

OPERATING INSTRUCTIONS

Portable Conductivity/TDS Meter

513-160

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<p><i>In the interests of improving and updating its equipment, ELE reserves the right to alter specifications to equipment at any time ELE International 2017 ©</i></p>		

Contents

Section	Page
1 Introduction	5
2 Safety Measures	5
2.1 Definition of signal warnings and symbols	5
2.2 Product specific safety notes	6
3 Design and Function	9
3.1 Overview	9
3.2 Sensor connections	10
3.3 Keypad	10
3.4 Display and icons	12
3.5 Set-up menu navigation	14
3.6 Measurement modes	14
4 Putting into Operation	15
4.1 Scope of delivery	15
4.2 Installing the batteries	16
4.3 Connecting sensor	16
4.4 Installing optional equipment	17
4.4.1 Electrode clip	17
4.4.2 Wrist strap	18
4.5 Switching the instrument on and off	19
5 Operation of the Instrument	20
5.1 General settings	20
5.1.1 Endpoint formats	20
5.1.2 Temperature capture	20
5.1.3 Calibration standards	21
5.1.4 Reference temperature	21
5.1.5 α -coefficient	21
5.1.6 TDS factor	22
5.1.7 Temperature unit	22
5.2 Performing a calibration	23
5.3 Performing a measurement	23
5.3.1 Measurement mode	23
5.3.2 Performing a conductivity measurement	23
5.3.3 Performing a TDS measurement	24

5.4	Using the memory	24
5.4.1	Storing a measurement result	24
5.4.2	Recalling from memory	24
5.4.3	Clearing the memory	25
5.5	Self-diagnosis	25
5.6	Factory reset	26
6	Probe	26
7	Maintenance	28
7.1	Cleaning the housing	28
7.2	Error messages	28
8	Technical Data	29
9	Appendix	31
	WEEE Directive	



1 Introduction

Thank you for purchasing this high quality field and laboratory meter. With the 513-160 conductivity/TDS meter, we wish to simplify your measuring process and your workflows.

The 513-160 portable has an excellent price/performance ratio. The meter offers a number of user-friendly features, including:

- **Waterproof operation**
The IP67 waterproof rating that allows free operation in wet or damp environments.
- **Optimized ease of use**
Simple menus for quick and easy operation.
- **Excellent ergonomics**
Handle the instrument with comfort and ease.

2 Safety Measures

2.1 Definition of signal warnings and symbols

Safety notes are marked with signal words and warning symbols.

These show safety issues and warnings. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results.

Signal words

- | | |
|------------------|--|
| WARNING | for a hazardous situation with medium risk, possibly resulting in severe injuries or death if not avoided. |
| CAUTION | for a hazardous situation with low risk, resulting in damage to the device or the property or in loss of data, or minor or medium injuries if not avoided. |
| Attention | (no symbol) for important information about the product. |
| Note | (no symbol) for useful information about the product. |

Warning symbols



General hazard



Toxic substance



Inflammable or explosive substance

2.2 Product specific safety notes

Your instrument represents state-of-the-art technology and complies with all recognized safety rules, however, certain hazards may arise in extraneous circumstances. Do not open the housing of the instrument; it does not contain any parts that can be maintained, repaired or replaced by the user. If you experience problems with your instrument, contact ELE International's service department.

Intended use



This instrument is designed for a wide range of applications in various areas and is suitable for measuring conductivity.

The use therefore requires knowledge and experience in working with toxic and caustic substances.

The manufacturer shall not be held liable for any damage resulting from incorrect usage divergent to the operating instructions. Furthermore, the manufacturer's technical specifications and limits must be adhered to at all times and in no way exceeded.

Location



The instrument may not be used in explosive environments.

Use the instrument in a location which is suitable for the operation, protected from direct sunlight and corrosive gases. Avoid powerful vibrations, excessive temperature fluctuations and temperatures below 0°C and above 40°C.

Protective Clothing

It is advisable to wear protective clothing in the laboratory when working with hazardous or toxic substances.



A lab coat should be worn.







Suitable eye protection such as goggles should be worn.



Use appropriate gloves when handling chemicals or hazardous substances, checking their integrity before use.

Safety notes

	<p> WARNING</p> <p>Chemicals</p> <p>All relevant safety measures are to be observed when working with chemicals.</p> <ul style="list-style-type: none">a) Set up the instrument in a well-ventilated location.b) Any spills should be wiped off immediately.c) When using chemicals and solvents, comply with the instructions of the producer and the general lab safety rules.
	<p> WARNING</p> <p>Flammable Solvents</p> <p>All relevant safety measures must be observed when working with flammable solvents and chemicals.</p> <ul style="list-style-type: none">a) Keep all sources of flame away from the workplace.b) When using chemicals and solvents, comply with the instructions of the producer and the general lab safety rules.

