Description of Device Parameters

Dosimag

Modbus RS485

Electromagnetic flowmeter
# Table of contents

1. **Document information** .................................. 4
   1.1 Document function ...................................... 4
   1.2 Target group ........................................... 4
   1.3 Using this document .................................... 4
      1.3.1 Information on the document structure ........ 4
      1.3.2 Structure of a parameter description ............ 6
   1.4 Symbols used ........................................... 6
      1.4.1 Symbols for certain types of information ....... 6
      1.4.2 Symbols in graphics ................................ 6

2. **Overview of the Expert operating menu** .................. 7

3. **Description of device parameters** ......................... 9
   3.1 "System" submenu ...................................... 10
      3.1.1 "Diagnostic handling" submenu ................. 11
      3.1.2 "Administration" submenu ....................... 13
   3.2 "Sensor" submenu ..................................... 15
      3.2.1 "Measured values" submenu ....................... 15
      3.2.2 "System units" submenu .......................... 18
      3.2.3 "Process parameters" submenu .................... 22
      3.2.4 "Sensor adjustment" submenu ..................... 26
      3.2.5 "Calibration" submenu ............................ 28
   3.3 "Input" submenu ........................................ 29
      3.3.1 "Status input" submenu ............................ 29
   3.4 "Communication" submenu ................................ 31
      3.4.1 "Modbus configuration" submenu .................. 31
      3.4.2 "Modbus information" submenu ................... 35
      3.4.3 "Modbus data map" submenu ....................... 36
   3.5 "Application" submenu ................................ 37
      3.5.1 "Totalizer 1 to 3" submenu ........................ 38
      3.5.2 "Batching" submenu ................................ 42
   3.6 "Diagnostics" submenu ................................ 58
      3.6.1 "Diagnostic list" submenu ........................ 62
      3.6.2 "Event logbook" submenu .......................... 67
      3.6.3 "Device information" submenu ..................... 68
      3.6.4 "Simulation" submenu ............................. 71

4. **Country-specific factory settings** ......................... 73
   4.1 SI units ............................................... 73
      4.1.1 System units ....................................... 73
      4.1.2 On value low flow cut off ......................... 73
   4.2 US units ............................................... 73
      4.2.1 System units ....................................... 73
      4.2.2 On value low flow cut off ......................... 73

5. **Explanation of abbreviated units** ......................... 75
   5.1 SI units ............................................... 75
   5.2 US units ............................................... 75

6. **Modbus RS485 Register Information** ....................... 77
   6.1 Notes .................................................. 77
      6.1.1 Structure of the register information .......... 77
      6.1.2 Address model .................................... 77
   6.2 Overview of the Expert operating menu ............... 78
   6.3 Register information .................................. 83
      6.3.1 "System" submenu .................................. 83
      6.3.2 "Sensor" submenu .................................. 84
      6.3.3 "Input" submenu ................................... 89
      6.3.4 "Communication" submenu ......................... 89
      6.3.5 "Application" submenu ............................. 90
      6.3.6 "Diagnostics" submenu ............................ 94

Index ..................................................... 97
1 Document information

1.1 Document function
The document is part of the Operating Instructions and serves as a reference for parameters, providing a detailed explanation of each individual parameter of the Expert operating menu.

1.2 Target group
The document is aimed at specialists who work with the device over the entire life cycle and perform specific configurations.

1.3 Using this document

1.3.1 Information on the document structure
The document lists the submenus and their parameters according to the structure from the Expert menu (→ 7).

Sample graphic

For information on the arrangement of the parameters according to the structure of the Operation menu (→ 42), Setup menu, Diagnostics menu (→ 58), along with a brief description, see the Operating Instructions for the device.
For information about the operating philosophy, see the "Operating philosophy" chapter in the device's Operating Instructions
1.3.2 Structure of a parameter description

The individual parts of a parameter description are described in the following section:

<table>
<thead>
<tr>
<th>Complete parameter name</th>
<th>Write-protected parameter = ⚖</th>
</tr>
</thead>
</table>

- **Navigation**: Navigation path to the parameter via the operating tool. The names of the menus, submenus, and parameters are displayed in abbreviated format.

- **Prerequisite**: The parameter is only available under these specific conditions.

- **Description**: Description of the parameter function.

- **Options**: List of the individual options for the parameter. 
  - Option 1
  - Option 2

- **User entry**: Input range for the parameter.

- **User interface**: Display value/data for the parameter.

- **Factory setting**: Default setting ex works.

- **Additional information**: Additional explanations (e.g. in examples):
  - On individual options
  - On display values/data
  - On the input range
  - On the factory setting
  - On the parameter function

1.4 Symbols used

1.4.1 Symbols for certain types of information

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>🔄</td>
<td>Tip Indicates additional information.</td>
</tr>
<tr>
<td>📜</td>
<td>Reference to documentation</td>
</tr>
<tr>
<td>📖</td>
<td>Reference to page</td>
</tr>
<tr>
<td>📖</td>
<td>Reference to graphic</td>
</tr>
<tr>
<td>🖥️</td>
<td>Operation via operating tool</td>
</tr>
<tr>
<td>⛔️</td>
<td>Write-protected parameter</td>
</tr>
</tbody>
</table>

1.4.2 Symbols in graphics

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3...</td>
<td>Item numbers</td>
</tr>
<tr>
<td>A, B, C,...</td>
<td>Views</td>
</tr>
<tr>
<td>A-A, B-B, C-C,...</td>
<td>Sections</td>
</tr>
</tbody>
</table>
2 Overview of the Expert operating menu

The following table provides an overview of the menu structure of the expert operating menu and its parameters. The page reference indicates where the associated description of the submenu or parameter can be found.

<table>
<thead>
<tr>
<th>Menu</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expert</td>
<td></td>
</tr>
<tr>
<td>▶ Locking status</td>
<td>9</td>
</tr>
<tr>
<td>▶ Access status tooling</td>
<td>10</td>
</tr>
<tr>
<td>▶ Enter access code</td>
<td>10</td>
</tr>
<tr>
<td>▶ System</td>
<td>10</td>
</tr>
<tr>
<td>▶ Diagnostic handling</td>
<td>11</td>
</tr>
<tr>
<td>▶ Administration</td>
<td>13</td>
</tr>
<tr>
<td>▶ Sensor</td>
<td>15</td>
</tr>
<tr>
<td>▶ Measured values</td>
<td>15</td>
</tr>
<tr>
<td>▶ System units</td>
<td>18</td>
</tr>
<tr>
<td>▶ Process parameters</td>
<td>22</td>
</tr>
<tr>
<td>▶ Sensor adjustment</td>
<td>26</td>
</tr>
<tr>
<td>▶ Calibration</td>
<td>28</td>
</tr>
<tr>
<td>▶ Input</td>
<td>29</td>
</tr>
<tr>
<td>▶ Status input</td>
<td>29</td>
</tr>
<tr>
<td>▶ Communication</td>
<td>31</td>
</tr>
<tr>
<td>▶ Modbus configuration</td>
<td>31</td>
</tr>
<tr>
<td>▶ Modbus information</td>
<td>35</td>
</tr>
<tr>
<td>▶ Modbus data map</td>
<td>36</td>
</tr>
<tr>
<td>▶ Application</td>
<td>37</td>
</tr>
<tr>
<td>▶ Reset all totalizers</td>
<td>37</td>
</tr>
<tr>
<td>▶ Reset overall batching quantity</td>
<td>38</td>
</tr>
</tbody>
</table>
## Overview of the Expert operating menu

### Dosimag Modbus RS485

- **Totalizer 1 to 3** → p. 38
- **Batching** → p. 42
- **Diagnostics** → p. 58
  - Actual diagnostics → p. 59
  - Timestamp → p. 60
  - Actual diagnostics → p. 60
  - Previous diagnostics → p. 60
  - Timestamp → p. 61
  - Previous diagnostics → p. 61
  - Operating time from restart → p. 61
  - Operating time → p. 61
- **Diagnostic list** → p. 62
- **Event logbook** → p. 67
- **Device information** → p. 68
- **Simulation** → p. 71
3 Description of device parameters

In the following section, the parameters are listed according to the menu structure of the operating tool.

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Locking status</td>
<td>→ 9</td>
</tr>
<tr>
<td>Access status tooling</td>
<td>→ 10</td>
</tr>
<tr>
<td>Enter access code</td>
<td>→ 10</td>
</tr>
<tr>
<td>System</td>
<td>→ 10</td>
</tr>
<tr>
<td>Sensor</td>
<td>→ 15</td>
</tr>
<tr>
<td>Input</td>
<td>→ 29</td>
</tr>
<tr>
<td>Communication</td>
<td>→ 31</td>
</tr>
<tr>
<td>Application</td>
<td>→ 37</td>
</tr>
<tr>
<td>Diagnostics</td>
<td>→ 58</td>
</tr>
</tbody>
</table>

**Locking status**

**Navigation**

Expert → Locking status

**Description**

Use this function to view the active write protection.

**User interface**

Temporarily locked

**Additional information**

Display

In the operating tool all active types of write protection are selected.

If additional write protection is active, this restricts the current access authorization even further. The write protection status can be viewed via the Locking status parameter (→ 9).

"Temporarily locked" option (priority 3)

Write access to the parameters is temporarily lock due to device-internal processing (e.g. data upload/download, reset). Once the internal processing has been completed, the parameters can be changed once again.
Access status tooling

Navigation

Expert → Access stat.tool

Description

Use this function to view the access authorization to the parameters via the operating tool.

User interface

- Operator
- Maintenance

Factory setting

Maintenance

Additional information

Description

The access authorization can be modified via the Enter access code parameter.

If additional write protection is active, this restricts the current access authorization even further. The write protection status can be viewed via the Locking status parameter (→ 9).

Display

Information on access authorization is provided in the 'User roles and associated access authorization' and 'Operating concept' sections of the Operations Instructions for the device.

Enter access code

Navigation

Expert → Ent. access code

Description

Use this function to enter the user-specific release code to remove parameter write protection.

User entry

0 to 9999

3.1 "System" submenu

Navigation

Expert → System

Diagram:

- System
  - Diagnostic handling (→ 11)
  - Administration (→ 13)
3.1.1 "Diagnostic handling" submenu

**Navigation**

Expert → System → Diagn. handling

---

**Alarm delay**

**Navigation**

Expert → System → Diagn. handling → Alarm delay

**Description**

Use this function to enter the time interval until the device generates a diagnostic message.

The diagnostic message is reset without a time delay.

**User entry**

0 to 60 s

**Factory setting**

0 s

**Additional information**

This setting affects the following diagnostic messages:

- 004 Sensor
- 062 Sensor connection
- 082 Data storage
- 083 Memory content
- 242 Software incompatible
- 270 Main electronic failure
- 272 Main electronic failure
- 273 Main electronic failure
- 281 Electronic initialization
- 311 Electronic failure
- 322 Electronic drift
- 453 Flow override
- 500 Electrode difference voltage too high
- 832 Electronic temperature too high
- 833 Electronic temperature too low
- 834 Process temperature too high
- 835 Process temperature too low
- 937 EMC interference
- 938 EMC interference
- 991 Batch time exceeded
“Diagnostic behavior” submenu

For a list of all the diagnostic events, see the Operating Instructions for the device.

Modifying the diagnostic behavior of a diagnostic event. Each diagnostic event is assigned a certain diagnostic behavior at the factory. The user can change this assignment for certain diagnostics events.

The following options are available in the Assign behavior of diagnostic no. xxx parameters:

- **Off** option
  The device continues to measure. The diagnostic event is ignored; it is neither entered into the Event logbook, nor is a diagnostic message generated.

- **Alarm** option
  The device continues to measure. The signal outputs assume the specified alarm condition. A diagnostic message is generated.

- **Warning** option
  The device continues to measure. A diagnostic message is generated.

- **Logbook entry only** option
  The device continues to measure. The diagnostic message is only entered in the Event logbook submenu (→ 67).

**Navigation**

Expert → System → Diagn. handling → Diagn. behavior

---

Assign behavior of diagnostic no. 991 (Batch time exceeded)

**Navigation**

Expert → System → Diagn. handling → Diagn. behavior → Diagnostic no. 991

**Description**

Use this function to change the diagnostic behavior of the diagnostic message 991 Batch time exceeded.

**Selection**

- Off
- Alarm
- Warning
- Logbook entry only

**Factory setting**

Warning

**Additional information**

For a detailed description of the options available, see → 12
Assign behavior of diagnostic no. 937 (EMC interference)

**Navigation**

Expert → System → Diagn. handling → Diagn. behavior → Diagnostic no. 937

**Description**

Use this function to change the diagnostic behavior of the diagnostic message **937 EMC interference**.

**Selection**

- Off
- Alarm
- Warning
- Logbook entry only

**Factory setting**

Warning

**Additional information**

For a detailed description of the options available for selection: → 12

---

### 3.1.2 "Administration" submenu

**Navigation**

Expert → System → Administration

![Administration](image)

- Device reset → 13
- Permanent storage → 14
- Device tag → 14

---

Device reset

**Navigation**

Expert → System → Administration → Device reset

**Description**

Use this function to choose whether to reset the device configuration - either entirely or in part - to a defined state.

**Selection**

- Cancel
- To delivery settings
- Restart device

**Factory setting**

Cancel

**Additional information**

'Cancel' option

No action is executed and the user exits the parameter.
"To delivery settings" option
All the parameters are reset to their factory settings.

"Restart device" option
The restart resets every parameter whose data are in the volatile memory (RAM) to the factory setting (e.g. measured value data). The device configuration remains unchanged.

### Permanent storage

**Navigation**

- **Expert → System → Administration → Perm. storage**

**Description**

Use this function to switch permanent storage on and off.

**Selection**

- Off
- On

**Factory setting**

On

**Additional information**

**Description**

NOTE!

If non-volatile device parameters are modified via the MODBUS RS485 function codes 06, 16 or 23, the change is saved in the EEPROM of the measuring device.

The number of writes to the EEPROM is technically restricted to a maximum of 1 million.

- Make sure to comply with this limit since, if it is exceeded, data loss and measuring device failure will result.
- Avoid constantly writing non-volatile device parameters via the MODBUS RS485.

### Device tag

**Navigation**

- **Expert → System → Administration → Device tag**

**Description**

Use this function to enter the name for the measuring point.

**User entry**

Max. 16 characters such as letters, numbers or special characters (e.g. @, %, /).

**Factory setting**

Dosimag
3.2 "Sensor" submenu

Navigation  

1. Expert → Sensor

- Measured values  →  15
- System units  →  18
- Process parameters  →  22
- Sensor adjustment  →  26
- Calibration  →  28

3.2.1 "Measured values" submenu

Navigation  


- Process variables  →  15
- Totalizer  →  16
- Input values  →  17

"Process variables" submenu

Navigation  


- Process variables
  - Volume flow  →  15

Volume flow

Navigation  


Description  

Use this function to view the volume flow currently measured.

User interface  

Signed floating-point number
Description of device parameters

Dosimag Modbus RS485

Additional information

**Dependency**

ℹ️ The unit is taken from the Volume flow unit parameter (→ 18)

Totalizer

**Navigation**

💡 Expert → Sensor → Measured val. → Totalizer

**Prerequisite**

In the Assign process variable parameter (→ 38) of the Totalizer 1 to 3 submenu, the Volume flow option is selected.

**Description**

Displays the current totalizer reading.

**User interface**

Signed floating-point number

**Additional information**

**Description**

As it is only possible to display a maximum of 7 digits, the current counter value is the sum of the totalizer value and the overflow value from the Totalizer overflow 1 to 3 parameter if the display range is exceeded.

ℹ️ In the event of an error, the totalizer adopts the mode defined in the Failure mode parameter (→ 41).

**User interface**

The value of the process variable totalized since measuring began can be positive or negative. This depends on the settings in the Totalizer operation mode parameter (→ 39).

