SevenExcellence™

SevenExcellence™

pH, ISFET

Conductivity

ORP/Redox

Ion Concentration

Dissolved Oxygen

Excel in the Lab with SevenExcellence™

Unmatched pH Performance

METTLER TOLEDO

Improved Lab Work from the Start
Intuitive and Clear

The operation of SevenExcellence™ is so intuitive that it can be immediately deployed without requiring long periods of user familiarization. Starting an analysis, changing the settings and accessing the results is easily achieved thanks to the cleverly-devised touch screen menu operation.

The large clear color display and the state-of-the-art touch screen operation make working with this instrument particularly enjoyable. The instrument's operation has been designed to support your workflow in the lab. The instrument speaks your language, making the selection of the right menu settings intuitive.

All parameters or the essentials

The instrument gives you the choice! By a single keypress you can switch between two different views with varying degrees of information. In the uFocus™ view, you will not be distracted by information that is of less importance.

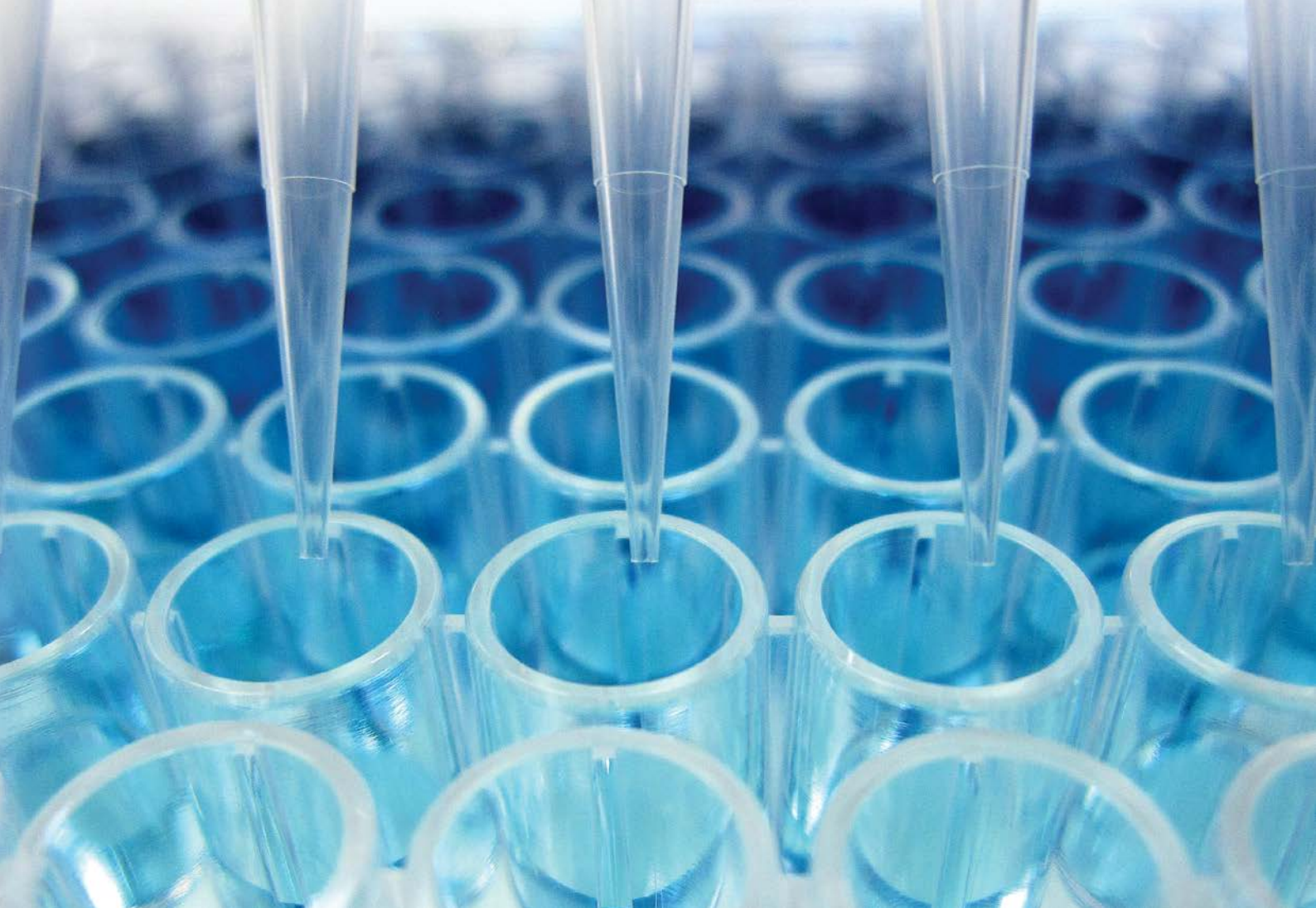### Intuitive touch screen operation

The capacitive 7 inch touch screen with clear buttons and an intuitive menu structure makes the instrument's operation fast and easy. The menus exist in 10 languages and do not contain a single cryptic expression!

OneClick™ methods – quick and revolutionary

Start your own method, which is a sequence of analyses steps, with a single click. Using methods makes sure that your particular analysis is always performed with identical settings.

Perfect ergonomics and high productivity with uPlace™

uPlace™: the electrode arm with perfect vertical movement can be operated using one hand only. This allows for faster measurements and poses less risk of the sample vessel tipping over and damaging the sensor!

Direct measurements – tried and trusted

This instrument encompasses a second possibility to start a measurement or calibration by pressing READ or CAL. Although more flexible, performing direct measurements in a row with varying parameters requires a change of settings before each sample.

Flexibility in all Respects
Versatile and Manifold

SevenExcellence™ offers flexibility on all levels, ranging from the number of measurement parameters to the choice of a vast collection of peripheral devices. The instrument's interfaces allow you to connect peripherals simultaneously, supporting your workflow in the best possible way.

