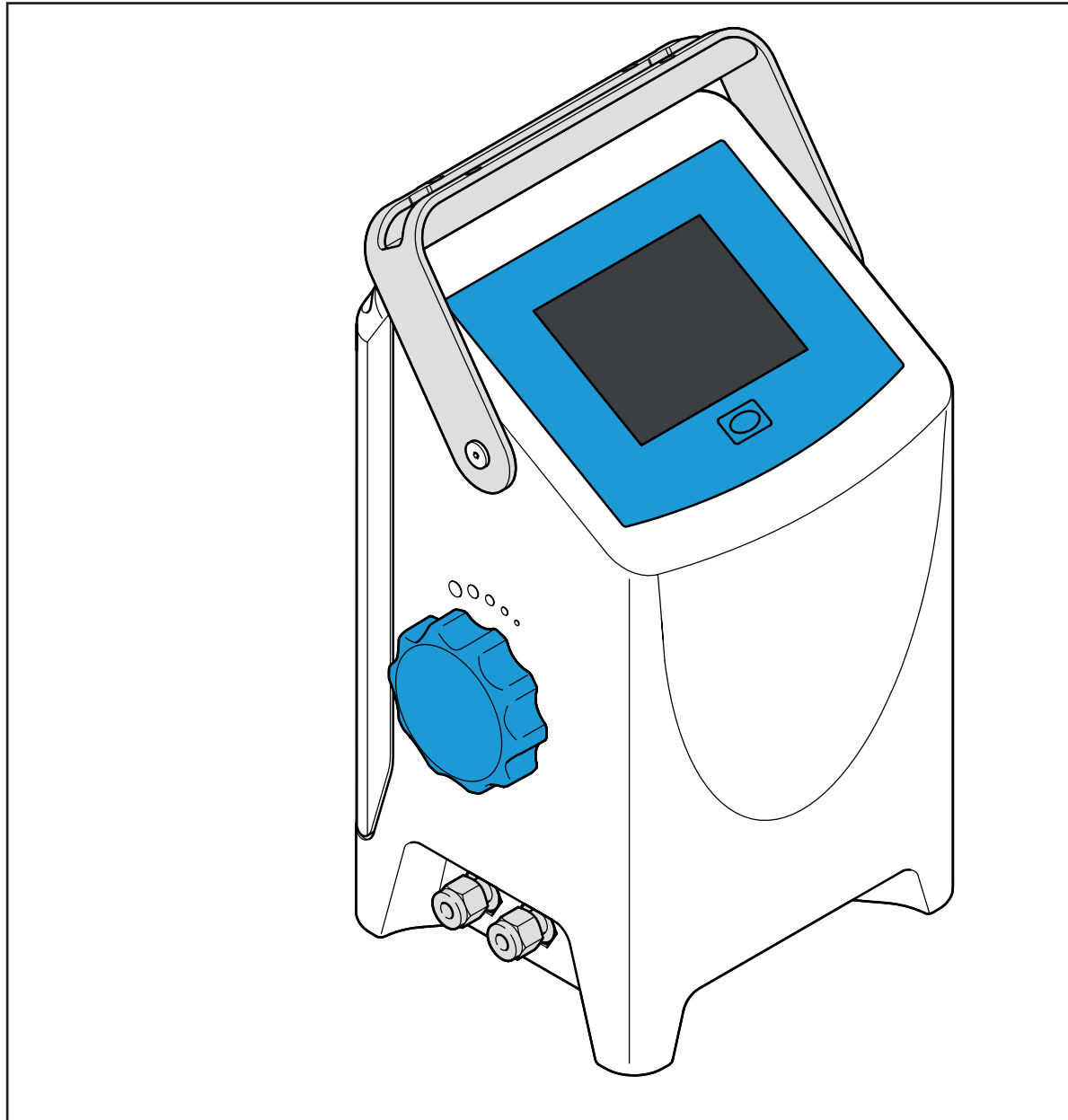


Portable oDO Analyzer





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# 1 Introduction

## 1.1 Information Regarding the Reference Manual

This reference manual is a supplement to the user manual "InTap Portable oDO Analyzer".

This reference manual offers further information on handling of the InTap™ portable oDO analyzer of METTLER TOLEDO.

A prerequisite for safe work is compliance with all indicated safety notes and instructions.

Furthermore, local work safety regulations and general safety provisions applicable for the application of the device must be complied with.

## 1.2 Explanation of Symbols

Warning notes are marked by symbols in this reference manual. The notes are initiated by signal words that express the scope of the danger.

Always comply with the notes and act carefully to prevent accidents, personal injury and property damage.

### Warning notes

#### **DANGER**



DANGER indicates a directly dangerous situation that will lead to death or serious injury if not avoided.

#### **WARNING**



WARNING indicates a potentially dangerous situation that may lead to death or serious injury if not avoided.

#### **CAUTION**



CAUTION indicates a potentially dangerous situation that may lead to slight or minor injury if not avoided.

#### **ATTENTION**



ATTENTION indicates a potentially harmful situation that may lead to property damage if not avoided.

### Advice and recommendations



NOTE emphasizes useful advice and recommendations, as well as information for efficient and interference-free operation.

## 1.3 Scope of Delivery

The following is included in the scope of delivery:

- InTap portable oDO analyzer
- Power supply 12 V, 2.5 A: AC/DC adapter with AC adapter set EU, US, AU, UK
- USB stick, plugged-in the USB connection

## 1.4 Customer Service

Our customer service is available for technical information.

You can find your local office on the last page.



**NOTE!**

For quick processing of the call, note the data on the product's label, such as serial number, part number, etc.

---

## 2 Safety

### 2.1 Intended Use

The InTap™ portable oDO analyzer is a portable measurement device for dissolved oxygen measurement and for calibration and data logging of optical dissolved oxygen ISM® sensors (InPro® 6970i) installed in the process. The InTap and the sensors communicate via Bluetooth.

For this, the separate Bluetooth interface T100 (order number 30 432 819) has to be mounted onto each sensor. The InTap is designed for use in the beverage industries, in non-hazardous areas. The InTap is intended to be used indoor.

The following InTap variants are available:

- InTap portable oDO analyzer (metric connectors): order number 30 425 550
- InTap portable oDO analyzer (imperial inch / US connectors): order number 30 457 912

METTLER TOLEDO accepts no liability for damages resulting from incorrect use or use other than that intended.

### 2.2 General Safety Instructions

The following is a list of general safety instructions and warnings. Failure to adhere to these instructions can result in damage to the equipment and/or personal injury to the operator.

- Follow all warnings, cautions, and instructions indicated on and supplied with this product.
- The device must only be connected, commissioned, and maintained by qualified specialists in full compliance with the instructions in the User Manual / Reference Manual, the applicable norms and legal regulations.
- The specialist must have read and understood the User Manual and must follow the instructions it contains.
- The device should be operated only by personnel familiar with the device and who are qualified for such work.
- If this device is used in a manner not specified by the manufacturer, the protection provided by it against hazards may be impaired.
- The device must only be operated under the specified operating conditions. See Chapter 11 "Technical Data" on Page 60.
- The enclosure rating is only guaranteed if all covers are closed, also the cover for the connection of the AC/DC adapter and the cover for the USB stick.
- Disconnect device from power before open the device.
- The device's cover must be in place at all times during normal operation. Tighten cover screws with a maximum torque of 5 Nm.
- Repairs and battery exchange may only be carried out by METTLER TOLEDO.
- With the exception of routine maintenance, cleaning procedures as described in this reference manual, the device must not be tampered with or altered in any manner.
- METTLER TOLEDO accepts no responsibility for damage caused by unauthorized modifications to the device.



## 3 Function and Design

### 3.1 Function

The InTap portable oDO analyzer is a portable measurement device for dissolved oxygen measurement and for calibration and data logging of optical dissolved oxygen ISM® sensors (InPro® 6970i) installed in the process. The InTap and the sensors communicate via Bluetooth.

For this, the separate Bluetooth interface T100 (order number 30 432 819) has to be mounted onto each sensor. The InTap is designed for use in the beverage industries, in non-hazardous areas. The InTap is intended to be used indoor.

### 3.2 Design

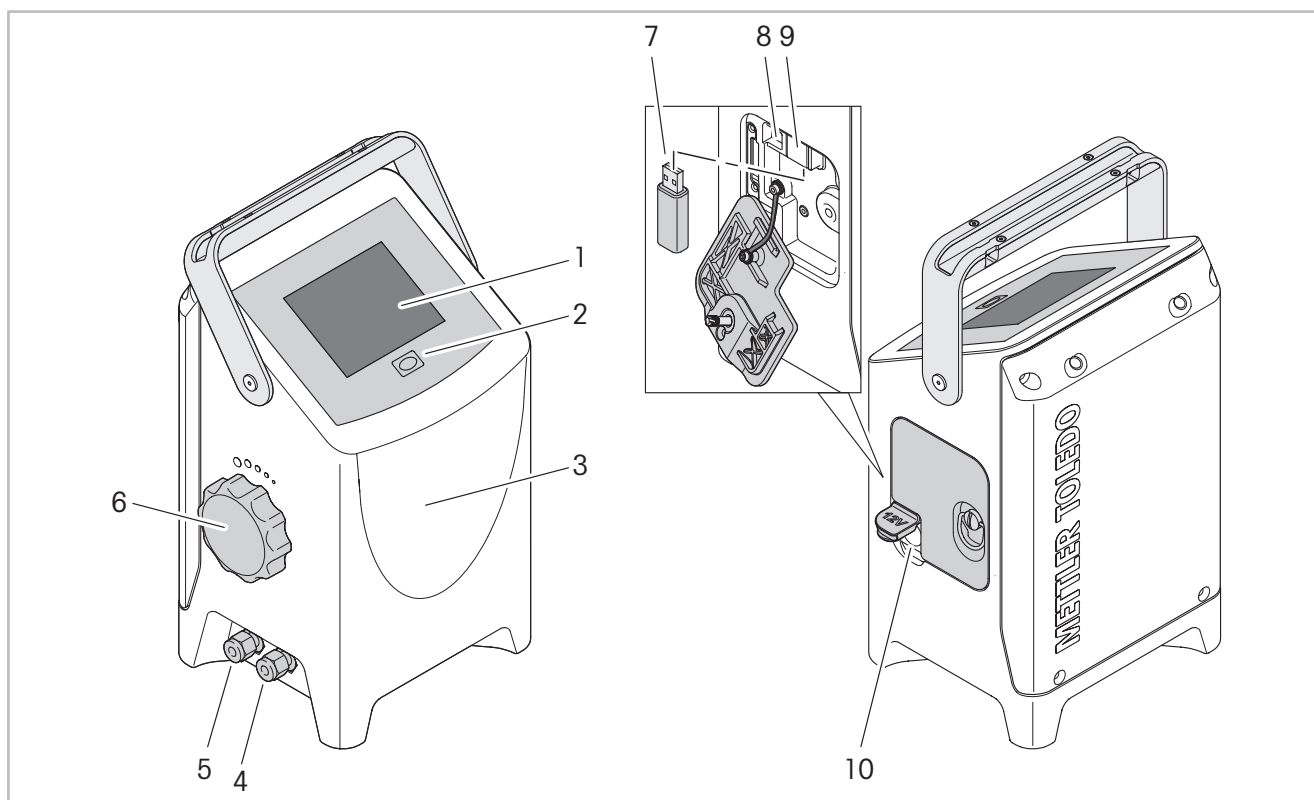


Fig. 1: Design InTap

- 1 Monochrome 4" touch display
- 2 On / Off button
- 3 Housing with measurement cell, O<sub>2</sub> InTap sensor, valve, battery, hardware board
- 4 Connection for hose "Medium in"
- 5 Connection for hose "Medium out"
- 6 Rotary knob for adjusting medium flow rate
- 7 USB stick for data logging
- 8 USB type B connection for software updates
- 9 USB type A connection
- 10 Connection for AC/DC adapter for loading battery

### 3.3 Display and Operating Elements

#### 3.3.1 Displays Overview and Navigation



Fig. 2: Overview displays and navigation

- 1 Home screen
- 2 Measurement screen
- 3 Messages screen
- 4 Trend display screen
- 5 Menu screen, here e.g. "Calibration menu"
- 6 Parametrization screen, here e.g. screen "Calibrate InTap Sensor"
- 7 Navigation to Home screen
- 8 Navigation to next-higher menu level, here Measurement screen
- 9 Navigation to next-higher menu level, here Calibration menu screen

## 3.3.2 Displays

### Measurement screen

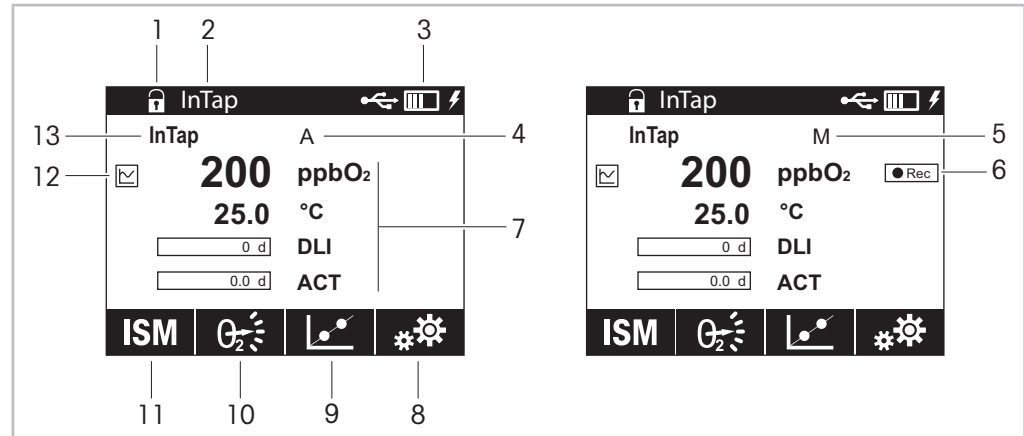


Fig. 3: Measurement screen

- 1 Enter Home screen
- 2 Instrument tag, default not configured (Chapter 7.6.10 on Page 50)
- 3 Information about USB stick, battery, AC/DC adapter
- 4 Automatic logging mode is activated (Chapter 3.4 on Page 14)
- 5 Manual logging mode is activated (Chapter 3.4 on Page 14)
- 6 Start manual logging
- 7 Measurement values M1, M2, M3 and M4 (Chapter 7.6.1 on Page 41)
- 8 Enter Configuration (CONFIG) menu
- 9 Enter Calibration (CAL) menu
- 10 Configurable key: Favorite menu, O<sub>2</sub> menu or Messages menu (Chapter 7.6.15 on Page 53)
- 11 Enter ISM menu
- 12 Enter Trend display screen
- 13 Channel (Channel descriptor), default "InTap"

### MP – Select (Measurement Point – Select)

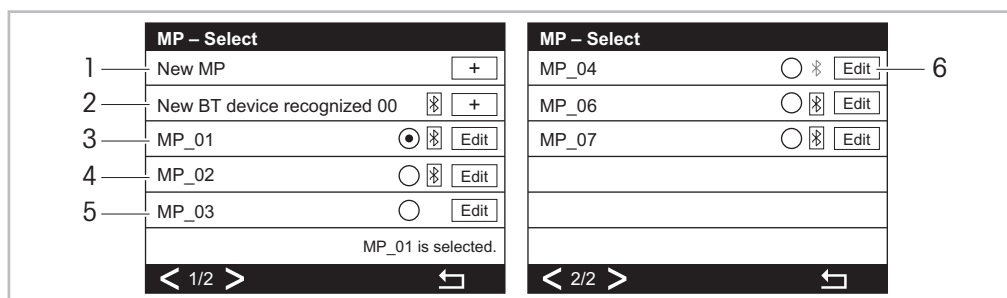
























Fig. 4: MP – Select screen

- 1 The "New MP" is always displayed on the top of the list. If 50 measurement points have been created, "New MP" will no longer be displayed. Measuring points created by the function "New MP" have to be paired later to an In-Line sensor.
- 2 A new Bluetooth device is within the Bluetooth range and was recognized. The sensor needs to be parameterized.
- 3 The In-Line sensor "MP\_01" is selected. The sensor is within the Bluetooth range and already parameterized.
- 4 The In-Line sensor "MP\_02" is not selected. The sensor is within the Bluetooth range and already parameterized.
- 5 The In-Line sensor "MP\_03" is not selected. The sensor is already parameterized but not within the Bluetooth range.
- 6 The In-Line sensor "MP\_04" is not selected. The sensor is already parameterized but the Bluetooth device is not available.

