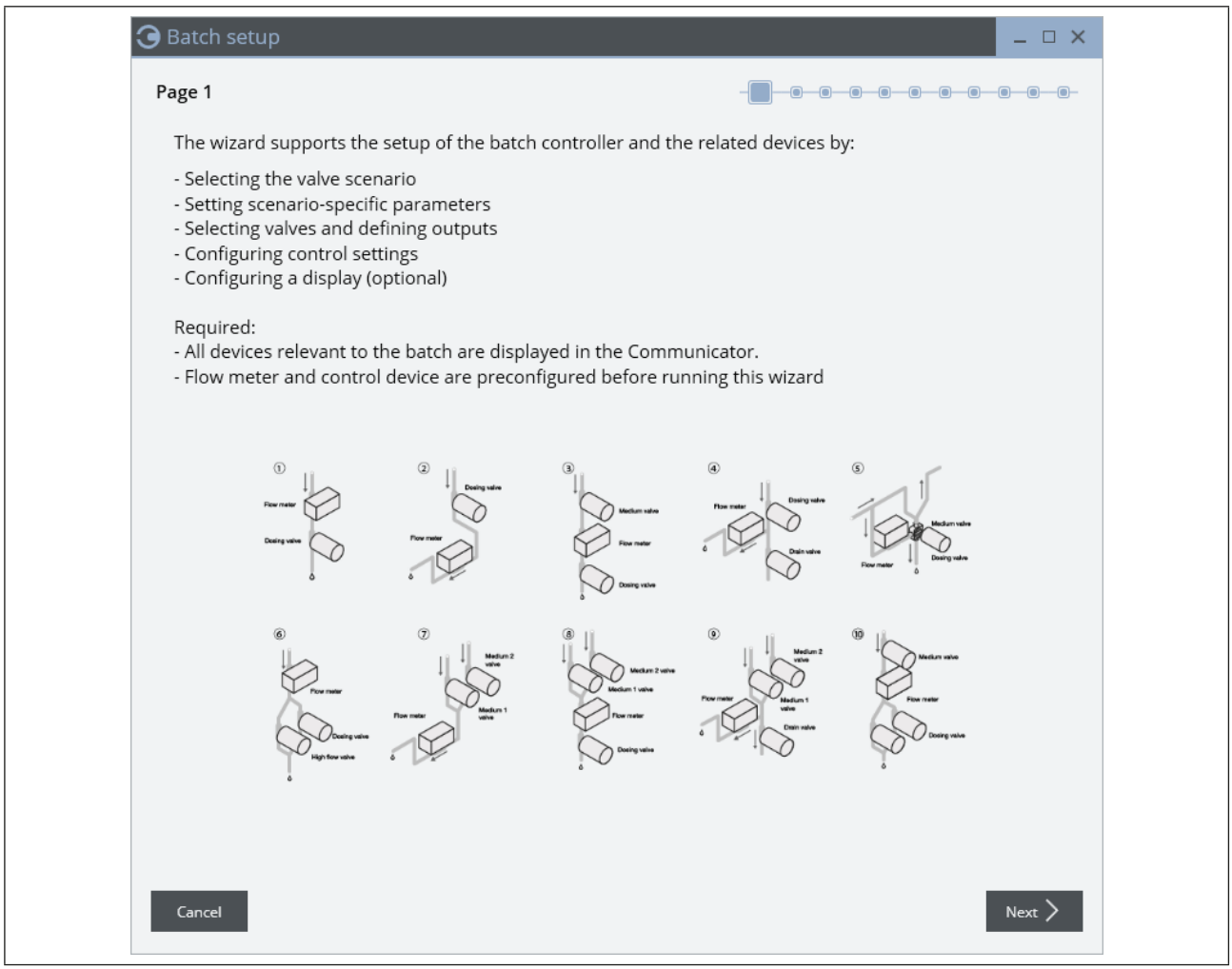

Fig. 13: Wizard overview page

The wizard provides support with the setup of the batch controller and the configuration of individual devices:

- Valve scenario selection
- Scenario-specific parameter
- Valve selection or output definition
- Controller configuration
- Display configuration (optional)

Prerequisite

- The flow sensor, as well as all valves and IO modules required for the application have been correctly connected regarding the electrics (büS (termination), supply (24 V, compressed air)) and connected to each other.
- Flowmeters used must be installed and calibrated correctly.
- Controller must be configured and integrated correctly.

The Communicator must display all devices connected via büS in the overview. When selecting the device in the Communicator, its status LED should start flashing.

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10.1.2 Valve scenarios selection

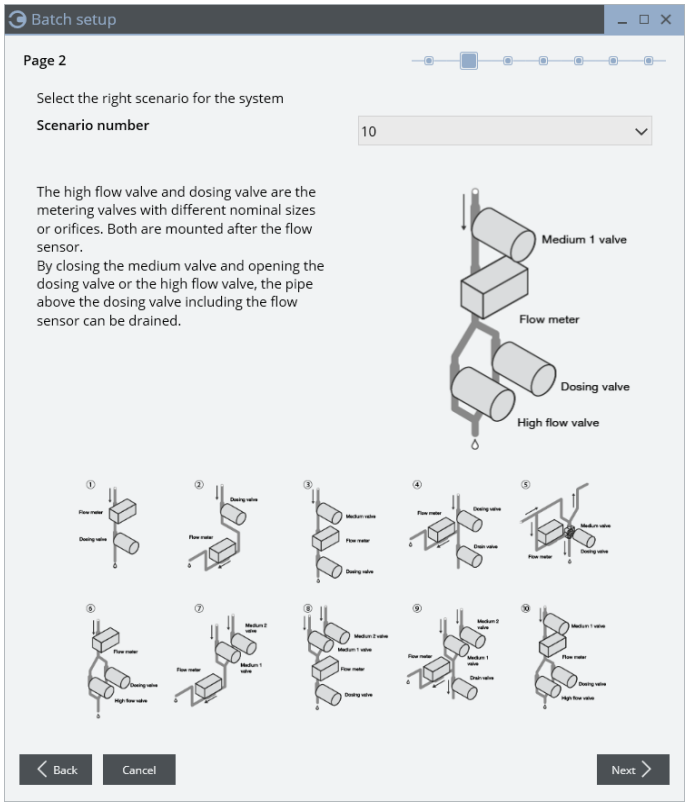

Fig. 14: Scenario selection – example of scenario 10

10.1.3 Configuration of scenario selected

Depending on the scenario selected, the following is displayed on page 3 of the wizard:

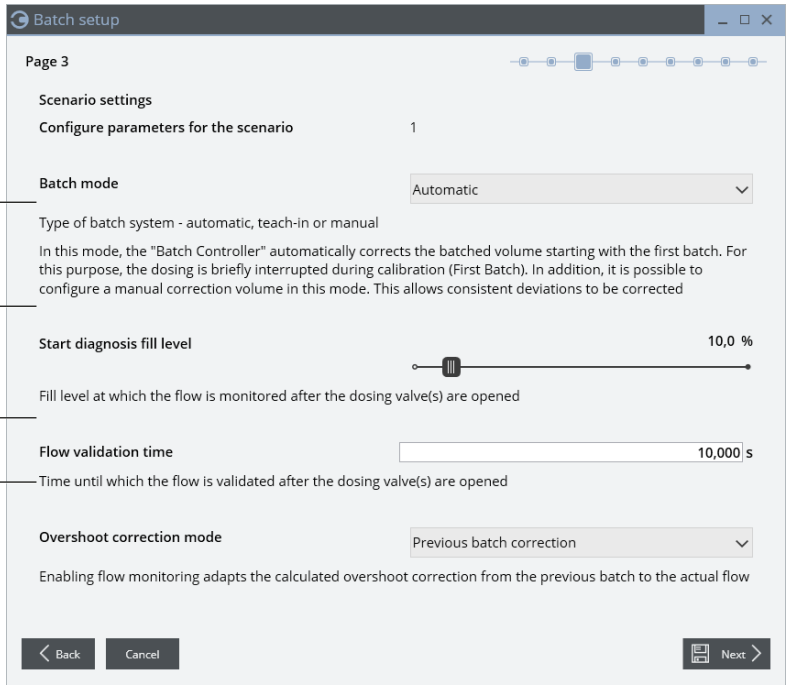

Fig. 15: Configuration of scenarios 1, 2, 4, 6

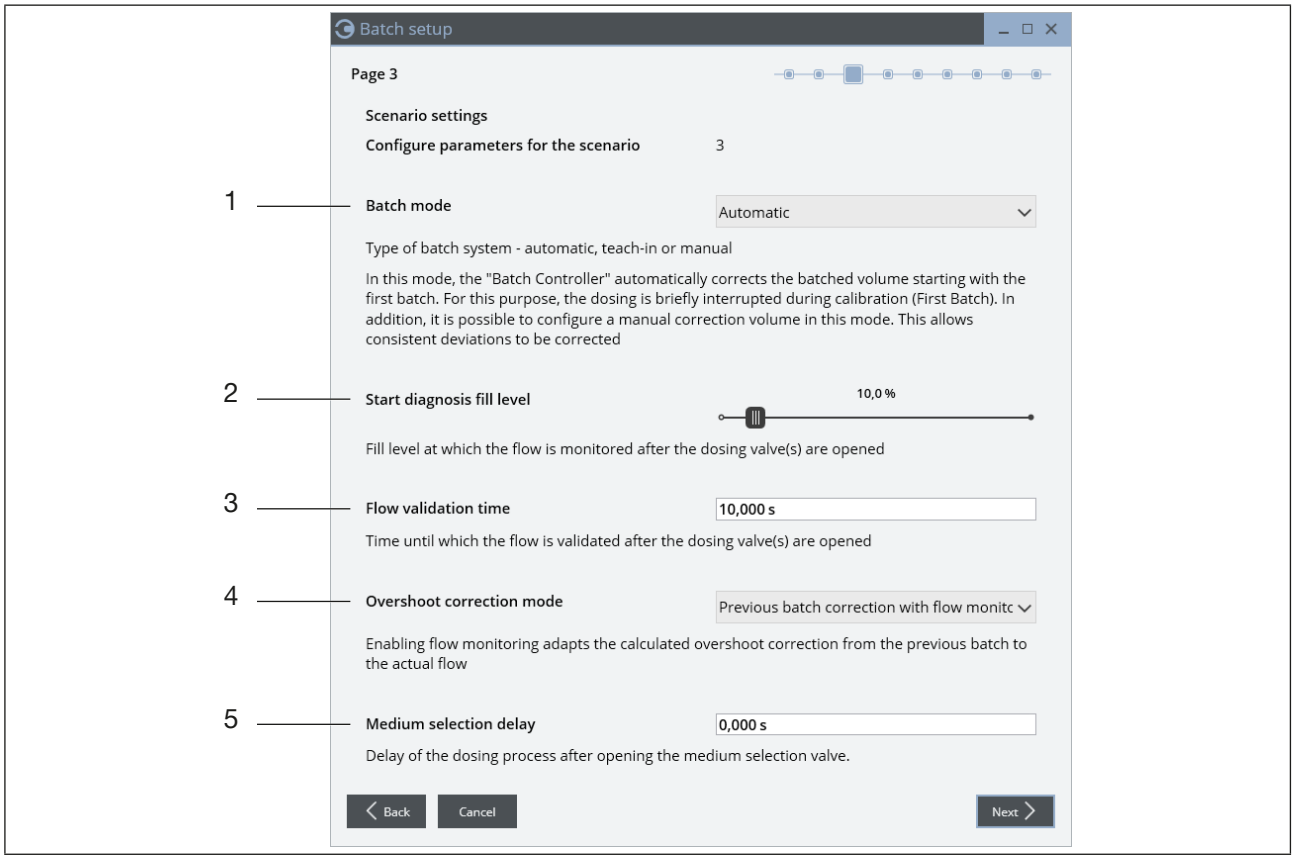

Fig. 16: Configuration of scenarios 3, 5, 7, 8, 9, 10

No.	Designation	Description	Scenario
1	**Batch mode**	Batch mode selection: *“Automatic”*, *“Teach-In”* or *“Manual”* (see chapter “9.1 Description of batch modes”)	All
2	**Start fill level diagnostics** **Only for batch mode:** *“Automatic”* and *“Teach-In”*	Fill level when the flow diagnostics start (see chapter “9.5 Troubleshooting”)	All
3	**Flow validation time** **Only for batch mode:** *“Automatic”* and *“Teach-In”*	Time when the flow is tested after the valves open (see chapter “9.5 Troubleshooting”)	All
4	**Overrun correction mode** **Only for batch mode:** *“Automatic”*	**Mode for overrun correction** • ***“Previous batch correction”*** Adjustment while taking the last batch into consideration • ***“Previous batch correction with flow monitoring”*** Dynamic adjustment while taking the last batch **and** the current flow into consideration	All
5	**Medium selection delay** **Only for batch mode:** *“Automatic”* and *“Teach-In”*	Determines the delay from the opening of the medium selection valve to the start of the dosing process. The delay to be set depends on the medium, pressure, line length, nominal diameter and whether the line is full or empty.	3, 5, 7, 8, 9, 10

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10.1.4 Flow measurement devices

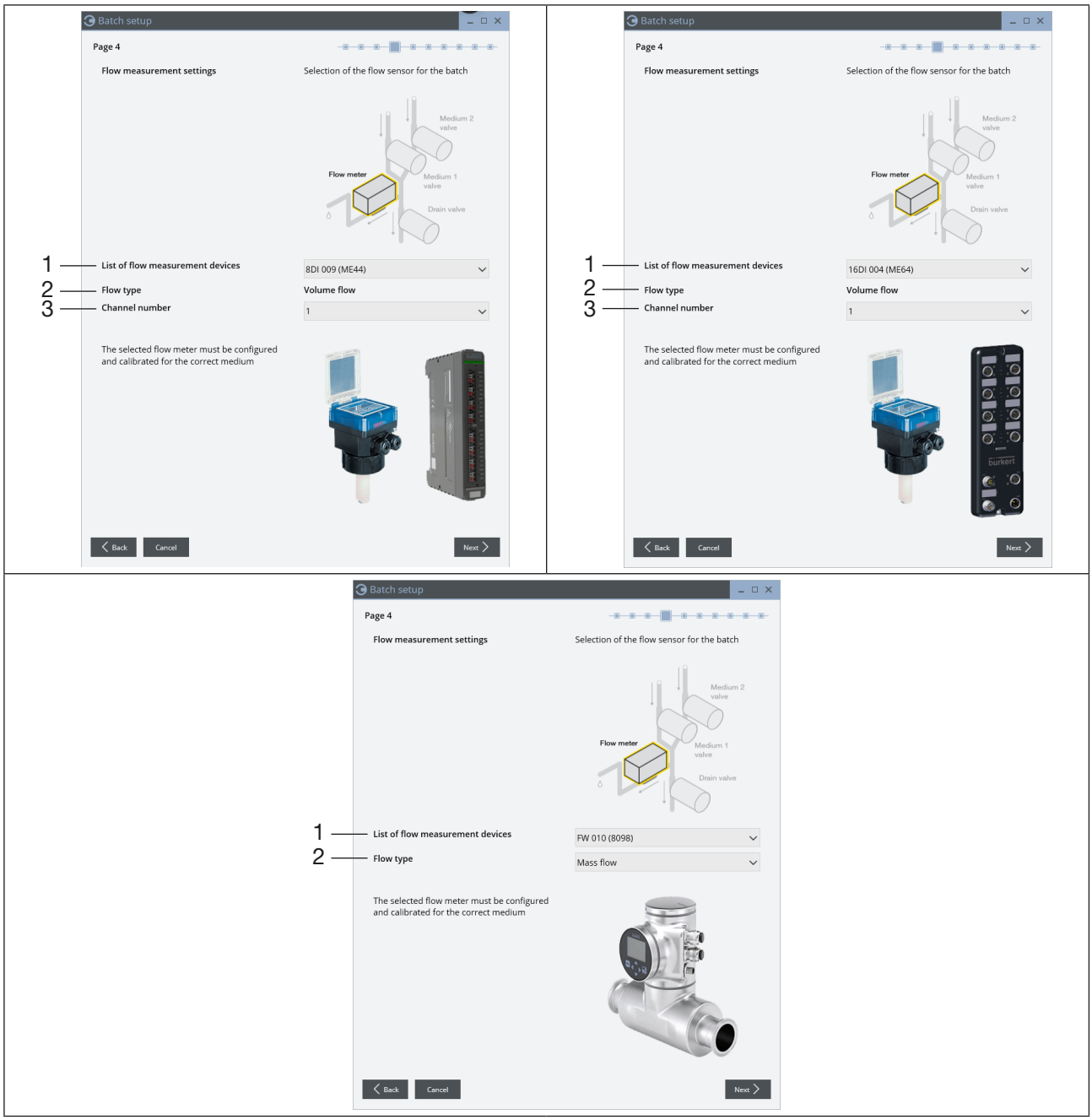

Fig. 17: Flow measurement devices (flow measurement settings)

No.	Designation	Description	Scenario
1	**List of flow meters**	Selection between different flow measurement devices must be made	All
2	**Type of flow**	Volume flow	All
		Mass flow **Only with supported Type 8098 FLOWave**	
3	**Channel number**	Channel number must be selected in a drop-down menu Is only displayed when the device possesses multiple channels	All

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10.1.5 settings of the controller

Note for Type ME61 – EDIP process control display
Existing screens on the display are deleted.
Device restart required in order to apply changes.

