



# STARTER™ SERIES

Water Analysis Portable Meters



## *Versatile and Portable Electrochemistry Products for Wherever Your Work Takes You*

After more than a century of perfecting the art of measurement through our durable weighing products, OHAUS precision is now available in a line of Starter portable water analysis meters, for measuring pH, conductivity, salinity, total dissolved solids (TDS), oxidation reduction potential (ORP) and dissolved oxygen (DO). These portable meters offer convenience, reliability and durability in one compact design.

### *Standard Features:*

- **Intuitive Software that Powers the Starter Series**—Intuitive software and a well-organized display work in tandem to make operating the Starter Series a simple and straightforward task.
- **Compact and Ergonomic Design Creates a User-Friendly Experience**—Starter portable meters fit comfortably in the palm of your hand. Each meter also comes equipped with a retractable built-in stand that can be used to prop it up on a flat surface.
- **Reliable Calibration Results for Accurate Measurement**—Starter portable meters track the accuracy of the calibration process right on the display, so that you can measure with peace-of-mind, knowing that your results will be highly precise.

# STARTER™ 300 *Water Analysis Portable Meters*

## Versatile Portable Meters for Lab and Field Use

The Starter 300 portable water analysis meters were created with versatility in mind. They can be operated in the lab with the support of built-in stand, or in the field. Easy to use with a clear, well-organized LCD screen, one touch recall of calibration data and stored information. In addition, they are equipped with IP54 protection which shields the meter from damage by water and dust particles.

### Starter 300 pH Meter

Starter 300 combines portability with precise pH measurement.

- With a meter stand, wrist strap for secure field use and IP54 housing, Starter 300 is durable and prepared for versatile use.
- Automatic and manual temperature compensation ensure accurate readings while a 30 measurement library stores data for future reference.
- The auto buffer recognition stores calibration data and helps to avoid errors during the calibration process.



### Starter 300C Conductivity Meter

Starter 300C is the reliable and accurate choice for measurement of conductivity and TDS levels of liquids.

- The 30 item library allows the user to store measurements data, and stored information and calibration data can be easily recalled with one touch.
- Auto temperature compensation with adjustable temperature co-efficient for accurate measurements, and 4-pole and 2-pole conductivity probes which offer a large conductivity range that safeguards them from effects of polarization and pollution.
- With a simple calibration process and quick delivery of measurement results, Starter 300C is efficient and easy-to-use.



### Starter 300D Dissolved Oxygen Meter

Starter 300D provides accurate and reliable DO measurement, critical to aquatic life and water quality.

- With a simple calibration process, quick delivery of measurements and automatic temperature compensation, Starter 300D is both easy-to-use and accurate.
- The automatic or manual endpoints allow the user to easily recall the last calibration data and stored information with one quick touch.
- The galvanic electrode can be used immediately after being powered on without the wait time typically associated with dissolved oxygen meters.



