



## *Convenient Results at Your Fingertips*

For over a century, OHAUS has perfected the art of measurement through our line of weighing products. Taking a similar approach to our weighing equipment, OHAUS now delivers a line of pen meters that are durable, practical and affordable. Starter pen meters—the portable solution for on-the-go measurement of pH, oxidation-reduction potential (ORP), conductivity, salinity, total dissolved solids (TDS) and dissolved oxygen (DO). Starter pen meters are the economical option when you are simply looking for accurate measurements with no restrictions.

### *Standard Features Include:*

- **Simple Operation in a Slim and Portable Design**

Starter pen meters provide what should be expected of a small pen meter. Simple, fast, straightforward, no-frills yet highly accurate operation time and time again.

- **Durably Constructed to Withstand Wear and Tear Resulting from Repetitive Use**

With durable plastic housing, a protective cap that safeguards the sensor, and an automatic shutdown feature to preserve battery life, the Starter pen meters can endure consistent use in rugged environments.

- **Waterproof Housing Protects the Meters in their Working Environment**

Equipped with a wrist strap that helps to prevent unintentional dropping, Starter pen meters are constructed with an IP67 waterproof design that can prevent water damage when accidentally dropped into liquid.

# STARTER *Pen Meters*

## Convenient pH Testing

Two models with varying resolution and accuracy; the ST10 and ST20 offer a convenient way to measure pH, or the relative acidity or alkalinity of a sample at a given temperature. The pH pen meters can be operated with just one hand, freeing up your other hand to handle samples.

## pH Meters

| Model                    | ST20                          | ST10                          |
|--------------------------|-------------------------------|-------------------------------|
| Range                    | 0.00 – 14.00                  | 0.0 – 14.0                    |
| Resolution               | 0.01 pH                       | 0.1 pH                        |
| Accuracy                 | 0.05 pH                       | 0.1 pH                        |
| Temperature Range        | 0.0 – 99.0 °C                 | NA                            |
| Temperature Compensation | Yes                           | NA                            |
| Display                  | Dual                          | Single                        |
| Calibration              | 3 Point                       | N/A                           |
| Buffer Group             | 4.01, 7.00, 10.01             | N/A                           |
| Automatic Shutdown       | 6 Minutes of Non-Use          | 6 Minutes of Non-Use          |
| Batteries                | 4 AG13 1.5V<br>Micro Alkaline | 4 AG13 1.5V<br>Micro Alkaline |
| Size/Weight              | 185 × 45 × 38 mm,<br>110 g    | 185 × 45 × 38 mm,<br>110 g    |



## Portable ORP Measurement

ST10R and ST20R can provide measurement of ORP virtually anywhere the need for measurement of the availability of electrons in a liquid exist. Both models provide almost instantaneous results and the ST20R offers the ability to hold the reading right on the display to provide additional time for data logging.

## ORP Meters

| Model                    | ST20R                         | ST10R                         |
|--------------------------|-------------------------------|-------------------------------|
| Range                    | -1000mV – 1000mV              | -1000mV – 1000mV              |
| Resolution               | 1mV                           | 1mV                           |
| Accuracy                 | 2mV                           | 2mV                           |
| Temperature Range        | 0.0 - 99.0 °C                 | N/A                           |
| Temperature Compensation | Yes                           | N/A                           |
| Display                  | Dual                          | Single                        |
| Calibration              | N/A                           | N/A                           |
| Automatic Shutdown       | 6 Minutes of Non-Use          | 6 Minutes of Non-Use          |
| Batteries                | 4 AG13 1.5V<br>Micro Alkaline | 4 AG13 1.5V<br>Micro Alkaline |
| Size/Weight              | 185 × 45 × 38 mm,<br>110 g    | 185 × 45 × 38 mm,<br>110 g    |



# STARTER *Pen Meters*

## Productive Conductivity Meters

Starter pen meters are the choice for basic testing needs of the total ionic concentration within a solution. With six models that can measure within three different conductivity ranges, there is a Starter conductivity meter for every application that requires portable operation and quick results.

