

LAB & INDUSTRY EQUIPMENT

BUCH  HOLM



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SevenCompact™



**SevenCompact™**

Intuitive and Clear

Powerful and Versatile



# Increased pH Efficiency with SevenCompact™

Universal and Reliable Instruments

METTLER TOLEDO

# More Efficient Everyday Work

## Versatile and Universal

**The SevenCompact™ series combines precise electrochemical measurement technologies with flexibility, innovative design and ease-of-use. Optimal measuring specifications ensure great performance in nearly all pH or conductivity related lab measurements.**

While the instruments encompass numerous measurement parameters and offer many options for data input and archiving, it is also possible to perform straightforward calibrations and measurements with a single keypress! At METTLER TOLEDO we understand that reproducibility and measurement performance are the highest priority. As a customer you can therefore rest assured that the SevenCompact™ series fulfills the highest quality standards and guarantees precise and reliable measurements.

### Pharmaceutical industry



The wealth of data archiving and input possibilities make the SevenCompact™ series ideally suited for satisfying the stringent needs and GLP requirements of the pharmaceutical industry and testing labs.

### Food & Beverage industry



Only a single keypress is required to start a measurement which can be stored and printed automatically. This makes it great for quick and reliable analysis of many samples during the food production process.

### Chemical industry



Analysis parameters and sample characteristics cannot be more diverse than in pure chemical R&D. SevenCompact's flexibility makes it the perfect choice for pH, ion, redox and conductivity measurements.





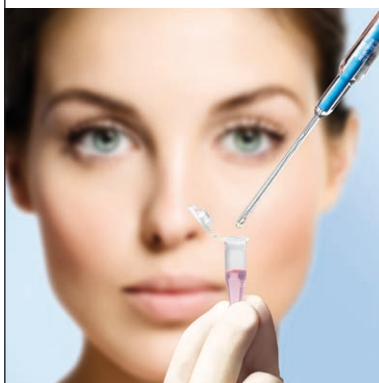
Green plants rely on sunlight for photosynthesis and are universal in their distribution throughout the world.

### Academia



For research groups and laboratory courses alike, the intuitive operation and versatility fulfills the needs of lab researchers and students.

### Biotechnology



A perfect match for our micro pH and conductivity sensors, the SevenCompact™ series is well suited for obtaining precise and reliable results with the smallest samples and most precious solutions.

### Cosmetics



Be it QA during production or QC of finished products and raw materials, the SevenCompact™ series stands up to demanding data input, measurement and archiving tasks.

# Productive Work from the Start

## Intuitive and Clear

The operation of the SevenCompact™ series is so intuitive that measurement can start immediately. The large and clear color display makes working with these instruments simply a pleasure.

The instruments' functionality has been designed to maximize the productivity of your lab work. Starting a measurement or calibration, toggling measurement modes or switching between the two different display layouts only requires a single keypress. Selecting the right settings in the menu is intuitive because the instrument speaks your language.

**Large color display for clearly visible results**



The 4.3 inch high-resolution color display has large digits and well arranged icons making relevant information identifiable at a glance. The color and contrast can be adapted to your preferences and light conditions.

**Stay focused with uFocus showing only the essential parameters**



The instrument gives you the choice! In the normal screen layout, all available information is visible. By switching to the uFocus™ view you will not be distracted by information of less importance.

**A reference for intuitive operation**



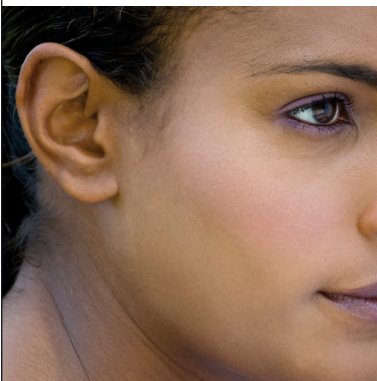
Starting a measurement or calibration or toggling between measurement modes only requires a single keypress. For adjustment of settings, the SevenCompact™ offers menus with full sentences in 12 languages. No more cryptic expressions.





Dissection of a dandelion, showing the clear and structured arrangement of the seeds, which easily become airborne by the wind.

**Viewing or also hearing according to your preferences**



An acoustic signal can be setup to announce warnings, button presses or end-point stability, allowing you to focus on other laboratory tasks while measurements or calibrations are running.

