# Conductivity Meters – The Electrolytical Conductivity

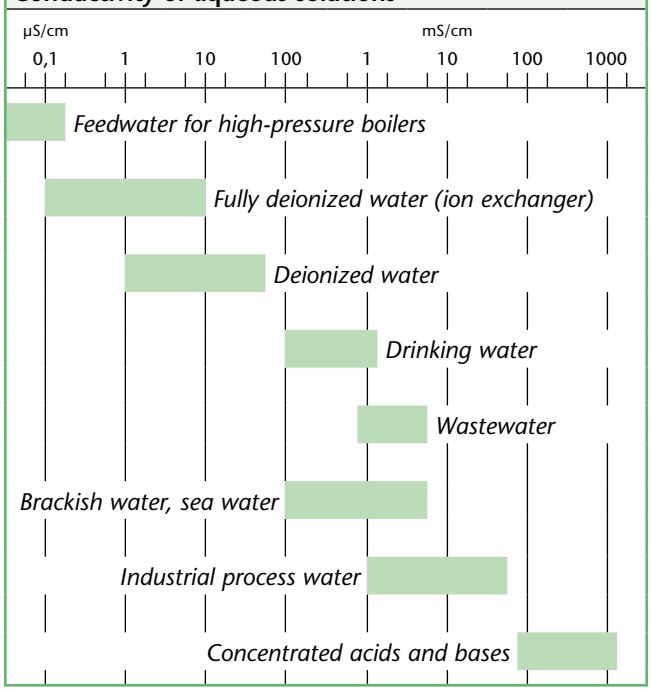
Conductivity is a parameter used to measure the ionic concentration and activity of a solution. The more salt, acid or alkali in a solution, the greater its conductivity. The unit of conductivity is S/m, often also S/cm.

The scale for aqueous solutions begins with pure water at a conductivity of 0.05 µS/cm (77 °F/25°C). Naturally occurring waters such as drinking water or surface water have a conductivity in the range 100 – 1000 µS/cm. At the upper end of the chart some acids and alcalines can be found.

Conductivity measurements are used for applications such as in the production of ultrapure water or determining the salinity of sea water.

Conductivity is measured by making a measurement of the electrical resistance. The simplest kind of measuring cell used consists of two similar electrodes. An alternating voltage applied to one of the electrodes causes the ions in the solution to migrate towards the electrodes. The more ions in the solution, the greater the current which flows between the electrodes. The instrument measures the current and uses Ohm's law to calculate first the conductance of the solution and then – by taken the cell data into account – the conductivity.

**Conductivity of aqueous solutions**






For information visit **www.WTW.com** for a customer care center near you or inside US: call **WTW 800 645 5999**.

## Application Range Conductivity Measurements

● recommended by WTW ❍ conditionally applicable – not recommended

| Application Range | inoLab® | | | | ProfiLine Cond 1970i | VARIO® $C_{ond}$ | Handheld meters | | |
|---|---|---|---|---|---|---|---|---|---|
| | Cond 7200 | Cond 7300 | Cond 7400 | pH/ION/ Cond 7500 | | | Cond 3150i | Cond 3300i | Cond 3400i |
| Routine measurement | ● | – | – | – | – | ● | ● | ● | – |
| Routine measurement with documentation | – | ● | ● | ● | ● | – | – | – | ● |
| AQA with documentation | – | ● | ● | ● | ● | – | – | – | ● |
| R&D high precision | – | ● | ● | ● | ● | – | – | ● | ● |
| Control measurements | – | ● | ● | ● | ● | ● | – | ● | ● |
| LIMS connection | – | ● | ● | ● | ● | – | – | – | ❍ |
| Quality assurance | – | ● | ● | ● | ● | – | – | ● | ● |
| Training | ● | ● | ● | ● | ❍ | ● | ● | ● | ❍ |
| Service | – | – | – | – | ● | ● | ● | ● | ● |
| Laboratory measurements | ● | ● | ● | ● | ● | ● | – | – | ❍ |
| Field measurements | – | – | – | – | ● | – | ● | ● | ● |
| Depth measurements | – | – | – | – | ● | – | – | – | – |
| External control/ PC connection/ PC control | – | ●<br>●<br>– | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>– | – | – | – | ●<br>●<br>– |
| Salinity/TDS measurement | ● | ● | ● | ● | ● | ● | only SAL | ● | ● |
| Specific resistance | ● | ● | ● | ● | – | – | ● | ● | ● |
| Suitable for Pharmacopoeia | ● | ● | ● | ● | ● | – | – | ● | ● |
| Measurement of ultrapure water | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Trace conductivity | ● | ● | ● | ● | ● | – | – | ● | ● |
| *see page* | *38* | *38* | *39* | *52* | *40* | *43* | *41* | *42* | *42* |