ℹ️ The unit of the selected process variable is specified for the totalizer in the Assign process variable parameter. If the following is selected in the Assign process variable parameter:

- **Volume flow option**: Volume flow unit parameter (→ 18)

**Example**

Calculation of the current totalizer reading when the value exceeds the 7-digit display range:

- Value in the Totalizer value 1 parameter: 196 845.7 m³
- Value in the Totalizer overflow 1 parameter: \(1 \cdot 10^7\) (1 overflow) = 10 000 000 [m³]
- Current totalizer reading: 10 196 845.7 m³
Totalizer overflow 1 to 3

**Navigation**

Expert → Sensor → Measured val. → Totalizer → Tot. overflow 1 to 3

**Prerequisite**

In the Assign process variable parameter (→ 38) of the Totalizer 1 to 3 submenu, the Volume flow option is selected.

**Description**

Displays the current totalizer overflow.

**User interface**

Integer with sign

**Additional information**

*Description*

If the current reading has more than 7 digits, which is the maximum value range that can be displayed, the value above this range is given as an overflow. The current totalizer value is therefore the sum of the overflow value and the totalizer value from the Totalizer value 1 to 3 parameter.

*User interface*

The unit of the selected process variable is specified for the totalizer in the Assign process variable parameter. If the following is selected in the Assign process variable parameter:

- Volume flow option: Volume flow unit parameter (→ 18)

*Example*

Calculation of the current totalizer reading when the value exceeds the 7-digit display range:

- Value in the Totalizer value 1 parameter: 196845.7 m³
- Value in the Totalizer overflow 1 parameter: $2 \cdot 10^7$ (2 overflows) = 20000000 m³
- Current totalizer reading: 20196845.7 m³

"Input values" submenu

**Navigation**

Expert → Sensor → Measured val. → Input values

**Value status input**

**Navigation**


**Description**

Displays the current input signal level.
User interface

- High
- Low

3.2.2 "System units" submenu

Navigation

Expert → Sensor → System units

| Volume flow unit | → 18 |
| Volume unit      | → 20 |
| Date/time format | → 20 |
| User-specific units | → 21 |

Volume flow unit

Navigation

Expert → Sensor → System units → Volume flow unit

Description

Use this function to select the unit for the volume flow.
Selection

**SI units**
- cm³/s
- cm³/min
- cm³/h
- cm³/d
- dm³/s
- dm³/min
- dm³/h
- dm³/d
- m³/s
- m³/min
- m³/h
- m³/d
- ml/s
- ml/min
- ml/h
- ml/d
- l/s
- l/min
- l/h
- l/d
- hl/s
- hl/min
- hl/h
- hl/d
- Ml/s
- Ml/min
- Ml/h
- Ml/d

**US units**
- af/s
- af/min
- af/h
- af/d
- ft³/s
- ft³/min
- ft³/h
- ft³/d
- fl oz/s (us)
- fl oz/min (us)
- fl oz/h (us)
- fl oz/d (us)
- gal/s (us)
- gal/min (us)
- gal/h (us)
- gal/d (us)
- kgal/s (us)
- kgal/min (us)
- kgal/h (us)
- kgal/d (us)
- bbl/s (us;liq.)
- bbl/min (us;liq.)
- bbl/h (us;liq.)
- bbl/d (us;liq.)
- bbl/s (us;beer)
- bbl/min (us;beer)
- bbl/h (us;beer)
- bbl/d (us;beer)
- bbl/s (us;oil)
- bbl/min (us;oil)
- bbl/h (us;oil)
- bbl/d (us;oil)
- bbl/s (us;tank)
- bbl/min (us;tank)
- bbl/h (us;tank)
- bbl/d (us;tank)

**Imperial units**
- gal/s (imp)
- gal/min (imp)
- gal/h (imp)
- gal/d (imp)
- Mgal/s (imp)
- Mgal/min (imp)
- Mgal/h (imp)
- Mgal/d (imp)
- bbl/s (imp;beer)
- bbl/min (imp;beer)
- bbl/h (imp;beer)
- bbl/d (imp;beer)
- bbl/s (imp;oil)
- bbl/min (imp;oil)
- bbl/h (imp;oil)
- bbl/d (imp;oil)

**Custom-specific units**
- User vol./s
- User vol./min
- User vol./h
- User vol./d

**Factory setting**

Country-specific:
- ml/s
- fl oz/s (us)

**Additional information**

**Result**
The selected unit applies for:

*Volume flow* parameter (→ 15)

**Options**

For an explanation of the abbreviated units: → 75
Customer-specific units

The unit for the customer-specific volume is specified in the User volume text parameter (→ 21).

Volume unit

Navigation

Expert → Sensor → System units → Volume unit

Description

Use this function to select the unit for the volume.

Selection

<table>
<thead>
<tr>
<th>SI units</th>
<th>US units</th>
<th>Imperial units</th>
</tr>
</thead>
<tbody>
<tr>
<td>cm³</td>
<td>af</td>
<td>gal (imp)</td>
</tr>
<tr>
<td>dm³</td>
<td>ft³</td>
<td>Mgal (imp)</td>
</tr>
<tr>
<td>m³</td>
<td>fl oz (us)</td>
<td>bbl (imp;beer)</td>
</tr>
<tr>
<td>l</td>
<td>gal (us)</td>
<td>bbl (imp;oil)</td>
</tr>
<tr>
<td>hl</td>
<td>kgal (us)</td>
<td></td>
</tr>
<tr>
<td>Mi Mega</td>
<td>Mqgal (us)</td>
<td></td>
</tr>
</tbody>
</table>

Custom-specific units

User vol.

Factory setting

Country-specific:
- ml
- fl oz (us)

Additional information

Options

For an explanation of the abbreviated units: → 75

Customer-specific units

The unit for the customer-specific volume is specified in the User volume text parameter (→ 21).

Date/time format

Navigation

Expert → Sensor → System units → Date/time format

Description

Use this function to select the desired time format for calibration history.

Selection

- dd.mm.yy hh:mm
- dd.mm.yy hh:mm am/pm
- mm/dd/yy hh:mm
- mm/dd/yy hh:mm am/pm

Factory setting

dd.mm.yy hh:mm
**User-specific units** submenu

*Navigation*  
Expert → Sensor → System units → User-spec. units

**User volume text**

*Navigation*  
Expert → Sensor → System units → User-spec. units → Volume text

*Description*  
Use this function to enter a text for the user-specific unit of volume and volume flow. The corresponding time units (s, min, h, d) for volume flow are generated automatically.

*User entry*  
Max. 10 characters such as letters, numbers or special characters (@, %, /)

*Factory setting*  
User vol.

*Additional information*  
The defined unit is shown as an option in the choose list of the following parameters:
- Volume flow unit parameter (→ 18)
- Volume unit parameter (→ 20)

*Example*  
If the text GLAS is entered, the choose list of the Volume flow unit parameter (→ 18) shows the following options:
- GLAS/s
- GLAS/min
- GLAS/h
- GLAS/d

**User volume factor**

*Navigation*  
Expert → Sensor → System units → User-spec. units → Volume factor

*Description*  
Use this function to enter a quantity factor for the user-specific volume and volume flow unit.
**User entry**
Signed floating-point number

**Factory setting**
1.0

### 3.2.3 "Process parameters" submenu

**Navigation**

<table>
<thead>
<tr>
<th>Process parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow override</td>
</tr>
<tr>
<td>Low flow cut off</td>
</tr>
</tbody>
</table>

**Flow override**

**Navigation**

**Description**
Use this function to select whether to interrupt the evaluation of measured values. This is useful for the cleaning processes of a pipeline, for example.

**Selection**
- Off
- On

**Factory setting**
Off

**Additional information**

**Effect**
This setting affects all the functions of the measuring device.

Positive zero return is not relevant for most applications.

**Description**

The volume flow is set to 0.

**Flow override is active**
- The diagnostic message diagnostic message C453 Flow override is displayed.
- Output values
  - Output: 0
  - Temperature: proceeding output
  - Totalizers 1-3: Stop being totalized
"Low flow cut off" submenu

Low flow cut off is an important function for many applications to shut out inherent noise from the measuring device and the application in the lower measuring range. If the flow drops below a certain minimum value, the value is set to 0 so that the flow signal can be kept at the zero point between two batches.

Navigation  
Expert → Sensor → Process param. → Low flow cut off

Assign process variable

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign process variable</td>
<td>→ 23</td>
</tr>
<tr>
<td>On value low flow cutoff</td>
<td>→ 23</td>
</tr>
<tr>
<td>Off value low flow cutoff</td>
<td>→ 24</td>
</tr>
<tr>
<td>Pressure shock suppression</td>
<td>→ 24</td>
</tr>
</tbody>
</table>

Description

Use this function to select the process variable for low flow cutoff detection.

Selection

- Off
- Volume flow

Factory setting

Volume flow

On value low flow cutoff

Navigation  
Expert → Sensor → Process param. → Low flow cut off → On value

Prerequisite

In the Assign process variable parameter (→ 23), the Volume flow option is selected.

Description

Use this function to enter a switch-on value for low flow cut off. Low flow cut off is activated if the value entered is not equal to 0 → 24.

User entry

Signed floating-point number

Factory setting

Depends on country and nominal diameter → 73

Additional information  
Dependency

The unit depends on the process variable selected in the Assign process variable parameter (→ 23).
Off value low flow cutoff

Navigation

Expert → Sensor → Process param. → Low flow cut off → Off value

Prerequisite

In the Assign process variable parameter (→  23), the Volume flow option is selected.

Description

Use this function to enter a switch-off value for low flow cut off. The off value is entered as a positive hysteresis from the on value→  23.

User entry

0 to 100.0 %

Factory setting

50 %

Additional information

Example

- On value low flow cutoff parameter (→  23): 2 g/s
- Off value low flow cutoff parameter (→  24): 50 %
- Switch-off value: 3 g/s

Pressure shock suppression

Navigation


Prerequisite

In the Assign process variable parameter (→  23), the Volume flow option is selected.

Description

Use this function to enter the time interval for signal suppression (= active pressure shock suppression).

User entry

0 to 100 s

Factory setting

0 s
Additional information

**Description**

**Pressure shock suppression is enabled**
- Prerequisite:
  - Flow rate < on-value of low flow cut off
- Output values
  - Flow displayed: 0
  - Totalizer: the totalizers are pegged at the last correct value

**Pressure shock suppression is disabled**
- Prerequisite: the time interval set in this function has elapsed.
- If the flow also exceeds the switch-off value for low flow cut off, the device starts processing the current flow value again and displays it.

**Example**

When closing a valve, momentarily strong fluid movements may occur in the pipeline, which are registered by the measuring system. These totalized flow values lead to a false totalizer status, particularly during batching processes.

![Diagram](image.png)

- **Q**: Flow
- **t**: Time
- **A**: Drip
- **B**: Pressure shock
- **C**: Pressure shock suppression active as specified by the time entered
- **D**: Pressure shock suppression inactive
- **1**: Valve closes
- **2**: Flow falls below the on-value of the low flow cut off: pressure shock suppression is activated
- **3**: The time entered has elapsed: pressure shock suppression is deactivated
- **4**: The actual flow value is now displayed and output
- **5**: On value for low flow cut off
- **6**: Off value for low flow cut off
3.2.4 "Sensor adjustment" submenu

**Navigation**


**Installation direction**

**Navigation**


**Description**

Use this function to change the sign of the medium flow direction.

**Selection**

- Flow in arrow direction
- Flow against arrow direction

**Factory setting**

Flow in arrow direction

**Additional information**

Description

Before changing the sign: ascertain the actual direction of fluid flow with reference to the direction indicated by the arrow on the sensor nameplate.

**Integration time**

**Navigation**

Expert → Sensor → Sensor adjustm. → Integration time

**Description**

Display the duration of an integration cycle.

**User interface**

1 to 65 ms

**Factory setting**

5 ms

**Measuring period**

**Navigation**

Expert → Sensor → Sensor adjustm. → Measuring period

**Description**

Display the time of a full measuring period.
User interface 6 to 80 ms
Factory setting 12.5 ms

"Process variable adjustment" submenu


Volume flow offset

Description Use this function to enter the zero point shift for the volume flow trim. The volume flow unit on which the shift is based is m³/s.

User entry Signed floating-point number

Factory setting 0 m³/s

Additional information Description

\[
\text{Corrected value} = (\text{factor} \times \text{value}) + \text{offset}
\]

Volume flow factor

Description Use this function to enter a quantity factor for the volume flow. This multiplication factor is applied over the volume flow range.

User entry Positive floating-point number

Factory setting 1

Additional information Description

\[
\text{Corrected value} = (\text{factor} \times \text{value}) + \text{offset}
\]
3.2.5 "Calibration" submenu

Navigation

Expert → Sensor → Calibration

Nominal diameter

Description
Displays the nominal diameter of the sensor.

User interface
DNxx / x''

Factory setting
Depends on the size of the sensor

Additional information
Description

The value is also specified on the sensor nameplate.

Calibration factor

Description
Displays the current calibration factor for the sensor.

User interface
Positive floating-point number

Factory setting
Depends on nominal diameter and calibration.

Zero point

Navigation

Expert → Sensor → Calibration → Zero point

Description
This function shows the zero point correction value for the sensor.

User interface
Signed floating-point number
Factory setting

Depends on nominal diameter and calibration

3.3 "Input" submenu

Navigation

Expert → Input

3.3.1 "Status input" submenu

Navigation

Expert → Input → Status input

Assign status input

Value status input

Active level

Response time status input

Assign status input

Value status input

Active level

Response time status input

Assign status input

Value status input

Active level

Response time status input

Assign status input

Value status input

Active level

Response time status input

Navagations

Expert → Input → Status input → Assign stat.inp.

Prerequisite

Start condition for a batching process:

- There is no diagnostic message from the Alarm category.
- The batch quantity must be > 0.
- The Batching option is selected in the Switch output function parameter (→ 47).

Description

Use this function to select the function for the status input.

Selection

- Off
- Start batch
- Start & stop batch
- Reset totalizer 1
- Reset totalizer 2
- Reset totalizer 3
- Reset all totalizers
- Flow override

Factory setting

Off

Endress+Hauser
Additional information

Options
- Off
  The status input is switched off.
- Start batch
  A pulse initiates a batching process if there is none running and if the other start conditions have also been met.
- Start & stop batch
  A pulse either initiates a batching process if none is running and if the other start conditions have also been met, or it stops an ongoing batching process. A new drip quantity and a new drip correction quantity are not calculated in this case (averaging and single outliers).
- Reset totalizer 1...3
  The individual totalizers are reset.
- Reset all totalizers
  All totalizers are reset.
- Flow override
  The Flow override (→ 22) is activated.

Note on the Flow override (→ 22):
- The Flow override (→ 22) is enabled as long as the level is at the status input (continuous signal).
- All other assignments react to a change in level (pulse) at the status input.

Value status input

Navigation  
Expert → Input → Status input → Val. status inp.

Description
Displays the current input signal level.

User interface
- High
- Low

Active level

Navigation  
Expert → Input → Status input → Active level

Description
Use this function to determine the input signal level at which the assigned function is activated.

Selection
- High
- Low

Factory setting
High
Response time status input

**Navigation**

Expert → Input → Status input → Response time

**Description**

Use this function to enter the minimum time period for which the input signal level must be present before the selected function is activated.

**User entry**

10 to 200 ms

**Factory setting**

50 ms

3.4 "Communication" submenu

**Navigation**

Expert → Communication

![Diagram](image.png)

3.4.1 "Modbus configuration" submenu

**Navigation**

Expert → Communication → Modbus config.

![Diagram](image.png)
Description of device parameters  Dosimag Modbus RS485

<table>
<thead>
<tr>
<th>Device Parameter</th>
<th>Description</th>
<th>User Entry</th>
<th>Factory Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus address</td>
<td>For entering the device address.</td>
<td>1 to 247</td>
<td>247</td>
</tr>
<tr>
<td>Baudrate</td>
<td>Use this function to select a transmission rate.</td>
<td>1200 BAUD, 2400 BAUD, 4800 BAUD, 9600 BAUD, 19200 BAUD, 38400 BAUD, 57600 BAUD, 115200 BAUD</td>
<td>19200 BAUD</td>
</tr>
<tr>
<td>Data transfer mode</td>
<td>Use this function to select the data transmission mode.</td>
<td>ASCII, RTU</td>
<td>RTU</td>
</tr>
</tbody>
</table>
**Additional information**

*Options*
- **ASCII**
  Transmission of data in the form of readable ASCII characters. Error protection via LRC.
- **RTU**
  Transmission of data in binary form. Error protection via CRC16.