**Perfect ergonomics and high productivity with uPlace™**



uPlace™: the electrode arm can be operated with one hand, moving straight up and down bringing the electrode into the position where it works best for your sample. This allows for faster measurements and reduces the risk of spilling sample or damaging the sensor.

# Extensive Security Functions

## Innovative and Reliable

**SevenCompact™ comes with a wealth of security functions to support you during all phases of the calibration, measurement, data collection and archiving process. Its ingenious package makes the instrument suitable for routine measurements and professional measurements under stringent GLP-conditions alike.**

The instrument's versatility is also reflected in its security package. Users requiring no or little GLP support can use the instrument conveniently without worrying about the security settings and possibilities. Still they benefit from those functionalities that reduce mistakes to a minimum, such as calibration support and Intelligent Sensor Management (ISM®). On the other hand, those who need full GLP support will have peace of mind when employing the full spectrum of security functionalities.

### Routine / expert mode that suits the needs of any operator



SevenCompact™ has two operating modes. In routine mode deletion of data and changing of settings is blocked, turning the instrument into a reliable workhorse. The PIN protected expert mode allows authorized users to enjoy the full range of functions.

### Professional calibration comprises advanced demands



Calibration support is provided on many levels, featuring pre-defined and user-defined buffer groups, a calibration reminder with optional sensor blocking and a pH sensor icon, which shows the quality of the latest electrode calibration.

### A wealth of GLP functions that leaves nothing to coincidence



The instruments come with a package of GLP support functions such as PIN protection, GLP print-out with all relevant information and measurement limit monitoring. A warning message appears should values fall below or exceed defined limits.





The thick spined leaves of Agave Parryi provide security against herbivores and allow it to survive under dry conditions.

## Intelligent Sensor Management (ISM®) – security at its finest!

ISM® eliminates mistakes in the following ways:

### **Correct sensor identification:**

Upon connection, the sensor is automatically identified. This prevents performing a measurement with the wrong sensor ID by mistake.

### **Current calibration:**

The most recent sensor calibration is transferred to the meter upon pressing read and is selected for future measurements automatically.

This offers the peace of mind that the correct calibration data is being used, regardless of which meter the sensor is connected to.

### **5 calibration data records:**

The last five calibration data records are stored on the ISM® sensor which can be viewed or printed out at any time. You can monitor your sensors' performance over time and take action if needed, avoiding future surprises and increasing the uptime of your instrument.

### **Factory calibration:**

The electrode certificate with the factory calibration details of an ISM® sensor is stored on the sensor and can be reviewed or printed anytime.

### **Temperature:**

The maximum temperature an ISM® sensor is exposed to during a measurement is automatically monitored and can be recalled. This provides an insight into possible reasons for rapid ageing of your sensor.



# Instruments with Protection at all Levels Complete and Contemporary

To maximize their lifetime, the instruments have been designed to withstand dust and spills of aqueous solutions. Environmental protection is also ensured as the materials, electronic components and packaging have been specifically selected for this purpose.

Although great care is taken in the laboratory, accidental spills cannot always be prevented; therefore it is good to know that your SevenCompact™ instrument is well-protected. When not in use the instrument is encapsulated by rubber caps and a protective cover, providing a barrier against dust and water.

**IP54 water and dust resistance for a long lasting investment**



The SevenCompact™ instruments have been designed to withstand spills on the housing and connections. Not only does this provide perfect protection, but it also allows for easy cleaning with a damp cloth.

**Protection for the connectors**



For extra protection rubber caps cover the connectors, which are the most vulnerable points of the instrument, keeping water and dust out. The caps are connected on one side of the housing, so there is no risk of losing them.

**Transparent cover as an extra barrier**

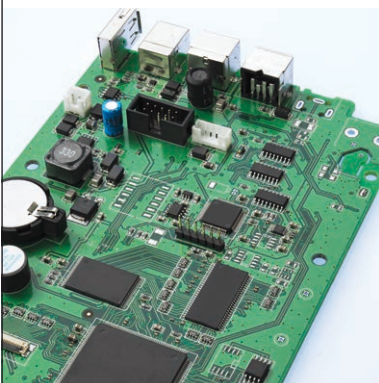


The protective cover is part of the standard delivery and can be left on the instrument during operation without affecting the key press functionalities. It also provides an extra barrier when the meter is not in use.



Close-up of a butterfly pupa, which has a hard protective coating and uses camouflage to evade potential predators.

