



3  
Year  
Meter  
Warranty



# Eutech 150 & 450 Series Waterproof Handheld Meters

- pH • mV • ION • Conductivity • TDS • Salinity
- Dissolved Oxygen • Temperature

SOLUTIONS FOR WATER ANALYSIS

**EUTECH**  
**INSTRUMENTS**  
*Technology Made Easy ...*

Part of Thermo Fisher Scientific



# Features

DO 450 and PD 450  
Utilize Optical  
Oxygen Technology



PC 450 Can Accept  
Combi Probe or  
Separate pH/  
Conductivity Probes



81 % Larger Three Line  
Display 450 series  
add backlight

Battery Life Indicator

All Measurements  
Include Temperature  
in °C or °F

View Electrode Slope or  
Probe Efficiency  
At-A-Glance

Calibration Due Reminder  
Set automatic notifications  
from 0 - 60 days

Increased Memory:  
150 points for 150 series,  
500 points with  
date/time for 450 series

450 series offers upgradable  
firmware and also can utilize  
Free Communication Software



Rugged Housing Floats  
& Meets Waterproof  
IP67 Rating  
(With rubber covers)



Utilizes New and  
Improved Grip-Clip™  
Electrode Holder  
(See page 11  
for more details)



Uses Only Two AA  
Batteries or  
Optional Universal  
Power Supply



Integral Built-In-Stand  
for table use or  
wall mounting



450 Models Offer  
Output for  
USB or RS232



# Comparison Tables



Meter Features	pH 150	CON 150	pH 450	CON 450	DO 450	PD 450	PC 450
	See Page 4	See Page 5	See Page 6	See Page 7	See Page 8	See Page 9	See Page 10
pH & mV	✓	-	✓	-	-	✓	✓
ION	-	-	✓	-	-	-	-
Temperature	✓	✓	✓	✓	✓	✓	✓
Conductivity & TDS	-	✓	-	✓	-	-	✓
Optical Dissolved Oxygen	-	-	-	-	✓	✓	-
Salinity	-	-	-	✓	-	-	-
Display	Three line custom LCD			Three line custom LCD with backlight			
Temperature Compensation	Automatic or manual from -10 to 110 °C						
Temperature Coefficient	-	0.00 to 10.00 %/°C	-	0.00 to 10.00 %/°C	-	-	0.00 to 10.00 %/°C
Memory	150 data sets				500 data sets		
Output	-				USB or RS232		
Real-Time Clock	Time and date stamp on calibration and stored data						
Power	Two AA batteries (included)						
	>700 hours continuous use	>500 hours continuous use	>500 hours (without backlight)	>300 hours (without backlight)	>100 hours (without backlight)		
Dimensions (L x W x H)	9 V DC adapter, 1.3 A (100/240 VAC, SMPS) (optional)						
Weight	Meter: 7 7/8" x 3 1/8" x 2 1/4" (20 x 8.3 x 5.7 cm) ; Boxed: 9 1/8" x 9 1/8" x 2 3/4" (23 x 23 x 7 cm)						
	Meter: 1 lb (0.5 kg) ; Boxed: 1.4 lb (0.7 kg)						

