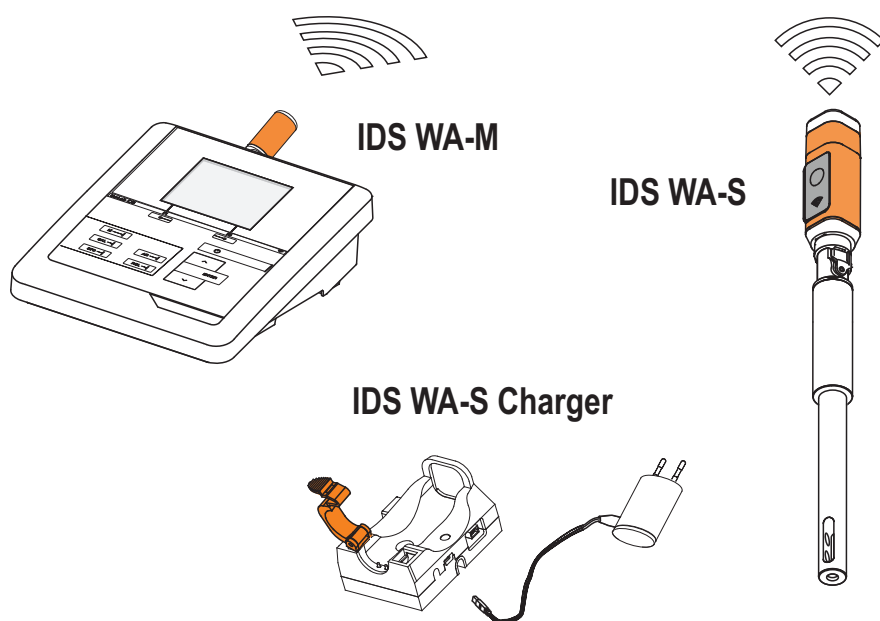




IDS WA System

SYSTEM FOR THE WIRELESS OPERATION OF IDS SENSORS



a xylem brand



For the most recent version of the manual, please visit
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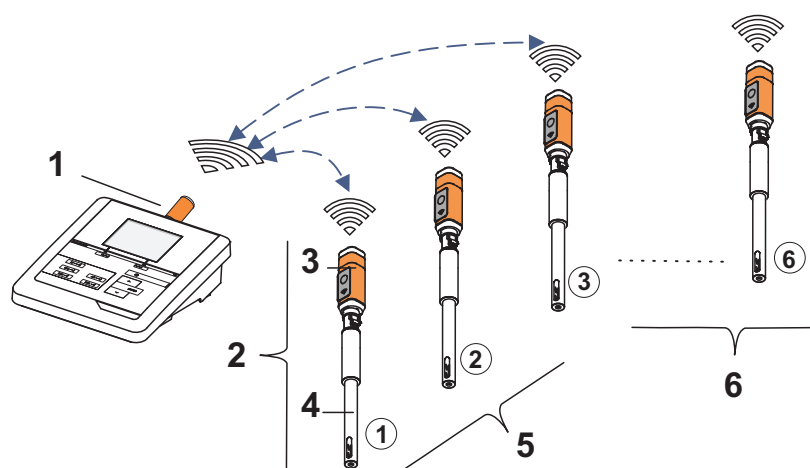
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1 General information

The IDS WA System is an accessory for IDS measuring systems enabling a wireless connection between any IDS sensor with plug head connector (variant W) and your IDS meter.

Two adapters, one at the IDS meter (IDS WA-M) and one at the sensor (IDS WA-S), replace the sensor cable with an energy-saving Bluetooth LE radio connection. The sensor is supplied with power by a rechargeable battery in the IDS WA-S adapter. The battery is charged with the charging device included in the IDS WA System (IDS WA-S Charger).

To upgrade the IDS WA System, equip further IDS sensors with the IDS WA-S adapter, which is available as an accessory.



- 1 IDS WA-M adapter (on the meter)
With an IDS WA-M adapter connected, the IDS meter registers up to 6 wireless sensors within a radius of up to 10 meters. The administering of the sensors is done in the *Sensors* menu.
- 2 Wireless sensor
Unit of IDS WA-S adapter (3) and IDS sensor (4)
- 3 IDS WA-S adapter (connected to the sensor)
- 4 IDS sensor with plug head connector (variant W)
- 5 Sensors registered and selected for the measured value display (max. 3, corresponding to the number of sensor connections / channels on the meter).
- 6 Sensors registered but not selected for the measured value display.

2 Safety

2.1 Safety information

2.1.1 Safety information in the operating manual

This operating manual provides important information on the safe operation of the system. Read this operating manual thoroughly and make yourself familiar with the system before putting it into operation or working with it. The operating manual must be kept in the vicinity of the system so you can always find the information you need.

2.1.2 Further documents providing safety information

The following documents provide additional information, which you should observe for your safety when working with the measuring system:

- Operating manuals of meters, sensors and other accessories
- Safety datasheets of calibration or maintenance accessories (such as buffer solutions, electrolyte solutions, etc.)

2.2 Safe operation

2.2.1 Authorized use

The authorized use of the IDS WA System is exclusively the running of a wireless connection between IDS sensors with IDS meters.