### Environmentally friendly electronics



At METTLER TOLEDO we care strongly about the environment. The power supply has the highest Energy Star rating which means energy loss and heat generation are particularly low. All of our components are RoHS compliant so they are free of hazardous, banned substances.

### Green packaging



The packaging used for the SevenCompact™ instruments is specifically selected with the environment in mind. It consists of recyclable cardboard and is manufactured without the use of chlorine bleaching agents.



# Comprehensive Service and Support Elaborate and Tailored

With comprehensive service offerings from **METTLER TOLEDO**, you can maintain the performance and maximize the uptime of your instruments. At the same time, you can be free of concerns around compliance issues during quality audits. Enjoy peace of mind.

## Flexible and customized service offerings



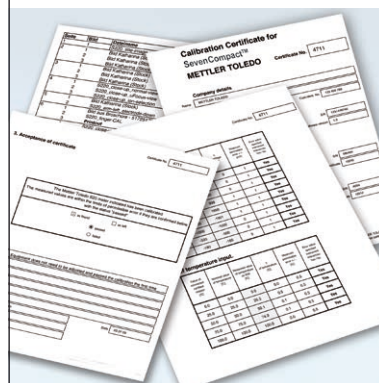
Regular technical inspections ensure that the instrument continues to function reliably and error-free, maximizing its uptime. With our wide range of services we can find a flexible solution for every need.