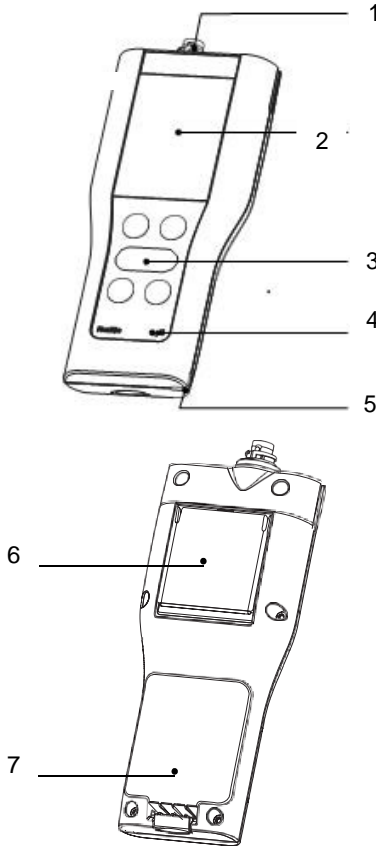
FCC Rules

This device complies with Part 15 of the FCC Rules and Radio Interference Requirements of the Canadian Department of Communications. Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

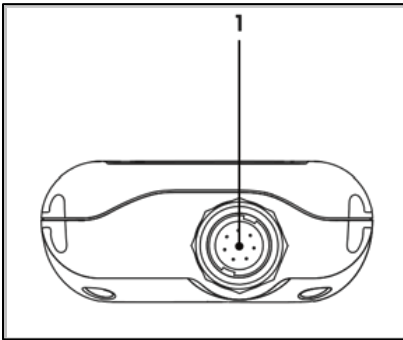
3 Design and Function

3.1 Overview



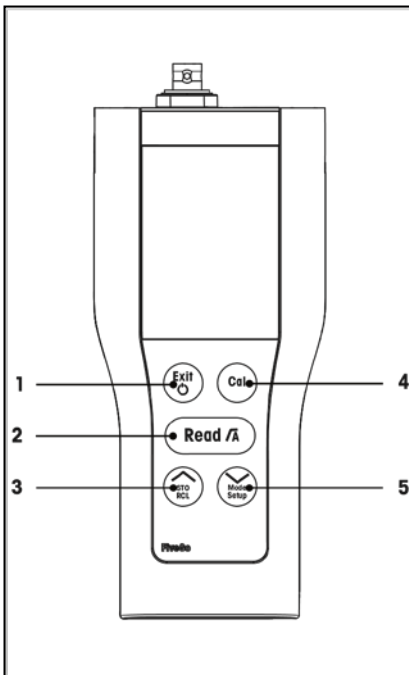
1	Sensor connections	5	Slot for wrist strap
2	Display	6	Table top stand
3	Keypad	7	Battery compartment
4	Type label		






3.2 Sensor connections



1	LTW socket for conductivity signal input
---	--

3.3 Keypad

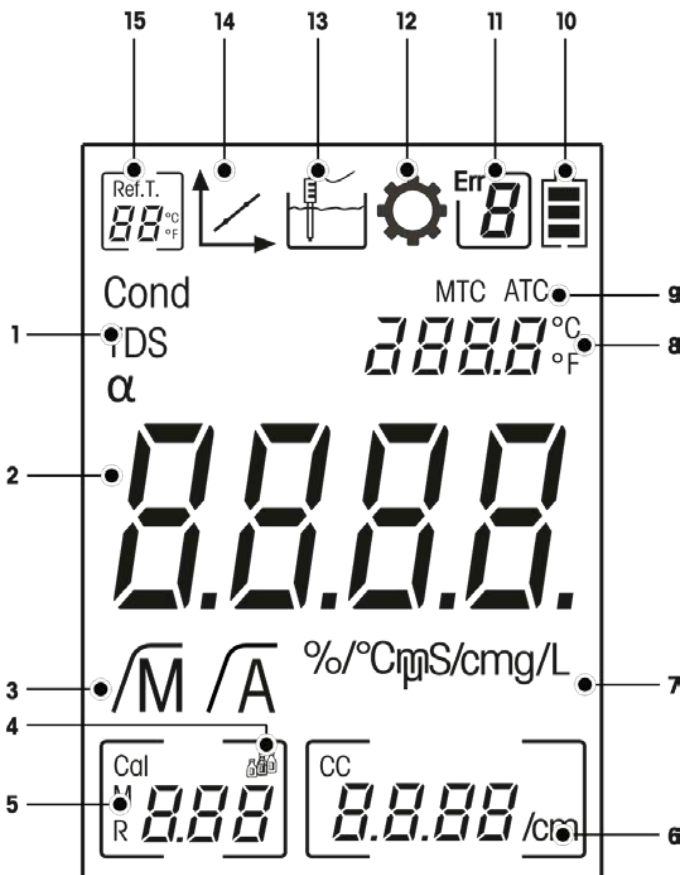













	Key	Naming	Press & release	Press & hold
1		On / Off / Exit	<ul style="list-style-type: none"> • Switch meter on • Back to measurement screen 	Switch meter off
2		Read / Endpoint format	<ul style="list-style-type: none"> • Start or end point measurement • Confirm setting 	Turn auto endpoint on or off
3		Store / Recall	<ul style="list-style-type: none"> • Store current reading to memory • Increase value during setting • Scroll up through the memory 	Recall stored data
4		Calibration	<ul style="list-style-type: none"> • Start calibration 	Recall calibration data
5		Mode / Setup	<ul style="list-style-type: none"> • Switch between conductivity and TDS • Decrease value during setting • Scroll down through the memory 	Enter setup mode

3.4 Display and icons

When turning on the instrument, the startup screen appears for 3 seconds. The startup screen shows all icons which can appear on the display. In the following table you will find a short description about these icons.