Only the operation and running of the analyzer according to the instructions and technical specifications given in this operating manual is authorized (see section 9 TECHNICAL DATA).

Any other use is considered unauthorized.

2.2.2 Requirements for safe operation

Note the following points for safe operation:

- The IDS WA System may only be operated according to the authorized use specified above.
- The IDS WA System may only be supplied with power by the energy sources mentioned in this operating manual.
- The IDS WA System may only be operated under the environmental conditions

mentioned in this operating manual.

- The individual components of the IDS WA System must not be opened.

3 Commissioning

3.1 Scope of delivery

Depending on the order number, the scope of delivery consists of the whole IDS WA Kit, or one individual item out of the IDS WA Kit.

- IDS WA Kit
 - IDS WA-M adapter for the meter
 - IDS WA-S adapter for the sensor
 - IDS WA-S Charger to charge the battery in the IDS WA-S adapter
 - USB cable to connect the IDS WA-S Charger to a USB socket
 - Power pack with USB connection and country-specific line adapters
- Operating manual

3.2 System requirements

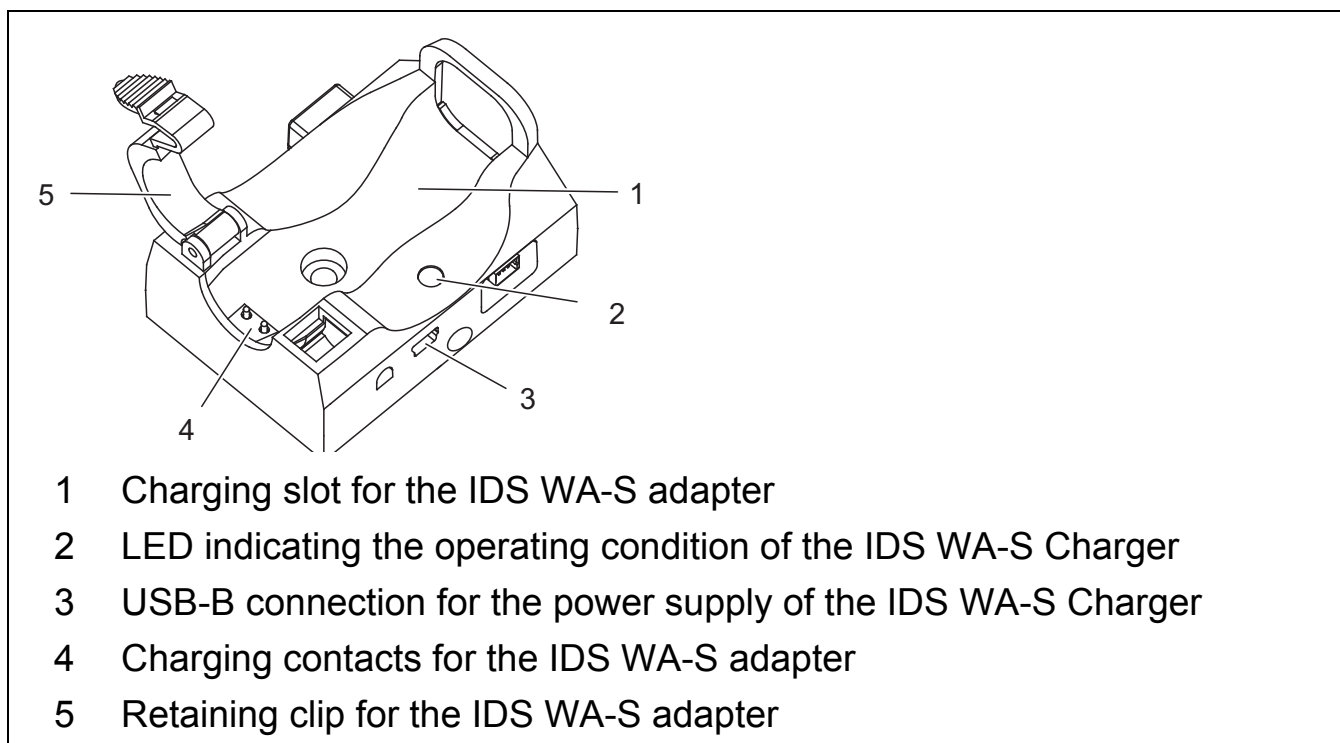
- IDS sensor with plug head connector (variant W)
Available sensors, see Internet
- WA capable meter
 - MultiLab 4010(P)-1W IDS, MultiLab 4010(P)-1 IDS (from software version V2.00)
 - MultiLab 4010-2W IDS, MultiLab 4010-3W IDS



The meters with older software listed here can be retrofitted with the function for the administration of wireless sensors via a software update (see operating manual of your meter).

3.3 Charging the battery with the IDS WA-S Charger

The wireless transmission of sensor data from sensor to meter is only possible if the battery in the IDS WA-S adapter is charged. Charge the battery with the IDS WA-S Charger.



The IDS WA-S Charger is used both to charge and store the IDS WA-S adapters (e.g. overnight). The sensors may remain plugged to the IDS WA-S adapters while being charged.

3.3.1 Power supply of the IDS WA-S Charger

1. Plug the USB plug of the USB cable supplied into the USB connector (3) of the IDS WA-S Charger.
2. Plug the other USB plug of the cable to the USB connector of the power pack or to the USB connector (USB 3.0 or higher) of a PC.
The status LED of the IDS WA-S Charger lights up green. The IDS WA-S Charger is ready for operation.