## Cost-efficient and fast support

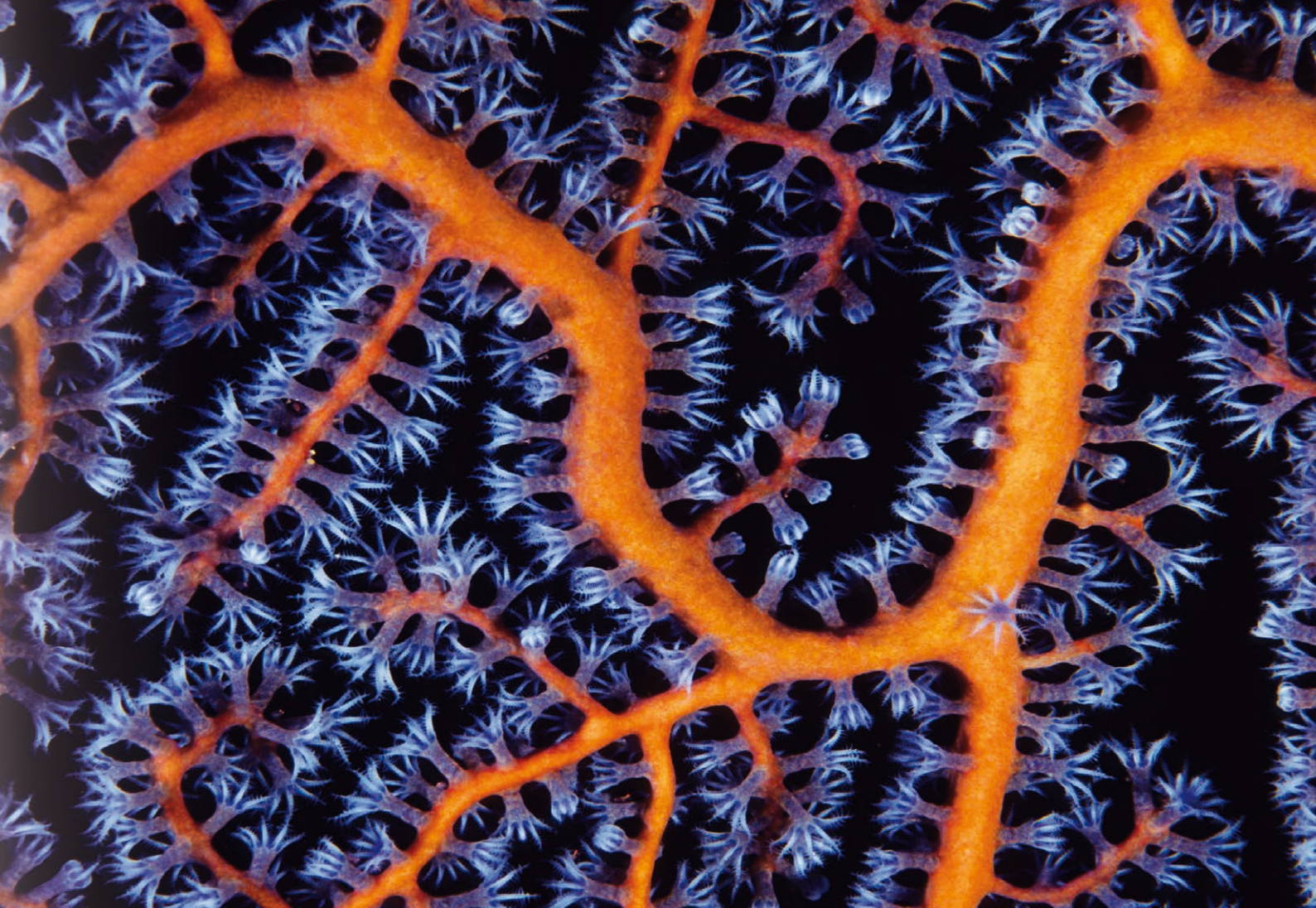


Fast support without the necessity of a service visit or spending hours on the phone is now possible. Just export the instrument settings to a USB-stick and send them via e-mail to a readily available support team.

## Compliance made easy



A calibration performed with certified tools demonstrates proper functioning and ensures conformity with manufacturer's specifications. With the calibration certificate, ensure your next audit is satisfying and gain peace of mind on compliance issues.



Purple sea fan, showing the tentacles of each polyp that the organism uses for filtering plankton from the water.

### **Effortless IQ/OQ**



Instrument qualification is often mandatory. Proof of professional installation and commissioning is required by several regulations and quality standards. METTLER TOLEDO provides simple and fully compliant initial qualification services.

### **Installation and qualification for peace of mind**

METTLER TOLEDO offers different service packages depending on your needs.

#### **StarterPac**

Professional on-site installation and configuration of your new equipment by an expert. An additional basic user training allows you to use most of the functionality of the instrument right from the start.

#### **IPac**

The IPac not only consists of professional on-site installation and configuration but also of installation and operational qualification. Get documented proof that your equipment is ready and compliant to use in your operating environment. After the qualification and

initial calibration the expert will familiarize you with the functions and use of the equipment.

#### **Extended care**

Desire full coverage beyond initial warranty? Get the extended care package. Apart from extending the warranty period METTLER TOLEDO also performs preventive maintenance on-site. If needed the technician will repair, adjust and reverify the instrument for proper use. Have full uptime and best performance for your measurements.

► [www.mt.com/phlabsupport](http://www.mt.com/phlabsupport)



# Connectivity and Peripheral Options Manifold and Convenient

**SevenCompact™ is a powerful instrument in stand alone mode, but with peripherals from METTLER TOLEDO its possibilities are greatly enhanced. Our focus is ease of use, ensuring that operating the instrument but also installing and using sensors and peripherals is as easy as possible.**

Various interfaces on the instrument allow you to connect peripherals simultaneously according to your needs, supporting your workflow in the best possible way. We offer a large selection of sensors so you will always find one that suits your application. Rest assured that, when using our high-quality sensors and certified buffers and standards for calibration, your measurement results will be of the highest accuracy.

## Plug and play USB interfaces



SevenCompact™ has a USB A and USB B interface, allowing connection of a barcode reader or a keyboard, a USB stick or a USB-Printer and a PC with EasyDirect™ pH software for data handling. The USB connection is fully plug and play which allows for immediate use of the tool after connection.

## Convenient printing possibilities



METTLER TOLEDO printers with RS232 and USB interface are supported. Customers requiring the maximum level of efficiency and convenience are recommended to use the RS/USB-P25, RS-P26 and RS-P28 series of printers. These are automatically detected.

## Improve accuracy and reliability with uMix magnetic stirrer



The optional uMix™ magnetic stirrer from METTLER TOLEDO is controlled and powered by the instrument. Stirring can be performed both before and during measurement and the stir speed can be adjusted in the menu settings to reflect the viscosity of the sample or sample vessel size.



The sunflower stays connected to the sun, moving its head towards the direction the sunlight is coming from.

### Data handling made easy with EasyDirect™ pH



Do you need to safely archive and use your measurement data on a computer? This intuitive software helps you to capture and store the data from any SevenCompact™ instrument. Furthermore it allows you to directly print or export the data to an open application such as Excel.