Startup screen




	Icon	Description
1	Cond / TDS	Current measurement method
2	---	Conductivity measurement value
3	\sqrt{M} / \sqrt{A}	Endpoint format: \sqrt{A} Automatic \sqrt{M} Manual
4		Calibration settings
5	---	Memory information
6	---	Currently used cell constant
7	mS/cm / μS/cm / mg/L	Currently used measurement unit
8	---	Temperature information
9	MTC / ATC	MTC (Manual temperature capture) ATC (Automatic temperature capture)
10		Power status  fully charged  half charged  lowly charged  fully discharged
11		Error code
12		Setup mode
13		Measurement mode
14		Calibration mode: Indicates calibration mode and appears whenever you are performing a calibration or reviewing calibration data.
15		Reference temperature

3.5 Setup menu navigation

For general navigation in the setup menu read the following information:

- Press and hold **Setup** to enter the setup menu.
- Press **Exit** to exit the setup menu.
- Use \wedge and \vee to increase or decrease values.
- Press **Read** to confirm a change.

The following parameters can be changed in the order as shown.

Parameter	Description	Range
MTC	Manual temperature setting	0.0...100.0 °C / 32.0...212 °F
	Calibration standard setting	1, 2, 3
Ref.T.	Reference temperature	25 °C (68 °F), 20 °C (77 °F)
α	α -coefficient	0.0...10.00 %/°C
TDS	TDS factor	0.4...1.00
°C, °F	Temperature unit	°C, °F

3.6 Measurement modes

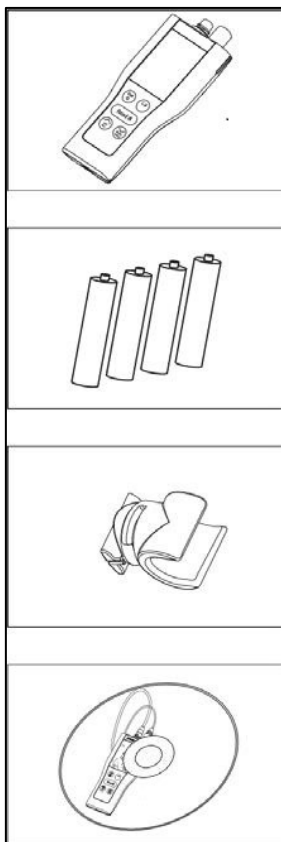
With the conductivity meter it is possible to measure the following parameters of a sample:

- Conductivity ($\mu\text{S}/\text{cm}$ and mS/cm)
- TDS (mg/L and g/L)

To change the unit, press **Mode** on the measurement screen until the desired appears.

4 Putting into Operation

4.1 Scope of delivery



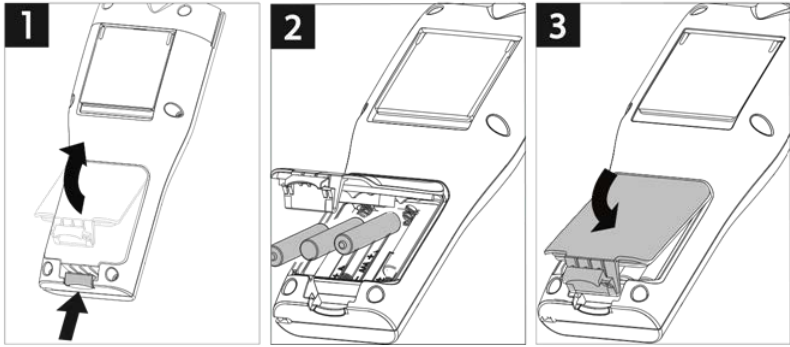
Instrument for conductivity measurement

Battery LR03/AAA 1.5V
4 pcs.

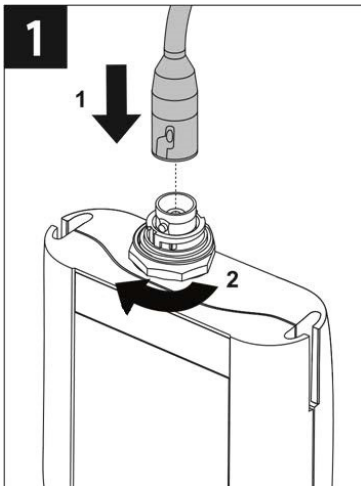
Electrode clip
1 pc.