Note for DI devices
Channels on the input control device must be configured in digital input mode and arranged with keys in the following sequence:

- 0: Start
- 1: Pause
- 2: Stop

Fig. 18: Controller settings

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No.	Designation	Description			Scenario
1	**Type of controller**	Input control device selection (to control batch process). **Option EDIP miscellaneous:** All EDIP devices that are connected to the büS are displayed.			All
2	**List of controllers**	Selection of devices found on büS and possible devices.			All
3	**List of inputs (Only for ME43 and ME63)**	The possible inputs are displayed here. (This point is displayed or hidden, depending on the previous selection.)			All
4	**Cyclical value of gateway (PLC)**	**OFF:** Internal batch controller recipes are used.			All
		ON: Upstream controller recipes are used.			
5	**Flow unit on the display (Only for ME61)**	Flow unit must be selected.	Volume flow	l/min	All
				m3/min	
				USgal/min	
				ft3/min	
			Mass flow	kg/min	
				lb/min	
6	**Totaliser unit on the display (Only for ME61)**	**Totaliser** unit must be selected. When using the display, it is automatically configured by clicking on **Continue**, and the batch dashboard is prepared. The wizard continues configuration after the display restart.	Volume flow	l	All
				m3	
				ml	
				USgal	
				ft3	
				fl.oz.	
			Mass flow	kg	
				g	
				oz	
				lb	
7	**8-bit input selection (Only for ME64)**	8-bit input Ch1–8			All
		8-bit input Ch9–16			

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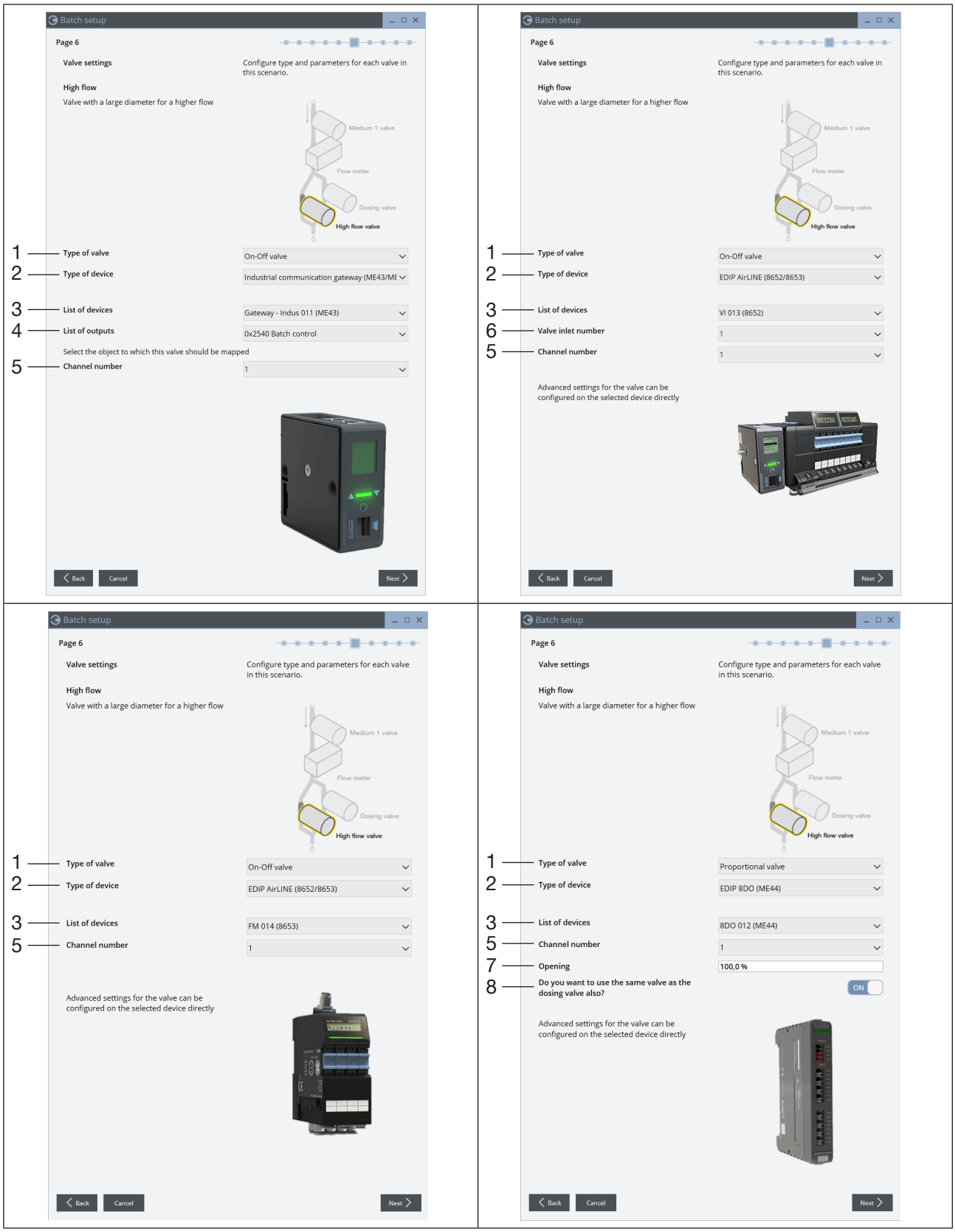
10.1.6 Dosing valve with high flow



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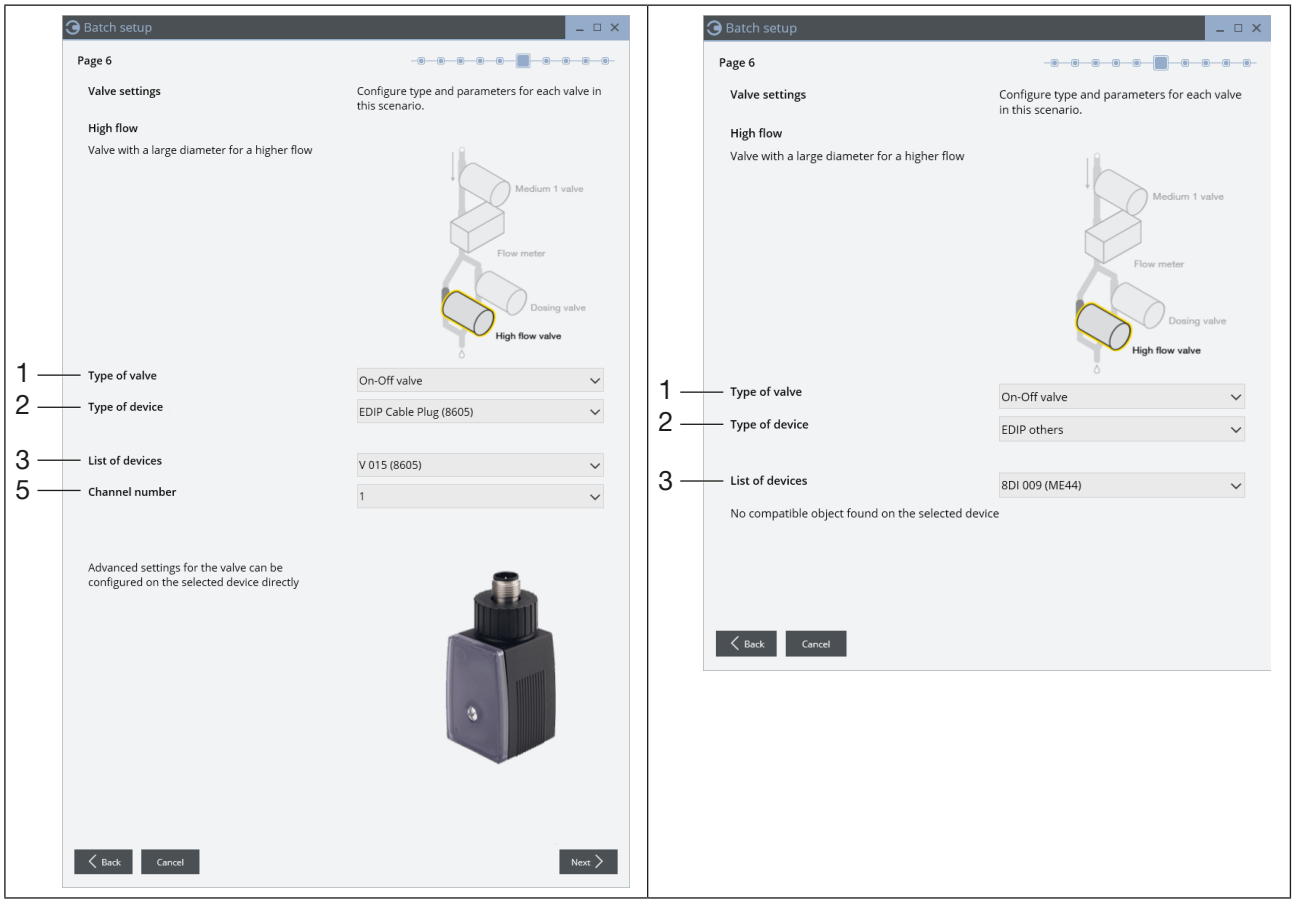

Fig. 19: Selection and configuration of the dosing valve with high flow

No.	Designation	Description	Scenario
1	**Valve type**	On/off valve	6, 10
		Inverted on/off valve	
		Proportional valve **Not for Type 8652/8653**	
2	**Device type**	Type of the device to which the valves are connected **Option EDIP miscellaneous:** All EDIP devices that are connected to the büS are displayed.	6, 10
3	**List of devices**	Devices that are connected to the büS network and meet the **"Device type"** selection criterion	6, 10
4	**List of outputs**	Select correct output	6, 10
5	**Channel number**	Channel number must be selected in a drop-down menu	6, 10
6	**Valve inlet number**	Drop-down menu for valve selection (valve 1–6). **Only for Type 8652.**	6, 10
7	**Opening**	Setting the flow rate. **Only possible if "valve type" Proportional valve has been selected**	6, 10

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8	**Use the same valve also as a dosing valve**	**OFF (dosing valve with high flow ≠ dosing valve).** Selection criteria of **dosing valve with high flow** and **dosing valve** can be individually adjusted.	6, 10
		ON (dosing valve with high flow = dosing valve). Selection criteria of **dosing valve with high flow** are assumed for the **dosing valve.** **Opening** must be set individually.	

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10.1.7 Dosing valve

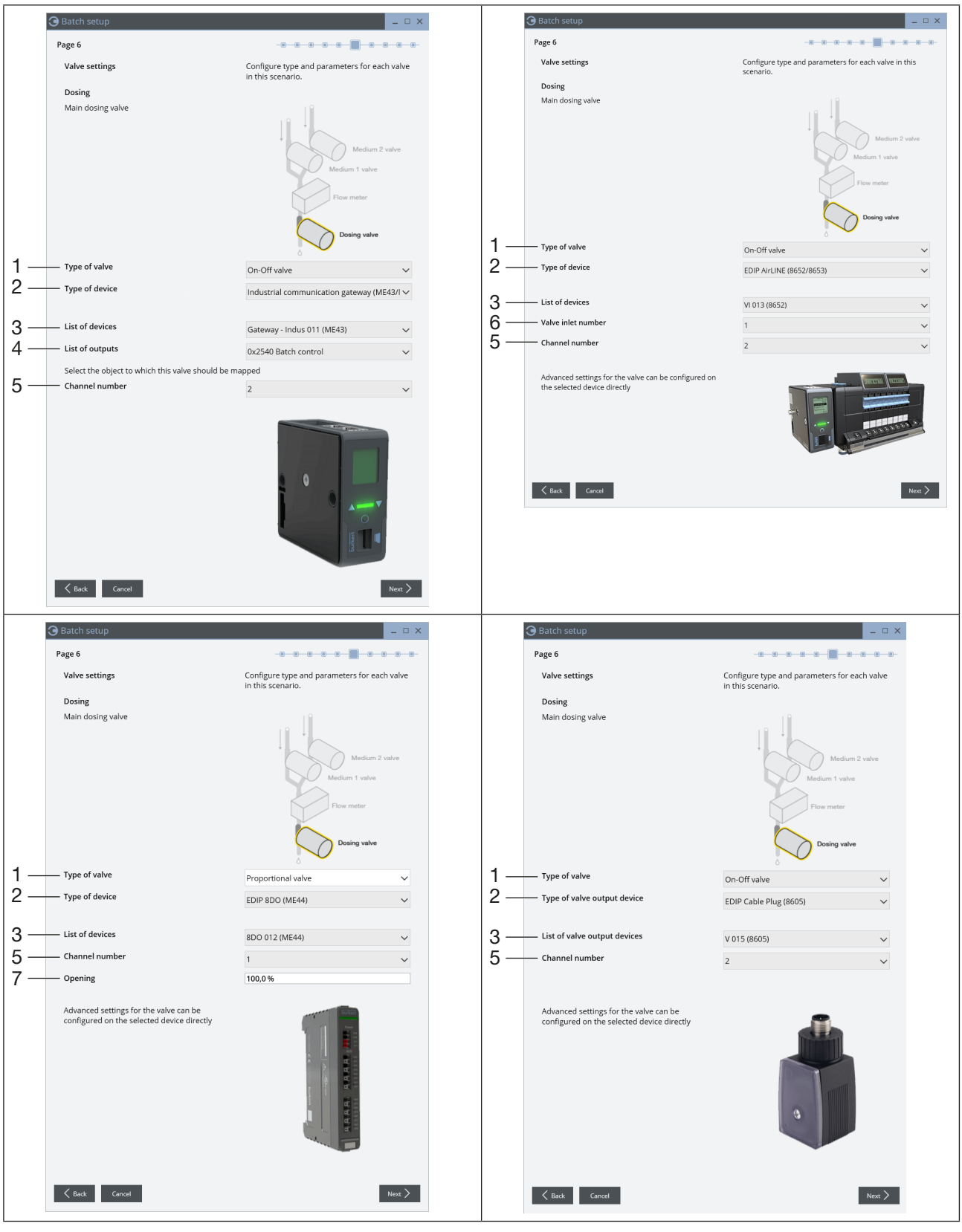

Fig. 20: Dosing valve selection and configuration – example of scenario 10

No.	Designation	Description	Scenario
1	**Valve type**	On/off valve	1, 2, 3, 4, 5, 6, 8, 10
		Inverted on/off valve	
		Proportional valve **Not for Type 8652/8653**	
2	**Device type**	Type of the device to which the valves are connected	1, 2, 3, 4, 5, 6, 8, 10
3	**List of devices**	Devices that are connected to the büS network and meet the **"Device type"** selection criterion	1, 2, 3, 4, 5, 6, 8, 10
4	**List of outputs**	Select correct output	1, 2, 3, 4, 5, 6, 8, 10
5	**Channel number**	Channel number must be selected in a drop-down menu	1, 2, 3, 4, 5, 6, 8, 10
6	**Valve inlet number**	Drop-down menu for valve selection (valve 1–6) **Only for Type 8652/8653**	1, 2, 3, 4, 5, 6, 8, 10
7	**Opening**	Setting the flow rate **Only possible if "valve type" Proportional valve has been selected**	1, 2, 3, 4, 5, 6, 8, 10

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10.1.8 Selection valves

Medium valve 1

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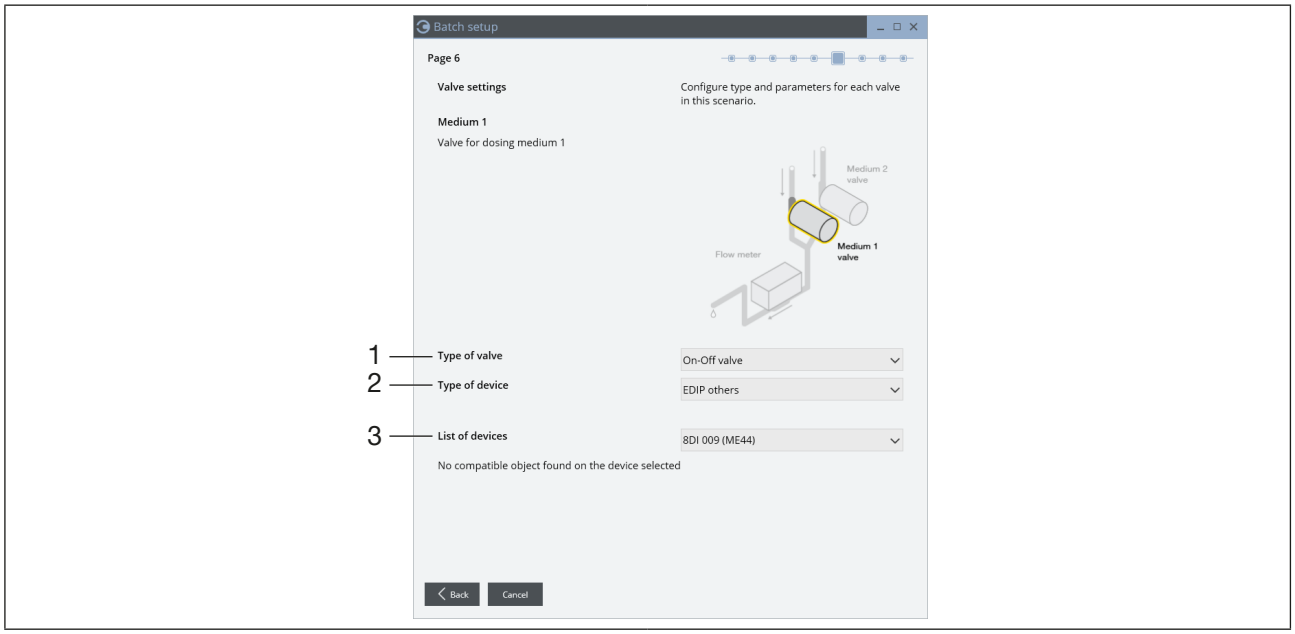

Fig. 21: Medium valve 1 selection and configuration

No.	Designation	Description	Scenario
1	**Valve type**	On/off valve	3, 5, 7, 8, 9, 10
		Inverted on/off valve	
		Proportional valve **Not for Type 8652/8653**	
2	**Device type**	Type of the device to which the valves are connected	3, 5, 7, 8, 9, 10
3	**List of devices**	Devices that are connected to the büS network and meet the **"Device type"** selection criterion	3, 5, 7, 8, 9, 10
4	**List of outputs**	Select correct output	3, 5, 7, 8, 9, 10
5	**Channel number**	Channel number must be selected in a drop-down menu	3, 5, 7, 8, 9, 10
6	**Valve inlet number**	Drop-down menu for valve selection (valve 1–6). **Only for Type 8652/8653**	3, 5, 7, 8, 9, 10
7	**Opening**	Setting the flow rate. **Only possible if "valve type" Proportional valve has been selected**	3, 5, 7, 8, 9, 10