**Parity**

**Navigation**  
Expert → Communication → Modbus config. → Parity

**Description**
Use this function to select the parity bit.

**Selection**
- Odd
- Even
- None / 1 stop bit
- None / 2 stop bits

**Factory setting**
Even

**Additional information**

*Options*
Picklist **ASCII** option:
- 0 = **Even** option
- 1 = **Odd** option

Picklist **RTU** option:
- 0 = **Even** option
- 1 = **Odd** option
- 2 = **None / 1 stop bit** option
- 3 = **None / 2 stop bits** option

**Byte order**

**Navigation**  
Expert → Communication → Modbus config. → Byte order

**Description**
Use this function to select the sequence in which the bytes are transmitted. The transmission sequence must be coordinated with the Modbus master.

**Selection**
- 0-1-2-3
- 3-2-1-0
- 1-0-3-2
- 2-3-0-1

**Factory setting**
1-0-3-2
Description of device parameters

**Telegram delay**

**Navigation**
- Expert → Communication → Modbus config. → Telegram delay

**Description**
Use this function to enter a delay time after which the measuring device replies to the request telegram of the Modbus master. This allows communication to be adapted to slow Modbus RS485 masters.

**User entry**
0 to 100 ms

**Factory setting**
6 ms

**Assign diagnostic behavior**

**Navigation**
- Expert → Communication → Modbus config. → Assign diag. beh

**Description**
Use this function to select the diagnostic behavior for Modbus communication.

**Selection**
- Off
- Alarm or warning
- Warning
- Alarm

**Factory setting**
Alarm

**Additional information**

**Description**
Defines the category of messages to which data transmission responds:

- **Off**
  The device continues to measure. The diagnostic event is ignored, and no diagnostic message is generated.

- **Alarm or warning**
  The device continues to measure. A diagnostic message is generated. In the event of an alarm, the signal outputs assume the specified alarm condition.

- **Warning**
  The device continues to measure. A diagnostic message is generated.

- **Alarm**
  The device continues to measure. The signal outputs assume the specified alarm condition. A diagnostic message is generated.

**Failure mode**

**Navigation**
- Expert → Communication → Modbus config. → Failure mode

**Description**
Use this function to select the measured value output in the event of a diagnostic message via Modbus communication.

**Selection**
- NaN value
- Last valid value
**Factory setting**  
NaN value

**Additional information**  
*Options*

- NaN value  
The device outputs the NaN value 1).
- Last valid value  
The device outputs the last valid measured value before the fault occurred.

1) This effect of this parameter depends on the option selected in the **Assign diagnostic behavior** parameter (→ 34).

**Interpreter mode**

**Navigation**  
Expert → Communication → Modbus config. → Interpreter mode

**Description**  
Use this function to select the interpreter mode. This mode defines the behavior of the telegram reception interpreter.

**Selection**  
- Standard
- Ignore surplus bytes

**Factory setting**  
Standard

**Additional information**  
*“Standard” option*  
Behaves according to the Modbus standard, i.e. the last two bytes received are the checksum CRC16.

**NOTE!**  
The selection is only relevant in the RTU mode. In the ASCII mode, the device always behaves according to the Modbus standard.

*“Ignore surplus bytes” option*  
If supported by the function code, the two bytes for the checksum CRC16 are determined from the anticipated telegram length. Surplus bytes at the end of the actual telegram are ignored. This is not the standard Modbus behavior.

### 3.4.2 "Modbus information" submenu

**Navigation**  
Expert → Communication → Modbus info

- **Device ID**  
  → 36

- **Device revision**  
  → 36

1) Not a Number
Device ID

**Navigation**

Expert → Communication → Modbus info → Device ID

**Description**

Displays the device ID for identifying the measuring device.

**User interface**

4-digit hexadecimal number

Device revision

**Navigation**

Expert → Communication → Modbus info → Device revision

**Description**

Displays the device revision.

**User interface**

4-digit hexadecimal number

3.4.3 "Modbus data map" submenu

**Navigation**

Expert → Communication → Modbus data map

Scan list register 0 to 15

**Navigation**

Expert → Communication → Modbus data map → Scan list reg.0 to 15

**Description**

Use this function to enter the scan list register. By entering the register address (1-based), up to 16 device parameters can be grouped in the auto-scan buffer by assigning them to the scan list registers 0 to 15. The data of the device parameters assigned here are read out via the register addresses 5051 to 5081.

**User entry**

1 to 65535

**Factory setting**

1
Additional information

**Description**

- **Scan list: Configuration area**
  The device parameters to be grouped are defined in a list in that their Modbus RS485 register addresses are entered in the list.

- **Data area**
  The measuring device reads out the register addresses entered in the scan list cyclically and writes the associated device data (values) to the data area.

---

3.5 "Application" submenu

**Navigation**

 waivers

**Reset all totalizers**

**Navigation**

 waivers

**Description**

Use this function to reset all totalizers to the value 0 and restart the totaling process. This deletes all the flow values previously totalized.

**Selection**

- Cancel
- Reset + totalize

**Factory setting**

Cancel

**Additional information**

**Selection**

- Cancel
  No action is executed and the user exits the parameter.
- Reset + totalize
  All totalizers are reset to 0 and the totaling process is restarted.
Reset overall batching quantity

Navigation
- Expert → Application → Reset batch qty

Description
Use this function to reset the Overall batching quantity (→ 46) and the **Batch counter** parameter (→ 43) to 0.

Selection
- Reset
- Cancel

Factory setting
Cancel

Additional information
**Options**
- Reset
  The Overall batching quantity (→ 46) and the **Batch counter** parameter (→ 43) are reset to 0 and restarted.
- Cancel
  No action is executed and the user exits the parameter.

3.5.1 "Totalizer 1 to 3" submenu

Navigation
- Expert → Application → Totalizer 1 to 3

Assign process variable
- Off
- Volume flow

Volume unit
- → 39

Totalizer operation mode
- → 39

Control Totalizer 1 to 3
- → 40

Preset value 1 to 3
- → 41

Failure mode
- → 41

Assign process variable

Navigation
- Expert → Application → Totalizer 1 to 3 → Assign variable

Description
Use this function to select a process variable for totalizer 1-3.

Selection
- Off
- Volume flow
**Factory setting**
Volume flow

**Additional information**

*Description*

If the option selected is changed, the device resets the totalizer to 0.

*Options*

If the Off option is selected, only Assign process variable parameter (→ § 38) is displayed in the Totalizer 1 to 3 submenu. All other parameters in the submenu are hidden.

### Volume unit

**Navigation**

Expert → Application → Totalizer 1 to 3 → Volume unit

**Prerequisite**

The Volume flow option is selected in the Assign process variable parameter (→ § 38) of the Totalizer 1 to 3 submenu.

**Description**

Use this function to select the unit for the volume.

**Selection**

*SI units*
- cm³
- dm³
- m³
- ml
- l
- hl
- Ml Mega

*US units*
- af
- ft³
- fl oz (us)
- gal (us)
- kgal (us)
- Mgal (us)
- bbl (us;oil)
- bbl (us;beer)
- bbl (us;tank)

*Imperial units*
- gal (imp)
- Mgal (imp)
- bbl (imp;beer)
- bbl (imp;oil)

*Custom-specific units*

User vol.

**Factory setting**

Depending on country:
- ml
- fl oz (us)

### Totalizer operation mode

**Navigation**

Expert → Application → Totalizer 1 to 3 → Operation mode

**Prerequisite**

In the Assign process variable parameter (→ § 38) of the Totalizer 1 to 3 submenu, the Volume flow option is selected.

**Description**

Use this function to select how the totalizer summates the flow.
Description of device parameters

Dosimag Modbus RS485

Selection
- Net flow total
- Forward flow total
- Reverse flow total

Factory setting
Net flow total

Additional information Options
- Net flow total
  Positive and negative flow values are totalized and balanced against one another. Net flow is registered in the flow direction.
- Forward flow total
  Only the flow in the forward flow direction is totalized.
- Reverse flow total
  Only the flow against the forward flow direction is totalized (= reverse flow total).

Control Totalizer 1 to 3

Navigation
Expert → Application → Totalizer 1 to 3 → Control Tot. 1 to 3

Prerequisite
In the Assign process variable parameter (→ 38) of the Totalizer 1 to 3 submenu, the Volume flow option is selected.

Description
Use this function to select the control of totalizer value 1-3.

Selection
- Totalize
- Reset + hold
- Preset + hold
- Reset + totalize
- Preset + totalize

Factory setting
Totalize

Additional information Options
- Totalize
  The totalizer is started or continues totalizing with the current counter reading.
- Reset + hold
  The totaling process is stopped and the totalizer is reset to 0.
- Preset + hold
  The totaling process is stopped and the totalizer is set to its defined start value from the Preset value parameter (→ 41).
- Reset + totalize
  The totalizer is reset to 0 and the totaling process is restarted.
- Preset + totalize
  The totalizer is set to the defined start value in the Preset value parameter (→ 41) and the totaling process is restarted.
**Preset value 1 to 3**

**Navigation**

Expert → Application → Totalizer 1 to 3 → Preset value 1 to 3

**Prerequisite**

In the Assign process variable parameter (→ 38) of the Totalizer 1 to 3 submenu, the Volume flow option is selected.

**Description**

Use this function to enter a start value for totalizer 1-3.

**User entry**

Signed floating-point number

**Factory setting**

Country-specific:
- 0 m³
- 0 ft³

**Additional information**

User entry

The unit of the selected process variable is specified for the totalizer in the Assign process variable parameter. If the following is selected in the Assign process variable parameter:
Volume flow option: Volume flow unit parameter (→ 18)

**Example**

This configuration is suitable for applications such as iterative filling processes with a fixed batch quantity.

---

**Failure mode**

**Navigation**

Expert → Application → Totalizer 1 to 3 → Failure mode

**Prerequisite**

In the Assign process variable parameter (→ 38) of the Totalizer 1 to 3 submenu, the Volume flow option is selected.

**Description**

Use this function to select how a totalizer behaves in an alarm condition.

**Selection**

- Stop
- Actual value
- Last valid value

**Factory setting**

Stop

**Additional information**

Description

This setting does not affect the error response mode of other totalizers and the outputs. This is specified in separate parameters.
Description of device parameters

Options

- Stop
  Totalizing is stopped in an alarm condition.
- Actual value
  The totalizer continues to count based on the actual measured value; the error is ignored.
- Last valid value
  The totalizer continues to count based on the last valid measured value before the error occurred.

3.5.2 "Batching" submenu

- Any change to the configuration only becomes effective for the next batching process, i.e. a batching process that is running is finished with the configuration it was started with.
- Parameters that are not relevant in relation to other parameters retain their value nevertheless. As soon as such parameters become relevant, they are processed further with this value.

Navigation

Expert → Application → Batching

"Operation" submenu

Navigation

Expert → Application → Batching → Operation
**Batch control**

**Navigation**

Expert → Application → Batching → Operation → Batch control

**Description**

Use this function to control the batching process.

**Selection**

- Start
- Stop

**Factory setting**

Stop

**Additional information**

- **'Start' option**
  - The display of the amount currently measured is reset to 0.
  - If a diagnostic message (alarm) occurs during an ongoing batching process, the batching process is canceled as an emergency measure.
  - If a batching process is in progress, the **Start** option does not have any effect.
  - The batching process is started when the necessary conditions have been met:
    - There is no diagnostic event pending (with the exception of the maximum batch time and maximum flow rate being exceeded)
    - Target quantity is greater than 0.
    - The last batching process has been completed (including possible blow out).

- **'Stop' option**
  - The batching process is canceled as an emergency measure.
  - A new drip quantity and a new drip correction quantity are not calculated (averaging and single outliers).
  - The number of batching processes is increased by 1.
  - If no batching process is in progress, the **Stop** option does not have any effect.

**Batch counter**

**Navigation**

Expert → Application → Batching → Operation → Batch counter

**Description**

Use this function to display the number of batching processes.
### User interface
Positive integer

### Additional information
*Description*
This number is updated each time a batching process is completed. The Batch counter (→ 43) is reset to 0 if a new batch profile is selected or if the assignment of the measured variable changes.

### Quantity last batch

<table>
<thead>
<tr>
<th>Navigation</th>
<th>Expert → Application → Batching → Operation → Last batch qty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Use this function to display the total amount measured including the drip quantity from the last batching process.</td>
</tr>
<tr>
<td><strong>User interface</strong></td>
<td>Signed floating-point number</td>
</tr>
</tbody>
</table>
| **Additional information** | *Description*
This total is updated each time a batching process is completed and is automatically reset when a new batching process starts. |

*Dependency*

| The unit is taken from: | `Batch unit` parameter (→ 47) |

### Quantity last drip

<table>
<thead>
<tr>
<th>Navigation</th>
<th>Expert → Application → Batching → Operation → Last drip qty</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Use this function to display the drip quantity of the last batching process in the configured batch unit.</td>
</tr>
<tr>
<td><strong>User interface</strong></td>
<td>Signed floating-point number</td>
</tr>
</tbody>
</table>
| **Additional information** | *Description*
This amount is updated each time a batching process is completed and is automatically reset when a new batching process starts. The parameter is saved and, following a restart, is used for drip quantity correction. |

*Dependency*

| The unit is taken from: | `Batch unit` parameter (→ 47) |
### Time last batch

**Navigation**

Expert → Application → Batching → Operation → Last batch time

**Description**

Displays the duration (in seconds) of the last batch up to the end of drip quantity measurement.

**User interface**

Positive floating-point number

**Additional information**

*Description*

This time is updated after the end of a batch and automatically reset each time a new batching process is started.

### Close time last batch

**Navigation**

Expert → Application → Batching → Operation → Last close time

**Description**

Displays the closing duration (in ms) for the last batch from the switch-off time up to the end of drip quantity measurement.

**User interface**

Positive floating-point number

**Additional information**

*Description*

This time is updated after the end of a batch and automatically reset each time a new batching process is started.

### Current drip correction quantity

**Navigation**

Expert → Application → Batching → Operation → Curr. drip corr.

**Description**

Use this function to display the drip correction quantity for the next batching process.

**User interface**

Signed floating-point number

**Additional information**

*Description*

Following a restart, the value corresponds to the value of the last drip quantity that was saved.

*Dependency*

The unit is taken from: **Batch unit** parameter (→ 47)
### Overall batching quantity

**Navigation**  
Expert → Application → Batching → Operation → Overall quantity

**Description**  
Use this function to display the total quantity measured for all batching processes.

**User interface**  
Signed floating-point number

**Additional information**  
*Description*  
As only a maximum of 7 digits can be displayed, the current totalizer reading in the event of the display range being exceeded is the sum of the Overall batching quantity and the Overflow number overall batch. quantity.  
This number is updated each time a batching process is completed. The Overall batching quantity (→ 46) is reset to 0 if a new batch profile is selected or if the assignment of the measured variable changes.

*Example*  
Calculation of the current totalizer reading when the 7-digit display range is exceeded:  
- Value in the Overall batching quantity parameter: 196 845.7 ml  
- Value in the Overflow number overall batch. quantity parameter: 2 \cdot 10^7 (2 overflows)  
  = 20 000 000 [ml]  
- Current totalizer reading: 20 196 845.7 ml

*Dependency*  
The unit is taken from: Batch unit parameter (→ 47)

### Overflow number overall batch. quantity

**Navigation**  
Expert → Application → Batching → Operation → Overfl.num.batch

**Description**  
Use this function to display the number of overflows for the overall batching quantity.

**User interface**  
–32 000.0 to 32 000.0

**Additional information**  
*Description*  
If the current totalizer reading has more than 7 digits, which is the maximum value range that can be displayed, the value above this range is output as an overflow. The current totalizer reading is thus the sum of the Overflow number overall batch. quantity and the Overall batching quantity.

