YSI

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YSI ProDSS Multiparameter Sampling Instrument

Portable digital sampling system for the measurement of pH, ORP, dissolved oxygen (optical-based sensor), conductivity, turbidity, temperature, depth and more.

Designed for use in applications such as surface water, groundwater, coastal waters, and aquaculture, the rugged and reliable ProDSS allows for measurement of up to 17 parameters. The ProDSS features user-replaceable digital smart sensors that are automatically recognized by the instrument when connected. A backlit color display, large memory, convenient calibration procedures, rechargeable battery, and powerful PC data management program (KorDSS) make the ProDSS user friendly. The optional GPS function, wide range of sensors, and varying cable lengths allow for complete customization of the ProDSS. Mil-spec (military spec) connectors and a waterproof (IP-67), rubber over-molded case ensures durability to provide years of sampling even in the harshest field conditions.

- Single cable design features universal ports which can accept any 4 sensors plus depth
- Long-life rechargeable lithium-ion battery to power handheld and sensors
- Color display and backlit keypad allow for sampling in all lighting conditions
- Digital smart sensors are automatically recognized by the instrument and store calibration data
- User-replaceable cables and sensors provide versatility, reduce down time and reduce overall cost of ownership
- Large memory (> 100,000 data sets) with extensive site list and Data ID tag capabilities
- KorDSS, a powerful data management software with geo-mapping capability, is included with the instrument
- USB On-The-Go connector for PC connection, recharging/powering the ProDSS and connecting directly to a USB stick
- Global Positioning System (GPS) (optional)
- Cable lengths up to 100 meters available with or without a depth sensor
- Rugged, waterproof case (IP-67 rated) with rubber over-mold and metal, military-spec (MS) cable connectors as well as rugged titanium sensors
- Multiple languages in handheld and KorDSS: English, Spanish, Portuguese, French, German, Italian, Japanese, Norwegian, and Chinese (simplified and traditional)
- Warranty: 3-year instrument; 2-year cable assembly and sensors; 1-year pH and pH/ORP sensor modules; 6-months ammonium, nitrate and chloride sensor modules.

Parameters:

Dissolved Oxygen (Optical)
Turbidity
pH
ORP/Redox
Conductivity
Specific Conductance
Salinity
Total Dissolved Solids (TDS)
Resistivity
Seawater Density
Total Suspended Solids (TSS)
Depth
Ammonium
Ammonia
Chloride
Nitrate
Temperature

ProDSS General Specifications

Size	Instrument: 8.3 cm width x 21.6 cm length x 5.6 cm depth (3.27 in x 8.5 in x 2.21 in) Bulkhead with sensors, without depth (no guard): 33.3 cm (13.11 in) length - the length with the ISE sensors is 34.04 cm (13.4 in) Bulkhead with sensors, with depth (no guard): 35.84 cm (14.11 in) length - the length with the ISE sensors is 36.58 cm (14.4 in) Bulkhead with guard, without depth: 42.82 cm (16.86 in) length and 4.75 cm (1.87 in) outer diameter Bulkhead with guard, with depth: 45.36 cm (17.86 in) length and 4.75 cm (1.87 in) outer diameter
Weight with batteries	567 grams (1.25 lbs)
Power	Rechargeable lithium-ion battery pack provides ~48 hours with the handheld only and ~20 hours with the handheld, cable and four sensors; battery recharge time is ~9 hours with the AC power adapter The instrument can also be powered via AC or external power pack through the USB port
Instrument operating temperature	0 to 50 °C (32 to 122 °F)
Instrument storage temperature	0 to 45 °C (32 to 113 °F) with battery installed; 0 to 60 °C (32 to 140 °F) without battery installed
Display	Color, LCD graphic display; 3.9 cm width x 6.5 cm height
USB port	Built-in micro USB On-The-Go port for PC connection, recharging/powering the ProDSS and connecting directly to a USB stick
Cables	Available with or without depth sensor in 1, 4, 10, 20, 30, 40, 50, 60, 70, 80, 90, and 100-meters
Sensor ports	4 universal sensor ports on each cable; can accept any ProDSS sensor
Warranty	3-year instrument; 2-year bulkhead, cable assembly, and sensors; 1-year pH and pH/ORP sensor modules, ODO sensor caps, and Li-ion battery pack; 6-months ammonium, nitrate, and chloride sensor modules
Memory	> 100000 data sets
Logging modes	Single point or continuous with autostable feature
GLP compliance	Yes; 400 detailed GLP records can be stored and are available to view, download, and print.
Languages	English, Spanish, Portuguese, French, German, Italian, Japanese, Norwegian, Simplified Chinese, Traditional Chinese
Certifications	CEC, CE; RoHS; IP-67; WEEE; FCC; UN Part III, Section 38.3, Test methods for lithium-ion batteries (Class 9)
GPS	Optional internal GPS; coordinates are stored with measurement data and site lists
Sites and data ID	100 user-defined sites and 100 user-defined data ID tags