CD-ROM including operating instructions

4.2 Installing the batteries



4.3 Connecting sensor

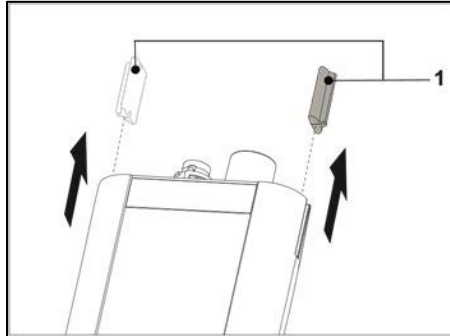


4.4 Installing optional equipment

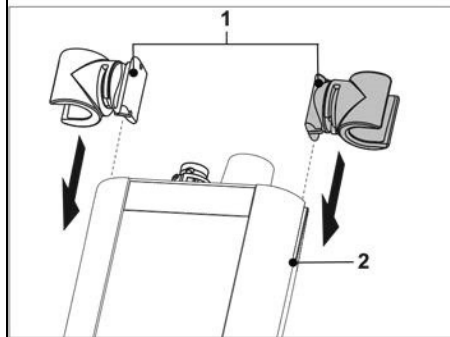
4.4.1 Electrode clip

For safe placing of the electrode you can mount an electrode clip on the side of the instrument. The electrode clip is part of delivery. You can mount it on either side of the instrument according to your preference.

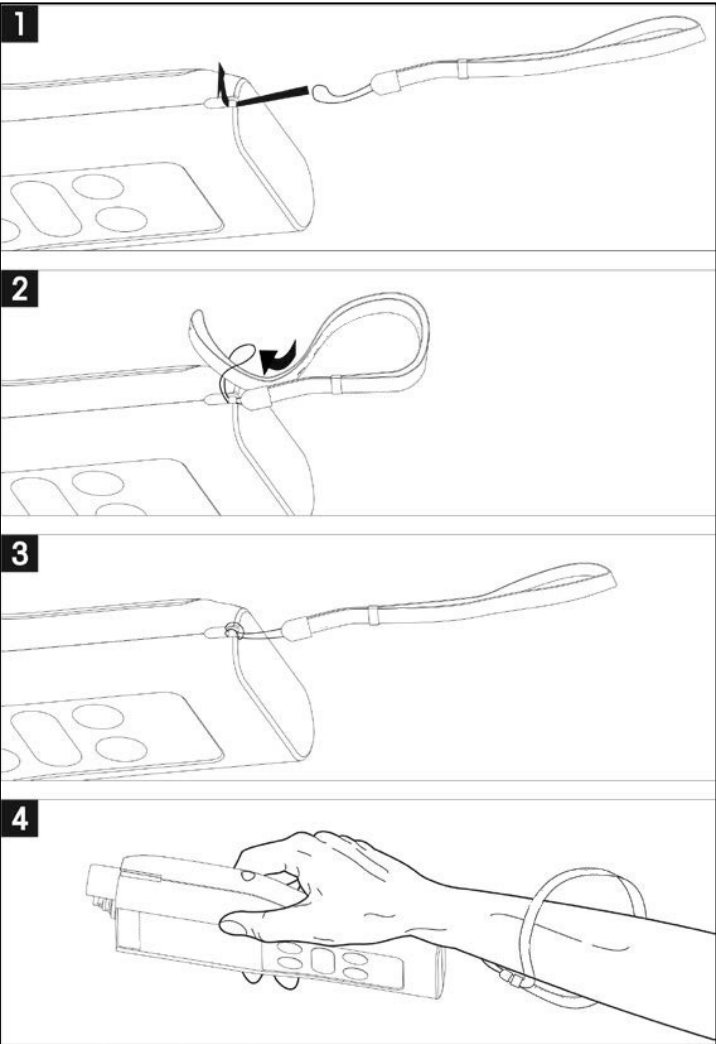
- Remove the protective clips (1)





- Push the electrode clip (1) into the recess (2) of the instrument



4.4.2 Wrist strap

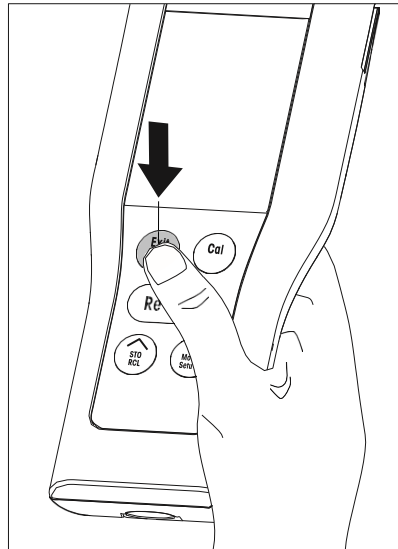


4.5 Switching the instrument on and off

- 1) Press and release  to switch on the instrument.
 - ⇒ All segmented digital numbers and icons are displayed for 3 seconds. After that the installed software version appears (e.g. 1.00) and the instrument is ready for use.
- 2) Press  for 3 seconds and release to switch off the instrument.

Note

By default after 10 minutes not in use, the instrument shuts down.



5 Operation of the Instrument

5.1 General settings

5.1.1 Endpoint formats

The instrument offers two different endpoint formats, automatic and manual. To switch between the automatic and manual endpoint modes, press and hold **Read**.

Automatic endpoint

With the automatic endpoint, the measurement stops automatically as soon as the input signal is stable. This ensures an easy, quick and precise measurement.

Manual endpoint

Unlike the automatic endpoint, user interaction is required to stop the measurement reading in manual mode. To manually endpoint a measurement, press **Read**.

