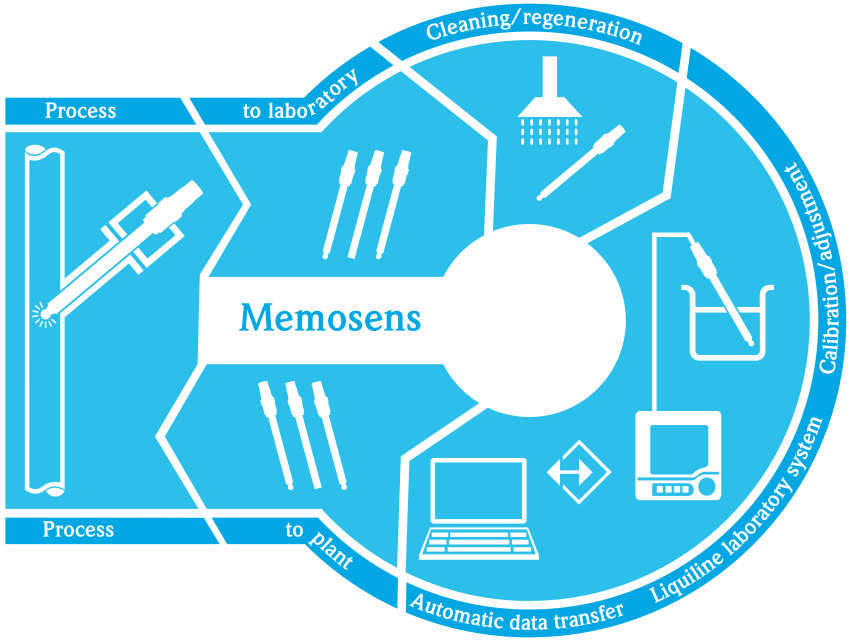
Level Pressure Flow Temperature Liquid Analysis Registration Systems Components Services Solutions

Operating Instructions

Memobase CYZ41D

Software for central data and sensor management



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Endress+Hauser
People for Process Automation

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1 Memobase

1.1 Features

Memobase is a software package offering central data and sensor management for Memosens systems that allows end-to-end documentation of data relevant to your sensor and measuring point, e.g.:
- Calibration history
- Sensor utilization data such as total operating hours, operating hours under extreme process conditions
- Assignment to a measuring point or a group of measuring points

Memobase is based on a client-server architecture and allows multiple client access. All the data are stored in a central database.

The software can be combined with the following databases:
- SQLite
  You can install the free SQLite database provided on the Memobase CD and use it on your computer.
- Oracle[1)] over ODBC
  If you are already using an Oracle database, you can use this. To do so, the appropriate ODBC driver for Oracle must be installed on your computer and an appropriate database client must be set up on your computer. Contact your database administrator if you have any queries.

Any other use than the one described here is not permitted.
The manufacturer is not liable for damage caused by improper or non-designated use.

1.2 System requirements

The following system requirements must be met when installing and using Memobase.

- Operating system: Windows XP[1)] SP2 or Windows Vista[1)]
- At least 100 MB free storage space on the hard disk
- Commubox modem FXA291
  Information on connecting and installing the FXA291 is provided in the Technical Information document (TI405C/07/en) and the installation CD for FXA291.
- Adobe Reader[1)] 7.0 or higher
  To display the Operating Instructions (also required if a full version of Adobe Acrobat is installed)
- Liquiline lab device

Version	Parameter	Software version
CM42-M/N*********	pH glass, pH ISFET, ORP	10.05.00 or higher
CM42-K*********	Conductivity	13.05.00 or higher
CM42-O*********	Oxygen	20.03.00 or higher

1) The products referred to are trademarks of their respective companies.

2 Identification

2.1 Product structure

	Software						
	1	Standard					
		Version					
		1	Standard				
			Diagnosis				
			A	Standard			
				Interface			
				1	Not selected		
				2	FXA291		
					Documentation language[1)]		
					D	German / English	
						Additional options	
						1	Not selected
CYZ41D-							

1) This option only refers to the printed Getting Started. The software contains complete Operating Instructions in all available user interface languages.

2.2 Scope of delivery

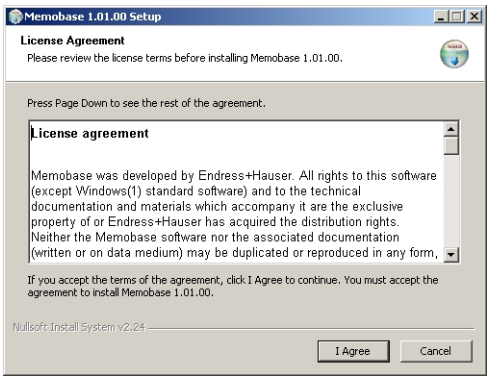
The scope of delivery comprises:
- Installation CD with Memobase setup and Operating Instructions
- Serial number and license key
- Brief Operating Instructions
- Commubox FXA291 (optional)

3 Installation

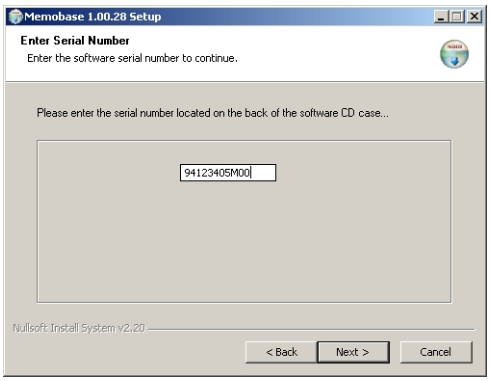
3.1 Installation wizard

The installation wizard guides you through the installation of the Memobase software. It also comprises an update function. So, if you want to update your Membase software, start the installation wizard as well.

1. Insert the CD into your CD/DVD drive.
   The Memobase installation procedure starts automatically.
   If autostart is not active, start **SetupMemobase.exe** directly from the CD.
2. In the dialog box displayed, select the language for the installation.
   Click **OK**.
3. The license agreement appears.

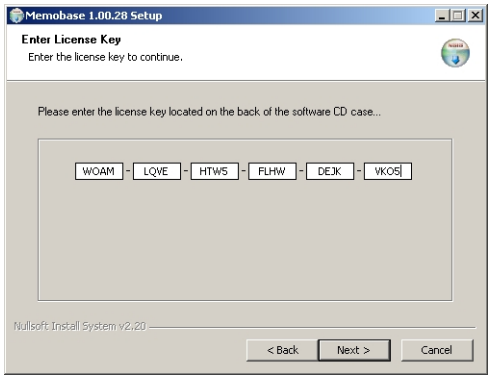


   – Please read the license agreement carefully.
   – Select **I agree** to accept the agreement and continue installing the software.
   – Click **Cancel** if you do not accept the agreement and want to abort the installation.
4. In the dialog box that appears, enter the serial number located on the back of the CD cover.



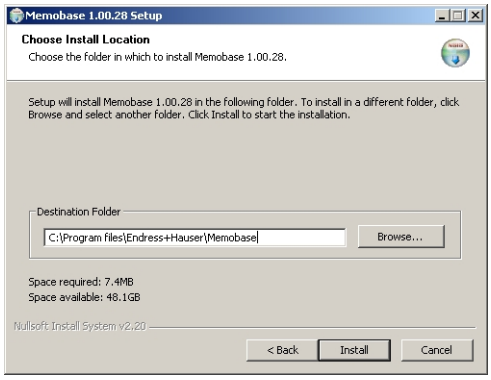
   Click **Next**.

