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RST Instruments Ltd.
11545 Kingston St.,
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PRODUCT CATEGORY:
DATA COLLECTION

Fully Automated Wireless Data Collection

The RSTAR Array Radio Series uses wireless technology to provide automated data acquisition. A complete RSTAR L900 System uses Nodes at the sensor level, deployed in a star topology from a continuously active Hub, which consists of an L900 RTU interfaced to a flexDAQ Datalogger.

The "DT Series" Data Loggers from RST accommodate the RSTAR Data Collection System and use a single lithium standard cell which provides years of battery life (model dependent). The DT Series provides reliable, unattended monitoring of various sensor types: vibrating wire sensors, ShapeArray, MEMS tilt sensors, digitally bussed (DT-BUS) sensors, in-place inclinometers, 4-20 mA sensors, and thermistors. More details can be found at www.rstinstruments.com

DT LOGGER /RSTAR PORTFOLIO

All "DT Series" Data Loggers are equipped with an option to add on a radio antenna and incorporate it into an RSTAR wireless system. L900 RSTAR radios and antennas can be ordered at time of initial ordering, or at a later date. L900 RSTAR Kit enables the logger to connect to an RSTAR Hub or RSTAR Affinity Gateway with backward compatibility Radio. An L900 RSTAR decal is also supplied for each unit to allow for prope identification.

DT2011B Single Channel Vibrating Wire Data Logger attached to an RST Vibrating Wire

GENERAL SPECIFICATIONS

L900 SYSTEM	
Operating Frequency (country dependent)	900 MHZ, 868 MHZ, 2.4 GHZ - Spread Spectrum band
Access Frequency	24 Hours
Outdoor Range	Up to 14 km (at 900 MHz) in open country, depending on frequency and antenna
Maximum Nodes	255
Communication	See diagram on inside
L900 NODE	
Memory	4 MB
Time Format	Month / day / year Hour / minute / second
Power Source	1 lithium standard cell battery
Additional Quiescent Current	15 µA
Battery Life	3-5 years depending on reading frequency, sensor type and quantity, weather conditions.
Temperature Range	-40°C to 60°C (-40° to 140°F)

Enclosure dimensions will vary according to chosen data logger.

> FEATURES

- 900 MHZ, 868 MHz and 2.4 GHz spread spectrum band (country dependent) with extensive open-country range through use of simple dipole or directional antenna.
- Nodes comprised of sensors and compatible "DT Series" Data Loggers which can accommodate: vibrating wire sensors, potentiometers, MEMS tilt sensors, strain gauge (full bridge) sensors, digitally bussed (DT-BUS) sensors, 4-20 mA sensors, and thermistors.
- The nodes wake from low power and collect data from their attached sensors. This data, which includes the node serial number, data and diagnostics, is then sent wirelessly as a packet to the L900 RTU.
- The L900 RTU stores the data in a temporary register set which is overwritten as new data is received; there is an intermediate data logging function in the RSTAR L900 Node. The datalogger within the flexDAQ has ultimate responsibility for logging data.
- Power requirements for a single RSTAR L900 node is one lithium standard cell.
- The flexDAQ Data Logger (RSTAR Hub) can be powered by a solar panel, batteries or AC power.

> BENEFITS

- ✓ **Integrated**
- ✓ **Flexible**
- ✓ **Secure**
- ✓ **User-friendly**
- ✓ **Durable**
- ✓ **Cost-effective**

> EXCELLENT HUB - NODE RANGE

Up to 14 km in open country.

> PROVEN

Based on proven flexdaq experience and technology

> ULTRA-LOW QUIESCENT POWER

RSTAR nodes powered by a single lithium cell which provides years of battery life.

> MULTIPLE TELEMETRY OPTIONS

Cell modem, LAN, radio, satellite, etc.

> SIMPLE STAR ROUTING

No mesh overhead.

> ACCESSIBLE DATA LOCATIONS

Data can be accessed at multiple locations via internet browser.

> SIMPLE NETWORK SETUP

Add node serial number to RSTAR Hub, deploy.

> PROTECTED DATA

Data is protected at all stages by encrypted, error-corrected transmission and storage.

> UP TO 255 L900 NODES PER FLEXDAQ

RST Instruments Ltd. reserves the right to change specifications without notice.

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In a typical RSTAR configuration, data is protected at all stages by encrypted, error-corrected transmission and storage.

A flexDAQ enclosure shown with an open lid to reveal an installed RSTAR L900 RTU (on DIN rail), datalogger, radio and power supply.

GeoExplorer

Total sensor data integration with all-in-one management, visualization, and analysis.

A sensor configuration with RSTAR is easily incorporated into GeoExplorer software for multi-sensor management.

ORDERING INFORMATION

L900 COMPATIBLE DATA LOGGERS		L900 RSTAR RADIO & ANTENNA KIT PLEASE SPECIFY FREQUENCY BASED ON LOCATION	
Data Logger	**Description**	**Frequency**	**Location**
DT2011B	Single Channel Vibrating Wire Data Logger	900 MHz	North America
DT2040	20/40 Channel Vibrating Wire/ Thermistor Data Logger	2.4 GHz	Worldwide
DT2055B	5/10 Channel Vibrating Wire/ Thermistor Data Logger	868 MHz	EU Countries/ Europe
DT2485	Digital Bus (DT-BUS) Data Logger	900 MHz	Australia
DTSAA	ShapeArray Data Logger	900 MHz	Brazil
DT4205	5/10 Channel 4-20mA Transmitter Data Logger Thermistor Data Logger	900 MHz	Chile
ELGL1430	flexDAQ Data Logger CR310 (RSTAR Hub)	GeoExplorer Software (optional)	
ELGL1206	flexDAQ Data Logger CR6 (RSTAR Hub)		