### A sensor for every application



METTLER TOLEDO has over 60 years of experience with sensor manufacturing. We offer sensors for all applications, covering pH, ORP, conductivity and ion concentration. Read our Sensor Brochure to see the full range of electrodes or visit: [www.mt.com/electrode-guide](http://www.mt.com/electrode-guide)

### All you need for your measurement – buffers and solutions



Choose from our range of pH buffers, conductivity and ion standards, electrolytes and electrode cleaning solutions. For ion-selective measurements not only do we offer calibration standards, but also ISA and TISAB solutions to guarantee your ion measurements are of the highest accuracy.



# SevenCompact™ pH/Ion Meter

## Flexible and Powerful

The SevenCompact™ S220 pH/Ion meter is not just an ordinary pH meter, it can also measure ORP and ion-concentration in various units. Switching modes before, during or after measurement is easy requiring just a single keypress.

Pressing a single button – READ or CAL – starts a measurement or calibration, with three options for endpointing. With a timed endpoint the analysis endpoints after a pre-defined time interval. It can also be endpointed manually or the instrument can automatically endpoint according to one of three stability criterion: fast, normal or strict.

### pH calibration support



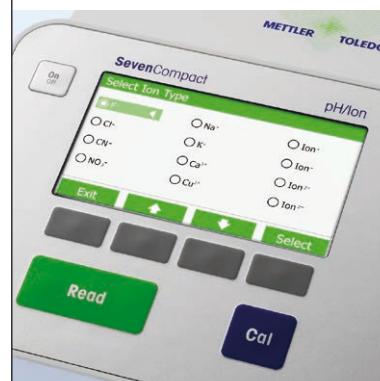
Eight different pre-defined pH buffer groups are available giving you a high degree of flexibility. It is also possible to create your own buffer group. After calibration, the sensor icon shows you the quality of the calibration at a glance.

### Ion measurements – flexible sensor choice



With SevenCompact™ S220 it is possible to use our perfectION™ Series of combined Ion Selective Electrodes as well as our collection of half-cells. For measurements with half-cell sensors a reference electrode connection is present.

### Full ion support



The eight most commonly used ion types are pre-programmed to make the settings as convenient as possible. For others, you can enter generic ions with different ionic charges to ensure that the slope is calculated correctly.



### Specifications for SevenCompact™ pH/Ion meter S220

	Measuring range	Resolution	Accuracy
<b>pH</b>	-2.000 ... 20.000	0.001 / 0.01 / 0.1	± 0.002
<b>mV*</b>	-2000.0 ... 2000.0	0.1 / 1	0.1
<b>Ion concentration**</b>	1.00E <sup>-9</sup> ... 9.99E <sup>+9</sup>	± last signifi. digit	± 0.5%
<b>Temperature***</b>	-30.0 ... 130.0 °C	0.1 °C	± 0.1 °C
<b>Calibration</b>	Max. 5 points, 8 pre-defined and 1 user-defined buffer group		
<b>System</b>	Date / time, PIN-protection, 12 languages		
<b>Data storage</b>	1000 measurements		
<b>Data export</b>	USB stick, EasyDirect™ pH Software		
<b>Measurement limits</b>	User-definable with warning message		
<b>ID entry</b>	User ID, Sample ID, Sensor ID, Sensor Serial Number		
<b>ISM®</b>	Intelligent Sensor Management supported		

\* Instrument can also measure rel. mV

\*\* Ion concentration supports units mmol/L, mol/L, ppm, mg/L, % and pX

\*\*\* Temperature display choice between °C and °F. ATC temperature range is -5,0 ... 130,0 °C

### Temperature – an important parameter



SevenCompact™ S220 supports both NTC30kΩ and Pt1000 temperature sensors, with the option of automatic detection or manual selection. Three options for temperature capture exist: an integrated temperature sensor in the electrode, an external temperature sensor or setting the temperature manually.

### Description & order information for SevenCompact™ pH/Ion meter S220

Order info	Description and sensors	Order no.
S220-Meter (instrument)	Includes instrument, electrode holder, protective cover, operating instructions, quick guide, declaration of conformity and test certificate	30019028
S220-Standard kit	As S220-meter, but also with InLab® Expert Pro-ISM, guide to pH measurements and 2 buffer sachets for pH 4.01, 7.00, 9.21 and 10.00.	30019029
S220-Bio kit	As S220-STD but with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM	30019031
S220-Uni kit	As S220-STD but with InLab® Versatile Pro instead of InLab® Expert Pro-ISM	30019032
S220-Micro kit	As S220-STD but with InLab® Ultra-Micro instead of InLab® Expert Pro-ISM	30096985
S220-uMix kit	As S220-STD but also including the uMix magnetic stirrer	30096986

