GOSSEN METRAWATT
GMC-INSTRUMENTS GROUP

OPERATING INSTRUCTIONS

1/5.25
3-447-252-03

SECULIFE IF BASE

INFUSION PUMP ANALYZER

TABLE OF CONTENTS

1 SAFETY INSTRUCTIONS

	Read and follow these instructions carefully and completely in order to ensure safe and proper use. The instructions must be made available to all persons who use the instrument. Keep for future reference.

General

- The device may only be used by skilled technical personnel in the commercial field. This device is not a consumer product.
- The device may only be serviced by authorized service personnel.
- Observe and comply with all safety regulations which are applicable for your work environment.

Accessories

- Use only the specified accessories (included in the scope of delivery or listed as options) with the instrument.
- Carefully and completely read and adhere to the product documentation for optional accessories. Retain these documents for future reference.

Handling

- Use the instrument in undamaged condition only.
  Inspect the instrument before use. Pay particular attention to damage, interrupted insulation or kinked cables.
  Damaged components must be replaced immediately.
- Use the accessories and all cables in undamaged condition only.
  Inspect accessories and all cables before use. Pay particular attention to damage, interrupted insulation or kinked cables.
- If the instrument or its accessories don't function flawlessly, permanently remove the instrument/accessories from operation and secure them against inadvertent use.
- If the instrument or accessories are damaged during use, for example if they're dropped, permanently remove the instrument/accessories from operation and secure them against inadvertent use.
- If there are any signs of interior damage to the instrument or accessories (e.g. loose parts in the housing), permanently remove the instrument/accessories from operation and secure them against inadvertent use.
- The instrument and the accessories may only be used for the tests/measurements described in the documentation for the instrument.
- The instrument is intended for testing only and should never be used in diagnostics, treatment or any other capacity where it would come in contact with a patient.
- All connections to patients must be removed before connecting the DUT to the instrument. A serious hazard may occur if the patient is connected when testing with the instrument. Do not connect any leads or tubing from the patient directly to the instrument or DUT.
- The instruments and accessories of Gossen Metrawatt GmbH are designed such as to ensure optimum compatibility with the Gossen Metrawatt GmbH products that are expressly provided for them. Unless otherwise expressly confirmed in writing by Gossen Metrawatt GmbH, they are not intended and suited for use with other products.
- Route cables in an orderly fashion, e.g. the mains power cable and accessories cable. Loose, disorderly cables result in unnecessary danger of tripping and falling.

Operating Conditions

- Do not use the instrument and its accessories after long periods of storage under unfavorable conditions (e.g. humidity, dust or extreme temperature).
- Do not use the instrument and its accessories after extraordinary stressing due to transport.
- Do not expose the instrument to direct sunlight for longer periods of time. Overheating may cause damage to the device.
- Do not use the instrument if internal components may have been exposed to fluid.

- Only use the instrument and its accessories within the limits of the specified technical data and conditions (ambient conditions, IP protection code, measuring category etc.).
- Allow the instrument to acclimate to specified conditions for at least 30 minutes before attempting to operate it.

Calibration

- Comply with national calibration regulations and laws.
- Calibrations must be carried out by authorized service departments.

Emissions

- The instrument is equipped with a Bluetooth® module. Determine whether or not use of the implemented frequency band of 2.402 to 2.480 GHz is permissible in your country.
- Switch off nearby cell phones while performing tests/measurements with the instrument. Cell phone signals may impair the correct functioning of the device due to interference.

Data Security

- Always create a backup copy of your measurement/test data.
- The device is equipped with a data memory to which personal and/or sensitive data can be stored. Observe and comply with the applicable national data protection regulations. Use the corresponding functions provided by the test instrument (such as access protection), as well as other appropriate measures to prevent unauthorized access to the data.
- Protect the device against unauthorized tampering. Use the functions provided by the instrument (e.g. key lock/sealing/lock function) as well as other appropriate measures (e.g. restricting physical access to the instrument).

2 APPLICATION

Please read this important information!

2.1 INTENDED USE / USE FOR INTENDED PURPOSE

SECULIFE IF BASE is a single channel infusion pump analyzer for flow tests and occlusion tests. It provides continuous monitoring of the fluid flow without the need to stop and perform intermittent drains. The test parameters are configurable which allows for specific test routines specified by various manufacturers. Up to 250 tests can be stored as record on the instrument.

With the PC software “BC Flow” you can manage test records, create reports, configure the instrument, and remote controlling the instrument.

The app “myBC Mobile” for mobile devices allows for remote controlling the instrument and basic managing of test records.

The instrument is intended for testing only.

Safety of the user, as well as that of the instrument, is only assured when it’s used for its intended purpose.

2.2 USE FOR OTHER THAN INTENDED PURPOSE

Using the instrument for any purposes other than those described in these instrument operating instructions is contrary to use for intended purpose. Use for purposes other than those intended may result in unforeseeable damage!

2.3 LIABILITY AND GUARANTEE

The warranty provided by Gossen Metrawatt GmbH, and its liability, are governed by the applicable contractual and mandatory statutory provisions.

3 DOCUMENTATION

3.1 INFORMATION CONCERNING THESE INSTRUCTIONS

Read these instructions carefully and attentively. They contain all necessary information for safe use of the instrument. Comply with them in order to protect yourself and others from injury, and to avoid damaging the instrument.

The latest version of these instructions is available on our website:

https://www.gossenmetrawatt.de/en/services/download-center/

Errors and Suggestions for Improvement

These instructions have been prepared with utmost care in order to ensure correctness and completeness. Unfortunately, errors can never be entirely avoided. Continuous improvement is part of our quality goal, so we always appreciate your comments and suggestions.

Gender Equality

For better readability, only the masculine form is used in these instructions in a grammatically impartial sense. The feminine and diverse forms are of course always implied as well.

Trademark Law

Product designations used in this document may be subject to brand law and patent law. They are of the property of their respective owner.

Copyright

3.2 IDENTIFICATION OF WARNINGS

Instructions for your safety and for the protection of the instrument and its environment are provided as warnings and notes at certain points within these instructions.

They're laid out as shown below and are graded in terms of the severity of the respective hazard. They also describe the nature and cause of the hazard, the consequences of non-observance and what must be done to avoid it.

DANGER

Death or serious injury is almost certain.

WARNING

Death or serious injury is possible.

CAUTION

Minor or moderate injury is possible.

ATTENTION

Damage to the product or the environment is possible.

Note

Important information.

Tip

Useful additional information or application tip.

3.3 IDENTIFIERS

The following identifiers are used in this documentation:

Identifier	Meaning
Control Element	Keys, buttons, menus and other controls
✓ Prerequisite	A condition etc. which must be fulfilled before a given action can be taken
▶ **Procedure**	Beginning of a procedural instruction
1. Procedural step	Steps of a procedure which must be completed in the specified order
↳ Result	Result of a procedural step
■ Enumeration ■ Enumeration	Bullet lists
Figure 1: Caption	Description of the content of a figure
Tab. 1: Table 1	Description of the content of a table
Footnote	Comment

Tab. 1: Identifiers in this Document

3.4 SYMBOLS IN THE DOCUMENTATION

The following icons are used in this documentation:

Icon	Meaning
	Read and adhere to the product documentation.
	General warning symbol.
	Warning regarding electrical voltage.

Tab. 2: Icons used in this Document

3.5 DEFINITION OF TERMS

Term	Definition
AC	Alternating current
DC	Direct current
DUT	Device under test

Tab. 3: Definition of Terms

4 GETTING STARTED

This chapter gives you an overview of the initial steps with the instrument.

1. Read and adhere to the product documentation. In particular, observe all safety information in the documentation, on the tester and on the packaging.
   - Safety Instructions ➪🗎5.
   - Application ➪🗎7.
   - Documentation ➪🗎8.
2. Familiarize yourself with the tester ➪ "The Instrument" 🗎12.
3. Familiarize yourself with the display and instrument operation ➪ "Menu and Functions" 🗎16.
4. Install the tester ➪🗎22.
5. Perform and document tests.
   - Testing ➪ "Operation" 🗎23.
   - View and manage test records stored in device ➪ "Data Storage in Instrument" 🗎27.
   - View test records on PC, export test records, create reports and remote control the instrument ➪ "BC Flow – PC Software For Data Management and Remote Control" 🗎29.
   - View test records on mobile device, send test records, and remote control the instrument ➪ "myBC Mobile – App For Data Management and Remote Control" 🗎33.

Further topics of interest: Maintenance ➪🗎42.

5 THE INSTRUMENT

5.1 SCOPE OF DELIVERY

Please check the scope of delivery for completeness and intactness.