*For conductivity measurements with multi-parameter instruments see page 48*

| Application Range Sensors | TetraCon® 325 | TetraCon® 325/S | LR 325/01 | LR325/001 | TetraCon® DU/T | TA 197 LF |
|---|---|---|---|---|---|---|
| Ultrapure water (Pharmacopoeia) | – | – | ● | ● | – | – |
| Chemical water | ❍ | – | – | – | ● | – |
| Ground water | ● | – | ● | – | – | ● |
| Surface water | ● | – | – | – | – | – |
| Depth measurements (barrages) | ❍ | – | – | – | – | ● |
| Laboratory measurements | ● | – | ● | ● | – | – |
| Food industry (juices) | ● | – | – | – | ❍ | – |
| Swimming pools | ● | – | – | – | ❍ | – |
| Pharmaceutics | ● | – | ● | ❍ | ❍ | – |
| Cosmetics/Detergents | ❍ | ● | – | – | – | – |
| Semi-conductor industry | – | – | ● | ● | – | – |
| Paint/Varnish (water-soluble) | ● | ❍ | – | – | – | – |
| Electroplating | ● | – | – | – | – | – |
| *applicable instruments:* | *all/except VARIO®* | *all/except VARIO® /3150i* | *all/except VARIO®* | *all/except VARIO® /3150i* | *all/except VARIO® /3150i* | *Cond 1970i* |

# Laboratory Conductivity Meters

Conductivity is an important parameter that is often used for monitoring water quality. In the laboratory sector this -parameter has also increased in importance since the introduction of pharmacopoeia standards for pharmaceutical water. WTW inoLab® Cond laboratory instruments meet all the requirements for measurements according to this standard.

## inoLab® Cond 7200

- Application specific displays
- Touch-sensitive keypad with pressure point and tactile response
- Battery or line power operation

**Simple and reliable**

Routine laboratory conductivity meter with large multi-functional display, parallel temperature display and automatic temperature compensation. 68 °F or 77 °F (20 °C or 25 °C) can be set as reference temperature. Both TDS and salinity measurements are possible as well as conductivity and temperature. The ability to set different cell constants means that other special conductivity cells can be connected as well as the TetraCon® 325 4-electrode conductivity cell and LR 325/01 ultrapure water conductivity cell.

## inoLab® Cond 7300

- Simplified operator convenience
- GLP documentation via PC or optional built-in printer
- Meets all the requirements acc. to pharmacopoeia

**Compact and precise**

Standard laboratory conductivity meter with large multifunctional display, parallel temperature display and automatic temperature compensation. The datalogging capability and the real-time clock allows for all GLP functions. Data output can take place via the optional built-in printer on thermal paper accepted for use for official documents or via the built-in RS 232 digital interface via a PC or external printer.

68 °F or 77 °F (20 °C or 25 °C) can be set as reference temperature. Both TDS and salinity measurements are possible as well as conductivity and temperature. The ability to set different cell constants means that other special conductivity cells can be connected as well as the TetraCon® 325 4-electrode conductivity cell and LR 325/01 ultrapure water conductivity cell.