Through methods and direct measurement, the instrument provides two completely different types of analyses and supporting the workflow of users with different preferences and needs. Methods are especially suitable for analyses that require strictly defined parameters, such as in quality assurance. Direct measurements on the other hand are useful for R&D purposes as the parameters for each measurement can be changed easily.

Modularity – expand at any time

SevenExcellence fits three modules in any composition and order. It offers the highest possible flexibility as you can expand the instrument at any time, adding new measurement parameters.

Connectivity and peripheral options

SevenExcellence has USB, Ethernet and RS232 interfaces, allowing the connection of a barcode reader, Rondolino sample changer, USB stick, network and METTLER TOLEDO printers and a PC with LabX® direct software.

Flexible and personalized buffer choices

Choose from our large collection of pre-defined calibration buffers and standards, or create your own with only a few clicks. Our Pick-and-Mix™ feature allows you to conveniently combine pH buffers from different buffer groups.

The discovery of the protective coating technique has increased the lifetime of products, because it protects the core material from exposure to outside elements. The correct pH value of the final product helps maximize the protective effect of the coating.

Free choice with the number of parameters

SevenExcellence allows for measurements of 1, 2 or 3 parameters simultaneously, either in the same or different samples. With multi-channel measurements the temperature signal from one module can be used for all others to ensure identical temperature readings!

Useful magnetic stirrer

The optional uMix™ magnetic stirrer from METTLER TOLEDO provides an extra degree of flexibility for methods. Stirring can be setup individually for measurement or waiting steps in your method and the stir speed adjusted to reflect the sample's vessel size and viscosity.

Extensive Security Functions
Innovative and Reliable

SevenExcellence™ comes with security functions that support your workflow during all phases of the calibration, measurement data collection and archiving processes. Its ingenious package makes the instrument suitable for routine tasks as well as professional measurements under stringent GLP conditions.