## Conductivity Meters

| Model              | ST20C-C                    | ST20C-B                    | ST20C-A                    |
|--------------------|----------------------------|----------------------------|----------------------------|
| Range              | 0.00 – 19.99 mS/cm         | 0 – 1999 $\mu$ S/cm        | 0.0 – 199.9 $\mu$ S/cm     |
| Resolution         | 10 $\mu$ S/cm              | 1 $\mu$ S/cm               | 0.1 $\mu$ S/cm             |
| Accuracy           | $\pm 1.5$ % FS             | $\pm 1.5$ % FS             | $\pm 1.5$ % FS             |
| ATC                | With Temperature Display   | With Temperature Display   | With Temperature Display   |
| Display            | Dual                       | Dual                       | Dual                       |
| Automatic Shutdown | 6 Minutes of Non-Use       | 6 Minutes of Non-Use       | 6 Minutes of Non-Use       |
| Batteries          | 4 AG13 1.5V Micro Alkaline | 4 AG13 1.5V Micro Alkaline | 4 AG13 1.5V Micro Alkaline |
| Size/Weight        | 185 x 45 x 38 mm, 110 g    | 185 x 45 x 38 mm, 110 g    | 185 x 45 x 38 mm, 110 g    |

  

| Model              | ST10C-C                     | ST10C-B                     | ST10C-A                     |
|--------------------|-----------------------------|-----------------------------|-----------------------------|
| Range              | 0.00 – 19.99 mS/cm          | 0 – 1999 $\mu$ S/cm         | 0.0 – 199.9 $\mu$ S/cm      |
| Resolution         | 10 $\mu$ S/cm               | 1 $\mu$ S/cm                | 0.1 $\mu$ S/cm              |
| Accuracy           | $\pm 2.5$ % FS              | $\pm 2.5$ % FS              | $\pm 2.5$ % FS              |
| ATC                | Without Temperature Display | Without Temperature Display | Without Temperature Display |
| Display            | Single                      | Single                      | Single                      |
| Automatic Shutdown | 6 Minutes of Non-Use        | 6 Minutes of Non-Use        | 6 Minutes of Non-Use        |
| Batteries          | 4 AG13 1.5V Micro Alkaline  | 4 AG13 1.5V Micro Alkaline  | 4 AG13 1.5V Micro Alkaline  |
| Size/Weight        | 185 x 45 x 38 mm, 110 g     | 185 x 45 x 38 mm, 110 g     | 185 x 45 x 38 mm, 110 g     |



## Simple Salinity Measurement

Starter pen meters combine all of the most useful features for measuring salinity in a liquid medium. With the combination of quality construction and sturdy design, Starter pen meters will provide durable operation in even the toughest environments.

## Salinity Meters

| Model              | ST20S                      | ST10S                       |
|--------------------|----------------------------|-----------------------------|
| Range              | 0.0 – 80.0 ppt             | 0.0 – 10.0 ppt              |
| Resolution         | 0.1 ppt                    | 0.1 ppt                     |
| Accuracy           | $\pm 1.5$ % FS             | $\pm 2.5$ % FS              |
| ATC                | With Temperature Display   | Without Temperature Display |
| Display            | Dual                       | Single                      |
| Automatic Shutdown | 6 Minutes of Non-Use       | 6 Minutes of Non-Use        |
| Batteries          | 4 AG13 1.5V Micro Alkaline | 4 AG13 1.5V Micro Alkaline  |
| Size/Weight        | 185 x 45 x 38 mm, 110 g    | 185 x 45 x 38 mm, 110 g     |



# STARTER Pen Meters

## Multi Parameter Meter

The OHAUS ST20M is a multi parameter pen meter that directly measures pH, conductivity and temperature, as well as provides conversion measurements for TDS and Salinity. These fully waterproof pen meters combine measurement capabilities of two testers in one convenient pocket-sized unit.

