About Voltage Recorder RVR-52A

Our RVR-52A not only measures and records voltage, pulse, and soil moisture data, but enables you to send this data via wireless radio communication to an RTR-57U Data Collector whether located in the same building or at an extensive distance. Beyond the gathering of the data, the RTR-57U gives you the power to start and stop logger recording, check data, and monitor current readings from a distance. Besides wireless communication, optical communication is also possible.

Basic Functions

The data recorded with the RVR-52A can be easily downloaded via wireless radio communication to the RVR-52A Data Collector. Color data can be saved for later download to your computer. Moreover, all recording settings, channel settings, and other settings related to data collection can be changed via wireless communication.

Note: In order to collect data via wireless communication, it is necessary to register via computer the RVR-52A and use as a Remote Unit in the RTR-57U unit you wish to use. For details about what is necessary for wireless settings, see the Help Manual in the software or the User's Manual for the software.

Gathering Data via Wireless Communication

The wireless communication is transmissible to a Direct PC, and is about 100 meters.

Example of Downloading Data via Optical Communication

Place the RVR-52A unit face down on the RTR-57U to carry out direct optical communication with your computer.

Voltage Recorder RVR-52A

Wireless Data Logger for Voltage / Pulse / Event Time / Soil Moisture

Thank you for purchasing this product. Carefully read and understand these instructions before using this unit.

User’s Manual

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Notices about this User’s Manual

This symbol denotes a forbidden action. Inside or near this symbol will cause ELECTROCUTION.

Examples of Downloading Data via Optical Communication

Example of Downloading Data via Optical Communication

With the RVR-52A, you can measure up to 30 counts (per second) when the input voltage range is between 0-30V and there is a continuous pulse of more than 15 milliseconds. The largest number of counts for one recording interval is 32,000 counts. You can select from sampling (Hi-Lo) or filtering (Hi-Low) and count when one of the other occurs.

Measurement Specifications

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<th>Response Time</th>
<th>Input Impedance</th>
<th>Detection Voltage</th>
<th>Dimensions H</th>
<th>Weight Approx.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>±1% of reading (10:1, 60Hz, 0-600V)</td>
<td>10μsec</td>
<td>10Mohm</td>
<td>10V</td>
<td>100 x 65 x 30mm</td>
<td>50g</td>
</tr>
</tbody>
</table>

Accessories Included:

- User’s Manual

Safety Precautions and Instructions

Please carefully observe the following safety measures when using our product.

To prevent any loss or damage to our customers, other people and/or property, and to prevent any loss or damage to your product, you should follow this manual before using our product. It is prohibited to use, duplicate, and/or arrange any part of the User’s Manual without the permission of T&M Corporation.

- Pin all the safety notices carefully. We cannot guarantee nor are we responsible to safe if the product is used in any manner other than intended.
- T&M Corporation accepts no responsibility for any malfunction or trouble with the product or with your computer that is caused by the improper handling of the product.
- Do not carry or store the product as it is falling out of the case. This may cause fire or damage.
- Do not use with batteries other than those that are recommended. If may cause fire or damage.
- Do not use the input cable if it has water droplets or if your hands are wet. It may cause electric shock.
- Do not use the product in areas exposed to strong magnetic fields, or in the vicinity of high-voltage power lines.
- Do not insert any foreign objects into the unit.
- Do not remove any objects from the input cable jack.
- Do not place any objects in the input cable jack.
- Do not place any objects near the product.
- Do not expose the unit to direct sunlight or high temperature. If the product is used in such environments, it may cause physical damage or burn out.
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Before Using

◆ Insert the batteries
  Note:
  - When changing batteries make sure to carefully read [Changing Batteries].
  - Make sure no water gets inside the case.
  1. Remove the screws and take off the back case.
  2. Insert the battery in its lube and place in unit as in diagram.
  3. Check the rubber packing for any cuts or scratches and replace the cover as it was when opened.

◆ Connect the Input Cable
  Confirm that the sensor is properly connected by inserting it until you hear a clicking sound.

◆ Upon insertion of the batteries, measuring and recording will automatically begin at the factory set default recording settings, or if replacing the batteries the settings will return to the most recent recording settings.

The default settings are: Recording Mode: Endless / Recording Interval: 1 minutes / Recording Start: Immediate Start (Measurement and recording will automatically begin in Voltage Measurement Mode.)