# STARTER™ 300 *Water Analysis Portable Meters*

| Model                    | ST300                                                                    | ST300C                                                                    | ST300D                                                                                                          |
|--------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Measurement Range        | 0.00 to 14.00 pH<br>-1999 to 1999 mV<br>0 °C to 100 °C                   | 0.0 µS/cm to 199.9 mS/cm<br>0.1 mg/l to 199.9 g/l (TDS)<br>0 °C to 100 °C | 0.0 to 199.9%; 200 to 400%<br>0.00 to 19.99; 20.0 to 45.0 mg/L<br>0.00 to 19.99; 20.0 to 45.0 ppm<br>0 to 50 °C |
| Measurement Resolution   | 0.01 pH<br>1 mV<br>0.1 °C                                                | Automatic Range<br>0.1 °C                                                 | 0.1%; 1%<br>0.1 mg/L; 1 mg/L<br>0.01 ppm; 0.1 ppm<br>0.1 °C                                                     |
| Barometric Range         | NA                                                                       | NA                                                                        | 375 to 825 mmHg<br>500 to 1100 mbar<br>500 to 1100 hPa                                                          |
| Barometric Resolution    | NA                                                                       | NA                                                                        | 1 mmHg<br>1 mbar<br>1 hPa                                                                                       |
| Error Limits             | ± 0.01 pH<br>± 1 mV<br>± 0.5 °C                                          | ± 0.5 % of the Measured Value<br>± 0.3 °C                                 | ± 1% ; ± 0.3 °C                                                                                                 |
| Calibration              | 3 Points<br>4 Predefined Buffer Group                                    | 1 Point<br>4 Predefined Standards                                         | 1 or 2 Points<br>100% and 0%                                                                                    |
| Memory                   | 30 Measurements<br>Last Calibration Data                                 | 30 Measurements<br>Last Calibration Data                                  | 30 Measurements<br>Last Calibration Data                                                                        |
| Power Supply             | 4 AAA<br>> 500 Operating Hours                                           | 4 AAA<br>> 250 Operating Hours                                            | 4 AAA<br>> 250 Operating Hours                                                                                  |
| Size/Weight              | Approximately<br>90 W × 150 D × 35 H mm / 0.18 kg<br>(Without Batteries) | Approximately<br>90 W × 150 D × 35 H mm / 0.16 kg<br>(Without Batteries)  | Approximately<br>90 W × 150 D × 35 H mm / 0.18 kg<br>(Without Batteries)                                        |
| Display                  | Liquid Crystal                                                           | Liquid Crystal                                                            | Liquid Crystal                                                                                                  |
| Input                    | BNC, Impedance > 10e+12 Ω<br>Cinch, NTC 30 kΩ                            | Mini-DIN                                                                  | BNC,<br>Cinch, NTC 30 kΩ                                                                                        |
| Temperature Compensation | ATC & MTC                                                                | ATC, Linear: 0.00 %/°C...10.00 %/°C<br>Reference Temperature: 20 & 25 °C  | ATC & MTC                                                                                                       |
| Salinity Compensation    | NA                                                                       | NA                                                                        | 0.0 to 50.0 ppt                                                                                                 |
| IP Protection            | IP54                                                                     | IP54                                                                      | IP54                                                                                                            |
| Housing                  | ABS                                                                      | ABS                                                                       | ABS                                                                                                             |

## Starter 300 Portable Meter Packages



| Model   | ST300 Packages                                                                                            |
|---------|-----------------------------------------------------------------------------------------------------------|
| ST300-B | 300 Meter with IP54 Sets, Electrode Clip, Wrist Strap and 4 AAA Batteries (Electrode Not Included)        |
| ST300   | ST300-B, ST320 3-in-1 Plastic Gel pH Electrode, and pH Buffer Powder Sachet                               |
| ST300-G | ST300-B, ST320 3-in-1 Plastic Gel pH Electrode, pH Buffer Powder Sachet (4.01, 7.00, 10.01), Portable Bag |

| Model    | ST300D Packages                                                                                 |
|----------|-------------------------------------------------------------------------------------------------|
| ST300D-B | 300D Meter with IP54 Sets, Electrode Clip, Wrist Strap and 4 AAA Batteries (Probe Not Included) |
| ST300D   | ST300D-B with STDO11 Galvanic DO Probe, and STTEMP30 Temperature Probe                          |
| ST300D-G | ST300D-B with STDO11 Galvanic DO Probe, STTEMP30 Temperature Probe, Portable Bag                |

| Model    | ST300C Packages                                                                                                                                                                                               |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ST300C-B | 300C Meter, Conductivity Standards 1413 µS/cm and 12.88 mS/cm (20mL bottles), IP54 Sets, Electrode Clip, Wrist Strap, 4 AAA Batteries (Probe Not Included)                                                    |
| ST300C   | ST300C-B, with STCON3 4-Pole Conductivity Probe (70 µS/cm-200 mS/cm), 2 Small Bottles of Standard Conductivity Solution - 1413 µS/cm and 12.88 mS/cm, IP54 Sets, Electrode Clip, Wrist Strap, 4 AAA Batteries |
| ST300C-G | ST300C-B, STCON3 4-Pole Conductivity Probe (70 µS/cm - 200 mS/cm), Portable Bag                                                                                                                               |