ProDSS System Specifications (Instrument, Sensor, and Cable)

Sensor/Parameter	Range	Accuracy	Resolution	Units
Temperature	-5 to 70 °C (temperature compensation range for DO mg/L measurement: -5 to 50 °C)	±0.2 °C	0.1 °C or 0.1 °F (user selectable)	°C, °F, K
pH	0 to 14 pH units	±0.2 pH units	0.01 pH units	pH, pH mV
ORP	-1999 to 1999 mV	±20 mV	0.1 mV	mV
Dissolved Oxygen	0 to 500%, 0 to 50 mg/L	0 to 200%: ±1% of reading or 1% saturation, whichever is greater 200 to 500%: ±8% of reading 0 to 20 mg/L: ±0.1 mg/L or 1% of reading, whichever is greater 20 to 50 mg/L: ±8% of reading	0.01 mg/L and 0.1%, or 0.1 mg/L and 1% (user selectable)	% saturation, % saturation local, mg/L, ppm
Barometer	375 to 825 mmHg	±1.5 mmHg from 0 to 50 °C	0.1 mmHg	mmHg, inHg, mbar, psi, kPa, atm
Conductivity	0 to 200 mS/cm	0 - 100 mS/cm: ±0.5% of reading or .001 mS/cm, whichever is greater 100 - 200 mS/cm: ±1.0% of reading	0.001, 0.01 or 0.1 µS/cm (range dependent)	µS/cm, mS/cm
Specific Conductance*	0 to 200 mS/cm	0 - 100 mS/cm: ±0.5% of reading or .001 mS/cm, whichever is greater 100 - 200 mS/cm: ±1.0% of reading. User selectable reference temperature (15 to 25 °C; default 25 °C) and compensation coefficient (0 to 4%/°C; default 1.91%)	0.001, 0.01, 0.1 mS/cm	µS/cm or mS/cm
Salinity*	0 to 70 ppt	±1.0% of reading or ±0.1 ppt, whichever is greater	0.01 ppt	ppt or PSU
Total Dissolved Solids (TDS)*	0 to 100 g/L	Calculated from specific conductance and a user-selectable TDS multiplier (0.30 to 1.00; default 0.65)	0.001, 0.01, 0.1 g/L	mg/L, g/L, kg/L
Resistivity*	0 to 2 Mohms	±0.1% Full Scale	0.001, 0.01, 0.1 ohms	ohm-cm, kohm-cm, Mohm-cm
Seawater Density*	0.0 to 50.0 sigma, sigma T	-	0.1 sigma or sigma T	Sigma, Sigma T
Turbidity	0 to 4000 FNU	0 to 999 FNU: 0.3 FNU or ±2% of reading, whichever is greater 1000 to 4000 FNU: ±5% of reading	0.1 FNU	FNU, NTU
Total Suspended Solids (TSS)*	-	User correlated from turbidity field measurements and lab TSS measurements from grab samples	0.01, 0.1 mg/L	mg/L
Ammonium**	0 to 200 mg/L NH₄-N	±10% of reading or 2 mg/L, whichever is greater	0.01 mg/L	NH₄-N mg/L, NH₄-N mV
Ammonia*	0 to 200 mg/L NH₃-N	-	0.01 mg/L	NH₃-N mg/L
Chloride**	0 to 18000 mg/L Cl	±15% of reading or 5 mg/L, whichever is greater	0.01 mg/L	Cl mg/L, Cl mV
Nitrate**	0 to 200 mg/L NO₃-N	±10% of reading or 2 mg/L, whichever is greater	0.01 mg/L	NO₃-N mg/L, NO₃-N mV
Depth	0 to 328 feet (0 to 100 m)	±0.013 ft (±0.004 m) for 1, 4, and 10 m cables ±0.13 ft (±0.04 m) for cables 20 m and longer	0.001 m or 0.01 ft	m, ft