*Example*  
Calculation of the current totalizer reading when the 7-digit display range is exceeded:  
- Value in the Overall batching quantity parameter: 196 845.7 ml  
- Value in the Overflow number overall batch. quantity parameter: 2 \cdot 10^7 (2 overflows)  
  = 20 000 000 [ml]  
- Current totalizer reading: 20 196 845.7 ml
Batch unit

Navigation

Expert → Application → Batching → Operation → Batch unit

Description
Displays the selected unit from the batch profile.

User interface

<table>
<thead>
<tr>
<th>SI units</th>
<th>US units</th>
</tr>
</thead>
<tbody>
<tr>
<td>l</td>
<td>ft³</td>
</tr>
<tr>
<td>dm³</td>
<td>fl oz (us)</td>
</tr>
<tr>
<td>cm³</td>
<td>gal (us)</td>
</tr>
<tr>
<td>ml</td>
<td></td>
</tr>
</tbody>
</table>

Custom-specific units
User vol.

Additional information

Effect

The selected unit applies for:
- Overall batching quantity (→ 46)
- Current drip correction quantity (→ 45)
- Quantity last batch (→ 44)
- Quantity last drip (→ 44)

Switch output function 1 to 2

Navigation

Expert → Application → Batching → Operation → SwitchOutFunct 1 to 2

Description
Use this function to select a function for the switch output.

Selection

- Close
- Open
- Batching

Factory setting

- Batching (Switch output function 1)
- Open (Switch output function 2)

Additional information

Options

- Close
  The switch output is permanently switched on.
- Open
  The switch output is permanently switched off.
- Batching
  The switch output is used for batching purposes.
  - Switch output 1 is permanently assigned to the first batch level.
  - The second switch output is assigned to either the second batch level or the blow out.
  - If a batching process is ongoing, the Open option and the Close option do not have any effect.
Switch status 1 to 2

**Navigation**

Expert → Application → Batching → Operation → Switch status 1 to 2

**Description**

Use this function to display the current status of the switch output.

**User interface**

- Closed
- Open

"Configuration" submenu

**Navigation**

Expert → Application → Batching → Configuration

![Configuration menu]

- **Batch profile**
  
  **Navigation**
  
  Expert → Application → Batching → Configuration → Batch profile

  **Description**
  
  Use this function to select the right profile for the medium that was configured by the customer.

  **Selection**
  
  - Profile 1
  - Profile 2
  - Profile 3
  - Profile 4
  - Profile 5
  - Profile 6

  **Factory setting**
  
  Profile 1
### 'Settings batch profile 1 to 6’ submenu

#### Navigation

- Expert → Application → Batching → Configuration → Batch profile 1 to 6

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input selector</td>
<td>Use this function to assign a measured variable for the batch profile.</td>
</tr>
<tr>
<td>Batch unit</td>
<td></td>
</tr>
<tr>
<td>Batch quantity</td>
<td></td>
</tr>
<tr>
<td>Measuring time drip quantity</td>
<td></td>
</tr>
<tr>
<td>Fixed compensation quantity</td>
<td></td>
</tr>
<tr>
<td>Drip correction mode</td>
<td></td>
</tr>
<tr>
<td>Filter depth drip median</td>
<td></td>
</tr>
<tr>
<td>Average drip correction quantity</td>
<td></td>
</tr>
<tr>
<td>Batch levels</td>
<td></td>
</tr>
<tr>
<td>Start level 2</td>
<td></td>
</tr>
<tr>
<td>Stop level 2</td>
<td></td>
</tr>
<tr>
<td>Blow out delay</td>
<td></td>
</tr>
<tr>
<td>Blow out duration</td>
<td></td>
</tr>
<tr>
<td>Maximum batch time</td>
<td></td>
</tr>
<tr>
<td>Maximum flow rate exceeded</td>
<td></td>
</tr>
<tr>
<td>Disable time pressure shock suppression</td>
<td></td>
</tr>
</tbody>
</table>
Description of device parameters

Dosimag Modbus RS485

Selection
- Off
- Volume flow

Factory setting
Volume flow

Additional information
Options
- Off
  The profile is not active.
- Volume flow
  Volume flow is assigned as a measured variable.

Batch unit

Navigation
Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Batch
unit

Prerequisite
One of the following options is selected in the Input selector parameter (→ 49):
Volume flow

Description
Use this function to select the unit for the process variable in the batch profile.

Selection
- SI units
  - l
  - dm³
  - cm³
  - ml
- US units
  - ft³
  - fl oz (us)
  - gal (us)
- Custom-specific units
  User vol.

Factory setting
Depending on country:
- ml
- fl oz (us)

Additional information
Result
The selected unit applies for:
- Batch quantity (→ 50)
- Fixed compensation quantity (→ 51)
- Batch unit (→ 47)

Batch quantity

Navigation
Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Batch
quantity

Prerequisite
One of the following options is selected in the Input selector parameter (→ 49):
Volume flow

Description
Use this function to enter the batch quantity in the specified batch unit of the selected measured variable.
User entry

Positive floating-point number

Factory setting

Depending on country:
- 0 ml
- 0 fl oz (us)

Additional information

Dependency

The unit is taken from: **Batch unit** parameter (→ \( \# 50 \))

### Measuring time drip quantity

**Navigation**

Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Meas. time drip

**Prerequisite**

One of the following options is selected in the **Input selector** parameter (→ \( \# 49 \)):
- Volume flow

**Description**

Use this function to enter the time used for drip quantity measurement.

**User entry**

0.01 to 100 s

**Factory setting**

1 s

### Fixed compensation quantity

**Navigation**

Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Fixed comp. qty

**Prerequisite**

One of the following options is selected in the **Input selector** parameter (→ \( \# 49 \)):
- Volume flow

**Description**

Use this function to enter a fixed correction quantity in the set batch unit for the selected measured variable.

**User entry**

Signed floating-point number

**Factory setting**

Country-specific:
- 0 ml
- 0 fl oz (us)

**Additional information**

Dependency

How this parameter functions depends on the option selected in the **Drip correction mode** parameter (→ \( \# 52 \)).
If the following option is selected in the **Drip correction mode** parameter (→ 52):

- **Off**
  - The Fixed compensation quantity (→ 51) is subtracted from the Batch quantity (→ 50). The result is the target batch quantity.
  - The target quantity must be greater than 0.
  - If the target quantity is 0, batching cannot be started.

- **Fixed time** option or **Fixed time or low flow cut off** option
  - The Fixed compensation quantity (→ 51) does not directly affect the target batch quantity. Instead it is used for the value of the drip correction quantity for the next batch.
  - However, this is only the case if the **Current drip correction quantity** parameter (→ 45) was 0 before batching and therefore the drip quantity has not yet been recorded.
  - If the Fixed compensation quantity (→ 51) is set to a value not equal to 0, this value is used as the drip correction quantity for the first batch.
  - If the Fixed compensation quantity (→ 51) is set to 0, a drip correction quantity of 10 % of the Batch quantity (→ 50) is adopted for the first batch.

The unit is taken from: **Batch unit** parameter (→ 50)

---

**Drip correction mode**

<table>
<thead>
<tr>
<th>Navigation</th>
<th>Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Drip correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisite</td>
<td>One of the following options is selected in the <strong>Input selector</strong> parameter (→ 49):</td>
</tr>
<tr>
<td></td>
<td>Volume flow</td>
</tr>
<tr>
<td>Description</td>
<td>Use this function to select the mode for implementing a drip correction.</td>
</tr>
<tr>
<td>Selection</td>
<td>• Off</td>
</tr>
<tr>
<td></td>
<td>• Fixed time</td>
</tr>
<tr>
<td></td>
<td>• Fixed time or low flow cut off</td>
</tr>
<tr>
<td>Factory setting</td>
<td>Off</td>
</tr>
<tr>
<td>Additional information</td>
<td><strong>Options</strong></td>
</tr>
<tr>
<td></td>
<td>• Off</td>
</tr>
<tr>
<td></td>
<td>No drip correction is performed.</td>
</tr>
<tr>
<td></td>
<td>• Fixed time</td>
</tr>
<tr>
<td></td>
<td>The Fixed time corresponds to the value that was entered in the <strong>Measuring time drip quantity</strong> parameter (→ 51). The drip quantity is the quantity that is measured from the time of switch-off until a fixed time has expired. When measurement of the drip quantity is complete, this is the end of the batching process without the possibility of blowing out the valve.</td>
</tr>
<tr>
<td></td>
<td>• Fixed time or low flow cut off</td>
</tr>
<tr>
<td></td>
<td>The drip quantity is the quantity that is measured from the time of switch-off until the low flow cut off is activated or until a specified time has expired.</td>
</tr>
</tbody>
</table>
Filter depth drip median

**Navigation**
Expert → Application → Batching → Configuration → Batch profile 1 to 6 → FilterDripMedian

**Prerequisite**
The following conditions are met:
- In the **Input selector** parameter (→ 49), the **Volume flow** option is selected.
- In the **Drip correction mode** parameter (→ 52), the **Fixed time** option or the **Fixed time or low flow cut off** option is selected.

**Description**
Use this function to select the filter depth of the drip median for the batch profile.

**Selection**
- Off
- Median 3
- Median 5
- Median 7

**Factory setting**
Median 5

Average drip correction quantity

**Navigation**
Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Avg drip correc

**Prerequisite**
The following conditions are met:
- In the **Input selector** parameter (→ 49), the **Volume flow** option is selected.
- In the **Drip correction mode** parameter (→ 52), the **Fixed time** option or the **Fixed time or low flow cut off** option is selected.

**Description**
Use this function to enter the number of batches used to obtain the median drip quantity.

**User entry**
1 to 100

**Factory setting**
5

**Additional information**
*Description*
The individual drip quantities are averaged in a stepless manner over the number entered. The result is the drip correction quantity. This is subtracted from the target quantity for the next batch, resulting in the switch-off quantity. The averaging is performed with a PT1 element \(^2\). The first drip correction quantity determined initializes the filter. The switch-off time is reached when the quantity measured since the start is equal to the switch-off quantity.

\(^2\) Proportional behavior with first-order lag
**Navigation**

- Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Batch levels

**Prerequisite**

One of the following options is selected in the **Input selector** parameter (→ 49):
- Volume flow

**Description**

Use this function to select the number of levels for the batch.

**Selection**

- One-level
- Two-level
- One-level and blow out

**Factory setting**

One-level

**Additional information**

**Selection**

- One-level
  - Only switch output 1 is active.
- Two-level
  - Switch output 2 is also active (second level).
- One-level and blow out
  - Switch output 2 is also active (blow out valve after batching). The starting point of the first level is implicitly 0 % of the target value. The finishing point of the first level is implicitly 100 % of the target value.

**Example**

The example explains the parameterization of various batching functions with the input format in % for the valve switch points.

The following batch is to be implemented:

- Two-level batch with a total batching quantity of 15 kg
- Rough batching quantity of 3 to 12 kg, valve opens once 20 % (3 kg) of the batching quantity is reached and closes once 80 % (12 kg) is reached.
- Valve 1 opens at the start of batching and closes (automatically) once the batching quantity (15 kg) is reached.
- The values should be input as percentages (%).
**Start level 2**

**Navigation**
- Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Start level 2

**Prerequisite**
The following conditions are met:
- In the Input selector parameter (→ 49), the Volume flow option is selected.
- In the Batch levels parameter (→ 54), the Two-level option is selected.

**Description**
Use this function to enter the starting point of the second level in % of the target value. The starting point must always be smaller than the finishing point.

**User entry**
0 to 100 %

**Factory setting**
0 %

**Stop level 2**

**Navigation**
- Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Stop level 2

**Prerequisite**
The following conditions are met:
- In the Input selector parameter (→ 49), the Volume flow option is selected.
- In the Batch levels parameter (→ 54), the Two-level option is selected.

**Description**
Use this function to enter the finishing point of the second level in % of the target value. The finishing point must always be greater than the starting point.
**Blow out delay**

**User entry**
0 to 100 %

**Factory setting**
100 %

**Blow out duration**

**User entry**
0 to 100 s

**Factory setting**
0 s

**Maximum batch time**

**User entry**

**Factory setting**

---

**Description of device parameters**

Dosimag Modbus RS485

---

**User entry**

**Factory setting**

---

**Blow out delay**

**Navigation**
Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Blow out delay

**Prerequisits**
The following conditions are met:
- In the **Input selector** parameter (→ 49), the **Volume flow** option is selected.
- In the **Batch levels** parameter (→ 54), the **One-level and blow out** option is selected.

**Description**
Use this function to enter the delay for blow-out at the end of batching.

**User entry**
0 to 100 s

**Factory setting**
0 s

**Blow out duration**

**Navigation**
Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Blow out durat.

**Prerequisits**
The following conditions are met:
- In the **Input selector** parameter (→ 49), the **Volume flow** option is selected.
- In the **Batch levels** parameter (→ 54), the **One-level and blow out** option is selected.

**Description**
Use this function to enter the duration for blow-out at the end of batching.

**User entry**
0 to 100 s

**Factory setting**
1 s

**Maximum batch time**

**Navigation**
Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Max. batch time

**Prerequisits**
One of the following options is selected in the **Input selector** parameter (→ 49):
Volume flow

**Description**
Use this function to enter the maximum batch time.
User entry
0 to 10^6 s

Factory setting
0 s

Additional information
Description
If the maximum batch time expires before the switch-off amount is reached, the batching process is canceled as an emergency measure. A value of 0 means that the maximum batch time is not monitored.

ℹ️ If batching is canceled in this way, the measuring device displays the diagnostic message `F991 Batch time exceeded`. The diagnostic message is canceled when the next batch starts. Neither a new drip quantity nor a new drip correction quantity are calculated (averaging and single outliers).

### Maximum flow rate exceeded

**Navigation**
- Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Max. flow rate

**Prerequisite**
One of the following options is selected in the Input selector parameter (→ 49):
- Volume flow

**Description**
Use this function to enter the maximum flow during batching.

**User entry**
Positive floating-point number

**Factory setting**
0

**Additional information**
Description
If the maximum flow is exceeded during batching, the batching process is canceled as an emergency measure. A value of 0 means that the maximum flow is not monitored.

ℹ️ If batching is canceled in this way, the measuring device displays the diagnostic message `F991 Batch time exceeded`. The diagnostic message is canceled when the next batch starts. Neither a new drip quantity nor a new drip correction quantity are calculated (averaging and single outliers).

**Dependency**
- The unit depends on the process variable selected in the Input selector parameter (→ 49).

### Disable time pressure shock suppression

**Navigation**
- Expert → Application → Batching → Configuration → Batch profile 1 to 6 → Disab.PressShock

**Prerequisite**
One of the following options is selected in the Input selector parameter (→ 49):
- Volume flow
Description of device parameters

Dosimag Modbus RS485

**Description**

Use this function to enter a time (in seconds) in which pressure shock suppression is not active after starting a batching process.

**User entry**

0 to 100 s

**Factory setting**

0 s

**Additional information**

*Description*

<table>
<thead>
<tr>
<th>Q</th>
<th>Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>t</td>
<td>Time</td>
</tr>
<tr>
<td>A</td>
<td>Disable time pressure shock suppression</td>
</tr>
<tr>
<td>B</td>
<td>Drip</td>
</tr>
<tr>
<td>C</td>
<td>Pressure shock</td>
</tr>
<tr>
<td>D</td>
<td>Pressure shock suppression active</td>
</tr>
<tr>
<td>E</td>
<td>Pressure shock suppression inactive</td>
</tr>
<tr>
<td>1</td>
<td>Valve opens</td>
</tr>
<tr>
<td>2</td>
<td>Valve closes</td>
</tr>
<tr>
<td>3</td>
<td>Flow falls below the on-value of the low flow cut off: pressure shock suppression is activated</td>
</tr>
<tr>
<td>4</td>
<td>The time entered has elapsed: pressure shock suppression is deactivated</td>
</tr>
<tr>
<td>5</td>
<td>The actual flow value is now displayed and output</td>
</tr>
<tr>
<td>6</td>
<td>On value for low flow cut off</td>
</tr>
<tr>
<td>7</td>
<td>Off value for low flow cut off</td>
</tr>
</tbody>
</table>

3.6 "Diagnostics" submenu

*Navigation*  

Expert → Diagnostics

![Diagnostics submenu](image_url)
Actual diagnostics

**Navigation**

Expert → Diagnostics → Actual diagnos.