5. Enter the license key. This is also located on the back of the CD cover.



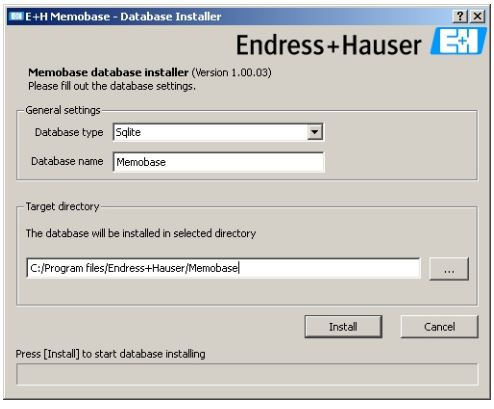
Click **Next**.

6. Specify the directory where Memobase is to be installed.



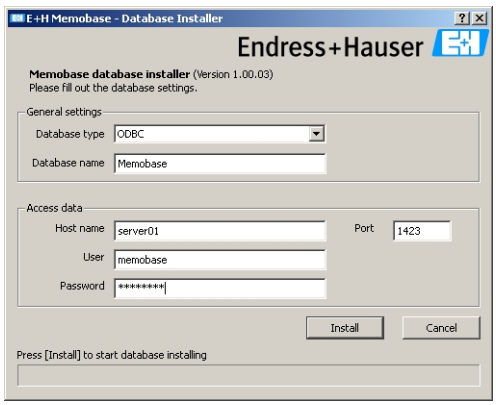
Memobase is installed in the following directory as standard:
C:\Program files\Endress+Hauser\Memobase
If you want to install the program in another directory, click **Browse** and select the desired directory.
Click **Install** to start the installation.

7. In the **Database Installer** dialog box, select your database type and specify the requisite information on your database.
   - If you are using Memobase with the SQLite database supplied:



   – Select **SQLite** under **Database type**.
   – Enter the target directory where the database will be installed.
     The SQLite database is installed in the following directory as standard:
     C:\Program files\Endress+Hauser\Memobase
     If you want to install the database in another directory, specify the desired directory.

■ If you are using an Oracle database over ODBC:



– Make sure that the appropriate ODBC driver for Oracle is installed on your computer and an ODBC client is set up. Where necessary, contact your database administrator.
– Select **ODBC** under **Database type**.
– Enter your access data for the database.

Click **Install** to continue the installation procedure.

8. The following dialog boxes are displayed depending on the database type selected:
   – If you are creating a new SQLite database the **Create new database** dialog box appears. If a database already exists in the selected directory, a message appears that this database will be updated. We recommend to make a backup copy of the database before updating it. Click **OK**.
   The Memobase and database files are copied to the target directory.
   – If you are updating an existing ODBC database, the **Update existing ODBC database** dialog box appears.
   We recommend to make a backup copy of the database before updating it.
   Click **OK**.
   The Memosens definitions and texts are updated.
9. In the dialog box displayed, click **Close** to finish the installation procedure.

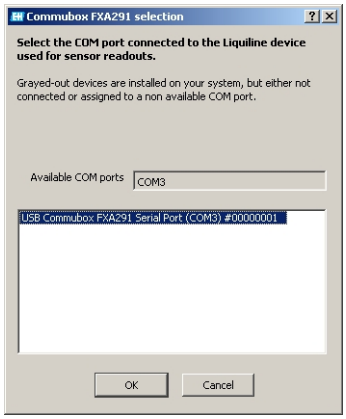
4 Operation

4.1 Starting the program

1. Make sure that the drivers for the Commubox FXA291 are installed on your computer as per the installation instructions.
2. Make sure that the Commubox FXA291 is connected to the Liquiline and the USB port of your computer.
3. Select **Start** > **Programs** > **Memobase** > **Memobase**.
4. The login screen appears:

If you are starting Memobase for the first time:
– Leave **Administrator** as the user name.
– Do not enter any password.
You specify user administration and passwords later in the software.
For all subsequent starts:
– Enter your user name.
– Enter your password.
Click **Login**.

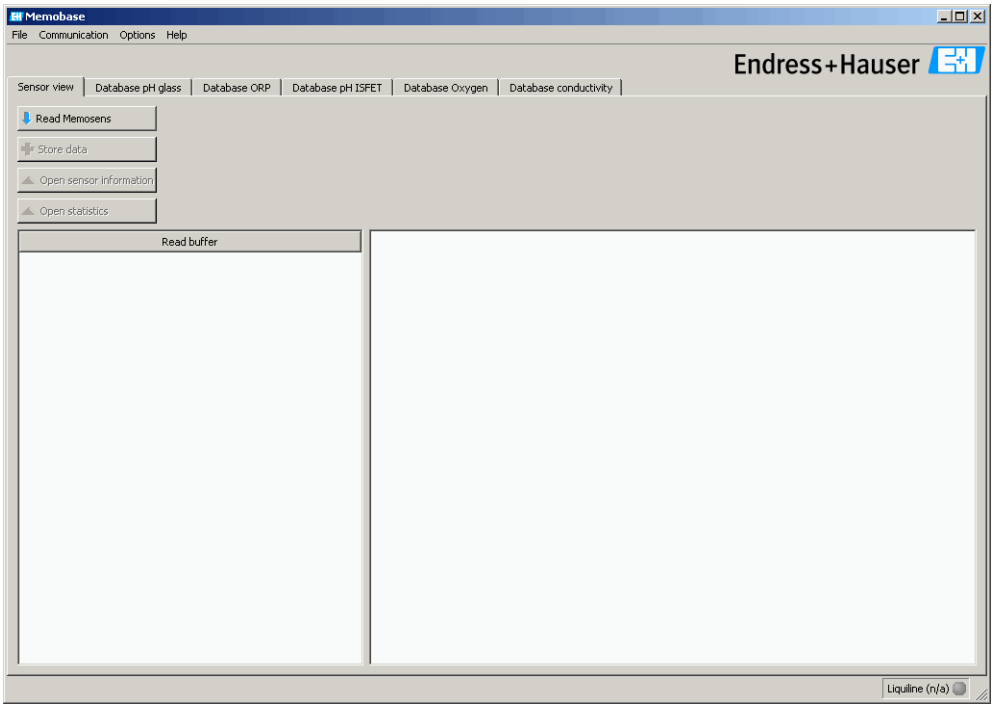
5. The **Modem selection** dialog box is displayed.



– Select the COM port to which the Commubox FXA291 is connected.
– Click **OK**.

6. The connection to the Liquiline is established.

7. The Memobase user interface is displayed.



4.2 Communication

4.2.1 Connecting Commubox FXA291

If the Liquiline is connected to your computer when you start Memobase, the connection is automatically established when you start the program.

If the Liquiline is not connected to your computer, proceed as follows:

1. Insert the USB plug of your Commubox FXA291 into a USB socket on your computer.
2. Select **Communication** > **Connect Commubox FXA291**.
3. In the **Modem selection** dialog box, select **USB Commubox FXA291 serial port**. Click **OK**.
4. The connection to the Liquiline is established.

4.2.2 Automatic Liquiline polling

By means of the automatic Liquiline polling function, you can automatically save every calibration you perform on the connected Liquiline in the Memobase database.

Automatic Liquiline polling is enabled as standard.
Thus, if you calibrate a sensor on the Liquiline and confirm the option **Store the data for adjustment**, the calibration data are transmitted to the sensor and the Memobase database. A new data record with the new calibration data is automatically created in the database.