*Derived/calculated parameter   **ISEs for freshwater only; 20 meter maximum depth

ProDSS System Specifications (Instrument, Sensor, and Cable)

Sensor/Parameter	Sensor Type/Measurement Method	Calibration	Maximum Depth	Warranty
Temperature	Thermistor, installed on conductivity sensor	Not available	100 m	2 years for conductivity/temperature sensor
pH	Combination glass bulb electrode, Ag/AgCl reference electrode with gelled electrolyte	1, 2, or 3 point	100 m	2 years for pH and pH/ORP sensors 1 year for pH and pH/ORP sensor modules
ORP	Platinum button with Ag/AgCl reference	1 point	100 m	2 years for pH/ORP sensor 1 year for pH/ORP sensor module
Dissolved Oxygen	Optical luminescence - lifetime method	1 or 2 point	100 m	2 years for optical DO sensor 1 year for optical DO sensor cap
Barometer	-	1 point	-	3 years, integrated into ProDSS handheld
Conductivity	Four nickel electrode cell	1 point	100 m	2 years for conductivity/temperature sensor
Specific Conductance*	Calculated from conductivity and temperature	1 point	-	-
Salinity*	Calculated from conductivity and temperature	1 point	-	-
Total Dissolved Solids (TDS)*	Calculated from specific conductance and a user-selectable TDS multiplier (0.30 to 1.00; default 0.65)	-	-	-
Resistivity*	Calculated from conductivity and temperature	-	-	-
Seawater Density*	Sigma is calculated from salinity, temperature, and pressure (depth) Sigma T is calculated from salinity and temperature	-	-	-
Turbidity	Nephelometric - Optical, 90° scatter Meets ISO 7027	1, 2, or 3 point	-	2 years for turbidity sensor
Total Suspended Solids (TSS)*	User correlated from turbidity field measurements and lab TSS measurements from grab samples	-	-	-
Ammonium**	Ion selective electrode	1, 2, or 3 point	20 m	2 years for ammonium sensor 6 months for ammonium sensor module
Ammonia*	Calculated from ammonium, temperature, salinity, and pH	-	-	-
Chloride**	Ion selective electrode	1, 2, or 3 point	20 m	2 years for chloride sensor 6 months for chloride sensor module
Nitrate**	Ion selective electrode	1, 2, or 3 point	20 m	2 years for nitrate sensor 6 months for nitrate sensor module
Depth	Pressure transducer	1 point	-	2 years, integrated into cable assembly

*Derived/calculated parameter
**ISEs for freshwater only ; 20 meter maximum depth

ProDSS Order Guide

Step 1: Order Instrument

All instruments include a rechargeable lithium-ion battery (pre-installed), hand strap, USB cable for charging the ProDSS battery and for connection to a PC, universal AC charger, cable for connection to a USB memory stick, ProDSS quick start guide, and USB memory stick containing KorDSS software and digital copy of the comprehensive manual.

☐**626870-1**: Handheld without GPS

☐**626870-2**: Handheld with GPS

Step 2: Order Cable

Cables do not include an integrated temperature sensor. All cables include 4 universal sensor ports and a maintenance kit (3 port plugs, tube of Krytox® lubricant, brush for conductivity probe, syringe for depth sensor, and sensor installation/removal tool). A 1 lb. weight is included with all cables 10 meters and longer while 10, 20, and 30 meter cables include a cable management kit.