**Prerequisite**

A diagnostic event has occurred.

**Description**

Displays the current diagnostic message. If two or more messages occur simultaneously, the message with the highest priority is shown on the display.

**User interface**

Symbol for diagnostic behavior, diagnostic code and short message.

**Additional information**

*User interface*

Additional pending diagnostic messages can be shown in the **Diagnostic list** submenu (→ 62).

*Example*

For the display format:

⚠️ S442 Frequency output
### Timestamp

**Navigation**
- Expert → Diagnostics → Timestamp

**Description**
Displays the operating time when the current diagnostic message occurred.

**User interface**
Days (d), hours (h), minutes (m) and seconds (s)

**Additional information**
- **User interface**
  - The diagnostic message can be displayed via the Actual diagnostics parameter (→ 59).

  **Example**
  For the display format:
  24d12h13m00s

### Actual diagnostics

**Navigation**
- Expert → Diagnostics → Actual diagnos.

**Prerequisite**
A diagnostic event has occurred.

**Description**
Displays the service ID of the current diagnostic message.

**User interface**
0 to 65535

### Previous diagnostics

**Navigation**
- Expert → Diagnostics → Prev.diagnostics

**Prerequisite**
Two diagnostic events have already occurred.

**Description**
Displays the diagnostic message that occurred before the current message.

**User interface**
Symbol for diagnostic behavior, diagnostic code and short message.

**Additional information**
- **Example**
  For the display format:
  △S442 Frequency output
**Timestamp**

**Navigation**  
Expert → Diagnostics → Timestamp

**Description**  
Displays the operating time when the last diagnostic message before the current message occurred.

**User interface**  
Days (d), hours (h), minutes (m) and seconds (s)

**Additional information**  
The diagnostic message can be displayed via the Previous diagnostics parameter (→ 60).

*Example*

For the display format:
24d12h13m00s

---

**Previous diagnostics**

**Navigation**  
Expert → Diagnostics → Prev.diagnostics

**Prerequisite**  
Two diagnostic events have already occurred.

**Description**  
Displays the service ID of the diagnostic message that occurred before the current diagnostic message.

**User interface**  
0 to 65535

---

**Operating time from restart**

**Navigation**  
Expert → Diagnostics → Time fr. restart

**Description**  
Use this function to display the time the device has been in operation since the last device restart.

**User interface**  
Days (d), hours (h), minutes (m) and seconds (s)

---

**Operating time**

**Navigation**  
Expert → Diagnostics → Operating time

**Description**  
Use this function to display the length of time the device has been in operation.

**User interface**  
Days (d), hours (h), minutes (m) and seconds (s)
Additional information  

*User interface*

The maximum number of days is 9999, which is equivalent to 27 years.

3.6.1 "Diagnostic list" submenu

*Navigation*  

Expert → Diagnostics → Diagnostic list

---

**Diagnostics 1**

*Navigation*  

Expert → Diagnostics → Diagnostic list → Diagnostics 1

*Description*  

Use this function to display the current diagnostics message with the highest priority.
**User interface**
Symbol for diagnostic behavior, diagnostic code and short message.

**Additional information**

*Examples*

For the display format:
- ✖️ S442 Frequency output
- ✗ F276 I/O module failure

---

**Diagnostics 1**

**Navigation**

 Expert → Diagnostics → Diagnostic list → Diagnostics 1

**Description**
Displays the service ID of the current diagnostic message with the highest priority.

**User interface**
0 to 65535

---

**Timestamp**

**Navigation**

 Expert → Diagnostics → Diagnostic list → Timestamp

**Description**
Displays the operating time when the diagnostic message with the highest priority occurred.

**User interface**
Days (d), hours (h), minutes (m) and seconds (s)

**Additional information**

*User interface*

The diagnostic message can be displayed via the **Diagnostics 1** parameter (→ 62).

*Example*
For the display format:
24d12h13m00s

---

**Diagnostics 2**

**Navigation**

 Expert → Diagnostics → Diagnostic list → Diagnostics 2

**Description**
Use this function to display the current diagnostics message with the second-highest priority.

**User interface**
Symbol for diagnostic behavior, diagnostic code and short message.

**Additional information**

*Examples*

For the display format:
- ✖️ S442 Frequency output
- ✗ F276 I/O module failure
### Diagnostics 2

**Navigation**

Expert → Diagnostics → Diagnostic list → Diagnostics 2

**Description**

Displays the service ID of the current diagnostic message with the second-highest priority.

**User interface**

0 to 65,535

---

### Timestamp

**Navigation**

Expert → Diagnostics → Diagnostic list → Timestamp

**Description**

Displays the operating time when the diagnostic message with the second-highest priority occurred.

**User interface**

Days (d), hours (h), minutes (m) and seconds (s)

**Additional information**

*User interface*

The diagnostic message can be displayed via the Diagnostics 2 parameter (→ 63).

*Example*

For the display format:
24d12h13m00s

---

### Diagnostics 3

**Navigation**

Expert → Diagnostics → Diagnostic list → Diagnostics 3

**Description**

Use this function to display the current diagnostics message with the third-highest priority.

**User interface**

Symbol for diagnostic behavior, diagnostic code and short message.

**Additional information**

*Examples*

For the display format:
- △S442 Frequency output
- ✗F276 I/O module failure

---

### Diagnostics 3

**Navigation**

Expert → Diagnostics → Diagnostic list → Diagnostics 3

**Description**

Displays the service ID of the current diagnostic message with the third-highest priority.
**User interface**

0 to 65535

---

**Timestamp**

**Navigation**

Expert → Diagnostics → Diagnostic list → Timestamp

**Description**

Displays the operating time when the diagnostic message with the third-highest priority occurred.

**User interface**

Days (d), hours (h), minutes (m) and seconds (s)

**Additional information**

*User interface*

The diagnostic message can be displayed via the **Diagnostics 3** parameter (→ 64).

*Example*

For the display format:

24d12h13m00s

---

**Diagnostics 4**

**Navigation**

Expert → Diagnostics → Diagnostic list → Diagnostics 4

**Description**

Use this function to display the current diagnostics message with the fourth-highest priority.

**User interface**

Symbol for diagnostic behavior, diagnostic code and short message.

**Additional information**

*Examples*

For the display format:

- `S442` Frequency output
- `F276` I/O module failure

---

**Diagnostics 4**

**Navigation**

Expert → Diagnostics → Diagnostic list → Diagnostics 4

**Description**

Displays the service ID of the current diagnostic message with the fourth-highest priority.

**User interface**

0 to 65535
### Timestamp

**Navigation**
- Expert → Diagnostics → Diagnostic list → Timestamp

**Description**
Displays the operating time when the diagnostic message with the fourth-highest priority occurred.

**User interface**
Days (d), hours (h), minutes (m) and seconds (s)

**Additional information**

*User interface*

The diagnostic message can be displayed via the **Diagnostics 4** parameter (→ 65).

*Example*
For the display format:
24d12h13m00s

### Diagnostics 5

**Navigation**
- Expert → Diagnostics → Diagnostic list → Diagnostics 5

**Description**
Use this function to display the current diagnostics message with the fifth-highest priority.

**User interface**
Symbol for diagnostic behavior, diagnostic code and short message.

**Additional information**

*Example*
For the display format:
- `S442 Frequency output`
- `F276 I/O module failure`

### Diagnostics 5

**Navigation**
- Expert → Diagnostics → Diagnostic list → Diagnostics 5

**Description**
Displays the service ID of the current diagnostic message with the fifth-highest priority.

**User interface**
0 to 65 535

### Timestamp

**Navigation**
- Expert → Diagnostics → Diagnostic list → Timestamp

**Description**
Displays the operating time when the diagnostic message with the fifth-highest priority occurred.
User interface
Days (d), hours (h), minutes (m) and seconds (s)

Additional information

User interface
The diagnostic message can be displayed via the Diagnostics 5 parameter (→ 66).

Example
For the display format:
24d12h13m00s

3.6.2 "Event logbook" submenu

Navigation
Expert → Diagnostics → Event logbook

Filter options

Filter options

Navigation
Expert → Diagnostics → Event logbook → Filter options

Description
Use this function to select the category whose event messages are displayed in the events list.

Selection
- All
- Failure (F)
- Function check (C)
- Out of specification (S)
- Maintenance required (M)
- Information (I)

Factory setting
All

Additional information

The status signals are categorized in accordance with VDI/VDE 2650 and NAMUR Recommendation NE 107:
- F = Failure
- C = Function Check
- S = Out of Specification
- M = Maintenance Required
3.6.3 "Device information" submenu

Navigation 
Expert → Diagnostics → Device info

<table>
<thead>
<tr>
<th>Device information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device tag         -&gt; 68</td>
</tr>
<tr>
<td>Serial number      -&gt; 69</td>
</tr>
<tr>
<td>Firmware version   -&gt; 69</td>
</tr>
<tr>
<td>Device name        -&gt; 69</td>
</tr>
<tr>
<td>Order code         -&gt; 69</td>
</tr>
<tr>
<td>Extended order code 1 -&gt; 70</td>
</tr>
<tr>
<td>Extended order code 2 -&gt; 70</td>
</tr>
<tr>
<td>Extended order code 3 -&gt; 70</td>
</tr>
<tr>
<td>ENP version        -&gt; 71</td>
</tr>
<tr>
<td>Configuration counter -&gt; 71</td>
</tr>
</tbody>
</table>

Device tag

Navigation 
Expert → Diagnostics → Device info → Device tag

Description Displays a unique name for the measuring point so it can be identified quickly within the plant. The name is displayed in the header.

User interface Max. 32 characters such as letters, numbers or special characters (e.g. @, %, /)

Factory setting Dosimag

Additional information User interface

Header text

The number of characters displayed depends on the characters used.
<table>
<thead>
<tr>
<th><strong>Serial number</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigation</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>User interface</strong></td>
</tr>
<tr>
<td><strong>Additional information</strong></td>
</tr>
<tr>
<td><strong>Uses of the serial number</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Firmware version</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigation</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>User interface</strong></td>
</tr>
<tr>
<td><strong>Factory setting</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Device name</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigation</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>User interface</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Order code</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Navigation</strong></td>
</tr>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>User interface</strong></td>
</tr>
<tr>
<td><strong>Additional information</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
The order code is generated from the extended order code through a process of reversible transformation. The extended order code indicates the attributes for all the device features in the product structure. The device features are not directly readable from the order code.

### Uses of the order code
- To order an identical spare device.
- To identify the device quickly and easily, e.g. when contacting Endress+Hauser.

#### Extended order code 1

<table>
<thead>
<tr>
<th>Navigation</th>
<th>Expert → Diagnostics → Device info → Ext. order cd. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Displays the first part of the extended order code. On account of length restrictions, the extended order code is split into a maximum of 3 parameters.</td>
</tr>
<tr>
<td>User interface</td>
<td>Character string</td>
</tr>
</tbody>
</table>

**Additional information**

*Description*

The extended order code indicates the version of all the features of the product structure for the measuring device and thus uniquely identifies the measuring device.

*It can be found in the "Ext. ord. cd." field on the nameplate.*

#### Extended order code 2

<table>
<thead>
<tr>
<th>Navigation</th>
<th>Expert → Diagnostics → Device info → Ext. order cd. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>For displaying the second part of the extended order code.</td>
</tr>
<tr>
<td>User interface</td>
<td>Character string</td>
</tr>
</tbody>
</table>

| Additional information | For additional information, see **Extended order code 1** parameter (→ 70) |

#### Extended order code 3

<table>
<thead>
<tr>
<th>Navigation</th>
<th>Expert → Diagnostics → Device info → Ext. order cd. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>For displaying the third part of the extended order code.</td>
</tr>
<tr>
<td>User interface</td>
<td>Character string</td>
</tr>
</tbody>
</table>

| Additional information | For additional information, see **Extended order code 1** parameter (→ 70) |
**ENP version**

**Navigation**
- Expert → Diagnostics → Device info → ENP version

**Description**
Displays the version of the electronic nameplate.

**User interface**
Character string

**Factory setting**
2.02.00

**Additional information**

*Description*
This electronic nameplate stores a data record for device identification that includes more data than the nameplates attached to the outside of the device.

---

**Configuration counter**

**Navigation**
- Expert → Diagnostics → Device info → Config. counter

**Description**
Displays the number of parameter modifications for the device. When the user changes a parameter setting, this counter is incremented.

**User interface**
0 to 65 535

---

### 3.6.4 "Simulation" submenu

**Navigation**
- Expert → Diagnostics → Simulation

<table>
<thead>
<tr>
<th>▶ Simulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign simulation process variable  →  71</td>
</tr>
<tr>
<td>Value process variable  →  72</td>
</tr>
<tr>
<td>Simulation device alarm  →  72</td>
</tr>
</tbody>
</table>

---

**Assign simulation process variable**

**Navigation**
- Expert → Diagnostics → Simulation → Assign proc.var.

**Description**
Use this function to select a process variable for the simulation process that is activated.
Selection
- Off
- Volume flow

Factory setting
Off

Additional information
Description
The simulation value of the selected process variable is specified in the Value process variable parameter (→ 72).

Value process variable

Navigation
Expert → Diagnostics → Simulation → Value proc. var.

Prerequisite
In the Assign simulation process variable parameter (→ 71), the Volume flow option is selected.

Description
Use this function to enter a simulation value for the selected process variable. Subsequent measured value processing and the signal output use this simulation value. In this way, users can verify whether the measuring device has been configured correctly.

User entry
Depends on the process variable selected

Factory setting
0

Additional information
User entry
The unit of the displayed measured value is taken from the System units submenu (→ 18).

Simulation device alarm

Navigation
Expert → Diagnostics → Simulation → Sim. alarm

Description
Use this function to switch the device alarm on and off.

Selection
- Off
- On

Factory setting
Off

Additional information
Description
In this way, users can verify the correct function of downstream switching units.
4 Country-specific factory settings

4.1 SI units

Not valid for USA and Canada.

4.1.1 System units

<table>
<thead>
<tr>
<th>Volume</th>
<th>ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume flow</td>
<td>ml/s</td>
</tr>
</tbody>
</table>

4.1.2 On value low flow cut off

The switch-on point depends on the type of medium and the nominal diameter.

<table>
<thead>
<tr>
<th>Nominal diameter [mm]</th>
<th>On value low flow cut off (v ~ 0.04 m/s) [ml/s]</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>0.5</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>15K¹)</td>
<td>7</td>
</tr>
<tr>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>25</td>
<td>16</td>
</tr>
</tbody>
</table>

¹) Conical version (corresponds to DN 12)

4.2 US units

Only valid for USA and Canada.

4.2.1 System units

<table>
<thead>
<tr>
<th>Volume</th>
<th>fl oz (us)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume flow</td>
<td>fl oz/s (us)</td>
</tr>
</tbody>
</table>

4.2.2 On value low flow cut off

The switch-on point depends on the type of medium and the nominal diameter.