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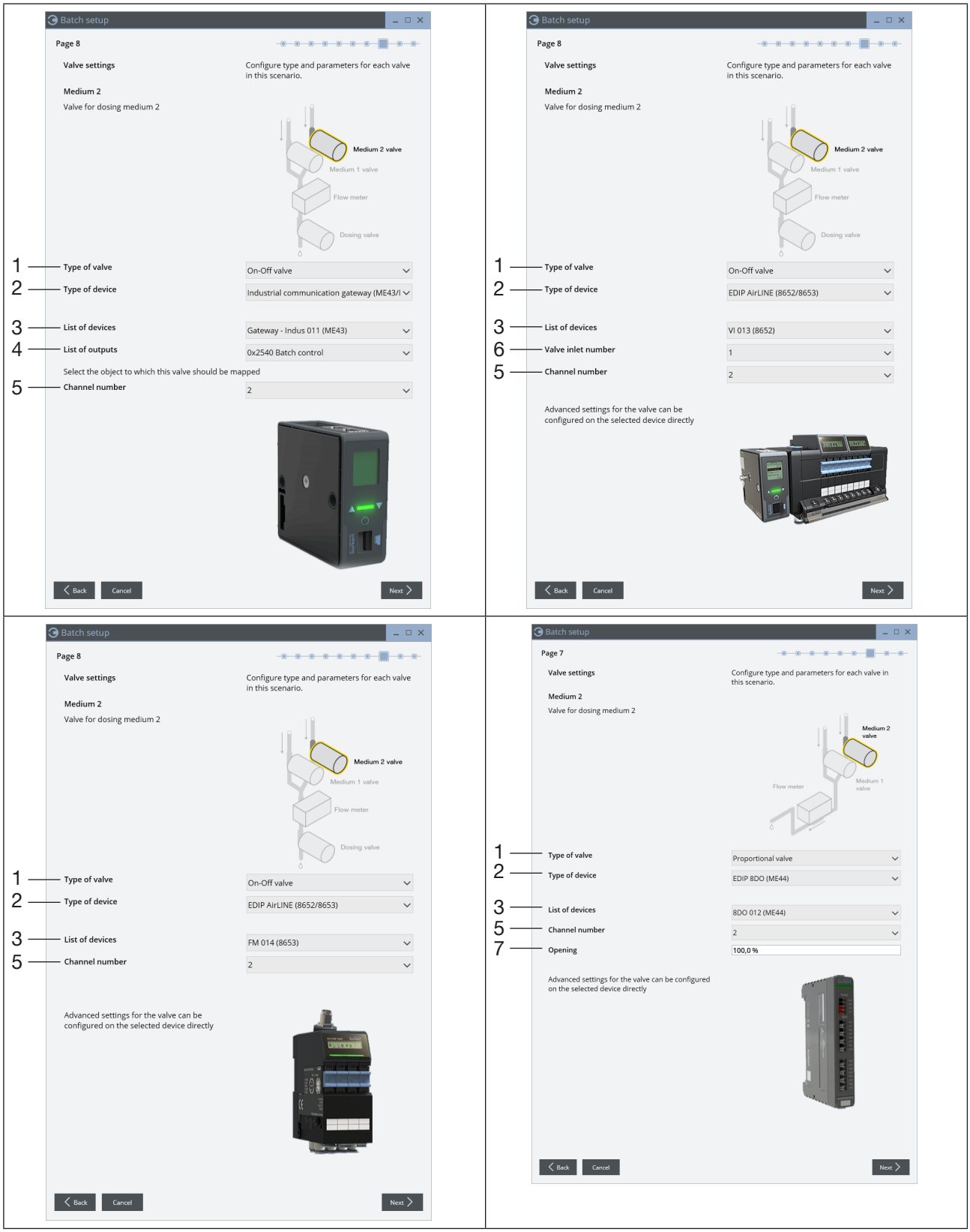
Medium valve 2



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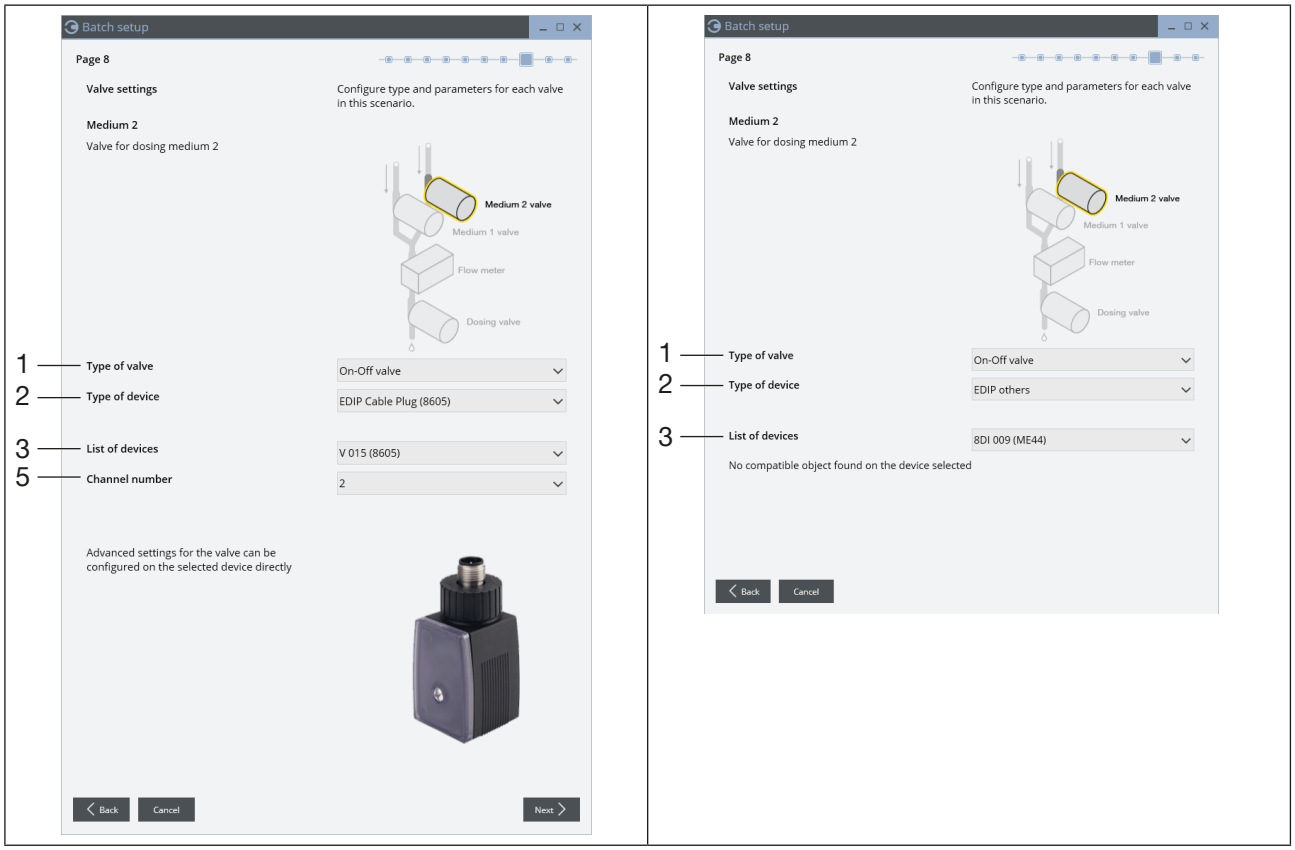

Fig. 22: Medium valve 2 selection and configuration

No.	Designation	Description	Scenario
1	**Valve type**	On/off valve	7, 8, 9
		Inverted on/off valve	
		Proportional valve **Not for Type 8652/8653**	
2	**Device type**	Type of the device to which the valves are connected	7, 8, 9
3	**List of devices**	Devices that are connected to the büS network and meet the **“Device type”** selection criterion	7, 8, 9
4	**List of outputs**	Select correct output	7, 8, 9
5	**Channel number**	Channel number must be selected in a drop-down menu	7, 8, 9
6	**Valve inlet number**	Drop-down menu for valve selection (valve 1–6). **Only for Type 8652/8653**	7, 8, 9
7	**Opening**	Setting the flow rate. **Only possible if “valve type” Proportional valve has been selected**	7, 8, 9

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10.1.9 Drain valve

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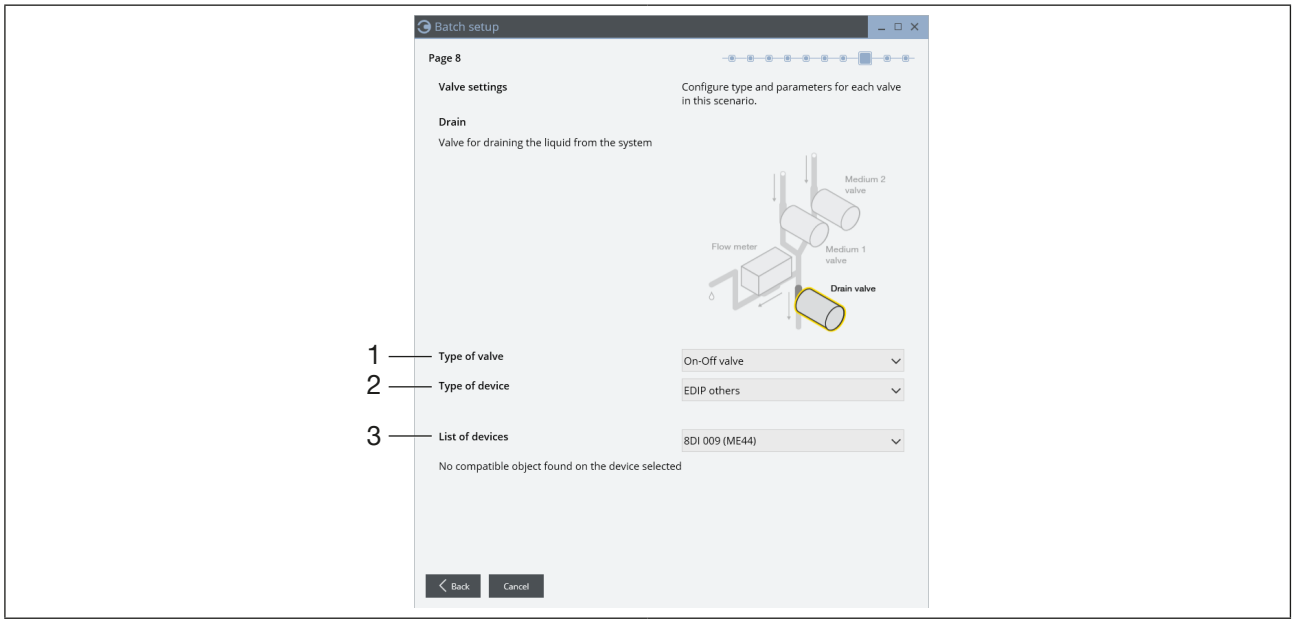

Fig. 23: Drain valve

No.	Designation	Description	Scenario
1	**Valve type**	On/off valve	4, 9
		Inverted on/off valve	
		Proportional valve **Not for Type 8652/8653**	
2	**Device type**	Type of the device to which the valves are connected	4, 9
3	**List of devices**	Devices that are connected to the büS network and meet the **“Device type”** selection criterion	4, 9
4	**List of outputs**	Select correct output	4, 9
5	**Channel number**	Channel number must be selected in a drop-down menu	4, 9
6	**Valve inlet number**	Drop-down menu for valve selection (valve 1–6). **Only for Type 8652.**	4, 9
7	**Opening**	Setting the flow rate. **Only possible if “valve type” Proportional valve has been selected**	4, 9

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10.1.10 Recipe configuration

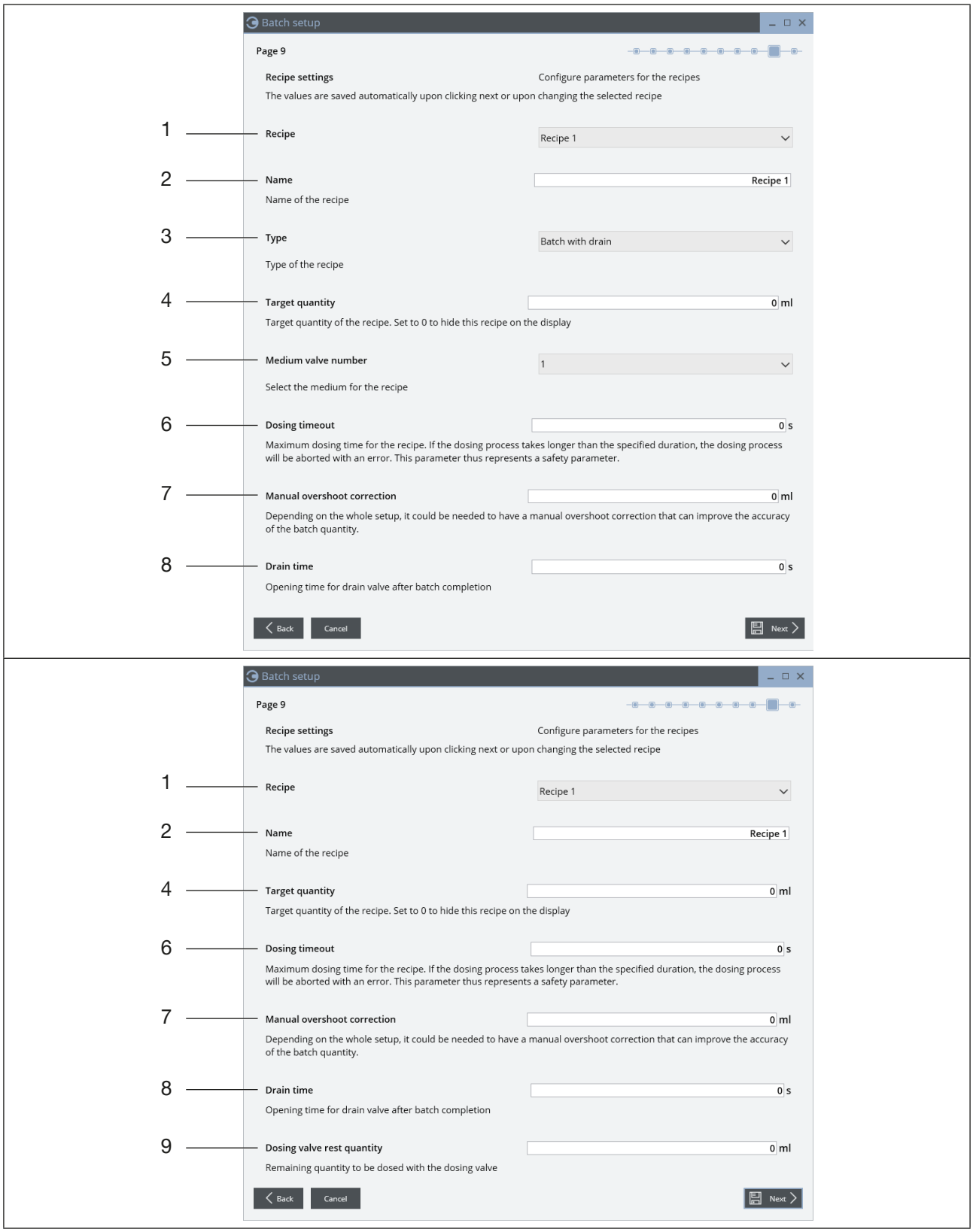

Fig. 24: Recipe configuration

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No.	Designation	Description	Scenario
1	Recipe	A maximum of 7 recipes are available. The individual settings can be adjusted here for each recipe. If the ME61 is being used, the recipe can be hidden by entering the quantity 0.	All
2	Name	Freely selectable name for the recipe (this is displayed in the process control display).	All
3	Type	**Recipe type:** A choice can be made between *"Batch"*, *"Drainage"* or *"Batch with draining"* at this point.	Only for 4 and 9
4	Target quantity Only for Type: ***"Batch"*** or ***"Batch with drainage" "***	Target quantity of recipe.	All
5	Medium valve number Only for Type: ***"Batch"*** or ***"Batch with draining"***	The medium valve is selected here, depending on the scenario.	Only for 7, 8 and 9
6	Dosing time limit Only for Type: ***"Batch"*** or ***"Batch with draining"***	**Safety parameters (maximum dosing time for the recipe):** Knowledge of the flow and target quantity can be used to estimate how long a maximum dosing period should last. If the dosing time is exceeded, an error occurs and the valves are closed.	All
7	Manual overrun correction Only for Type: ***"Batch"*** or ***"Batch with draining"***	The batch controller possesses an automatic and constant correction function. It may be necessary to enter a manual correction quantity in certain cases. This is then always automatically included in the calculation.	All
8	Draining time Only for type: ***"Drain"*** or ***"Batch with draining"***	Opening time of drain valve after end of batch dosing.	Only for 4, 9 and 10
9	Residual quantity in dosing valve	Residual quantity to be dosed with the dosing valve.	Only for 6 and 10

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10.1.11 Batch logging

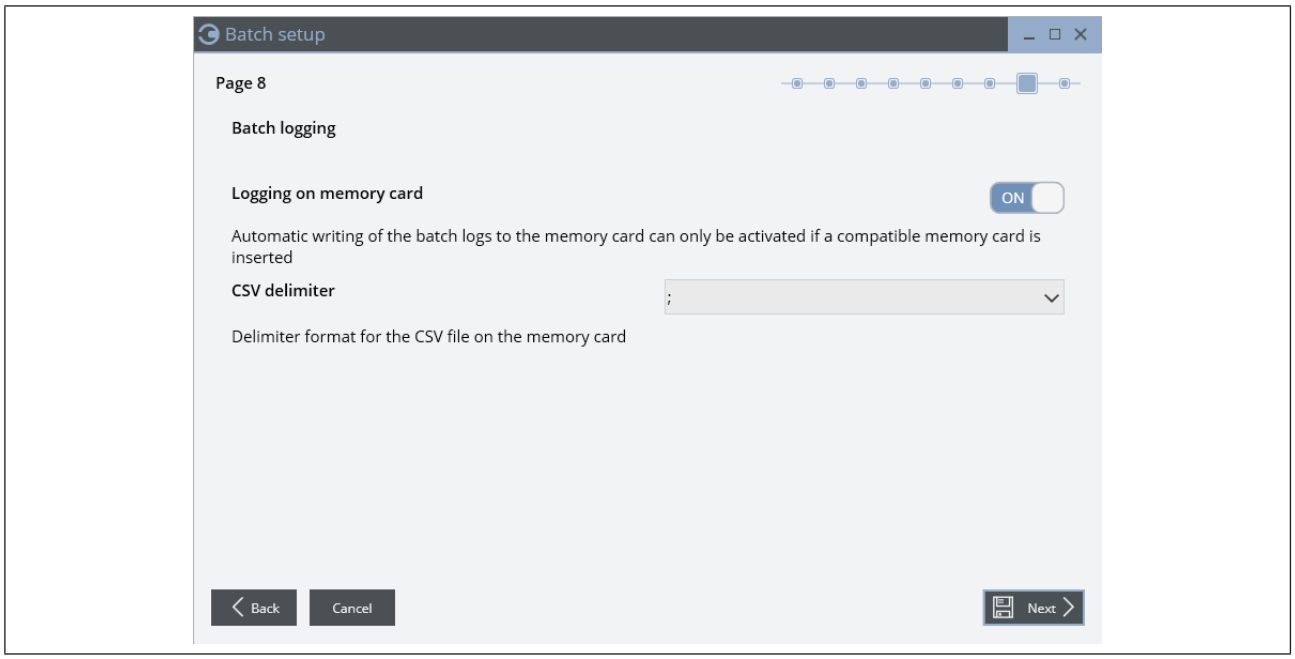

Fig. 25: Setting batch logging in the wizard

Batch logging is limited to 30 logs as a standard. For information on increasing the number of saved logs, see “13 Batch logs”.