☐**626909**: No depth sensor integrated in **1**, **4**, **10**, **20**, **30**, **40**, **50**, **60**, **70**, **80**, **90**, or **100** meter cable.

☐**626910**: Depth sensor integrated in **1**, **4**, or **10** meter cable.

☐**626911**: Depth sensor integrated in **20**, **30**, **40**, **50**, **60**, **70**, **80**, **90**, or **100** meter cable.

ProDSS Order Guide continued

Step 3: Order Smart Sensor(s)

A conductivity/temperature sensor *must* be installed in a ProDSS cable for accurate measurement of *all* parameters. All sensors, including conductivity/temperature, must be ordered separately. Please visit ysi.com/ProDSS for replacement module ordering information.

☐ **626900**: Optical dissolved oxygen (ODO)

☐ **626901**: Turbidity

☐ **626902**: Conductivity and temperature

☐ **626903**: pH sensor with module

☐ **626904**: pH/ORP sensor with module

☐ **626905**: Nitrate sensor with module

☐ **626906**: Ammonium sensor with module

☐ **626907**: Chloride sensor with module

Step 4: Order Standards

☐ **065270**: Conductivity standard, 1000 umhos/cm (quart)

☐ **065272**: Conductivity standard, 10000 umhos/cm (quart)

☐ **065274**: Conductivity standard, 100000 umhos/cm (quart)

☐ **603824**: 2 pints each of 4, 7, and 10 pH buffers

☐ **061320**: Zobell standard for ORP (mV) calibration, 125 mL

☐ **608000**: Turbidity standard, 0 FNU (1 gallon)

☐ **607200**: Turbidity standard, 12.4 FNU (1 gallon)

☐ **607300**: Turbidity standard, 124 FNU (1 gallon)

☐ **607400**: Turbidity standard, 1010 FNU (1 gallon)

☐ **005580**: Confidence Solution® to verify pH, ORP and conductivity data (not for calibration)

☐ **003841**: 1 mg/L ammonium standard (500 mL)

☐ **003842**: 10 mg/L ammonium standard (500 mL)

☐ **003843**: 100 mg/L ammonium standard (500 mL)

☐ **003885**: 1 mg/L nitrate standard (500 mL)

☐ **003886**: 10 mg/L nitrate standard (500 mL)

☐ **003887**: 100 mg/L nitrate standard (500 mL)

Step 5: Order Accessories

☐ **626946**: Large, hard-sided carrying case

☐ **603075**: Large, soft-sided carrying case

☐ **626945**: Small, hard-sided carrying case (1 and 4 meter)

☐ **599080**: Flow cell

☐ **603056**: Flow cell mounting spike

☐ **063507**: Tripod

☐ **063517**: Ultra clamp

☐ **603070**: Shoulder strap

☐ **603069**: Belt clip

☐ **626942**: USB car charger

☐ **626846**: Replacement Li-ion battery pack

☐ **626969***: ProDSS USB flash drive

☐ **626991***: USB cable for charging and PC connection

☐ **626992***: Cable for connection to USB stick

☐ **626990****: Cable maintenance kit

☐ **626919****: Probe guard kit

☐ **599786****: Calibration/storage cup

☐ **603062*****: Cable management kit

☐ **626918******: 1 lb weight

☐ **605978**: 4.9 oz weight

☐ **626943**: Small external battery pack. Will typically recharge battery to ~50% when completely discharged

☐ **626944**: Large external battery pack. Will typically recharge battery and charge second battery to ~20%

☐ **626940***: AC charger (USA). Includes power supply and USB cable (626991)

☐ **626941***: AC charger (International). Includes power supply, USB cable and outlet adapters

*Included with new ProDSS. Only one (1) AC charger is included based on region   ******Included with all cables
***Included with all 10, 20, and 30 meter cables   ********Included with all cables 10 meters and longer

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