5.1.2 Temperature capture

Automatic temperature capture (ATC)

For better accuracy, we recommend the use of either a sensor with a built-in or a separate temperature probe. If a temperature probe is recognized by the meter, **ATC** and the sample temperature are displayed.

Note

The meter accepts NTC 30 k Ω temperature sensors.

Manual temperature capture (MTC)

If the meter does not detect a temperature probe, it automatically switches to the manual temperature mode and **MTC** appears. The entered MTC temperature is used for temperature compensation.

1) To set the MTC temperature, press and hold **Setup**.

⇒ The temperature value is blinking. The default setting is 25 °C.

2) Choose the temperature value by using \wedge and \vee .

3) Press **Read** to confirm your settings.

4) Continue with calibration standard selection or press **Exit** to return to measurement screen.

5.1.3 Calibration standards

The calibration standard is selected in the setup menu.
The following three standards are available:

- 84 $\mu\text{S}/\text{cm}$
- 1413 $\mu\text{S}/\text{cm}$
- 12.88 mS/cm

Tables for conductivity values at different temperatures are programmed in the meter for each standard, see Appendix.

- After confirmation of the MTC temperature, the current calibration standard is blinking.
- 1) Select the standard by using \wedge and \vee .
 - 2) Press **Read** to confirm.
 - 3) Continue with reference temperature selection or press **Exit** to return to measurement screen.

5.1.4 Reference temperature

You can select between the reference temperatures 20 °C and 25 °C. The conductivity of the sample is referenced to the selected temperature during measurement.

- After confirming the selection of the calibration standard, the reference temperature is blinking.
- 1) Select the targeted reference temperature using \wedge and \vee .
 - 2) Press **Read** to confirm.
 - 3) Continue with α -coefficient setting or press **Exit** to return to measurement screen.

5.1.5 α -coefficient

The conductivity of a solution increases when the temperature rises. With most solutions, a linear inter-relationship between conductivity and temperature is given.

The measured conductivity is corrected and displayed using the following formula:

$$G_{T_{\text{Ref}}} = G_T / (1 + \alpha (T - T_{\text{Ref}}) / 100\%)$$

Whereas

- GT = conductivity measured at temperature T (mS/cm)
 - GT_{Ref} = conductivity (mS/cm) displayed by the instrument, calculated back to the reference temperature T_{Ref}
 - α = linear temperature correction coefficient (%/°C); $\alpha = 0$: no temperature correction
 - T = measured temperature (°C)
 - T_{Ref} = Reference temperature (20 °C or 25 °C)
- After confirming the setup of the reference temperature, the α -coefficient value is blinking.
- 1) Set the α -coefficient value using \wedge and \vee .
 - 2) Press **Read** to confirm.
 - 3) Continue with TDS factor setting or press **Exit** to return to measurement screen.

5.1.6 TDS factor

TDS is calculated by multiplying the conductivity value by the TDS factor.




- After confirming the α -coefficient, the TDS value is blinking.
- 1) Set the TDS factor using \wedge and \vee .
 - 2) Press **Read** to confirm.
 - 3) Continue with the Temperature unit setting or press **Exit** to return to measurement screen.

5.1.7 Temperature unit

- After confirming the TDS setting, the temperature unit is blinking.
- 1) Select the temperature unit (°C or °F) using \wedge and \vee .
 - 2) Press **Read** to confirm and get back to the measurement screen.

5.2 Performing a calibration

To determine the cell constant of a conductivity sensor, perform a calibration as described below.

- A sensor is connected to the instrument.
- 1) Place the sensor in a calibration standard and press **Cal**.
 - ⇒  and  appear on the display.
The instrument endpoints according to the preselected endpoint mode (manual or auto). After the signal has stabilized or after pressing **Read** (manual endpoint) the meter displays and freezes the relevant standard value.
 - ⇒  disappears from the display.
 - ⇒ The new cell constant of the sensor is shown at the bottom right of the display.
- 2) Press **Read** to save the calibration.
 - or -
 - Press **Exit** to discard the data of the calibration.

Note

- To ensure the most accurate conductivity readings, you should verify your cell constant with a standard solution once a day and recalibrate if necessary. Always use fresh standards.

5.3 Performing a measurement

5.3.1 Measurement mode

The conductivity meter offers two different reading modes: conductivity and TDS.

- Press the **Mode** button to switch between conductivity and TDS mode.

5.3.2 Performing a conductivity measurement

- An electrode is connected to the instrument.
- Make sure that the conductivity reading mode is selected.
- Place the electrode in the sample and press **Read** to start the measurement.

- ⇒ The decimal point blinks.
- ⇒ The display shows the conductivity of the sample.
- ⇒ If the automatic endpoint is chosen, and the signal has stabilized, the display freezes, \sqrt{A} appears and the decimal point stops blinking.
In case the **Read** button was pressed before the automatic endpoint, the display freezes and \sqrt{M} appears.

Note

Press and hold **Read** to switch between the automatic and manual endpoint format.

5.3.3 Performing a TDS measurement

- An electrode is connected to the instrument.
- Make sure that the TDS mode is selected and the correct TDS factor is entered in the settings TDS factor (5.1.6).
- Perform the same steps as described in the section Performing a conductivity measurement (5.3.2).