Eutech 150 Series & Eutech 450 Series Configurations		Electrodes						Accessories				Solutions	
		Double-Junction pH Electrode (ECFC7252201B)	pH Electrode, 26 mm Diameter (ECDA9350603B)	Combi pH/Con/ATC Electrode (COMBI03BW)	Conductivity/ATC Electrode, K = 1 (CONSEN91W)	ATC Probe (PHWPTM01W)	RDO Electrode With Cap (RDO3M)	Glip-Clip™	Hard Carry Case	USB Cable	RDO Stainless Steel Weight/Guard	RDO Calibration Sleeve	60 mL Bottles of pH 4, pH 7, Storage Solution, DI Water
Order Code	Product Combination												
ECPHWP15000	pH 150 Meter Only						✓						
ECPHWP15002	pH 150 Meter & Electrode	✓				✓	✓						
ECPHWP15002K	pH 150 Meter Kit	✓				✓	✓	✓				✓	
ECCONWP15003	CON 150 Meter & Electrode				✓		✓						
ECCONWP15003K	CON 150 Meter Kit				✓		✓	✓					✓
ECPHWP45000	pH 450 Meter Only						✓						
ECPHWP45002	pH 450 Meter & Electrode	✓				✓	✓						
ECPHWP45002K	pH 450 Meter Kit	✓				✓	✓	✓				✓	
ECCONWP45003	CON 450 Meter & Electrode				✓		✓						
ECCONWP45003K	CON 450 Meter Kit				✓		✓	✓					✓
ECDOWP45000	DO 450 Meter Only												
ECDOWP45003	DO 450 Meter & Electrode						✓						
ECDOWP45003K	DO 450 Meter Kit						✓	✓	✓	✓			
ECPDWP45000	PD 450 Meter Only												
ECPDWP45004	PD 450 Meter & Electrodes		✓				✓						
ECPDWP45004K	PD 450 Meter Kit		✓				✓	✓	✓	✓		✓	
ECPCWP45000	PC 450 Meter Only							✓					
ECPCWP45004	PC 450 Meter & pH & Con/ATC Electrodes	✓			✓		✓						
ECPCWP45004K	PC 450 Meter Kit	✓			✓		✓	✓	✓			✓	✓
ECPCWP45003	PC 450 Meter & Combi Electrode			✓									
ECPCWP45003K	PC 450 Meter Combi Kit			✓								✓	✓

# Eutech PD 450



## pH / mV / Dissolved Oxygen / Temperature

Affordable optical RDO technology reduces maintenance time and costs

- Maintenance free optical probe with no electrolyte eliminates hassle of replacing delicate membranes and salt build up from refilling solutions
- **Switch between pH, mV, % saturation and mg/L (ppm) dissolved oxygen** – With the press of a button
- Durable waterproof and dustproof design with IP67 rating
- Large, backlit graphic display provides measurement with temperature
- Calibrate up to 5 points automatically with USA or NIST buffer groups (up to 6 points with DIN). New manual option allows calibration with up to 5 custom buffer standards
- **Auto buffer recognition** – Automatically identifies the correct pH buffer for rapid calibration
- **Calibration due alarm** – Set a visible reminder when it is time to recalibrate the meter
- **Selectable °C or °F** – Choose units to best fit your application
- Ready indicator, manual or automatic measurement hold feature and optional automatic shutoff function
- **Store up to 500 data sets** – Easy USB or RS232 output with optional data cables
- **Built-in real-time clock stamps stored data and calibration data with time and date** – Meets standards for GLP (Good Laboratory Practices)



Calibration Chamber



RDO Weight/Guard



RDO Sensor Cap



RDO Probe



## Specification Table

<b>pH</b>	Range	-2.00 to 16.00 pH
	Resolution	0.01 pH
	Accuracy	±0.01
	Calibration	Up to 6 points: USA, NIST, DIN or custom
<b>mV</b>	Range	±2000 mV
	Resolution	0.1 mV ±999.9 mV; 1 mV beyond
	Accuracy	±0.2 mV +2 LSD or +0.5 % of reading; whichever is greater
	Calibration	±200 mV
<b>Dissolved Oxygen</b>	Range	0 to 200 %; 0 to 20 ppm/mg/L
	Resolution	0.10 %; 0.1 ppm/mg/L
	Accuracy	±2 %; ±0.1 ppm or mg/L up to 8; ±0.2 ppm or mg/L above 8
	Calibration	Zero and saturation
<b>Temperature</b>	Range	-10.0 to 110.0 °C (14.0 to 230.0 °F)
	Resolution	0.1 °C/°F
	Accuracy	±0.5 °C; ±0.9 °F
	Calibration	Offset in 0.1 increments, ±10 °C or ±18 °F
<b>Display</b>	Custom LCD with backlight	
<b>Memory</b>	Stores up to 500 data sets	
<b>Output</b>	USB or RS232	
<b>Real-Time Clock</b>	Time and date stamp on calibration and stored data	
<b>Temperature Compensation</b>	Automatic or manual from -10 to 110 °C	
<b>Pressure &amp; Salinity Compensation</b>	Manual	
<b>Power</b>	Two AA batteries (included), >100 hours (without backlight); AC adapter (optional)	