# SevenCompact™ Conductivity Meter

## Powerful and Versatile

**The SevenCompact™ S230 conductivity meter is the perfect choice for a wide range of applications. Not only does it measure conductivity but also various other parameters such as salinity, resistivity, total dissolved solids and conductivity ash.**

The instruments are ideally suited for routine conductivity measurements and special applications alike. Calibrations are possible by manual input of the cell constant or by using a standard solution. For measurements you have the choice between two reference temperatures and four different temperature compensation options: linear, non-linear, off and pure water.

### Bioethanol



By default the instrument uses standard conductivity units but it also supports special units required for bioethanol analysis meaning unit interconversion and recalculation is no longer necessary. The InLab® 725, a special 2-cell platinum sensor, is also available for this application.

### Sugar analysis – the right package for this application



The SevenCompact™ S230 is ideally suited for sugar analysis. It has a special parameter for Conductivity Ash, which can be measured in accordance with two official ICUMSA regulations for refined sugar or raw sugar and molasses.

### Pure water – high accuracy for low conductivity



Low conductivity measurement requires special attention. When measuring pure or ultra-pure water there are several sources of potential error such as carbon dioxide from air and temperature inaccuracy. Our digital conductivity cell InLab® Trace, with high temperature accuracy and optional flowthrough cell now provides the perfect solution.





### Specifications for SevenCompact™ Conductivity meter S230

	Measuring range	Resolution	Accuracy
<b>Conductivity*</b>	0.001 $\mu$ S/cm ... 1000 mS/cm	0.001 ... 1	$\pm$ 0.5%
<b>Temperature**</b>	-30.0 ... 130.0 °C	0.1 °C	$\pm$ 0.1 °C
<b>Calibration</b>	13 pre-defined or 1 user-defined standard		
<b>Cell constant</b>	Determined via calibration or entered manually		
<b>Temperature compensation</b>	Linear, non-linear, off, pure- water – reference temperature 20 °C or 25 °C		
<b>System</b>	Date / time, PIN-protection, 12 languages		
<b>Data storage</b>	1000 measurements		
<b>Data export</b>	USB-stick, EasyDirect pH		
<b>Measurement limits</b>	User-definable with warning message		
<b>ID entry</b>	User ID, Sample ID, Sensor ID, Sensor Serial Number		
<b>ISM®</b>	Intelligent Sensor Management supported		

\* Instrument can also measure salinity, resistivity and total dissolved solids

\*\* Temperature display choice between °C and °F. ATC temperature range is -5,0 ... 130,0 °C

#### Temperature compensation for pure water



For pure water we offer a special temperature compensation mode to increase the reliability of your readings. For USP/EP measurements you can also switch the temperature compensation off to comply with the regulations.

### Description & order information for SevenCompact™ Conductivity meter S230

Order info	Description and sensors	Order no.
S230-Meter (instrument)	Includes instrument, electrode holder, protective cover, operating instructions, quick guide, declaration of conformity and test certificate	30019033
S230-Standard kit	As S230-STD, but also with InLab® 731-ISM, guide to conductivity measurements and 2 calibration sachets for 1413 $\mu$ S/cm and 12.88 mS/cm	30019034
S230-USP/EP kit	As S230-STD but with InLab® 741-ISM instead of InLab® 731-ISM, and without 12.88 mS/cm calibration sachets	30019035

# SevenCompact™ Duo Meter

## Efficient Multitasking

**The SevenCompact™ Duo S213 is a true multiparameter workhorse, able to measure both pH and conductivity simultaneously or independently. With both parameters available in one instrument it covers a wide range of applications in everyday lab work.**

Speed up your lab work with SevenCompact™ Duo. Press just one single button and start your pH and conductivity measurement immediately. This multiparameter instrument features tried and trusted high end specification to ensure you can trust your results. Albeit its sophisticated specifications and the wide range of features it is easy to operate thanks to its larger screen, the intuitive menu and the 12 supported languages.

### Two measurements on one single screen



Whether measuring pH and conductivity separately or simultaneously the meter switches the display with one key press. In the normal screen layout the meter displays all available information. By switching to the uFocus™ view the information can be reduced to the essential.