The instrument's focus on workflow is also reflected in its security package. Mistakes are minimized to an absolute minimum by using methods, through the professional user management and the sophisticated calibration support. Archiving results can be done automatically by creating a hardcopy on a METTLER TOLEDO or network printer and/or transfer to LabX® direct PC software.

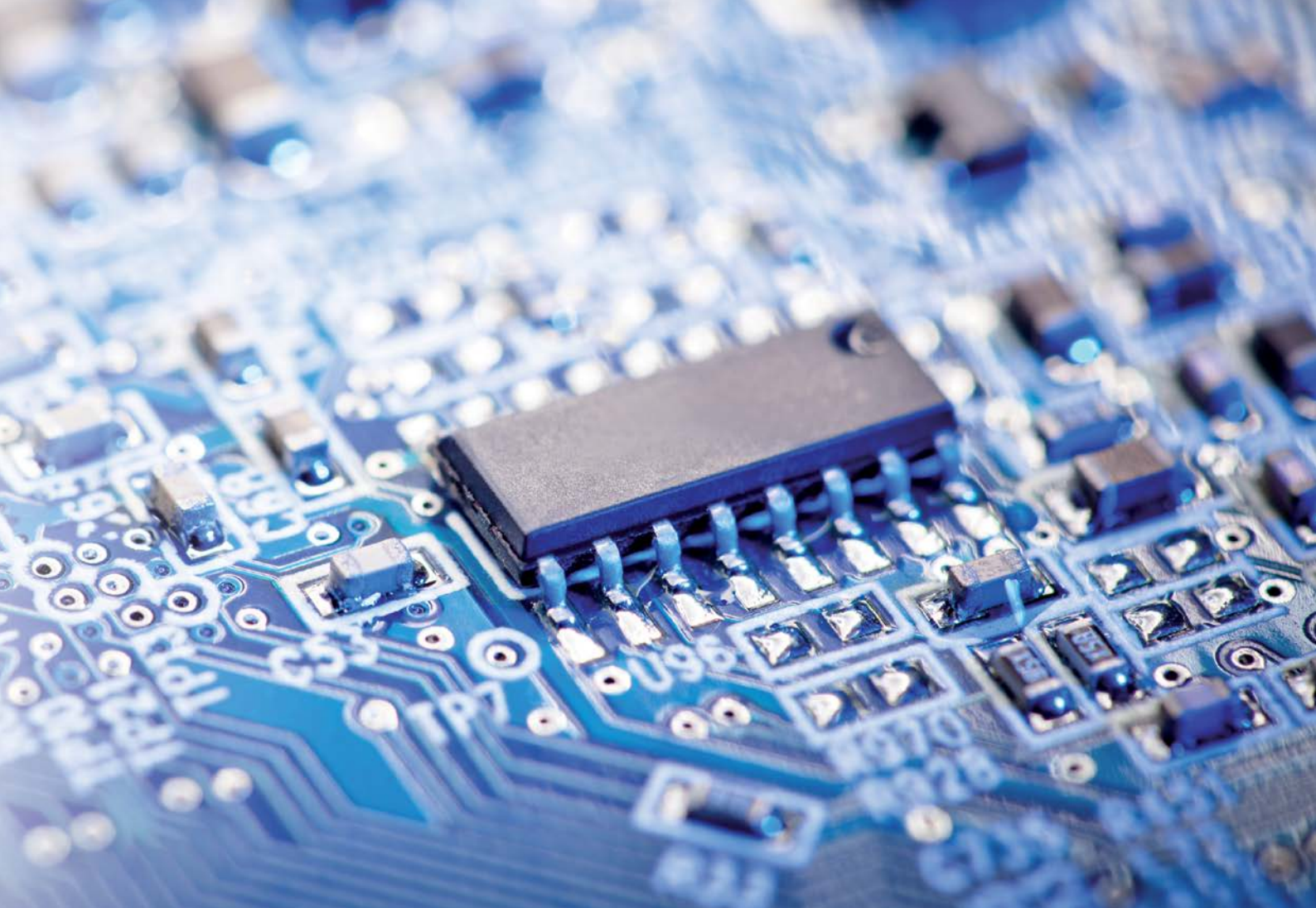| Security via methods	Intelligent Sensor Management	Professional calibration makes calibrations so easy
Methods provide a high degree of security ensuring that the analyses are always performed with identical settings and parameters. Behind method modification are user management rights that can be further restricted so that changes are only allowed by the method's creator.	ISM® sensors are automatically identified by the instrument, preventing the use of the wrong sensor ID by mistake. Furthermore, calibration data is stored on the sensor and upon connection it is automatically transferred to the instrument for further use.	The instrument provides calibration support. Methods with a fixed calibration sequence, automatic evaluation of the calibration results with optional rejection and monitoring of the sensor's age and calibration interval are all available. Automatic calibration with the Rondolino sample changer is also possible!