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## inoLab® Cond 7400

inoLab innovations that make sense

- Meets all the requirements acc. to pharmacopoeia
- TDS and salinity measurement
- External control with MultiLab® pilot via PC

**with Terminal or PC software: flexible and powerful**
High-performance laboratory conductivity meter with graphic display and digital recorder function, parallel display of temperature and automatic temperature compensation. A built-in datalogger and a real-time clock allows for all QA conforming functions. The optional built-in printer allows data printout on thermal paper accepted for use in official documents. 68 °F or 77 °F (20 °C or 25 °C) can be set as reference temperature. Both TDS and salinity measurements are possible as well as conductivity and temperature. The ability to set different cell constants means that other special conductivity cells can be connected as well as the TetraCon® 325 4-electrode conductivity cell and LR 325/01 ultrapure water conductivity cell.

A PC keyboard interface allows an external keyboard or a barcode reader to be connected.

**additional features**
- Built-in digital recorder
- Real-Time Graphic Display
- User Selectable Languages
- Multi-Level GLP Functions (password-protected operator levels)
- Limit input with acoustic alarm
- Meets all the requirements acc. to pharmacopoeia
- Free-of-charge software downloads for MultiLab® pilot or terminal

## Technical Data

| Model | | Cond 7200 and Cond 7300 | Cond 7400 |
|---|---|---|---|
| Range/ Resolution | Conductivity | 0.0 µS/cm ... 500 mS/cm<br>in 5 measuring ranges or AutoRange additionally for<br>K = 0.1 $cm^{-1}$: 0.00 µS/cm ... 19.99 µS/cm<br>K = 0.01 $cm^{-1}$: 0.000 µS/cm ... 1.999 µS/cm | 0.0 µS/cm ... 2000 mS/cm<br>in 5 measuring ranges or AutoRange additionally for<br>K = 0.1 $cm^{-1}$: 0.00 µS/cm ... 20.00 µS/cm<br>K = 0.01 $cm^{-1}$: 0.000 µS/cm ... 2.000 µS/cm |
| | Temperature | 23 ... 211.82 °F (-5.0 ... +99.9 °C) | 23 ... 221 °F (-5.0 ... +105.0 °C) |
| | Salinity | 0.0 ... 70.0 | 0.0 ... 70.0 |
| | TDS | 0 ... 1999 mg/l | 0 ... 2000 mg/l |
| | Resistivity | 0.000 ... 1999 MΩcm | 0.000 ... 2000 MΩcm |
| Accuracy (±1 digit) | Conductivity | ± 0.5% of value | |
| | Temperature | ± 0.1 K | |
| Reference temperature | | 68 ... 77 °F (20 °C or 25 °C) selectable | |
| Cell constants | | 0.475 $cm^{-1}$, 0.1 $cm^{-1}$ and 0.01 $cm^{-1}$ fixed;<br>freely selectable 0.25 ... 2.5 $cm^{-1}$ and 0.09 ... 0.11 $cm^{-1}$ | 0.475 $cm^{-1}$, 0.1 $cm^{-1}$ and 0.01 $cm^{-1}$ fixed;<br>freely selectable 0.25 ... 2.5 $cm^{-1}$ |
| Temperature compensation | | Automatic or switched off | |
| Temperature coefficient | | • Non-linear function for natural water to EN 27 888<br>• Linear compensation from 0.001 ... 2.999%/K<br>• No compensation | |
| Calibration | | With 0.01 mol KCl | |

## Ordering Information

| inoLab® Laboratory Conductivity Meter SETs – with wide-range power supply 100-240 VAC (50/60 Hz) included | | Order No. |
|---|---|---|
| inoLab® Cond 7200 | Simple and reliable conductivity meter, including TetraCon® 325 and accessories | 1C10-0111 |
| inoLab® Cond 7300 | Compact precision conductivity meter, including TetraCon® 325, passive multifunction box and accessories | 1C20-0111 |
| inoLab® Cond 7400P | The intelligent conductivity measuring station with additional built-in printer, TetraCon® 325 and accessories | 1C31-0111 |
| Passive multifunction box | (not included in Cond 7200 Set) | 109 810 |

IP 43 CE cETLus 3 Year Warranty

# Portable Conductivity Meters

The WTW conductivity meter ProfiLine Cond 1970i supplied with integrated powerful NiMH rechargeable batteries is both hoseproof (IP 66) and submersible (IP 67). Along with an 800 data file datalogger, a real time clock and recorder output, the ProfiLine Cond 1970i conforms to all GLP requirements.