To enable the automatic Liquiline polling, proceed as follows:

1. Select **Communication** and click **Autom. Liquiline polling**. A checkmark appears beside **Autom. Liquiline polling** and a green dot appears in the task bar.
2. To deactivate automatic polling, select **Communication** again and click **Autom. Liquiline polling**.
   The checkmark beside **Autom. Liquiline polling** disappears and a gray dot is displayed in the task bar.

4.3 Customizing the user interface

4.3.1 Selecting the language

Memobase is supplied in the following languages:
- German
- Dutch
- English
- Spanish
- French
- Italian
- Japanese
- Polish
- Portuguese
- Russian
- Czech

The language of the user interface can be easily changed if another user wants the user interface to be displayed in a different language.

To change the language:

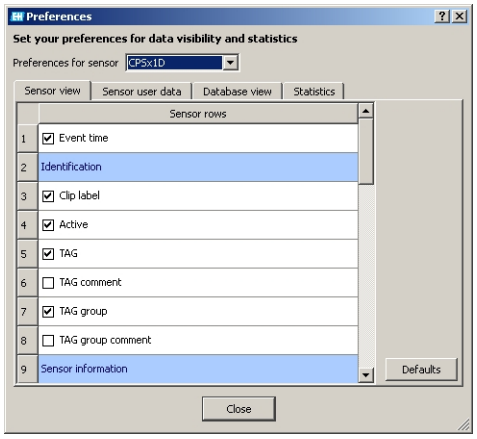
1. Select **Options** > **Set language**.
2. The **Language selection dialog box is displayed**.
   – Select the desired language for the user interface, e.g. English.
   – Click **OK**.
3. Memobase switches to the selected language. This has no effect on the stored data.

4.3.2 Viewing sensor data

You can configure the sensor data view individually so that you always have the information you need at your fingertips.

To customize the view:

1. Select **Options** > **Preferences**.
2. The **Preferences** dialog box is displayed.



– Under **Preferences for sensor**, select the sensor type for which you would like to customize the view.
Select **CPSx1D** for glass electrodes, for example or **CLSxxD** for conductivity sensors.
– Select the tab for the view you want to customize: **Sensor view**, **Sensor user data**, **Database** or **Statistics**.
– Tick the sensor data that should be displayed.

Note!
You can restore the default settings at any time. To do so, click **Defaults**.

– Once the sensor data view meets your requirements, click **Close**.

3. The ticked sensor data are displayed and the disabled data are hidden.

Note!
Hiding the data has no effect on the database. All data are always saved.

4.4 User administration

To protect Memobase against unintentional or undesired changes, you can restrict database access to only certain users with a password, and assign these users user roles.

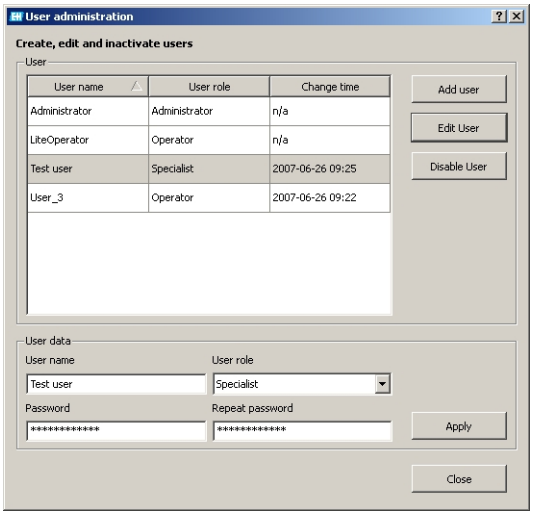
You can define the following user roles:

- Operator
  As an operator, you can save new Memosens sensors or edit stored data records and save them as new data records with a new time stamp. You cannot make any changes to the user administration or measuring point (TAG) assignment, however.
- Specialist
  As a specialist, you have all rights of the operator. In addition, you can manage the measuring point assignment. You cannot make changes to the user administration.
- Administrator
  As the administrator, you have all the rights of the specialist. In addition, you can also manage the users.

4.4.1 Creating, editing and deleting users

Proceed as follows to set up user administration:

1. Select **Options > User administration**.
2. The **User administration** dialog box is displayed.



To create a new user:
– Click **Add user**.
– Enter the desired user name.
– Assign a user role to the user.
– Enter the password and repeat it.
To edit an existing user:
– Click the user entry.
– Click **Edit user**.
– Change the user role or the password as required.
To deactivate a user:
– Click the user entry.
– Click **Disable user**.

3. Click **Apply** to save the modified settings.

4.4.2 Logging users on and off

When you exit the Memobase database, you can log off without having to close the program.

1. To do so, select **File** > **User logout**.
2. The **E+H Memobase - Login** dialog box is displayed.

3. A new user just has to enter his/her user name and password in the login window to be able to use the Memobase database.

4.5 Measuring point (TAG) assignment

Memobase allows you to assign your sensors to a specific measuring point or group of measuring points.
In order not to mistake the sensors when replacing them in the field, you can – in addition to the outer labeling with Memoclip (see "Accessories") – activate a sensor check in transmitters of the Liquiline platform. The sensors are then checked for correct measuring point assignment. An incorrect assignment triggers an alarm in the Liquiline.

The following measuring point assignment types are available:

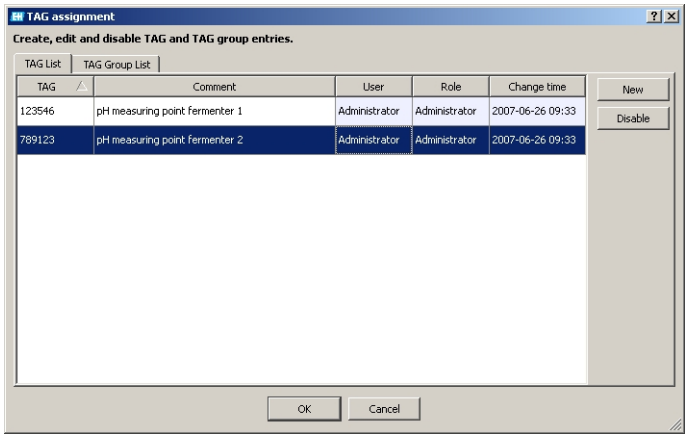
- TAG:
  If you assign a TAG to a sensor, the sensor is fully linked to one measuring point. It can only be used at this measuring point and cannot be used at any other measuring point.
  Example:
  Sensor A is assigned to measuring point TAG 1.
  ➡ Sensor A can only be used at measuring point TAG 1. If it is connected to another measuring point, an alarm is triggered.
- TAG group:
  If you assign a TAG group to the sensor, the sensor can be used at all the measuring points that belong to this TAG group.
  Example:
  TAG group 1 comprises measuring points X, Y and Z.
  Sensor A is assigned to TAG group 1.
  ➡ Sensor A can be used at the three measuring points X, Y and Z. If it is connected to another measuring point, an alarm is triggered.

4.5.1 Assigning measuring points (TAGs) in Memobase

To assign the sensors that you manage in your Memobase database to a specific TAG or TAG group, you have to create a TAG list or TAG group list.

Proceed as follows:

1. Select **Options > TAG assignment**.
2. The **TAG assignment** dialog box appears.



To create a new entry:
– Select the **TAG list** or **TAG group list** tab.
– Click **New**.
– Enter the TAG name or TAG group.
  Enter a comment if required.
– Repeat the two previous steps for every TAG name or TAG group that you want to add to your list.