The invention and subsequent rapid development of electronics has enhanced flexibility and performance in all areas of daily life. To ensure the quality of the ultra-pure water utilized during the production of micro-electronic chips, measuring conductivity is vital.

A wealth of GLP support – leave nothing to coincidence

The instrument comes with a package of GLP support functions, such as PIN protection, GLP printout format with all GLP relevant information and monitoring of measurement limits. Results in memory and printout are marked accordingly if they are outside the predefined limits.

Radio controlled clock – no doubt about date and time

The instrument has an integrated radio controlled clock for extra security. When enabled in a laboratory environment and geographic area with sufficient signal strength, you can rest assured that the instrument always displays the correct date and time.

Supporting Compliance Requirements
Elaborate and Tailored

This instrument has been designed to help you meet the most stringent compliance requirements. SevenExcellence™ offers the ideal combination of innovative properties integrated within the instrument, appropriate documentation and services.

METTLER TOLEDO also offers professional installation, qualification and calibration services. These services do not only guarantee accurate and precise measurements but also leave your mind worry-free when it comes to possible compliance issues during quality audits.

Sophisticated user management

SevenExcellence has an ingenious user management with four levels from operator to administrator, each with progressively more rights. This allows the assignment of rights to a user that match his experience and authorization level. The risk of unintentional or unauthorized changes of settings and deletion of results is eliminated!

Radio-controlled-clock for peace of mind

When enabling the radio-controlled-clock you have absolute certainty that the displayed date and time is correct. When the radioclock is used the result in the memory and printout is marked accordingly. In case the signal strength deteriorates the instrument then notifies you.

Fingerprint reader for secure access

In addition to typing a password, the instrument also supports the LogStraight™ external fingerprint reader. This not only offers a convenient login solution, but also provides an extra degree of security!

Comprehensive services

Professionally executed installation and qualification as well as regularly performed maintenance and calibration ensure error- and carefree instrument operation. Moreover, our qualification and calibration services support you in fulfilling regulatory compliance and provide you with essential documentation required during quality audits.

Service Solutions

Service products and solutions constitute sustainable contribution to cost savings and satisfying regulatory demands.

Installation and Qualification
METTLER TOLEDO provides installation and qualification services for all types of analytical instrumentation including meters. Standardized installation procedures as well as instrument-specific qualification consisting of IQ/OQ and corresponding Equipment Qualification document (EQPac) are essential for efficient and regulatory compliant instrument operation.
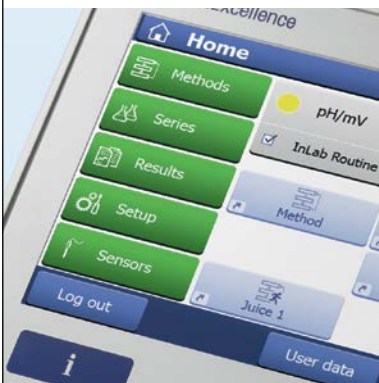
Maintenance and Calibration
Annual preventive maintenance, and calibration services ensure a faultless instrument operation, saving costs on unexpected repair and/or verification activities. Instrument calibration with the traceable tools ensures reliability of the generated results and regulatory compliance.