## ProfiLine Cond 1970i

- Highly precise, indestructible, waterproof
- Large, silicone keys for field use
- Large, easy to read display
- Measurement down to depths of 330 ft (100 m)

They are equipped with a carrying/support handle and carrying strap as standard.

The Cond 1970i is suitable for depth measurements down to 330 ft (100 m) in combination with the TA 197 LF depth armature.

## TA 197 LF

Conductivity depth armature TA 197 LF with built-in temperature sensor, up to 100 m cable with waterproof plug (IP 67), pressure-resistant steel armoring (material VA 1.4571) with screw-off protective hood, pressure-resistant to max. 10 bar, fits into small boreholes (2" dia.).

## Technical Data

| Model | | ProfiLine Cond 1970i |
|---|---|---|
| Range/ Resolution | Conductivity | 0.0 µS/cm … 500 mS/cm in 5 measuring ranges or AutoRange,,<br>0.00 … 19.99 µS/cm for K=0.1 $cm^{-1}$, 0.000 … 1.999 µS/cm for K=0.01 cm-1 |
| | Temp. | 23 … 221 °F (-5.0 °C … +105.0 °C) |
| | Salinity | 0.0 … 70.0 |
| | TDS | 0 … 1999 mg/l |
| Accuracy (±1 digit) | Conductivity | ±0.5% of value |
| | Temp. | ± 0.1 K |
| Reference temperature | | 68 … 77 °F (20 °C or 25 °C), selectable |
| Cell constants | | Calibratable 0.450...0.500 and 0.800...1.200 $cm^{-1}$, fixed: 0.01 $cm^{-1}$<br>freely adjustable 0.25 … 2.5 $cm^{-1}$ and 0.09 … 0.11 $cm^{-1}$ |
| Temperature compensation | | Automatic, can be switched off |
| Temperature coefficient | | • Non-linear function for natural waters to EN 27 888 coefficient and ultrapure water function<br>• Linear compensation from 0.01 ... 2.99%/K<br>• No compensation |

## Ordering Information

| Portable Conductivity Meter – with wide-range power supply 100-240 VAC (50/60 Hz) included | | Order No. |
|---|---|---|
| ProfiLine Cond 1970i | Robust, waterproof, submersible conductivity meter | 3C30-010 |

IP 66 IP 67 CE cETLus 3 Year Warranty

*Depth armatures down to 330 ft (100 m) see brochure "Product Details"*



For information visit **www.WTW.com** for a customer care center near you or inside US: call **WTW 800 645 5999**.

# Handheld Conductivity Meters

WTW handheld conductivity meters are available in three versions: **Cond 3150i, Cond 3300i, Cond 3400i.**

Useable anywhere, WTW handheld instruments are robust, easy to operate and provide assured accurate readings. From the monitoring of on-line process systems to field studies, WTW's handheld Conductivity meters meet all your measurement needs.

## Cond 3150i

- Robust, shockproof, waterproof
- Up to 1500 hours of continuous operation
- 4-electrode principle allows a wide range of applications

The simple conductivity meter for meeting higher demands. With only 5 keys for error-free measurement with parallel temperature measurement, automatic temperature compensation, 4-electrode measuring technology.