A USB 2.x connector on the PC supplies up to 200 mA.

A USB 3.x connector on the PC supplies up to 900 mA.

If several USB devices are connected to a PC or a USB hub without extra power supply, the available current is distributed to several connections. One device consuming a lot of power may cause other devices to receive not enough power so that they cannot be operated.

- Operate the IDS WA-S Charger on the USB 3.0 or higher interfaces of your PC.
- Operate only one IDS WA-S Charger per PC to avoid possible conflicts with other USB devices about power resources.

3.3.2 Charging the IDS WA-S battery

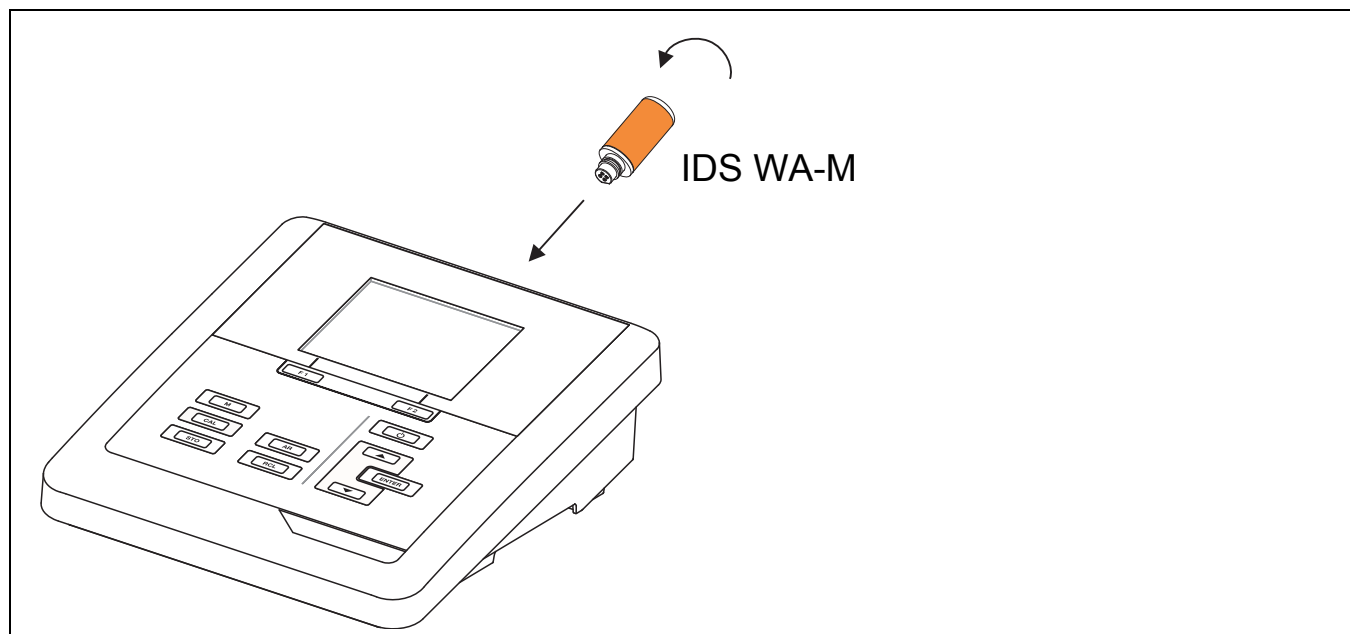
1. Open the retaining clip (5) on the IDS WA-S Charger.
2. Insert the IDS WA-S adapter in the IDS WA-S Charger. The charging contacts of the adapter have to be positioned on the charging contacts (4) of the IDS WA-S Charger. The function keys of the adapter point upwards.
3. Close the retaining clip (5) of the IDS WA-S Charger until it clicks into place. The status LED (2) of the IDS WA-S Charger lights up red. The battery is being charged.

3.3.3 Status LED of the IDS WA-S Charger

Color	Status	Meaning
GREEN	Illuminated	<u>with IDS WA-S adapter:</u> The battery is fully charged. The charging current is switched off. <u>without IDS WA-S adapter:</u> The IDS WA-S Charger is ready for operation.
RED	Illuminated	The battery is being charged.
GREEN/ RED	Flashes	Charging error (see section 7 WHAT TO DO IF ...)
Off	-	The IDS WA-S Charger is not supplied with enough power