Efficient Workflow Support
Contemporary and Convenient

SevenExcellence™ has been designed with the objective of optimizing the workflow and making work in the laboratory more efficient. Just one click is needed to start a sample or a series of measurements or an analysis series with an optional autosampler. Once setup, data archiving is a standard procedure that will take place automatically following each analysis.

With SevenExcellence the complete cycle from data entry to data archiving is kept as simple as possible. On its own, the instrument offers great functionality, but increased efficiency and workflow optimization can be achieved by connecting peripherals.

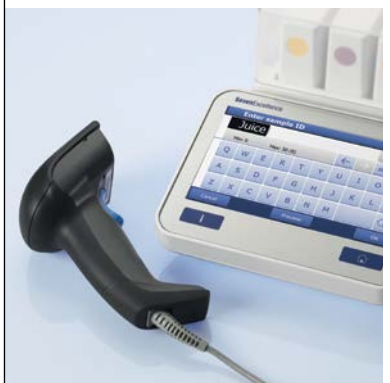| **One Click™ methods – starting analyses quickly**	**Series – consecutive samples with statistics**	**Fast and convenient data entry**

By a single click on a shortcut you can start a series or method. If started when running, the next analysis will be queued in the tasklist and starts automatically upon completion of the previous task.

With Series it is possible to run several samples with the same method one after the other. Not only does this increase the efficiency of the analysis, but also automatically generates statistical data such as mean value and standard deviation across the samples.

The instrument's touch screen operation makes the entry of text, e.g. sample ID's, possible in a quick and convenient way. To even further increase efficiency, you can use a USB barcode reader.

In liquid chromatography reliable results are only given if the pH value of the mobile phase lies within a defined range. To guarantee a seamless process when preparing the eluent, a quick and precise pH measurement is key.

Automatic data transfer with LabX® direct

The LabX direct pH PC software allows for easy and efficient export of results during analysis. The transfer settings for this software need to be activated only once in the instrument and will work automatically with plug-and-play.

Export of results to a USB stick

Users who wish to document results have an alternative to printing the data on a METTLER TOLEDO- or network-printer, as the instrument also supports exporting results in pdf format to a memory stick. This is especially interesting for a paperless laboratory.

SevenExcellence™ pH/mV
Professional and Flexible

The SevenExcellence™ pH/mV meter redefines flexibility and also offers various measurement parameters in one meter. It not only measures pH and ORP with classical sensors, but also supports pH measurement with ISFET technology.

Flexibility is also reflected through the numerous measurement, calibration and endpoint possibilities. The measurement endpoints after a pre-defined interval when using the timed endpoint setting and only after user interaction when using the manual setting. It is also possible to endpoint the measurement automatically according to pre-defined or user-defined endpoint criteria.

Professional pH calibration	Methods for secure and efficient calibrations	Sensor test
Choose from one of eight pre-defined calibration buffers groups or easily create your own. With the Pick-and-Mix™ feature you can conveniently combine pH buffers from different groups. After calibration the sensor icon shows you the quality of the calibration at a glance.	Using methods is a secure and efficient way of calibrating a pH sensor. Once a method is created, each calibration will use identical settings. Limits for offset and slope can be monitored to avoid a poor calibration from being stored.	SevenExcellence offers the possibility to check the performance of a pH sensor. The special method type sensor test guides the user through the individual steps, checking various measurement characteristics of a sensor, such as drift and repeatability.