To deactivate an entry:
– Select the entry you want to delete.
– Click **Disable**.

3. Once the list is completed, click **OK**.
4. You can now assign a TAG name or TAG group to every Memosens sensor. See the "Reading out Memosens" section for this purpose.

4.5.2 Liquiline settings – Assigning measuring points in Liquiline

Liquiline M CM42-K/M/N/O********* offers the following functions for measuring point administration:

- Lab device:
  With this function you can ensure that the measuring point information saved in the sensor is not overwritten by calibrating on the Liquiline.
  Use this function for the instruments that you use in the laboratory for central Memosens sensor calibration.
- Sensor check (only available with the "Advanced Version"):
  Use this function to specify what sensors are accepted on a Liquiline instrument.
  Activate this function for the instruments that you use in the process and to which you would like to assign specific sensors.

Note!
The two functions are mutually exclusive. In a Liquiline instrument, you can either enable the lab device or the sensor check function.

Lab device

Since the sensors with Memosens technology save the calibration data, you can calibrate them centrally in the laboratory. To do so, use a Liquiline and activate the lab function. In this way, you can ensure that all the measuring point information stored in the sensor (TAG, TAG group) is not overwritten. This means that you can use the calibrated sensor again at its assigned measuring point even if the sensor check is enabled.

To activate the lab function in the Liquiline:

1. Select **Setup** > **General settings** > **Lab device**.
2. Select **On** and press the navigator to confirm your entries.

Sensor check

If you assigned your measuring point certain sensors in the process, you can use the sensor check to ensure that only the assigned sensors, or sensors fresh from the factory with precisely the same order code, can be connected to this measuring point.
If another sensor is connected to this measuring point, the Liquiline rejects this sensor and an alarm is displayed.

To activate the sensor check in the Liquiline:

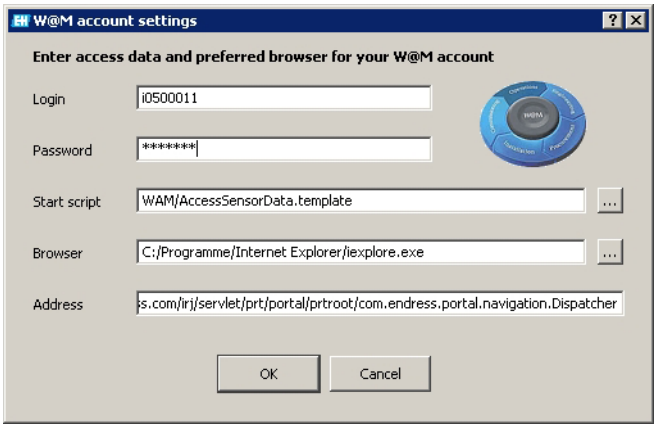
1. Select **Setup** > **General settings** > **Sensor check**. Press the navigator to confirm.
2. Depending on whether you manage your measuring point using TAG groups or TAGs, select **TAG group** or **TAG**. Press the navigator to confirm.
3. Depending on the setting previously made, select **TAG number** or **TAG group**. Press the navigator to confirm.
4. Enter the desired **TAG number** or **TAG group**. Using the navigator, scroll to **OK** and confirm by pressing the navigator.

4.6 W@M administration

Memobase offers direct access to the Endress+Hauser W@M portal. In this portal, you can find further information and documents concerning your sensors.

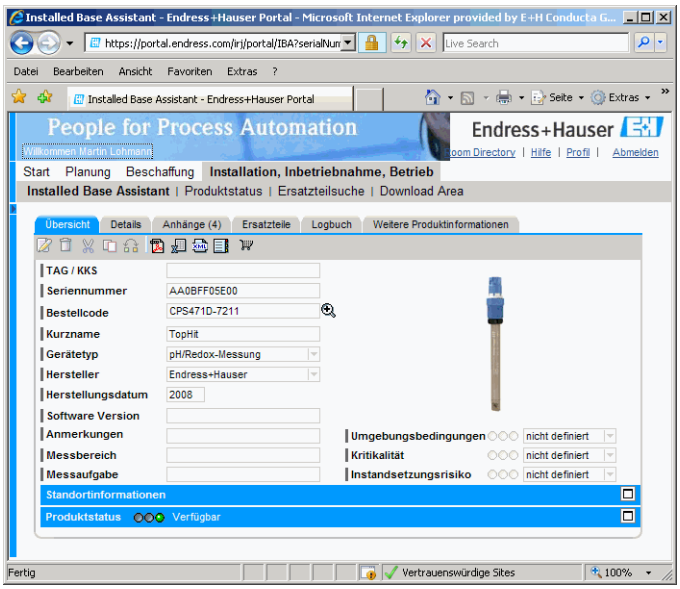
To create the W@M access:

1. Select **Options** > **WAM administration**.
2. The **W@M account settings** dialog box is displayed.



– Under **Login**, enter your W@M user name.
– Under **Password**, enter your W@M plassword.
– Click **OK**.
Now you have direct access to the W@M information.

3. Select the desired sensor in the database view.
4. Select **File** > **WAM**.
The W@M portal automatically displays the data record of the selected sensor.



Note!
To access the W@M information, your PC needs an Internet access.

4.7 Sensor view

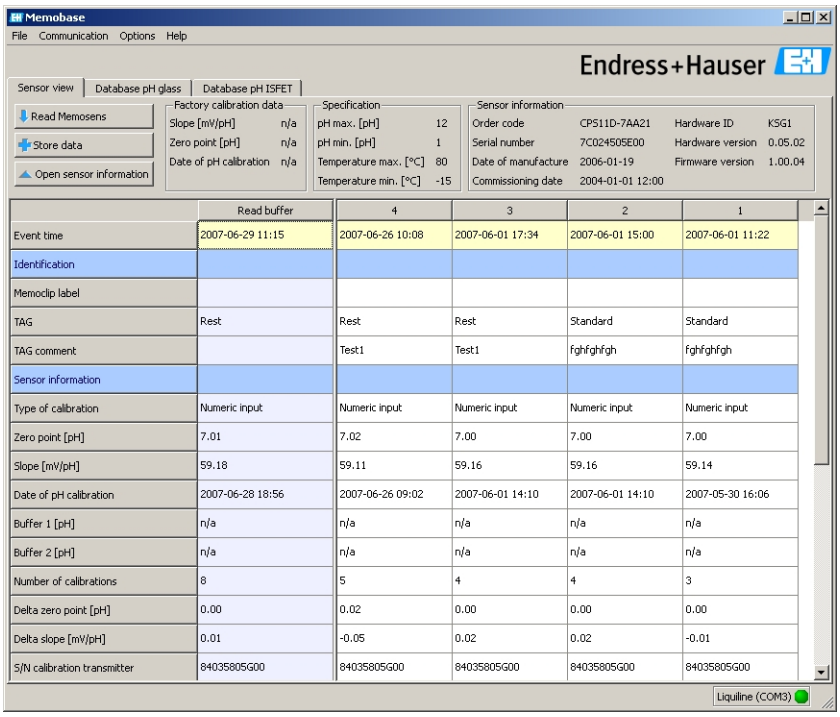
The sensor view shows the sensor that is currently connected to your Liquiline lab device.

In the sensor view, you can
- Read out the data of the sensor
- Add your specific information on the sensor
- Save the data record of the sensor in your database
- Assign the sensor to a specific TAG or TAG group, if required.