### Measure pH and conductivity in one beaker accurately



All sensor inputs are galvanically isolated from each other which allows for undisturbed measurement in the same beaker. Measure pH and conductivity of waste or sea water for quality checks simultaneously and save valuable time.

### Plug and play with USB-Printer



SevenCompact™ S213 supports the use of not only RS232 printers but also METTLER TOLEDO USB printers. Similar as with other peripherals, such as barcode reader or keyboard, there is no need to change any settings, just connect the printer and start.



### Specifications for SevenCompact™ Duo pH/Conductivity meter S213

	Measuring range	Resolution	Accuracy
<b>pH</b>	-2.000 ... 20.000	0.001/0.01/0.1	±0.002
<b>mV</b>	-2000.0 ... 2000.0	0.1/1	±0.1*
<b>Conductivity</b>	0.001 µS/cm ... 1000 mS/cm	0.001 ... 1	±0.5%
<b>Temperature</b>	-30.0 ... 130.0 °C	0.1 °C	±0.1°C

\* ±0.1 mV in -1000 ... 1000 mV; ±0.2 mV outside

<b>Calibration</b>	pH max. 5 points, 8 pre-defined buffers for pH, 13 pre-defined standards for cond. or 1 user defined buffer/standard
<b>Temperature compensation (Conductivity)</b>	Linear, non-linear, off, pure water, reference temperature 20/ 25°C
<b>Cell constant</b>	Determined via calibration or entered manually
<b>System</b>	Date/ Time, PIN-protection, 12 languages
<b>Data storage</b>	2000 Measurements
<b>Data export</b>	USB-Stick, Printer, PC (EasyDirect pH), all selectable
<b>Measurement limits</b>	User-definable with warning message
<b>ID entry</b>	User ID, Sample ID, Sensor ID and Sensor Serial Number

### Description and order information for SevenCompact™ Duo pH/Conductivity meter S213

Order info	Description and sensors	Order no.
S213-Meter	Includes instrument, electrode holder, protective cover, operating instructions, user manual, declaration of conformity, and test certificate	30339958
S213-Standard kit	As 213-Meter, but also with InLab® Expert Pro-ISM pH sensor and InLab® 731 conductivity sensor, guide to pH measurement and guide to conductivity measurement, 2 buffer sachets for pH 4.01, 7.00, 9.21 and 10.00 and 2 standard sachets for 1433 uS/cm and 12.88 mS/cm.	30339959
S213-Water kit	As 213-STD but with InLab® Pure Pro-ISM instead of Expert Pro-ISM for pH and InLab® 741-ISM instead of InLab® 731-ISM for conductivity.	30339980

### Ready for the future - connect analog and digital sensors



The SevenCompact™ S213 supports both, analog and digital pH and conductivity sensors. Profit from the complete selection of METTLER TOLEDO sensors, now and in the future.



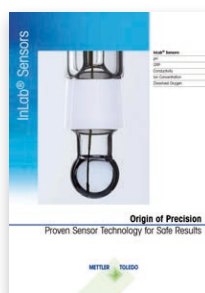
# METTLER TOLEDO and Seven

## Extra Value for Everyday Lab-Work...

### ...with Corresponding Sensors

METTLER TOLEDO combines 60 years of experience of INGOLD in the production of electrochemical sensors with the innovative electronics of the Seven series.

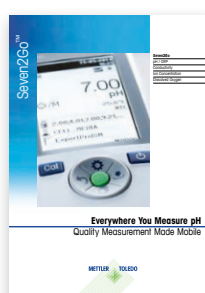
The complete METTLER TOLEDO Sensor portfolio is documented in a separate brochure with the order number 30264253.



### ...and for Use in the Field

The METTLER TOLEDO Seven range provides models for use in the lab as well as portable models for use in the field and in factories.

The Seven portables are documented in separate brochures: Seven2Go™ : 30212801



### ...with Buffers and Solutions

Learn more about our portfolio of certified buffers and solutions:

► [www.mt.com/buffersandmore](http://www.mt.com/buffersandmore)



[www.mt.com/SevenCompact](http://www.mt.com/SevenCompact)

For more information

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Subject to technical changes  
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Marketing pH Lab / MarCom Analytical  
Global MarCom 1957 MA / RT



**Quality certificate.** Development, production and testing according to ISO 9001.



**Environmental management system** according to ISO 14001.



**"European conformity"**. The CE conformity mark provides you with the assurance that our products comply with the EU directives.