For further information see Chapter 5 on Page 18.

### 3.3.3 Operating Elements

Operating elements	Description
	USB stick is connected.
	Display of the current battery status.
	The InTap is powered via the AC/DC adapter.
	Failure: No battery or battery is empty.
	Failure: Battery is low (< 5 %). The InTap is not powered via the AC/DC adapter.
	Failure: USB stick is not connected or damaged.
	Failure: Leakage, high temperature, battery faulty etc.
	Enter Messages screen.
	Enter Measurement screen.
	Enter Home screen.
	The manual logging mode is activated. Start logging.
	The manual logging mode is activated. Stop logging.
	Enter Trend display screen.
<b>ISM</b>	Enter ISM menu.
	Enter Calibration menu.
	Enter Measurement Point (MP) menu.
	Enter Favorite menu.
	Enter Configuration menu.
	Return to Home screen.
	Enter next-lower menu level.
	Return to next-higher menu level.
	Return to next-higher screen.
	Change between pages within one menu level.

## 3.4 Logging Modes, USB Stick and Data Storage

### 3.4.1 Logging Modes

Via the InTap the following logging modes are available:

Logging mode	Indicator on the display	Description
Automatic	A	The automatic logging mode is activated. In this logging mode the measurements of the InTap are logged. You activate this mode via the Measurement Mode menu. At the factory the data logging is set to automatic mode. See Chapter 7.6.3 on Page 44.
Manual	M	The manual logging mode is activated. In this logging mode the measurements of a selected measurement point (In-Line sensor) for a period are logged. You activate this mode via the Measurement Mode menu. See Chapter 7.6.3 on Page 44.
Sample	S	The sample logging mode is activated. In this logging mode only one measurement result of a selected measurement point (In-Line sensor) is logged. You activate this mode via the O2 menu. See Chapter 5.2 on Page 21.  Once the stability criteria are met, the Measurement Result screen is displayed. You configure the stability criteria for each measurement point individually using either the "MP – Add" screen or the "MP – Edit" screen. See Chapter 5 on Page 18.

Table 1: Logging modes

### 3.4.2 USB Stick and Data Storage

With this "USB Data Management" menu you configure which data and how the data is stored on the USB stick. The settings apply for the "Automatic logging mode" and for the "Manual logging mode". See Chapter 7.6.6 on Page 47.

The following folder and file structure is created automatically:

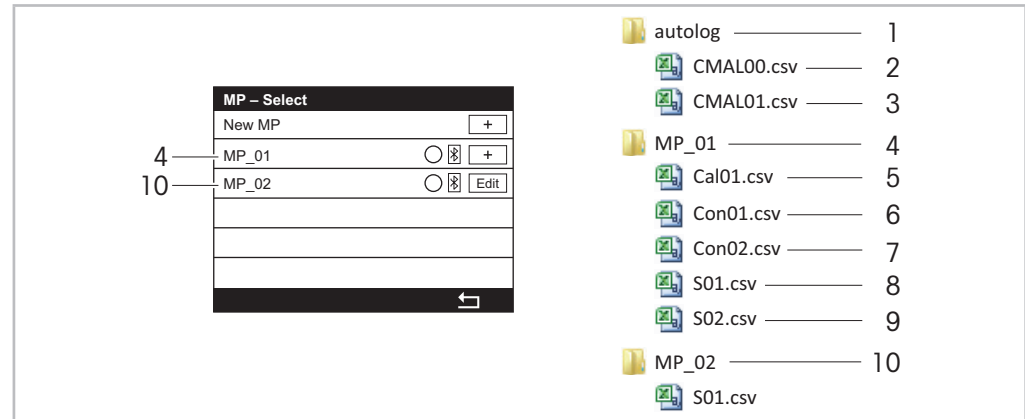


Fig. 5: Data storage on the USB stick

- 1 Folder "autolog" is created 1 minute after the InTap is powered. The automatic logging mode must be activated.
- 2 In the file "CMAL00.csv" all measurement values of the InTap sensor are saved. The automatic logging mode must be activated. Once the file has reached a size of 10 MB, the file "CMAL01.csv" is created.
- 3 In the file "CMAL01.csv" all measurement values of the InTap sensor are saved. The automatic logging mode must be activated. Once the file has reached a size of 10 MB, the file "CMAL00.csv" is deleted and a new file "CMAL00.csv" is created.
- 4 Exemplary name for a measurement point. The folder name is related to the name of the measurement point, e.g. MP\_01. The folder is created when via "MP - Select" screen the corresponding measurement point is activated and either manual logging mode or sample logging mode is selected.
- 5 File "Cal01.csv" is created when the calibration result of the corresponding In-Line sensor is saved by "Adjust" or "Calibrate".
- 6 File "Con01.csv" is created when via "MP - Select" screen the corresponding measurement point is activated and manual logging mode is selected the first time. The file contains all measurement values of the first record.
- 7 File "Con02.csv" is created when via "MP - Select" screen the corresponding measurement point is activated and manual logging mode is selected the second time. The file contains all measurement values of the second record.
- 8 File "S01.csv" is created when via "MP - Select" screen the corresponding measurement point is activated and sample logging mode is selected the first time. The file contains the first measurement result.
- 9 File "S02.csv" is created when via "MP - Select" screen the corresponding measurement point is activated and sample logging mode is selected the second time. The file contains the second measurement result.
- 10 Exemplary name for a measurement point. The folder name is related to the name of the measurement point, e.g. MP\_02. The folder is created when via "MP - Select" screen the corresponding measurement point is activated and either manual logging mode or sample logging mode is selected.

## 4 Connections and Commissioning

### 4.1 Connections

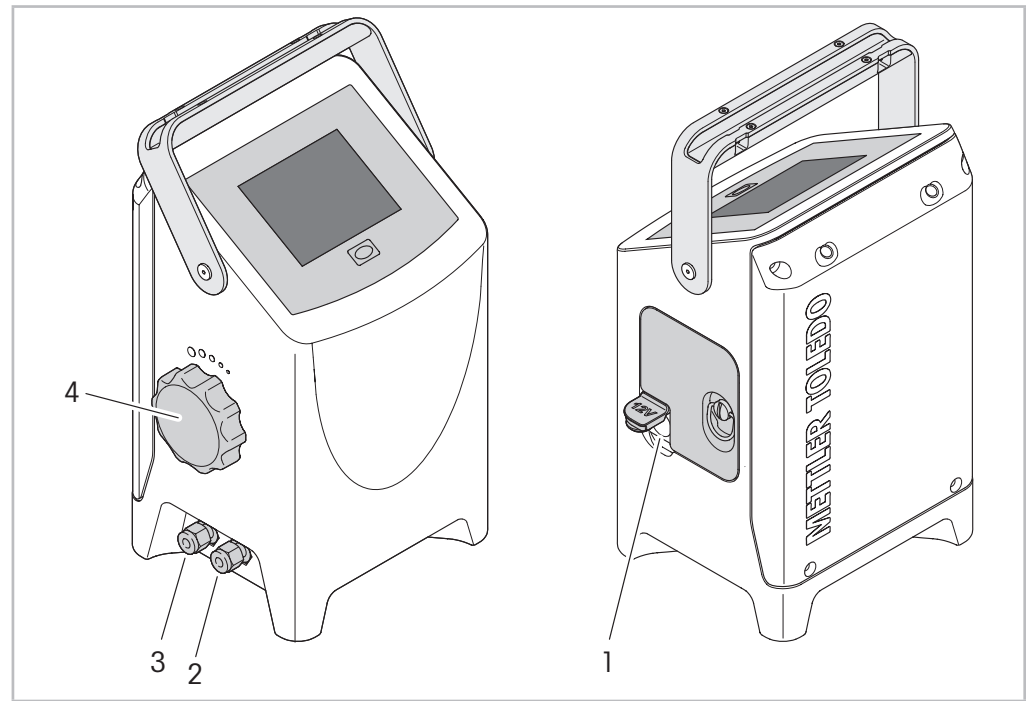


Fig. 6: Connection InTap

- 1 Connection for AC/DC adapter for loading battery
- 2 Connection for hose "Medium in"
- 3 Connection for hose "Medium out"
- 4 Rotary knob for adjusting medium flow rate

#### Supply voltage (Power)

You have the following possibilities to power the device:

- either via the internal battery
- or via the supplied AC/DC adapter connected to 100 to 240 V AC / 50 to 60 Hz.

#### Hoses "Medium In" and "Medium Out"

You can connect the following hoses to "Medium In" and "Medium Out":

InTap portable oDO analyzer		Hoses	
Description	Order number	Description	Order number
With metric connectors	30 425 550	6 mm	30 422 575
With imperial inch / US connectors	30 457 912	1/4" NPT	30 461 774



## 4.2 Commissioning

The InTap is supplied ready for use. After connecting the InTap, you can immediately use the InTap as a measuring device or as a measuring device with data logging function.

At the factory the data logging is set to automatic mode. Use the parameter "Logging Mode" to change to manual mode (CONFIG \ Measurement Mode).

The display is switched off after some minutes, but the measurement will continue. Use the menu "Display Setup" to change the settings (CONFIG \ Display Setup).

For communication with an In-Line sensor (e.g. process calibration) a separate Bluetooth interface T100 (order number 30 432 819) has to be mounted onto each sensor and the sensor has to be paired with the InTap.

### 4.2.1 Connecting the InTap

1. Power the device.
2. Connect the hoses to "Medium In" and "Medium Out".
3. Adjust the medium flow rate. See Chapter 4.2.2 on Page 17.
4. Create measurement point and pair measurement point with In-Line sensor. See Chapter 5 on Page 18.

### 4.2.2 Adjusting medium flow rate

The flow rate is adjusted with the rotary knob. The flow rate depends on the medium pressure. The flow rate increases with increasing medium pressure.

1. Turn rotary knob clockwise to the end stop.
2. Turn rotary knob anti-clockwise to adjust the flow rate. The rotary knob has a click-stop position every 15°. E.g. for a flow rate of approximately 200 ml/min at 2 bar you have to turn the rotary knob to the 30° position. That means you hear 2 clicks.

## 5 Measurement Points (02)

Menu path: Menu path: Home screen > Measurement screen >  $\Theta_2$  or  
Home screen > Measurement screen > ★ > Sample Measurement

The “Measurement Points” menu allows you to perform the following actions:

- Pair measurement points of the InTap with In-Line sensors by creating new measurement points. See Chapter 5.1.1 on Page 18.
- Pair measurement points of the InTap with In-Line sensors by assigning existing measurement points. See Chapter 5.1.2 on Page 20.
- Create a new measurement point. See Chapter 5.3 on Page 23.
- Edit a measurement point. See Chapter 5.4 on Page 24.
- Disconnect a measurement point from an In-Line sensor. See Chapter 5.5 on Page 25.
- Delete a measurement point. See Chapter 5.6 on Page 26.
- Identify a paired In-Line sensor. See Chapter 5.7 on Page 27.
- Check information of an In-Line sensor. See Chapter 5.8 on Page 27.

Additionally you can select one measurement point and record measurement results. See Chapter 5.2 on Page 21.

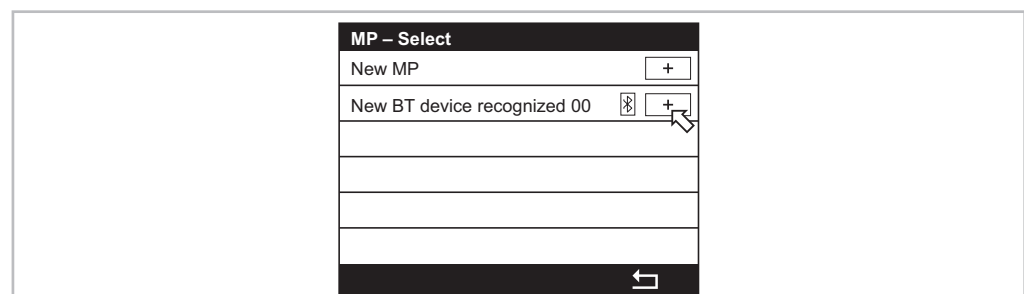
The Measurement Result is only displayed if the stability criteria are met. You configure the stability criteria for each measurement point individually using either the “MP – Add” screen or the “MP – Edit” screen. See for example Chapter 5.1 on Page 18 or Chapter 5.3 on Page 23.

### 5.1 Pairing InTap with In-Line Sensors

#### 5.1.1 Creating a New Measurement Point (MP)

**Prerequisite:** The In-Line sensor is within the Bluetooth range of the InTap.

1. Menu path: Home screen > Measurement screen >  $\Theta_2$  or  
Home screen > Measurement screen > ★ > Sample Measurement  
⇒ The screen “MP – Select” is displayed.



2. Tap "+" for the item "New BT device recognized XX". If there are several In-Line sensors within the Bluetooth range, all sensors are listed and sorted by signal strength.

⇒ The screen "MP – Add" is displayed.

MP – Add		SN: 0000001
Method	New	
MP Name	New_00	
Num of Meas	10	
Stab. Range	2.000	ppbO <sub>2</sub>
Cancel		Ok

3. Select for the parameter "Method" the option "New".
  4. Enter for the parameter "MP Name" the name for the measurement point e.g. "MP\_01".
  5. Parameterize the parameter "Number of Meas" and "Stab. Range".
  6. Tap "OK".
- ⇒ The screen "MP – Select" with the new name for the measurement point is displayed.

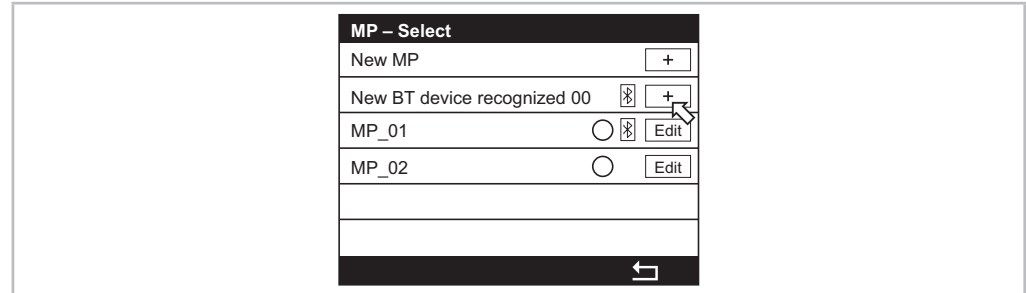
MP – Select	
New MP	+
MP_01	○ ⓘ Edit
↩	

7. Tap ↩.
- ⇒ The question "Save changes?" is displayed.
8. Select one of the following options.
    - Yes: The changes are saved. The Measurement screen is displayed.
    - No: No changes are saved. The Measurement screen is displayed.
    - Cancel: No changes are saved. The "MP – Select" screen is displayed.