3.4 Connecting the IDS WA-M adapter to a meter

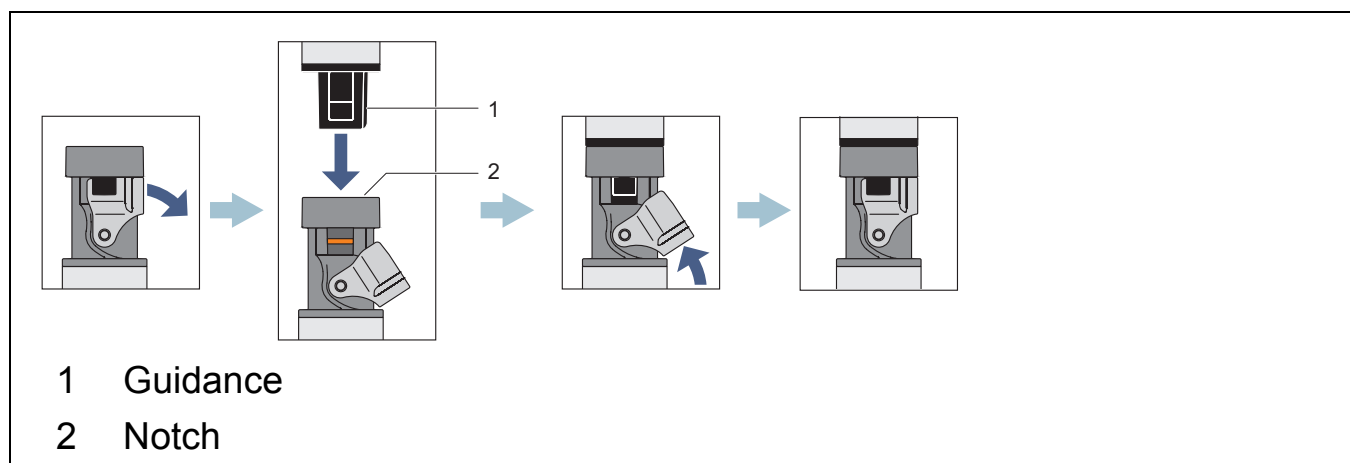
For a working wireless connection the IDS WA-M adapter has to be connected to an IDS meter.



1. Turn the IDS WA-M adapter so that the notch on the plug of the IDS WA-S adapter is aligned to the guidance of the socket.
2. Plug the IDS WA-M adapter into an IDS sensor socket of the meter.

3.5 Connecting the IDS WA-S adapter to an IDS sensor

For a working wireless connection the IDS WA-S adapter has to be connected to an IDS sensor with plug head connector (variant W).

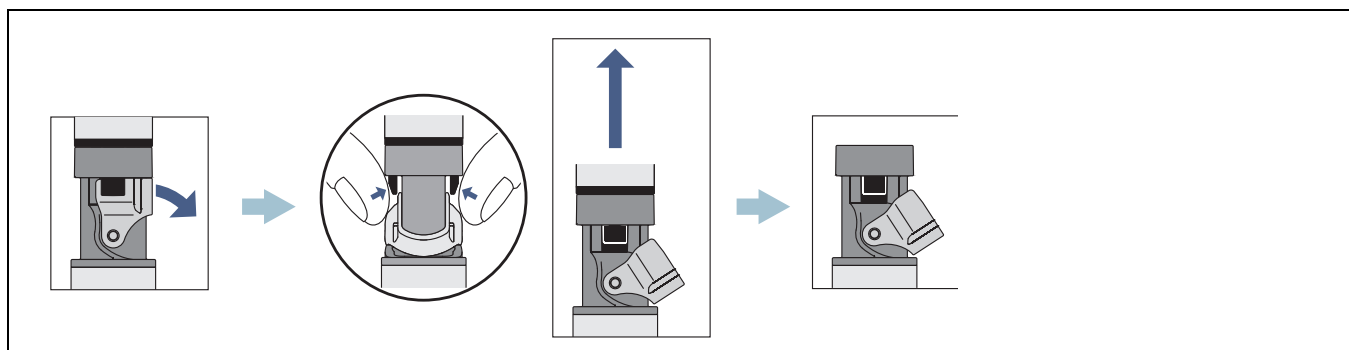




Make sure that the plug connection is completely dry and clean.

1. Open the locking device on the plug head sensor.
2. Align the guidance (1) of the IDS WA-S adapter to the notch (2) in the plug of the plug head sensor and insert the IDS WA-S adapter into the unlocked plug of the plug head sensor until it clicks into place.
3. Close the locking device on the plug head sensor.

3.5.1 Removing the IDS WA-S adapter from the plug head of the IDS sensor



Make sure that the plug connection is completely dry and clean. If necessary, clean the plug connection prior to opening.

1. Open the locking device on the plug head sensor.
2. Press together the clips of the IDS WA-S adapter with your thumb and forefinger and pull the IDS WA-S adapter out of the plug.

3.6 Establishing a wireless connection

3.6.1 The *Sensors* menu

You can administer the sensors for your IDS meter in the *Sensors* menu.



Prerequisites for the wireless operation of sensors:

- The IDS meter can administer wireless sensors (see section 3.2 SYSTEM REQUIREMENTS)
- The IDS WA-M adapter is connected to the meter
- An IDS WA-S adapter is connected to an IDS sensor
- The battery in the IDS WA-S- adapter is charged
- The radio link is less than 10 m
- The radio link is free of visible obstacles

The list includes wireless sensors in the reception area and sensors that are connected to the meter.

The maximum number of sensors (with or without cable) that can be connected to the meter corresponds to the number of IDS channels of the meter.