Description and order information for SevenExcellence™ pH/mV

	Measuring range	Resolution	Accuracy
pH	−2.000 … 20.000	0.001 / 0.01 / 0.1	± 0.002
mV	−2000.0 … 2000.0	0.1 / 1	± 0.1
ISFET pH	0.000 … 14.000	0.001 / 0.01 / 0.1	± 0.05
Temperature	−30.0 … 130.0 °C	0.1 °C	± 0.1 °C

Calibration	Max. 5 points, 8 pre-defined and 20 user-defined buffer groups
Methods	17 pre-defined and 60 user defined methods
System	Date/time, PIN-protection, user management, 10 languages
Data storage / Data export	At least 20 000 data points, 250 analyses / USB-Stick, LabX® direct PC software

Order info	Description and sensors	Order no.
S400-Basic (instrument)	Includes instrument, pH/mV expansion unit, 2 blank expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.	30046240
S400-Kit (kit)	As S400-Basic, 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.	30046241
S400-Bio (kit)	As S400-Kit but with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM.	30046242
S400-ISFET (kit)	As S400-Kit but with InLab® 490 instead of InLab® Expert Pro-ISM.	30046243
S400-Micro (kit)	As S400-Kit but with InLab® Ultra-Micro instead of InLab® Expert Pro-ISM.	30092982
S400-uMix (kit)	As S400-Kit, also including magnetic stirrer uMix™.	30092983

Triple channel instrument with pH/Ion, DO/BOD and conductivity expansion units

S975-uMix (kit)	Includes instrument, pH/Ion, DO/BOD and conductivity expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate. Also includes the uMix™ magnetic stirrer. Kit includes the following sensors: InLab® Expert Pro-ISM, InLab® 731-ISM and InLab® OptiOx.	30092989

SevenExcellence™ Conductivity
Professional and Contemporary

The SevenExcellence™ Conductivity meter is a flexible and modern meter that is suitable for professional and routine measurements alike. In addition to conductivity it also measures various other parameters such as resistivity, salinity, total dissolved solids and conductivity ash.

The instrument supports your workflow, making conductivity measurements obstacle-free. For special applications such as USP/EP and conductivity ash it guides you through the measurement steps and notifies you when a measurement is out of range.

Methods – a perfect match for conductivity

In addition to being more secure, more reproducible due to identical settings and more convenient, methods also enable you to run special applications for conductivity. These include USP/EP measurement of pure water with limits monitoring and Conductivity Ash measurements according to two ICUMSA regulations.

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 flow through cell now provides the perfect solution.

Temperature compensation for pure water

For pure water, SevenExcellence offers a special temperature compensation mode to increase the reliability of your readings. For USP/EP measurements the temperature compensation must be disabled to comply with the regulations. These settings are automatically applied when using the pre-defined USP/EP method.

Description and order information for SevenExcellence™ Conductivity

	Measuring range	Resolution	Accuracy
Conductivity*	0.001 µS/cm … 2000 mS/cm	0.001 … 1	± 0.5%
Temperature**	−30.0 … 130.0 °C	0.1 °C	± 0.1 °C

Calibration	13 pre-defined and 20 user-defined standards
Temperature compensation	Linear, non-linear, off, pure-water; reference temperature 20 °C or 25 °C
Methods	17 pre-defined and 60 user defined methods
System	Date/time, PIN-protection, user management, 10 languages
Data storage / Data export	At least 20 000 data points, 250 analyses / USB-Stick, LabX® direct PC software

*Instrument can also measure salinity, resistivity and total dissolved solids / ** Temperature choice between °C and °F

Order info	Description and sensors	Order no.
S700-Basic (instrument)	Includes instrument, conductivity expansion unit, 2 blank expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.	30046244
S700-Kit (kit)	As S700-Basic, but also with InLab® 731-ISM, guide to conductivity measurements and 2 calibration sachets for 1413 µS/cm and 12.88 mS/cm.	30046245
S700-Trace (kit)	As S700-Kit but with InLab® Trace instead of InLab® 731-ISM, with Flow-Cell and without calibration sachets.	30046246

Dual channel instrument with pH/mV and conductivity expansion units (for triple channel see page 17 and 19)