1 SECULIFE IF BASE (M695Z)
1 Universal power adapter (including interchangeable US, UK, AUS, and Euro adapters; 12 V_{DC})
1 Tubing kit
(2 × male Luer, 2 × female Luer, 1 × 3-way stopcock, 1 × 60 ml syringe,1 × 60 cm clear tubing 1/8” internal diameter)
1 Micro USB cable (type B)
1 Calibration certificate
1 Manual

5.2 OPTIONAL ACCESSORIES

Some measurements necessitate optional accessories:

- Universal power adapter (with interchangeable US, UK, AUS and Euro adapters, 12 V_{DC})
- Tubing kit
(2 × male Luer, 2 × female Luer, 1 × 3-way stopcock, 1 × 60 ml syringe,1 × 60 cm clear tubing 1/8” internal diameter)
- Micro USB cable (Type B)

5.3 DEVICE OVERVIEW

5.3.1 FRONT

Fig. 1: Front Panel and Right Side

1 Handle
2 Stylus
3 4.3” color touchscreen display
4 Inlet port
5 Outlet port

5.3.2 LEFT SIDE

Fig. 2: Back of Instrument and Left Side

1	Micro USB port	2	Charging LED
3	Power switch	4	12 V_{DC} power input

5.3.3 SYMBOLS ON THE INSTRUMENT AND THE INCLUDED ACCESSORIES

Icon	Meaning
	Warning concerning a point of danger (attention, observe documentation!)
CE	European conformity marking
	The instrument may not be disposed of with household trash ⇨ "Disposal and Environmental Protection" 47.
	Warning regarding dangerous electrical voltage
	Power supply socket polarity
CALIBRATION VOID IF SEAL DAMAGED	Calibration seal (Calibration is void if seal is damaged)

Tab. 4: Symbols on the Instrument and the Included Accessories

5.4 RELEVANT STANDARDS

The instrument has been manufactured and tested in accordance with the following safety regulations:

DIN EN 61010-1 IEC 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements
DIN EN 61326-1 IEC 61326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
DIN EN 63000 IEC 63000	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Tab. 5: Relevant Standards

5.5 TECHNICAL DATA

Power supply	AC power:	100 V_{AC} … 240 V_{AC}, 50/60 Hz
	AC power adapter:	12 V_{DC}, 1.5 A 
	Battery:	Internal rechargeable lithium-ion battery pack
	Battery runtime:	12 hours idle, 3 … 4 hours of continuous testing
Ambient conditions	Operating temperatures:	+15 … +40 °C
	Storage temperatures:	0 … +50 °C
	Relative atmospheric humidity:	10 % … 90 %, no condensation allowed
	Elevation:	max. 3000 m
Electromagnetic Compatibility (EMC)	Interference emission:	EN 61326-1, class A
	Interference immunity:	DIN EN IEC 61326-1
Mechanical Design	Housing (W × H × D):	Approx. 121.9 × 109.2 × 157.5 mm
	Weight:	Approx. 1.4 kg
	Display:	4.3” color touchscreen 480 × 270 px
Data Interfaces	Wireless interface:	Bluetooth® Frequency range: 2.4 GHz … 2.482 GHz Transmission intensity: max. 3 dBm
	COM port:	Micro-USB type B
Internal memory	250 measurements	

Tab. 6: Technical Data

5.6 CHARACTERISTIC VALUES

Function	Measured Parameter	Measuring Range	
Flow measurement	Flow rate	0.01 ml/h … 1000 ml/h	
	Flow time		
	Flow resolution	0.01 ml/h	
	Accuracy (after 30 seconds)	1% of reading + 0.005 ml/h	0.1 … 9.9 ml/h
		1% of reading	10 … 700 ml/h
		2% of reading	700 … 1000 ml/h
	Back pressure	0.200 psi	
	Minimum volume	0.05 ml	
	Measurement range	10 Hz	
Volume measurement	Range	0 … 2000 ml	
	Resolution	0.001 ml	
	Accuracy	1% of reading after 0.100 ml	
Pressure measurement	Range	–5 psi … 50 psi	
	Resolution	0.001 psi	
	Accuracy	0.1% of full scale	
	Pressure units	psi (default), mmHg, mbar, kPa	
	Measurement range	10 Hz	

Tab. 7: Characteristic Values

6 MENU AND FUNCTIONS

The instrument is operated via touchscreen on the front panel. For a more precise operation, you can use the stylus. It comes with the SECULIFE IF BASE (⇨ "Device Overview" 🗎12) and just needs to be pulled out and then later placed back into the slot.

The settings and values are displayed on the display.

6.1 ICONS AND INDICATORS

Icon / Indicator	Description	Function
	**Flow Test**	Opens the flow test setup screen to setup a flow test
	**Occlusion Test**	Opens the occlusion test setup screen to setup an occlusion test
	**Drain**	Starts the drain sequence to drain the internal chamber
	**Datalog**	Opens the datalog screen to view all test records
	**Settings**	Opens the settings menu to change system settings
	**Battery**	Indicates the battery charging status Pressing on the battery indicator on any screen will show the percent battery life remaining for a short duration.
	**Battery**	Internal battery pack is charging
	**Home**	Returns to the main menu screen
	**Back**	Returns to the previous screen
	**Up**	Scrolls upwards in a list
	**Down**	Scrolls downwards in a list
	**Start**	Starts a test
	**Stop**	Stops a test
	**Save**	Saves a result

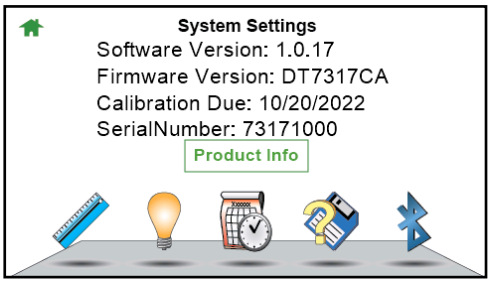
Tab. 8: Icons and Indicators

6.2 SYSTEM SETTINGS

Press **Settings** to enter the system settings.

In the system settings the following product information is displayed:

- Software version
- Firmware version
- Calibration due date ➪ "Recalibration" 🗎42.
- Serial number



In the system settings you can also enter the following submenus:

- Pressure Unit ➪🗎17 (scale icon)
- Density ➪🗎17 (scale icon)
- Brightness ➪🗎18 (lamp icon)
- Date and Time ➪🗎18 (calender icon)
- Autosave ➪🗎18 (disk icon)
- Bluetooth® ➪🗎18 (logo icon)
- Product information ➪🗎20 (Product Info)

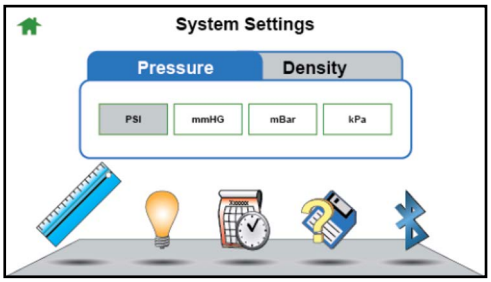
To enter the submenu, press onto the corresponding symbol.

6.2.1 PRESSURE UNIT

Changes the unit of pressure.

Select the desired unit of pressure:

- psi
- mmHg
- mbar
- kPa



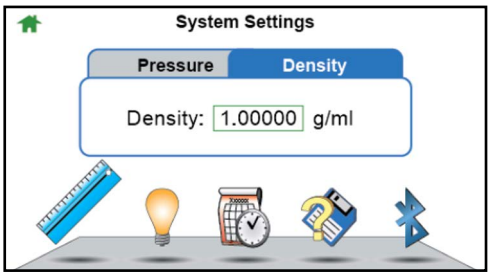
Tip

You can also set the pressure unit in the software BCFlow (➪🗎30) or in the app myBC mobile (➪🗎33).

6.2.2 DENSITY

The density is used to calculate the mass of the liquid measured during a Flow Test.

The density can be set between 0 and 2.00000 g/ml.



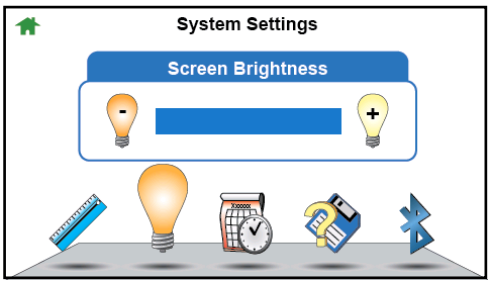
Tip

You can also set the density in the app myBC mobile (➪🗎33).

6.2.3 BRIGHTNESS

Changes the screen brightness:

- Press – to decrease the brightness.
- Press + to increase the brightness.



6.2.4 DATE AND TIME

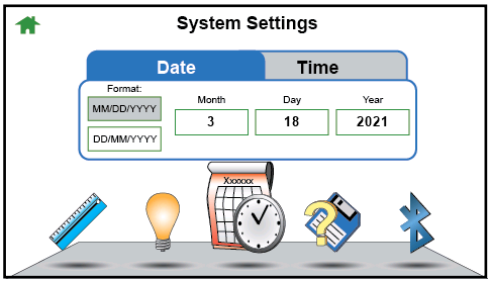
Tab Date

Changes the date format and the date.

Select the desired date format:

- MM/DD/YYYY
- DD/MM/YYY

Enter the date via the fields **Month**, **Day**, **Year**.



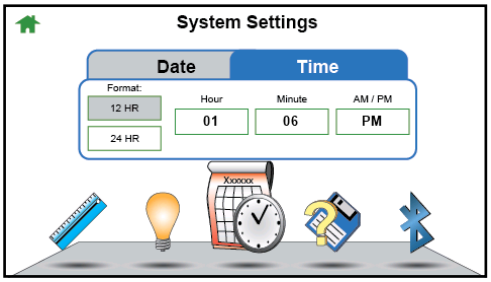
Tab Time

Changes the time format and the time.

Select the desired time format:

- **12 HR**: 12-hour-mode
- **24 HR**: 24-hour-mode

Enter the time via the fields **Hour**, **Minute**, **AM / PM**.

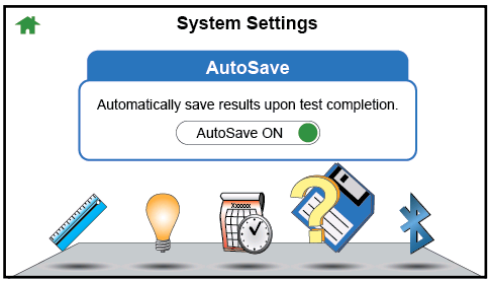


6.2.5 AUTOSAVE

Turns autosave mode for record saving on or off.