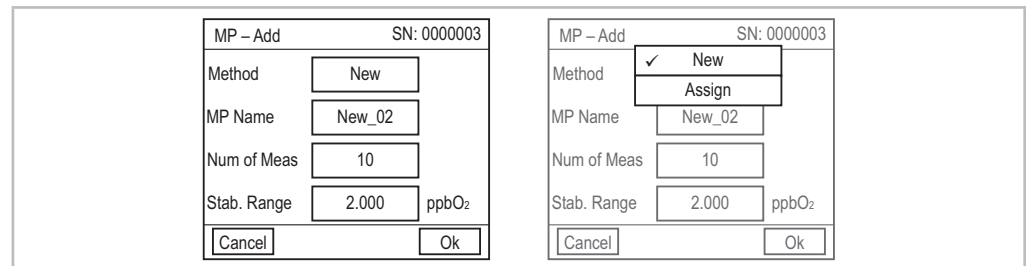
### 5.1.2 Assigning an Existing Measurement Point (MP)

**Prerequisite:** The In-Line sensor is within the Bluetooth range of the InTap.

1. Enter "Measurement Point (MP)" menu.  
 Menu path: Home screen > Measurement screen >  $O_2$  or  
 Home screen > Measurement screen > ★ > Sample Measurement  
 ⇒ The screen "MP – Select" is displayed.

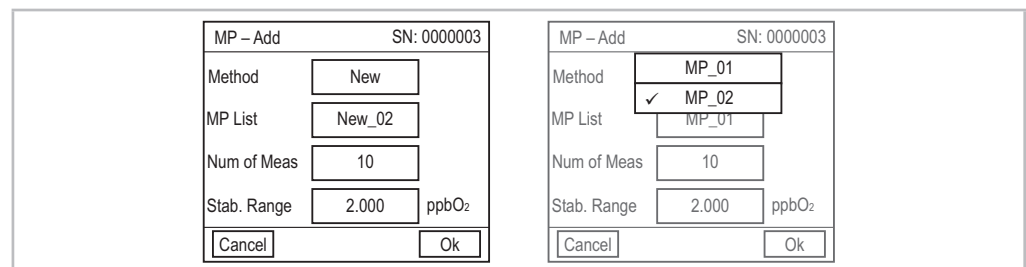


2. Tap "+" for the item "New BT device recognized XX". If there are several In-Line sensors within the Bluetooth range, all sensors are listed and sorted by signal strength.  
 ⇒ The screen "MP – Add" is displayed.
3. Select for the parameter "Method" the option "Assign".



⇒ The parameter "MP List" is displayed.

4. Select for the parameter "MP List" the name of the measurement point you want to assign to the In-Line sensor. The parameter lists the names of the existing measurement points.

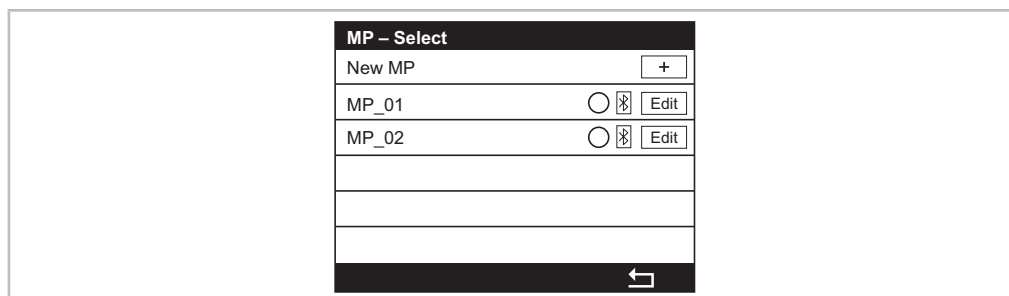


If you select a name that is already paired with an In-Line sensor, the following message is displayed: "This MP is already assigned to the BT. Do you want to reassign it to another BT?". Select "No" to abort the process. Select "Yes" to continue the process.

5. Parameterize parameter "Num of Meas" and "Stab Range". As default values the settings of the "Common Stability Criteria" menu are used.

## 6. Tap "OK"

⇒ The screen "MP – Select" is displayed. The In-Line sensor is displayed with the assigned name.



## 7. Tap ↶.

⇒ The "Save changes" dialog is displayed.

## 8. Select one of the following options.

- Yes: The changes are saved. The Measurement screen is displayed.
- No: No changes are saved. The Measurement screen is displayed.
- Cancel: No changes are saved. The "MP – Select" screen is displayed.

## 5.2 Selecting a Measurement Point (MP) and Recording Measurement Results

See Chapter 3.4 "Logging Modes, USB Stick and Data Storage" on Page 14.



### NOTE!

The Measurement Result is only displayed if the stability criteria are met. You configure the stability criteria for each measurement point individually using either the "MP – Add" screen or the "MP – Edit" screen. See for example Chapter 5.1 on Page 18 or Chapter 5.3 on Page 23.

If the stability criteria are not met after 30 minutes, the process is aborted. If you want to cancel the process earlier, you must switch the device off and on again.

**Prerequisite:** The In-Line sensor is paired with the InTap.

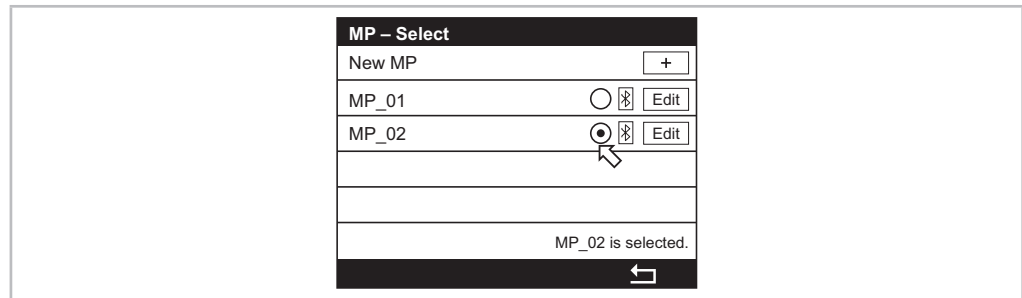
Enter "Measurement Point (MP)" menu.

Menu path: Home screen > Measurement screen >  $\Theta_2$  or

Home screen > Measurement screen > ★ > Sample Measurement

⇒ The screen "MP – Select" is displayed.

9. Activate the radio button of the measurement point you want to record.

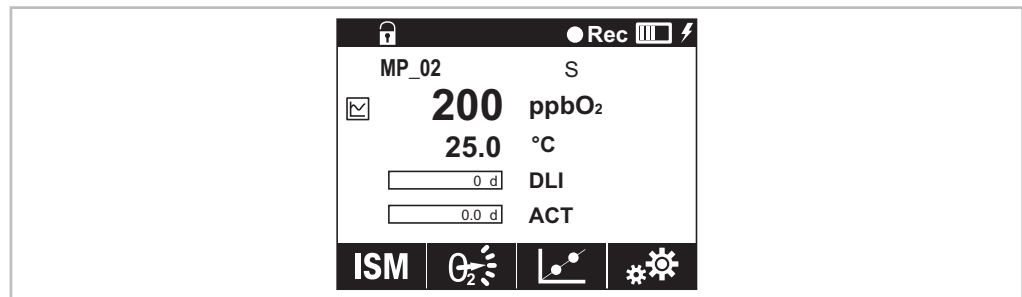


10. Tap .

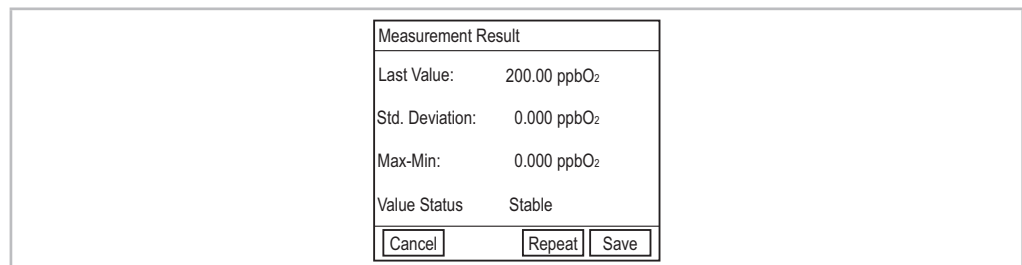
⇒ The question "Save changes?" is displayed.

11. Tap "Yes".

⇒ The Measurement screen for the selected measurement point is displayed. The measurement result is recorded.



⇒ Once the stability criteria are met, the Measurement Result screen is displayed.

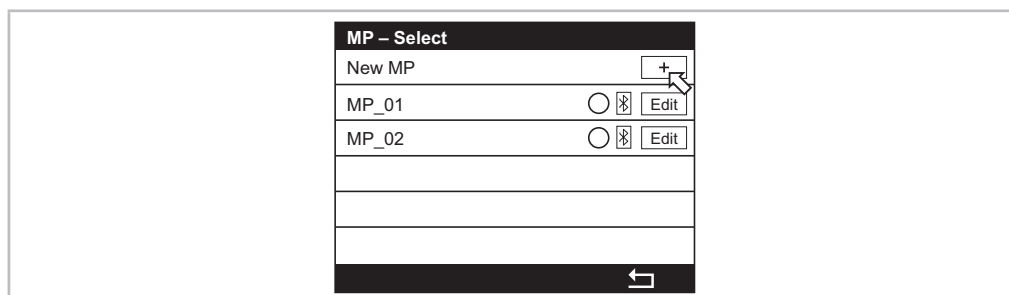


12. Select for the measurement result one of the following options.

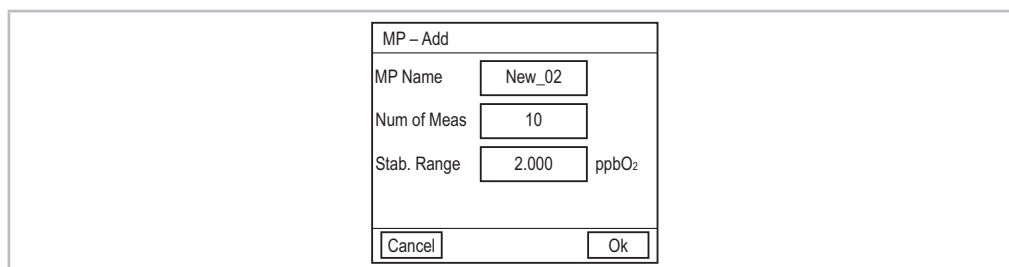
- Cancel: The process is aborted. The measurement result is not saved.
- Repeat: The process is repeated. The InTap requests new data from the In-Line sensor.
- Save: The measurement result is saved on the USB stick in the folder of the recorded measurement point.

## 5.3 Creating a New Measurement Point (MP)

1. Enter "Measurement Point (MP)" menu.  
Menu path: Home screen > Measurement screen >  $O_2$  or  
Home screen > Measurement screen > ★ > Sample Measurement  
⇒ The screen "MP – Select" is displayed.



2. Tap "+" for the item "New MP".  
⇒ The screen "MP – Add" is displayed.

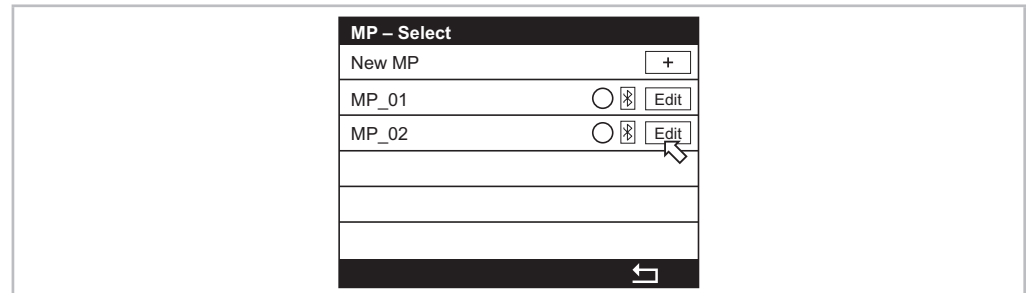


3. Enter for the parameter "MP Name" the name for the measurement point e.g. "MP\_03".
4. Parameterize parameter "Num of Meas" and "Stab Range". As default values the settings of the "Common Stability Criteria" menu are used.
5. Tap "OK"  
⇒ The screen "MP – Select" with the new created MP is displayed.
6. Tap ↩.  
⇒ The "Save changes" dialog is displayed.
7. Select one of the following options.
  - Yes: The changes are saved. The Measurement screen is displayed.
  - No: No changes are saved. The Measurement screen is displayed.
  - Cancel: No changes are saved. The "MP – Select" screen is displayed.

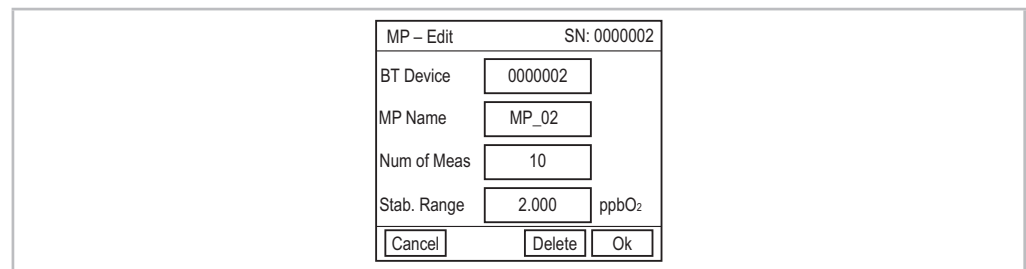
For assigning the new Measurement point to an In-Line sensor see Chapter 5.1.2 on Page 20.

## 5.4 Editing an Measurement Point (MP)

1. Enter "Measurement Point (MP)" menu.  
Menu path: Home screen > Measurement screen >  $O_2$ .  
⇒ The screen "MP – Select" is displayed.



2. Tap "Edit" for the measurement point you want to change.  
⇒ The screen "MP – Edit" is displayed.  
If the selected measurement point is currently being used for the manual logging or the sample measurement, a warning message will be displayed.

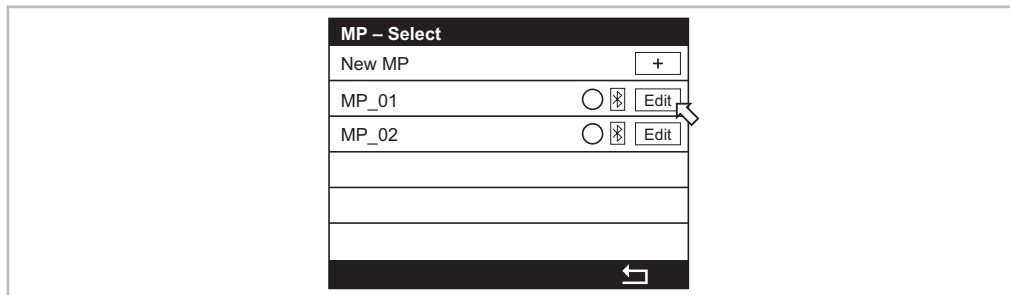


3. Perform changes. If the measurement point is already paired to an In-Line sensor, the serial number of the Bluetooth device is displayed at the top right of the "MP – Edit" screen.
4. Select one of the following options.
  - Cancel: The procedure is aborted. No changes are saved.
  - Delete: The selected measurement point and the associated data folder are deleted.
  - OK: The procedure is proceeded.
 ⇒ The screen "MP – Select" is displayed.
5. Tap  $\leftarrow$ .  
⇒ The "Save changes" dialog is displayed.
6. Select one of the following options.
  - Yes: The changes are saved. The Measurement screen is displayed.
  - No: No changes are saved. The Measurement screen is displayed.
  - Cancel: No changes are saved. The "MP – Select" screen is displayed.