# STARTER™ 400 *Water Analysis Portable Meters*

## Starter 400 pH and Starter 400M Multi-Parameter Meters

Starter 400/400M Portable Water Analysis Meters are robust, lightweight, battery-operated units with waterproof housing which makes them ideal for prolonged use in wet environments, and a rubber protective case fit for field testing. A rechargeable lithium battery ensures hours of trouble-free testing in the field. Intuitive software and an easy-to-view LCD allows for simple operation. A built-in USB port enables easy data transfer.

- **IP67 Waterproof Housing for Working in Wet Environments**

Built with IP67 waterproof housing as well as a rubber cover and IP67 probes, the ST400/400M is ideal for prolonged use in any field environment.

- **Rechargeable Lithium Battery Ensures Less Downtime**

Rechargeable lithium battery provides 40 hours of uninterrupted use and more than 300 charge cycles—eliminating the need to change out batteries often.

- **Easy to Operate with Intuitive Software and Information Displayed on the LCD**

The ST400/400M features intuitive software which guides the user through operation. All necessary information to run tests successfully such as electrode condition is displayed clearly on the large LCD.

- **Equipped with Large Storage Capacity and Ability to Transfer Data Easily Via USB**

The ST400/ST400M has a large data storage capacity of 1000 records.

If it exceeds capacity, data can be quickly transferred to a laptop via the micro-USB port, ensuring that users can retain every measurement.

## Starter 400D Dissolved Oxygen Meter

ST400D, a practical, affordable, low-maintenance DO portable meter equipped with optical technology—ideal for applications that require simple yet accurate DO measurements.

- The optical probe requires minimal maintenance—frequent membrane replacement not needed. Also, warm up and stirring of samples when taking measurements is not required.
- Equipped with a color LCD display, the ST400D is designed to fit comfortably in the palm of your hands. The automatic/manual endpoints enable easy recall of last calibration data and stored information with one touch.
- Simple calibration process offers quick delivery of measurements, and automatic temperature and barometric pressure compensation ensure accurate results.



## Starter 400 Portable Meter Packages



| Model   | ST400 Packages                                                                                            |
|---------|-----------------------------------------------------------------------------------------------------------|
| ST400-B | 400 Meter with IP67 Rubber Housing, Electrode Clip, Wrist Strap and 4 AAA Batteries (Probes Not Included) |
| ST400-F | ST400-B with ST320 IP67 3m Probe                                                                          |
| ST400-G | ST400-F with Portable Bag                                                                                 |

| Model    | ST400M Packages                                                                                            |
|----------|------------------------------------------------------------------------------------------------------------|
| ST400M-B | 400M Meter with IP67 Rubber Housing, Electrode Clip, Wrist Strap and 4 AAA Batteries (Probes Not Included) |
| ST400M-F | ST400M-B with ST320 IP67 3m and STCON3 IP67 3m probes                                                      |
| ST400M-G | ST400M-F with Portable Bag                                                                                 |

| Model    | ST400D Packages                                                                                 |
|----------|-------------------------------------------------------------------------------------------------|
| ST400D-B | 400D Meter with IP54 Sets, Electrode Clip, Wrist Strap and 4 AAA Batteries (Probe Not Included) |
| ST400D   | ST400D-B with STDO21 Probe                                                                      |
| ST400D-G | ST400D-B with STDO21 Optical DO Probe, Portable Bag                                             |