10.1.12 Installed devices

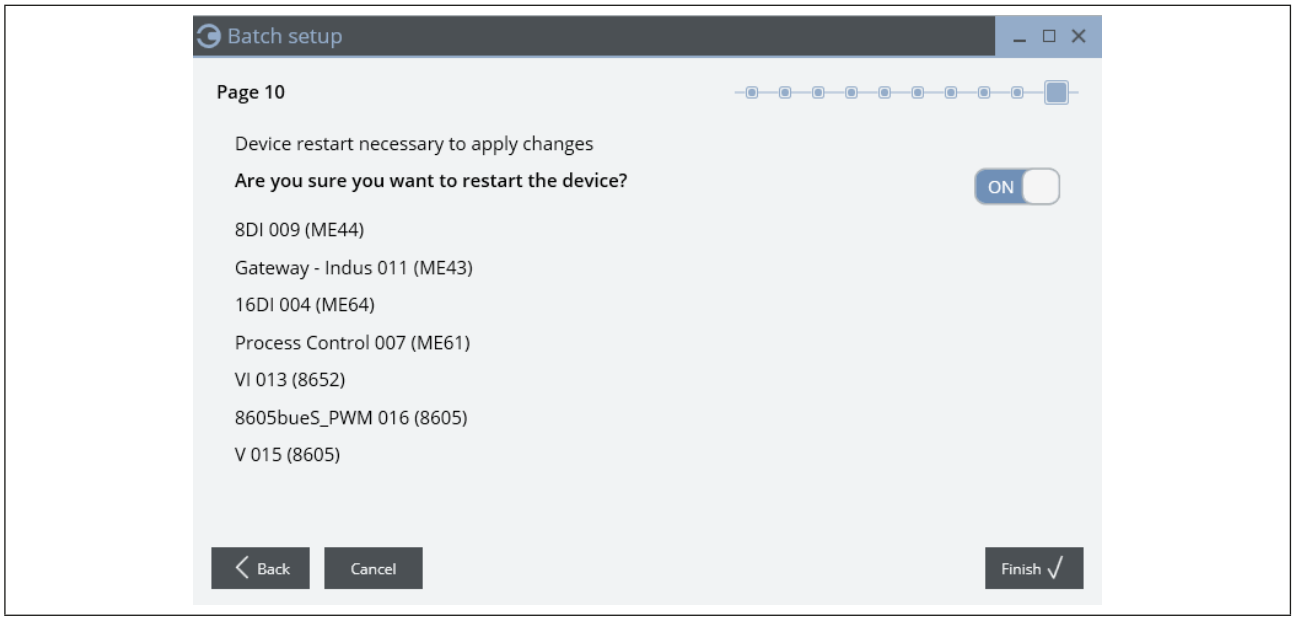

Fig. 26: Example representation of all devices configured by the wizard

To end the wizard, all devices required and configured for the batch are automatically restarted.

The restart is performed by clicking on Finish.

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10.1.13 Batch controller re-configuration

→ Open büS map. and select the Network configuration tab at this point (see “Fig. 27: Network configuration”).

Input side

If the wizard is restarted again after an initial successful configuration and the devices are reconfigured, the inputs of the batch controller (red) are reconnected.

Connections (mappings) that are no longer present are deleted.

Output side

Automatic updates do not occur on the output side (green).

Available mappings remain

Delete mapping manually if necessary.

→ Click the connection that should be deleted.

→ Delete selected connection:

- Apply change or
- discard change

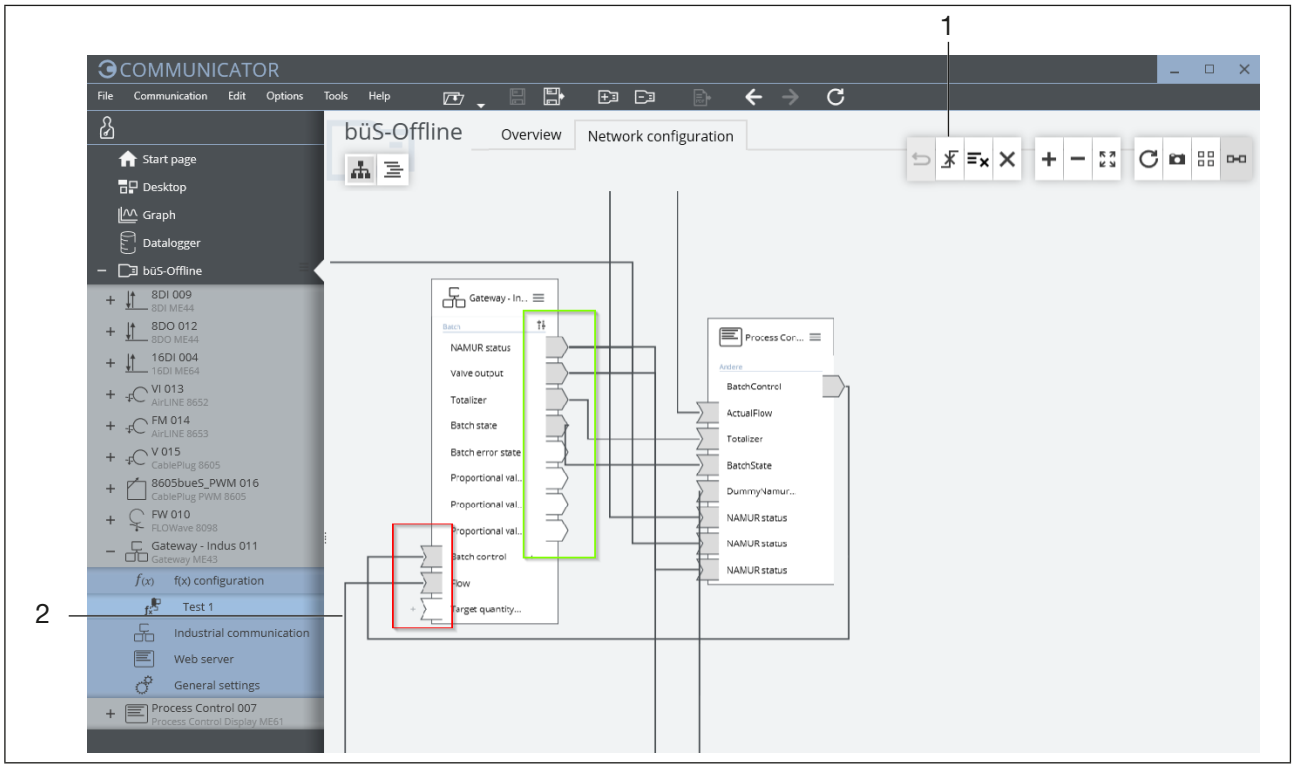

Fig. 27: Network configuration

No.	Designation	Description
1	**Connection**	Click a connection to select it.
2	**Delete selected connection**	The selected connection can be **individually** deleted.

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11 BATCH CONTROLLER UPDATE

ATTENTION!

Device damage due to faulty firmware update

If the firmware update is not completed successfully, the device may not be operational.

During the firmware update

- do not switch the device off.
- do not disconnect from the power source.
- do not operate the device.
- contact Bürkert service in case of error.

As the Batch Controller is a component of the gateway firmware in question, it is updated via this firmware. Not every gateway firmware update automatically adds new features (or bug fixes) to the Batch Controller.

The gateway restarts after an update to the gateway firmware via the Communicator. If the new features contained in the firmware are needed for the Batch Controller, it must be reinstalled.

Update sequence

→ Right-click on gateway.

→ "Print all parameters in PDF...".

→ Create PDF report for gateway. All relevant settings and information are displayed and saved as a PDF file.

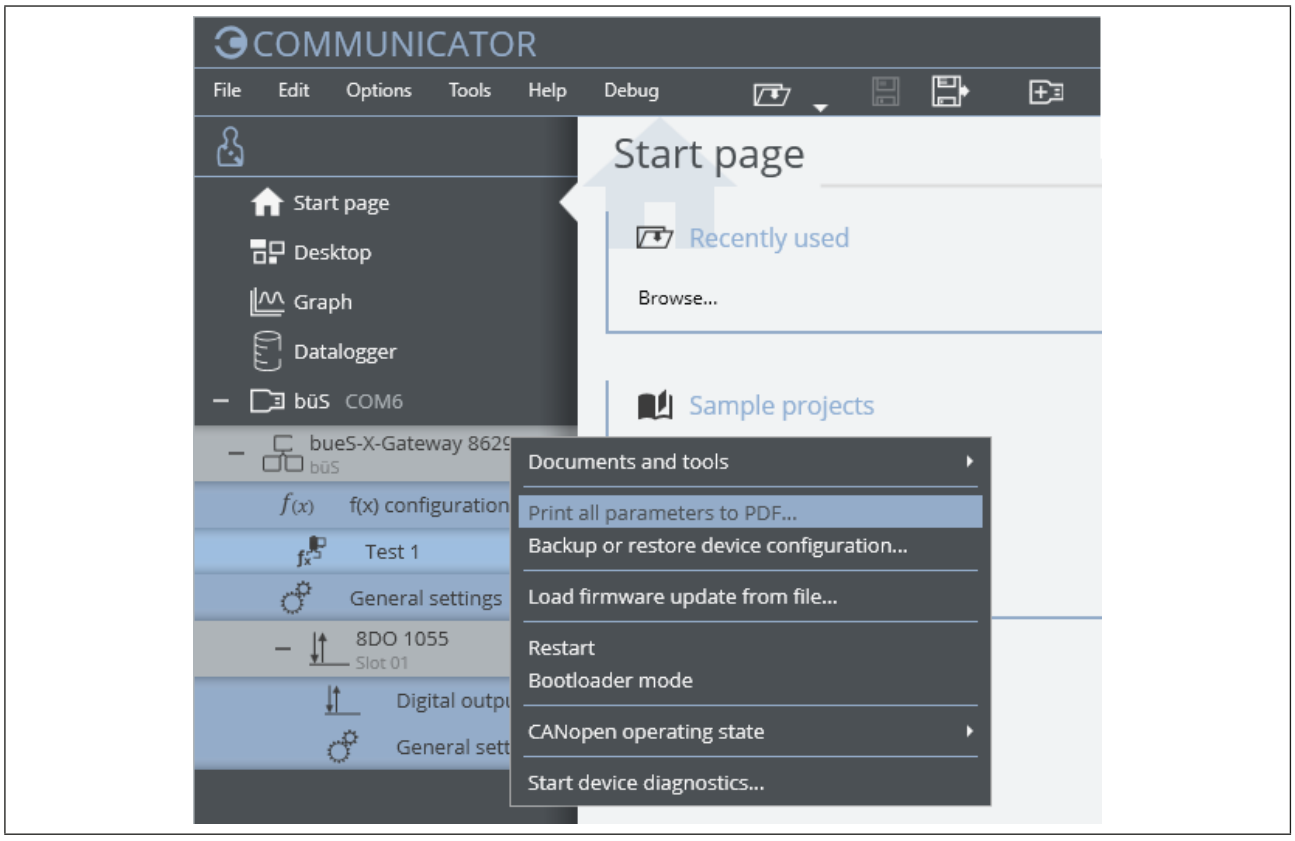

Fig. 28: Generate Batch Controller report

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→ Click f(x) configuration.

→ Delete Batch Controller via “x” **(1)** and confirm device restart **(2)** (see“Fig. 29: Delete Batch Controller and restart device”).

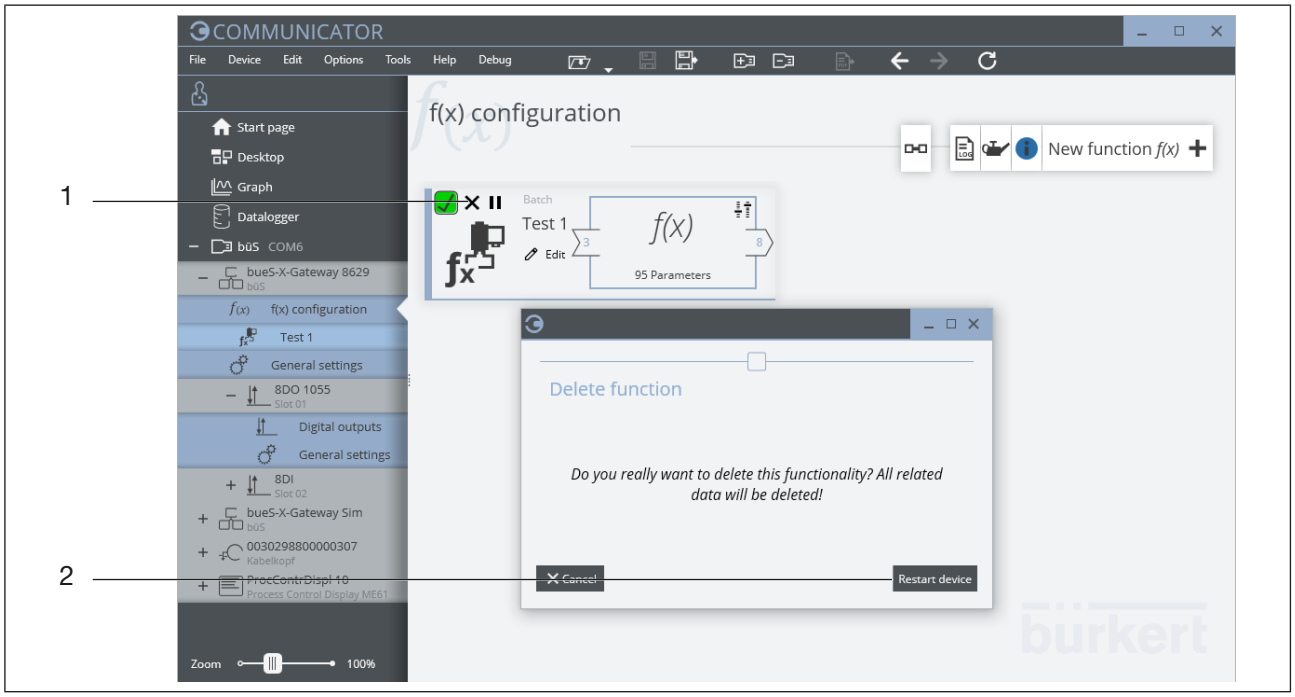

Fig. 29: Delete Batch Controller and restart device

→ The Batch Controller can then be added again.

→ If a licence was available, the newly initialised Batch Controller is automatically licensed again and can operated permanently (see chapter “6.4 Enable the batch function”).

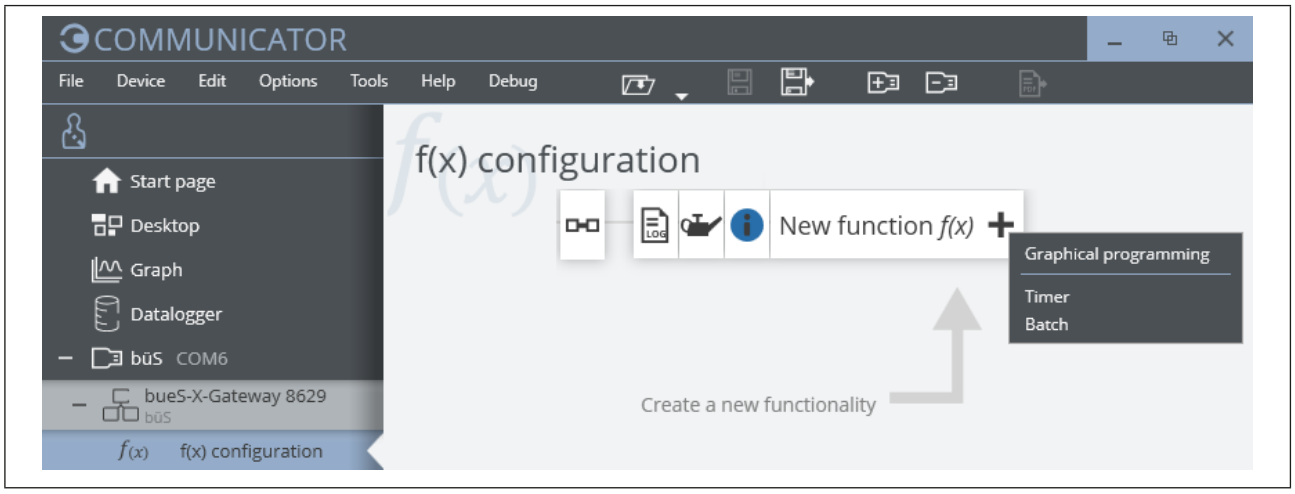

Fig. 30: Add Batch Controller

→ The wizard (see “10.1 Batch setup – run wizard”) can then be executed using the PDF report created. All scenario and recipe settings can be found in the report created.

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12 RESTORE OR BACKUP DEVICE CONFIGURATIONS

Symbol	Menu	Command/description
	Restore or backup device/device configurations	Device configurations can be exported, imported, copied or overwritten.

In the menu bar:

→ Click on interface büS-Offline.
→ Click on Communication.
→ Save system configuration.

In context menu:

→ Click on interface büS-Offline.
→ ≡ click.
→ Save system configuration.

Or:

→ Right-click on büS-Offline .
→ Save system configuration.

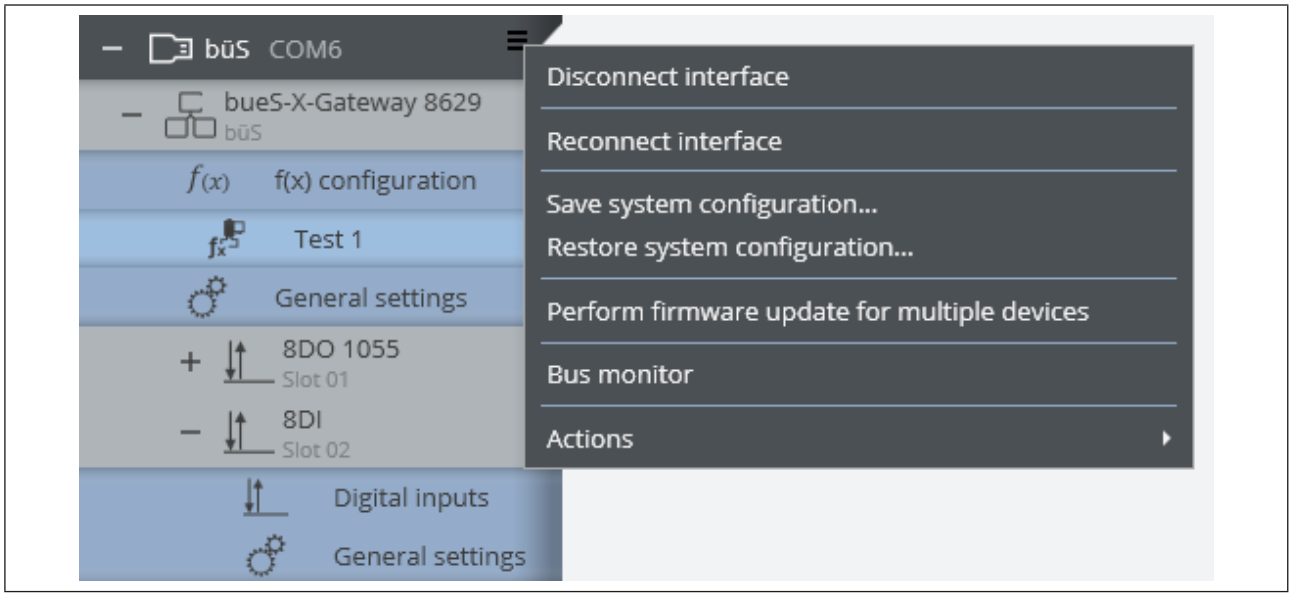

Fig. 31: Context menu device or product

→ Click Backup and restore device configurations.

✔ A wizard will appear.