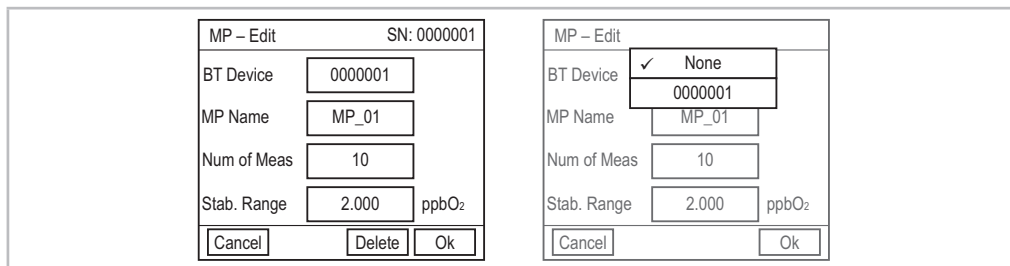


## 5.5 Disconnecting a Measurement Point (MP) from an In-Line Sensor

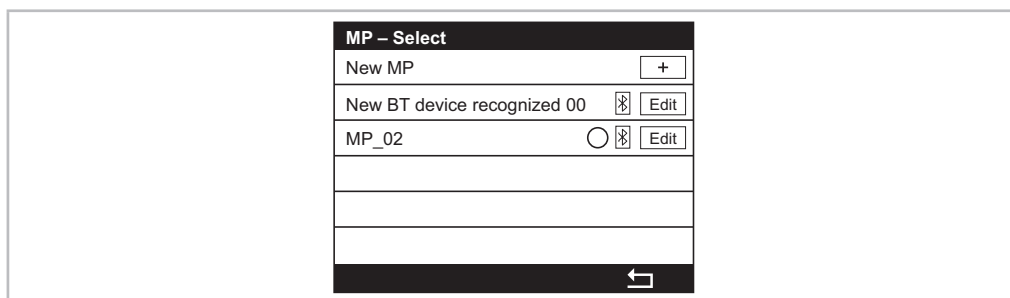
1. Enter "Measurement Point (MP)" menu.  
 Menu path: Home screen > Measurement screen >  $O_2$  or  
 Home screen > Measurement screen > ★ > Sample Measurement  
 ⇒ The screen "MP – Select" is displayed.




2. Tap "Edit" for the measurement point whose connection you want to disconnect.  
 ⇒ The screen "MP – Edit" is displayed.  
 If the selected measurement point is currently being used for the manual logging or the sample measurement, a warning message will be shown.
3. Select for parameter "BT Device" the option "None".  
 ⇒ The serial number at the top right of the "MP – Edit" screen is displayed no longer.




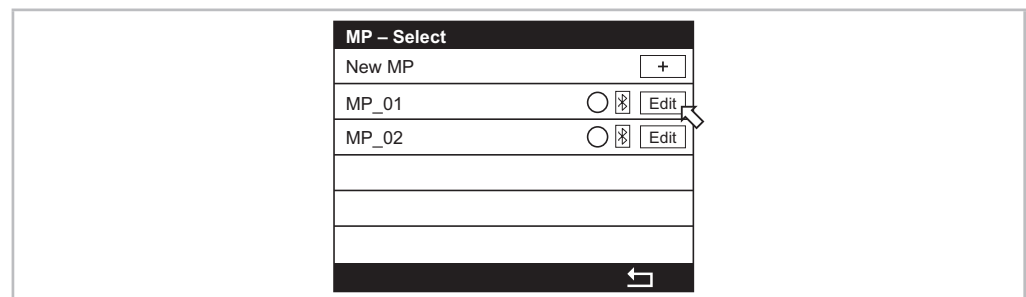
4. Select one of the following options.
  - Cancel: The procedure is aborted. No changes are saved.
  - Delete: The selected measurement point and the associated data folder are deleted.
  - OK: The procedure is proceeded. For the disconnected measurement point "New BT device recognized XX" is displayed. The changes are not saved until you select "Yes" for the "Save changes" dialog.
 ⇒ The screen "MP – Select" is displayed.




5. Tap .
  - ⇒ The "Save changes" dialog is displayed.
6. Select one of the following options.
  - Yes: The changes are saved. The Measurement screen is displayed.
  - No: No changes are saved. The Measurement screen is displayed.
  - Cancel: No changes are saved. The "MP – Select" screen is displayed.

## 5.6 Deleting a Measurement Point (MP)

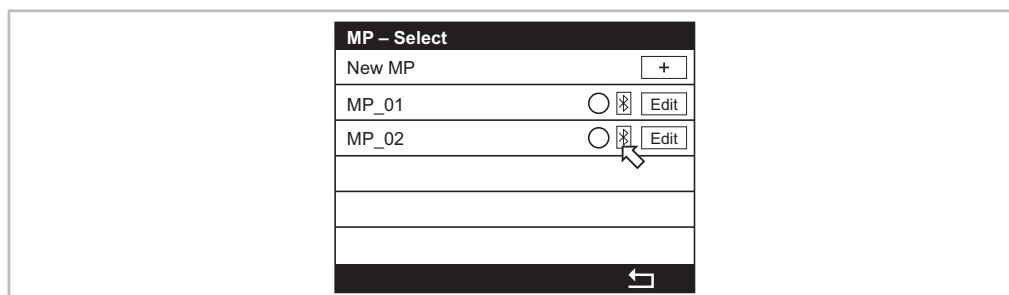
1. Enter "Measurement Point (MP)" menu.  
 Menu path: Home screen > Measurement screen >  or  
 Home screen > Measurement screen > ★ > Sample Measurement  
 ⇒ The screen "MP – Select" is displayed.




2. Tap "Edit" for the measurement point you want to delete.
  - ⇒ The screen "MP – Edit" is displayed.
3. Tap "Delete".
  - ⇒ A warning message is displayed.
4. Tap "Yes".
  - ⇒ The screen "MP – Select" is displayed.
5. Tap .
  - ⇒ The "Save changes" dialog is displayed.
6. Select one of the following options.
  - Yes: The changes are saved. The measurement point and the associated folder on the USB stick are deleted. The Measurement screen is displayed.
  - No: No changes are saved. The Measurement screen is displayed.
  - Cancel: No changes are saved. The "MP – Select" screen is displayed.

## 5.7 Identifying a Paired In-Line Sensor

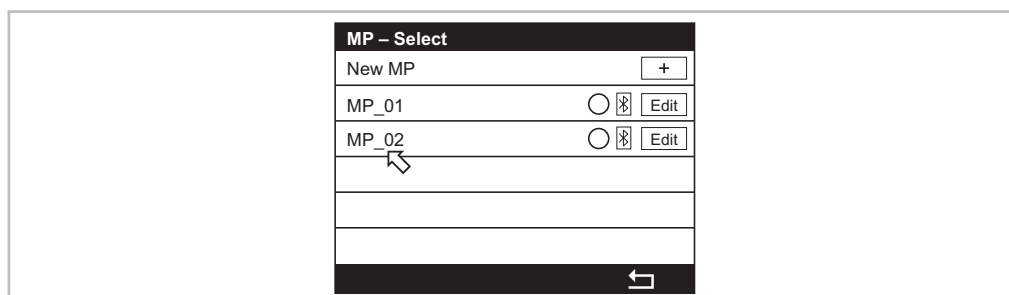
1. Enter "Measurement Point (MP)" menu.  
Menu path: Home screen > Measurement screen >  $O_2$  or  
Home screen > Measurement screen > ★ > Sample Measurement  
⇒ The screen "MP – Select" is displayed.



2. Tap  for the measurement point you want to identify.  
⇒ The message "Identify device ..." (5 seconds blinking)" is displayed.  
⇒ The LED of the Bluetooth device of the paired In-Line sensor is blinking.

## 5.8 Checking Information of an In-Line Sensor

1. Enter "Measurement Point (MP)" menu.  
Menu path: Home screen > Measurement screen >  $O_2$  or  
Home screen > Measurement screen > ★ > Sample Measurement  
⇒ The screen "MP – Select" is displayed.



2. Tap on the name of the measurement point you need further information.  
⇒ The "Verify" screen is displayed.

## 5.9 Parameter Descriptions – Measurement Points (O2) menu

Parameter	Description
MP Name	<p>Displays the name of the measurement point and the name of the associated folder on the connected USB stick. As default name "New_XX" is displayed. XX is a unique number in the system.</p> <p>You can change the default name. A name with max. 8 characters is possible. Some characters are not allowed. If the name is invalid, an error message is displayed.</p>
Num of Meas	<p>Enter the number of measurements for the "Stability criterion" function.</p> <p>The stability criterion is met if the entered number (Num of Meas) is in the entered range (Stab. Range).</p> <p>Default value: 10</p> <p>Range: 3 to 1000</p>
Stab. Range	<p>Enter range for the "Stability criterion" function.</p> <p>The stability criterion is met if the entered number (Num of Meas) is in the entered range (Stab. Range).</p> <p>Default value: <math>\pm 2</math> (Unit for M1: ppbO2)</p> <p>Range: 1 to 1000</p>
Method	<p>Select pairing method.</p> <ul style="list-style-type: none"> <li>– New: Creates a new measurement point. This new measurement point is paired with an In-Line sensor.</li> <li>– Assign: The measurement point already exists. The selected measurement point is assigned to an In-Line sensor.</li> </ul>
MP List	<p>Displays the names of the existing measurement points. Select the name you want to assign to the In-Line sensor.</p>
BT Device	<p>Displays the serial number of the Bluetooth device connected to the In-Line sensor. Select "None" if you want to disconnect the measurement point from the Bluetooth device.</p>

Table 2: Parameter descriptions – Measurement Points (O2) menu

## 5.10 Messages – Measurement Points (O2) menu

Message	Possible cause	Action
Error: MP name contains invalid character	Some characters are not allowed, e.g. *, ; and ?	Enter another name.
Warning: Manual logging or sample measurement is running!	<p>The selected measurement point is currently being used for the manual logging or the sample measurement.</p> <p>As long as the measurement point is used by another action you cannot edit or disconnect this measurement point.</p>	<p>Manual logging mode: If necessary, stop manual logging mode.</p> <p>Sample logging mode: Wait until the measurement result is displayed. Then you can finish the sample logging mode.</p>

Table 3: Messages – Measurement Points (O2) menu

## 6 Calibration



NOTE!

You can also calibrate the dismantled InTap sensor or the dismantled In-Line sensor via iSense™ software. See Operating Instructions of the iSense™ software.



NOTE!

As soon as the calibration is in progress no other calibration can be started.

### 6.1 Terminate Sensor Calibration

After every successful calibration different options are available. If "Adjust" or "Calibrate" is chosen, the message "Calibration saved successfully!" is displayed. Press "Done".

Option	Description
Adjust	Calibration values are adopted and used for the measurement. Additionally, the calibration values are stored in the calibration history.
Calibrate	Calibration values are stored in the calibration history for documentation, but cannot be used for the measurement. The calibration values from the last valid adjustment are further used for the measurement.
Abort	Calibration values are discarded.

Table 4: Options for terminating sensor calibration

### 6.2 Calibrating an In-Line Sensor



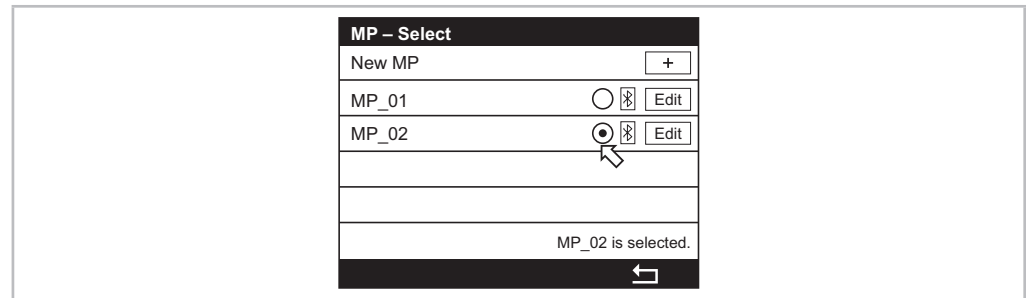
NOTE!

Via the "Measurement points (O2)" menu you configure the stability criteria for each measurement point individually. These stability criteria are used for the calibration of the corresponding In-Line sensor. See Chapter 5 on Page 18.

**Prerequisite:** The In-Line sensor is paired with the InTap and is within the Bluetooth range of the InTap.

1. Enter "Calibrate In-Line Sensor" menu. Menu path: Measurement screen > > Calibrate In-Line Sensor  
⇒ The screen "MP – Select" is displayed.

2. Activate the radio button of the In-Line sensor (measurement point) you want to calibrate.



3. Tap .
  - ⇒ The "Save changes" dialog is displayed.
4. Tap "Yes".
  - ⇒ The "Calibrate In-Line Sensor" screen is displayed.
5. Set parameter "Unit". See Chapter 6.2.1 on Page 30.
6. Tap .
7. Tap "Cal".
8. If the automatic logging mode is activated, the following message is displayed "There is a "auto logging" procedure running ...". Confirm this message with "Yes".
9. Answer the question "First calibration after OptoCap change" correctly.
  - ⇒ The current values for the InTap sensor and the In-Line sensor are shown.
10. Tap "Next".
  - ⇒ The values for P100 and P0 are shown.
11. Tap "Adjust" or "Calibrate".
12. Tap "Done" to finish calibration of the In-Line sensor.

## 6.2.1 Parameter Description "Calibrate In-Line Sensor"

Parameter	Description
MP	Displays the name of the measurement point paired with the In-Line sensor.
Unit	Select the unit to be used for the In-Line sensor calibration.
Method	The parameter is set to "Process" and cannot be changed.
Options	The settings have no influence on the calibration.

Table 5: Parameter description "Calibrate In-Line Sensor"

Key	Description
Cal	Starts the calibration procedure.
Verify	Displays the current values for phase and the selected measurement values M1 to M4 (at factory O <sub>2</sub> , temperature, ACT and DLI).



Table 6: Key description "Calibrate In-Line Sensor"

## 6.3 Calibrating the InTap Sensor



### NOTE!

Use as air gas dry, clean and oil-free compressed air. Use as zero gas N<sub>2</sub> or CO<sub>2</sub> with a purity of at least 99.9 %. For best results use a zero gas with a purity of 99.995 %.

1. Connect the compressed air to the connection "Medium In".
2. Purge the InTap for 5 minutes with compressed air to remove the excess humidity out of the measurement cell. Ensure a steady medium flow without pressure build-up in the measurement cell. For this, perform two turns with the rotary knob. See Fig. 1 on Page 9.
3. Turn off compressed air.
4. Enter "Calibrate InTap Sensor" menu. Menu path: Measurement screen >  > Calibrate InTap Sensor
  - ⇒ The "Calibrate InTap Sensor" screen is displayed.
5. Select the unit for the air gas and the zero gas. See Chapter 6.3.1 on Page 32.
6. Tap "Options".
7. Set parameters "Cal Pressure", "Rel. Humidity" and "Stability".
8. Tap .
9. Tap "Cal".
10. If the automatic logging mode is activated, the following message is displayed "There is a "auto logging" procedure running ...". Confirm this message with "Yes".
11. Answer the question "First calibration after OptoCap change" correctly.
  - ⇒ The message "Connect the gas to InTap inlet." is displayed.
12. Turn on the compressed air.
13. Ensure a steady medium flow without pressure build-up in the measurement cell.
14. Tap "Next".
  - ⇒ The current value is displayed.
  - ⇒ If the criteria are met, the message "Please change gas." is displayed.
15. Connect the second reference gas (zero gas) to the connection "Medium In".
16. Tap "Next".
  - ⇒ The current value is displayed.
  - ⇒ If the stability criteria are met, the values for P100 and PO are shown.
17. Tap "Adjust" or "Calibrate".
18. Tap "Done" to finish calibration of the InTap sensor.