## Ordering Information

Order Code	Part No.	Description
<b>Meter</b>		
ECPDWP45000	01X651641	<b>PD 450 Meter Only:</b> Meter, two AA batteries
ECPDWP45004	01X651646	<b>PD 450 Meter &amp; Electrodes:</b> Meter, pH/ATC electrode, RDO electrode with sensor cap, two AA batteries
ECPDWP45004K	01X651642	<b>PD 450 Meter Kit:</b> Meter, pH electrode, RDO electrode with sensor cap, two AA batteries, hard carry case, USB cable, RDO stainless steel weight/guard, RDO calibration chamber, calibration solutions
<b>Electrodes</b>		
ECDA9350603B	93X218879	Replacement pH electrode, submersible, single-junction, ABS, 26 mm diameter, BNC, 3 m cable
RDO3M	RDO3M	RDO probe, 3 m (10 ft) cable
RDO6M	RDO6M	RDO probe, 6 m (20 ft) cable
RDO15M	RDO15M	RDO probe, 15 m (50 ft) cable
<b>Accessories</b>		
RDOCAP	RDOCAP	Replacement RDO sensor cap
RDOWEIGHT	RDOWEIGHT	RDO weight, screw thread to attach to probe
RDOCALCHAMBER	RDOCALCHAMBER	Calibration chamber
60X426401	60X426401	Optional 100 / 240 VAC SMPS power adapter, 9V, 6 W
MINIPHONEUSB	MINIPHONEUSB	USB cable for 450 series, mini phone plug to USB
30X427301	30X427301	RS232 cable for 450 series, mini phone plug to RS232 9-pin (F)
ECDOZEROSOLN	01X211238	Zero oxygen solution, 0 % DO, 480 mL

# Eutech PC 450



## pH / mV / Conductivity / Total Dissolved Solids / Salinity / Temperature

PC 450 accepts a single pH/Con probe or separate pH and conductivity probes

- Durable waterproof and dustproof design with IP67 rating
- Switch between pH, mV, conductivity, TDS and salinity with a press of a button
- **Large, backlit custom display** – Lets you view measurement with temperature
- **Grip-Clip™** – Quickly and easily secures separate pH and conductivity electrodes simultaneously to your sample container or beaker
- Calibrate up to 5 points automatically with USA or NIST buffer groups (up to 6 points with DIN). New manual option allows calibration with up to 5 custom buffer standards you
- **Auto buffer recognition** – Automatically identifies the correct pH buffer for rapid calibration
- **Calibration due alarm** – Set a visible reminder when it is time to recalibrate the meter
- **Intuitive, user-friendly icons** – Electrode status displays pH slope or cell constant
- **Auto-range conductivity from 0 to 199.9 mS in five ranges** – With up to five calibration points
- **Selectable cell constant** – 0.10, 1.00 or 10.0
- **Adjustable temperature coefficient** – From 0.00 to 10.00 % per °C
- **Conductivity-to-TDS factor** – Adjustable from 0.40 to 1.00
- **Selectable °C/°F** – Choose units to best fit your application
- Ready indicator, manual or automatic measurement hold feature and optional automatic shutoff function
- Store up to 500 data sets; easy USB or RS232 output with optional data cables
- **Built-in real-time clock stamps stored data and calibration data with time and date** – Meets standards for GLP (Good Laboratory Practices)
- 500 hours battery life or use optional universal power adapter
- **Built-in stand with wall-mount** – Allows for easy benchtop measurement and storage



