RBR

Your Path Through the Sea

MARINE | FRESHWATER | CRYOSPHERIC

Submersible CT and CTD Recorders

For Conductivity, Temperature and Depth

Loggers for CT and CTD

These recorders will provide derived measurements of Salinity, Speed of Sound and Density

The XR series CT/CTD offer three conductivity sensors; two case styles; and a maximum sampling rate of 1Hz or 6Hz. Temperature may be measured internally, or with an external probe of time constant 3s or ~0.1s.

Conductivity Measurement

The RBR XR series offer three sensors for conductivity, each with different applications.

Inductive cell

This is the simplest and most rugged sensor. It has one range, from 0 to 85mS/cm and is sufficiently robust that it may be frozen into the water. Noise level is less than 1µS/cm RMS

This option is specified with a suffix "m".

Electrode contact cell

This provides high resolution measurements in fresh water. The range is 0 to 2mS/cm. The noise level of this sensor is less than 0.02µS/cm RMS.

Specify with a "f" suffix.

Software

Integrated RBR Windows® software is available at no additional charge for all of our instruments. See reverse for further details or check our website for details, downloads and upgrades.

Zero External Field Inductive cell

(ZEFICC). This innovation permits the use of an inductive cell without external field. The principle is to dynamically cancel the external field of the cell. This is valuable in the presence of mooring structures.

This option may be selected by using a suffix "z" in the model number. This sensor is a special order - please contact RBR.

Outline Specifications

Conductivity:	±0.003 mS/cm
Temperature:	±0.002˚C ITS-90
Depth:	±0.05% full scale

See overleaf for full specifications

Other Sensors

Sensors are available for a wide range of standard parameters. See the multichannel data sheet for more details.

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Conductivity, Temperature and Depth

General Specifications

Case Size:	310-420mm length x 65mm diameter (incl. conductivity cell)
Material:	Delrin®: to 740m Titanium: to 6,600m
Memory:	8Mbyte Flash (2,400,000 samples) (May be extended to 2 Gbyte)
Power:	Four CR123A Lithium (3V) standard camera batteries or external power (6 to 15 V). Battery power sufficient for 2,400,000 readings or three years of operation
Weight:	1260g in air, 389g in water (Delrin®) 2400g in air, 1530g in water (titanium)
Calibration:	NIST traceable standards
Clock Accuracy:	±32 seconds/year
Sample Rates:	Up to 1Hz (XR-420) Up to 6Hz (XR-620)
Communications:	RS-232/485 RF Modem control or GSM/CDMA modem
Download Speed:	~115,000 samples/minute RS232 Or USB for large memory option

Ordering Information

Inductive:	XR-420CT(D)m	XR-620CT(D)m
Electrode:	XR-420CT(D)f	XR-620CT(D)f
ZEFICC:	XR-420CT(D)z	XR-620CT(D)z
Select depth range:	10/20/50/100/200/500/740m 1000/2000/4000/6000m	

Select fast temperature probe (~0.1s) if required

Other Options

Optional u/w connector for data & power
Modem interface

Measurement Specifications

Conductivity

Range:	0-2mS/cm (freshwater) or 0-85mS/cm (marine). PSS-78 is defined up to 70mS/cm, extended ranges are available.
Accuracy:	± 0.003 mS/cm at 35psu 15°C
Drift(T):	0.001 mS/cm over 5° to 25°C after compensation for temperature.
Drift(t):	~1 µS/cm/month
Resolution:	~0.01 µS/cm (freshwater) or ~1 µS/cm (marine)
Time Constant:	Set by flow through cell. Cell length is 60mm.

Temperature

Range:	-5 °C to 35 °C Standard -40°C to +50° optional
Accuracy:	± 0.002 °C (ITS-90 and NIST traceable primary standards for -39°, 0° and 29° C)
Resolution:	<0.00005 °C
Time Constant:	~3 sec ~0.1 sec (optional)
Drift:	~0.002 °C/year typical

Depth (Optional)

Range:	10/20/50/100/200/500/740/1000/2000/4000/6000m (dBar)
Accuracy:	±0.05% full scale
Resolution:	<0.001% full scale
Time Constant:	< 10 msec
Drift:	~0.1%(full scale)/year
Sensor Type:	Keller strain gauge Option: Quartz resonant gauge accuracy ±0.01% full scale

Measurement of sensor performance is a complex and continually evolving area . Please contact RBR for the most recent metrological data for your sensor.

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