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	Hydrology Operations Manual	

Handheld Meter Specifications

Overview:

All measuring equipment used for “check data” collection for discrete water quality measurements must have a current validation certificate and meet the minimum specifications outlined in this procedure. Water temperature is validated annually and must follow the procedure outlined in section 8.3 of the Catchment Data Operations Manual. The Handheld Meter Maintenance Schedule located in section 14.3 of the Catchment Data Operations Manual outlines the frequency at which sensors must be replaced to ensure they are still valid.

Standards:


At the time of writing, NEMS (National Environmental Monitoring Standards) are being written (or planned to be) around water quality parameters. Horizons procedures are intended to comply with the NEMS standards.

Approved Instrumentation:

YSI Professional Plus
YSI 556
Insitu Smart Troll

Specifications (YSI):

	Sensor Type		Range		Accuracy		Resolution	
	YSI Pro	YSI 556	YSI Pro	YSI 556	YSI Pro	YSI 556	YSI Pro	YSI 556
Temperature			-5 to 70°C	-5 to 45°C	± 0.2°C	± 0.15°C	0.1°C	0.1°C
Barometric Pressure	Piezoresistive		500 to 1100 mbar	665 to 1066 mbar	± 1.5 mbar	± 4 mbar	0.1 mbar	0.1 mbar
Dissolved Oxygen (%)	Galvanic	Galvanic	0 to 500%	0 to 500%	± 2%	± 2%	0.1%	0.1%
Dissolved Oxygen (mg/l)	Galvanic	Galvanic	0 to 50mg/L	0 to 50mg/L	± 2% or ±0.2mg/L	± 2% or ±0.2mg/L	0.01 mg/L	0.01 mg/L
Conductivity	4-Electrode Cell	4-Electrode Cell	0 to 200ms/cm	0 to 200ms/cm	± 0.5%	± 0.5%	0.1ms/cm	0.1ms/cm
pH	Glass electrode	Glass electrode	0 to 14 units	0 to 14 units	± 0.2 units	± 0.2 units	0.01 units	0.01 units
ORP	Platinum button	Platinum button	-1999 to +1999mV	-999 to +999mV	± 20mV	± 20mV	0.1mV	0.1mV

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Handheld Meter Specifications

Specifications (Insitu):

	Sensor Type		Range		Accuracy		Resolution	
	Smart Troll		Smart Troll		Smart Troll		Smart Troll	
Water Temperature	PT100		-5 to 50°C		± 0.1°C		0.01°C	
Air Temperature	Thermistor		-20 to 70°C		± 2.0°C		± 0.1°C	
Barometric Pressure	Battery Pack		300 to 1100 mbar		± 3.0 mbar		0.1 mbar	
Depth	Non vented absolute PT		0 – 76 meters		0.1% FS		0.01 m	
Dissolved Oxygen (%)	Optical (RDO)		0-80% 80-200 % 20-50 mg/L		± 1% ± 2% ± 10% of reading		0.1%	
Dissolved Oxygen (mg/l)	Optical (RDO)		0-8 mg/L 8-20 mg/L 20-50 mg/L		±0.1mg/L ±0.2mg/L ± 10% of reading		0.1mg/L	
Conductivity	4-Electrode Cell		5 to 100000 µs/cm		± 0.5% + 1µs/cm		0.1µs/cm	
pH	Glass electrode		0 to 14 units		± 0.1 units		0.01 units	
ORP	Platinum button		-1400 to +1400 mV		± 5mV		0.1mV	