→ Select function:
- Restore Export device configuration
- Backup Import device configuration
- Clone Copy device configuration
- Overwrite Overwrite device configuration

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Function	Description	
Restore	Export device configuration. Saves the device configuration in a file.	A wizard will appear: → Select storage location and designation for the device configuration. → **Save**. → **Ok**. ✓ The device configuration is saved in a file. Note: the file type is “Device Backup File (*.load)”.
Backup	Import device configuration. Imports the device configuration from a file into the device or product. Note: the identification number and serial number of the device or product must match in the device configuration.	A wizard will appear: → Select storage location and device configuration. → **Open**. → Select values. → **Ok**. ✓ The device configuration is imported into the device or product. Note: the file type is “Device Backup File (*.load)”.
Clone	Copy device configuration. Imports the device configuration from a file into the device or product. Note: the identification number of the device or product must match in the device configuration.	A wizard will appear: → Select storage location and device configuration. → **Open**. → **Enter the data via the keyboard:** The user can input name, location and description of the device or product here. Or: **Data of restored file:** Name, location and description are copied over from the file. → Select values. → **Ok**. ✓ The device configuration is imported into the device or product.
Overwrite	Overwrite device configuration. Imports the device configuration from a file into the device or product. Note: the data is imported unchecked.	A wizard will appear: → Request password from service.

Table 1: Restore or backup device configuration.

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13 BATCH LOGS

The batch controller has a logging function that can be used to log certain parameters of a dosing process.

This includes:

- Date and time of dosing
- Associated recipe names and target quantity
- Dosing amount
- Average dosing amount
- Maximum and minimum flow rate
- Standard deviation
- Variance
- Batch status and possible error messages

These logs can be helpful, for example, when searching for errors and during optimisation.

Logging can take place in the memory of the device or on the memory card if this is available in the device. A restart is necessary after inserting the memory card.

13.1 Logging with and without memory card

	Gateway without memory card	Gateway with memory card
Language	Set interface language of the Bürkert Communicator	English
Date and time	ME43[5]: local PC time	ME43: UTC
	ME63[6]: elapsed time	ME63: elapsed time
File name	BatchLog_2023-10-24-11-47-02.csv (example)	BatchLog.csv
Logs	max. 30 logs (Only the logs in the device's memory can be read out)	dependent on the memory capacity
Reading out the log data	CSV export (see chapter "13.3 Batch logging diagnostics")	via card reader

Memory card

- Article number: 774087
- Type: KT01

5) *The ME43 has a real-time clock, so the time and date are logged for each entry.*

6) *The ME63 does not have a real-time clock, so the entries in the log refer to the elapsed time since the device was started.*

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13.2 Parameter batch logging

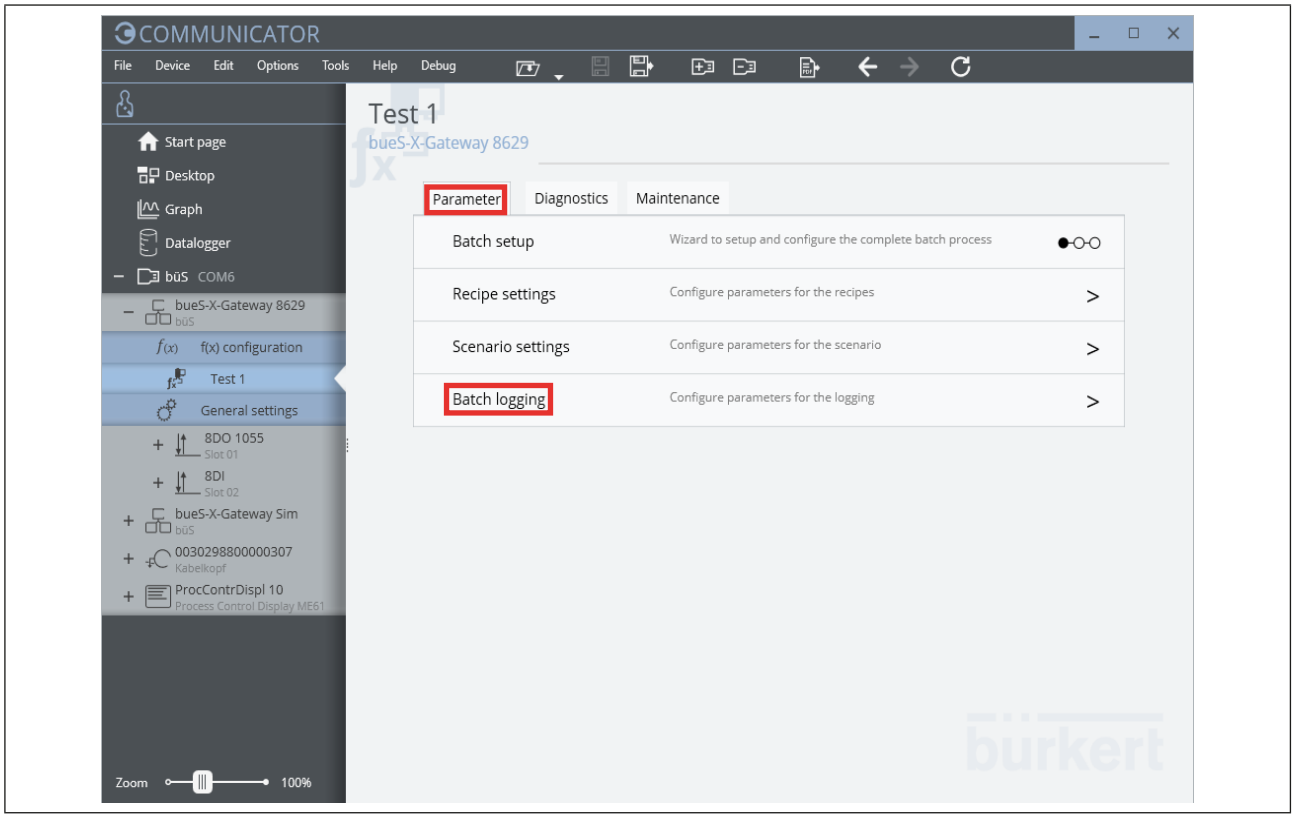

Fig. 32: Parameter batch logging

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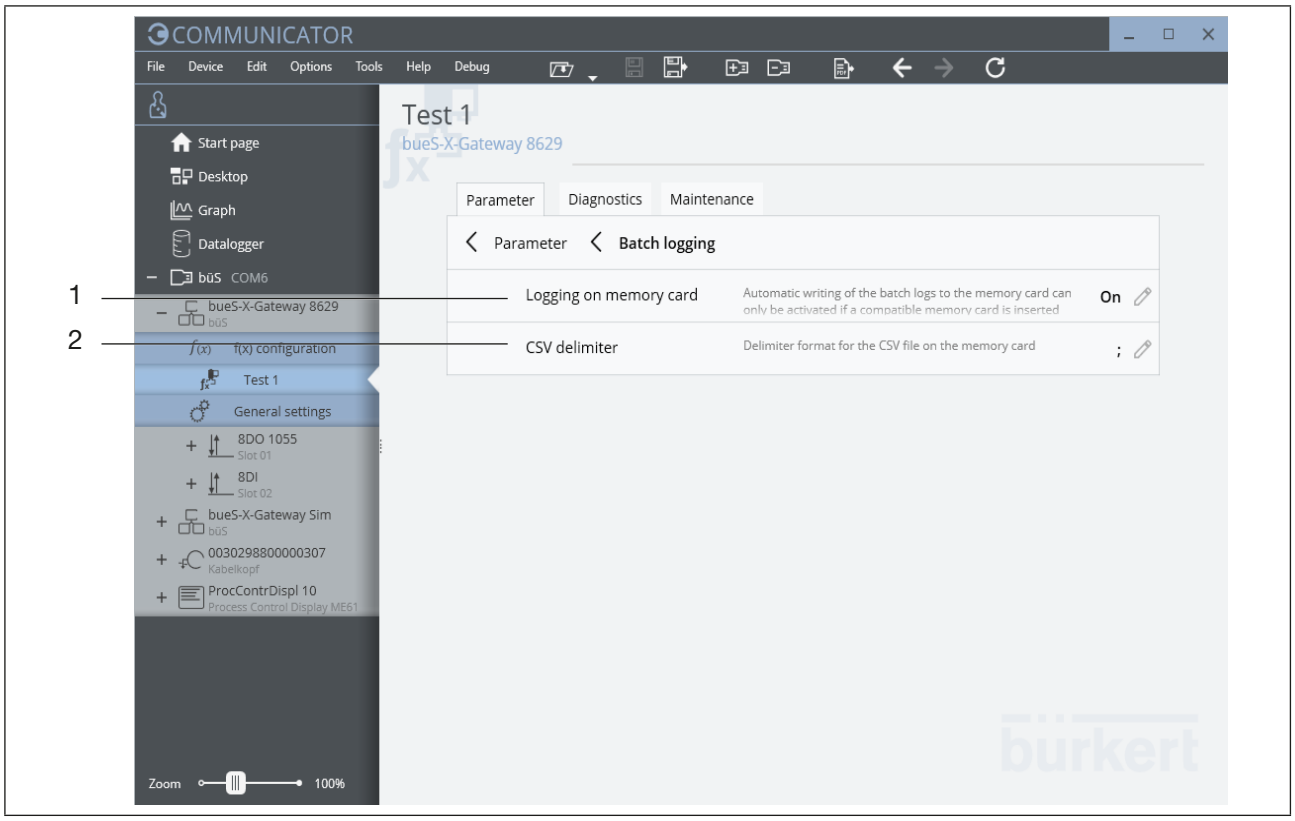

Fig. 33: Batch logging settings

No.	Designation	Description	
1	**Logging on memory card**	**Off**	Up to 30 batch logs are saved on the Bürkert Communicator.
		On	Enables over 30 batch logs to be saved on one memory card.
2	**CSV separator**	The separator (semicolon or comma) is selected for a CSV file depending on regional conventions and software requirements, and to ensure consistent data processing.	

→ Click “Log on memory card”.

→ Set selection to “On”.

→ Select separator.

→ Restart the device

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13.3 Batch logging diagnostics

The Diagnostics tab shows where the logged data is saved and how it is separated from each other.

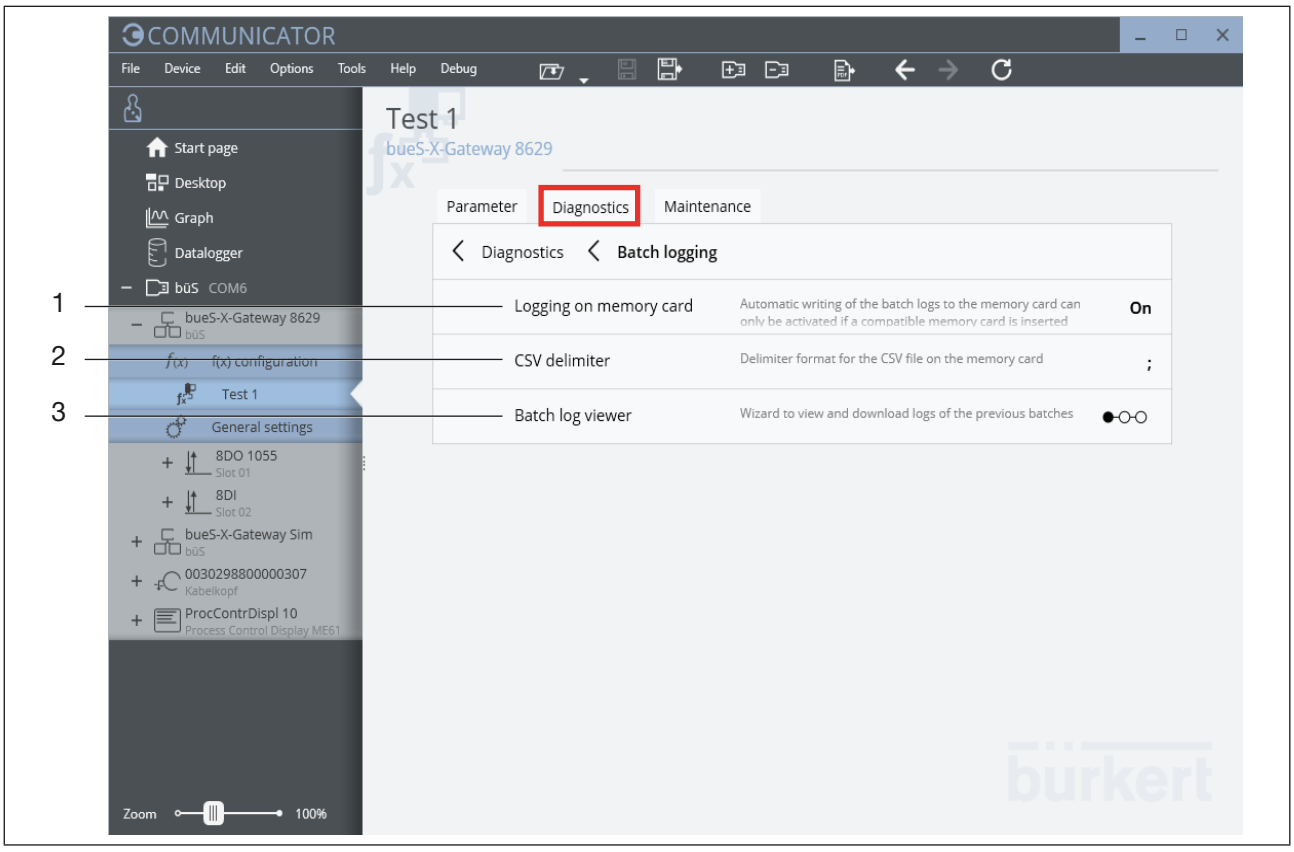

Fig. 34: Batch logging diagnostics

No.	Designation	Description
1	**Logging on memory card**	See chapter“13.2 Parameter batch logging”
2	**CSV separator**	See chapter“13.2 Parameter batch logging”
3	**Batch logging display**	Display area for logs from the last dosing process executed. Batch logging can be saved in an Excel file via a CSV export. To do this, the Bürkert Communicator must be connected to a PC.

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Batch logging display

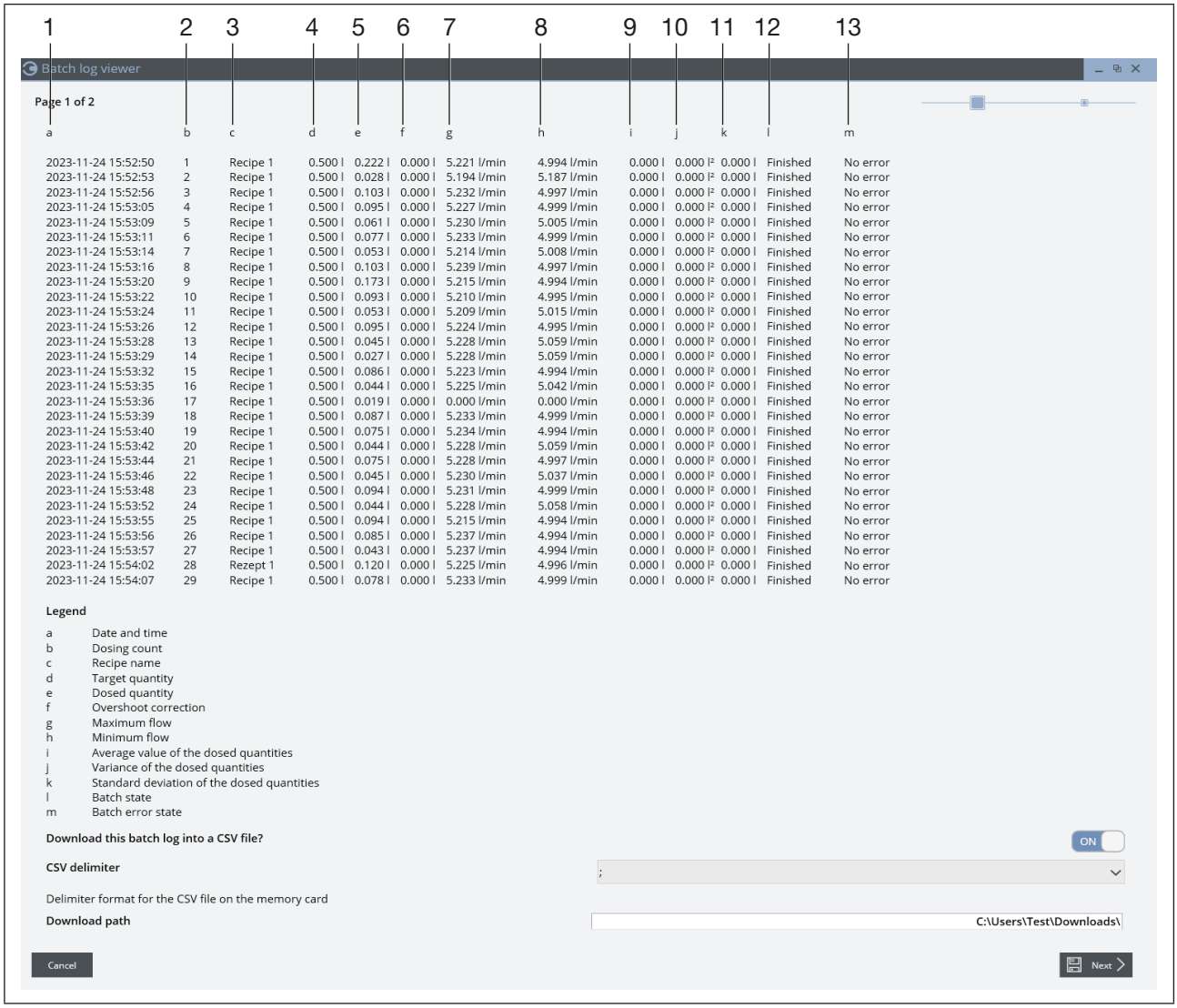

Fig. 35: Example of batch logging display

No.	Designation	Description
1	Date and time	Time and date of dosing process
2	Dosing meter	Number of completed dosing practises
3	Recipe name	Name of recipe selected for the dosing process
4	Target quantity	Set target quantity
5	Dosing amount	Measured amount of the dosing process
6	Overrun correction	Automatic overrun correction of batch
7	Maximum flow	Maximum flow rate within the set validation time (see chapter “10.1.3 Configuration of scenario selected”)
8	Minimum flow	Minimum flow rate within the set validation time (see chapter “10.1.3 Configuration of scenario selected”)
9	Average of dosed quantities	Average of last maximum 30 dosed quantities
10	Variance of dosed quantities	Average square deviation of the last maximum 30 dosed quantities from the average
11	Standard deviation of dosed quantities	Average deviation of the last maximum 30 dosed quantities from the average
12	Batch state	Dosing process status
13	Batch – error state	Display area for errors that occurred during the dosing process

CSV export

A log file in CSV format can be created to document the dosing processes. This CSV file contains different information on dosing processes

→ Set CSV export in the batch logging display to “On”

→ Generate CSV file

→ Save CSV file

The ability to document and analyse dosing processes means that the recorded data can be used for optimisation and tracking.