Changing the Battery

Note:
  - Once the battery indicator [ ] appears, replace the old battery with a new one as soon as possible.
  - After removing the old battery, all recorded data will be lost if a new battery is not inserted within 1 minute. Make sure to compile the battery change within 1 minute.
  - If the battery direction is incorrect (+/-) and a short occurs, all recorded data saved in the main unit will be lost.
  - Please store the Li14250 batteries in a temperature of less than 20°C.
  - When using an Li14250 battery, the battery indicator [ ] on the main unit display may not soon disappear, even if you have used a new battery. This is due to the nature of the battery and the time it will take for the indicator to disappear will increase with the time that the battery has been in storage. If a battery has been in storage for about one year, it will take about 10 minutes for the indicator to disappear. During this time, if you try to collect Remote Unit Info via the RTR-57U it will respond that the battery level is too low.

1. When battery power becomes low, the battery indicator [ ] will appear in the LCD display.
   - If you change the battery at this time, recording will continue uninterrupted and the downloading of recorded data is possible.
   - If you do not change. Recording OK Wireless Communication: OK Data Download: OK
   - If you do not change. Recording NO Wireless Communication: NO Data Download: NO

2. If you do not change the battery and continue using the unit, the temperature display will intermittently display [ bAtt ]. Please change the battery at once.
   - If at this time a new battery is placed in the unit, recording will continue and downloading of saved data can be done.
   - If you do not change. Recording OK Wireless Communication: OK Data Download: NO
   - If you do not change. Recording NO Wireless Communication: NO Data Download: NO

3. Check the rubber packing for any cuts or scratches and replace the cover as it was when opened.

4. If you do not change the battery even under conditions in 3 above, the display will go blank.
   - All of the recorded data will be erased. If at this time a new battery is placed in the unit, [ CHEC] will appear on the display after which recording will begin again using the previously set recording conditions.

About the LCD Display

Check
  This is displayed under the following conditions: after purchasing and putting in the batteries for the first time, if the battery terminals + - were mistaken and a short occurred, or if the batteries are replaced after having been taken out for a long period. If this is displayed all data that had been stored in the main unit has been erased.

Full Memory
  If recording under the ONE TIME MODE, when the data reaches the upper limit of 8,000 readings, recording will stop and this will be displayed intermittently with the current temperature.

Wireless Transmission
  This will be displayed when transmitting data to an RTR-57U unit via wireless communication.

Over Measurement Range (only for Voltage Measurement)
  Display will blink if measurement is below 0 or above 0.5 V

Over 10,000 Pulse Count Readings Display
  On tenth of readings will be displayed with a x10.

About the Pulse Measurement Display
  This reading shown on the pulse measurement display shows the number of total pulse counts for the recording interval set at the recording start and changes every one sixtieth of the time of the set recording interval.

For example: If the recording interval is set at 30 minutes, the display will show the total number of pulse counts for the previous thirty minutes; changing at a rate of every thirty seconds. (if the interval is set at 1 minute or less, the measurement count and the display will change every second.)

Signal Level at time of Event Recording
  If the current signal level is high, Hi will be displayed.

Signal Level at time of Event Recording
  If the current signal level is low, Lo will be displayed.

About the Soil Moisture Sensor

It is possible to measure soil moisture using Decagon Devices Inc. Soil Moisture Sensor ECHO Probes (EC-10, EC-20). The RVR-52A has a built-in excitation voltage (2.5V) for the ECHO probe that allows for easy direct connection. The output from the ECHO probe is converted directly into moisture volume content by percentage (%) and displayed as such. Moreover, by using the adjustment function in the software you can achieve even more accurate readings.

Note:
  T&D Corporation does not handle or sell the Soil Moisture Sensors ECHO Probe (EC-10, EC-20). All inquires and questions concerning sales of and the operational specifications of the sensors should be made to Decagon Devices Inc.

Soil Moisture Measurement

1. Connect the Input Cable (VR-2C10). Connect the VR-2C10 (optional cable) to the logger’s input cable jack, making sure to insert until you hear a clicking sound.

2. Connect the Moisture Sensor to the VR-2C10. Connect the Moisture Sensor jack to the VR-2C10 terminal, making sure to insert until you hear a clicking sound.

3. Make Necessary Mode Settings and Start Recording.
   In the software, under [Measuring Mode] set to [Moisture] and start recording.

Connection Specifications

Voltage Measurement Mode

Pulse / Event Measurement Mode

About the Soil Moisture Measurement

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