Select the desired autosave mode:

- **AutoSave ON**: Test records will be saved automatically at the end of a test.
- **AutoSave OFF**: Test records must be saved manually by pressing **Save** at the end of a test.



6.2.6 BLUETOOTH®

ATTENTION

Bluetooth® permits device access (unwanted connections)

Abuse of device access.

Disable Bluetooth® whenever possible.

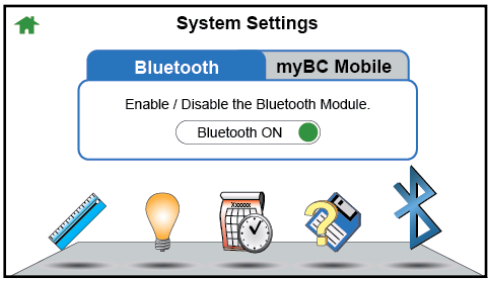
Tip

To conserve battery life and to reduce energy consumption, disable Bluetooth®.

Bluetooth® is used for connecting the instrument to the PC software BC Flow (⇨🗎29) and for connecting to the mobile device app myBC Mobile (⇨🗎33).

Enables or disables Bluetooth®:

- **Bluetooth ON**: Bluetooth® enabled
- **Bluetooth OFF**: Bluetooth® disabled



6.2.7 PRODUCT INFORMATION

Displays QR codes linking to the product's website and the user manual. User your mobile device to scan the QR code and be directed to the respective link target.

Tap to dismiss and return to **Settings**.

6.3 COMMUNICATION PROTOCOL

The communication protocol provides a means to completely configure and use the instrument from a PC. All of the functions available through the front panel can be performed through the communication protocol.

The Standard Commands for Programmable Instruments (SCPI) is used as communications protocol. Please note that this document does not explain the usage of SCPI and that Gossen Metrawatt GmbH does not provide support of SCPI.

6.3.1 ESTABLISH CONNECTION & COMMUNICATIONS PORT

✓ You know how to use SCPI.

1. Connect the SECULIFE IF BASE to the PC via the included USB cable.
   ↳ The USB port of the tester shows up as a virtual serial port on the PC.
2. Configure the serial port as follows
   - Baud rate: 115200
   - Data bits: 8
   - Stop bit: 1
   - No parity
3. Use SCPI commands to control the SECULIFE IF BASE ⇨ "Command Syntax (SCPI)" 🗎20.
4. Once finished with testing, disconnect the SECULIFE IF BASE from the PC.

6.3.2 COMMAND SYNTAX (SCPI)

The KEYWORD column provides the name of the command. The actual name of the command consists of one or more keywords since SCPI commands are based on a hierarchical structure, also known as a tree system.

In such a system, associated commands are grouped together under a common node in the hierarchy, analogous to the way leaves at a same level are connected at a common branch. This and similar branches are connected to fewer and thicker branches, until they meet at the root of the tree. The closer to the root, the higher a node is considered in the hierarchy. To activate a particular command, the full path to it must be specified.

This path is represented in the following tables by placing the highest node in the left-most position. Further nodes are indented one position to the right, below the parent node.

The highest-level node of a command is called the **Keyword**, followed by the **Node** and then the **Value**.

Some commands allow for reading and writing data and some commands are read-only. To indicate a read function, a question mark (?) is placed at the end of the command path.

Lowercase letters indicate the long-form of the command (for example, "DATAlog:VIEWRecord x") and can be omitted for simplification. Uppercase letters indicate the abbreviated, or short-form, of the commands and must be included (for example, "DATA:VIEWR X").

All commands sent to the unit are terminated with a carriage return <cr>.

Commands sent to the instrument are not case sensitive. Upper and lower cases are only used when documenting the commands.

Examples

A write command to change the **Autosave** to be **on** would be "SETTings:AUTOSave ON<cr><lf>", where <cr> indicates a carriage-return and <lf> is a linefeed.

An example command to read average flow rate would be "SENSE:FLOWRate?<cr><lf>", which would return a value of "xxxx.xx<cr><lf>" where <cr> is a carriage-return and <lf> is a linefeed.

Keyword	Node	Sub-node	Value	Description
Show	FLOW			Goes to flow test screen
	OCCLusion			Goes to occlusion test screen
TESTSetup	FLOW	STARTcondition?	MANUal, AUTO	
		TARGETVolume?	0.000 - 2000.000	
		TARGETFlow?	0.00 … 1000.00	
		TARGETHour?	0 … 99	
		TARGETMinute?	0 … 59	
		TARGETSecond?	0 … 59	
		ENDCondition?	NONE VOLume DURation VOLUMEAndduration	
	OCCLusion	STARTcondition?	MANUal, AUTO	
	DUT	PUMP?	xxx (up to 25 characters)	
		MANUfacturer?	xxx (up to 25 characters)	
		MODEL?	xxx (up to 25 characters)	
		SERIALnumber?	xxx (up to 25 characters)	
		TESTEDby?	xxx (up to 25 characters)	
TEST	START			Only available if in a test screen and a test has not been started
	STOP			Only available if in a test screen and a test has been started
	SAVE			Only available if in a test screen and a test has been completed
SETTings	PRESSureunit?		PSI, MMHG, MBAR, KPA	
	BRIGHTness?		1 … 10	
	AUTOSave?		ON, OFF	
	CALIbratetouch			Goes to the calibrate touchscreen screen, the instrument will restart after the calibration is complete
DATAlog	VIEWRecord		1 … (number of records)	
	NUMRecords?			Returns the number of saved records
	DELetelog			Deletes all the records
SENSE	FLOWRate?			Returns the average flow rate during a test
	VOLUme?			Returns the volume during a test
	INSTantflowrate?			Returns the instant flow rate during a test
	PRESSure?			Returns the current pressure during a test
	PEAKPressure?			Returns the peak pressure of the test
	PEAKTime?			Returns the time of peak pressure of the test
	TIME?			Returns the elapsed time of the test
	ERRORFlow?			Returns the percent error of the average flow rate vs. the target flow rate
	ERRORVolume?			Returns the percent error of the volume vs. the target volume

Tab. 9: Command Syntax

7 INSTALLATION

7.1 UNPACKING THE INSTRUMENT

1. Carefully remove instrument and accessories from the packaging.
2. Check delivery for completeness and possible damage.
3. In case of detected damages, hidden defects and short deliveries, document type and scope and contact the manufacturer or supplier immediately.
4. Keep packing material for further transport.

7.2 ESTABLISHING THE POWER SUPPLY

You can use the SECULIFE IF BASE with power supplied from the mains or in battery mode. For battery mode, the instrument has an internal rechargeable lithium-ion battery pack.

Mains Operation

1. Connect the plug of the AC power adapter to the instrument.
2. Connect the mains adapter of the AC power adapter to a mains socket.

↳ The instrument can now be used in mains operation mode.

Battery Operation

The internal battery pack will be charged automatically, when the instrument is connected to the mains ⇨ "Mains Operation" 🗎22. The charging process is indicated by the battery charging icon ⇨ "Icons and Indicators" 🗎16.

Duration: Approx. 4 hours until the instrument is fully charged.

With sufficient battery charge, you can use the device without mains connection.

When the battery life is low (20% or less), the battery icon will turn red. The flow and occlusion test screens will have visual indications on the start buttons that the battery is low.

You can still start a test but you should connect the device to the mains soon.
If the battery is low during a test and the device is not connected to the mains, a popup message will occur every minute for 5 seconds. This message can be dismissed by tapping on the popup message. Ideally you connect the instrument to the mains during the currently running test.

Tip

Pressing on the battery indicator on any screen will show the percent battery life remaining for a short duration at any time.

7.3 ESTABLISHING FLUID CONNECTIONS

1. Connect the output of the infusion pump to the inlet of the instrument.
2. Connect the output of the instrument to a drain collection tank.

7.4 SWITCHING ON/OFF

7.4.1 SWITCHING ON THE INSTRUMENT

1. Press the power switch in position **ON**.

↳ The main menu is displayed on the screen. The instrument draws a vacuum on the inlet port. The instrument is ready for operation.

7.4.2 SWITCHING OFF THE INSTRUMENT

1. Press the power switch in position **OFF**.

↳ The instrument is switched off.

8 OPERATION

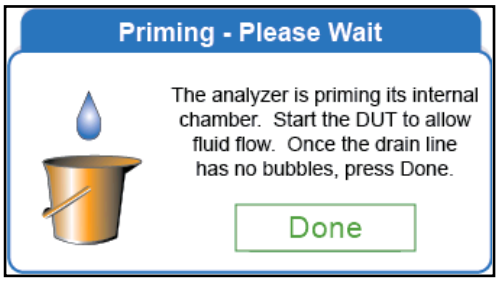
Before performing tests, you need to prime the instruments. After testing, drain and clean the internal chamber. Priming, testing, draining, and cleaning are described in this chapter.

8.1 PRIME THE INSTRUMENT

The internal chamber of the instrument can be primed at any time. It is recommended to prime the instrument after every change of connections.

✓ The fluid connections have been made ➪🗎22.

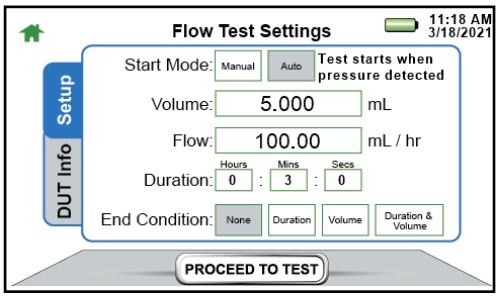
1. Start the infusion pump.
   ↳ The priming message is displayed.
2. Once no more air bubbles appear in the outlet tubing line, press **Done**.