<table>
<thead>
<tr>
<th>Nominal diameter [in]</th>
<th>On value low flow cut off (v ~ 0.13 ft/s) [oz fl/s]</th>
</tr>
</thead>
<tbody>
<tr>
<td>¹/₄₂</td>
<td>0.02</td>
</tr>
<tr>
<td>¹/₁₆</td>
<td>0.08</td>
</tr>
<tr>
<td>¹/₄K¹)</td>
<td>0.25</td>
</tr>
</tbody>
</table>
| Nominal diameter [in] | On value low flow cut off 
(v ~ 0.13 ft/s) [oz fl/s] |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>⅛</td>
<td>0.25</td>
</tr>
<tr>
<td>1</td>
<td>0.53</td>
</tr>
</tbody>
</table>

1) Conical version (corresponds to DN 12)
## 5 Explanation of abbreviated units

### 5.1 SI units

<table>
<thead>
<tr>
<th>Process variable</th>
<th>Units</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>cm³, dm³, m³</td>
<td>Cubic centimeter, cubic decimeter, cubic meter</td>
</tr>
<tr>
<td></td>
<td>ml, l, hl, l, Ml</td>
<td>Milliliter, liter, hectoliter, megaliter</td>
</tr>
<tr>
<td>Volume flow</td>
<td>cm³/s, cm³/min, cm³/h, cm³/d</td>
<td>Cubic centimeter/time unit</td>
</tr>
<tr>
<td></td>
<td>dm³/s, dm³/min, dm³/h, dm³/d</td>
<td>Cubic decimeter/time unit</td>
</tr>
<tr>
<td></td>
<td>m³/s, m³/min, m³/h, m³/d</td>
<td>Cubic meter/time unit</td>
</tr>
<tr>
<td></td>
<td>ml/s, ml/min, ml/h, ml/d</td>
<td>Milliliter/time unit</td>
</tr>
<tr>
<td></td>
<td>l/s, l/min, l/h, l/d</td>
<td>Liter/time unit</td>
</tr>
<tr>
<td></td>
<td>hl/s, hl/min, hl/h, hl/d</td>
<td>Hectoliter/time unit</td>
</tr>
<tr>
<td></td>
<td>Ml/s, Ml/min, Ml/h, Ml/d</td>
<td>Megaliter/time unit</td>
</tr>
<tr>
<td>Time</td>
<td>m, h, d, y</td>
<td>Minute, hour, day, year</td>
</tr>
</tbody>
</table>

### 5.2 US units

<table>
<thead>
<tr>
<th>Process variable</th>
<th>Units</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>af</td>
<td>Acre foot</td>
</tr>
<tr>
<td></td>
<td>ft³</td>
<td>Cubic foot</td>
</tr>
<tr>
<td></td>
<td>fl oz (us), gal (us), kgal (us), Mgal (us)</td>
<td>Fluid ounce, gallon, kilogallon, million gallon</td>
</tr>
<tr>
<td></td>
<td>bbl (us;liq.), bbl (us;beer), bbl (us;oil), bbl (us;tank)</td>
<td>Barrel (normal liquids), barrel (beer), barrel (petrochemicals), barrel (filling tanks)</td>
</tr>
<tr>
<td>Volume flow</td>
<td>af/s, af/min, af/h, af/d</td>
<td>Acre foot/time unit</td>
</tr>
<tr>
<td></td>
<td>ft³/s, ft³/min, ft³/h, ft³/d</td>
<td>Cubic foot/time unit</td>
</tr>
<tr>
<td></td>
<td>fl oz/s (us), fl oz/min (us), fl oz/h (us), fl oz/d (us)</td>
<td>Fluid ounce/time unit</td>
</tr>
<tr>
<td></td>
<td>gal/s (us), gal/min (us), gal/h (us), gal/d (us)</td>
<td>Gallon/time unit</td>
</tr>
<tr>
<td></td>
<td>kgal/s (us), kgal/min (us), kgal/h (us), kgal/d (us)</td>
<td>Kilogallon/time unit</td>
</tr>
<tr>
<td></td>
<td>Mgal/s (us), Mgal/min (us), Mgal/h (us), Mgal/d (us)</td>
<td>Million gallon/time unit</td>
</tr>
<tr>
<td></td>
<td>bbl/s (us;liq.), bbl/min (us;liq.), bbl/h (us;liq.), bbl/d (us;liq.)</td>
<td>Barrel/time unit (normal liquids) Normal liquids: 31.5 gal/bbl</td>
</tr>
<tr>
<td></td>
<td>bbl/s (us;beer), bbl/min (us;beer), bbl/h (us;beer), bbl/d (us;beer)</td>
<td>Barrel/time unit (beer) Beer: 31.0 gal/bbl</td>
</tr>
<tr>
<td></td>
<td>bbl/s (us;oil), bbl/min (us;oil), bbl/h (us;oil), bbl/d (us;oil)</td>
<td>Barrel/time unit (petrochemicals) Petrochemicals: 42.0 gal/bbl</td>
</tr>
<tr>
<td></td>
<td>bbl/s (us;tank), bbl/min (us;tank), bbl/h (us;tank), bbl/d (us;tank)</td>
<td>Barrel/time unit (filling tank) Filling tanks: 55.0 gal/bbl</td>
</tr>
<tr>
<td>Time</td>
<td>m, h, d, y</td>
<td>Minute, hour, day, year</td>
</tr>
<tr>
<td></td>
<td>am, pm</td>
<td>Ante meridiem (before midday), post meridiem (after midday)</td>
</tr>
</tbody>
</table>
### 5.3 Imperial units

<table>
<thead>
<tr>
<th>Process variable</th>
<th>Units</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>gal (imp), Mgal (imp)</td>
<td>Gallon, mega gallon</td>
</tr>
<tr>
<td></td>
<td>bbl (imp;beer), bbl (imp;oil)</td>
<td>Barrel (beer), barrel (petrochemicals)</td>
</tr>
<tr>
<td>Volume flow</td>
<td>gal/s (imp), gal/min (imp), gal/h (imp), gal/d (imp)</td>
<td>Gallon/time unit</td>
</tr>
<tr>
<td></td>
<td>Mgal/s (imp), Mgal/min (imp), Mgal/h (imp), Mgal/d (imp)</td>
<td>Mega gallon/time unit</td>
</tr>
<tr>
<td></td>
<td>bbl/s (imp;beer), bbl/min (imp;beer), bbl/h (imp;beer), bbl/d (imp;beer)</td>
<td>Barrel/time unit (beer) Beer: 36.0 gal/bbl</td>
</tr>
<tr>
<td></td>
<td>bbl/s (imp;oil), bbl/min (imp;oil), bbl/h (imp;oil), bbl/d (imp;oil)</td>
<td>Barrel/time unit (petrochemicals) Petrochemicals: 34.97 gal/bbl</td>
</tr>
<tr>
<td>Time</td>
<td>m, h, d, y</td>
<td>Minute, hour, day, year</td>
</tr>
<tr>
<td></td>
<td>am, pm</td>
<td>Ante meridiem (before midday), post meridiem (after midday)</td>
</tr>
</tbody>
</table>
# Modbus RS485 Register Information

## 6.1 Notes

### 6.1.1 Structure of the register information

The individual parts of a parameter description are described in the following section:

<table>
<thead>
<tr>
<th>Navigation: navigation path to the parameter</th>
<th>Data type</th>
<th>Access type</th>
<th>Selection/input</th>
<th>Specified number of pages and cross-reference to standard parameter description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of parameter</td>
<td>Indicated in decimal numerical format</td>
<td>Possible type of access to parameter:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>Register</td>
<td>- Float length = 4 byte</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Integer length = 2 byte</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- String length, depending on parameter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data type</td>
<td></td>
<td>- Read access via function codes 03, 04 or 23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access type</td>
<td></td>
<td>- Write access via function codes 06, 16 or 23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selection</td>
<td></td>
<td>List of the individual options for the parameter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input range for the parameter</td>
<td></td>
<td>Specified number of pages and cross-reference to standard parameter description</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### NOTICE

If non-volatile device parameters are modified via the MODBUS RS485 function codes 06, 16 or 23, the change is saved in the EEPROM of the measuring device. The number of writes to the EEPROM is technically restricted to a maximum of 1 million.

- Make sure to comply with this limit since, if it is exceeded, data loss and measuring device failure will result.
- Avoid constantly writing non-volatile device parameters via the MODBUS RS485.

### 6.1.2 Address model

The Modbus RS485 register addresses of the measuring device are implemented in accordance with the "Modbus Applications Protocol Specification V1.1".

In addition, systems are used that work with the register address model "Modicon Modbus Protocol Reference Guide (PI-MBUS-300 Rev. J)".

Depending on the function code used, a number is added at the start of the register address with this specification:

- '3' → 'Read' access
- '4' → 'Write' access
6.2 Overview of the Expert operating menu

The following table provides an overview of the menu structure of the expert operating menu and its parameters. The page reference indicates where the associated description of the submenu or parameter can be found.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>03 04 23</td>
<td>Read</td>
<td>XXXX Example: mass flow = 2007</td>
<td>3XXXX Example: mass flow = 32007</td>
</tr>
<tr>
<td>06 16 23</td>
<td>Write</td>
<td>XXXX Example: reset totalizer = 6401</td>
<td>4XXXX Example: reset totalizer = 46401</td>
</tr>
<tr>
<td>Category</td>
<td>Register Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>----------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>System units</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume flow unit</td>
<td>85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume unit</td>
<td>86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date/time format</td>
<td>87</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>User-specific units</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Process parameters</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow override</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Low flow cut off</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sensor adjustment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation direction</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integration time</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring period</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Process variable adjustment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Calibration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal diameter</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calibration factor</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zero point</td>
<td>88</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Input</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Status input</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assign status input</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value status input</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active level</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response time status input</td>
<td>89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Modbus RS485 Register Information

Dosimag Modbus RS485

<table>
<thead>
<tr>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modbus configuration</td>
</tr>
<tr>
<td>Bus address</td>
</tr>
<tr>
<td>Baudrate</td>
</tr>
<tr>
<td>Data transfer mode</td>
</tr>
<tr>
<td>Parity</td>
</tr>
<tr>
<td>Byte order</td>
</tr>
<tr>
<td>Telegram delay</td>
</tr>
<tr>
<td>Assign diagnostic behavior</td>
</tr>
<tr>
<td>Failure mode</td>
</tr>
<tr>
<td>Interpreter mode</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Modbus information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device ID</td>
</tr>
<tr>
<td>Device revision</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Modbus data map</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scan list register 0 to 15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset all totalizers</td>
</tr>
<tr>
<td>Reset overall batching quantity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Totalizer 1 to 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign process variable</td>
</tr>
<tr>
<td>Volume unit</td>
</tr>
<tr>
<td>Totalizer operation mode</td>
</tr>
<tr>
<td>Control Totalizer 1 to 3</td>
</tr>
<tr>
<td>Section</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>Preset value 1 to 3</td>
</tr>
<tr>
<td>Failure mode</td>
</tr>
<tr>
<td><strong>Batching</strong></td>
</tr>
<tr>
<td>Operation</td>
</tr>
<tr>
<td>Configuration</td>
</tr>
<tr>
<td><strong>Diagnostics</strong></td>
</tr>
<tr>
<td>Actual diagnostics</td>
</tr>
<tr>
<td>Timestamp</td>
</tr>
<tr>
<td>Previous diagnostics</td>
</tr>
<tr>
<td>Timestamp</td>
</tr>
<tr>
<td>Operating time from restart</td>
</tr>
<tr>
<td>Operating time</td>
</tr>
<tr>
<td><strong>Diagnostic list</strong></td>
</tr>
<tr>
<td>Diagnostics 1</td>
</tr>
<tr>
<td>Diagnostics 1</td>
</tr>
<tr>
<td>Timestamp</td>
</tr>
<tr>
<td>Diagnostics 2</td>
</tr>
<tr>
<td>Diagnostics 2</td>
</tr>
<tr>
<td>Timestamp</td>
</tr>
<tr>
<td>Diagnostics 3</td>
</tr>
<tr>
<td>Diagnostics 3</td>
</tr>
<tr>
<td>Timestamp</td>
</tr>
<tr>
<td>Diagnostics 4</td>
</tr>
</tbody>
</table>
### Modbus RS485 Register Information

- **Diagnostics 4**  
- **Timestamp**  
- **Diagnostics 5**  
- **Diagnostics 5**  
- **Timestamp**

#### Event logbook
- **Filter options**

#### Device information
- **Device tag**  
- **Serial number**  
- **Firmware version**  
- **Device name**  
- **Order code**  
- **Extended order code 1**  
- **Extended order code 2**  
- **Extended order code 3**  
- **ENP version**  
- **Configuration counter**

#### Simulation
- **Assign simulation process variable**  
- **Value process variable**  
- **Simulation device alarm**
### 6.3 Register information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locking status</td>
<td>4918</td>
<td>Integer</td>
<td>Read</td>
<td>512 = Temporarily locked</td>
</tr>
<tr>
<td>Access status tooling</td>
<td>2178</td>
<td>Integer</td>
<td>Read</td>
<td>0 = Operator, 1 = Maintenance</td>
</tr>
<tr>
<td>Enter access code</td>
<td>2177</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 to 9999</td>
</tr>
</tbody>
</table>

#### 6.3.1 "System" submenu

**"Diagnostic handling" submenu**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarm delay</td>
<td>6808</td>
<td>Float</td>
<td>Read / Write</td>
<td>0 to 60 s</td>
</tr>
</tbody>
</table>

**"Diagnostic behavior" submenu**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign behavior of diagnostic no. 937</td>
<td>2396</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off, 1 = Logbook entry only, 2 = Warning, 3 = Alarm</td>
</tr>
<tr>
<td>Assign behavior of diagnostic no. 991</td>
<td>2809</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off, 1 = Logbook entry only, 2 = Warning, 3 = Alarm</td>
</tr>
</tbody>
</table>

**"Administration" submenu**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device reset</td>
<td>6817</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Cancel, 1 = Restart device, 2 = To delivery settings</td>
</tr>
<tr>
<td>Permanent storage</td>
<td>6907</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off, 1 = On</td>
</tr>
<tr>
<td>Device tag</td>
<td>4901</td>
<td>String</td>
<td>Read / Write</td>
<td>Max. 16 characters such as letters, numbers or special characters (e.g. @, %, /).</td>
</tr>
</tbody>
</table>
6.3.2 "Sensor" submenu

"Measured values" submenu

"Process variables" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume flow</td>
<td>2007</td>
<td>Float</td>
<td>Read</td>
<td>Signed floating-point number</td>
</tr>
</tbody>
</table>

"Totalizer" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totalizer value 1 to 3</td>
<td>1: 2610 2: 2810 3: 3010</td>
<td>Float</td>
<td>Read</td>
<td>Signed floating-point number</td>
</tr>
<tr>
<td>Totalizer overflow 1 to 3</td>
<td>1: 2612 2: 2812 3: 3012</td>
<td>Float</td>
<td>Read</td>
<td>Integer with sign</td>
</tr>
</tbody>
</table>

"Input values" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value status input</td>
<td>2746</td>
<td>Integer</td>
<td>Read</td>
<td>9 = Low 10 = High</td>
</tr>
</tbody>
</table>
"System units" submenu
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
</table>
| Volume flow unit   | 2103     | Integer   | Read / Write    | 0 = cm³/s
|                    |          |           |                 | 1 = cm³/min
|                    |          |           |                 | 2 = cm³/h
|                    |          |           |                 | 3 = cm³/d
|                    |          |           |                 | 4 = dm³/s
|                    |          |           |                 | 5 = dm³/min
|                    |          |           |                 | 6 = dm³/h
|                    |          |           |                 | 7 = dm³/d
|                    |          |           |                 | 8 = m³/s
|                    |          |           |                 | 9 = m³/min
|                    |          |           |                 | 10 = m³/h
|                    |          |           |                 | 11 = m³/d
|                    |          |           |                 | 12 = ml/s (*)
|                    |          |           |                 | 13 = ml/min
|                    |          |           |                 | 14 = ml/h
|                    |          |           |                 | 15 = ml/d
|                    |          |           |                 | 16 = l/s
|                    |          |           |                 | 17 = l/min
|                    |          |           |                 | 18 = l/h
|                    |          |           |                 | 19 = l/d
|                    |          |           |                 | 20 = l/s
|                    |          |           |                 | 21 = l/min
|                    |          |           |                 | 22 = l/h
|                    |          |           |                 | 23 = l/d
|                    |          |           |                 | 24 = M³/s
|                    |          |           |                 | 25 = M³/min
|                    |          |           |                 | 26 = M³/h
|                    |          |           |                 | 27 = M³/d
|                    |          |           |                 | 32 = af/s
|                    |          |           |                 | 33 = af/min
|                    |          |           |                 | 34 = af/h
|                    |          |           |                 | 35 = af/d
|                    |          |           |                 | 36 = ft³/s
|                    |          |           |                 | 37 = ft³/min
|                    |          |           |                 | 38 = ft³/h
|                    |          |           |                 | 39 = ft³/d
|                    |          |           |                 | 40 = fl oz/s (us)
|                    |          |           |                 | 41 = fl oz/min (us)
|                    |          |           |                 | 42 = fl oz/h (us)
|                    |          |           |                 | 43 = fl oz/d (us)
|                    |          |           |                 | 44 = gal/s (us)
|                    |          |           |                 | 45 = gal/min (us)
|                    |          |           |                 | 46 = gal/h (us)
|                    |          |           |                 | 47 = gal/d (us)
|                    |          |           |                 | 48 = Mgal/s (us)
|                    |          |           |                 | 49 = Mgal/min (us)
|                    |          |           |                 | 50 = Mgal/h (us)
|                    |          |           |                 | 51 = Mgal/d (us)
|                    |          |           |                 | 52 = bbl/s (us.liq.)
|                    |          |           |                 | 53 = bbl/min (us.liq.)
|                    |          |           |                 | 54 = bbl/h (us.liq.)
|                    |          |           |                 | 55 = bbl/d (us.liq.)
|                    |          |           |                 | 56 = bbl/s (us.beer)
|                    |          |           |                 | 57 = bbl/min (us.beer)
|                    |          |           |                 | 58 = bbl/h (us.beer)
|                    |          |           |                 | 59 = bbl/d (us.beer)
|                    |          |           |                 | 60 = bbl/s (us.oil)
|                    |          |           |                 | 61 = bbl/min (us.oil)
|                    |          |           |                 | 62 = bbl/h (us.oil)
|                    |          |           |                 | 63 = bbl/d (us.oil)
|                    |          |           |                 | 64 = bbl/s (us.tank)
|                    |          |           |                 | 65 = bbl/min (us.tank)
|                    |          |           |                 | 66 = bbl/h (us.tank)
|                    |          |           |                 | 67 = bbl/d (us.tank)
|                    |          |           |                 | 68 = gal/s (imp)
|                    |          |           |                 | 69 = gal/min (imp)
|                    |          |           |                 | 70 = gal/h (imp)
### Navigation: Expert → Sensor → System units