## ST400 Series Portable Meters

|                          |                       | ST400                                                                 | ST400M                                                                            | ST400D                                                                       |
|--------------------------|-----------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Measuring Range          | pH                    | -2 ... 16.00 pH                                                       |                                                                                   | —                                                                            |
|                          | mV                    | -1999 ... 1999 mV                                                     |                                                                                   | —                                                                            |
|                          | Conductivity          | —                                                                     | 0.0 µS/cm ... 199.9 mS/cm                                                         | —                                                                            |
|                          | TDS                   | —                                                                     | 0.1 mg/l ... 199.9 g/l                                                            | —                                                                            |
|                          | Salinity              | —                                                                     | 0.0 ... 99.9 psu                                                                  | —                                                                            |
|                          | Resistivity           | —                                                                     | 0 ... 20MΩ·cm                                                                     | —                                                                            |
|                          | Temperature           | -5 °C ... 110 °C                                                      |                                                                                   | 0 to 50 °C                                                                   |
|                          | Dissolved Oxygen      | —                                                                     |                                                                                   | 0.0 to 200.0%<br>0.00 to 20.0 mg/L (ppm)                                     |
|                          | Barometric Range      | —                                                                     |                                                                                   | 50.0 to 115.0 kPa                                                            |
| Resolution               | pH                    | 0.01 pH                                                               |                                                                                   | —                                                                            |
|                          | mV                    | 1 mV                                                                  |                                                                                   | —                                                                            |
|                          | Conductivity          | —                                                                     | 0.1 µS/cm, Auto-range                                                             | —                                                                            |
|                          | TDS                   | —                                                                     | 0.01 mg/l, Auto-range                                                             | —                                                                            |
|                          | Salinity              | —                                                                     | 0.01 psu, Auto-range                                                              | —                                                                            |
|                          | Resistivity           | —                                                                     | 0.01 Ω·cm, Auto-range                                                             | —                                                                            |
|                          | Temperature           | 0.1 °C                                                                |                                                                                   | —                                                                            |
|                          | Dissolved Oxygen      | —                                                                     |                                                                                   | 0.1%<br>0.01 mg/L (ppm)                                                      |
|                          | Barometric Resolution | —                                                                     |                                                                                   | 0.1 kPa                                                                      |
| Accuracy                 | pH                    | ± 0.01 pH                                                             |                                                                                   | —                                                                            |
|                          | mV                    | ± 1 mV                                                                |                                                                                   | —                                                                            |
|                          | Conductivity          | —                                                                     | ± 0.5% F.S.                                                                       | —                                                                            |
|                          | TDS                   | —                                                                     | ± 0.5% F.S.                                                                       | —                                                                            |
|                          | Salinity              | —                                                                     | ± 0.5% F.S.                                                                       | —                                                                            |
|                          | Resistivity           | —                                                                     | ± 0.5% F.S.                                                                       | —                                                                            |
|                          | Temperature           | ± 0.5 °C                                                              | ± 0.3 °C                                                                          | —                                                                            |
| Calibration              | pH                    | 1-5 points,<br>6 predefined buffer groups                             | 1-5 points,<br>6 predefined buffer groups                                         | 1 or 2 points                                                                |
|                          | Conductivity          | -                                                                     | 1 point, 5 predefined standards                                                   | —                                                                            |
| Memory                   |                       | 1000 measurements<br>5 calibration data<br>for each sensor ID         | 1000 measurements<br>(pH + conductivity)<br>5 calibration data for each sensor ID | 99 Measurements<br>Last Calibration Data                                     |
| Power Supply             |                       | Rechargeable Li-battery, 2600mAh;<br>> 300 charge and discharge times |                                                                                   | 4 × AAA (LR03) Batteries,<br>12 hrs                                          |
| Size/Weight              |                       | Approximately 100W × 230 L × 40 H mm / 0.35 kg                        |                                                                                   | Approx. 90 W × 150 D × 35 H mm /<br>0.16 kg (Without Batteries)              |
| Display                  |                       | LCD with Backlight                                                    |                                                                                   |                                                                              |
| Input                    | pH                    | IP67 BNC, impedance > 10e+12 Ω                                        |                                                                                   | Mini-DIN                                                                     |
|                          | Temperature           | IP67 Cinch, NTC 30 k                                                  |                                                                                   | —                                                                            |
|                          | Conductivity          | —                                                                     | IP67 LTW                                                                          | —                                                                            |
| Temperature Compensation | pH                    | ATC & MTC                                                             |                                                                                   | ATC                                                                          |
|                          | Conductivity          | —                                                                     | ATC, Linear: 0.00 / °C to 10.00% / °C<br>Reference Temperature: 20 or 25 °C       | —                                                                            |
| Salinity Compensation    |                       | —                                                                     |                                                                                   | 0.0 to 40.0 ppt                                                              |
| Error Limits             |                       | —                                                                     |                                                                                   | ± 0.2 mg/L (<8 mg/L),<br>± 0.3 mg/L (8 to 20 mg/L);<br>± 0.3 °C<br>± 1.5 kPa |
| IP Protection            |                       | IP67                                                                  |                                                                                   | IP54                                                                         |
| Housing                  |                       | ABS / PC                                                              |                                                                                   | ABS                                                                          |
| Communication            |                       | Micro-USB                                                             |                                                                                   | —                                                                            |