*Complete as SET*

## Cond 3300i, 3400i

- Robust, shockproof, waterproof
- Up to 1500 hours of continuous operation
- 4-electrode principle allows a wide range of applications

*Cond 3400i in field armoring FM 325 (optional)*

*Cond 3300i in protective armoring SM 325 (optional)*

**Cond 3300i**

Robust and waterproof handheld conductivity meter for battery operation; with parallel temperature display, integrated datalogger, GLP supporting functions, automatic and manual temperature compensation with linear temperature function and non-linear function for ultrapure water and natural waters according to EN 27 888. The temperature compensation can be switched off; either 68 °F or 77 °F (20 °C or 25 °C) can be selected as the reference temperature.

**Cond 3400i**

As Cond 3300i, but with additional analog and digital RS 232 output and an optional power supply is available.

## Technical Data

| Model | | Cond 3150i | Cond 3300i and Cond 3400i |
|---|---|---|---|
| Range/ Resolution | Conductivity | 0.0 µS/cm … 500 mS/cm in 5 measuring ranges or AutoRange 0.00 µS/cm ... 19.99 µS/cm (for K=0.1 $cm^{-1}$) | 0.0 µS/cm … 500 mS/cm in 5 measuring ranges or AutoRange 0.00 µS/cm ... 19.99 µS/cm (for K=0.1 $cm^{-1}$) 0.000 µS/cm ... 1.999 µS/cm (for K=0.01 cm-1) |
| | Temp. | -5.0 °C … +105.0 °C | -5.0 °C … +105.0 °C |
| | Salinity | 0.0 … 70.0 | 0.0 … 70.0 |
| | TDS | | 0 … 1999 mg/l |
| | Resistivity | 0.000 ... 1999 MΩcm | |
| Accuracy (±1 digit) | Conductivity | ±0.5% of value | |
| | Temp. | ±0.1 K | |
| Reference temp. | | 68 … 77 °F (20 °C or 25 °C), selectable | |
| Cell constant | | Fixed 0.475 $cm^{-1}$, 0.1 $cm^{-1}$ | 0.475 $cm^{-1}$, 0.1 $cm^{-1}$ and 0.01 $cm^{-1}$ fixed and 0.25 ... 2.5 $cm^{-1}$ and 0.09 ... 0.11 $cm^{-1}$ adjustable |
| Temperature comp. | | Automatic, can be switched off | |
| Temperature coefficient | | • Non-linear function for natural waters (nLF) to EN 27 888 and ultrapure water function<br>• No compensation | • Non-linear function for natural waters (nLF) to EN 27 888 and ultrapure water function<br>• Linear compensation from 0.01 ... 2.99 %/K<br>• No compensation |

## Ordering Information

| Handheld Conductivity Meter SETs | | Order No. |
|---|---|---|
| Cond 3150i | Robust and waterproof battery-operated handheld conductivity meter, including TetraCon® 325, professional case and accessories | 2C10-0011 |
| Cond 3300i | Robust and waterproof battery-operated handheld conductivity meter with datalogger, including TetraCon® 325, professional case and accessories | 2C20-0011 |
| Cond 3400i | Robust and waterproof battery-operated handheld conductivity meter with datalogger and serial interface, including TetraCon® 325, professional case and accessories | 2C30-0011 |
| Universal wide-range power supply | 100 V - 240 V, 50-60 Hz; for 3400i series | 902 867 |

IP 66 IP 67 CE cETLus 3 Year Warranty

*Other measuring cells in SET see brochure "Product Details"*



For information visit **www.WTW.com** for a customer care center near you or inside US: call **WTW 800 645 5999**.

## VARIO® $C_{ond}$

- Touch screen
- Large operating range
- Plug-in cells – no cables

**Simple measurement at your fingertips – now also available for conductivity measurement!**

VARIO® $C_{ond}$ has a lot to offer – at an excellent price. This economical designed meter is ideal for use in process control monitoring or anywhere a small, accurate meter is needed. The VARIO® is small, light, handy, waterproof and has a robust firm-grip rubber armoring.