Great for water, laboratory or plant use, the ST20M features a single-junction pH electrode and a pin-style conductivity probe for longer usage and durability. The replaceable electrode module saves you money by reusing the meter body. Advanced features include auto-shutoff, low-battery indicator, and simple and easy calibration.

- Measures 5 parameters including pH, Conductivity, TDS, Salinity, and Temperature
- Waterproof rated to IP67
- Automatic Temperature Compensation
- Auto shutoff with low battery indicator
- ST20M meter includes electrode, protective sensor cap, four AG13 1.5V batteries, and wrist strap.

## ST20M

| Model             |              | ST20M-B                       | ST20M-C              |
|-------------------|--------------|-------------------------------|----------------------|
| Measurement Range | pH           | 0 - 14                        |                      |
|                   | Conductivity | 0 ... 1999 $\mu$ S/cm         | 0 ... 19.99 mS/cm    |
|                   | TDS          | 0 ... 1000 mg/L               | N/A                  |
|                   | Salinity     | N/A                           | 0.0-10.0 ppt         |
|                   | Temperature  | 0 - 99.0 °C                   |                      |
| Resolution        | pH           | 0.01 pH                       |                      |
|                   | Conductivity | 1 $\mu$ S/cm                  | 0.01 mS/cm           |
|                   | TDS          | 1 mg/L                        | NA                   |
|                   | Salinity     | N/A                           | 0.1 ppt              |
|                   | Temperature  | 0.1 °C                        |                      |
| Accuracy          | pH           | $\pm$ 0.05 pH                 |                      |
|                   | Conductivity | $\pm$ 2 % Full Scale          |                      |
|                   | TDS          | $\pm$ 2 % Full Scale          | N/A                  |
|                   | Salinity     | N/A                           | $\pm$ 2 % Full Scale |
|                   | Temperature  | $\pm$ 0.5 °C                  |                      |
| ATC               |              | Yes, with temperature display |                      |
| ATC Range         |              | 0 - 45 °C                     |                      |
| Calibration       | pH           | 3 point                       |                      |
|                   | Conductivity | 1 point                       |                      |
|                   | TDS          | N/A                           |                      |
|                   | Salinity     | N/A                           |                      |
| IP Grade          |              | IP67                          |                      |
| Dimensions        |              | 185 x 45 x 38 mm              |                      |
| Weight            |              | 110 g                         |                      |
| Batteries         |              | 4 x 1.5V                      |                      |
| Battery Life      |              | 100 hours                     |                      |
| Warranty          |              | 1 year                        |                      |



# STARTER *Pen Meters*

## Simple and Fast Dissolved Oxygen (DO) Measurement

The perfect DO meter for every application that requires portable operation and quick results. With IP67 waterproof design and automatic shutdown feature that preserves battery life, the Starter DO meter can endure consistent use in rugged environments.

### DO Meter

| Model                               | ST20D                          |
|-------------------------------------|--------------------------------|
| Measurement Range                   | 0.0 – 19.9 mg/L                |
| Resolution                          | 0.1 mg/L                       |
| Accuracy                            | ± 0.5 mg/L                     |
| Batteries                           | 4 AG13 1.5V Micro Alkaline     |
| Dimension                           | 185 × 42 × 37 mm               |
| Weight                              | 90 g                           |
| Auto-off                            | After 15 Minutes of Inactivity |
| Auto Temperature Compensation Range | 5 to 45 °C (41 to 113 °F)      |
| Materials                           | ABS                            |