# STARTER™ SERIES *IP67 Water Analysis Portable Meters*



## **Durable, Waterproof Battery-Operated pH and Multi-Parameter Meters Ideal for Field Testing!**

- **IP67 Housing**

The Starter ST400/400M portable meter is constructed of an IP67 waterproof housing, ensuring it will operate even when fully immersed in water. A rubber cover protects the meter in harsh field environments or if accidentally dropped. Single-handed control of the meter is possible, which gives the user the ability to perform field tests, while simultaneously operating the meter.

- **Long Battery Life**

The ST400/400M has a rechargeable lithium battery which provides more than 40 hours of continuous use (without backlight), and over 300 charge cycles—making it ideal for use on long expeditions to the most remote test sites. It comes with a USB-charging cable, which means that the meter can be charged in a car or any USB outlet, similar to a mobile phone.

- **Easy to Operate**

The large backlit LCD with intuitive software displays useful information such as the electrode condition, calibration information, as well as all GLP required information including date, time, and user ID. The optimized menu is easy to navigate and makes setting up the portable meter quick and easy.

# STARTER™ SERIES *Electrodes & Probes*

## ST300 Compatible Probes

| Description                                                                                               | Model    |
|-----------------------------------------------------------------------------------------------------------|----------|
| 3 in 1 Refillable pH Electrode, Integrated Temperature Probe, Glass Shaft                                 | ST350    |
| 3 in 1 Non-refillable pH Electrode, Gel Electrolyte, Integrated Temperature Probe, Plastic Shaft          | ST320    |
| 3 in 1 Refillable pH Electrode, Integrated Temperature Probe, Plastic Shaft                               | ST310    |
| 2 in 1 Non-refillable Puncture pH Electrode, Glass Shaft                                                  | ST270    |
| 2 in 1 pH Electrode, Glass Shaft, Double Salt-Bridge, Suitable For Tris-Buffer pH Measurements            | ST260    |
| 2 in 1 Refillable pH Electrode, Glass Shaft, Suitable for Muddy Samples (Such as Milk, Juice etc.)        | ST230    |
| 2 in 1 Refillable pH Electrode, Plastic Shaft                                                             | ST210    |
| 2 in 1 Refillable pH Electrode, Glass Shaft, 80 × 5 mm (L × Ø), Suitable for Tubes and Narrow Containers  | STMICRO5 |
| 2 in 1 Refillable pH Electrode, Glass Shaft, 150 × 8 mm (L × Ø), Suitable for Tubes and Narrow Containers | STMICRO8 |
| 2 in 1 Refillable pH Electrode, Glass Shaft, Suitable for Pure Water Samples                              | STPURE   |
| 2 in 1 Refillable pH Electrode, Suitable for Flat Surface Applications, Plastic Shaft                     | STSURF   |
| Temperature Probe 30kΩ, Stainless Steel Shaft                                                             | STTEMP30 |
| Non-refillable ORP Electrode, Gel Electrolyte, Plastic Shaft                                              | STORP1   |
| Refillable ORP Electrode, Glass Shaft                                                                     | STORP2   |

