

# XR-420 T8, 16, or 24 Multi-channel Temperature Logger

## Features:

- High Accuracy
- Large Memory
- Low Power
- High-speed Data Download
- Custom Configuration

The XR-420 T8, T16 and T24 are a series of multi-channel temperature data recorders designed to operate with arrays of thermistors. The XR-420 can include up to three eight-channel modules, and any combination of thermistors (up to 24) can be readily made using the eight channel modules.

The thermistor arrays are made to order, and may be any practical length. We have made them to be deployed in sea or lake water, as well as underground, in concrete, in permafrost or in ice. They have been used to measure internal waves and for cryospheric studies. The array may be mounted in-line on a cable, or embedded into a rugged PVC tube for ground temperature measurements. With extra pressure housings they may be used at depths up to 4,000m. The data logger has an extended operational temperature range of -40°C to +35°C.

The standard thermistor used in the strings is the Thermometrics P Series, chosen for stability. Other thermistors have been supplied, and the particular model is selected according to the temperature range anticipated. The thermistor strings are calibrated to  $\pm 0.005^\circ\text{C}$ .



8MB of nonvolatile flash memory provides sufficient memory for 2,400,000 readings, which can be logged on one set of high-powered 3V lithium batteries. The batteries are common camera batteries (CR123A), which are readily available. Power consumption can vary significantly depending on the sampling rate, and operating temperature. A fresh set of batteries will usually permit collection of a full complement of readings over periods exceeding one year.

## Technical

### Base Logger

Power:	QTY 4, 3V CR123A cells
Communications:	RS-232/485; logged, cable, or telemetry
Download Speed:	~115,000 samples/minute
Clock Accuracy:	$\pm 32$ seconds/year
Size:	230mm (T8), 310mm (T16, T24) x 64mm
Memory:	8Mbyte Flash (2,400,000 samples)
Calibration:	NIST traceable standards

### Temperature

Range:	-5 °C to 35 °C; extended range to -40 °C
Accuracy:	$\pm 0.005$ °C
Resolution:	<0.00005 °C
Time Constant:	depends on probe construction

## Software

The XR-420 use fully integrated RBR Windows® software, which is compatible with Windows® 95/98/NT/2000/XP. Please see the "RBR Logger Software" datasheet, or visit the RBR website ([www.rbr-global.com](http://www.rbr-global.com)) for more information.

For more details, please visit our website: [www.rbr-global.com](http://www.rbr-global.com)

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