Sensors	
1	4110W 16010001 ☒ LE
2	4310W 15080123 - - -
3	4320W 15120056 - - -
4	* FDO 4410W 15090246 - - -

[☒] BAT 86 % SIGNAL -75 dBm

[☒]

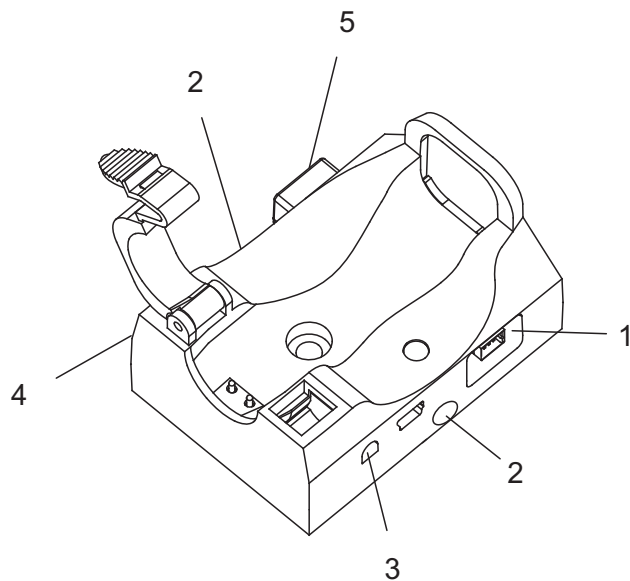
- 1 Sensor name, series number (max. 8 sensors)
- 2 Setting of the connection to the meter (- - -/✓ LED/✓)
Open the connection setting for the sensor with <ENTER>.
The IDS WA-S adapter of the selected sensor briefly lights up red.
- 3 * (asterisk): The sensor is already connected to another meter. If the sensor is connected to another meter, the <ENTER> and <CAL> keys are blocked for the sensor there. For information, the status indicator [RO] is displayed in the measured value display.
- 4 [☒] BAT xx %: Current charging condition of the battery in the IDS WA-S adapter
- 5 [☒] SIGNAL xx dBm: Current signal strength
- 6 <F2>/[☒] or <F4>/[☒]: Update the list of sensors

3.6.2 Establishing a wireless connection

1. Open the *Sensors* / menu.
 - automatically (on switching on the meter)
 - manually (in the measured value display)
 - with the softkey <F1__>/[Info]
 - with the softkey <F2>/[] (MultiLab 4010-3(-2))
2. Select a sensor with <▲><▼> .
3. Open the connection setting for the sensor with <ENTER>.
The IDS WA-S adapter of the selected sensor briefly lights up red.
4. Select the connection setting for the sensor with <▲><▼> and confirm with <ENTER>.
 - Sensor not connected.
 - ✓ LED Sensor connected
(LED flashes during data exchange)
 - ✓ Sensor connected
(LED does not flash during data exchange)
5. Use <M> to quit the *Sensors* menu.
The settings are accepted.
The measured value of the sensor is displayed.

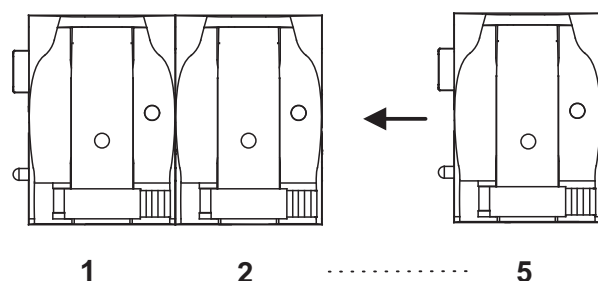
3.7 Combining several IDS WA-S Charger modules

To be able to charge several IDS WA-S adapters via one USB connection at the same time, you can combine up to 5 IDS WA-S Charger modules to form one charging station.



- 1 Socket for the power supply of a further IDS WA-S Charger module via the plug (5) of the other module
- 2 Channel for the connection rod to bolt together the combined IDS WA-S Charger modules
- 3 Pin receptacle for the mechanical positioning of a further IDS WA-S Charger module with the pin (4) of the other module
- 4 Pin for the mechanical positioning of a further IDS WA-S Charger module with the socket (3) of the other module
- 5 Plug for the power supply of a further IDS WA-S Charger module via the socket (1) of the other module