13.4 Error messages

Designation	Description	
F(x) Batch: memory card is not available. Confirm to disable batch logging	disable	→ Confirm error message.
	re-enable	→ Do **not** confirm error message. → Insert memory card. → Restart device to continue logging.
F(x) Batch: writing batch log onto memory card failed	Error while writing onto memory card. Possible causes: • Memory card damaged • Memory card full	
F(x) Batch: log file on memory card is reaching the maximum permitted size of 100 MB	Saving the batch log is only possible for a limited time (depending on the number of dosing processes that take place during the process).	
F(x) Batch: log file on memory card has reached the maximum permitted size of 100 MB	Log file has reached the maximum size and will no longer be written onto. Later dosing processes are no longer written on the memory card. (100 MB is equivalent to approx. 1 million dosing processes)	

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14 BATCH DIAGNOSTICS

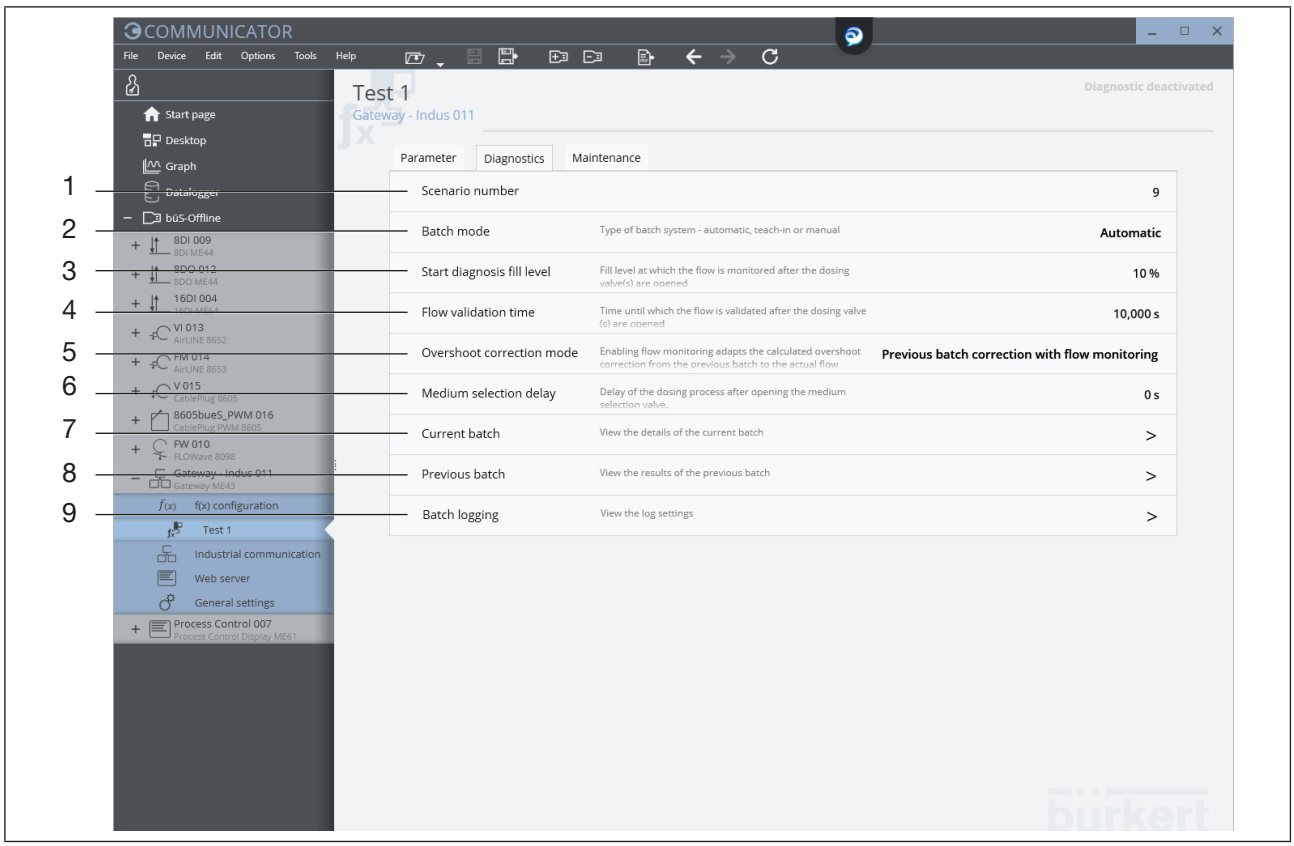

Fig. 36: Batch diagnostics

No.	Designation	Description
1	**Scenario number**	Number of scenario selected
2	Batch mode	Batch mode selection: *“Automatic”*, *“Teach-In”* or *“Manual”*
3	**Start fill level diagnostics**	Fill level when the flow diagnostics start
4	**Flow validation time**	Time when the flow is tested after the valves open
5	**Overrun correction mode**	**Mode for overrun correction** • ***“Previous batch correction”*** Adjustment while taking the last batch into consideration • ***“Previous batch correction with flow monitoring”*** Dynamic adjustment while taking the last batch **and** the current flow into consideration
6	**Medium selection delay**	Determines the delay from the opening of the medium selection valve to the start of the dosing process. The delay to be set depends on whether the line is full or, if the line is empty, medium, line lengths, pressure and nominal diameter. **Only for scenario 7, 8, 9**
7	**Current batch**	See chapter “14.1 Current batch”
8	**Previous batch**	See chapter “14.2 Previous batch”
9	**Batch logging**	See chapter “13.3 Batch logging diagnostics”

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14.1 Current batch

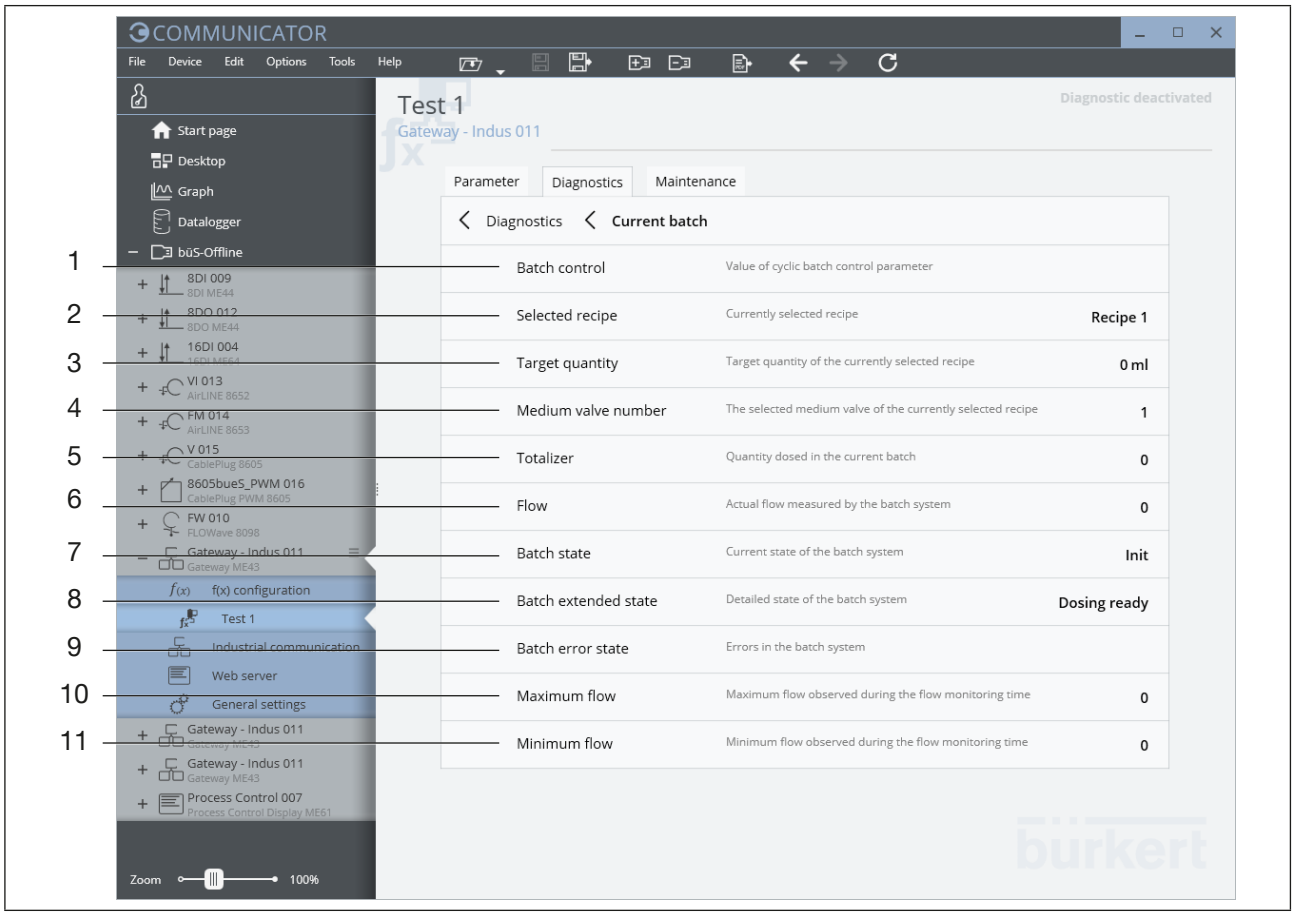

Fig. 37: Current batch

No.	Designation	Description
1	**Batch controller**	Batch procedure control
2	**Selected recipe**	Recipe currently selected
3	**Target quantity**	Target quantity of recipe.
4	**Medium valve number**	The selected medium valve is listed here, depending on the scenario
5	**Totaliser**	Cycles of the current batch
6	**Flow**	Actual flow rate
7	**Batch state**	Current state of batch system
8	**Advanced batch status**	Detailed state of batch system
9	**Batch – error state**	Error detected in dosing system
10	**Maximum flow**	Maximum flow occurring during dosing
11	**Minimum flow**	Minimum flow occurring during dosing

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14.2 Previous batch

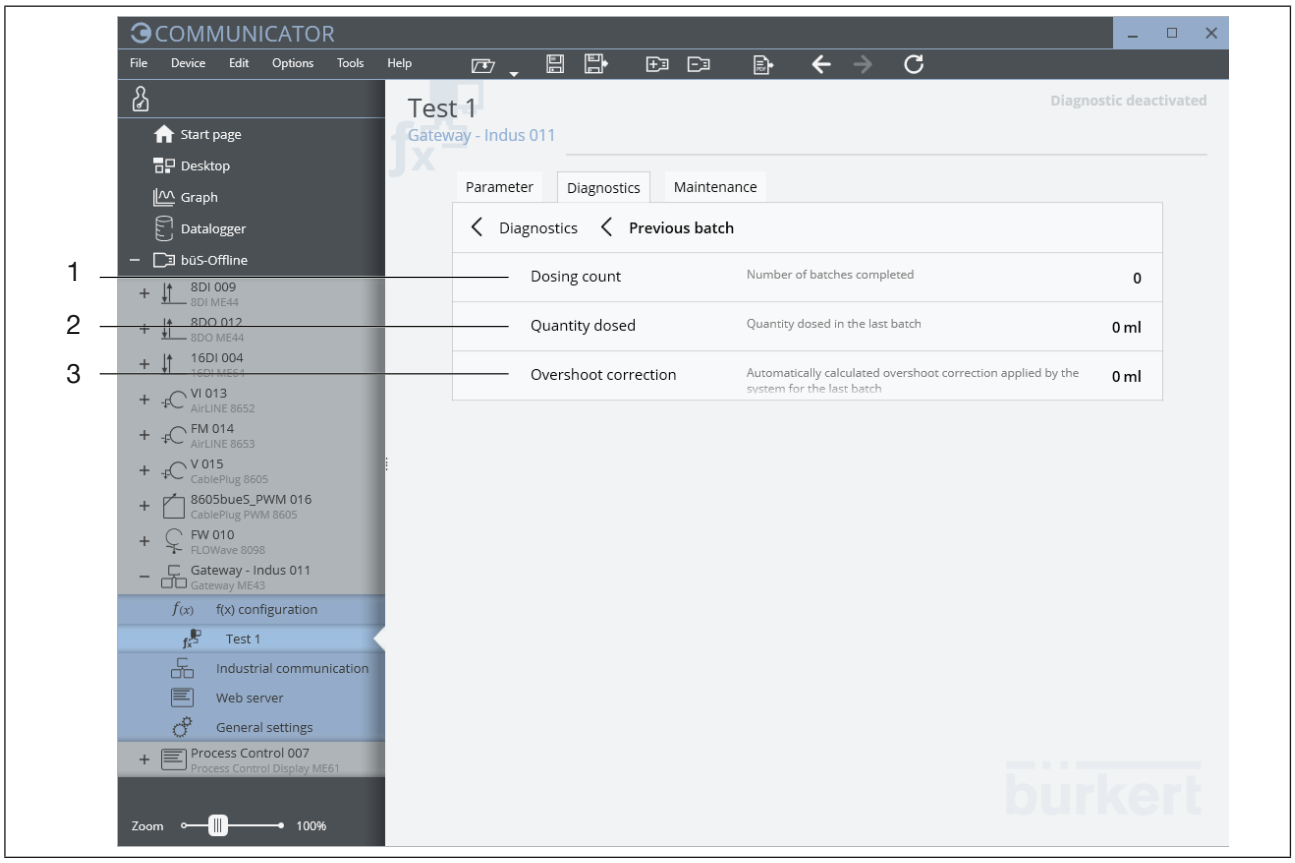

Fig. 38: Previous batch

No.	Designation	Description
1	**Dosing meter**	Number of completed batches
2	**Dosing amount**	Dosing amount in last batch process
3	**Overrun correction**	Automatic overrun correction of batch

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15 BATCH PARAMETER

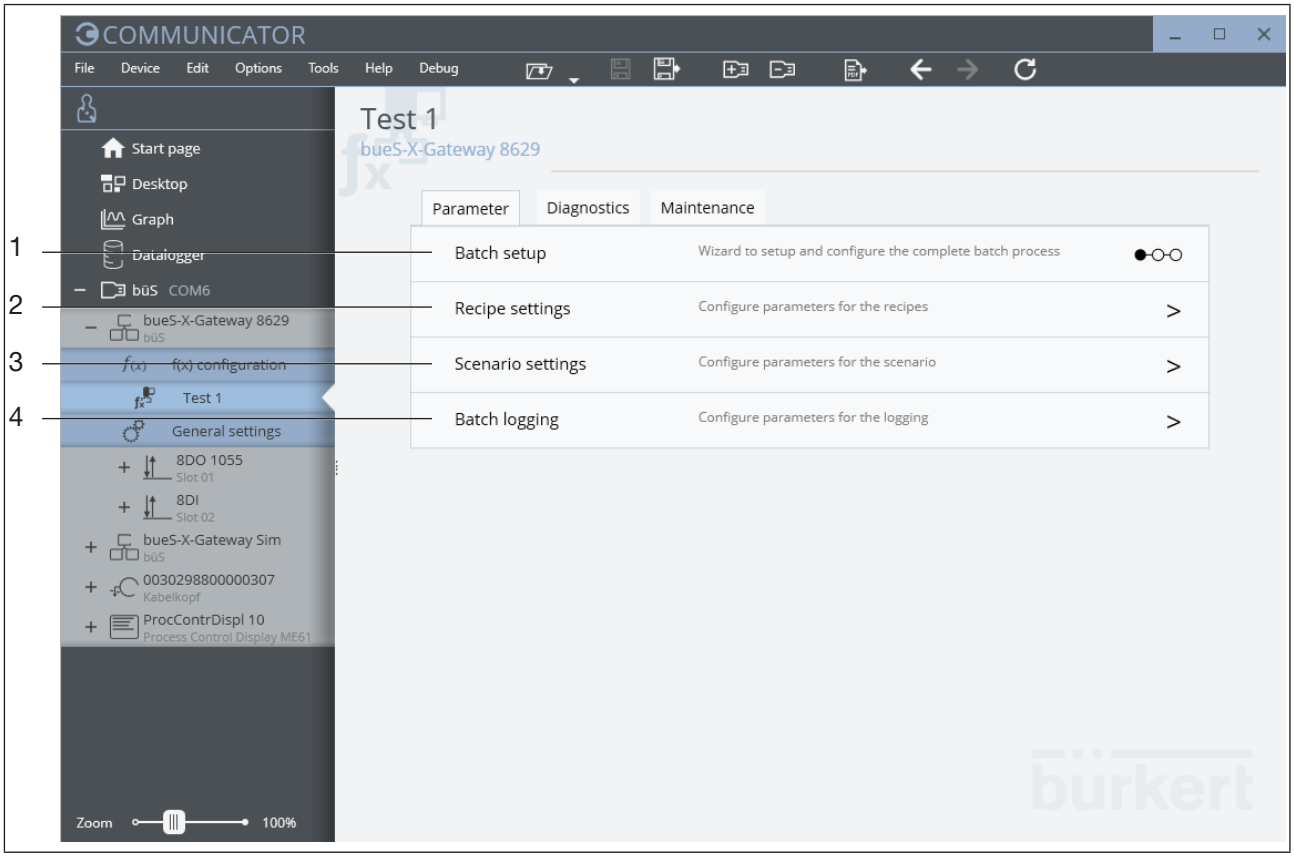

Fig. 39: Batch parameter

No.	Designation	Description
1	**Batch setup**	Wizard for setting up and configuring the complete batch process
2	**Recipe settings**	Configuration of parameters for the recipes
3	**Scenario settings**	Configuration of parameters for the scenario
4	**Batch logging**	See chapter “13 Batch logs”