5.4 Using the memory

5.4.1 Storing a measurement result

The instrument can store up to 200 endpointed results.

- Press **STO** when the measurement has endpointed.
 - ⇒ **M001** indicates that one result has been stored, and **M200** that the maximum of 200 results have been stored.

Note

If you press **STO** when **M200** is displayed, **Err 6** indicates that the memory is full. To store further data you will have to clear the memory.

5.4.2 Recalling from memory

- 1) Press and hold **RCL** to recall the stored values.
- 2) Press \wedge or \vee to scroll through the stored results.
 - ⇒ **MR 001** to **MR 200** indicates which result is currently displayed.
- 3) Press **Exit** to go back to the measurement screen.

5.4.3 Clearing the memory

- 1) Press and hold **RCL** to recall the stored values from memory.
- 2) Press **RCL** until **ALL** appears on the display.
- 3) Press **Read** to delete all measurement results.
 - ⇒ **CLr** starts blinking on the display.
- 4) Press **Read** to confirm the deletion
- or -
Press **Exit** to cancel the deletion.

5.5 Self-diagnosis

- 1) Switch the meter on.
- 2) Press **Read** and **Cal** simultaneously until the meter displays the full screen.
 - ⇒ Each icon blinks one after the other whereby you can check if all icons are correctly shown on the display.
 - ⇒ After that, **b** starts to blink and 5 hardkey-icons are shown on the display.
- 3) Press any hardkey.
 - ⇒ The specific icon disappears from the display.
- 4) Press each hardkey once.
 - ⇒ When the self-diagnosis is completed successfully, **PAS** appears. If the self-diagnosis has failed, **Err 2** appears.

Note

You must press all hardkeys within 1 minute, otherwise **FAL** appears and the self-diagnosis has to be redone.

5.6 Factory reset



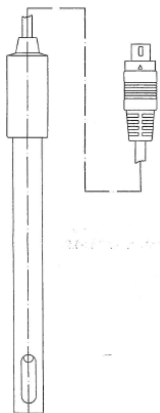
Note
Loss of data!

With a factory reset all user-specific settings will be set to standard. Also all data memories will be deleted.

- The instrument is switched off.
 - 1) Press and hold **Read**, **Cal** and **Exit** simultaneously for 2 seconds.
 - ⇒ **RST** appears on the display.
 - 2) Press **Read**.
 - 3) Press **Exit**.
 - ⇒ The instrument switches off.
 - ⇒ All settings are reset.

6 Probe

The conductivity measuring cell utilizes the 4-pole potentiometric method for measuring conductivity, which incorporates a series of four graphite poles embedded in the probe shaft. This design completely eliminates the polarization, which frequently occurs with the 2-plate amperometric method during measuring high conductivity solution.



Furthermore, the combined temperature sensor makes the probe automatic temperature compensating.

Order No: 513-160/10

6.1 For optimum performance, use the following operating procedures:-

6.1.1 Remove all packaging material from the sensor before use.

6.1.2 To prevent carry-over from solution to solution, rinse the sensor with distilled water between measurements.

6.1.3 When measuring. Make sure the solution is above the cell rings.

6.1.4 Ensure the cell chamber is free of bubbles when measuring.

6.1.5 Allow sufficient time for the sensor to stabilize when measuring samples at different temperatures. Manual endpoint is advised.

6.1.6 The sensor is not recommended for low conductivity solutions (<10 $\mu\text{S}/\text{cm}$).

6.1.7 Clean the probe with distilled water after use.

6.1.8 For calibration and measurement procedures, refer to the instruction manual.

6.2 Precautions and limitations

6.2.1 Always disconnect the sensor from the meter before cleaning.

6.2.2 Do not expose the sensor to organic solvents, either when cleaning or when taking measurements.

6.2.3 Do not use the probe outside the recommended temperature range.

6.2.4 Specification and performance of this probe is guaranteed only when used with this conductivity meter.

7 Maintenance

7.1 Cleaning the housing



Note

Damage to the instrument!

Ensure that no liquid enters the interior of the instrument.

Wipe off any spills immediately.

The meter does not require any maintenance other than an occasional wipe with a damp cloth. The housing is made of acrylonitrile butadiene styrene (ABS). This material is sensitive to some organic solvents, such as toluene, xylene and methyl ethyl ketone (MEK).

- Clean the housing of the instrument using a cloth dampened with water and a mild detergent.