### Specification Table

<b>pH</b>	Range	-2.00 to 16.00 pH
	Resolution	0.01 pH
	Accuracy	±0.01 pH
	Calibration	Up to 6 points: USA, NIST, DIN or custom
<b>mV</b>	Range	±2000 mV
	Resolution	0.1 mV ±999.9 mV; 1 mV beyond
	Accuracy	±0.2 mV +2 LSD or +0.5 % of reading; whichever is greater
<b>Conductivity</b>	Calibration	±200 mV
	Range	0 to 200 mS; 0 to 20 mS if using COMBI03BW probe
	Resolution	0.01 µS to 0.1 mS
	Accuracy	±1 % full scale
<b>TDS</b>	Calibration	Auto/manual; one point per range
	Range	0 to 200 ppt (TDS factor 1.0)
	Resolution	0.01 ppm to 0.1 ppt
	Accuracy	±1 % full scale
<b>Temperature</b>	Calibration	Manual; 1 point/range
	Range	-10.0 to 110.0 °C (14.0 to 230.0 °F)
	Resolution	0.1 °C/°F
	Accuracy	±0.5 °C; ±0.9 °F
<b>Display</b>	Calibration	Offset in 0.1 increments, ±10 °C or ±18 °F
<b>Memory</b>	Custom LCD with backlight	
<b>Output</b>	Stores up to 500 data sets	
<b>Real-Time Clock</b>	USB or RS232	
<b>Power</b>	Time and date stamp on calibration and stored data	
	Two AA batteries (included), >100 hours (without backlight); AC adapter (optional)	



### Ordering Information

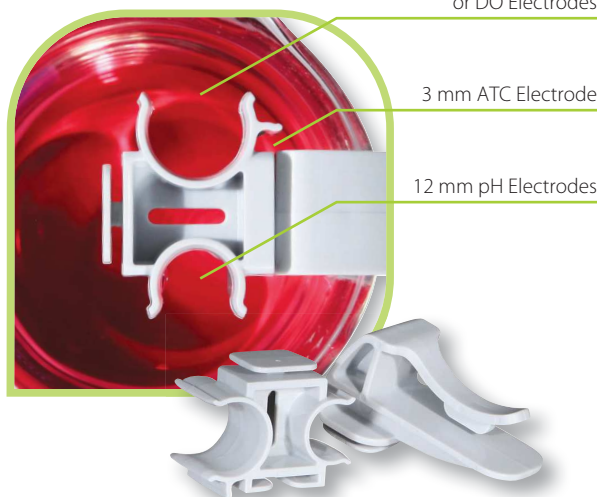
Order Code	Part No.	Description
<b>Meter</b>		
ECPCWP45000	01X651636	<b>PC 450 Meter Only:</b> Meter, two AA batteries
ECPCWP45004	01X651639	<b>PC 450 Meter &amp; pH &amp; Con/ATC Electrodes:</b> Meter, double-junction pH electrode, conductivity cell (K = 1.0), Grip-Clip™, two AA batteries
ECPCWP45004K	01X651640	<b>PC 450 Meter Kit:</b> Meter, double-junction pH electrode, conductivity cell (K = 1.0), Grip-Clip™, two AA batteries, hard carry case, USB cable, calibration solutions
ECPCWP45003	01X651637	<b>PC 450 Meter &amp; Combi Electrode:</b> Meter, combi pH/Con/ATC electrode, two AA batteries
ECPCWP45003K	01X651638	<b>PC 450 Meter Combi Kit:</b> Meter, combi pH/Con/ATC electrode, two AA batteries, hard carry case, USB cable, calibration solutions
<b>Electrodes</b>		
ECFC7252201B	01X099417	Replacement pH electrode, double-junction, epoxy body, BNC
PHWPTEM01W	PHWPTEM01W	ATC probe. Use with any pH electrode with BNC connector for temperature compensation
COMBI03BW	COMBI03BW	Combination pH/Con/ATC probe
ECCONSEN72W	93X244303	Conductivity/ATC cell, glass body, K = 0.1
CONSEN91W	01X244702	Conductivity/ATC cell, K = 1.0
CONSEN92W	CONSEN92W	Conductivity cell, K = 10
<b>Accessories</b>		
GRIPCLIP	GRIPCLIP	Grip-Clip™
60X426401	60X426401	Optional 100 / 240 VAC SMPS power adapter, 9V, 6 W
MINIPHONEUSB	MINIPHONEUSB	USB cable for 450 series, mini phone plug to USB
30X427301	30X427301	RS232 cable for 450 series, mini phone plug to RS232 9-pin (F)