8.2 PERFORMING A FLOW TEST

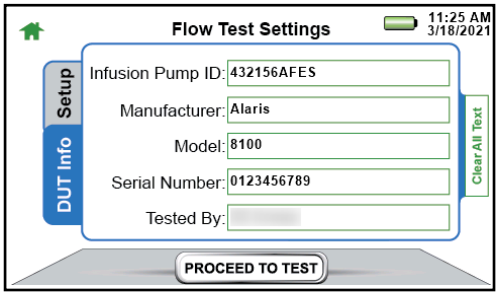
✓ The fluid connections have been made ➪🗎22.
✓ The infusion pump has been started.
✓ The main menu is displayed.

1. Press **Flow Test**.
   ↳ The flow test setup screen is displayed.
2. Press the tab **Setup**.
3. Select the desired test settings; see the table below.



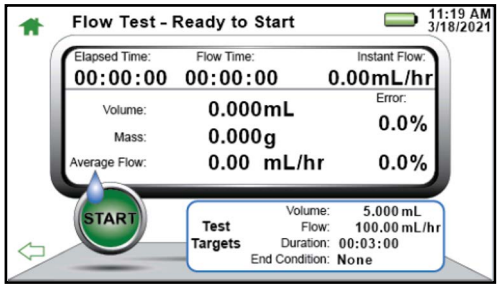
Parameter	Range	Unit	Description
Start Mode	Manual	–	After pressing **Start,** the test starts whether a flow is present or not.
	Auto	–	After pressing **Start,** the test starts when the instrument detects a flow.
Volume	0 … 1000	ml/hr	Sets the volume.
Flow	0 … 2000	ml	Sets the flow rate.
Duration	0 … 99:59:59	h:m:s	Sets the duration.
End Condition	None	–	The test is active until **Stop** is pressed.
	Duration	–	The test stops automatically when the set condition is met.
	Volume	–	
	Duration and Volume	–	

4. Press the tab **DUT Info**.
5. Enter the information about the DUT. Each field allows 25 characters:
   - Infusion Pump ID
   - Manufacturer
   - Model
   - Serial Number
   - Tested By
6. Press **PROCEED TO TEST.**



↳ The flow test screen is displayed.

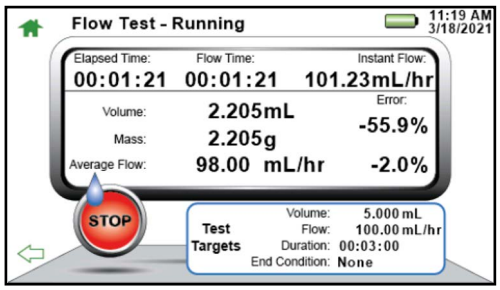
7. Press **START**.
   ↳ The test is being performed.



↳ The following values are displayed during the test:

- Elapsed time (duration of the whole test) and flow Time (time that Flow has actually been detected)
  (During periods of no flow detected, the test measurements will not update.)
- Instantaneous flow rate
- Volume dispensed
- Average flow rate
- Percentage error of the average flow vs. target flow
- Percentage error of the volume dispensed vs volume to be dispensed

↳ The test runs until the end condition is reached or until it is manually stopped by pressing **STOP**.



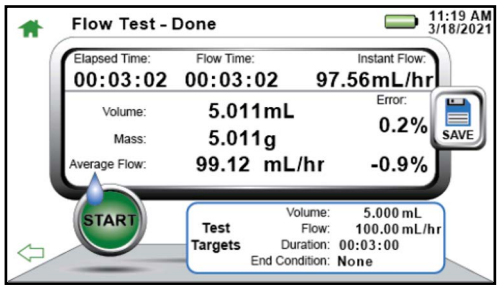
↳ The result screen is displayed.

8. If the autosave function is deactivated: Press **SAVE** to save the test record.

↳ The flow test has been performed.

↳ Press **START** to start a new test with the same test settings.

↳ Press **Back** to enter the test settings screen.



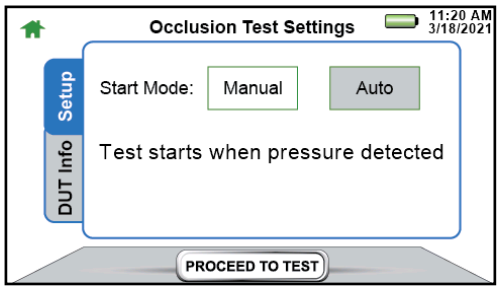
8.3 PERFORMING AN OCCLUSION TEST

✓ The fluid connections have been made ➪🗎22.

✓ The infusion pump has been started.

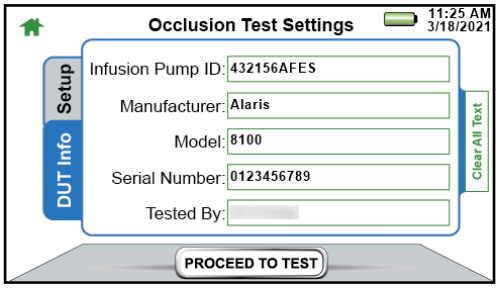
✓ The main menu is displayed.

1. Press **Occlusion Test**.
   ↳ The occlusion test setup screen is displayed.
2. Press the tab **Setup**.
3. Select the test settings; see the table below.

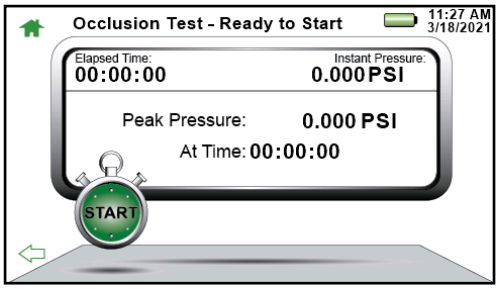


Parameter	Range	Unit	Description
Start Mode	Manual	–	After pressing **Start,** the test starts whether pressure is present or not.
	Auto	–	After pressing **Start,** the test starts when the instrument detects pressure.

4. Press the tab **DUT Info**.
5. Enter the information about the DUT. Each field allows 25 characters:
   - Infusion Pump ID
   - Manufacturer
   - Model
   - Serial Number
   - Tested By
6. Press **PROCEED TO TEST.**

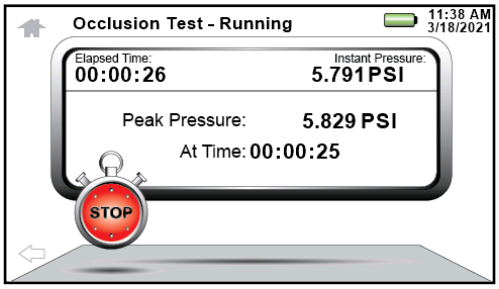


   ↳ The occlusion test screen is displayed.
7. Press **START**.
   ↳ The test is being performed.

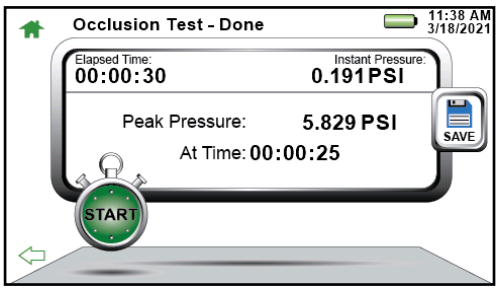


   ↳ The following values are displayed during the test:
   - Current pressure
   - Elapsed time
   - Peak pressure
   - Peak time

   ↳ The occlusion alarm sounds on the DUT.
8. Press **STOP**.
   ↳ The pressure is relieved.



   ↳ The result screen is displayed.
9. If the autosave function is deactivated: Press **SAVE** to save the test record.
   ↳ The occlusion test has been performed.
10. Press **START** to start a new test with the same test settings.
11. Press **Back** to enter the test settings screen.



8.4 SAVE A TEST RECORD

Automatically

If the autosave function is active, the test record is saved automatically after the end of a test. See chapter "Autosave" ➪🗎18.

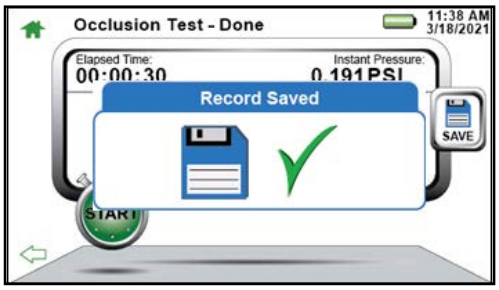
Manually

If autosave is disabled (➪🗎18), you need to device whether to save the current test as record.

✓ Autosave function is deactivated.

1. Press **SAVE**.

↳ The test record is saved.



Tip

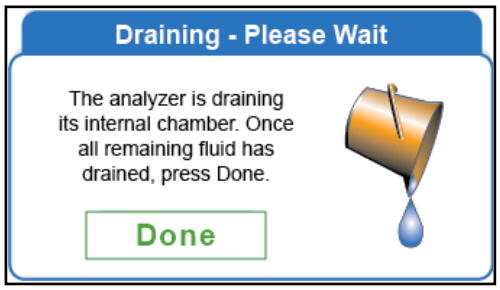
For managing test records in the instrument see chapter "Data Storage in Instrument" ➪🗎27.

For saving test records to a PC and create reports see chapter "BC Flow – PC Software For Data Management and Remote Control" ➪🗎29.

You can also access and send test records via your mobile device. See chapter "myBC Mobile – App For Data Management and Remote Control" ➪🗎33.