### 6.3.1 Parameter Description "Calibrate InTap Sensor"

Parameter	Description
Chan (Channel)	Displays the channel descriptor. See "Channel" parameter, chapter 7.6.1 on Page 41.
Unit	Select the unit for the air gas and the zero gas.
Method	The parameter is set to "2-Point" and cannot be changed.
Options	See Table 8 on Page 32.

Table 7: Parameter description "Calibrate InTap Sensor"

Parameter	Description
Cal Pressure	Enter calibration pressure.
Rel. Humidity	Enter relative humidity of the calibration gas. When no humidity measurement is available use the default value of 50 %.
Stability	Select the stability mode for the sensor signal during calibration procedure. <ul style="list-style-type: none"> <li>– Manual: You decide when the sensor signal is stable enough.</li> <li>– Auto: The InTap decides when the sensor signal is stable enough.</li> </ul>

Table 8: Parameter description "Options – Calibrate InTap Sensor"

Key	Description
Cal	Starts the calibration procedure.
Verify	Displays the current phase of the InTap sensor.

Table 9: Key description "Calibrate InTap Sensor"



# 7 Menu Overview and Menu Description

## 7.1 Menu Overview

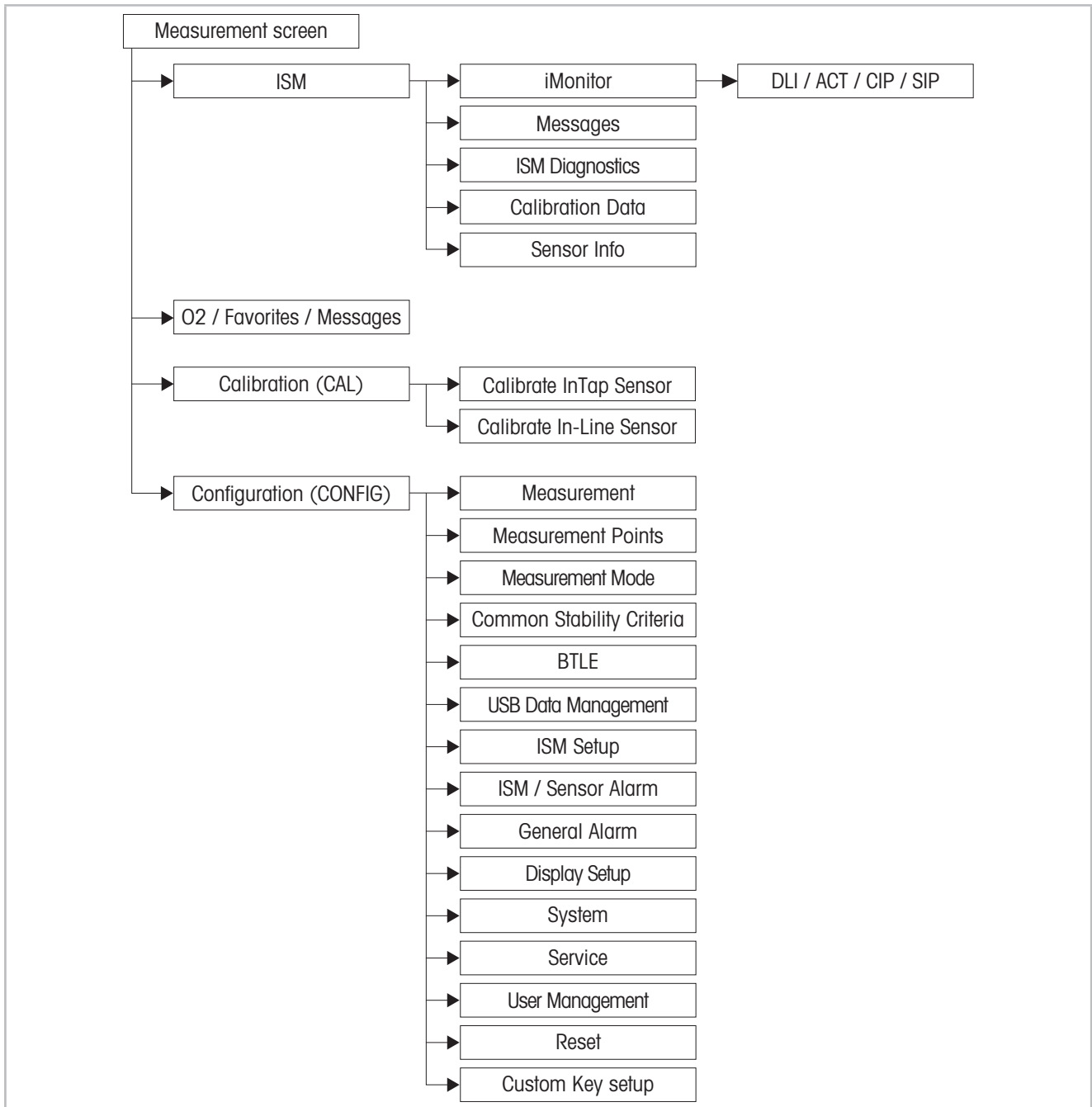


Fig. 7: Menu overview

## 7.2 Menu Configuration (CONFIG)

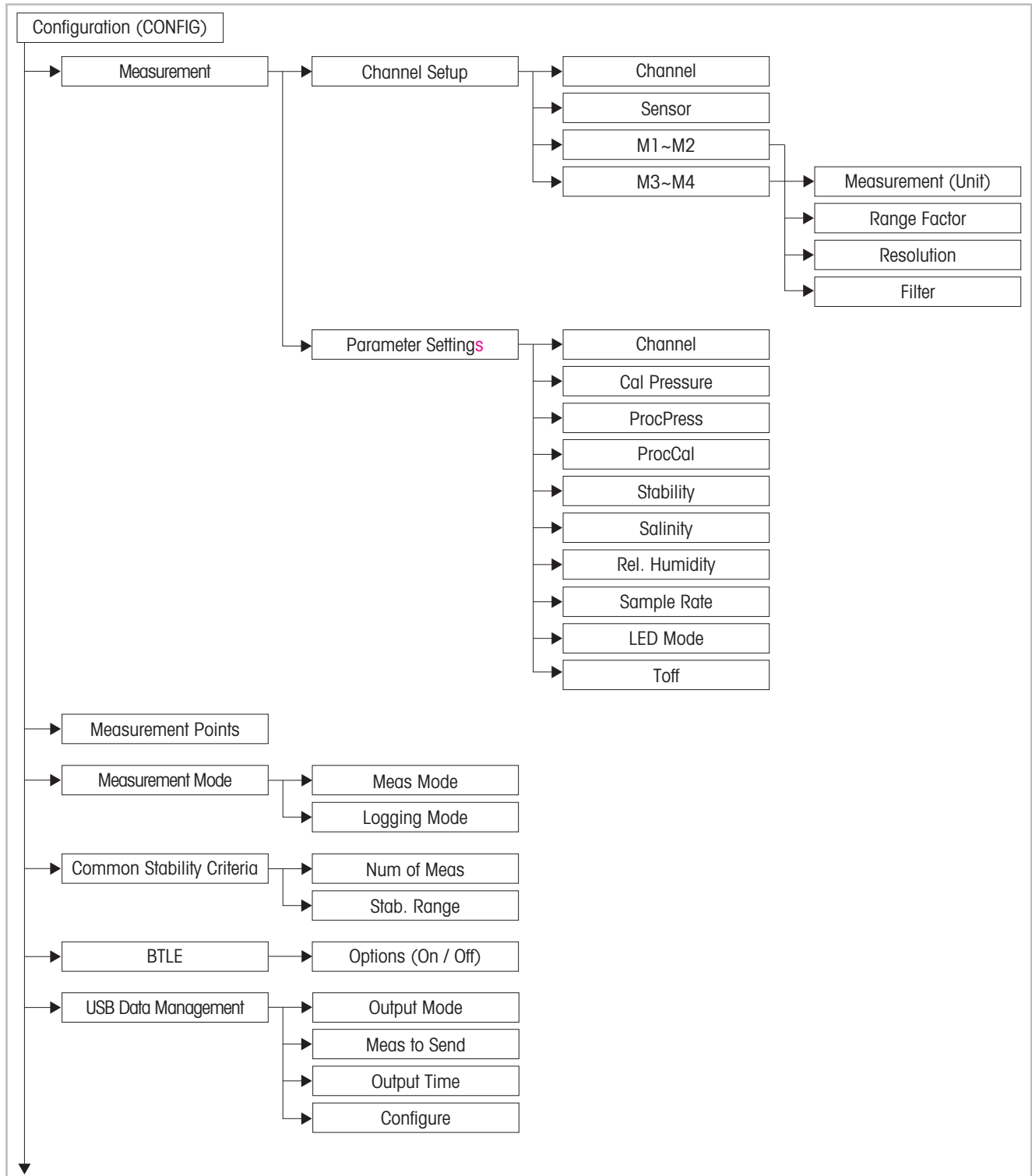


Fig. 8: Menu Configuration (CONFIG) – Measurement to USB Data Management

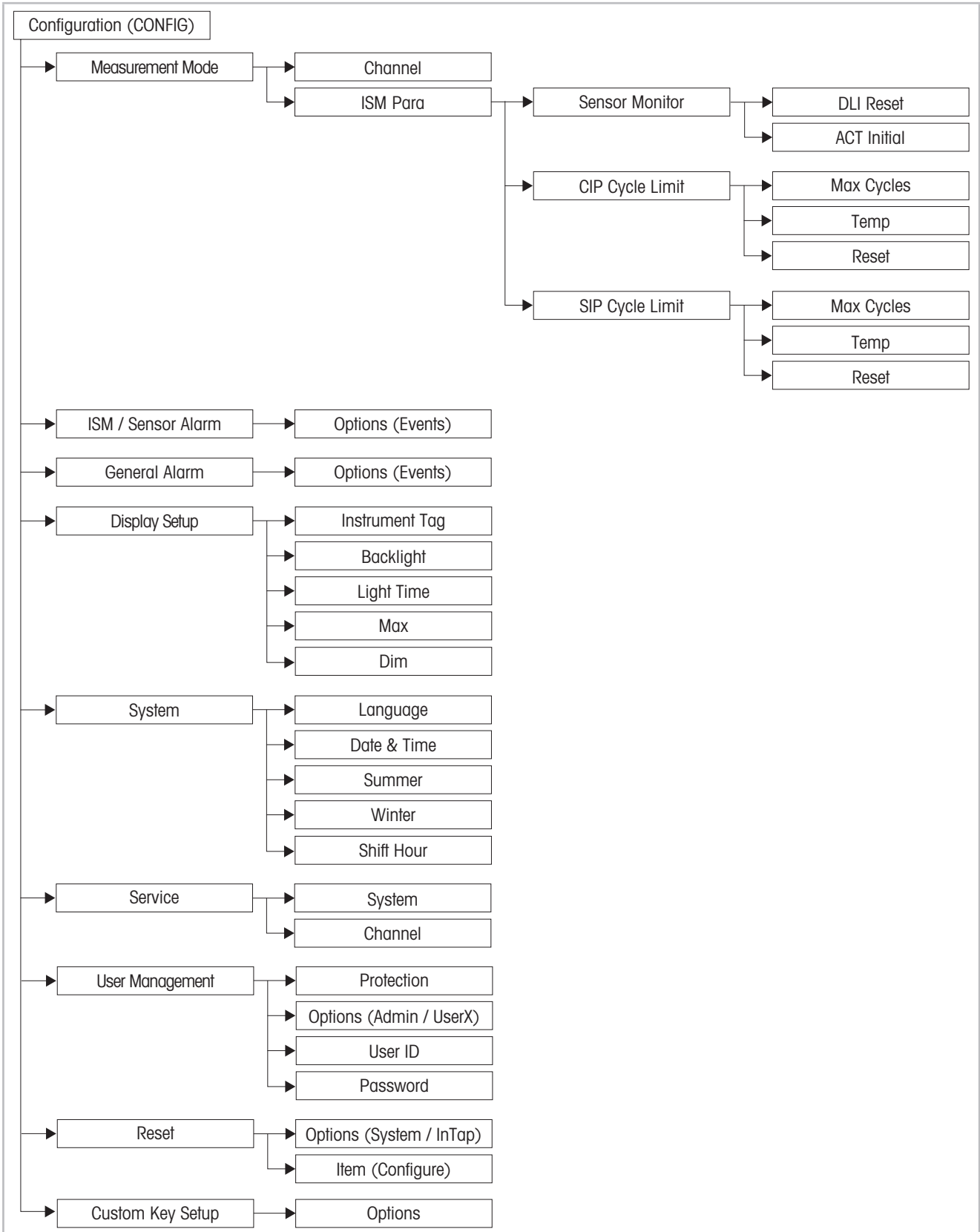


Fig. 9: Menu overview – Measurement Mode to Custom Key Setup

## 7.3 Menu "ISM"

### 7.3.1 iMonitor

Menu path: Home screen > ISM > iMonitor

The "iMonitor" menu displays the status of the different timers.

Parameter	Description
DLI	<p>Displays the remaining days for the <b>Dynamic Lifetime Indicator</b>. The days are set by the manufacturer.</p> <p>The following parameters affect the lifetime indicator: temperature, oxygen value, calibration history, phase 0 and phase 100, LED on time, sampling rate, CIP cycles, SIP cycles, autoclaving cycles.</p>
ACT	<p>Displays the <b>Adaptive Cal Timer</b> in days.</p> <p>The Adaptive Cal Timer estimates when the next calibration should be performed to keep the best possible measurement performance. The Adaptive Cal Timer is reset to its initial value after a successful adjustment or calibration.</p> <p>You can set the days with the ACT Initial parameter. Menu path: CONFIG <b>**</b> &gt; Measurement mode &gt; ISM Para &gt; Sensor Monitor &gt; ACT Initial</p>
CIP	<p>Displays the number of CIP cycles performed. If the current number is below the entered value, a tick is displayed.</p> <p>You can set the maximum cycles with the Max Cycles parameter. Menu path: CONFIG <b>**</b> &gt; Measurement mode &gt; ISM Para &gt; CIP Cycle Limit &gt; Max Cycles</p>
SIP	<p>Displays the number of SIP cycles performed. If the current number is below the entered value, a tick is displayed.</p> <p>You can set the maximum cycles with the Max Cycles parameter. Menu path: CONFIG <b>**</b> &gt; Measurement mode &gt; ISM Para &gt; SIP Cycle Limit &gt; Max Cycles</p>

Table 10: iMonitor

## 7.3.2 Messages

Menu path: Home screen > ISM > Messages

The **Messages** menu displays all current alarms and all not cleared messages. If there are no alarms and all messages are cleared, the message "No available messages" is displayed.

For troubleshooting see Chapter 8 on Page 55.

For the alarms and messages the following status are possible.