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume unit</td>
<td>2104</td>
<td>Integer</td>
<td>Read / Write</td>
<td></td>
</tr>
<tr>
<td>User volume text</td>
<td>2542</td>
<td>String</td>
<td>Read / Write</td>
<td>Max. 10 characters such as letters, numbers or special characters (@, %, /)</td>
</tr>
<tr>
<td>User volume factor</td>
<td>2119</td>
<td>Float</td>
<td>Read / Write</td>
<td>Signed floating-point number</td>
</tr>
</tbody>
</table>
### "Process parameters" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow override</td>
<td>5503</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off 1 = On</td>
</tr>
</tbody>
</table>

### "Low flow cut off" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign process variable</td>
<td>5101</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off 1 = Volume flow</td>
</tr>
<tr>
<td>On value low flow cutoff</td>
<td>5138</td>
<td>Float</td>
<td>Read / Write</td>
<td>Signed floating-point number</td>
</tr>
<tr>
<td>Off value low flow cutoff</td>
<td>5104</td>
<td>Float</td>
<td>Read / Write</td>
<td>0 to 100.0 %</td>
</tr>
<tr>
<td>Pressure shock suppression</td>
<td>5140</td>
<td>Float</td>
<td>Read / Write</td>
<td>0 to 100 s</td>
</tr>
</tbody>
</table>

### "Sensor adjustment" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation direction</td>
<td>5501</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Flow in arrow direction 1 = Flow against arrow direction</td>
</tr>
<tr>
<td>Integration time</td>
<td>2260</td>
<td>Float</td>
<td>Read</td>
<td>1 to 65 ms</td>
</tr>
<tr>
<td>Measuring period</td>
<td>2852</td>
<td>Float</td>
<td>Read</td>
<td>6 to 80 ms</td>
</tr>
</tbody>
</table>

### "Process variable adjustment" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume flow offset</td>
<td>5521</td>
<td>Float</td>
<td>Read / Write</td>
<td>Signed floating-point number</td>
</tr>
<tr>
<td>Volume flow factor</td>
<td>5519</td>
<td>Float</td>
<td>Read / Write</td>
<td>Positive floating-point number</td>
</tr>
</tbody>
</table>

### "Calibration" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal diameter</td>
<td>2048</td>
<td>String</td>
<td>Read</td>
<td>DNxx / x’</td>
</tr>
<tr>
<td>Calibration factor</td>
<td>2313</td>
<td>Float</td>
<td>Read</td>
<td>Positive floating-point number</td>
</tr>
<tr>
<td>Zero point</td>
<td>2870</td>
<td>Float</td>
<td>Read</td>
<td>Signed floating-point number</td>
</tr>
</tbody>
</table>
## 6.3.3 "Input" submenu

### "Status input" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
</table>
| Assign status input        | 2506     | Integer   | Read / Write | 0 = Off  
1 = Flow override  
2 = Reset all totalizers  
3 = Reset totalizer 1  
4 = Reset totalizer 2  
5 = Reset totalizer 3  
6 = Start batch  
7 = Start & stop batch |
| Value status input         | 2746     | Integer   | Read       | 9 = Low  
10 = High |
| Active level               | 2530     | Integer   | Read / Write | 9 = Low  
10 = High |
| Response time status input | 3404     | Float     | Read / Write | 10 to 200 ms |

## 6.3.4 "Communication" submenu

### "Modbus configuration" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus address</td>
<td>4910</td>
<td>Integer</td>
<td>Read / Write</td>
<td>1 to 247</td>
</tr>
</tbody>
</table>
| Baudrate                   | 4912     | Integer   | Read / Write | 0 = 1200 BAUD  
1 = 2400 BAUD  
2 = 4800 BAUD  
3 = 9600 BAUD  
4 = 19200 BAUD  
5 = 38400 BAUD  
6 = 57600 BAUD  
7 = 115200 BAUD |
| Data transfer mode         | 4913     | Integer   | Read / Write | 0 = RTU  
1 = ASCII |
| Parity                     | 4914     | Integer   | Read / Write | 0 = Even  
1 = Odd  
2 = None / 2 stop bits  
3 = None / 1 stop bit |
| Byte order                 | 4915     | Integer   | Read / Write | 0 = 0-1-2-3  
1 = 3-2-1-0  
2 = 2-3-0-1  
3 = 1-0-3-2 |
| Telegram delay             | 4916     | Float     | Read / Write | 0 to 100 ms |
| Assign diagnostic behavior | 4921     | Integer   | Read / Write | 0 = Off  
1 = Warning  
2 = Alarm  
3 = Alarm or warning |
| Failure mode               | 4920     | Integer   | Read / Write | 0 = NaN value  
1 = Last valid value |
| Interpreter mode           | 4925     | Integer   | Read / Write | 0 = Standard  
1 = Ignore surplus bytes |
## "Modbus information" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device ID</td>
<td>2547</td>
<td>Integer</td>
<td>Read</td>
<td>4-digit hexadecimal number</td>
</tr>
<tr>
<td>Device revision</td>
<td>4481</td>
<td>Integer</td>
<td>Read</td>
<td>4-digit hexadecimal number</td>
</tr>
</tbody>
</table>

## "Modbus data map" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
</table>

## 6.3.5 "Application" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset all totalizers</td>
<td>2609</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Cancel 1 = Reset + totalize</td>
</tr>
<tr>
<td>Reset overall batching quantity</td>
<td>2913</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Cancel 3 = Reset</td>
</tr>
</tbody>
</table>
**“Totalizer 1 to 3” submenu**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign process variable</td>
<td>1: 2601</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off&lt;br&gt;1 = Volume flow</td>
<td>0, 1</td>
</tr>
<tr>
<td></td>
<td>2: 2801</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume unit</td>
<td>1: 2603</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = cm³&lt;br&gt;1 = dm³&lt;br&gt;2 = m³&lt;br&gt;3 = ml (+)&lt;br&gt;4 = 1&lt;br&gt;5 = hl&lt;br&gt;6 = Ml Mega&lt;br&gt;8 = af&lt;br&gt;9 = ft³&lt;br&gt;10 = fl oz (us)&lt;br&gt;11 = gal (us)&lt;br&gt;12 = Mgal (us)&lt;br&gt;13 = bbl (us;liq.)&lt;br&gt;14 = bbl (us;beer)&lt;br&gt;15 = bbl (us;oil)&lt;br&gt;16 = bbl (us;tank)&lt;br&gt;17 = gal (imp)&lt;br&gt;18 = Mgal (imp)&lt;br&gt;19 = bbl (imp;beer)&lt;br&gt;20 = bbl (imp;oil)&lt;br&gt;21 = User vol.&lt;br&gt;22 = kgal (us)</td>
<td>0, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22</td>
</tr>
<tr>
<td></td>
<td>2: 2803</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totalizer operation mode</td>
<td>1: 2605</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Net flow total&lt;br&gt;1 = Forward flow total&lt;br&gt;2 = Reverse flow total</td>
<td>0, 1, 2</td>
</tr>
<tr>
<td></td>
<td>2: 2805</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3005</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Totalizer 1 to 3</td>
<td>1: 2608</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Totalize&lt;br&gt;1 = Reset + totalize&lt;br&gt;2 = Reset + hold&lt;br&gt;3 = Reset + hold&lt;br&gt;4 = Reset + totalize</td>
<td>0, 1, 2, 3, 4</td>
</tr>
<tr>
<td></td>
<td>2: 2808</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3008</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preset value 1 to 3</td>
<td>1: 2590</td>
<td>Float</td>
<td>Read / Write</td>
<td>Signed floating-point number</td>
<td>0, 1, 2</td>
</tr>
<tr>
<td></td>
<td>2: 2592</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 2594</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Failure mode</td>
<td>1: 2606</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Stop&lt;br&gt;1 = Actual value&lt;br&gt;2 = Last valid value</td>
<td>0, 1, 2</td>
</tr>
<tr>
<td></td>
<td>2: 2806</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3006</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**"Batching" submenu**

**"Operation" submenu**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batch control</td>
<td>2829</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Stop&lt;br&gt;6 = Start</td>
<td>0, 6</td>
</tr>
<tr>
<td>Batch counter</td>
<td>3520</td>
<td>Integer</td>
<td>Read</td>
<td>Positive integer</td>
<td></td>
</tr>
<tr>
<td>Quantity last batch</td>
<td>2844</td>
<td>Float</td>
<td>Read</td>
<td>Signed floating-point number</td>
<td></td>
</tr>
<tr>
<td>Quantity last drip</td>
<td>3238</td>
<td>Float</td>
<td>Read</td>
<td>Signed floating-point number</td>
<td></td>
</tr>
<tr>
<td>Time last batch</td>
<td>2992</td>
<td>Float</td>
<td>Read</td>
<td>Positive floating-point number</td>
<td></td>
</tr>
<tr>
<td>Close time last batch</td>
<td>2994</td>
<td>Float</td>
<td>Read</td>
<td>Positive floating-point number</td>
<td></td>
</tr>
<tr>
<td>Current drip correction quantity</td>
<td>3240</td>
<td>Float</td>
<td>Read</td>
<td>Signed floating-point number</td>
<td></td>
</tr>
</tbody>
</table>
### Modbus RS485 Register Information

#### Navigation: Expert → Application → Batching → Operation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall batching quantity</td>
<td>3262</td>
<td>Float</td>
<td>Read</td>
<td>Signed floating-point number</td>
</tr>
<tr>
<td>Overflow number overall batch. quantity</td>
<td>3552</td>
<td>Float</td>
<td>Read</td>
<td>~32000.0 to 32000.0</td>
</tr>
<tr>
<td>Batch unit</td>
<td>21295</td>
<td>Integer</td>
<td>Read</td>
<td>0 = cm³ 1 = dm³ 3 = ml 4 = l 9 = ft³ 10 = fl oz (us) 11 = gal (us) 21 = User vol.</td>
</tr>
<tr>
<td>Switch output function 1</td>
<td>2488</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Batching (↑) 1 = Open 2 = Close</td>
</tr>
<tr>
<td>Switch status 1</td>
<td>3518</td>
<td>Integer</td>
<td>Read</td>
<td>1 = Open 2 = Close</td>
</tr>
<tr>
<td>Switch output function 2</td>
<td>2489</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Batching (↑) 1 = Open 2 = Close</td>
</tr>
<tr>
<td>Switch status 2</td>
<td>3519</td>
<td>Integer</td>
<td>Read</td>
<td>1 = Open 2 = Closed</td>
</tr>
</tbody>
</table>

*Configuration* submenu

#### Navigation: Expert → Application → Batching → Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batch profile</td>
<td>3000</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Profile 1 1 = Profile 2 2 = Profile 3 3 = Profile 4 4 = Profile 5 5 = Profile 6</td>
</tr>
</tbody>
</table>

*Settings batch profile 1 to 6* submenu

#### Navigation: Expert → Application → Batching → Configuration → Settings batch profile 1 to 6

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input selector</td>
<td>1: 3580  2: 3581  3: 3582  4: 3583  5: 3584  6: 3585</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off 1 = Volume flow</td>
</tr>
<tr>
<td>Batch unit</td>
<td>1: 3530  2: 3531  3: 3532  4: 3533  5: 3534  6: 3535</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = cm³ 1 = dm³ 3 = ml (↑) 4 = l 9 = ft³ 10 = fl oz (us) 11 = gal (us) 21 = User vol.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Register</td>
<td>Data type</td>
<td>Access</td>
<td>Selection / User entry / User interface</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>----------------</td>
<td>-----------</td>
<td>------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Batch quantity</td>
<td>1: 3586</td>
<td>Float</td>
<td>Read / Write</td>
<td>Positive floating-point number</td>
</tr>
<tr>
<td></td>
<td>2: 3588</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3590</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4: 3592</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5: 3594</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: 3596</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring time drip quantity</td>
<td>1: 3646</td>
<td>Float</td>
<td>Read / Write</td>
<td>0.01 to 100 s</td>
</tr>
<tr>
<td></td>
<td>2: 3648</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3650</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4: 3652</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5: 3654</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: 3656</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed compensation quantity</td>
<td>1: 3634</td>
<td>Float</td>
<td>Read / Write</td>
<td>Signed floating-point number</td>
</tr>
<tr>
<td></td>
<td>2: 3636</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3638</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4: 3640</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5: 3642</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: 3644</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Drip correction mode            | 1: 3880        | Integer   | Read / Write | 0 = Off  
1 = Fixed time  
2 = Fixed time or low flow cut off |
|                                 | 2: 3881        |           |            |                                         |
|                                 | 3: 3882        |           |            |                                         |
|                                 | 4: 3883        |           |            |                                         |
|                                 | 5: 3884        |           |            |                                         |
|                                 | 6: 3885        |           |            |                                         |
| Filter depth drip median        | 1: 3598        | Integer   | Read / Write | 0 = Off  
1 = Median 3  
2 = Median 5  
3 = Median 7 |
|                                 | 2: 3599        |           |            |                                         |
|                                 | 3: 3600        |           |            |                                         |
|                                 | 4: 3601        |           |            |                                         |
|                                 | 5: 3602        |           |            |                                         |
|                                 | 6: 3603        |           |            |                                         |
| Average drip correction quantity| 1: 3658        | Integer   | Read / Write | 1 to 100                               |
|                                 | 2: 3659        |           |            |                                         |
|                                 | 3: 3660        |           |            |                                         |
|                                 | 4: 3661        |           |            |                                         |
|                                 | 5: 3662        |           |            |                                         |
|                                 | 6: 3663        |           |            |                                         |
| Batch levels                    | 1: 3664        | Integer   | Read / Write | 0 = One-level  
1 = Two-level  
2 = One-level and blow out |
|                                 | 2: 3665        |           |            |                                         |
|                                 | 3: 3666        |           |            |                                         |
|                                 | 4: 3667        |           |            |                                         |
|                                 | 5: 3668        |           |            |                                         |
|                                 | 6: 3669        |           |            |                                         |
| Start level 2                   | 1: 3820        | Float     | Read / Write | 0 to 100 %                             |
|                                 | 2: 3822        |           |            |                                         |
|                                 | 3: 3824        |           |            |                                         |
|                                 | 4: 3826        |           |            |                                         |
|                                 | 5: 3828        |           |            |                                         |
|                                 | 6: 3830        |           |            |                                         |
| Stop level 2                    | 1: 3832        | Float     | Read / Write | 0 to 100 %                             |
|                                 | 2: 3834        |           |            |                                         |
|                                 | 3: 3836        |           |            |                                         |
|                                 | 4: 3838        |           |            |                                         |
|                                 | 5: 3840        |           |            |                                         |
|                                 | 6: 3842        |           |            |                                         |
| Blow out delay                  | 1: 3886        | Float     | Read / Write | 0 to 100 s                             |
|                                 | 2: 3888        |           |            |                                         |
|                                 | 3: 3890        |           |            |                                         |
|                                 | 4: 3892        |           |            |                                         |
|                                 | 5: 3894        |           |            |                                         |
|                                 | 6: 3896        |           |            |                                         |
### Modbus RS485 Register Information