4.7.1 Reading out Memosens

Proceed as follows:

1. Make sure that a sensor is connected to your transmitter.
2. Select the **Sensor view tab**.
3. Click **Read Memosens**.
4. The sensor data are read out.



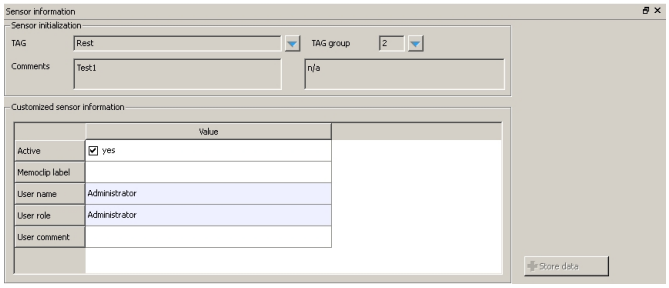
	Read buffer	4	3	2	1
Event time	2007-06-29 11:15	2007-06-26 10:08	2007-06-01 17:34	2007-06-01 15:00	2007-06-01 11:22
Identification					
Memoclip label					
TAG	Rest	Rest	Rest	Standard	Standard
TAG comment		Test1	Test1	fghfghfgh	fghfghfgh
Sensor information					
Type of calibration	Numeric input	Numeric input	Numeric input	Numeric input	Numeric input
Zero point [pH]	7.01	7.02	7.00	7.00	7.00
Slope [mV/pH]	59.18	59.11	59.16	59.16	59.14
Date of pH calibration	2007-06-28 18:56	2007-06-26 09:02	2007-06-01 14:10	2007-06-01 14:10	2007-05-30 16:06
Buffer 1 [pH]	n/a	n/a	n/a	n/a	n/a
Buffer 2 [pH]	n/a	n/a	n/a	n/a	n/a
Number of calibrations	8	5	4	4	3
Delta zero point [pH]	0.00	0.02	0.00	0.00	0.00
Delta slope [mV/pH]	0.01	-0.05	0.02	0.02	-0.01
S/N calibration transmitter	84035805G00	84035805G00	84035805G00	84035805G00	84035805G00

If the database already contains data records from the connected sensor, these records are also displayed.

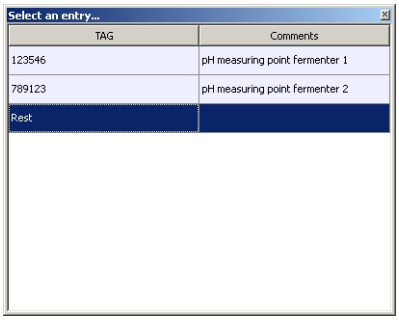
Note!
- The data read out are not saved automatically. To save the data, see the "Storing data" section.
- After exchanging the sensor, click **Read Memosens** to update the displayed data.

4.7.2 Adding sensor information

1. If you would like to assign specific information to the sensor, click **Open sensor information**.
2. The sensor information is displayed.



– If you want to assign the sensor to a TAG or TAG group, click the arrow beside the **TAG** or **TAG group** field.
The TAG list or TAG group list created beforehand is displayed.



Double-click the entry that you want to assign to the sensor. The assigned TAG or TAG group is stored in the database as well as the sensor.

✎ Note!
Sensors that are operated on a measuring point with a TAG that is not yet included in the TAG list of the database automatically create a new entry in the list when saved. A comment on this measuring point can always be added to the measuring point assignment at any time.

– You can disable a sensor if you no longer want to use it. In this way, you immediately see that it is no longer integrated in the process.
Click the box beside **Active**. The checkmark is deleted and the entry changes to **No**. The sensor is indicated as not activated in the database
– To enter a Memoclip name, click the empty field beside **Label Memoclip**. Enter the desired information.
– To enter a comment, click the empty field beside **User comment**. Enter the desired information.

4.7.3 Storing data

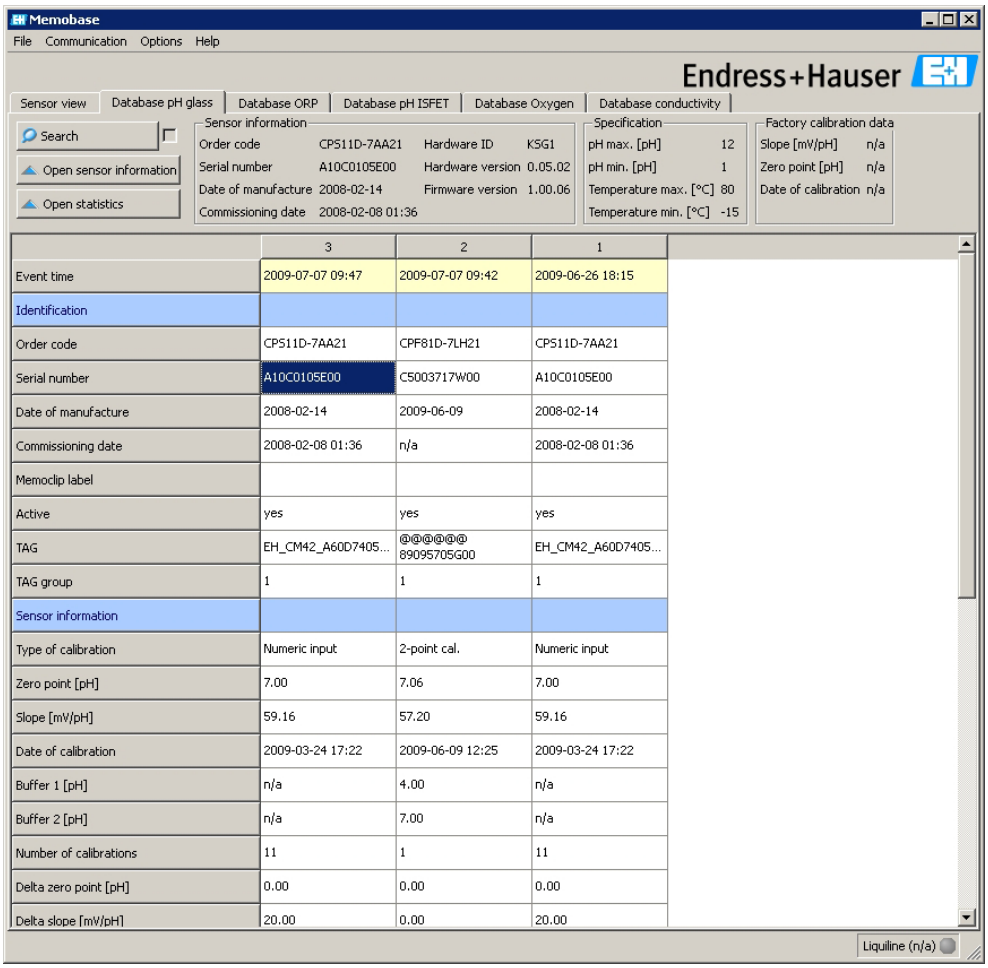
1. Click **Store data**.
2. The data record is saved with the date and time it was read in and stored in the database.

✎ Note!
A data record cannot be overwritten once it has been stored. This protects the database from being manipulated.
If you make changes to a data record, e.g. changes to the sensor information, a copy is created with a new time stamp.

4.8 Database view

All the sensors that you stored in your database are displayed in the database view.

To open the database view, select the desired tab.