See page 6 for pH calibration solutions & page 7 for conductivity calibration solutions.

# Eutech 150 & 450 Series Accessories

## Introducing the Grip-Clip™

Secure Grip-Clip™ to meter for storage or rotate for one-handed measurement



16 mm Conductivity or DO Electrodes

3 mm ATC Electrode

12 mm pH Electrodes

**| Grip-Clip™** | Use this innovative electrode accessory to save time while preventing electrode damage. Designed for use with a 3 mm ATC electrode, 12 mm pH electrode, and a 16 mm conductivity or DO electrode. Attach the Grip-Clip™ to your instrument when not in use or for single-handed measurement. It secures to most beakers without the need for a separate electrode arm. Keeps electrode(s) suspended during use, away from dangerous stir bars and out of harm's way. Easy-access opening allows for electrode replacement without removal of the electrode storage bottle. Allows for quick height adjustment of your electrode(s) to suit your sample container and individual preference. Don't break another electrode bulb or waste time with clumsy holders – use the Grip-Clip™!

**| RS232 Thermal Printer** | The convenience of printing directly from your meter whenever, wherever! This compact thermal printer connects easily to your 450 series waterproof handheld meters via RS232 – ideal for data-recording and report-generation. Connecting cables included.



## Ordering Information

Order Code	Part No.	Description
60X426401	60X426401	Optional 100 / 240 VAC SMPS power adapter, 9 V, 6 W
GRIPCLIP	GRIPCLIP	Grip-Clip™; includes separate electrode holder and beaker clip
56X259306	56X259306	Hard carry case
MINIPHONEUSB	MINIPHONEUSB	USB cable for 450 series, mini phone plug to USB
30X427301	30X427301	RS232 cable for 450 series, mini phone plug to RS232 9-pin (F)
ECPHBUFKITC	01X639001	pH buffer set, pH 4 (red), 7 (yellow), 10 (blue), 480 ml each
ECPHBUFKIT	01X638901	Colorless pH buffer set, pH 4, 7 and 10 (480 mL each)
ECCON84BT	01X211241	84 µS conductivity standard, 480 mL
ECCON1413BT	01X211207	1413 µS conductivity standard, 480 mL
ECCON1288BT	01X211210	12.88 mS conductivity standard, 480 mL
ECCON1118BT	01X211244	111.8 mS conductivity standard, 480 mL
01X594301	01X594301	Thermal printer, includes 100-240 V power supply with plug adapters for UK, US, EU and Australia. Includes 01X594101 cable, 30X427301 cable, null modem adapter, and roll of paper
01X594401	01X594401	Replacement paper for thermal printer, two rolls



Power Adapter  
(60X426401)



Hard Carry Case  
(56X259306)



USB Cable  
(MINIPHONEUSB)



RS232 Cable  
(30X427301)



Colored & Colorless  
Buffer Solutions  
(ECPHBUFKITC)  
(ECPHBUFKIT)



RS232 Thermal Printer  
(01X594301)

Eutech Instruments, part of Thermo Fisher Scientific, manufactures a comprehensive range of laboratory and field instrumentation for water analysis. Eutech Instruments also produces on-line process instruments for water quality monitoring and control. Innovative products from Eutech include:

Dual Display Testers | Economy + Series Handhelds | Waterproof Colorimeters and Turbidimeters | CyberScan Handhelds | Bench Meters | Handheld Thermometers

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