8.5 DRAIN THE INTERNAL CHAMBER

It is recommended to drain the internal chamber after use or when storing the instrument.



✓ The main menu is displayed.

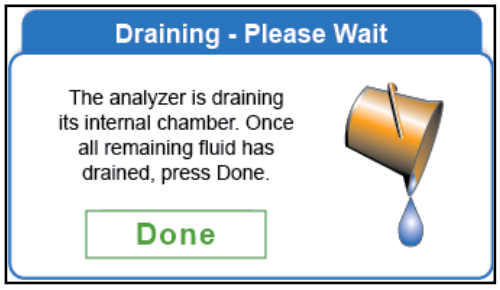
1. Press **Drain**.
   ↳ The drain cycle starts.
2. Once
   - all liquid is drained from the internal chamber and
   - no more liquid remains in the outlet tubing line

   press **Done**.

↳ The internal chamber is drained.

8.6 CLEAN THE INTERNAL CHAMBER

The drain function can be used to remove contaminants or debris in the flow and measurement path. You will need the “Cole-Parmer® Essentials Micro-90 Cleaning Solution”.



✓ Cole-Parmer® Essentials Micro-90 Cleaning Solution is available.
✓ The main menu is displayed.

1. Prepare the cleaning solution:
   Mix 1 ml Cole-Parmer® Essentials Micro-90 Cleaning Solution per 1000 ml of distilled water.
   (If foaming becomes a problem, change the ratio to 0.5 ml Cole-Parmer® Essentials Micro-90 Cleaning Solution per 1000 ml of distilled water.)
2. Connect the cleaning solution container to the inlet and outlet ports of the instrument.
3. Press **Drain**.
   ↳ The drain cycle starts.
4. Let the drain cycle run for 5 minutes.
5. Once all cleaning solution is drained, press **Done**.

↳ The internal chamber is cleaned.

9 DATA STORAGE IN INSTRUMENT

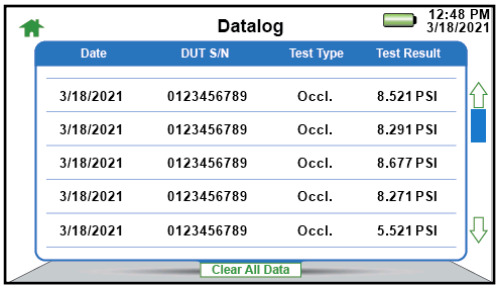
While performing tests you can store the test records in the device. Either automatically with the autosave function or manually after each test ➪ "Save a Test Record" 🗎25.

All data is stored in the datalog internal memory. You can view all test records stored in the instrument and clear its datalog.

9.1 VIEW A TEST RECORD

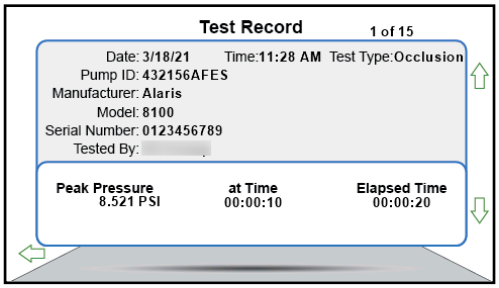
✓ The main menu is displayed.

1. Press **Datalog**.
   ↳ The datalog screen is displayed and shows the list of saved records.
2. Press **Up** or **Down** to scroll the list of records.



3. Select a record to show the detailed view.
4. Press **Up** or **Down** to select the previous or next record.

↳ The test record is displayed.



9.2 CLEAR THE DATALOG

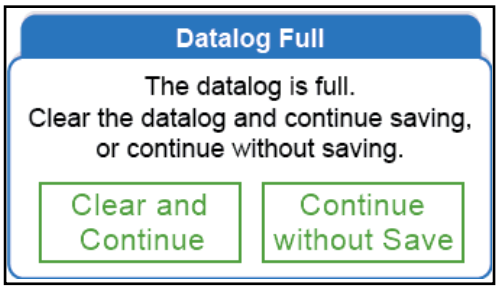
9.2.1 DATALOG IS FULL

If the datalog is full, a warning message is displayed when attempting to save a test.

Recommended: Backup your date before clearing the datalog ➪🗎30.

1. Press **Clear and Continue** to clear the datalog.
   ↳ The datalog is cleared.
   ↳ The record is saved.
2. If you don't want to clear the datalog, press **Continue without Save**.

↳ The record will not be saved.

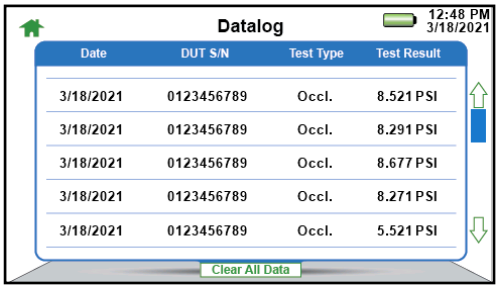


9.2.2 CLEAR DATALOG MANUALLY

Recommended: Backup your date before clearing the datalog ➪🗎30.

✓ The main menu is displayed.

1. Press **Datalog**.
   ↳ The datalog screen is displayed and shows the list of saved records.
2. Press **Clear All Data** to delete all records from the instrument.



↳ A warning message is displayed.

3. Press **Cancel** to abort the action.

   or

4. Press **Confirm**.

↳ All data is deleted from the datalog.

10 BC FLOW – PC SOFTWARE FOR DATA MANAGEMENT AND REMOTE CONTROL

The PC software “BC Flow” is an infusion pump analyzer data analyzer program to be used with the SECULIFE IF BASE.

Note

BC Flow is a program by BC Group International, Inc.

For program related questions and/or issued, please contact BC Group International, Inc.

Gossen Metrawatt GmbH provides support for using BC Flow with SECULIFE IF BASE only.

With the program you can

- manage test records:
  - View test records saved in the instrument’s datalog ➪🗎31.
  - Export test records to your PC (data backup) ➪🗎30.
  - Import test records previously saved to your PC for re-viewing and creating reports ➪🗎31.
- create reports ➪🗎32.
- configure the instrument ➪🗎32.
- remote control the instrument ➪🗎32.

10.1 DOWNLOAD AND INSTALLATION

ATTENTION

Upgrade conflict

BC Flow might not run.

If you have BC Flow version 1.3.1 or earlier installed on your PC, uninstall the old software before installing the new version.

System requirements

Microsoft Windows 10, or Windows 11.

Download

BC Flow is available here:

https://www.bcgroupstore.com/Assets/file/BC%20Flow%20Installer.zip

Installation

1. Download BC Flow to the PC to be installed and used on.
2. Unzip the file.
3. Run the BC Flow exe.
4. The installation wizard guides you trough the installation process.

↳ BC Flow is installed on your PC.

10.2 STARTING AND CLOSING THE PROGRAM

Start

Start BC Flow using the usual procedure for your operating system.

Close

Click **X** in the upper right corner to close the program.

10.3 SETTINGS

In the settings menu, you can define the program language, select the pressure unit, and check for updates.

Basic settings

1. Start the program ➪🗎29.
   ↳ The **Home** page appears.
2. Select **Settings**.
3. In the **Language Select** area, select your preferred program language from the **Language** drop down list.
   Default = English.
   ↳ The setting takes effect immediately.
4. In the **Pressure Unit Select** area, select your preferred unit from the **Pressure Units** drop down list.
   Default = PSI. Available: mmHg, PSI, mBar, kPa.

↳ The setting takes effect.

Check for update

1. Start the program ➪🗎29.
2. Select **Settings**.
   ↳ In the **Update** area, the update status is displayed.
3. In the **Update** area, click **Check for Update**.

↳ The program checks if a newer version is available.

No update available: Up to date is displayed.
Update available: The newer version number is displayed. Click Update and follow the wizard to install the new version.

10.4 ESTABLISHING THE CONNECTION BETWEEN INSTRUMENT AND PC

The instrument and PC with BC Flow can be connected via USB.

✓ The USB cable included in connection is at hand.

1. Connect the instrument to your PC via USB.
2. Turn the instrument on.
3. Start the program ➪🗎29.
   ↳ The **Home** page appears.
4. Under **Select Device**, choose **IPA-3100**.
5. Select **Device Controls**.
   ↳ The **Device Control** page appears.
6. Select **Find IPA-3100**.
   ↳ The program searches for instruments.
   Once found, the instrument is displayed as a dropdown list.

Note

If your device is simultaneously connected via Bluetooth® , the device appears twice. The entries/type of connection can be distinguished by the USB and Bluetooth® icons. Select USB.

7. Select **Connect**.

↳ The connection between instrument and program is established.
The instrument switches to remote control mode.
The program displays the device page.

10.5 MANAGING TEST RECORDS

With the software BC flow, you can view test records saved in the instrument's datalog on your PC.

These records of conducted tests can also be exported as .dat files and saved to your PC for storage. With this function, you can save your data before clearing the datalog in case the device storage is full (➪🗎27) and/or backup your test data.

Later, you can import these saved files into the BC flow at a later date in order to view it again and/or create a report.

10.5.1 VIEWING TEST RECORDS

You can have a look at all test records stored in the device.

✓ The connection between instrument and program is established ⇨🗎30.

1. Select the **Records** tab.
   ↳ The oldest saved record is displayed.
2. Use **Next**, **Last**, **First** and **Previous** to navigate to the desired record.

↳ The test record is displayed.

10.5.2 EXPORTING TEST RECORDS

You can either export a single test record or the whole datalog.

Tip

Once data has been exported, a shortcut to the export folder is displayed on the **Home** page of the program. (The shortcut is always to the last export folder used.)