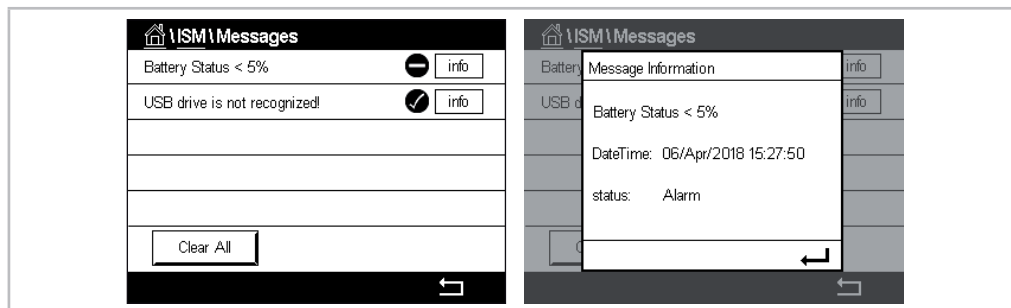



Status	Display "Messages" menu	Home screen / Measurement screen	Description
Alarm	Message e.g. "Battery status < 5 %" and flashing symbol 	The symbol  is displayed in the upper line of the screen. The upper line is flashing. If you tap on the upper line, the "Messages" menu is displayed.	An error was detected.
Acknowledged Alarm	Message e.g. "Battery status < 5 %" and symbol 	The symbol  is displayed in the upper line of the screen. If you tap on the upper line, the "Messages" menu is displayed.	The message was acknowledged by the user. You acknowledge the message via the key "Info".
Solved	Message e.g. "Battery status < 5 %" and symbol 	–	The error has been fixed. You can clear the message either via the button "Clear All" or the key "Clear".

Table 11: Messages – display and description



### In case of an error, proceed as follows:

Example: Battery status < 5 %

- Tap "Info" for the message "Battery status < 5 %".
  - ⇒ The "Message Information" screen is displayed. The "Message Information" comprises the message (alarm), date and time, when the error is occurred and the status.
- Tap .
  - ⇒ The message is acknowledged. The symbol  is not flashing anymore.
- Fix error.
  - ⇒ The symbol  is displayed.

4. Clear message. You have the following possibilities:
  - Clearing all messages whose errors have been fixed: Tap “Clear all”. Answer the question “Do you want to clear all messages?” with “Yes”.
  - Clearing one message whose error has been fixed: Tap “Info” for the message you want to clear. Tap “Clear” on the “Message Information” screen. Answer the question “Do you want to clear all messages?” with “Yes”.

### 7.3.3 ISM Diagnostics

Menu path: Home screen > Measurement screen > ISM > ISM Diagnostics

The “ISM Diagnostics” menu displays the executed cleaning cycles, the limits for the cleaning counters and the maximum temperatures. You can configure the cleaning cycles counters in the “ISM Para” menu.

Parameter	Description
Chan (Channel)	Displays the channel descriptor.
Diagnostic – Cycles	<ul style="list-style-type: none"> <li>– CIP Cycles: Displays the executed CIP cycles and the limit for the CIP cycles counter.</li> <li>– SIP Cycles: Displays the executed SIP cycles and the limit for the SIP cycles counter.</li> </ul>
Diagnostics – Sensor Monitor	<ul style="list-style-type: none"> <li>– DLI: Displays the Dynamic Lifetime Indicator in days and as bargraph</li> <li>– ACT: Displays the Adaptive Cal Timer in days and as bargraph</li> <li>– Operating Hours: Displays the operating hours in hours.</li> </ul>
Diagnostics – Max. Temperature	<ul style="list-style-type: none"> <li>– Tboard: Displays the temperature of the sensor electronics.</li> <li>– Tspot: Displays the temperature of the sensor measurement tip.</li> </ul>

Table 12: ISM Diagnostics

## 7.3.4 Calibration Data

Menu path: Home screen > Measurement screen > ISM > Calibration Data

This menu shows the following data: Factory calibration, Actual adjustment, the first adjustment and the calibration history.



### NOTE!

The **Calibration Data** function requires the correct setting of **Date & Time**. See Chapter 7.6.11 "System" on Page 51.

### Definitions:

- "S" means "Slope". "Z" means "Offset". (P100, P0)
- **Adjustment:** The calibration procedure is completed with the "Adjust" command. The calibration values are adopted and used for measurement. Additionally, the calibration values are stored in the calibration history.
- **Calibration:** The calibration procedure is completed with the "Calibrate" command. The calibration values are stored in the calibration history as dataset "Cal 1" for documentation, but cannot be used for the measurement. The measurement continues with the last valid adjustment dataset "Actual".
- **Factory calibration:** According to the definitions for "Adjustment" and "Calibration" the "Factory calibration" is a "Factory adjustment". Historically, the "Factory adjustment" is termed "Factory calibration".

Parameter	Description
Chan (Channel)	Displays the channel descriptor.
2nd key	<p>Tap the middle field to select the option.</p> <p>Options: Actual, Factory, 1. Adjust, Cal 1, Cal 2, Cal 3</p> <ul style="list-style-type: none"> <li>– Actual (Actual adjustment): This is the current calibration dataset which is used for the measurement. This dataset moves to "Cal2" position after the next adjustment.</li> <li>– Factory (Factory calibration): This is the original dataset, determined in the factory. This dataset remains stored in the InTap sensor for reference and cannot be overwritten.</li> <li>– 1. Adjust (First adjustment): This is the first adjustment after the factory calibration. This dataset remains stored in the InTap sensor for reference and cannot be overwritten.</li> <li>– Cal 1 (latest calibration/adjustment): This is the latest executed calibration/adjustment. This dataset moves to "Cal 2" when a new calibration/adjustment is performed.</li> <li>– Cal 2 and Cal 3: After calibration/adjustment the "Cal 1" dataset moves to "Cal 2" and "Cal 2" moves to "Cal 3". The former "Cal 3" dataset is not available anymore.</li> </ul>
3rd key	Tap "Cal Data" to show the values for P100, P0 and the date of modification.

Table 13: Calibration Data

### 7.3.5 Sensor Info

Menu path: Home screen > Measurement screen > ISM > Sensor Info

Parameter	Description
Chan (Channel)	Displays the channel descriptor.
Model	Displays the model of the built-in InTap sensor.
Cal Date	Displays the date of the last adjustment or calibration.
S/N	Displays the serial number of the InTap.
P/N	Displays the part number (order number) of the InTap.
SW Vers	Displays the software version of the InTap.
HW Vers	Displays the hardware version of the InTap.

Table 14: Sensor Info



## 7.4 Menu "O2"

Menu path: Menu path: Home screen > Measurement screen >  $O_2$  or  
Home screen > Measurement screen > ★ > Sample Measurement

See Chapter 5 "Measurement Points (O2)" on Page 18.

## 7.5 Menu "Calibration (CAL)"

Home screen > Measurement screen > CAL

See Chapter 6 "Calibration" on Page 29.

## 7.6 Menu "Configuration (CONFIG)"

### 7.6.1 Measurement

Menu path: Home screen > Measurement screen > CONFIG > Measurement

The "Measurement" menu includes the sub menus "Channel Setup" and "Parameter Setting". With the "Channel Setup" menu you configure the measurement values M1 to M4. With the "Parameter Setting" menu you configure the parameter needed for the  $O_2$  measurement.

#### Channel Setup

Menu path: Home screen > Measurement screen > CONFIG > Measurement > Channel Setup

Parameter	Description
Channel	The parameter is set to "#1" and cannot be changed. If you tap the right input field, you can edit the channel descriptor. The channel descriptor is always shown e.g. in the Home screen and Measurement screen.
Sensor	The parameter is set to "ISM" and " $O_2$ opt." and cannot be changed.
M1~M2	Configure the measurement values M1 and M2.
M3~M4	Configure the measurement values M3 and M4.

Table 15: Channel Setup

M1~M2 and M3~M4

Parameter	Description
Measurement	Select unit for the measurement value. Options for M1: % air, $O_2$ % $O_2$ , % $O_2$ , % $O_2G$ , g/L $O_2$ , $O_2$ gas, mbar, hPa, mmHg Options for M2, M3 and M4: None, % air, $O_2$ % $O_2$ , % $O_2$ , % $O_2G$ , g/L $O_2$ , $O_2$ gas, mbar, hPa, mmHg, ProcProcess, °C, °F, DLI, ACT

Parameter	Description
Range Factor	Select range factor for the measurement value. Options: Auto, ppm, ppb, ppt For units for which no range factor is possible, the selected unit is used.
Resolution	Select the resolution for the measurement. The accuracy of the measurement is not affected by this setting. Options: 1, 0.1, 0.01 and 0.001
Filter	Select the averaging method (noise filter) for the corresponding measurement value. <ul style="list-style-type: none"> <li>– None: No averaging or filtering</li> <li>– Low: Equivalent to 3 point moving average</li> <li>– Medium: Equivalent to 6 point moving average</li> <li>– High: Equivalent to 10 point moving average</li> <li>– Special (Default): Averaging dependent on the signal change, normally High averaging but Low averaging for large changes in input signal</li> <li>– Custom: Enter a value</li> </ul>

Table 16: M1–M2 and M3–M4

### Parameter Setting

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > Measurement > Parameter Setting

The “Parameter Setting” menu is relevant for the InTap sensor only.

Parameter	Description
Channel	Displays the channel descriptor.
Cal Pressure	Enter calibration pressure.
ProcPress	Enter ambient pressure. The type “Edit” cannot be changed. This pressure has only influence on the calculation of the gas phase value, units “% O2 Gas” and “O2 Gas”.
ProcCal	<b>Pressure</b> Select option “CalPress (Calibration pressure)”. The option “ProcPressure” is in this case without function. <b>Mode</b> Select option “Calibration”. The option “Scaling” is in this case without function.
Stability	Select the stability mode for the sensor signal during calibration procedure. <ul style="list-style-type: none"> <li>– Manual: You decide when the sensor signal is stable enough.</li> <li>– Auto: The InTap decides when the sensor signal is stable enough.</li> </ul>
Salinity	Enter salinity of the measured solution.
Rel Humidity	Enter relative humidity of the calibration gas. When no humidity measurement is available use the default value of 50 %.
Sample Rate	Enter the sample rate of the sensor during measurement in seconds. A higher value will increase the life time of the OptoCap of the sensor.

Parameter	Description
LED Mode	Select the LED Mode of the sensor. <ul style="list-style-type: none"> <li>– Off: LED is permanently switched off. No oxygen measurement is performed.</li> <li>– On: LED is permanently switched on.</li> <li>– Auto: The LED is on as long as the measured media temperature is less than the set temperature for “Toff” parameter.</li> </ul>
Toff	Prerequisite: Parameter “LED Mode” = Auto Enter the limit for the measuring temperature to switch off the LED of the sensor automatically. If the media temperature is higher than Toff, the LED will be switched off. The LED will be switched on as soon as the media temperature falls below Toff –3 K. This function can increase the lifetime of the OptoCap by switching off the LED during SIP or CIP cycles.

Table 17: Parameter Setting

## 7.6.2 Measurement Points

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > Measurement Points

The “Measurement Points” menu allows you to perform the following actions:

- Pair measurement points of the InTap with In-Line sensors by creating new measurement points. See Chapter 5.1.1 on Page 18.
- Pair measurement points of the InTap with In-Line sensors by assigning existing measurement points. See Chapter 5.1.2 on Page 20.
- Create a new measurement point. See Chapter 5.3 on Page 23.
- Edit a measurement point. See Chapter 5.4 on Page 24.
- Disconnect a measurement point from an In-Line sensor. See Chapter 5.5 on Page 25.
- Delete a measurement point. See Chapter 5.6 on Page 26.
- Identify a paired In-Line sensor. See Chapter 5.7 on Page 27.
- Check information of an In-Line sensor. See Chapter 5.8 on Page 27.



### NOTE!

For the manual logging mode use the “Measurement Mode” menu to select the measurement point. See Chapter 7.6.3 on Page 44.

For the sample logging mode use the “Measurement Points (O2)” menu to select the measurement point. See Chapter 5.2 on Page 21.

## 7.6.3 Measurement Mode



Menu path: Home screen > Measurement screen > CONFIG **\*\*** > Measurement Mode

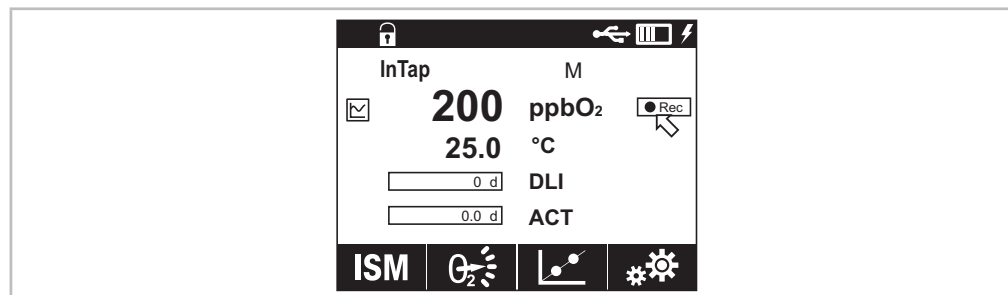
Parameter	Description
Meas Mode	The parameter is set to "Continuous" and cannot be changed.
Logging Mode	<ul style="list-style-type: none"> <li>– Auto: In the automatic logging mode the InTap is always measuring, the measurement values are displayed on the Measurement screen and saved automatically in the folder "Continues Mode Data" based on the ring memory concept.</li> <li>– Manual: See Chapter 7.6.4 on Page 44.</li> </ul>
Auto Shutoff	<p>Prerequisite: Parameter "Logging Mode" = Auto</p> <p>Select time without operator action after which the InTap is switched off. As soon as you perform an operator action, the "Auto shutoff" timer is stopped. Touching the screen, connection or disconnecting the USB stick, pressing the power key less than 3 seconds are operator actions.</p> <p>The "Auto shutoff" function is disabled as soon as you connect the AC/DC adapter or operate certain menus. Once you disconnect the AC/DC adapter and do not operate menus, the function will be re-enabled.</p> <p>As soon as the "Auto shutoff" timer has counted down to 0, a message is displayed for 30 seconds. After 30 seconds the InTap is switched off.</p> <p>Options: 5 min, 10 min, 30 min (default), 1 hour, 2 hour</p>

Table 18: Measurement Mode

## 7.6.4 Manual logging

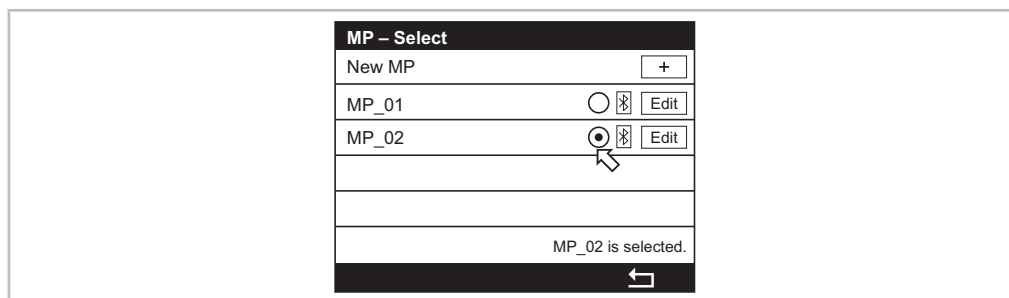
**Prerequisite:** The measurement point of the InTap is paired with an In-Line sensor.