**Miniature precision**

The globally renowned measurement cell TetraCon® 325 was specially shortened and modified for the VARIO® $C_{ond}$. With extra ultrapure water cell and flow vessel the VARIO® $C_{ond}$ is uniquely suited for ultrapure water analysis.

Increased precision through the omission of cable connectors – the VARIO® $C_{ond}$ is an appropriate solution for servicing and maintaining water treatment equipment. No matter whether using it for pure water measurement in semi-conductor industry or in cell culture laboratories, the pure water conductivity cell with flow-through vessel always allows a rapid and easy control measurement.

**Long-lasting power.**

VARIO® $C_{ond}$ offers up to 500 hours of continuous operation – with just one standard battery. The low power technology shuts down the device after 10 minutes in standby. Changing the battery is easy and quick.

## Technical Data

| Model | | VARIO® $C_{ond}$ |
|---|---|---|
| Range/ Resolution | [µS/cm] | 0.00 … 19.99 *(when using module LR01 V)* |
| | | 0.0 … 199.9 |
| | | 0 … 1999 |
| | [mS/cm] | 0.00 … 19.99 |
| | | 0.0 … 199.9 |
| | Resistivity [k*cm] | 0.000 … 1.999 |
| | | 0.00 … 19.99 |
| | | 0.0 … 199.9 |
| | | 0 … 1999 |
| | Resistivity [M*cm] | 0.000 … 1.999 |
| | | 0.0 … 199.9 |
| | | 0 … 1999 |
| | SAL | 0.0 … 70.0 *according IOT* |
| | TDS [mg/l] | 0 … 1999 |
| | T [°F/°C] | 41…221/5.0…+105.0 |

## Ordering Information

| VARIO® $C_{ond}$ | | Order No. |
|---|---|---|
| VARIO® $C_{ond}$ Set | VARIO® $C_{ond}$ in the mobile case set, incl. 4-electrode cell and KCl solution 0.01 mol/l | 2X00-001A |
| VARIO® $C_{ond}$ Set | VARIO® $C_{ond}$ in the mobile case set, incl. ultrapure water cell and flow-through vessel | 2X00-001B |

IP 65 CE 3 Year Warranty

*Other accessories see brochure "Product Details"*

# Conductivity Cells

For more than 50 years WTW has been one of the leading manufacturers worldwide of precision conductivity meters and cells. The TetraCon® 4-electrode system is the result of our commitment to quality and sets a new standard for professional conductivity measurements.

## TetraCon®

In comparison with conventional measuring cells with 2 electrodes, the TetraCon® conductivity cell offers numerous technical advantages:

- Highest degree of precision and linearity by optimized cell geometry
- Extremely large measuring range with just one cell
- Long-term cell constant stability with high-quality abrasion-resistant graphite electrodes
- With built-in temperature sensor as standard
- Smallest immersion depth possible
- No measuring errors even with very dirty electrode – contact resistance on the electrode surface is automatically compensated
- No measuring errors from cable influences
- No measuring errors from primary or secondary polarization effects
- No measuring errors due to contact with side walls or base of measuring vessels
- Robust, unbreakable epoxy body