#### Dosimag Modbus RS485

**Navigation: Expert → Application → Batching → Configuration → Settings batch profile 1 to 6**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blow out duration</td>
<td>1: 3922</td>
<td>Float</td>
<td>Read / Write</td>
<td>0 to 100 s</td>
</tr>
<tr>
<td></td>
<td>2: 3924</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3926</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4: 3928</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5: 3930</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: 3932</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum batch time</td>
<td>1: 3850</td>
<td>Float</td>
<td>Read / Write</td>
<td>0 to 10⁶ s</td>
</tr>
<tr>
<td></td>
<td>2: 3852</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3854</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4: 3856</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5: 3858</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: 3860</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum flow rate exceeded</td>
<td>1: 3862</td>
<td>Float</td>
<td>Read / Write</td>
<td>Positive floating-point number</td>
</tr>
<tr>
<td></td>
<td>2: 3864</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3866</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4: 3868</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5: 3870</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: 3872</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disable time pressure shock</td>
<td>1: 3934</td>
<td>Float</td>
<td>Read / Write</td>
<td>0 to 100 s</td>
</tr>
<tr>
<td>suppression</td>
<td>2: 3936</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3: 3938</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4: 3940</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5: 3942</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: 3944</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**6.3.6 "Diagnostics" submenu**

**Navigation: Expert → Diagnostics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual diagnostics</td>
<td>2732</td>
<td>Integer</td>
<td>Read</td>
<td>Symbol for diagnostic behavior, diagnostic code and short message.</td>
</tr>
<tr>
<td>Timestamp</td>
<td>2719</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and seconds (s)</td>
</tr>
<tr>
<td>Actual diagnostics</td>
<td>20190</td>
<td>Integer</td>
<td>Read</td>
<td>0 to 65535</td>
</tr>
<tr>
<td>Previous diagnostics</td>
<td>2734</td>
<td>Integer</td>
<td>Read</td>
<td>Symbol for diagnostic behavior, diagnostic code and short message.</td>
</tr>
<tr>
<td>Timestamp</td>
<td>2068</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and seconds (s)</td>
</tr>
<tr>
<td>Previous diagnostics</td>
<td>20184</td>
<td>Integer</td>
<td>Read</td>
<td>0 to 65535</td>
</tr>
<tr>
<td>Operating time from restart</td>
<td>2624</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and seconds (s)</td>
</tr>
<tr>
<td>Operating time</td>
<td>2631</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and seconds (s)</td>
</tr>
</tbody>
</table>

**"Diagnostic list" submenu**

**Navigation: Expert → Diagnostics → Diagnostic list**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostics 1</td>
<td>2736</td>
<td>Integer</td>
<td>Read</td>
<td>Symbol for diagnostic behavior, diagnostic code and short message.</td>
</tr>
<tr>
<td>Diagnostics 1</td>
<td>20189</td>
<td>Integer</td>
<td>Read</td>
<td>0 to 65535</td>
</tr>
<tr>
<td>Timestamp</td>
<td>2710</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and seconds (s)</td>
</tr>
</tbody>
</table>
## Dosimag Modbus RS485

### Modbus RS485 Register Information

#### Navigation: Expert → Diagnostics → Diagnostic list

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostics 2</td>
<td>2738</td>
<td>Integer</td>
<td>Read</td>
<td>Symbol for diagnostic behavior,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>diagnostic code and short message.</td>
</tr>
<tr>
<td>Diagnostics 2</td>
<td>20188</td>
<td>Integer</td>
<td>Read</td>
<td>0 to 65535</td>
</tr>
<tr>
<td>Timestamp</td>
<td>2701</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>seconds (s)</td>
</tr>
<tr>
<td>Diagnostics 3</td>
<td>2740</td>
<td>Integer</td>
<td>Read</td>
<td>Symbol for diagnostic behavior,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>diagnostic code and short message.</td>
</tr>
<tr>
<td>Diagnostics 3</td>
<td>20187</td>
<td>Integer</td>
<td>Read</td>
<td>0 to 65535</td>
</tr>
<tr>
<td>Timestamp</td>
<td>2692</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>seconds (s)</td>
</tr>
<tr>
<td>Diagnostics 4</td>
<td>2742</td>
<td>Integer</td>
<td>Read</td>
<td>Symbol for diagnostic behavior,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>diagnostic code and short message.</td>
</tr>
<tr>
<td>Diagnostics 4</td>
<td>20186</td>
<td>Integer</td>
<td>Read</td>
<td>0 to 65535</td>
</tr>
<tr>
<td>Timestamp</td>
<td>2683</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>seconds (s)</td>
</tr>
<tr>
<td>Diagnostics 5</td>
<td>2744</td>
<td>Integer</td>
<td>Read</td>
<td>Symbol for diagnostic behavior,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>diagnostic code and short message.</td>
</tr>
<tr>
<td>Diagnostics 5</td>
<td>20185</td>
<td>Integer</td>
<td>Read</td>
<td>0 to 65535</td>
</tr>
<tr>
<td>Timestamp</td>
<td>2675</td>
<td>Integer</td>
<td>Read</td>
<td>Days (d), hours (h), minutes (m) and</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>seconds (s)</td>
</tr>
</tbody>
</table>

#### "Event logbook" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter options</td>
<td>2639</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Failure (F)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 = Maintenance required (M)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8 = Function check (C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>12 = Out of specification (S)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16 = Information (I)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>255 = All</td>
</tr>
</tbody>
</table>

#### "Device information" submenu

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device tag</td>
<td>2026</td>
<td>String</td>
<td>Read / Write</td>
<td>Max. 32 characters such as letters,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>numbers or special characters (e.g. @,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>%, /)</td>
</tr>
<tr>
<td>Serial number</td>
<td>7003</td>
<td>String</td>
<td>Read</td>
<td>A maximum of 11-digit character string</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>comprising letters and numbers.</td>
</tr>
<tr>
<td>Firmware version</td>
<td>7277</td>
<td>String</td>
<td>Read</td>
<td>Character string in the format xx.yy.zz</td>
</tr>
<tr>
<td>Device name</td>
<td>7263</td>
<td>String</td>
<td>Read</td>
<td>Dosimag</td>
</tr>
<tr>
<td>Order code</td>
<td>2058</td>
<td>String</td>
<td>Read</td>
<td>Character string composed of letters,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>numbers and certain punctuation marks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(e.g. /).</td>
</tr>
<tr>
<td>Extended order code 1</td>
<td>2212</td>
<td>String</td>
<td>Read</td>
<td>Character string</td>
</tr>
<tr>
<td>Extended order code 2</td>
<td>2222</td>
<td>String</td>
<td>Read</td>
<td>Character string</td>
</tr>
<tr>
<td>Extended order code 3</td>
<td>2232</td>
<td>String</td>
<td>Read</td>
<td>Character string</td>
</tr>
</tbody>
</table>
### Modbus RS485 Register Information

#### Dosimag Modbus RS485

**Navigation: Expert → Diagnostics → Device information**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENP version</td>
<td>4003</td>
<td>String</td>
<td>Read</td>
<td>Character string 71</td>
</tr>
<tr>
<td>Configuration counter</td>
<td>3100</td>
<td>Integer</td>
<td>Read</td>
<td>0 to 65535 71</td>
</tr>
</tbody>
</table>

**"Simulation" submenu**

**Navigation: Expert → Diagnostics → Simulation**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Register</th>
<th>Data type</th>
<th>Access</th>
<th>Selection / User entry / User interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assign simulation process variable</td>
<td>6813</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off 1 = Volume flow 71</td>
</tr>
<tr>
<td>Value process variable</td>
<td>6814</td>
<td>Float</td>
<td>Read / Write</td>
<td>Depends on the process variable selected 72</td>
</tr>
<tr>
<td>Simulation device alarm</td>
<td>6812</td>
<td>Integer</td>
<td>Read / Write</td>
<td>0 = Off 1 = On 72</td>
</tr>
</tbody>
</table>
Index

A
Access status tooling (Parameter) .................. 10
Active level (Parameter) .......................... 30
Actual diagnostics (Parameter) .................... 59, 60
Administration (Submenu) .......................... 13
Alarm delay (Parameter) .......................... 11
Application (Submenu) .............................. 37
Assign behavior of diagnostic no. 937 (Parameter) 13
Assign behavior of diagnostic no. 991 (Parameter) 12
Assign diagnostic behavior (Parameter) ............ 34
Assign process variable (Parameter) ............... 23, 38
Assign simulation process variable (Parameter) ... 71
Assign status input (Parameter) ................... 29
Average drip correction quantity (Parameter) ..... 53

B
Batch control (Parameter) .......................... 43
Batch counter (Parameter) .......................... 43
Batch levels (Parameter) ............................ 54
Batch profile (Parameter) ........................... 48
Batch quantity (Parameter) .......................... 50
Batch unit (Parameter) ............................. 47, 50
Batching (Submenu) ................................. 42
Baudrate (Parameter) ............................... 32
 Blow out delay (Parameter) ......................... 56
 Blow out duration (Parameter) ....................... 56
 Bus address (Parameter) ............................ 32
 Byte order (Parameter) ............................. 33

C
Calibration (Submenu) ............................... 28
Calibration factor (Parameter) ....................... 28
Close time last batch (Parameter) .................. 45
Communication (Submenu) .......................... 31
Configuration (Submenu) ............................ 48
Configuration counter (Parameter) .................. 71
Control Totalizer 1 to 3 (Parameter) ............... 40
Current drip correction quantity (Parameter) ..... 45

D
Data transfer mode (Parameter) .................... 32
Date/time format (Parameter) ....................... 20
Device ID (Parameter) ................................ 36
Device information (Submenu) ...................... 68
Device name (Parameter) ............................ 69
Device reset (Parameter) ............................ 13
Device revision (Parameter) ......................... 36
Device tag (Parameter) .............................. 14, 68
Diagnostic behavior (Submenu) .................... 12
Diagnostic handling (Submenu) ..................... 11
Diagnostic list (Submenu) ........................... 62
Diagnostics (Submenu) ............................... 58
Diagnostics 1 (Parameter) ........................... 62, 63
Diagnostics 2 (Parameter) ........................... 62, 64
Diagnostics 3 (Parameter) ........................... 64
Diagnostics 4 (Parameter) ........................... 65

Diagnostics 5 (Parameter) ......................... 66
Disable time pressure shock suppression (Parameter) 57
Document
Explanation of the structure of a parameter description .................................................. 6
Function ................................................. 4
Structure .................................................. 4
Symbols used ............................................ 6
Target group ............................................. 4
Using the document ..................................... 4
Document function ...................................... 4
Drip correction mode (Parameter) .................... 52

E
ENP version (Parameter) ............................. 71
Enter access code (Parameter) ...................... 10
Event logbook (Submenu) ............................ 67
Extended order code 1 (Parameter) ................. 70
Extended order code 2 (Parameter) ................. 70
Extended order code 3 (Parameter) ................. 70

F
Factory settings ........................................ 73
SI units ................................................. 73
US units ................................................ 73
Failure mode (Parameter) ............................ 34, 41
Filter depth drip median (Parameter) .............. 53
Filter options (Parameter) ........................... 67
Firmware version (Parameter) ....................... 69
Fixed compensation quantity (Parameter) ........... 51
Flow override (Parameter) ........................... 22
Function see Parameter

I
Input (Submenu) ....................................... 29
Input selector (Parameter) ........................... 49
Input values (Submenu) .............................. 17
Installation direction (Parameter) .................... 26
Integration time (Parameter) ......................... 26
Interpreter mode (Parameter) ....................... 35

L
Locking status (Parameter) ........................... 9
Low flow cut off (Submenu) .......................... 23

M
Maximum batch time (Parameter) .................... 56
Maximum flow rate exceeded (Parameter) ........... 57
Measured values (Submenu) ........................ 15
Measuring period (Parameter) ....................... 26
Measuring time drip quantity (Parameter) ........... 51
Modbus configuration (Submenu) ................... 31
Modbus data map (Submenu) ....................... 36
Modbus information (Submenu) ..................... 35
## Index

### N
- Nominal diameter (Parameter) ........................................ 28

### O
- Off value low flow cutoff (Parameter) .......................... 24
- On value low flow cutoff (Parameter) ......................... 23
- Operating time (Parameter) ............................................ 61
- Operating time from restart (Parameter) ....................... 61
- Operation (Submenu) .................................................. 42
- Order code (Parameter) ............................................... 69
- Overall batching quantity (Parameter) ......................... 46
- Overflow number overall batch. quantity (Parameter) .... 46

### P
- Parameter
  - Structure of a parameter description ....................... 6
  - Parity (Parameter) ................................................... 33
  - Permanent storage (Parameter) .............................. 14
  - Preset value 1 to 3 (Parameter) ............................. 41
  - Pressure shock suppression (Parameter) .................... 24
  - Previous diagnostics (Parameter) .......................... 60, 61
  - Process parameters (Submenu) ............................... 22
  - Process variable adjustment (Submenu) ................. 27
  - Process variables (Submenu) .................................... 15

### Q
- Quantity last batch (Parameter) .................................. 44
- Quantity last drip (Parameter) ................................. 44

### R
- Reset all totalizers (Parameter) ................................. 37
- Reset overall batching quantity (Parameter) ............... 38
- Response time status input (Parameter) ....................... 31

### S
- Scan list register 0 to 15 (Parameter) ................. 36
  - Sensor (Submenu) .................................................. 15
  - Sensor adjustment (Submenu) ................................. 26
  - Serial number (Parameter) ..................................... 69
  - Settings batch profile 1 to 6 (Submenu) ............ 49
  - Simulation (Submenu) ............................................. 71
  - Simulation device alarm (Parameter) ......................... 72
  - Start level 2 (Parameter) ........................................ 55
  - Status input (Submenu) ......................................... 29
  - Stop level 2 (Parameter) ......................................... 55
  - Submenu
    - Administration .................................................. 13
    - Application ...................................................... 37
    - Batching .......................................................... 42
    - Calibration ....................................................... 28
    - Communication .................................................. 31
    - Configuration ................................................... 48
    - Device information ........................................... 68
    - Diagnostic behavior .......................................... 12
    - Diagnostic handling .......................................... 11
    - Diagnostic list ................................................ 62
    - Diagnostics .......................................................... 58
    - Event logbook ................................................... 67
    - Input ................................................................. 29

### T
- Target group ............................................................... 4
- Telegram delay (Parameter) ........................................... 34
- Time last batch (Parameter) ....................................... 45
- Timestamp (Parameter) .............................................. 60, 61, 63, 64, 65, 66
  - Totalizer (Submenu) ............................................. 16
  - Totalizer 1 to 3 (Submenu) .................................... 38
  - Totalizer operation mode (Parameter) ..................... 39
  - Totalizer overflow 1 to 3 (Parameter) .................... 17
  - Totalizer value 1 to 3 (Parameter) ......................... 16

### U
- User volume factor (Parameter) .................................. 21
- User volume text (Parameter) .................................... 21
- User-specific units (Submenu) .................................. 21

### V
- Value process variable (Parameter) .............................. 72
- Value status input (Parameter) .................................... 17, 30
- Volume flow (Parameter) ............................................ 15
- Volume flow factor (Parameter) .................................. 27
- Volume flow offset (Parameter) .................................. 27
- Volume flow unit (Parameter) .................................... 18
- Volume unit (Parameter) ............................................. 20, 39

### Z
- Zero point (Parameter) ............................................... 28