	3	2	1
Event time	2009-07-07 09:47	2009-07-07 09:42	2009-06-26 18:15
Identification			
Order code	CPS11D-7AA21	CPF81D-7LH21	CPS11D-7AA21
Serial number	A10C0105E00	C5003717W00	A10C0105E00
Date of manufacture	2008-02-14	2009-06-09	2008-02-14
Commissioning date	2008-02-08 01:36	n/a	2008-02-08 01:36
Memoclip label			
Active	yes	yes	yes
TAG	EH_CM42_A60D7405...	@@@@@@@ 89095705G00	EH_CM42_A60D7405...
TAG group	1	1	1
Sensor information			
Type of calibration	Numeric input	2-point cal.	Numeric input
Zero point [pH]	7.00	7.06	7.00
Slope [mV/pH]	59.16	57.20	59.16
Date of calibration	2009-03-24 17:22	2009-06-09 12:25	2009-03-24 17:22
Buffer 1 [pH]	n/a	4.00	n/a
Buffer 2 [pH]	n/a	7.00	n/a
Number of calibrations	11	1	11
Delta zero point [pH]	0.00	0.00	0.00
Delta slope [mV/pH]	20.00	0.00	20.00

The data are sorted as follows:
- The latest data record is always on the left.
- The data on the sensor that is currently selected are displayed in the top gray section.

4.8.1 Information displayed

The database view displays the following information on the sensors as standard:

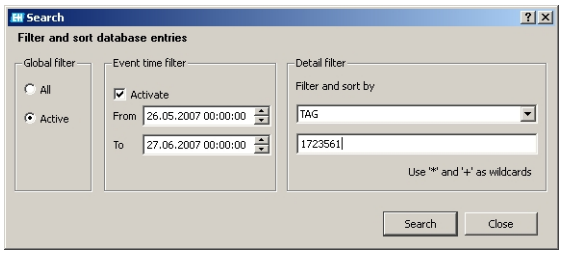
pH glass	ORP	pH ISFET	Oxygen	Conductivity
Event time	Event time	Event time	Event time	Event time
Identification Order code Serial number Date of manufacture Commissioning date Memoclip label Active TAG TAG group	*Identification* Order code Serial number Date of manufacture Commissioning date Memoclip label Active TAG TAG group	*Identification* Order code Serial number Date of manufacture Commissioning date Memoclip label Active TAG TAG group	*Identification* Order code Serial number Date of manufacture Commissioning date Memoclip label Active TAG TAG group	*Identification* Order code Serial number Date of manufacture Commisssioning date Memoclip label Active TAG TAG group
Sensor information Type of calibration Zero point [pH] Slope [mV/pH] Date of pH calibration Buffer 1 [pH] Buffe 2 [pH] Number of calibrations Delta zero point [pH] Delta slope [mV/pH] Slope as found [mV/pH] Zero point as found [mV/pH] S/N calibration transmitter	*Sensor information* Type of calibration Offset ORP Date of calibration ORP buffer Number of calibrations Delta offset S/N calibration transmitter	*Sensor information* Type of calibration Operating point [mV] Slope [mV/pH] Isotherm [pH] Date of pH calibration Buffer 1 [pH] Buffer 2 [pH] Number of calibrations Delta operating point [mV] Delta slope [mV/pH] Slope as found [mV/pH] Operating pnt. as found [mV/pH] S/N calibration transmitter	*Sensor information* Slope [pA/hPa] Min. slope Max. slope Date of slope calibration Type of calibration Date of zero point calibration Number of sensor calibrations Number of cap calibrations Delta slope [pA/hPa] Delta zero point [nA] Slope as found [pA/hPa] Zero point as found [nA] S/N calibration transmitter	*Sensor information* Type of calibration Cell const. [1/cm] Delta cell const. [1/cm] Temp. reference Conduct. reference Date of cell const. calibration Number of calibrations S/N calibration transmitter
Temperature calibration Temperature offset [K] Date of temp. calibration	*Temperature calibration* Temperature offset [K] Date of temp. calibration	*Temperature calibration* Temperature offset [K] Date of temp. calibration	*Temperature calibration* Temperature offset [K] Date of temp. calibration	*Temperature calibration* Temperature offset [K] Slope temp. Type of temp. calibration Temperature reference 1 Temperature reference 2 Date of temp. calibration S/N calibration transmitter
Operating hours Operating time Number of sterilizations Max. operating temp. [°C] Usage > 80 °C [h] Usage > 100 °C [h] Usage < -300 mV Usage > 300 mV	*Operating hours* Operating time Number of sterilizations Max. operating temp. [°C] Usage > 80 °C [h] Usage > 100 °C [h]	*Operating hours* Operating time Number of sterilizations Max. operating temp. [°C] Usage > 80 °C Usage > 100 °C Usage < -300 mV Usage > 300 mV	*Operating hours* Operating time Number of sensor sterilizations Number of cap sterilizations Max. operating temp. [°C] Min. operating temp. [°C] Usage > 40 °C [h] Usage > 80 °C [h] Usage > 10 nA [h] Usage > 40 nA [h] Charge [µAs] Leak current [nA] Reference voltage [mV] Polarization voltage [mV]	*Operating hours* Operating time Number of sterilizations Max. operating temp. [°C] Min. operating temp. [°C] Max. conductivity Min. conductivity Usage > 80 °C [h] Usage > 120 °C [h] Usage > 140 °C [h] Usage > 80 °C < 100 nS [h] CIP count
Customized sensor information User name User role User comment	*Customized sensor information* User name User role User comment	*Customized sensor information* User name User role User comment	*Customized sensor information* User name User role User comment	*Customized sensor information* User name User role User comment

4.8.2 Operations in the database view

In the database view, you can
- Filter and sort the database entries
- Edit the sensor information
- Open the graphic statistics.

Filtering and sorting

1. To filter and sort your data click **Search**.
2. The **Search** dialog box is displayed.

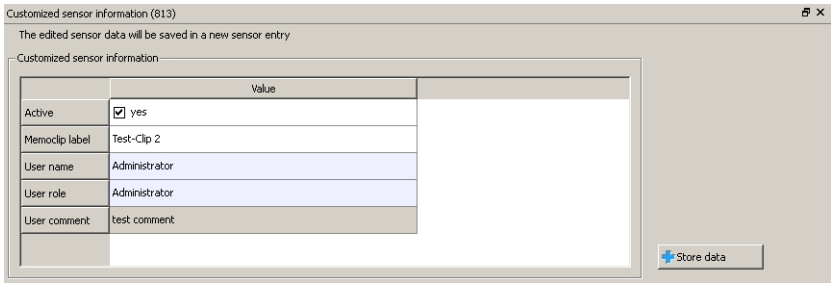


   – Under **Global filter** you can decide whether you want to take all the sensors, or only the active sensors, into account when performing the search.
   – In the **Event time filter**, you can specify the timeframe for when the search should be performed.
   – In the **Detail filter** specify the sensor properties the database entries should be filtered by. In the top field, select the sensor property e.g. serial number or TAG and enter the appropriate data in the field below, e.g. 7C024505E00 or Tag 1.
   You can filger by the following entries:
     – Order code
     – Serial number
     – Date of manufacture
     – Commissioning date
     – Date of calibration
     – TAG
     – TAG group
     – S/N calibration transmitter
     – Memoclip label
     – User name
     – User comment

   Click **Search** to perform the filtering and sorting action.
3. To display all stored sensor entries again, deactivate the filters in the **Search** dialog box and click **Search**.

Opening sensor info

1. If you want to edit the specific sensor information, click **Open sensor information**.
2. The sensor information is displayed.