Single file

✓ The connection between instrument and program is established ⇨🗎30.

1. Select the **Records** tab.
   ↳ The oldest saved record is displayed.
2. Use **Next**, **Last**, **First** and **Previous** to navigate to the desired record.
3. Select **Export .dat** to export.
   ↳ The save dialog of your operating system appears.
4. Rename the file, if desired.
   Default name: date_time_instrument serial number.dat
5. Save the file to your PC.

↳ The file has been exported to your PC.

Complete datalog

✓ The connection between instrument and program is established ⇨🗎30.

1. Select the **Records** tab.
   ↳ The oldest saved record is displayed.
2. Select **Export All .dat** to export.
   ↳ The save dialog of your operating system appears.
3. Rename the file, if desired.
   Default name: DataLog_instrument serial number.dat
4. Save the file to your PC.

↳ The datalog has been exported to your PC.

10.5.3 IMPORTING TEST RECORDS

✓ At least one test record is saved to your PC ⇨ "Exporting Test Records" 🗎31.

1. On the **Home** screen, select **Open File**.
2. Select and open the desired test record file.
   ↳ The test record is opened and displayed in the **Results** tab.
3. Graphs: You can display different graphs (depeding on the test type). To do so, select **Graphs** and in the dropout menu the desired graph type. It is then displayed in the **Graph** tab.
4. Export: To export the test record as PDF, select **Export PDF**. The **Export PDF** dialog appears and exporting now works as described in ⇨ "Creating A Report" 🗎32.

10.6 CREATING A REPORT

You can create reports from test records as pdf file. Additionally, you can export CSV data.

✓ The connection between instrument and program is established ➪🗎30.

1. Select the **Records** tab.
   ↳ The oldest saved record is displayed.
2. Use **Next**, **Last**, **First** and **Previous** to navigate to the desired record.
3. Select **Export PDF** to export.
   ↳ The **Export PDF** dialog appears.
4. Optional: Select the graphs to be included.
5. Optional: Tick **VCS Data**.
   ↳ The save dialog of your operating system appears.
6. Rename the pdf file, if desired.
   Default name: year_month_day_hour_minutes_seconds_test type.pdf
7. Save the file to your PC.

↳ The report is saved to your PC.

10.7 CONFIGURING THE INSTRUMENT

You can set the pressure unit (psi, mmHg, mbar, kPa) on the instrument.

✓ The connection between instrument and program is established ➪🗎30.

1. Select the **Device Settings** tab.
   ↳ The device settings page is displayed.
2. From the dropdown list **Unit of Pressure** select the desired unit.

↳ The setting is changed on the instrument.

10.8 REMOTE CONTROL TESTING

Remote control with BC flow allows for easy handling of the instrument: The DUT information and test configuration can be entered comfortably via the PC's keyboard.

Once the connection between instrument is established and remote control mode is activated in the program, the instrument enters remote control mode automatically and mirrors the program. It then shows the input from the program on its display. This also works vice versa, i.e. input on the instrument is displayed in the program.

✓ The connection between instrument and program is established ➪🗎30.

1. Select the **Configure Tests** tab.
   ↳ The **Configure DUT Configure Test** page is displayed.
   ↳ The device switches to remote control mode.
2. Enter the information about the DUT. Each field allows 25 characters:
   - Infusion Pump ID
   - Manufacturer
   - Model
   - Serial Number
   - Tested By
3. Select the type of test you want to conduct (flow or occlusion test).
4. Configure the test parameters:
   - Occlusion test: Select **AUTO** or **MANUAL**. For more information see chapter "Performing an Occlusion Test" ➪🗎24.
   - Flow test: Select **AUTO** or **MANUAL** and set the desired test settings. For more information see chapter "Performing a Flow Test" ➪🗎23.
5. Start the test by clicking **Start**.

↳ The test is being conducted. For more information on the respective tests see chapter "Operation" ➪🗎23.

Note

The test can only be aborted at the instrument. To stop the test, press **STOP** on the display.

11 MYBC MOBILE – APP FOR DATA MANAGEMENT AND REMOTE CONTROL

“myBC Mobile” is an infusion pump analyzer app to be used with the SECULIFE IF BASE.

Note

myBC Mobile is an app by BC Group International, Inc.

For app related questions and/or issued, please contact BC Group International, Inc. (⇨ "Information on the App" 🗎33). Gossen Metrawatt GmbH provides support for using myBC Mobile with SECULIFE IF BASE only.

With the app you can

- manage your DUTs ⇨🗎35.
- remote control the instrument ⇨🗎37.
- manage test records:
  - View test records saved in the app and in the instrument’s datalog ⇨🗎38.
  - Send test records ⇨🗎38.
- configure the instrument ⇨🗎36.

Note

In the myBC Mobile app, the SECULIFE IF BASE does not run under its own name but under the designation SECULIFE IF BASE, e.g. in the tutorials.

11.1 DOWNLOAD AND INSTALLATION

myBC Mobile is available for Android™ and iOS (iPhone, iPad).

System requirements

Please see the app store to find out if the app is compatible with your mobile device.

Download

Go to the app store to load and install the app as usual on your mobile device.

iOS

Android™

11.2 STARTING AND CLOSING THE APP

Open myBC Mobile using the usual procedure for your mobile device.

11.3 INFORMATION ON THE APP

In the settings menu, the following information on the app and links are available:

- About: Information on the app such as version and creator
- Contact us: Option to contact BC Group International, Inc.
- Privacy: Links to BC Group International, Inc.’s privacy policy
- Login: If you have a user account with BC Group International, Inc. you can login into it here
- BC Group Store: Links to BC Group International, Inc.’s store

Note

You do not need a user account to use this app.

11.4 TUTORIAL

The app offers a general tutorial, the “Main Page Tutorial”, as well as several instrument tutorials, e.g. for the SECULIFE IF BASE.

When you open myBC Mobile for the first time, a pop up offering the Main Page Tutorial appears. If you would like to learn about the app and its key features through this tutorial, tap **Start Tutorial**.

The respective device tutorials starts as soon as you connect to a device of that type.

You can enable or disable all tutorials, e.g. if you have used the app for some time.

Enable/disable tutorials

1. Select the tab **Settings**.
   ↳ The settings page is displayed.
2. In the **Tutorials** field, check or uncheck the desired tutorials individually.
   Alternatively, tap **Enable Tutorials** to enable all or **Disable Tutorials** to disable all.

↳ The setting takes effect immediately.

11.5 APP-SETTINGS

Operator name

The operator name is the user name that will appear in test records. You can only enter one operator, if several operators use the app, they must set their name each time.

1. Select the tab **Settings**.
   ↳ The settings page is displayed.
2. In the **Operator Name** field, tap the pencil icon.
   ↳ The field is editable now.
3. Enter the operator name.
4. Confirm with **Set**.

↳ The operator name is saved.

Orientation Lock

Orientation lock sets the orientation (portrait a.k.a. vertical / landscape a.k.a horizontal) of the app.

Note

Phone setting overrules app setting “Auto”!

If your phone orientation is locked (e.g. lock rotation is activated on your iOS device), this setting will override the app setting “Auto” in which the app would usually rotate. The app will stay in portrait orientation then.

If your phone orientation is locked, you can force rotate the app by selecting the setting “Landscape”. The app will then always be in landscape orientation.

1. Select the tab **Settings**.
   ↳ The settings page is displayed.
2. In the **Orientation Lock** field, check the desired option:
   - Auto: If you rotate the device, the app will change orientation of the app according to the device orientation.
   - Portrait: The app always stays in portrait orientation, independent of the device’s orientation.
   - Landscape: The app always stays in landscape orientation, independent of the device’s orientation.

↳ The setting takes effect immediately.

Test Equipment Setup

Not applicable when using the app with and for SECULIFE IF BASE.

Theme (Light or Dark Mode)

You can set the app to light or dark mode by adjusting the toggle switch in the **Themes** area to the desired setting. It will take effect immediately.

Printer

Not applicable when using the app with and for SECULIFE IF BASE.

11.6 ENTERING INFORMATION

You can enter information, e.g. a serial number or model when creating an asset (chapter "Assets – DUT Management" ➪🗎35), through the keyboard.

For several fields you can also enter it more easily by scanning a barcode. Barcode scanning is available if the barcode icon is displayed in the field. Tap the icon and the camera app on your mobile device will open to scan the barcode.

11.7 ASSETS – DUT MANAGEMENT

In the app, DUTs are called assets. For remote controlled testing (➪🗎37) you have two options: Either enter DUT (asset) information when testing or create asset entries in the app which can be called for a test. Asset management is recommended, when the same DUTs are tested regularly.

Create Asset

1. Select the tab **Asset**.
   ↳ The asset page is displayed.
2. Tap **Assets**.
   ↳ The **Asset Creator** page is displayed.
3. Fill the information fields either by entering text or scanning a barcode ➪ "Entering Information" 🗎35.
   (Max. 80 characters.)
   Asset Tag: required field. It is a unique identifier for your DUT and the ID with which it will be displayed in the selection list. If you have several DUT of the same type, use this text to make them easy to distinguish.
   Example: Infusion pump 1.
4. To confirm tap **Save**.

↳ The asset has been created. Your DUT has been added to the app.
It appears in the asset list on the **Asset** tab.