### Selection Guide

| Measuring cell | VARIO® $C_{ond}$ | Cond 3150i/315i | LF 315 | LF 318 | LF 320/323/325 | LF 330/340A | Cond 3300i/3400i/330i/340i | inoLab® Cond, pH/Cond, Multi | LF 537 | LF 538 | LF 539 | LF 3000 | MultiLab® 540 | MultiLab® P4/P5 | MultiLine® P4, Multi 3400i/340i, 1970i/197i | MultiLine® P3 pH/LF, pH/Cond 3400i/340i | Multi 3500i/350i | LF 197 | LF 597 | Cond 1970i/197i |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LTA 1 | | | ② | ② | ② | ② | ② | ② | ● | ● | ② | | | | | ② | ② | | | ② |
| LTA 10 | | | | | | | | | ● | | ● | ● | ② | | | | ② | | | |
| LR 01/T | | | | | | | | | ● | | ● | ● | | ● | | | | | | |
| KLE 1/T | | | | | | | | | ● | | ● | ● | | ● | | | | | | |
| KLE 315 | | | ● | | | | | | | | | | | | | | | | | |
| TetraCon® 96 | | | | | | | | | ● | | ● | ● | | ● | | | | | | |
| TetraCon® 96-1,5 | | | | | | | | | ● | | ● | ● | | ● | | | | | | |
| TetraCon® 325, TetraCon® 325/C | | ● | | ● | ● | ● | ● | ● | | ● | | | ● | | ● | ● | ● | ● | ● | ● |
| TA 197 LF | | | | | | | | | | | | | | | | | | ● | | ● |
| TetraCon® 325/Pt | | | | | | | | | | | | | ● | | | | | | | |
| TetraCon® DU/T | | | | | ⑤ | ⑤ | ⑤ | ⑤ | ④ | ⑤ | ④ | ④ | ⑤ | ④ | | | ⑤ | ⑤ | ⑤ | ⑤ |
| TetraCon® DU/TH | | | | | ⑤ | ⑤ | ⑤ | ⑤ | ④ | ⑤ | ④ | ④ | ⑤ | ④ | | | ⑤ | ⑤ | ⑤ | ⑤ |
| LR 325/01 | | ● | | | ● | ● | ● | ● | | ● | | | ● | | | | ● | ● | ● | ● |
| LR 325/001 | | | | | | ● | ● | ● | | | | | ● | | | | ● | | | ● |
| TetraCon® 325/S | | | | | | ● | ● | ● | | ● | | | ● | | | | ● | ● | ● | ● |
| ConOx | | | | | | | | | | | | | | | | | ● | | | |
| TetraCon® V | ● | | | | | | | | | | | | | | | | | | | |
| LR01 V | ● | | | | | | | | | | | | | | | | | | | |

***Adapter (possible conversion with cell constants) is required:***

② Adapter cable **K/LTA** together with temperature sensor **TFK 325** or **TFK 150**
④ Connection cable **KKDU**
⑤ Connection cable **KKDU 325**



For information visit **www.WTW.com** for a customer care center near you or inside US: call **WTW 800 645 5999**.

## Conductivity Cells

| Application | Standard | | Special | Ultrapure Water | | Trace | Flow-through |
|---|---|---|---|---|---|---|---|
| | TetraCon® 325 | TetraCon® V | TetraCon® 325/S | LR 325/01 | LR 01 V | LR 325/001 | TetraCon® DU/T |
| Order No. | 301 960 | 301 990 | 301 962 | 301 961 | 301 992 | 301 962 | 301 252** |
| Electrode material | Graphite | | Graphite | V4A steel | | V4A steel | Graphite |
| Flow-thru vessel | – | | – | – | | V4A steel | – |
| Shaft material | Epoxy | | Epoxy | V4A steel | | V4A steel | Epoxy |
| Shaft length | 4.72 in (120 mm) | | 4.72 in (120 mm) | 4.72 in (120 mm) | | 4.72 in (120 mm) | 6.10 in (155 mm) |
| Cell constant | K = 0.475 $cm^{-1}$ | | K = 0.491 $cm^{-1}$ | K = 0.1 $cm^{-1}$ | | K = 0.01 $cm^{-1}$ | K = 0.778 $cm^{-1}$ |
| Diameter | 0.60 in (15.3 mm) | | 0.60 in (15.3 mm) | 0.47 in (12 mm) | | 0.79 in (20 mm) | – |
| Cable length | 4.9 ft (1.5 m) | | 4.9 ft (1.5 m) | 4.9 ft (1.5 m) | | 4.9 ft (1.5 m) | 3.3 ft (1 m) (only with KKDU 325) |
| Measuring range | 1 µS/cm ... 2 S/cm* | | 1 µS/cm ... 2 S/cm* | 0,001 µS/cm ... 200 µS/cm | | 0,0001 µS/cm ... 30 µS/cm | 1 µS/cm ... 2 S/cm* |
| Temperature range | 32 ... 212 °F (0 ... 100 °C) | | 32 ... 212 °F (0 ... 100 °C) | 32 ... 212 °F (0 ... 100 °C) | | 32 ... 212 °F (0 ... 100 °C) | 32 ... 140 °F (0 ... 60 °C) |
| Filling volume | – | | – | 17 ml (without sensor) | | ca. 10 ml (without sensor) | 7 ml |
| Min./max. immersion depth | 36/120 mm | 40 mm | 40/120 mm | 30/120 mm | 40 mm | 40/120 mm | – |