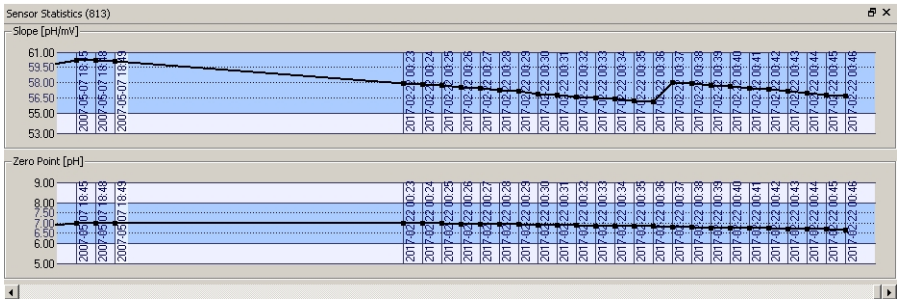
– If you want to remove a sensor from the process – because of wear or damage, for example – you can disable the sensor here. You can also disable sensors that have been destroyed in the field.
  To do so, click the box beside **Active**. The checkmark is deleted and the entry changes to **No**.
– To enter a Memoclip name, click the empty field beside **Label Memoclip**.
  Enter the desired information.
– To enter a comment, click the empty field beside **User comment**.
  Enter the desired information.

Click **Store data**.
The edited data are saved as a new database entry with a current time stamp.

Opening statistics

The sensor statistics provide you with a graphic way of displaying the calibration data for the sensor. Here, you can immediately see how the zero point and the slope of the sensor change, and use this information to specify the intervals at which the sensor has to be calibrated.

1. Click **Open statistics**.
2. The sensor statistics are displayed.



3. If you want to close the graphic view, click **Close statistics**.

4.9 Exporting data

Memobase gives you the option of exporting either individual database entries, or all the database entries of a specific sensor, or the entire database to various common formats such as Excel, HTML etc.. In this way, you can integrate the sensor data easily into other systems.

4.9.1 Sensor data export

With the Sensor data export option you can export the data of the sensor, which has just been read out, to an HTML file.

To start the sensor data export:

1. Click the **Sensor view tab**.
2. Select the database entries that you want to export.
   – To select multiple consecutive entries, hold down the shift key and click the first and last entry in the row.
   – To select multiple random entries, hold down the Ctrl key and click the desired entries.
3. Select **File** > **Sensor data export**.
4. The **Sensor data export** dialog box is displayed.
   – Select the target directory.
   – Enter a file name.
   – Click **Save**.
5. The database entries are saved as an HTML file in the selected directory.

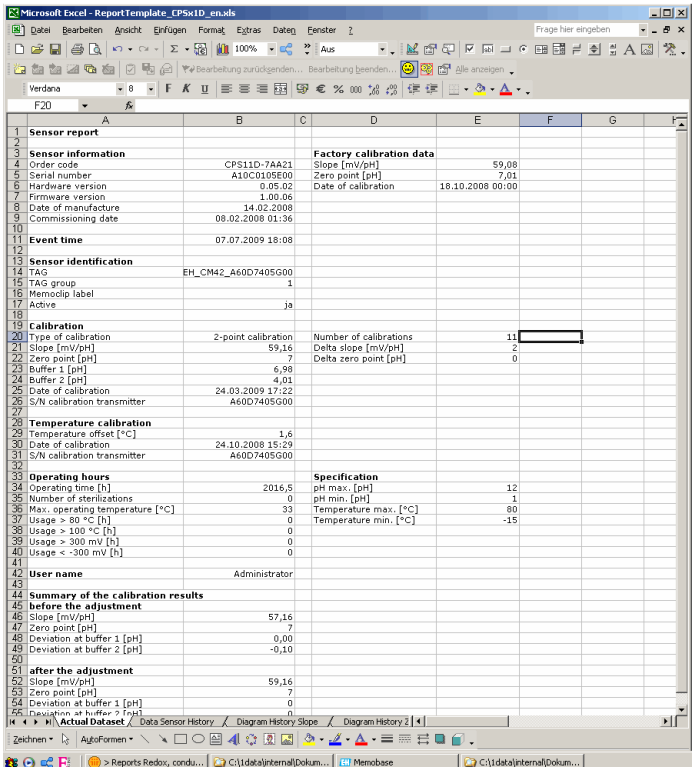
4.9.2 Sensor report

The sensor report exports all the database entries for a certain sensor to an XLS file.

To create the sensor report:

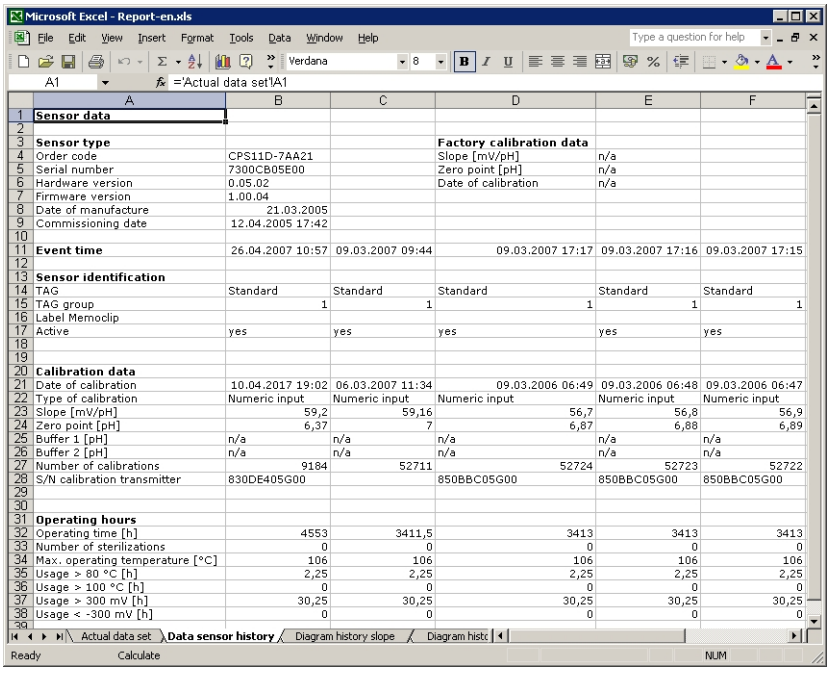
1. Select **File** > **Sensor report**.
2. In the dialog box that appears, enter the serial number of the sensor for which you want to create the report.
3. The **Create a sensor report** dialog box appears.
   – Memobase automatically creates a folder with the selected serial number in the directory **C:\Programs\Endress+Hauser\Memobase\Reports**.
   – Enter a file name.
   – Click **Save** to save the report in the created folder.