If you want to create an asset that is very similar to an existing asset, you can use the duplicate function:

1. Select the tab **Asset**.
   ↳ The asset page is displayed.
2. Tap the **Selected Assets** list and chose the asset to be duplicated.
   ↳ The duplication is displayed. Every field is copied except for **Asset Tag** as it is a unique identifier for your DUT and the ID with which it will be displayed in the selection list.
3. In the **Asset Tag:** field, enter a new text by entering text or scanning a barcode ➪ "Entering Information" 🗎35.
   (Max. 80 characters.)
   Example: Infusion pump 2.
4. Optional: Modify the asset by changing the information field(s) either by entering text or scanning a barcode ➪ "Entering Information" 🗎35.
   (Max. 80 characters.).
5. To confirm tap **Save**.

↳ The asset has been created. Your DUT has been added to the app.
It appears in the asset list on the **Asset** tab.

Modify Asset

1. Select the tab **Asset**.
   ↳ The asset page is displayed.
2. Tap the **Selected Assets** list and chose the asset to be modified.
   ↳ The asset and its information is displayed.

3. Tap the information.
   ↳ The **Asset Creator** page is displayed.
4. Modify the asset by changing the information field(s) either by entering text or scanning a barcode ⇨ "Entering Information" 🗎35.
   (Max. 80 characters.).
5. To confirm tap **Save**.

↳ The asset has been modified.

Delete Asset

ATTENTION

No trash function

Data loss.

Immediately after deletion, an undo option is shown at the bottom of the app. It disappears as soon as you continue to use the app and then there is no way to restore deleted data.

1. Select the tab **Asset**.
   ↳ The asset page is displayed.
2. Tap the **Selected Assets** list and chose the asset to be modified.
   ↳ The asset and its information is displayed.
3. Tap the information.
   ↳ The **Asset Creator** page is displayed.
4. Tap **Delete**.

↳ The asset has been removed.

11.8 BLUETOOTH® CONNECTION

Pairing the SECULIFE IF BASE and mobile device is not required; they communicate via Bluetooth® instantly.

You only need to turn on Bluetooth® in both devices ⇨ "Bluetooth®" 🗎18.

Both devices must also be in Bluetooth® communication distance with each other.

Note

Simultaneous connections may interfere with each other. Only connect one mobile device at a time.

11.9 CONFIGURING THE INSTRUMENT

You can set the pressure unit (psi, mmHg, mbar, kPa) as well as the density on the instrument.

✓ The Bluetooth® connection requisites are met ⇨🗎36.

1. Select the tab **Test**.
   ↳ The **Run Test** page is displayed and shows the available instruments.
2. Tap onto the device you want to connect to.

Tip

If your device is not displayed, tap the reload icon to search again.

   ↳ The connection is established.
   The tab **Asset** is displayed.
3. Select the tab **Test** again.
4. Select the **Settings** tab.
   ↳ The **System settings** page is displayed.
5. Tap **Unit of Pressure**.
   ↳ The **Unit of Pressure** dialog is displayed.

6. Select the unit of pressure.
7. Confirm with **Save**.
8. Tap **Density**.
   ↳ The **Density Selector** dialog is displayed.
9. Enter the density value.
10. Confirm with **done**.

↳ The setting is changed on the instrument.

11.10 REMOTE CONTROL TESTING

Remote control with myBC Mobile allows for easy handling of the instrument: The DUT information and test configuration can be entered comfortably via the mobile device's keyboard.

✓ The Bluetooth® connection requisites are met ➪🗎36.
✓ An asset has been created (➪🗎35) or information on the DUT is available.

Starting a Test with a Selected Asset (DUT)

✓ An asset has been created ➪🗎35.

1. Select the tab **Asset**.
   ↳ The **Asset** page is displayed.
2. Tap the **Selected Assets** list and chose the DUT you want to select.
   Alternatively, scan a barcode ➪ "Entering Information" 🗎35.

1. Select the tab **Test**.
   ↳ The **Run Test** page is displayed and shows the available instruments.
2. Tap onto the instrument you want to connect to.

Tip

If your device is not displayed, tap the reload icon to search again.

   ↳ The connection is established.
   The asset page is displayed. It contains information from the previously selected asset.
3. Optional: Tap on any of the fields, to change the information. Examples: Operator, Facility.

Note

Any changes made here are only for the current test and will show up on the record. They will not affect the original entries.

4. Select the tab **Test**.
   ↳ The **Setup** page for tests with the instrument is displayed.
5. Select the type of test: **Flow** or **Occlusion**.
6. Configure the test parameters ➪ "Operation" 🗎23.
7. Tap **Test**.
   ↳ The **Ready to Start** page appears.
8. Tap **Start**.
   ↳ The test starts.
   If you want to stop the test earlier, tap **Stop**.
9. The test log appears.
   Save Log: Saves the test record.
   Save and Export: Allows you to share the test record via the mobile device's usual services (e.g. via e-mail.)

Note

The mobile device's methods for sharing and their requirements depend on your device. See device documentation for more information.

   Clear: Deletes test record.

↳ Remote control testing is done.

Starting a Test with Manually Entered DUT Information

1. Select the tab **Test**.
   ↳ The **Run Test** page is displayed and shows the available instruments.
2. Tap onto the instrument you want to connect to.

   Tip

   If your device is not displayed, tap the reload icon to search again.

   ↳ The connection is established.
   The empty asset page is displayed.
3. Fill the information fields either by entering text or scanning a barcode ⇨ "Entering Information" 🗎35.
   (Max. 80 characters.)
   Asset Tag: required field. It is a unique identifier for your DUT. If you have several DUTs of the same type, use this text to make them easy to distinguish.

   Note

   You may change the operator's name. The change only affects the current test and will show up on the record. It will not affect the original operator setting.
4. Select the tab **Test**.
   ↳ The **Setup** page for tests with the instrument is displayed.
5. Select the type of test: **Flow** or **Occlusion**.
6. Configure the test parameters ⇨ "Operation" 🗎23.
7. Tap **Test**.
   ↳ The **Ready to Start** page appears.
8. Tap **Start**.
   ↳ The test starts.
   If you want to stop the test earlier, tap **Stop**.
9. The test log appears.
   Save Log: Saves the test record.
   Save and Export: Allows you to share the test record via the mobile device's usual services (e.g. via e-mail.)

   Note

   The mobile device's methods for sharing and their requirements depend on your device. See device documentation for more information.

   Clear: Deletes test record.

↳ Remote control testing is done.

11.11 MANAGING TEST RECORDS

11.11.1 VIEW RECORD

1. Select the tab **Records**.
   ↳ The record page is displayed. The title shows the number of records stored in the mobile device.
2. Tap **v** to expand the desired record.

↳ The record details are displayed.

11.11.2 SEND RECORD(S)

You can send records from your mobile device using an app of your choice.

Note

The mobile device's methods for sharing and their requirements depend on your device. See device documentation for more information.

Send Single Record

1. Select the tab **Records**.
   ↳ The record page is displayed. The title shows the number of records stored in the mobile device.
2. Tap **v** to expand the desired record.
   ↳ The record details are displayed.
3. Tab **Send Record**.
4. Select the app of your choice for sending the record.
5. Use the selected app to send your record.

↳ The record has been sent.

Send Selected Records

1. Select the tab **Records**.
   ↳ The record page is displayed. The title shows the number of records stored in the mobile device.
2. Tap and hold one record.
   ↳ Multi-select is active.
3. Tab all records you want to select.
   ↳ Selected records are marked with a green check mark.
4. Tab **Send Records**.
5. Select the app of your choice for sending the records.
6. Use the selected app to send your records.

↳ The selected records have been sent.

Send All Records

1. Select the tab **Records**.
   ↳ The record page is displayed. The title shows the number of records stored in the mobile device.
2. Tab **Send Records**.
3. Select the app of your choice for sending the records.
4. Use the selected app to send your records.

↳ The records have been sent.

11.11.3 DELETE RECORD(S)

ATTENTION

No trash function – immediate and permanent deletion

Data loss.

Only delete a record, if you are absolutely sure.

Delete Single Record

1. Select the tab **Records**.
   ↳ The record page is displayed. The title shows the number of records stored in the mobile device.
2. Tap **v** to expand the desired record.
   ↳ The record details are displayed.
3. Tab **Delete Record**.
4. Confirm the prompt.

↳ The record has been deleted.

Delete Selected Records

1. Select the tab **Records**.

↳ The record page is displayed. The title shows the number of records stored in the mobile device.
2. Tap and hold one record.
   ↳ Multi-select is active.
3. Tab all records you want to select.
   ↳ Selected records are marked with a green check mark.
4. Tab **Delete Records**.

↳ The selected records have been deleted.

Delete All Records

1. Select the tab **Records**.
   ↳ The record page is displayed. The title shows the number of records stored in the mobile device.
2. Tab **Delete Records**.

↳ All records have been deleted.

12 STORAGE AND TRANSPORT

ATTENTION

Improper Storage

Damage to the product and measuring error due to environmental influences

- Store the instrument in a protected location and only within the limits of permissible ambient conditions. The ambient conditions (temperature, humidity etc.) can be found in chapter ⇨ "Technical Data" 🗎14.

ATTENTION

Improper Transport

Damage to the product and measuring error

- Transport the instrument only within the limits of permissible ambient conditions (temperature, humidity etc.) ⇨ "Technical Data" 🗎14.
- Only use the original packaging to transport the instrument.

13 MAINTENANCE

13.1 CLEANING

DANGER

Life endangering due to electric shock!

The instrument and its accessories are operated with electrical power, therefore there is a general risk of electric shock. This can be fatal or cause serious injuries.

- The instrument, the accessories and all connected conductors must be voltage-free before and during cleaning. Switch the test instrument off and disconnect it from the mains power supply.
- Never immerse the instrument/accessories in water or other fluids.
- Never touch the instrument/accessories with wet or moist hands.