1. Select for parameter "Logging Mode" the option "Manual". Menu path: Measurement screen > CONFIG **\*\*** > Measurement Mode
2. Tap .
  - ⇒ The question "Save changes?" is displayed.
3. Tap "Yes".
4. Tap .
  - ⇒ The following screen is displayed:

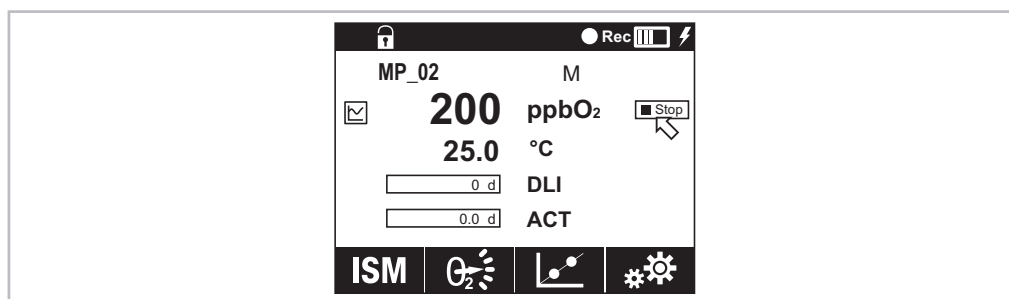


1. Tap "Rec".
  - ⇒ The screen "MP – Select" is displayed.

2. Activate the radio button of the measurement point you want to record.



3. Tap .
- ⇒ The question "Save changes?" is displayed.
4. Select "Yes" to record the measurement.
- ⇒ The following screen is displayed:



5. Tap "Stop", to stop the recording.
- ⇒ The measurement result is displayed. The Measurement result screen is only displayed if at least 1 measured value has been measured.
6. Select for the measurement result one of the following options.
- Cancel: The process is aborted. The measurement result is not saved. The next time you start the manual logging, you have to select a measurement point again.
  - Continue: The measurement result is saved on the USB stick in the folder of the recorded measurement point. The Measurement screen for the selected measurement point is displayed. The manual logging is continued with the same selected measuring point.
  - Save: The measurement result is saved on the USB stick in the folder of the recorded measurement point. The Measurement screen for the InTap sensor is displayed. The next time you start the manual logging, you have to select a measurement point again.

## Measurement Result

The Measurement result screen is only displayed if at least 1 measured value has been measured.

Parameter	Description
Last Value	Displays the last measured value.
Std. Deviation	Displays the standard deviation of the measurement values.
Min-Max	Displays the result of the maximal measured value minus the minimum measured value. The value is an indication for the stability of the measured value.
Value Status	Displays the stability of the measurement. <ul style="list-style-type: none"> <li>– Stable: The Max-Min value for measured values is less than or equal the entered value for the "Stab. Range" parameter.</li> <li>– Not Stable: The Max-Min value for measured values is higher than the entered value for the "Stab. Range" parameter.</li> </ul>

Table 19: Measurement Result

## 7.6.5 Common Stability Criteria

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > Common Stability Criteria

The parameters parameterized in the "Common Stability Criteria" menu are used as default values for all new measurements points that you create in the "Measurement Points (O2)" menu. In the "Measurement Points (O2)" menu, you can change the criteria for each measurement point individually. If you change the criteria in the "Common Stability Criteria" menu, this only has an impact on newly created measurement points. The change has no influence on existing measurement points.

Parameter	Description
Num of Meas	Enter the number of measurements for the "Stability criterion" function. The stability criterion is met if the entered number (Num of Meas) is in the entered range (Stab. Range). Default value: 10 Range: 3 to 1000
Stab. Range	Enter range for the "Stability criterion" function. The stability criterion is met if the entered number (Num of Meas) is in the entered range (Stab. Range). Default value: $\pm 2$ (Unit for M1: ppbO2) Range: 1 to 1000

Table 20: Common Stability Criteria

### 7.6.5.1 BTLE

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > BTLE

Parameter	Description
BTLE	<p>Enable or disable Bluetooth function.</p> <ul style="list-style-type: none"> <li>– On: Enables all BTLE related functions. For example you can search for Bluetooth devices or calibrate In-Line sensors.</li> <li>– Off: Disabled all BTLE related functions. For example you cannot calibrate an In-Line sensor.</li> </ul>

Table 21: BTLE

### 7.6.6 USB Data Management

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > USB Data Management

With the "USB Data Management" menu you configure which data and how the data is stored on the USB stick. The settings apply for the "Auto logging" and for the "Manual logging" method.

See Chapter 3.4.2 "USB Stick and Data Storage" on Page 15.

Parameter	Description
Output Mode	The parameter is set to "Data Log" and cannot be changed.
Measures to Send	<p>Enter the number of the measurements M1 to M4 to be saved.</p> <p>Range: 1 to 4</p>
Output Time	<p>Enter the time between each saving cycle.</p> <ul style="list-style-type: none"> <li>– Minimum time: 1 second.</li> <li>– Maximum time: 1 hour (60 min or 3600 sec)</li> </ul> <p>Tap on the number to configure the Output Time. The "Edit – Output Time" screen is displayed. In this screen you can edit the time. If you want to change the unit, you have to tap on the "U". Another "Edit – Output Time" screen is displayed. In this screen you can select "sec" or "min" as unit and edit the time.</p>
Configure	<p>Configure the output.</p> <p>By default, the settings for M1, M2, M3 and M4 are taken from the Channel Setup menu. M1 is the first line, M2 is the second line and so on. The number of lines displayed depends on the settings for the "Measures to Send" parameter.</p> <p>In the Configure screen you can change the order by selecting the unit of the measurement.</p> <p>Settings in this Configure screen do not affect the settings in Channel Setup the menu. Subsequent changes in the Channel Setup menu override the settings made here.</p>

Table 22: USB Data Management

## 7.6.7 ISM Setup

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > ISM Setup

Parameter	Description
Channel	Displays the channel descriptor.
ISM Para	Configure Sensor Monitor, CIP Cycle Limit and SIP Cycle Limit.

Table 23: ISM Setup

CIP or SIP cycles are automatically recognized by the sensor. The algorithm of the counter recognizes an increase of the measured temperature above the set temperature. If the temperature remains for longer than five minutes at the set temperature, the device is locked for the next two hours. The counter is incremented by one.

### Sensor Monitoring

Parameter	Description
DLI Reset	After exchanging the OptoCap select "Yes" to reset the Dynamic Lifetime Indicator (DLI) for the sensor. The DLI estimates when the OptoCap of the optical oxygen sensor is at the end of its lifetime, based on the actual stress it is exposed to. The sensor permanently takes the averaged stress of the past days into consideration and is able to increase / decrease the lifetime accordingly.
ACT Initial	Enter the ACT Initial value in days. The Adaptive Calibration Timer (ACT) estimates when the next calibration should be performed to keep the best possible measurement performance. The timer is influenced by significant changes on the DLI parameters. The ACT will be reset to its initial value after a successful calibration.

Table 24: ISM Para – Sensor Monitoring

### CIP Cycle Limit

Configure the CIP cycle counter.

Parameter	Description
Max Cycles	Enter limit of the CIP cycle counter. If the counter exceeds the set value, the message "CIP Counter Expired" is displayed. The function is switched off by entering the value "0".
Temp	Enter the temperature at which the sensor recognizes CIP cleaning. If the sensor measures the entered temperature or higher, the CIP cycle counter is incremented by one.
Reset	Select "Yes" to reset the CIP cycle counter.

Table 25: ISM Para – CIP Cycle Limit



### SIP Cycle Limit

Configure the SIP cycle counter.

Parameter	Description
Max Cycles	Enter limit of the SIP cycle counter. If the counter exceeds the set value, the message "SIP Counter Expired" is displayed. The function is switched off by entering the value "0".
Temp	Enter the temperature at which the sensor recognizes SIP cleaning. If the sensor measures the entered temperature or higher, the SIP cycle counter is incremented by one.
Reset	Select "Yes" to reset the SIP cycle counter.


Table 26: ISM Para – SIP Cycle Limit

## 7.6.8 ISM / Sensor Alarm

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > ISM / Sensor Alarm

Using the "ISM / Sensor Alarm" menu you activate the events you want to monitor.

The occurrence of a monitored event is displayed as follows:

- On the Home screen and Measurement screen the symbol  is flashing.
- The event is displayed in the Messages menu. See Chapter 7.3.2 on Page 37.

For troubleshooting see Chapter 8 on Page 55.

Parameter / Events	Description
Options – 1st field	Shows the channel name.
Options – 2nd field	<p>Tap "Events" to open the Events Option screen. Tick the box of the event you want to monitor. You can monitor all events.</p> <p>You can monitor the following events:</p> <ul style="list-style-type: none"> <li>– ACT = 0</li> <li>– CIP Counter Expired</li> <li>– SIP Counter Expired</li> <li>– Shaft Error</li> <li>– Signal Error</li> <li>– Hardware Error</li> <li>– Change Spot</li> <li>– Power Failure</li> </ul>

Table 27: ISM / Sensor Alarm

## 7.6.9 General Alarm

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > General Alarm

The "General Alarm" menu is identical to the "ISM / Sensor Alarm" menu except the selectable events. See Chapter 7.6.8 on Page 49.

Parameter	Description
Options	<p>Tap "Events" to open the Events Option screen. Tick the box of the event you want to monitor. You can monitor all events.</p> <p>You can monitor the following events:</p> <ul style="list-style-type: none"> <li>– Power Failure</li> <li>– Software Failure</li> </ul>

Table 28: General Alarm

## 7.6.10 Display Setup

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > Display Setup

Parameter	Description
Instrument Tag	Enter or edit the tag for the InTap. The instrument tag is displayed on the line at the top of the Home screen and Measurement screen.
Back Light	<p>Select option for the backlight of the display if the InTap is not operated for a certain time. After tapping the display the backlight is switched on again.</p> <ul style="list-style-type: none"> <li>– Auto Off: The display is switched off.</li> <li>– Auto Dim: The display is dimmed. You can adjust the backlight with the "Dim" parameter.</li> </ul>
Light Time	<p>Enter time in minutes. After this time without operation, the display is switched off or dimmed.</p> <p>In case of an unacknowledged warning or alarm the display is not dimmed or switched off.</p>
Max	Adjust the backlight of the display during operation.
Dim	Adjust the backlight of the display for the "Auto Dim" option.

Table 29: Display Setup

## 7.6.11 System

Menu path: Measurement screen > CONFIG **\*\*** > System

Parameter	Description
Language	Select display language.
Date & Time	Enter date and time.
Summer	Enter date when the summer time starts.
Winter	Enter date when the winter time starts.
Shift Hour	Select the time shift for the clock change (winter / summer).

Table 30: System

## 7.6.12 Service

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > Service

Parameter	Description
System – 1st field	Select the component you want to check. Options: Memory, Display, Touch Pad or Battery.
System – 2nd field	Tap "Diagnostic". Dependent on the selected component a diagnostic procedure is performed. <ul style="list-style-type: none"> <li>– Memory: The InTap performs a memory test of main board, sensor board, BTLE board and InTap sensor.</li> <li>– Display: The InTap changes the brightness of the display and returns afterwards to the menu.</li> <li>– Touch Pad: Calibrates the touchscreen in 4 steps. Tap the center of the circle shown in the 4 corners of the display. After calibration the result is displayed.</li> <li>– Battery: Displays the battery level in percent and mAh and the status e.g. charging. For a battery check the AC/DC adapter has to be connected. Tap "Start" to perform a battery check. The battery check lasts approximately 3 minutes.</li> </ul>
Channel – 1st field	Displays the channel descriptor.
Channel – 2nd field	Tap "Diagnostic" to get further information about the current state of the InTap.

Table 31: Service

## 7.6.13 User Management

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > User Management

Parameter	Description
Protection	<ul style="list-style-type: none"> <li>– Off: No protection</li> <li>– Active: To access the menus, you must answer the question “Active?” with “Yes”.</li> <li>– Password: The access to the menus is only possible with a password.</li> </ul>
Options	Select the profile. For the administrator (ADMIN) you can only change the password.
UserID	Enter a user ID e.g. a number or name for the selected user. The User ID is displayed if you want to access a menu and access is protected by a password.
Password	Enter a password or change the password. The default password is “00000000” for the administrator and all users.
Access	<p>Prerequisite: A User ID must have been entered for the selected user.</p> <p>Tap “Access Configure” to configure the menu access for the selected user. The user has access to the menus for which you tick the boxes.</p>

Table 32: User Management

## 7.6.14 Reset

Menu path: Home screen > Measurement screen > CONFIG **\*\*** > Reset

See Chapter 12 “Default Values” on Page 61.

Parameter	Description
Options	Select System or InTap.
Item	<p>Tap “Configure” and tick boxes of the data you want to reset.</p> <p>If you have selected “System” for “Options”, you can reset the following data: Configuration Data, Password and MP.</p> <p>If you have selected “InTap” for “Options”, you can reset the sensor calibration data.</p>
Action	<p>Prerequisite: One item was selected.</p> <p>Tap “Action” to reset the system or the InTap.</p>

Table 33: Reset

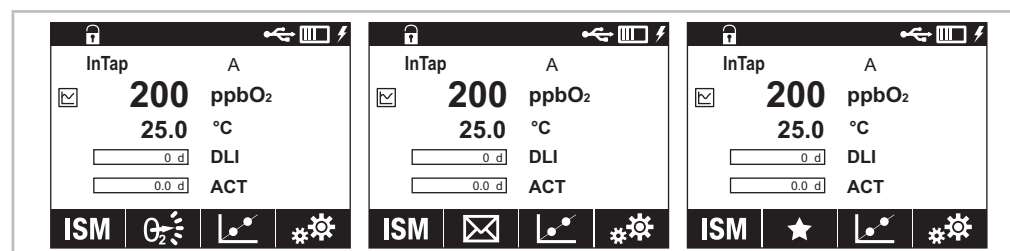
1. Select "Reset" menu.
2. Tap "System" to select the options.
3. Select "System" or "InTap".
4. Tap "Configure".
5. Tick the box for reset you want to perform.
6. Tap  $\leftarrow$ .
7. Tap "Reset".
  - $\Rightarrow$  The question "Reset .... Are you sure?" is displayed.
8. Tap "Yes" to perform the configured reset.

## 7.6.15 Custom Key Setup

Menu path: Home screen > Measurement screen > CONFIG  $**$  > Custom Key Setup

Parameter	Description
Options	Select the key to be shown on the Measurement screen. <ul style="list-style-type: none"> <li>– FAV (Favorite): The key <math>\star</math> is displayed. Tap this key to enter the "Favorite" menu.</li> <li>– Sample Meas.: The key <math>\text{O}_2</math> is displayed. Tap this key to enter the "Measurement Point (MP)" menu.</li> <li>– Messages: The key <math>\text{✉}</math> is displayed. Tap this key to enter the "Messages" menu.</li> </ul>

Table 34: Custom Key Setup



## 7.7 Menu “Favorite”

**Prerequisite:** Custom Key Setup = FAV (See Chapter 7.6.15 on Page 53)

Menu path: Home screen > Measurement screen > ★

This menu allows you to configure frequently used functions as quick access.

The administrator can disable the access to the “Favorite” menu for certain users. If you have access to the “Custom Key Setup” menu, you can select the “Sample Measurement” menu via the “Custom Key Setup” menu. See Chapter 7.6.15 on Page 53.

Menu / Parameter	Description
Sample Measurement	Tap ► for “Sample Measurement” to display the MP-Select screen. This favorite cannot be changed. For MP – Select screen see Chapter 5 on Page 18.
Set Favorite	Configure up to 3 functions as favorites.