4. The sensor report is saved as an XLS file.
   It provides you with the following information:
   – Current sensor data



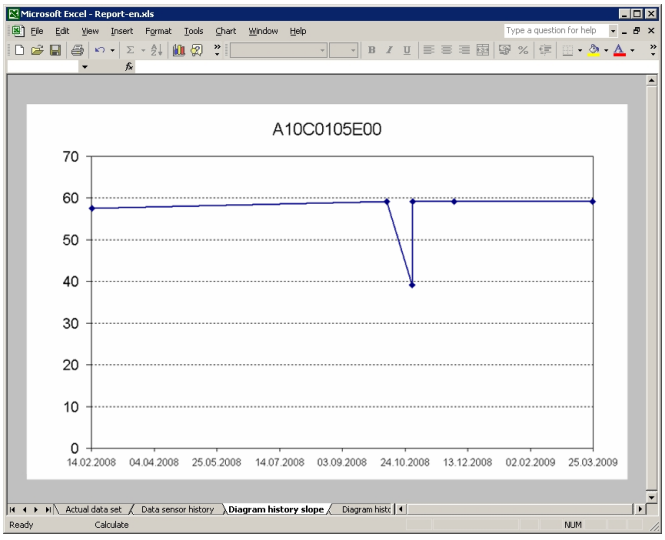
	A	B	C	D	E	F	G
1	**Sensor report**						
2							
3	**Sensor information**			**Factory calibration data**			
4	Order code	CPS11D-7AA21		Slope [mV/pH]	59,08		
5	Serial number	A10C0105E00		Zero point [pH]	7,01		
6	Hardware version	0.05.02		Date of calibration	18.10.2008 00:00		
7	Firmware version	1.00.06					
8	Date of manufacture	14.02.2008					
9	Commissioning date	08.02.2008 01:36					
10							
11	**Event time**	07.07.2009 18:08					
12							
13	**Sensor identification**						
14	TAG	EH_CM42_A60D7405G00					
15	TAG group	1					
16	Memoclip label						
17	Active	ja					
18							
19	**Calibration**						
20	Type of calibration	2-point calibration		Number of calibrations	11		
21	Slope [mV/pH]	59,16		Delta slope [mV/pH]	2		
22	Zero point [pH]	7		Delta zero point [pH]	0		
23	Buffer 1 [pH]	6,98					
24	Buffer 2 [pH]	4,01					
25	Date of calibration	24.03.2009 17:22					
26	S/N calibration transmitter	A60D7405G00					
27							
28	**Temperature calibration**						
29	Temperature offset [°C]	1,6					
30	Date of calibration	24.10.2008 15:29					
31	S/N calibration transmitter	A60D7405G00					
32							
33	**Operating hours**			**Specification**			
34	Operating time [h]	2016,5		pH max. [pH]	12		
35	Number of sterilizations	0		pH min. [pH]	1		
36	Max. operating temperature [°C]	33		Temperature max. [°C]	80		
37	Usage > 80 °C [h]	0		Temperature min. [°C]	-15		
38	Usage > 100 °C [h]	0					
39	Usage > 300 mV [h]	0					
40	Usage < -300 mV [h]	0					
41							
42	**User name**	Administrator					
43							
44	**Summary of the calibration results**						
45	**before the adjustment**						
46	Slope [mV/pH]	57,16					
47	Zero point [pH]	7					
48	Deviation at buffer 1 [pH]	0,00					
49	Deviation at buffer 2 [pH]	-0,10					
50							
51	**after the adjustment**						
52	Slope [mV/pH]	59,16					
53	Zero point [pH]	7					
54	Deviation at buffer 1 [pH]	0					
55	Deviation at buffer 2 [pH]	0					

   – All sensor data

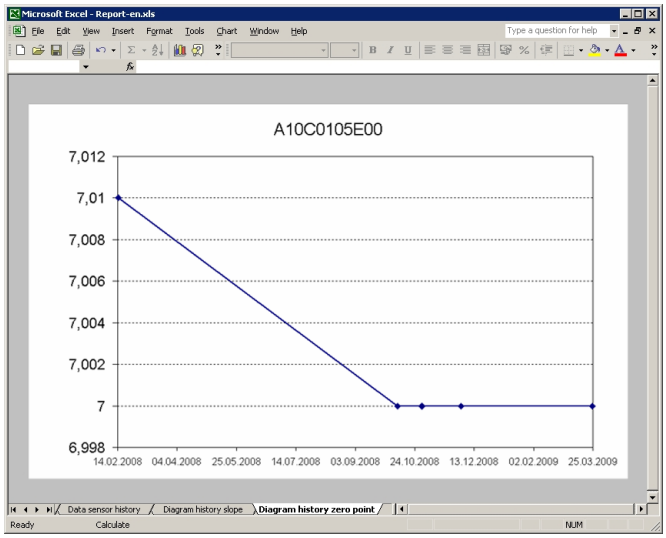


	A	B	C	D	E	F
1	**Sensor data**					
2						
3	**Sensor type**			**Factory calibration data**		
4	Order code	CPS11D-7AA21		Slope [mV/pH]	n/a	
5	Serial number	7300CB05E00		Zero point [pH]	n/a	
6	Hardware version	0.05.02		Date of calibration	n/a	
7	Firmware version	1.00.04				
8	Date of manufacture	21.03.2005				
9	Commissioning date	12.04.2005 17:42				
10						
11	**Event time**	26.04.2007 10:57	09.03.2007 09:44	09.03.2007 17:17	09.03.2007 17:16	09.03.2007 17:15
12						
13	**Sensor identification**					
14	TAG	Standard	Standard	Standard	Standard	Standard
15	TAG group	1	1	1	1	1
16	Label Memoclip					
17	Active	yes	yes	yes	yes	yes
18						
19						
20	**Calibration data**					
21	Date of calibration	10.04.2017 19:02	06.03.2007 11:34	09.03.2006 06:49	09.03.2006 06:48	09.03.2006 06:47
22	Type of calibration	Numeric input	Numeric input	Numeric input	Numeric input	Numeric input
23	Slope [mV/pH]	59,2	59,16	56,7	56,8	56,9
24	Zero point [pH]	6,37	7	6,87	6,88	6,89
25	Buffer 1 [pH]	n/a	n/a	n/a	n/a	n/a
26	Buffer 2 [pH]	n/a	n/a	n/a	n/a	n/a
27	Number of calibrations	9184	52711	52724	52723	52722
28	S/N calibration transmitter	830DE405G00		850BBC05G00	850BBC05G00	850BBC05G00
29						
30						
31	**Operating hours**					
32	Operating time [h]	4553	3411,5	3413	3413	3413
33	Number of sterilizations	0	0	0	0	0
34	Max. operating temperature [°C]	106	106	106	106	106
35	Usage > 80 °C [h]	2,25	2,25	2,25	2,25	2,25
36	Usage > 100 °C [h]	0	0	0	0	0
37	Usage > 300 mV [h]	30,25	30,25	30,25	30,25	30,25
38	Usage < -300 mV [h]	0	0	0	0	0

– A graphic representation of the slope history



– A graphic representation of the zero point history



4.9.3 Database export

With the Database export option, you can export selected entries of your Memobase database to a CSV file.

To start the database export:

1. Click the **Database tab**.
2. Select the database entries that you want to export.
   – To select multiple consecutive entries, hold down the shift key and click the first and last entry in the row.
   – To select multiple random entries, hold down the Ctrl key and click the desired entries.
3. Select **File** > **Database export**.
4. The **Database export** dialog box is displayed.
   – Select the target directory.
   – Enter a file name.
   – Click **Save**.
5. The database entry is saved as a CSV file in the selected directory.

5 Accessories

5.1 Communication

Commubox FXA291
- Interfaces module between CDI and USB-PC interface
- Technical Information TI405C/07/en
- Order no. 51516983

5.2 Transmitter

Liquiline M CM42
- Modular two-wire transmitter for Ex and non-Ex areas
- Hart®, PROFIBUS or FOUNDATION Fieldbus available
- Ordering acc. to product structure, Technical Information TI381C/07/en

5.3 Outer labeling

Memoclip
- Identification for Memosens sensors
- 100 plastic clips incl. label sheets
- order no. 71038228

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