7.2 Error messages

Error	Description	Resolution
Err 1	Memory access error	Reset to factory settings
Err 2	Self-diagnosis failed	Repeat the self-diagnosis procedure and make sure that you finish pressing all five keys within one minute.
Err 3	Measured values out of range	Make sure that the sensor wetting cap has been removed and the sensor is properly connected and placed in the sample solution.
Err 4	Measured standard temperature out of range (5... 35 °C)	Keep the temperature within the range for calibration (5... 35 °C).
Err 5	Cell constant out of range	Disconnect, clean and/or replace the sensor.
Err 6	Memory is full	Clear the memory
Err 7	Measurement data cannot be stored twice	---

8 Technical Data

8.1 General

Power requirements	Batteries	4 x LR03/AAA 1.5 V Alkaline - or - 4 x AAA 1.2 V NiMH rechargeable
	Battery life	> 200 h
Dimensions	Height	188 mm
	Width	77 mm
	Depth	33 mm
	Weight (without batteries)	260 g
Display	LCD	3.1" Segmented LCD, b/w
Ambient conditions	Operating temperature	0...40 °C
	Relative humidity	5%...85% (non-condensing) at 31 °C, linearly descending to 50% at 40 °C
	Overvoltage category	Class II
	Pollution degree	2
	Maximum operating altitude	2000 m above sea level
	Range of application	For indoor use
Materials	Housing	ABS
	Window	Polymethyl methacrylate (PMMA)
	IP Protection class	IP67

8.2 Measurement

Parameters	mS/cm, μ S/cm, mg/L, °C (°F)	
Sensor inputs	μ S/cm, mg/L, °C (°F)	LTW, 7-pin
Conductivity	Measuring range	0.00 μ S/cm...200.0 mS/cm
	Resolution	Automatic range
	Accuracy (sensor input)	\pm 0.5%
TDS	Measuring range	0.0 mg/L...200.0 g/L
	Resolution	Automatic range
Temperature	Measuring range	0...100 °C (32 °F...212 °F)
	Resolution	0.1 °C
	Limits of error	\pm 0.5 °C
	Compensation	Linear: 0.00 %/°C...10 %/°C Reference temperature: 20 and 25 °C
Calibration	Calibration points	1
	Predefined standards	3
	Calibration methods	Linear
Data security / storage	Memory size	200

9 Appendix

International Standard (at ref. temp. 25°C)

T [°C]	84 µS/cm	1413 µS/cm	12.88 mS/cm
5	53.02	896	8.22
10	60.34	1020	9.33
15	67.61	1147	10.48
20	75.80	1278	11.67
25	84.00	1413	12.88
30	92.19	1552	14.12
35	100.92	1667	15.39

Examples of temperature coefficients (α -value)

Substance at 25°C	Concentration [%]	Temperature coefficient alpha [%/°C]
HCl	10	1.56
KCl	10	1.88
CH ₃ COOH	10	1.69
NaCl	10	2.14
H ₂ SO ₄	10	1.28
HF	1.5	7.20

α -coefficients of conductivity standards for a calculation to reference temperature of 25°C

Standard	Measurement temp.: 15 °C	Measurement temp.: 20 °C	Measurement temp.: 30 °C	Measurement temp.: 35 °C
84 µS/cm	1.95	1.95	1.95	2.01
1413 µS/cm	1.94	1.94	1.94	1.99
12.88 mS/cm	1.90	1.89	1.91	1.95

Conductivity to TDS conversion factors

Conductivity	TDS KCl		TDS NaCl	
	ppm value	factor	ppm value	factor
at 25 °C				
84 µS/cm	40.38	0.5048	38.04	0.4755
447 µS/cm	225.6	0.5047	215.5	0.4822
1413 µS/cm	744.7	0.5270	702.1	0.4969
1500 µS/cm	757.1	0.5047	737.1	0.4914
8974 µS/cm	5101	0.5685	4487	0.5000
12.880 µS/cm	7447	0.5782	7230	0.5613
15.000 µS/cm	8759	0.5839	8532	0.5688
80 mS/cm	52.168	0.6521	48.384	0.6048

DIRECTIVE ON WASTE ELECTRICAL & ELECTRONIC EQUIPMENT (WEEE)



Electrical equipment marked with this symbol may not be disposed of in European public disposal systems after 12 August of 2005. In conformity with European local and national regulations (EU Directive 2002/96/EC), European electrical equipment users must now return old or end-of-life equipment to the Producer for disposal at no charge to the user.

Note: For return for recycling, please contact the equipment producer or supplier for instructions on how to return end-of-life equipment for proper disposal.

Important document. Retain with product records.

GERMAN

Elektrogeräte, die mit diesem Symbol gekennzeichnet sind, dürfen in Europa nach dem 12. August 2005 nicht mehr über die öffentliche Abfallentsorgung entsorgt werden. In Übereinstimmung mit lokalen und nationalen europäischen Bestimmungen (EU-Richtlinie 2002/96/EC), müssen Benutzer von Elektrogeräten in Europa ab diesem Zeitpunkt alte bzw. zu verschrottende Geräte zur Entsorgung kostenfrei an den Hersteller zurückgeben.

Hinweis: Bitte wenden Sie sich an den Hersteller bzw. an den Händler, von dem Sie das Gerät bezogen haben, um Informationen zur Rückgabe des Altgeräts zur ordnungsgemäßen Entsorgung zu erhalten.

Wichtige Informationen. Bitte zusammen mit den Produktinformationen aufbewahren.

FRENCH

A partir du 12 août 2005, il est interdit de mettre au rebut le matériel électrique marqué de ce symbole par les voies habituelles de déchetterie publique. Conformément à la réglementation européenne (directive UE 2002/96/EC), les utilisateurs de matériel électrique en Europe doivent désormais retourner le matériel usé ou périmé au fabricant pour élimination, sans frais pour l'utilisateur.