1. Plug together up to 5 IDS WA-S Charger modules with the aid of the pin receptacle (3) and pin (4).



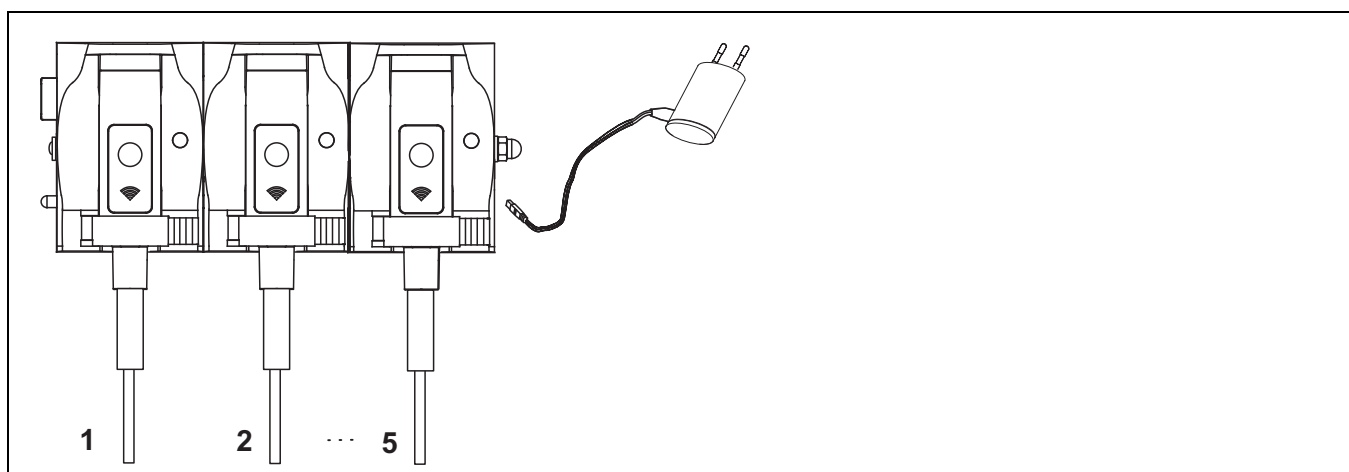


The number of IDS WA-S Charger modules is limited by the strength of current available at the USB connection.

Each IDS WA-S Charger module requires a charging current of max. 180 mA.

Example: To be able to use 5 IDS WA-S Charger modules at one USB connection, the USB connection must provide a current of at least 900 mA (= 5 x 180 mA).

2. Bolt together up to 5 connection rods (corresponding to the number of IDS WA-S Charger modules).
3. Tighten the cap nut with washer on the end of the connection rod with external thread.
4. Plug the combined connection rod through the channel (2) up to the stop (at the cap nut).
5. Tighten a bolt (M3x6) with washer onto the end with the open inside thread of the connection rod.
Tighten the bolt until the combined IDS WA-S Charger modules form a permanent unit.
6. Always operate the combined IDS WA-S Charger modules connected to a power pack with USB connection.
7. Connect the power pack with USB connection to the socket (1).

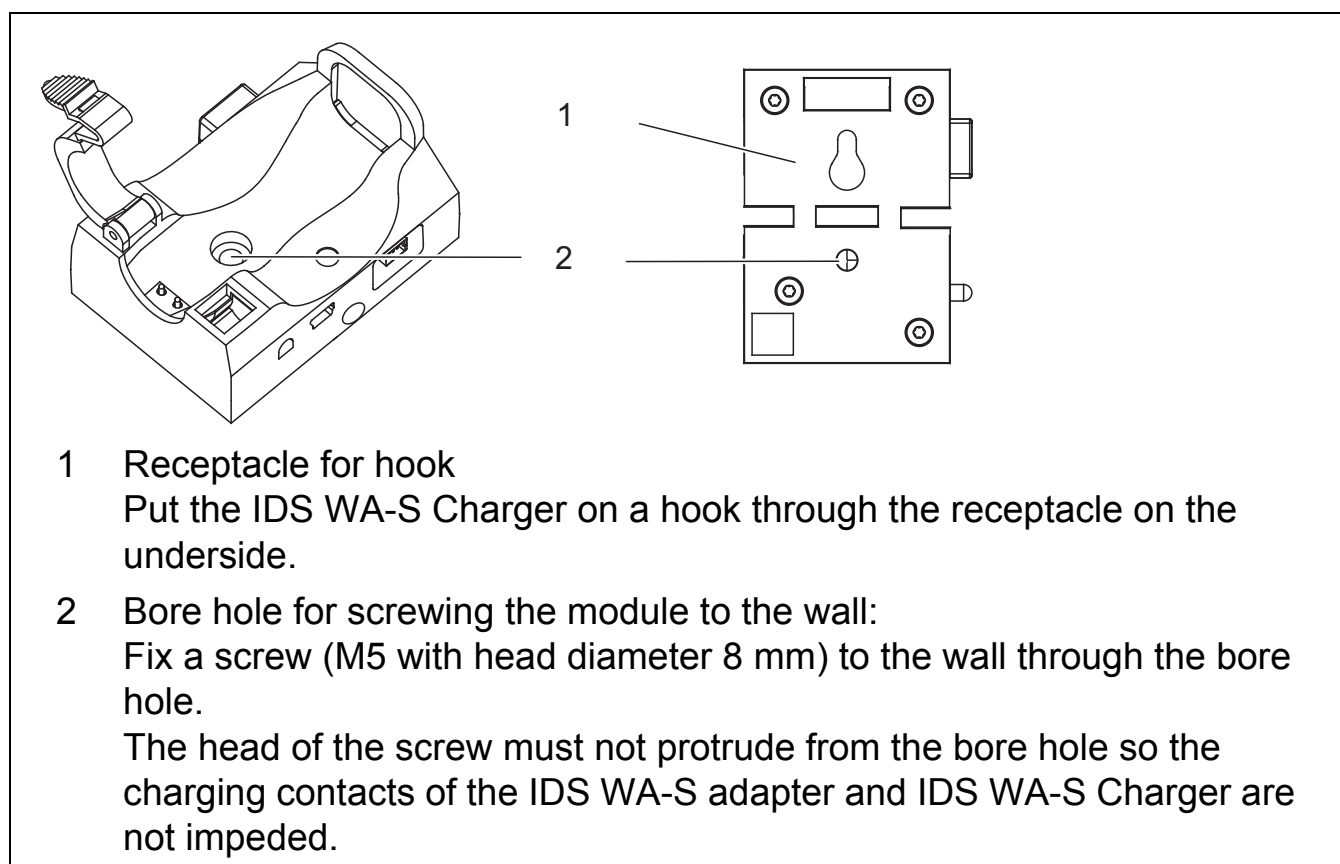


3.8 Mounting an IDS WA-S Charger module to a wall

To store the IDS WA-S Charger and IDS WA-S adapter in a way that saves space and keeps them always ready for use, the IDS WA-S Charger is prepared to be

mounted to a wall.