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15.1 Recipe settings

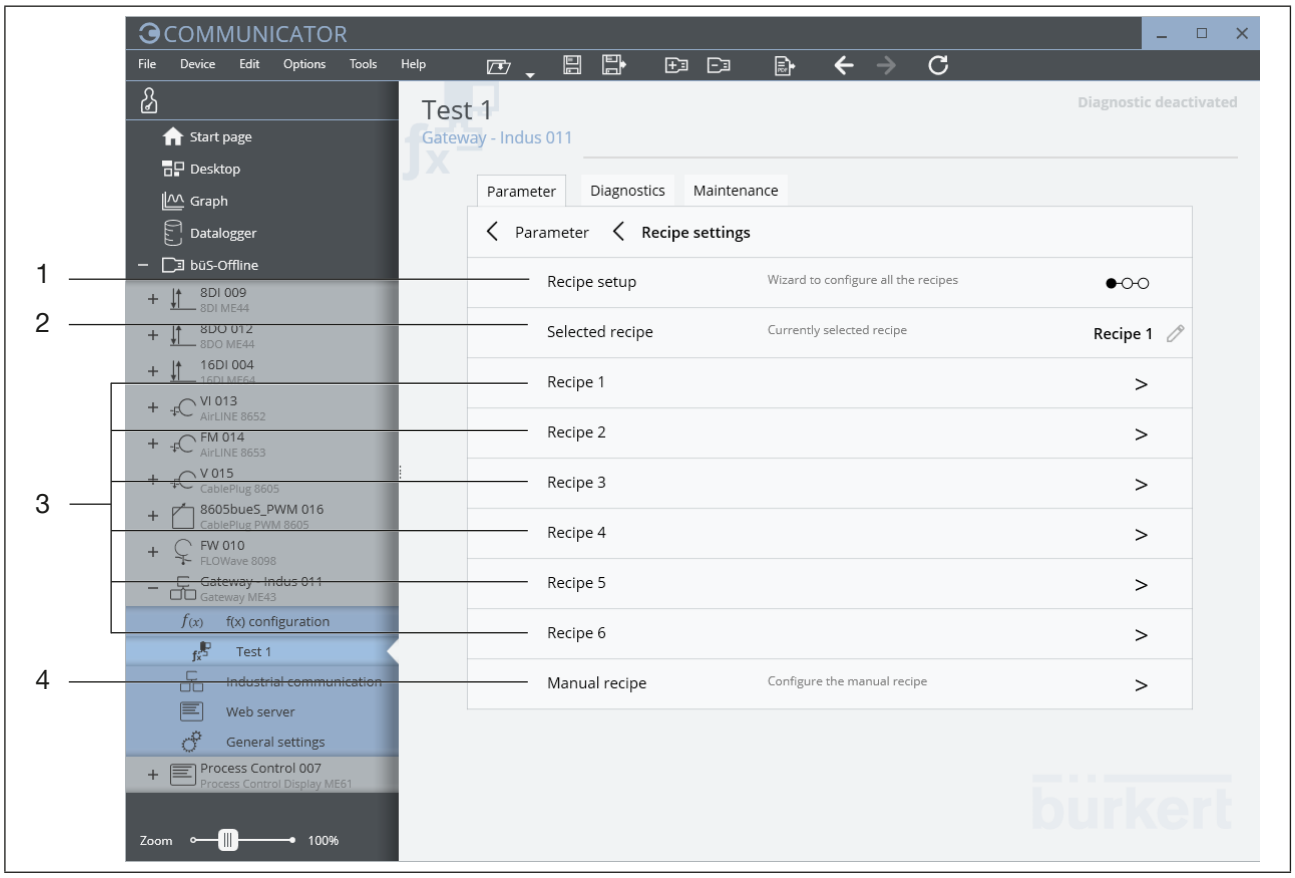

Fig. 40: Recipe settings

No.	Designation	Description
1	Recipe setup	Wizard for setting up and configuring the complete batch process
2	Selected recipe	Recipe currently selected
3	Recipe 1-6	Selection can be made between 6 different recipes
4	Manual recipe	Manual recipe configuration

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15.1.1 Steps for recipe setup

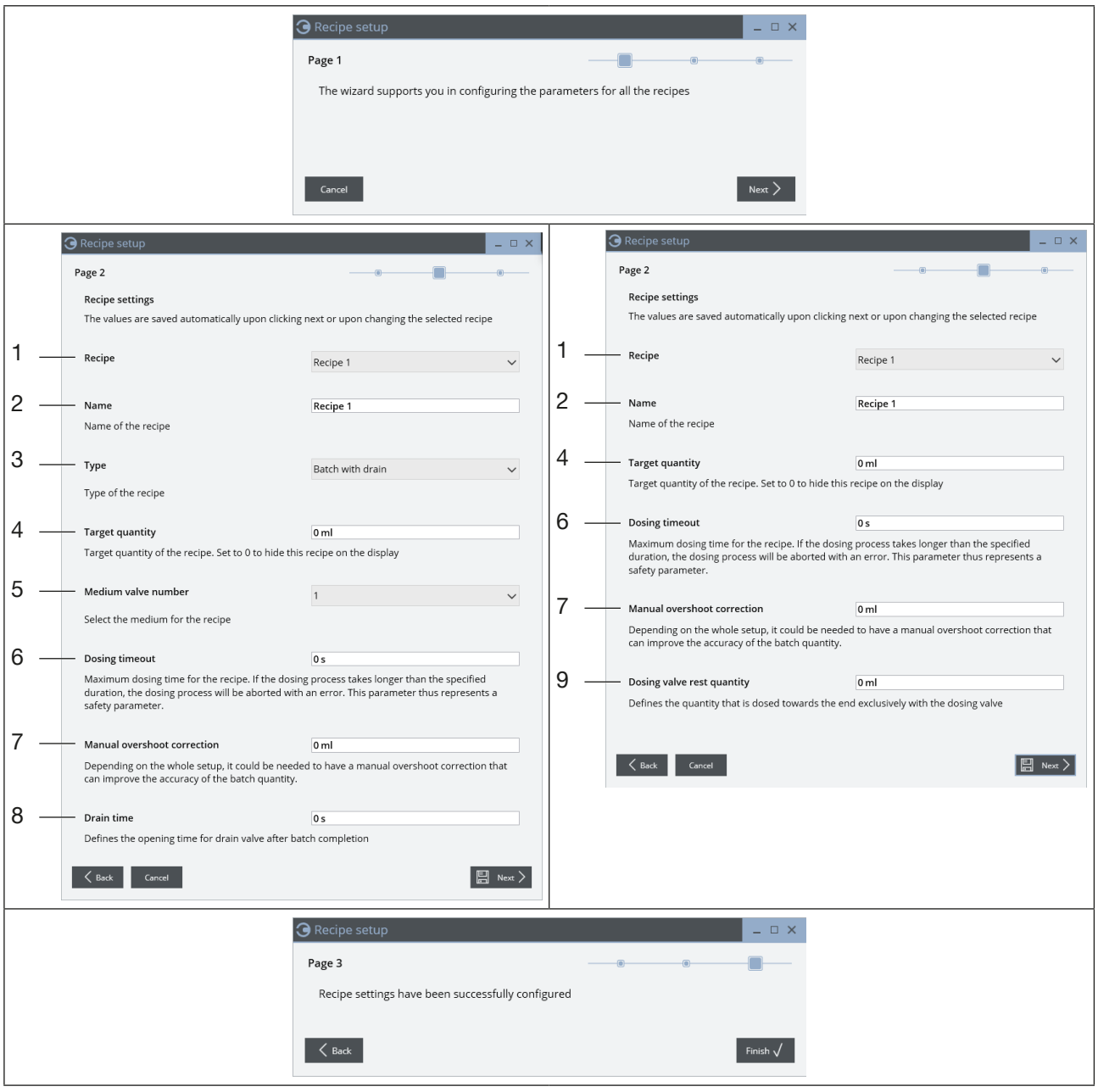

Fig. 41: Steps for recipe setup

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No.	Designation	Description	Scenario
1	Recipe	A maximum of 7 recipes are available. The individual settings can be adjusted here for each recipe. If the ME61 is being used, the recipe can be hidden by entering the quantity 0.	All
2	Name	Freely selectable name for the recipe (this is displayed in the process control display).	All
3	Type	**Recipe type:** A choice can be made between *"Batch"*, *"Drainage"* or ***"Batch with draining"*** at this point.	Only for 4 and 9
4	Target quantity	Target quantity of recipe.	All
5	Medium valve number	The medium valve is selected here, depending on the scenario	Only for 7, 8 and 9
6	Dosing time limit	**Safety parameters (maximum dosing time for the recipe):** Knowledge of the flow and target quantity can be used to estimate how long a maximum dosing period should last. If the dosing time is exceeded, an error occurs and the valves are closed.	All
7	Manual overrun correction	The batch controller possesses an automatic and constant correction function. It may be necessary to enter a manual correction quantity in certain cases. This is then always automatically included in the calculation.	All
8	Draining time	Opening time of drain valve after end of batch dosing.	Only for 4, 9 and 10
9	Residual quantity in dosing valve	Residual quantity to be dosed with the dosing valve.	Only for 6 and 10

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15.1.2 Current recipe

Recipes 1–6, and the user-defined recipe, can be adjusted here

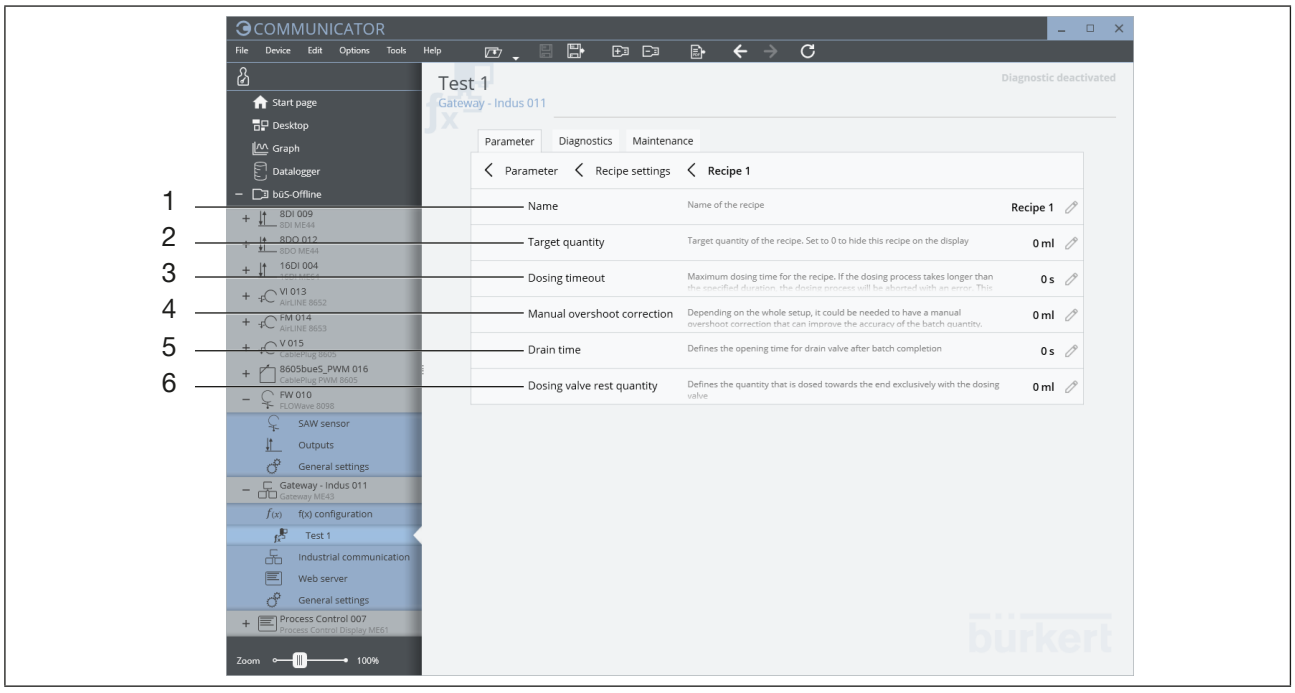

Fig. 42: Recipe options

No.	Designation	Description
1	**Name**	Freely selectable name for the recipe (this is displayed in the process control display).
2	**Target quantity**	Target quantity of recipe.
3	**Dosing time limit**	**Safety parameters (maximum dosing time for the recipe):** Knowledge of the flow and target quantity can be used to estimate how long a maximum dosing period should last. If the dosing time is exceeded, an error occurs and the valves are closed.
4	**Manual overrun correction**	The batch controller possesses an automatic and constant correction function. It may be necessary to enter a manual correction quantity in certain cases. This is then always automatically included in the calculation.
5	**Draining time**	Opening time for drain valve after batch has been completed
6	**Residual quantity in dosing valve**	Residual quantity to be dosed with the dosing valve. Only for scenario 6 and 10.

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15.2 Scenarios setting

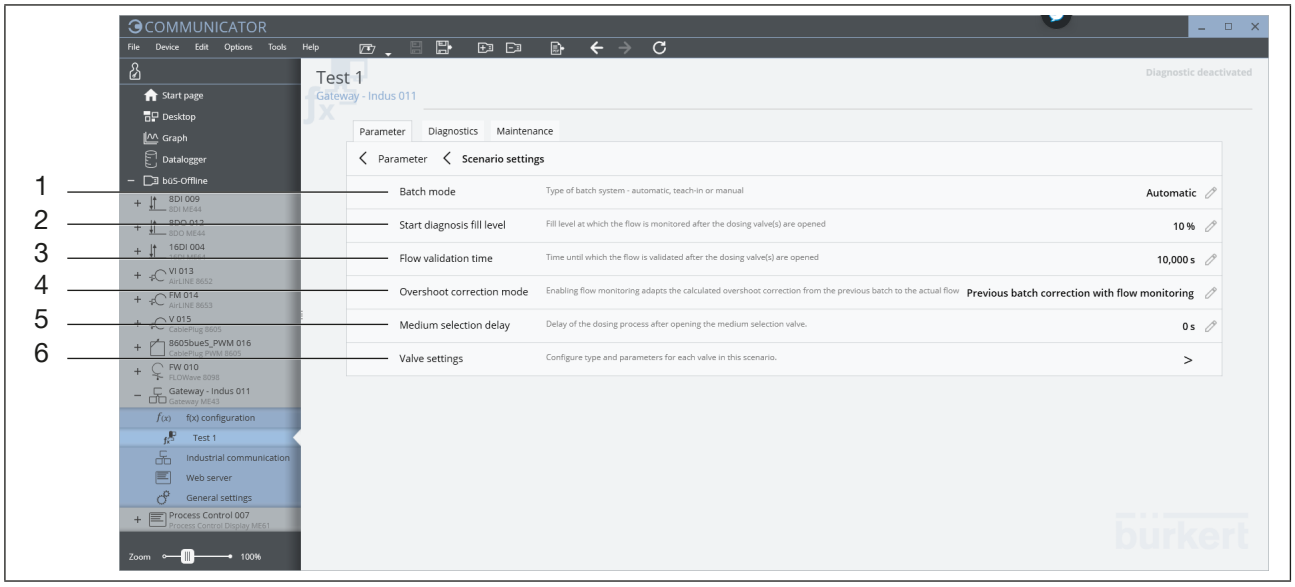

Fig. 43: Scenarios setting

No.	Designation	Description
1	Batch mode	Batch mode selection: *“Automatic”*, *“Teach-In”* or *“Manual”*
2	**Start fill level diagnostics**	Fill level when the flow diagnostics start
3	**Flow validation time**	Time when the flow is tested after the valves open
4	**Overrun correction mode**	**Mode for overrun correction** • ***“Previous batch correction”*** Adjustment while taking the last batch into consideration • ***“Previous batch correction with flow monitoring”*** Dynamic adjustment while taking the last batch **and** the current flow into consideration
5	**Medium selection delay**	Determines the delay from the opening of the medium selection valve to the start of the dosing process. The delay to be set depends on whether the line is full or, if the line is empty, medium, line lengths, pressure and nominal diameter. Only for scenario 3, 5, 7, 8, 9, 10
6	**Valve settings**	Configuration of valves used in scenario

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16 BATCH OPERATION

16.1 Operation via display

After the ME61 was selected as a controller in the wizard, the batch dashboard appears on the ME61.

In order to be able to use the preconfigured dashboard, it must be ensured that the supported display version is in use.

Fig. 44: Surface of display

No.	Designation	Description
1	**Dose meter**	Selected batch is displayed
2	**Totaliser**	Current dosing amount
3	**Batch status**	Current state of batch system For detailed information, see chapter “7.2 Process control of the batch”
4	**Operation keys**	• Start • Pause • Stop
5	**Recipe selection**	Up to 7 recipes are available. The individual settings of the selected recipe are displayed here. For detailed information, see chapter “10.1.10 Recipe configuration” If the ME61 is being used, the recipe can be hidden by entering the quantity 0.
6	**Flow rate**	Displays the temporary flow rate

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16.2 Operated via the Communicator

16.2.1 Parameters set

Start-up and operation of the batch controller can, in addition to the display, also be carried out with the Bürkert Communicator.

→ Select the gateway in the navigation bar.

→ Enable batch control (1).

→ Select recipe via bit values (2) (see chapter “16.2.2 Recipe selection”):

- Recipe bit 0 => value 1
- Recipe bit 1 => value 2
- Recipe bit 2 => value 4

→ Select start (3).

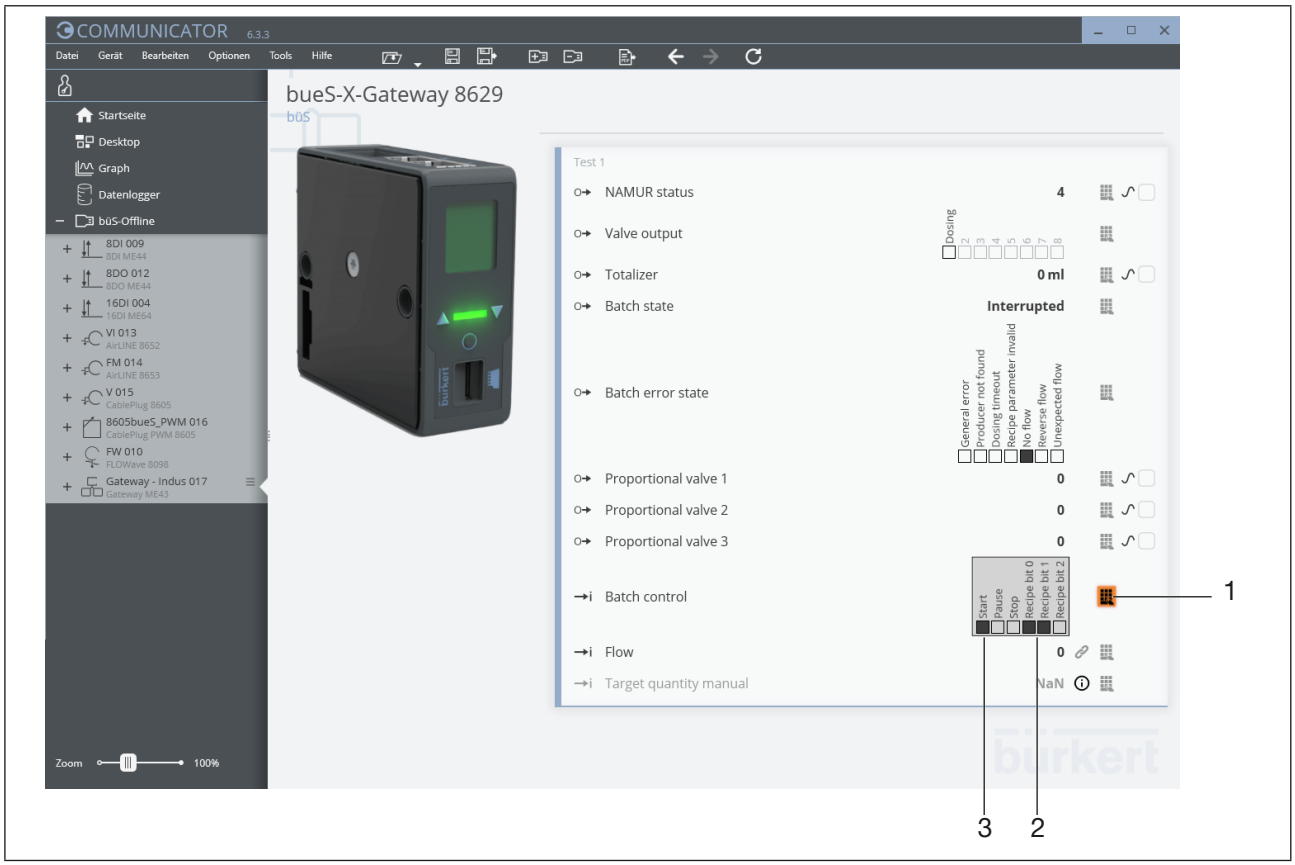

Fig. 45: Parameters set

16.2.2 Recipe selection

Recipe number	Recipe bit 0	Recipe bit 1	Recipe bit 2
1	x		
2		x	
3	x	x	
4			x
5	x		x
6		x	x
7	x	x	x