Table 35: Favorite

### Configure a favorite

1. Navigate to the Favorite menu. Menu path: Measurement screen > ★
2. Tap ► for “Set Favorite” parameter.
3. Tap ► for the desired main menu ISM, CAL or CONFIG.
  - ⇒ The sub menus of the selected main menu are shown.
4. Tick the box for the menu to be displayed as favorite.
  - ⇒ The selected menu is marked with the ★ icon.
5. Tap ↩.
- ⇒ The Save changes? dialog is displayed.
6. Tap “Yes” to save changes.
  - ⇒ The selected menu is displayed as favorite in the Favorite menu.

### Delete a favorite

Navigate to the sub menu. Tick the box of the sub menu to delete the favorite. The ★ icon is not shown any more.

### Select a favorite


Navigate to the Favorite menu. Tap ► for the desired favorite.

## 8 Troubleshooting

If the InTap is used in a manner not specified by METTLER TOLEDO the protection provided by the InTap may be impaired.

Review the table below for possible causes of common problems.

The occurrence of a monitored event is displayed as follows:

- On the Home screen and Measurement screen the symbol  is flashing.
- The event is displayed in the Messages menu. See Chapter 7.3.2 on Page 37.

The following alarms / messages are possible and cannot be deactivated.

Alarm / message	Possible cause	Action
InTap not connected	InTap sensor not connected.	Connect the InTap sensor.
Battery status < 5 %	The capacity of the battery is less than 5 % and no AC/DC adapter is connected.	Connect AC/DC adapter to the InTap. If you do not connect the AC/DC adapter within 5 minutes, a warning message will be displayed first and then the InTap will be switched off automatically.
Battery not present	No battery is built-in or battery is damaged.	Contact METTLER TOLEDO's Customer Service Dept. Send in InTap.
Battery failed	Battery is not connected.	Contact METTLER TOLEDO's Customer Service Dept.
Battery temperature too high	Check ambient temperature.	Position the InTap at a place with lower temperature. Contact METTLER TOLEDO's Customer Service Dept. Send in InTap.
USB drive is not recognized	The InTap wants to write data to the USB stick. The USB stick is not connected.	Connect USB stick to the InTap.
USB drive memory is full!	The maximum memory capacity of the USB stick is reached.	Connect USB stick to a PC. If necessary, copy the folders of the USB stick to the PC. Delete data from the USB stick.
Check for beer leakage	Sensor detected moisture in the InTap.	Dry the InTap from the inside with a cloth. Check the InTap for any leakage. Check hose connections.
InTap Cal required	The InTap has not been calibrated for a longer time.	Calibrate the InTap. See Chapter 6.3 on Page 31.
InTap change spot	The measurement tip of the InTap is exhausted.	Exchange the measurement tip of the InTap sensor.

Table 36: Troubleshooting – alarms / messages not selectable

Using the menus "ISM / Sensor Alarm" and "General Alarm" you activate additional events you want to monitor. See Chapter 7.6.8 on Page 49 and Chapter 7.6.9 on Page 50.

Problem	Possible cause	Action
ACT = 0	The set value for the "ACT Initial" parameter has been reached. See Chapter Table 24 on Page 48.	Calibrate the InTap. See Chapter 6.3 on Page 31.
CIP Counter Expired	The set value for the CIP cycle counter has been exceeded.	Clean hoses. See Chapter 9.1.1 on Page 57. Reset CIP cycle counter. See Chapter Table 25 on Page 48.
SIP Counter Expired	The set value for the SIP cycle counter has been exceeded.	Reset SIP cycle counter. See Chapter Table 26 on Page 49.

Table 37: Troubleshooting – "ISM / Sensor Alarm" and "General Alarm"

In addition, the following problems may occur.

Problem	Possible cause	Action
Medium flow rate reduced, longer measurement times and / or wrong measurement results.	Hoses clogged.	Clean hoses. See Chapter 9.1.1 on Page 57.
Inaccurate measurement values.	InTap sensor not or incorrectly calibrated.	Calibrate the InTap. See Chapter 6.3 on Page 31.
Function of rotary knob / control valve for medium flow rate impaired.	External force on the InTap e.g. by fall.	Contact METTLER TOLEDO's Customer Service Dept. Send in InTap.
No access to certain menus	The administrator has restricted the access.	Contact administrator. See Chapter 7.6.13 on Page 52.
The display of the InTap is switched off.	The InTap is not connected to power and the capacity of the battery is less than 5 %.	Connect AC/DC adapter to the InTap.

Table 38: Troubleshooting – no alarm / no message is displayed



## 9 Maintenance and Repair

### 9.1 Cleaning

**NOTE!**

The cleaning procedures described here are for guidance only. If the application requires a different cleaning solution, contact METTLER TOLEDO's Customer Service Dept. for more information.

#### 9.1.1 Cleaning connection hoses and hoses inside the InTap

**CAUTION****Irritating cleaning agents!**

Irritating cleaning agents may cause irritations of the skin and eyes.

- Avoid contact with skin and eyes.
- Observe instructions on the packaging of the cleaning agent.
- Wear personal protection equipment according instructions on the packaging of the cleaning agent.

**ATTENTION****Improper cleaning!**

Improper cleaning may cause damage the InTap.

- Do not use aggressive cleaning agents. Only use hot water or 2 % caustic soda.
- Do not exceed the maximum cleaning temperature of 80 °C.
- Do not clean for longer than 30 minutes.

1. Adjust maximum medium flow rate with the rotary knob.
2. Clean hoses with one of the following cleaning agent for a maximum of 30 minutes.
  - Hot water with a maximum of 80 °C or
  - 2 % caustic soda with a maximum of 80 °C
3. Only after cleaning with caustic soda: Clean hoses with cold water to remove residues.
4. Blow hoses dry with oil-free air.
5. Store InTap at a dry place.

#### 9.1.2 Cleaning InTap from outside

Clean the surfaces with a soft damp cloth and dry the surfaces with a cloth carefully.

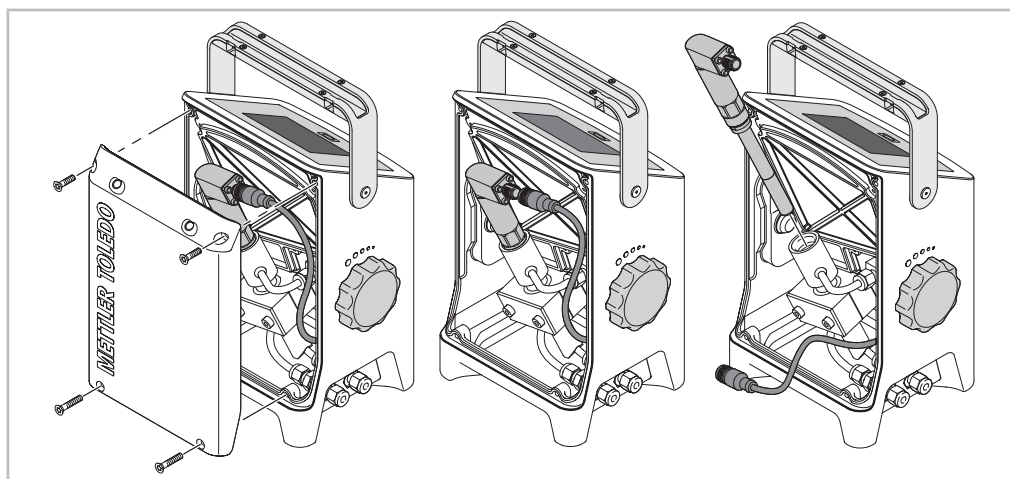
## 9.2 Replacing the OptoCap of the InTap Sensor (Sensor's Sensing Element)

Typically, the OptoCap has to be replaced after 6 to 12 months. This interval depends on the aggressiveness (CIP / SIP) of the application conditions.

For dismantling the sensor refer to the "Exchanging the InTap Sensor" section. For replacing the OptoCap refer to the Quick Setup Guide or to the Instructions Manual "InPro® 6000 / InTap Optical O<sub>2</sub> Sensors".

## 9.3 Exchanging the InTap Sensor

1. Unscrew the cover screws.
2. Exchange the InTap sensor as shown in the following figure.



Exchanging the InTap sensor

3. Tighten cover screws with a maximum torque of 5 Nm.
4. Calibrate sensor. See Chapter 6 "Calibration" on Page 29.

## 10 Disposal

### ATTENTION



#### Improper disposal!

Improper disposal may cause environmental damage.

- Do not dispose electrical products with household waste.
- Observe the local and national laws and directives, in particular when disposing the internal battery.
- Sort the raw materials by type and recycle them.

#### Prerequisite

- The InTap is not powered.
  - Hoses, AC/DC adapter and USB stick are disconnected.
1. Disassemble InTap according to its components e.g. plastic, metal, electronics.
  2. Sort the raw materials by type and recycle them. Observe the local and national laws and directives.

# 11 Technical Data

## General electrical specifications

Measurement parameter	Optical Dissolved Oxygen Saturation
Measuring range	0 to 2000 ppb
Accuracy <sup>1)</sup> (sensor)	≤ ± (1 % + 2 ppb)
Response time t <sub>98</sub> at +25 °C (+77 °F) (air to N <sub>2</sub> )	< 20 s
Power supply <sup>1)</sup>	<ul style="list-style-type: none"> <li>• External: 12 V DC, 2.5 A</li> <li>• Internal: Li-ion battery 45.4 Wh</li> </ul>
Battery life time	Up to 24 hours
Data storage USB 2.0	8 GB

1) 1) Measurement specification based on sensor specification

## Environmental specifications

Operating temperature	<ul style="list-style-type: none"> <li>• –5 to +45 °C (+23 to +113 °F) with media</li> <li>• Up to +80 °C (+176 °F) for cleaning with 2 % NaOH</li> <li>• With AC/DC adapter only up to +40 °C (+104 °F)</li> </ul>
Storage temperature	–20 to 50 °C (–4 to +122 °F)
Operating pressure	0 to 6 bar (0 to 87 psi)
Design pressure	10 bar (145 psi)
Relative humidity	0 to 95 % non-condensing
Altitude	Max. 2000 m

## Certificates and approvals

European directives	The EU Declaration of conformity is part of the delivery.
Safety standards	<ul style="list-style-type: none"> <li>• CAN / CSA – C22.2 No. 61010-1-12</li> <li>• ANSI / UL Std. No. 61010-1 (3rd Edition)</li> <li>• Overvolatge Catagory II</li> </ul>
FCC (USA)	<ul style="list-style-type: none"> <li>• CFR 47 FCC Part 15</li> <li>• ANSI C63.4-2014</li> </ul>
IC (Canada)	<ul style="list-style-type: none"> <li>• ICES-003, Issue 6</li> <li>• ANSI C63.4-2014</li> </ul>
CE mark	The measuring system is in conformity with the statutory requirements of the EC Directives. METTLER TOLEDO confirms successful testing of the device by affixing to it the CE mark.

## Mechanical specifications

Dimensions (height x width x depth)	280 mm x 170 mm x 150 mm (11.0" x 6.7" x 5.9") See Chapter 3.2 "Design" on Page 9.
Hose connection	<ul style="list-style-type: none"> <li>• Variant with metric connectors: Swagelock 6 mm</li> <li>• Variant with imperial inch / US connectors: 1/4" NPT</li> </ul>
Weight	3.5 kg (7.7 lbs)
Material	PU
Enclosure rating	IP 67



Menu	Sub menu / Parameter	Parameter / Option	Value	Affected by reset			
				1	2	3	4
Common Stability Criteria	–	Num of Meas	10	X	–	–	–
	–	Stability Range	2.0 (ppO <sub>2</sub> )	X	–	–	–
BTLE	–	Options	On	X	–	–	–
USB Data Management	–	Output Mode	Data Log	1)	1)	1)	1)
		Measures to Send	4	X	–	–	–
		Output Time	60 (seconds)	X	–	–	–
		Configure	– 1: Unit of M1 – 2: Unit of M2 – 3: Unit of M3 – 4: Unit of M4	X	–	–	–
ISM Setup > ISM Para	Sensor Monitor	DLI Reset	No	–	–	–	–
		ACT Initial	0 (days)	–	–	–	–
	CIP Cycle Limit	Max	100	–	–	–	–
		Temp	55 (°C)	–	–	–	–
		Reset	No	–	–	–	–
	SIP Cycle Limit	Max	100	–	–	–	–
		Temp	115 (°C)	–	–	–	–
Reset		No	–	–	–	–	
ISM / Sensor Alarm	Options > Events	ACT	Deactivated	X	–	–	–
		CIP Counter Expired	Deactivated	X	–	–	–
		SIP Counter Expired	Deactivated	X	–	–	–
		Shaft Error	Deactivated	X	–	–	–
		Signal Error	Deactivated	X	–	–	–
		Hardware Error	Deactivated	X	–	–	–
		Change Spot	Deactivated	X	–	–	–
		Power Failure	Deactivated	X	–	–	–
General Alarm	Options > Events	Software Failure	Off	X	–	–	–
		Power Failure	On	X	–	–	–
Display Setup	–	Instrument Tag	–	X	–	–	–
		Backlight	Auto Off	X	–	–	–
		Light Time	5 (minutes)	X	–	–	–
		Max	50 % <sup>3)</sup>	X	–	–	–
		Dim	50 % <sup>3)</sup>	X	–	–	–
System	–	Language	English	X	–	–	–
		Date & Time	– Date: 1/Jan/2009 – Time: 0:00:00	–	–	–	–
		Summer	25/Mar	X	–	–	–
		Winter	25/Oct	X	–	–	–
		Shift Hour	0-h (hour)	X	–	–	–
User Management	Protection	–	Off	–	X	–	–
	Options	–	ADMIN	–	X	–	–
	UserID ADMIN	Option "ADMIN"	ADMIN	–	X	–	–
	User ID User1 to User3	Option "UserX"	---	–	X	–	–
	Password	–	0000 0000 <sup>4)</sup>	–	X	–	–
	Access	Access configure	None <sup>5)</sup>	–	X	–	–

Menu	Sub menu / Parameter	Parameter / Option	Value	Affected by reset			
				1	2	3	4
Custom Key Setup	–	Options	Sample Meas.	–	–	–	–

- 1) The value is set by factory and cannot be changed.
- 2) The "System-MP" reset clears all measurement points and all related parameters. The data on the USB stick will not be deleted.
- 3) The 100 percent are divided into 32 steps (clicks). 50 percent equals 16 steps (clicks).
- 4) When "Password" is selected for the parameter "Protection".
- 5) For User1 to User3 the administrator can enable or disable the access to certain menus. At factory User1 to User3 only have access to the menus "Measurement Points (O2)" and "Measurement Mode".

## 13 Warranty

METTLER TOLEDO warrants this product to be free from significant deviations in material and workmanship for a period of one year from the date of purchase. If repair is necessary and not the result of abuse or misuse within the warranty period, please return by freight pre-paid and amendment will be made without any charge. METTLER TOLEDO's Customer Service Dept. will determine if the product problem is due to deviations or customer abuse. Out-of-warranty products will be repaired on an exchange basis at cost.

The above warranty is the only warranty made by METTLER TOLEDO and is lieu of all other warranties, expressed or implied, including, without limitation, implied warranties of merchantability and fitness for a particular purpose. METTLER TOLEDO shall not be liable for any loss, claim, expense or damage caused by, contributed to or arising out of the acts or omissions of the Buyer or Third Parties, whether negligent or otherwise. In no event shall METTLER TOLEDO's liability for any cause of action whatsoever exceed the cost of the item giving rise to the claim, whether based in contract, warranty, indemnity, or tort (including negligence).



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