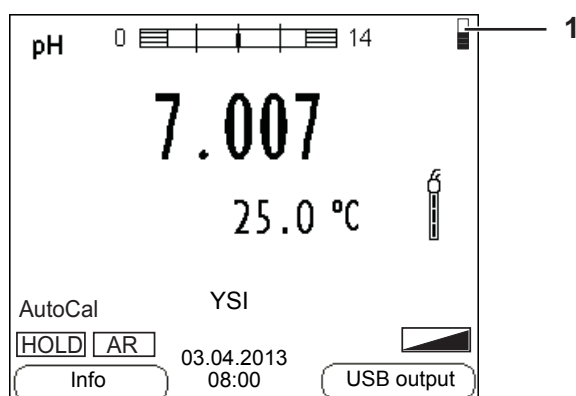
You can fix the IDS WA-S Charger to a wall in the following ways:



4 Operation and measurement

4.1 Operation

Once the wireless connection is established the measured value of the sensor is displayed on the meter. Establishing the connection for the first time may take several seconds.

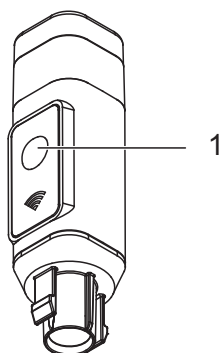


1 Charging condition of the battery in the IDS WA-S adapter

4.2 Saving the measured value

4.2.1 Functions of the IDS WA-S adapter

The IDS WA-S adapter on the sensor has a function key with which simple functions can be executed on the sensor.



1 Function key of the IDS WA-S adapter

Function key	Function
Short pressure (< 1 second)	The current measured value is stored and output to an interface of the connected meter.
Long pressure (> 1 second)	A measurement with AutoRead is started. When the measured value is stable the measured value is automatically stored and transferred to an interface of the meter that is connected (see operating manual of your meter).

4.3 Status LEDs of the IDS WA-S adapter

The IDS WA-S adapter on the sensor indicates its operating condition with colored LEDs.



This indicating can be switched off in the *Sensors* menu.

Color	Status	Meaning
GREEN	Flashes	Data are exchanged between the sensor and meter. The LED flashes during each data exchange. You can switch off the flashing by selecting the connection status ✓ in the <i>Sensors</i> menu.
RED	Flashes once	The sensor is identified. The function is started for the selected sensor in the <i>Sensors</i> menu with <ENTER>.
BLUE	Flashes once	The measured value was stored in the meter with the function key of the IDS WA-S adapter and transferred to an interface.
BLUE	Flashes	A measurement with AutoRead was started with the function key of the IDS WA-S adapter.
Off	-	No data exchange, no connection

5 Storing the IDS WA-S adapter

For storing, put the IDS WA-S adapter with the sensor connected into a IDS WA-S Charger ready for operation.

The battery of the IDS WA-S adapter is automatically recharged when the charge becomes less. Thus the wireless sensor is ready for operation at any time.

The IDS WA-S Charger ready for operation can also be used for storing the wireless sensor for longer periods of time.



To store the wireless sensor outside the charging station for longer periods of time, we recommend you store the IDS WA-S adapter and sensor separately.

6 Maintenance, cleaning, disposal

6.1 Maintenance

The only maintenance activity required is the charging of the batteries at regular intervals.

6.2 Cleaning

Occasionally wipe the WA adapter with a damp, lint-free cloth. If necessary, disinfect with Isopropanol.

NOTE

The housing is made of synthetic material. Thus, avoid contact with acetone or similar detergents that contain solvents. Remove any splashes immediately.

6.3 Disposal

All components of the IDS WA System contain electronics.

At the end of their operational lifetime, the components of the IDS WA System must be returned to the disposal or return system statutory in your country. If you have any questions, please contact your supplier.

7 What to do if ...

7.1 No connection between the sensor and meter

Cause	Remedy
– Battery of the IDS WA-S adapter	– Charge the battery – Battery defective. Please contact the service department.

Cause	Remedy
– IDS WA-S adapter or IDS WA-M adapter not identified	– Disconnect and reconnect the IDS WA-S adapter to the sensor. – Carry out a reset of the IDS WA-S adapter connected to the sensor: Press the function key of the adapter for more than 8 seconds – Carry out a reset of the IDS WA-M adapter connected to the meter: Disconnect and reconnect the adapter to the meter. – Carry out a reset of the meter (see operating manual of your meter)
– Strong damping of the radio signal	– Remove any obstacles in the radio link (e.g. doors, panes etc.) – Run the meter and sensor at a smaller distance – Check the signal strength (in the menu <i>Sensors</i> <F1__>

7.2 Display of when a sensor is connected

Cause	Remedy
– The maximum number of sensors or adapters is exceeded	– Disconnect the IDS sensor – Disconnect the IDS WA-M adapter

