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USER MANUAL FOR K-KONTROL DATA RELAY UNIT
Model TXR1A

FCC and Industry Canada Compliance

FCC ID: SDM870TR

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IC 5232A-870TR Canada

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CAUTION: Changes or modifications not expressly approved by 493K Limited could void the user's authority to operate this equipment.

General Description

The K-Kontrol Data Relay Unit is a battery powered 914.5MHz radio telemetry transceiver that processes the signals acquired from four type K thermocouples and, on receipt of master command, transmits the temperature data to a master unit which, via an RS232 serial output, passes the data to a computer for display, analysis and storage.

The unit can serve as a master or a slave. A unit connected to a computer via an RS232 serial cable automatically adopts the role of master and, at 2 second intervals, sequentially calls for data from the slaves.

The TXR1A units are designed for use with 493K's unique high temperature slip rings and the K-Kord software package.

A photograph of the Model TXR1A is shown to the right.

The unit is contained in an ABS plastic enclosure 160 x 120 x 90mm.

Power is provided by two 1.5 volt, D size, alkaline batteries retained in a cylindrical battery holder mounted in the base section of the enclosure.

Access to the thermocouple, RS232 and external power connectors is provided by slots/holes in the sides of the lid.

A power ON/OFF push switch and a power ON light emitting diode (LED) indicator are sited on the top facia of the unit.

The transmit/receive aerial is contained within the enclosure

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Initial set-up

1. Using the mechanical interface fixtures and the instructions provided with the 493K slip rings, the slave TXR1A units are affixed adjacent to the slip rings on each rotating arm.
2. Insert the K type thermocouple plugs issuing from the slip rings into the appropriate sockets on each slave TXR1A unit.
3. Place the K-Kord disc into the CD-ROM of the PC and install the K-Kord software.
4. Run up the K-Kord software, click the Preferences tab and select the PC serial comport to be used for connection to the master TXR1A unit, e.g., COM1, COM2, COM3 or COM4.
5. Site the master TXR1A unit adjacent to the PC and connect the RS232 serial cable between the master and the selected comport of the PC.

Operation

1. Press the ON button on each TXR1A unit, slaves and master, and confirm the power ON LED is illuminated on each unit.
2. At the PC, click on the Start Recording button located at the top right corner of the K-Kord window.
3. The master TXR1A unit power ON LED should change to flash on for approximately 0.3 seconds every 2 seconds.
4. As each slave TXR1A unit “locks on” to the master, its power ON LED will change to flash on for approximately 0.1 seconds every 2 seconds.
5. The received temperature data can be viewed in tabular or graphical form on K-Kord software and is automatically saved to a default directory file.
6. When the Stop Recording button on the K-Kord window is pressed, the master will stop calling the slaves and the power ON LEDs on the master and slave units will stop flashing and remain on.
7. If the system is left in the Stop Recording condition, the master and each slave unit will automatically switch off after a period of 10 minutes.

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Batteries

The unit is powered by two 1.5 volt D size Alkaline batteries.

With normal usage, the batteries would be expected to last in excess of 8 months in a slave unit and in excess of 3.5 months in a master unit.

The status of the batteries in each unit is shown on the bottom bar of the K-Kord software window. When this display indicates that a battery set is no longer "Good", the batteries in that unit should be replaced as soon as convenient.

To replace the batteries:-

1. Use the edge of a large coin or a large screwdriver to turn the lid of the battery holder through 90º to the released position.
2. Remove the lid and gently raise the opposite end of the unit to slide out the exhausted batteries.
3. Fit two new D size Alkaline batteries taking special care to ensure that the battery + polarity symbols (button end of a battery) are towards the lid.
4. Press lid onto the top battery, compress the spring until the lid locates in the vertical slots and turn through 90º to lock.

External power

The 1.3mm external power socket (centre pin positive) is provided as an option for use on TXR1A units assigned as a master.

An external power supply having a regulated DC output between 3 and 5 volts (max.) @ 200mA or greater, and a 1.3mm jack plug with the centre pin positive polarity may be used.