## ST300D Compatible Probes

| Description       | Model    |
|-------------------|----------|
| Temperature Probe | STTEMP30 |
| Galvanic DO Probe | STDO11   |

## ST300C Compatible Probes

| Description                                             | Model   |
|---------------------------------------------------------|---------|
| 4-Pole Conductivity Probe (70 µS/cm-200 mS/cm)          | STCON3* |
| 2-Pole Pure Water Conductivity Probe (0.02 – 200 µS/cm) | STCON7  |

\*In this range 70 µS/cm-200 mS/cm the measurement accuracy is 0.5%. STCON3 can also measure conductivity value which is below 70 µS/cm, the measurement will be less accurate (approximately 1% to 5%).

## ST400 Compatible Probe

| Description                  | Model            |
|------------------------------|------------------|
| pH electrode, IP67, 3m cable | ST320<br>IP67 3m |

## ST400M Compatible Probes

| Description                        | Model             |
|------------------------------------|-------------------|
| pH electrode, IP67, 3m cable       | ST320<br>IP67 3m  |
| Conductivity Probe, IP67, 3m cable | STCON3<br>IP67 3m |

## ST400D Compatible Probe

| Description      | Model  |
|------------------|--------|
| Optical DO Probe | STDO21 |

## Buffers and Accessories

| Description                                       | Item Number | 300 | 300C | 300D/400D | 400 | 400M |
|---------------------------------------------------|-------------|-----|------|-----------|-----|------|
| pH Buffer Powder Sachet (4.01;7.00;10.01)         | 83033971    | •   |      |           | •   | •    |
| Buffer pH 1.68 250ml                              | 30100424    | •   |      |           | •   | •    |
| Buffer pH 4.01 250ml                              | 30100425    | •   |      |           | •   | •    |
| Buffer pH 6.86 250ml                              | 30100426    | •   |      |           | •   | •    |
| Buffer pH 7.00 250ml                              | 30100427    | •   |      |           | •   | •    |
| Buffer pH 9.18 250ml                              | 30100428    | •   |      |           | •   | •    |
| Buffer pH 10.01 250ml                             | 30100429    | •   |      |           | •   | •    |
| Buffer pH 12.45 250ml                             | 30100440    | •   |      |           | •   | •    |
| pH Electrode Reference Electrolyte                | 30059255    | •   |      |           |     |      |
| pH Electrode Protection Solution (3M KCl, 125 mL) | 30059256    | •   |      |           | •   | •    |
| pH Sensor Protection Bottle (Package of 10)       | 30064800    | •   |      |           | •   | •    |
| Cond 10 µS/cm 250 mL                              | 30100441    |     | •    |           |     | •    |
| Cond 84 µS/cm 250 mL                              | 30100442    |     | •    |           |     | •    |
| Cond 500 uS/cm 250 mL                             | 30393269    |     |      |           |     | •    |
| Cond 1413 µS/cm 250 mL                            | 30100443    |     | •    |           |     | •    |
| Cond 12.88 µS/cm 250 mL                           | 30100444    |     | •    |           |     | •    |
| Dissolved Oxygen Zero Oxygen Chemicals            | 30059257    |     |      | •         |     |      |
| IP54 Seal Kit                                     | 83032962    | •   | •    | •         |     |      |
| Wrist Strap                                       | 83032963    | •   | •    | •         |     |      |
| Electrode Clip                                    | 83032964    | •   | •    | •         |     |      |
| Portable Bag                                      | 30031635    | •   | •    | •         | •   | •    |

# STARTER™ SERIES *Water Analysis Portable Meters*



**ST400**  
pH Meter



**ST400M**  
Multi-Parameter Meter



**ST400D**  
Dissolved Oxygen Meter



**ST300**  
pH Meter



**ST300C**  
Conductivity Meter



**ST300D**  
Dissolved Oxygen Meter

## Compliance

- Electromagnetic Compatibility: FCC Part 15 Class A; ICES-003 Class A

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