7.3 The battery of the IDS WA-S adapter cannot be charged

Cause	Remedy
– Insufficient contact of the IDS WA-S adapter in the charging station	– Clean the contacts – Fix the adapter with the retaining clip
– Battery exhaustively discharged	– Carry out a reset of the IDS WA-S adapter in the charging station (IDS WA-S Charger): Press the function key of the adapter for at least 8 seconds

7.4 Status LED of the IDS WA-S Charger flashing red/green

Cause	Remedy
– Charging error (e.g. battery is exhaustively discharged)	– Remove the IDS WA-S adapter from the charging station – Insert the IDS WA-S adapter in the charging station again – Disconnect and then reconnect the charging cable

8 Replacement parts and accessories

Description	Model	Order no.
Adapter for IDS sensors	IDS WA-S	108141y
Adapter for IDS meters	IDS WA-M	108142y
Charging station for IDS WA-S adapter	IDS WA-S Charger	108143y
Set for the wireless connection of IDS sensors with IDS meter	IDS WA Kit	108144y
Power pack with USB interface	NT USB Universal	902872y

9 Technical data

9.1 General features

Radio technology	Bluetooth LE	Bluetooth 4.0 Class 3 (0 dBm) Contains transmitter modules FCC ID: QOQBLE113 IC: 5123A-B6TBLE113
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At the moment, there exist licenses of the BlueTooth LE radio module in use for Europe, USA, Canada, and other countries (list available from YSI on request.)

Most important licenses: CE, FCC. All countries following these directives can use this product without hesitation. Otherwise, further local licenses may be necessary. On request, YSI can make available excerpts from the datasheet of the supplier of the BlueTooth LE radio module.

Guidelines and norms used

EMC	EC directive 2014/30/EC EN 61000-6-3 EN 61000-3-2 EN 61000-3-3 EN 61000-6-1 FCC Class A
Radio data transmission	RED directive 2014/53/EU EN 300 328 EN 301489-1 EN 301489-17
Meter safety	EC directive 2014/35/EC EN 60950
IP protection class	EN 60529

9.2 Adapter IDS WA-M

Dimensions	Approx. 15 x 18 x 40 mm	
Weight	approx. 7 g	
Mechanical structure	Type of protection	IP 43
Test certificates	CE, FCC	
Ambient conditions	Storage	-25 °C ... +65 °C
	Operation	+5 °C ... +55 °C
	Admissible relative humidity	Yearly mean: < 75 % 30 days/year: 95 % Other days: 85 %

Power supply	Via the sensor connection socket of the meter
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9.3 Adapter IDS WA-S

Dimensions	Approx. 83 x 20 x 20 mm		
Weight	approx. 25 g		
Mechanical structure	Type of protection	IP 66	
Test certificates	CE, FCC		
Ambient conditions	Storage	-25 °C ... +65 °C	
	Operation	+5 °C ... +55 °C	
	Admissible relative humidity	Yearly mean: < 75 % 30 days/year: 95 % Other days: 85 %	
Power supply	Rechargeable battery	Lithium polymer battery 3.7 V, 240 mAh	
	Operational life	The battery life depends on the power requirement of the sensors connected	
		IDS sensor	Battery life (h)
		pH/ORP	Approx. 60 h
		Conductivity	Approx. 30 h
	Dissolved oxygen	Approx. 9 h	

9.4 IDS WA-S Charger

Dimensions	Approx. 70 x 55 x 40 mm	
Weight	approx. 50 g	
Mechanical structure	Type of protection	IP 43
Test certificates	CE, FCC	
Ambient conditions	Storage	-25 °C ... +65 °C
	Operation	+5 °C ... +55 °C
	Admissible relative humidity	Yearly mean: < 75 %
		30 days/year: 95 % Other days: 85 %
Power supply	USB connection and plug connections on the IDS WA-S Charger The IDS WA-S Charger requires a current of 180 mA to charge the battery of the IDS WA-S adapter USB 3.x connections of the PC meet this criterion	
Power pack with USB connection	Helms-Man, PMB0501200P Input: 100 ... 240 V ~ / 50 ... 60 Hz / 300 mA Output: 5 V = / 1200 mA Primary plugs contained in the scope of delivery: Euro, US, UK and Australian.	
Charging time	Approx. 1.5 hours	

Contact Information

Ordering & Technical Support

Telephone: (800) 897-4151
(937) 767-7241
Monday through Friday, 8:00 AM to 5:00 PM ET

Fax: (937) 767-1058

Email: info@ysi.com

Mail: YSI Incorporated
1725 Brannum Lane
Yellow Springs, OH 45387
USA

Internet: www.ysi.com

When placing an order please have the following information available:

- YSI account number (if available)
- Model number or brief description
- Quantity
- Name and Phone Number
- Billing and shipping address
- Purchase Order or Credit Card

Service Information

YSI has authorized service centers throughout the United States and Internationally. For the nearest service center information, please visit www.ysi.com and click 'Support' or contact YSI Technical Support directly at 800-897-4151.

When returning a product for service, include the Product Return form with cleaning certification. The form must be completely filled out for an YSI Service Center to accept the instrument for service. The Product Return form may be downloaded at www.ysi.com and clicking on the 'Support' tab.

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- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're 12,500 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

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