***For additional special measuring cells or other cable lengths see brochure "Product Details"***

** Measuring range depends on particular instrument,*
*** Adapter cable KKDU 325 (order no. 301 963), length 3.3 ft (1 m), is necessary for the connection*

# Ultrapure water measuring acc. to pharmacopoeia

## Calibration and testing agents

**Kit for ultrapure water acc. to pharmacopoeia**

This kit contains LR 325/01 Ultrapure water cell, D01/T flow-through vessel made of glass (USP-KIT 1) or stainless steel (USP-KIT 2), NIST traceable 5 µS standard with accuracy ±2% and 6R/SET/LabTesting set

**Calibration standard 100 µS/cm**

Shelf life 2 years,
NIST traceable with accuracy ±3%

**Calibration standard 5 µS/cm**

Shelf life 1 year,
NIST traceable with accuracy ±2%

*Ultrapure water cell LR 325/01 with glass flow-through vessel*

*Conductivity measuring kit ultrapure water measuring acc. to pharmacopoeia, with stainless steel flow-through vessel for pharmaceutical water.*

## Ordering Information Calibration and Testing Agents

| **Kit for measuring the conductivity according to** pharmacopoeia | | **Order No.** |
|---|---|---|
| **USP Kit 1** | Kit for measuring conductivity according to pharmacopoeia, consisting of LR 325/01 Ultrapure water cell, D01/T Glass flow-through vessel, NIST traceable 5 µS standard with accuracy ±2% and 6R/SET/ LabTesting set | 300 569 |
| **USP Kit 2** | As USP Kit 1, but flow-through vessel made of stainless steel instead of D01/T | 300 568 |
| **Calibration agents** | | **Order No.** |
| **KS 100µS** | Calibration standard 100 µS/cm, shelf life 2 years, NIST traceable with accuracy ±3% (300 ml) | 300 578 |
| **KS 5µS** | Calibration standard 5 µS/cm, shelf life 1 year, NIST traceable with accuracy ±2% (300 ml) | 300 580 |
| **E/SET** | Calibration set (6 x 50 ml bottles calibration and control standard, KCl 0.01 mol/l) | 300 572 |



For information visit **www.WTW.com** for a customer care center near you or inside US: call **WTW 800 645 5999**.

## Flow-through vessels

*Trace conductivity cell LR 325/001 with stainless steel flow-through vessel*

*Glass flow-through vessel D01/T with ultrapure water cell LR 01 V*

## Ordering Information Flow-through Vessels

| | | |
|---|---|---|
| **for LTA 1, LTA, LTA 01 and TFK 530** | | **Order No.** |
| **D 530** | Flow-through vessel of transparent PVC, suitable for conductivity cells and temperature sensors, I.D. 44 mm, V*=97 ml | 108 060 |
| **for TetraCon® 325** | | **Order No.** |
| **D 201** | Flow-through vessel of transparent PVC, I.D. 18 mm, V*=13 ml | 203 730 |
| **for TetraCon® 96, LTA 100 and KLE 1** | | **Order No.** |
| **D 1/T** | Flow-through vessel, glass I.D. 24 mm, V*=36 ml | 302 730 |
| **for LR 01/T and LTA 01** | | **Order No.** |
| **D 01/T** | Flow-through vessel, glass I.D. 18 mm, V*=17 ml | 302 750 |

*V* = filling volume without sensor*