S470-Basic (instrument)	As S700-Basic, but with a pH/mV expansion unit instead of a blank expansion unit.	30046252
S470-Kit (kit)	As S700-Kit, but with but with a pH/mV expansion unit instead of a blank expansion unit. Additionally with InLab® Expert Pro-ISM, guide to pH measurements and 2 buffer sachets for pH 4.01, 7.00, 9.21 and 10.00.	30046253
S470-USP/EP (kit)	As S470-Kit but with InLab® 741-ISM instead of InLab® 731-ISM and InLab® Pure Pro-ISM instead of InLab® Expert Pro-ISM, BNC/RCA-MultiPin™ ISM-cable (1.2 m), and without 1413 µS/cm and 12.88 mS/cm calibration sachets.	30046254

SevenExcellence™ pH/Ion
Professional and Powerful

The SevenExcellence™ pH/Ion meter combines the advantages of a professional pH meter with the flexibility of a powerful ion meter. It can measure pH and ORP as well ion concentration in six different units.
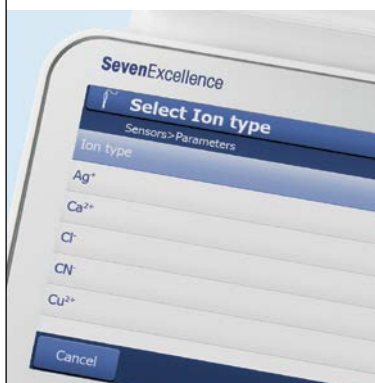
The wealth of measurement possibilities is also reflected in the large collection of compatible pH, ORP and Ion sensors available. You can also connect an external temperature sensor as well as a separate reference electrode if your special applications require it.

Incremental methods

Special methods for the most common incremental ion measurement techniques are included, such as various standard addition/subtraction and sample addition/subtraction methods. This gives you a flexible and contemporary tool kit for professional ion measurements!

Full ion support

The twelve most commonly used ion types are pre-programmed in the instrument making the settings as convenient as possible. For others you can enter the ion charge and molar mass to ensure that all calculations and conversions are done for you.

Ion measurements – flexible sensor choice

With SevenExcellence it is possible to use our perfectION™ series of combined ion selective electrodes as well our collection of half-cells. For measurements with half-cell sensors there is an input for connection of a reference electrode.

Description and order information for SevenExcellence™ pH/Ion

	Measuring range	Resolution	Accuracy
pH	−2.000 … 20.000	0.001 / 0.01 / 0.1	± 0.002
mV*	−2000.0 … 2000.0	0.1 / 1	± 0.1
Ion concentration	0 … 999 999 mg/L, ppm	0.001 … 1	± 0.5%
Temperature**	−30.0 … 130.0 °C	0.1 °C	± 0.1 °C

Calibration	Max. 5 points, 8 pre-defined and 20 user-defined buffer groups
Methods	17 pre-defined and 60 user defined methods
System	Date/time, PIN-protection, user management, 10 languages
Data storage / Data export	At least 20 000 data points, 250 analyses / USB-Stick, LabX® direct PC software

* Instrument can also measure rel. mV / ** Temperature choice between °C and °F

Order info	Description and sensors	Order no.
S500-Basic (instrument)	Includes instrument, pH/ion expansion unit, 2 blank expansion units, uPlace™ electrod holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.	30046248
S500-Kit (kit)	As S500-Basic, 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.	30046249
S500-Bio (kit)	As S500-Kit but with InLab® Routine Pro-ISM cable kit instead of InLab® Expert Pro-ISM.	30046250
S500-F (kit)	As S500-Kit but with PerfectION™ Fluoride instead of InLab® Expert Pro-ISM.	30046251

Triple channel instrument with pH/Ion, pH/mV and conductivity expansion units

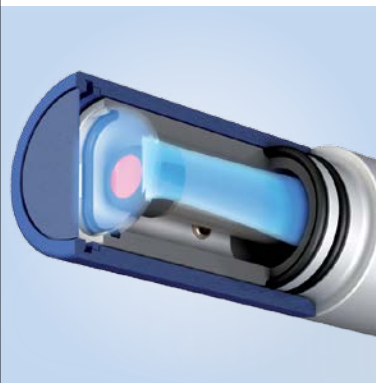|		
S475-Basic (instrument)	Includes instrument, pH/ion expansion unit, pH/mV expansion unit, conductivity expansion unit, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.	30046255