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17 BATCH MAINTENANCE

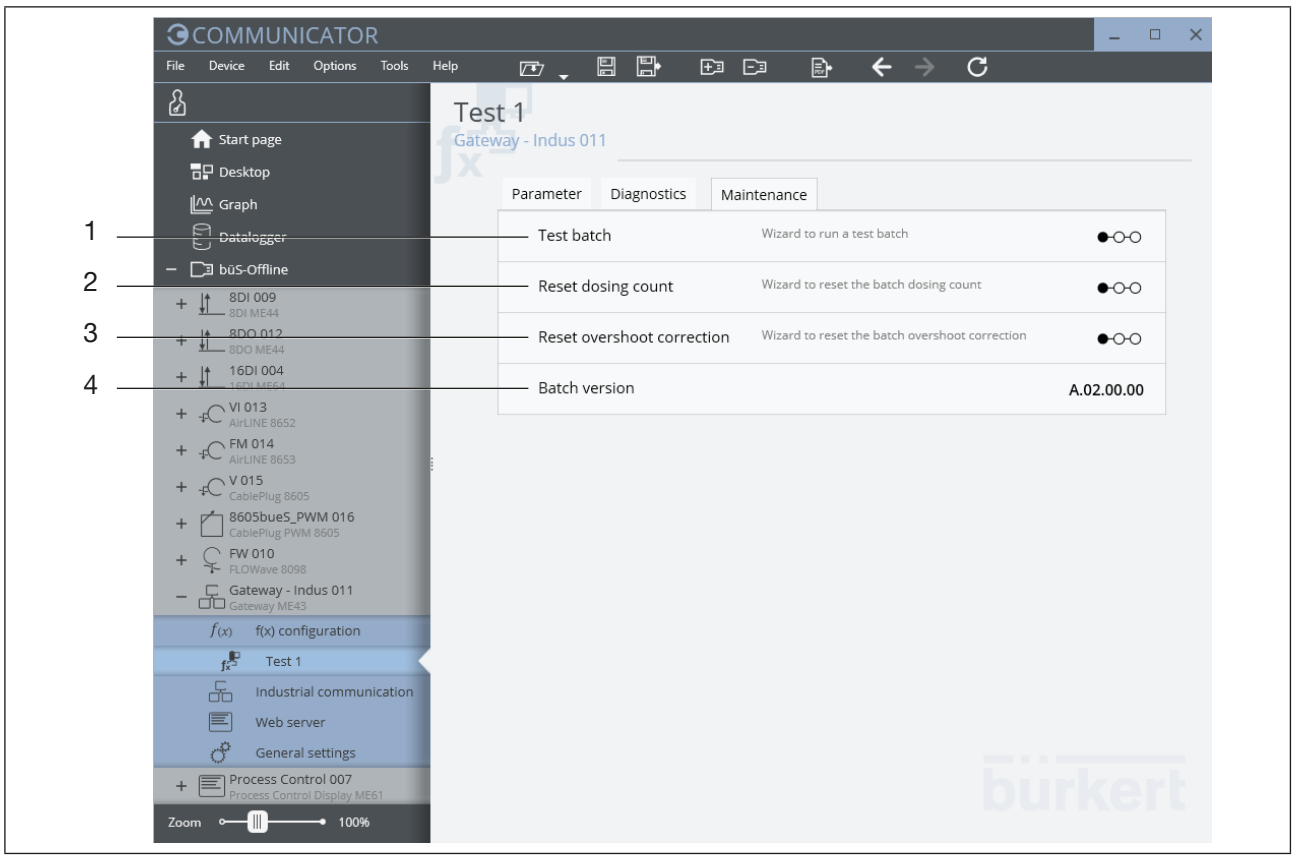

Fig. 46: Batch maintenance

No.	Designation	Description
1	**Test batch**	Can be used to calculate the dosing time. This is calculated here.
2	**Reset dosing meter**	Totaliser for the finished batch can be reset.
3	**Reset the overrun correction**	The batch controller possesses an automatic and constant correction function. The manually set correction quantity can be reset with this start-up wizard.
4	**Batch version**	Software version of the batch.

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18 LICENCE ACTIVATION

The use of the f(x) function and/or the batch has been set by the manufacturer to only be available for an hour, for experimental purposes. In order to permanently use the functions without restrictions, a licence must be obtained.

The following steps must be completed to obtain this licence:

→ Open Bürkert home page country.burkert.com and enter **licence key** or the **article number 00572948** in the search field.

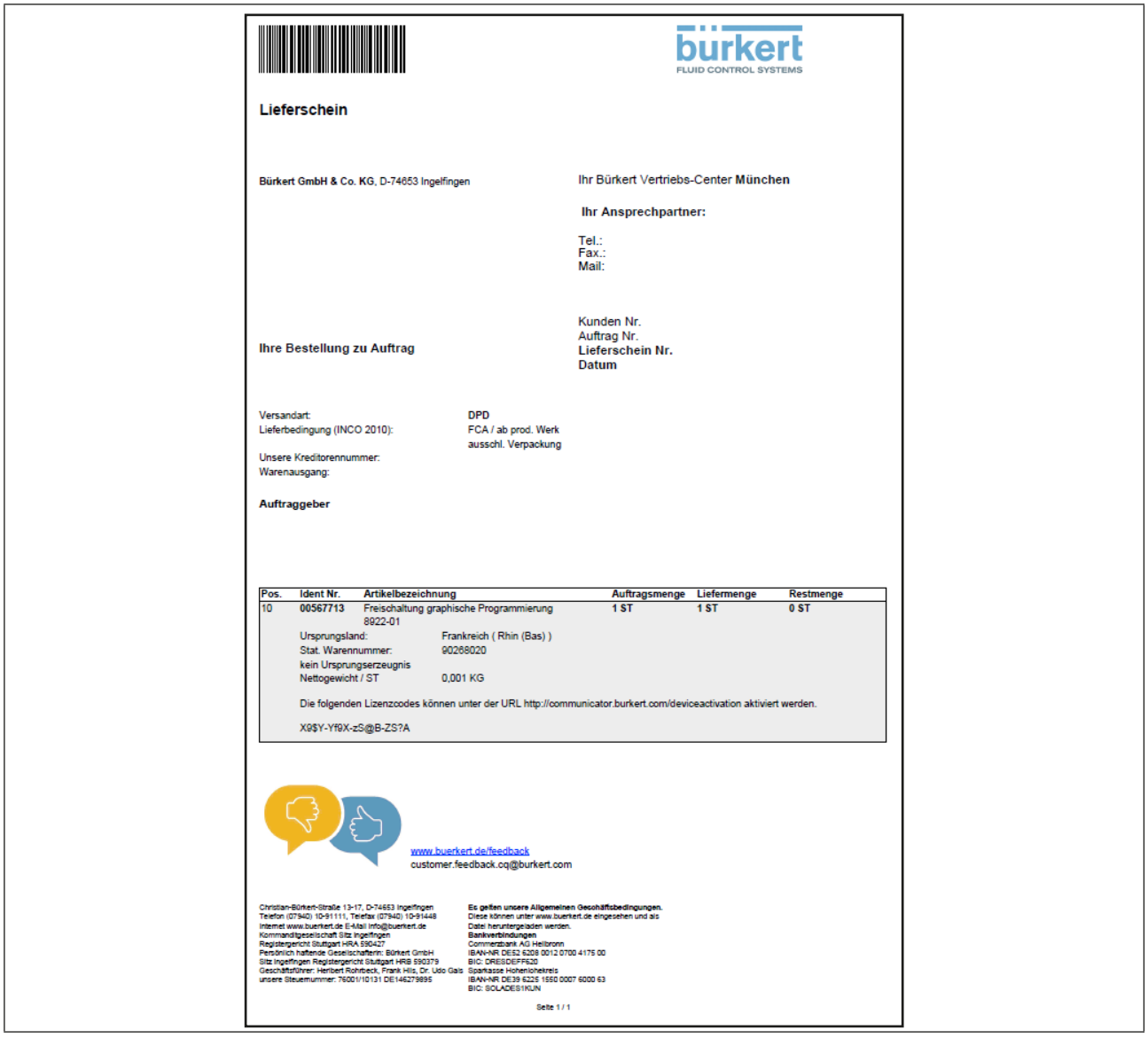
→ Start search.

→ Enable ordering/buying graphic programming.

Please note:

- The article and serial number of the device on which the batch controller is later used will be required for the order.
- You can find the article number and serial number on the type label.

After the order has been completed, a delivery note containing a licence is generated (see “Fig. 47: Example of a delivery note with the generated code”).



Lieferschein

Bürkert GmbH & Co. KG, D-74653 Ingelfingen

Ihr Bürkert Vertriebs-Center **München**

Ihr Ansprechpartner:

Tel.:
Fax.:
Mail:

Kunden Nr.
Auftrag Nr.
Lieferschein Nr.
Datum

Ihre Bestellung zu Auftrag

Versandart: DPD
Lieferbedingung (INCO 2010): FCA / ab prod. Werk ausschl. Verpackung
Unsere Kreditorennummer:
Warenausgang:

Auftraggeber

Pos.	Ident Nr.	Artikelbezeichnung	Auftragsmenge	Liefermenge	Restmenge
10	00567713	Freischaltung graphische Programmierung 8922-01	1 ST	1 ST	0 ST
		Ursprungsland: Frankreich (Rhin (Bas))			
		Stat. Warennummer: 90268020			
		kein Ursprungserzeugnis			
		Nettogewicht / ST 0,001 KG			

Die folgenden Lizenzcodes können unter der URL http://communicator.burkert.com/deviceactivation aktiviert werden.

X9$Y-Yf9X-zS@B-ZS?A

www.buerkert.de/feedback
customer.feedback.cq@burkert.com

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Registergericht Stuttgart HRA 590427
Persönlich haftende Gesellschafterin: Bürkert GmbH
Sitz Ingelfingen Registergericht Stuttgart HRB 590379
Geschäftsführer: Heribert Rohrbeck, Frank Hils, Dr. Udo Gais
unsere Steuernummer: 76001/10131 DE146279895

Es gelten unsere Allgemeinen Geschäftsbedingungen.
Diese können unter www.buerkert.de eingesehen und als Datei heruntergeladen werden.
Bankverbindungen
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IBAN-NR DE62 6208 0012 0700 4175 00
BIC: DRESDEFF620
Sparkasse Hohenlohekreis
IBAN-NR DE39 6225 1550 0007 6000 63
BIC: SOLADES1KUN

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Fig. 47: Example of a delivery note with the generated code

→ Open input mask at: https://communicator.burkert.com/deviceactivation and enter the following information:

- Licence code
- Article number of the product for which the f(x) function/batch function is to be enabled
- Item serial number

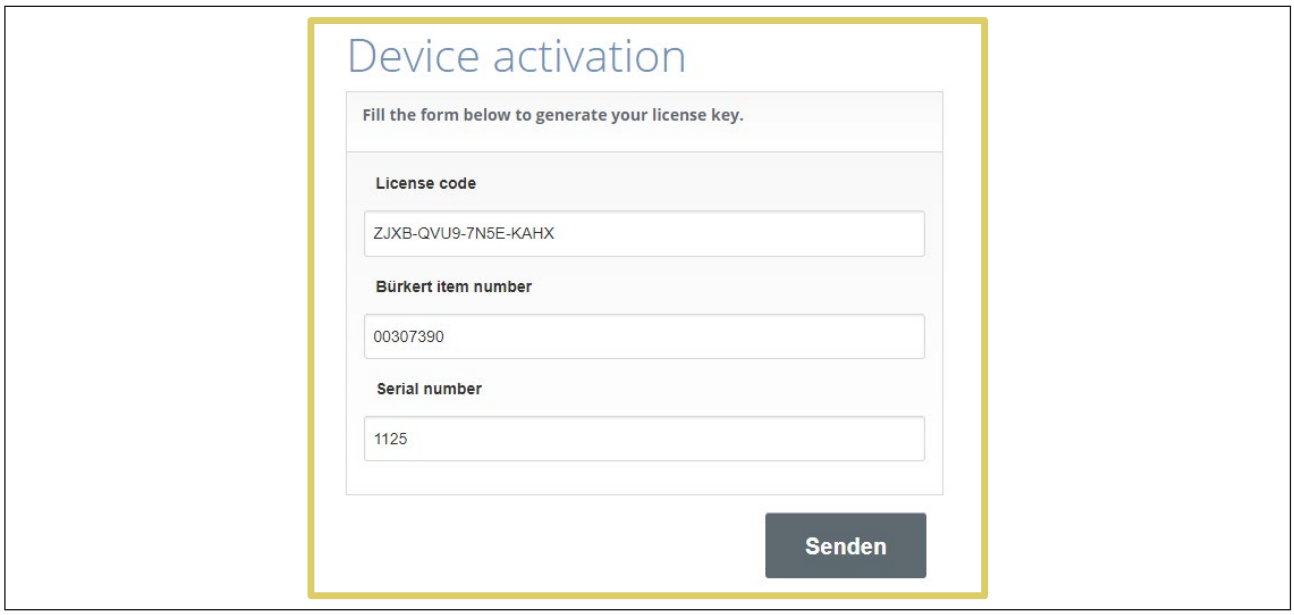

Fig. 48: Generate licence key

When the input mask is complete, a licence key (see “Fig. 49: Licence key”) that can be loaded into the Bürkert Communicator is generated.

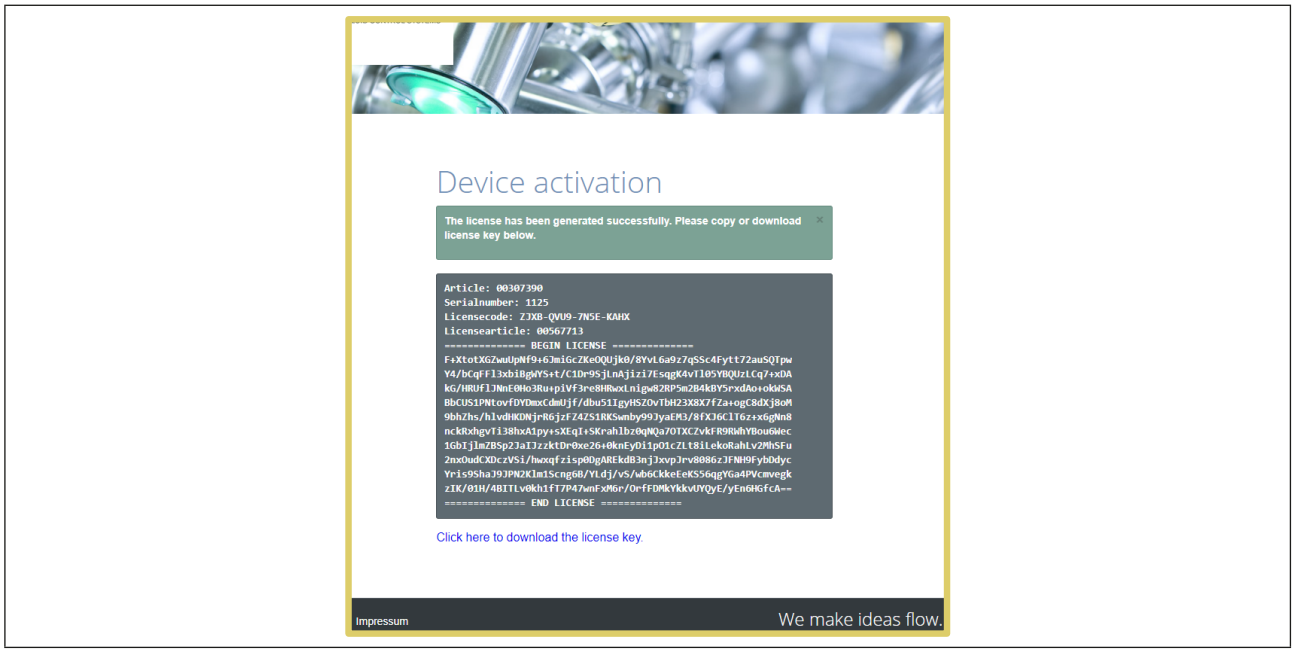

Fig. 49: Licence key

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→ Open Bürkert Communicator

→ **Tools**

→ **Enable device functions** (see “Fig. 50: Activate licence”)

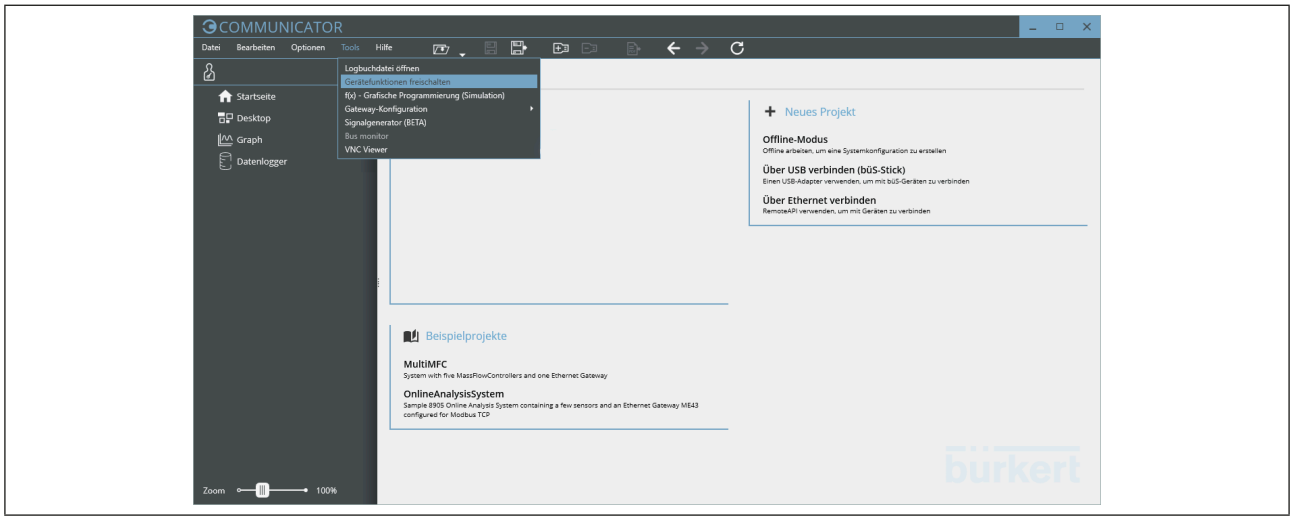

Fig. 50: Activate licence

→ **Load licence** (see “Fig. 51: Load licence”)

→ Open licence key

Fig. 51: Load licence

The unlimited f(x) function/batch function will be available after this procedure and can now be used.

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