Remarque : Veuillez vous adresser au fabricant ou au fournisseur du matériel pour les instructions de retour du matériel usé ou périmé aux fins d'élimination conforme.

Ce document est important. Conservez-le dans le dossier du produit.

ITALIAN

Le apparecchiature elettriche con apposto questo simbolo non possono essere smaltite nelle discariche pubbliche europee successivamente al 12 agosto 2005. In conformità alle normative europee locali e nazionali (Direttiva UE 2002/96/EC), gli utilizzatori europei di apparecchiature elettriche devono restituire al produttore le apparecchiature vecchie o a fine vita per lo smaltimento senza alcun costo a carico dell'utilizzatore.

Nota: Per conoscere le modalità di restituzione delle apparecchiature a fine vita da riciclare, contattare il produttore o il fornitore dell'apparecchiatura per un corretto smaltimento.

Documento importante. Conservare con la documentazione del prodotto.

DANISH

Elektriske apparater, der er mærket med dette symbol, må ikke bortskaffes i europæiske offentlige affaldssystemer efter den 12. august 2005. I henhold til europæiske lokale og nationale regler (EU-direktiv 2002/96/EF) skal europæiske brugere af elektriske apparater nu returnere gamle eller udtjente apparater til producenten med henblik på bortskaffelse uden omkostninger for brugeren.

Bemærk: I forbindelse med returnering til genbrug skal du kontakte producenten eller leverandøren af apparatet for at få instruktioner om, hvordan udtjente apparater bortskaffes korrekt.

Vigtigt dokument. Opbevares sammen med produktdokumenterne.

SWEDISH

Elektronikutrustning som är märkt med denna symbol kanske inte kan lämnas in på europeiska offentliga sopstationer efter 2005-08-12. Enligt europeiska lokala och nationella föreskrifter (EU-direktiv 2002/96/EC) måste användare av elektronikutrustning i Europa nu återlämna gammal eller uttrangerad utrustning till tillverkaren för kasserering utan kostnad för användaren.

Obs! Om du ska återlämna utrustning för återvinning ska du kontakta tillverkaren av utrustningen eller återförsäljaren för att få anvisningar om hur du återlämnar kasserad utrustning för att den ska bortskaffas på rätt sätt.

Viktigt dokument. Spara tillsammans med dina produktbeskrivningar.

SPANISH

A partir del 12 de agosto de 2005, los equipos eléctricos que lleven este símbolo no deberán ser desechados en los puntos limpios europeos. De conformidad con las normativas europeas locales y nacionales (Directiva de la UE 2002/96/EC), a partir de esa fecha, los usuarios europeos de equipos eléctricos deberán devolver los equipos usados u obsoletos al fabricante de los mismos para su reciclado, sin coste alguno para el usuario.

Nota: *Sírvase ponerse en contacto con el fabricante o proveedor de los equipos para solicitar instrucciones sobre cómo devolver los equipos obsoletos para su correcto reciclado.*

Documento importante. Guardar junto con los registros de los equipos.

DUTCH

Elektrische apparatuur die is voorzien van dit symbool mag na 12 augustus 2005 niet meer worden afgevoerd naar Europese openbare afvalsystemen. Conform Europese lokale en nationale wetgeving (EU-richtlijn 2002/96/EC) dienen gebruikers van elektrische apparaten voortaan hun oude of afgedankte apparatuur kosteloos voor recycling of vernietiging naar de producent terug te brengen.

Nota: *Als u apparatuur voor recycling terugbrengt, moet u contact opnemen met de producent of leverancier voor instructies voor het terugbrengen van de afgedankte apparatuur voor een juiste verwerking.*

Belangrijk document. Bewaar het bij de productpapieren.

POLISH

Sprzęt elektryczny oznaczony takim symbolem nie może być likwidowany w europejskich systemach utylizacji po dniu 12 sierpnia 2005. Zgodnie z europejskimi, lokalnymi i państwowymi przepisami prawa (Dyrektywa Unii Europejskiej 2002/96/EC), użytkownicy sprzętu elektrycznego w Europie muszą obecnie przekazywać Producentowi stary sprzęt lub sprzęt po okresie użytkowania do bezpłatnej utylizacji.

Uwaga: *Aby przekazać sprzęt do recyklingu, należy zwrócić się do producenta lub dostawcy sprzętu w celu uzyskania instrukcji dotyczących procedur przekazywania do utylizacji sprzętu po okresie użytkowania.*

Ważny dokument. Zachować z dokumentacją produktu.

PORTUGUESE

Qualquer equipamento eléctrico que ostente este símbolo não poderá ser eliminado através dos sistemas públicos europeus de tratamento de resíduos sólidos a partir de 12 de Agosto de 2005. De acordo com as normas locais e europeias (Directiva Europeia 2002/96/EC), os utilizadores europeus de equipamentos eléctricos deverão agora devolver os seus equipamentos velhos ou em fim de vida ao produtor para o respectivo tratamento sem quaisquer custos para o utilizador.

Nota: *No que toca à devolução para reciclagem, por favor, contacte o produtor ou fornecedor do equipamento para instruções de devolução de equipamento em fim de vida para a sua correcta eliminação.*

Documento importante. Mantenha junto dos registos do produto.