ATTENTION

Unsuitable Cleaning Agents

Unsuitable cleaning agents such as aggressive or abrasive cleansers result in damage to the instrument/ accessories.

- Use a dry, lint-free cloth or a cloth which has been slightly dampened with water for cleaning.
- Avoid the use of cleansers, abrasives or solvents.

Keep the outside surfaces of the instrument and any accessories clean.

13.2 RECALIBRATION

Note

Date on Calibration Certificate / Calibration Interval Begins Upon Receipt

Your instrument is furnished with a calibration certificate on which a date appears. This date may be further in the past if your instrument has been stored for some time prior to sale.

The instruments are stored in accordance with the specified conditions. Drift is thus negligible for a duration of 1 year and longer storage periods are highly unusual.

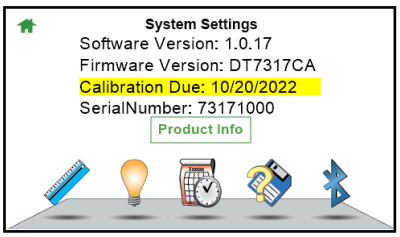
Consequently, the instrument's characteristic values lie within the specifications and the first calibration interval can be determined as of the date of receipt.

Calibration capability is valid for 1 year in Germany. Recalibration by our state-approved test laboratory is possible at any time. Please contact GMC-I Service GmbH for calibration services ➪ "Contact, Support and Service" 🗎45.

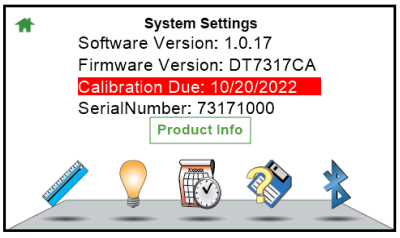
The calibration due date is stored in the instrument and has notifications on startup if the calibration is set to expire within 30 days or has already expired.

The product info screen also displays information about the calibration due date:

Calibration Due is highlighted yellow when the calibration is within a month of expiration.



Calibration Due is highlighted red when the calibration has expired.



14 TROUBLESHOOTING

When a hardware fault occurs, a message and an error code are displayed.
The instrument will attempt to automatically recover from the error.
You can also try to troubleshoot according to the error code:

Error code	Description	Recommended action
0x04	Linear motion stall	Cycle power
0x06	Hardware fault	Cycle power
0x08	Homing error	Cycle power

If the error persists after cycling power, contact Gossen Metrawatt GmbH for service ⇨ "Contact, Support and Service" 🗎45.

15 REPAIR

If your instrument requires repair, please contact our service department ⇨ "Contact, Support and Service" 🗎45.

Note

Loss of warranty and guarantee claims

Unauthorized modification of the instrument is prohibited. This also includes opening the instrument.

If it can be ascertained that the tester has been opened by unauthorized personnel, no guarantee claims can be honored by the manufacturer with regard to personal safety, measuring accuracy, compliance with applicable safety measures or any consequential damages.

If the guarantee seal is damaged or removed, all guarantee claims are rendered null and void.

- The device may only be repaired or opened by authorized, qualified personnel who are familiar with the associated dangers.
- Original replacement parts may only be installed by authorized, qualified personnel.
- A defective instrument may not be placed back into operation until troubleshooting, repair, and functional testing have been performed at our factory, or at one of our authorized service centers.

Note

Data Protection

Data can be stored in the instrument. This may include personal and/or sensitive data.

Back up your data before sending the instrument for repair.

Also, be aware of the owner's or end user's own responsibility with regard to protecting personal and other potentially sensitive data in the instrument before sending it for repair.

16 CONTACT, SUPPORT AND SERVICE

Gossen Metrawatt GmbH can be reached directly and simply – we have a single number for everything! Whether you require support or training, or have an individual inquiry, we can answer all of your questions here:

+49-911-8602-0	Monday to Thursday:	8 a.m. to 4 p.m.
	Friday:	8 a.m. to 2 p.m.
Or contact us by e-mail at:	info@gossenmetrawatt.com	

Do you prefer support by e-mail?

Measuring and Test Technology:	support@gossenmetrawatt.com
Industrial Measuring Technology:	support.industrie@gossenmetrawatt.com

Enquiries concerning training and seminars can also be submitted by e-mail and online:

training@gossenmetrawatt.com

https://www.gossenmetrawatt.com/training

Please contact GMC-I Service GmbH for repairs, replacement parts and calibration[1]:

+49-911-817718-0
service@gossenmetrawatt.com
www.gmci-service.com

Beuthener Str. 41
90471 Nürnberg
Germany

1. DAkkS calibration laboratory per DIN EN ISO/IEC 17025
accredited by the Deutsche Akkreditierungsstelle GmbH under reference number D-K-15080-01-01.

17 CERTIFICATIONS

17.1 CE DECLARATION

The instrument fulfills all requirements of applicable EU directives and national regulations. We confirm this with the CE mark.

Gossen Metrawatt GmbH	Begleitende Formulare zum PEP EU-Konformitätserklärung / EU Declaration of Conformity	Form E0F34

Hersteller / Manufacturer: Gossen Metrawatt GmbH
Anschrift / Address: Südwestpark 15, 90449 Nürnberg

Produktbezeichnung/ Prüfgerät für Infusionspumpen
Product name: Infusion Pump Analyzer
Typ / Type: SECULIFE IF BASE
Bestell-Nr / Order No: M695Z

Zubehör / Accessories: Power Adapter, Micro USB cable (type B)

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsvorschriften der Union: / The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2014/53/EU	RED - Richtlinie	RED Directive

Anforderungen an die Sicherheit gemäß 2014/35/EU (Niederspannungsrichtlinie) /
Safety requirements according to 2014/35/EU (Low Voltage Directive)

EN/Norm/Standard:

EN 61010-1 : 2010 + A1 : 2019 + A1 : 2019/AC : 2019

Anforderungen an die elektromagnetische Verträglichkeit gemäß 2014/30/EU (EMV Richtlinie) /
Requirements for electromagnetic compatibility according to 2014/30/EU (EMC Directive)

EN/Norm/Standard:

EN IEC 61326-1 : 2021

2011/65/EU	RoHS - Richtlinie	RoHS Directive
(EU) 2015/863	Deligierte Richtlinie	Deligate Directive

EN/Norm/Standard:
EN IEC 63000 : 2018

Nürnberg, 06.08.2024
Ort, Datum / Place, Date:

Joachim Czabanski, Geschäftsführer / Managing Director

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller. Sie beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der mitgelieferten Produktdokumentationen sind zu beachten.

This Declaration of Conformity is issued under the sole responsibility of the manufacturer but does not include a property assurance. The safety notes given in the product documentation which are part of the supply, must be observed.

Fig. 3: CE Declaration

17.2 CALIBRATION CERTIFICATE

A calibration certificate is included with the instrument.

18 DISPOSAL AND ENVIRONMENTAL PROTECTION

Proper disposal makes an important contribution to the protection of our environment and the conservation of natural resources.

ATTENTION

Environmental damage

Improper disposal results in environmental damage.

- Follow the instructions concerning return and disposal included in this section.

The following comments refer specifically to the legal situation in the Federal Republic of Germany. Owners or end users who are subject to other regulations must comply with the respective local requirements and implement them correctly on site. Further information can be obtained, for example, from the responsible authorities or local distributors.

Waste Electrical Equipment, Electrical or Electronic Accessories and Waste Batteries (including rechargeable batteries)

Electrical equipment and batteries (including rechargeable batteries) contain valuable raw materials that can be recycled, as well as hazardous substances which can cause serious harm to human health and the environment, and they must be recycled and disposed of correctly.

The symbol at the left depicting a crossed-out garbage can on wheels refers to the legal obligation of the owner or end user (German electrical and electronic equipment act ElektroG and German battery act BattG) not to dispose of used electrical equipment and batteries with unsorted municipal waste (“household trash”). Waste batteries must be removed from the old device (where possible) without destroying them and the old device and the waste batteries must be disposed of separately. The battery type and its chemical composition are indicated on the battery’s labelling. If the abbreviations “Pb” for lead, “Cd” for cadmium or “Hg” for mercury are included, the battery exceeds the limit value for the respective metal.

Please observe the owner’s or end user’s responsibility with regard to deleting personal data, as well as any other sensitive data, from old devices before disposal.

Old devices, electrical or electronic accessories and waste batteries (including rechargeable batteries) used in Germany can be returned free of charge to Gossen Metrawatt GmbH or the service provider responsible for their disposal in compliance with applicable regulations, in particular laws concerning packaging and hazardous goods. Waste batteries must be returned in discharged state or with appropriate precautions against short circuiting. Further information regarding returns can be found on our website.

Packaging Materials

We recommend retaining the original packaging materials in case that you might require servicing or calibration in the future.

WARNING

Danger of asphyxiation resulting from foils and other packaging materials

Children and other vulnerable persons may suffocate if they wrap themselves in packaging materials, or their components or foils, or if they pull them over their heads or swallow them.

- Keep packaging materials, as well as their components and foils, out of the reach of babies, children and other vulnerable persons.

In accordance with German packaging law (VerpackG), the user is obligated to correctly dispose of packaging and its components separately, and not together with unsorted municipal waste (“household trash”).

Packaging which is not subject to so-called system participation is returned to the appointed service provider. Further information regarding returns can be found on our website.

FIGURES

TABLES

GOSSEN METRAWATT
GMC-INSTRUMENTS GROUP

YOUR CONTACT

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Germany

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info@gossenmetrawatt.com
www.gossenmetrawatt.com