### Replacement Electrodes

| Item No. | Description                   | Compatible with  |
|----------|-------------------------------|------------------|
| 30087992 | Electrode, pH10 ST            | ST10             |
| 30087993 | Electrode, pH20 ST            | ST20             |
| 30087994 | Electrode, CT10A ST           | ST10C-A, ST10T-A |
| 30087995 | Electrode, CT10B ST           | ST10C-B, ST10T-B |
| 30087996 | Electrode, CS10C ST           | ST10C-C, ST10S   |
| 30087997 | Electrode, CT20A ST           | ST20C-A, ST20T-A |
| 30087998 | Electrode, CT20B ST           | ST20C-B, ST20T-B |
| 30087999 | Electrode, CS20C ST           | ST20C-C, ST20S   |
| 30088020 | Electrode, R10 ST             | ST10R            |
| 30088021 | Electrode, R20 ST             | ST20R            |
| 30222083 | Electrode, D20 ST             | ST20D            |
| 30222084 | Membrane & Electrolyte, ST20D | ST20D            |
| 30393203 | Electrode ST20M-B             | ST20M-B          |
| 30393204 | Electrode, ST20M-C            | ST20M-C          |



# STARTER Pen Meters

## Complete TDS Meters

When you need reliable and accurate measurement of TDS, the Starter pen meter offer a great value in a portable and compact design. Bring the Starter TDS Meter wherever your need to measure the combined content of all organic and inorganic substances in a liquid takes you.

## TDS Meters

| Model              | ST20T-B                    | ST20T-A                    | ST10T-B                     | ST10T-A                     |
|--------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|
| Range              | 0–1000 mg/L                | 0.0–100.0 mg/L             | 0–1000 mg/L                 | 0.0–100.0 mg/L              |
| Resolution         | 1 mg/L                     | 0.1 mg/L                   | 1 mg/L                      | 0.1 mg/L                    |
| Accuracy           | ±1.5 % FS                  | ±1.5 % FS                  | ±2.5 % FS                   | ±2.5 % FS                   |
| ATC                | With Temperature Display   | With Temperature Display   | Without Temperature Display | Without Temperature Display |
| Display            | Dual                       | Dual                       | Single                      | Single                      |
| Automatic Shutdown | 6 Minutes of Non-Use       | 6 Minutes of Non-Use       | 6 Minutes of Non-Use        | 6 Minutes of Non-Use        |
| Batteries          | 4 AG13 1.5V Micro Alkaline | 4 AG13 1.5V Micro Alkaline | 4 AG13 1.5V Micro Alkaline  | 4 AG13 1.5V Micro Alkaline  |
| Size/Weight        | 185 × 45 × 38 mm, 110 g    | 185 × 45 × 38 mm, 110 g    | 185 × 45 × 38 mm, 110 g     | 185 × 45 × 38 mm, 110 g     |



## Pen Meter Selector Guide

| Measuring Parameter | Pen Meters |      |         |         |       |       |
|---------------------|------------|------|---------|---------|-------|-------|
|                     | ST10       | ST20 | ST20M-B | ST20M-C | ST10C | ST20C |
| pH                  | ●          | ●    | ●       | ●       |       |       |
| Conductivity        |            |      | ●       | ●       | ●     | ●     |
| TDS                 |            |      | ●       |         |       |       |
| ORP                 |            |      |         |         |       |       |
| Salinity            |            |      |         | ●       |       |       |
| Resistivity         |            |      |         |         |       |       |
| DO                  |            |      |         |         |       |       |
| Temperature         |            | ●    | ●       | ●       |       | ●     |

| Measuring Parameter | Pen Meters |       |       |       |       |       |       |
|---------------------|------------|-------|-------|-------|-------|-------|-------|
|                     | ST10T      | ST20T | ST10S | ST20S | ST10R | ST20R | ST20D |
| pH                  |            |       |       |       |       |       |       |
| Conductivity        |            |       |       |       |       |       |       |
| TDS                 | ●          | ●     |       |       |       |       |       |
| ORP                 |            |       |       |       | ●     | ●     |       |
| Salinity            |            |       | ●     | ●     |       |       |       |
| Resistivity         |            |       |       |       |       |       |       |
| DO                  |            |       |       |       |       |       | ●     |
| Temperature         |            | ●     |       | ●     |       | ●     |       |

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