SevenExcellence™ DO/BOD
Professional and Precise

The model S900 offers a bench-top solution with OptiOx™ technology: the optical measurement of dissolved oxygen. Thanks to OptiOx, measuring dissolved oxygen is easier than ever before. For applications where the traditional polarographic measurement is preferred the S600-Kit is recommended.

Optical oxygen measurement is superior to conventional technologies. OptiOx is fast, precise and produces highly reproducible results. Because of the optical measuring principle used, the oxygen is not chemically consumed during the measurement, which makes stirring the sample superfluous. The InLab OptiOx requires no polarization time, meaning you can start your measurement immediately. In addition, the whole measuring system has a high level of stability making calibration rarely necessary.

Extremely easy handling, zero maintenance

The principle of optical measurement requires no membranes or electrolyte solutions. A used cap can be replaced by simply removing it and fitting a new one. A new cap lasts a whole year and the device informs you in good time when the next cap change is due.

Suitable for a wide range of applications

Thanks to the robust design and the customized accessoires, the InLab OptiOx is a true allrounder. Thus, it is ideally equipped for use in the laboratory, e.g. in quality monitoring, or, when fitted with the OptiOx protective guard, in harsh environments.

Biochemical oxygen demand (BOD)

The BOD content of any effluent can be checked very easily. With the special BOD adapter, the sensor is suitable for measuring in all current types of BOD bottles. According to the EPA (Environmental Protection Agency, USA), stirring is not necessary thanks to RDO technology. With the S900-BOD Kit you are ready to start.

Description and order information for SevenExcellence™ DO/BOD

Parameter		InLab® OptiOx – optical	InLab® 605-ISM – polarographic
Dissolved oxygen	Measuring range	0.000 … 50 mg/L (ppm)	0.000 … 99 mg/L (ppm)
	Display resolution	0.001	0.001
	Accuracy	± 0.1 mg/L from 0 … 8 ± 0.2 mg/L from 8 … 20 ± 10% from 20 … 50	± 0.5%
	Units	mg/L, ppm	mg/L, ppm
DO saturation	Measuring range / Resolution	0.0 … 500% / 0.1	0.0 … 600% / 0.1
Pressure	Measuring range	500 … 1100 mbar	500 … 1100 mbar
	Resolution / Accuracy	1 / ± 1	1 / ± 1
General	Calibration points	2	2
	Sensor input	MiniLTW (IP67)	BNC
	Pressure compensation	automatic / manual	automatic / manual

Order info	Description and sensors	Order no.
S900-Basic	Includes instrument, DO/BOD expansion unit, 2 blank expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.	30092984
S900-Kit	As S900-Basic but with InLab® OptiOx, guide to DO measurement and zero oxygen tablets.	30092986
S900-BOD	As S900-Kit, also including BOD adapter.	30092987
S600-Kit	As S900-Kit, but with InLab® 605-ISM instead of InLab® OptiOx.	30092985

Triple channel instrument with pH/mV, conductivity and DO/BOD expansion units

| S479-Kit | Includes instrument, pH/mV, conductivity and DO/BOD expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, LabX® direct pH PC software, declaration of conformity and test certificate.
Included kit sensors: InLab® Expert Pro-ISM, InLab® 731-ISM and InLab® OptiOx. | 30092988 |

Discover the Safest Path to the Top
with Good Electrochemistry Practice™

Various factors can affect your pH, redox, conductivity, dissolved oxygen or ion measurements. Take 5 minutes to localize your risks and get the necessary support:

▶ **www.mt.com/GEP**

www.mt.com/pH

For more information

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

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

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