



ES601 for HEMS

Quick Start Guide

Package Contents:

8001-124	ES601-HEMS
3000-009	POWER CORD
3140-403	CABLE, USB A-B MALE, 6'
3140-475	KELVIN CLAMP CABLE
6950-021	DATREND UNIVERSAL PRODUCT USB DRIVE
7006-052	ACCESSORY BAG

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Introduction

This Quick Start Guide will provide basic information about Datrend Systems' ES601 Automated Electrical Safety Analyzer for HEMS. Please refer to the Operating Manual on the USB that accompanied this device for more complete instructions. The steps in this guide will refer you to the appropriate section of the Operating Manual, as applicable. For instructions on installing the ES601pc-US program see the **ES601pc-HEMS Software for HEMS CMMS** section on the second page.

Unpacking and Inspection

Follow standard receiving practices upon receipt of the instrument. Check the shipping carton for damage. If damage is found, stop unpacking the instrument. Notify the freight carrier and ask for an agent to be present while the instrument is unpacked. There are no special unpacking instructions, but be careful not to damage the instrument when unpacking it. Inspect the instrument for physical damage such as bent or broken parts, dents, or scratches, and ensure all accessories are present. If any accessories are missing, immediately contact Datrend Customer Service and provide the ES601 serial number.

Starting Up (Setup)

Before starting, attach the Power Cord to ES601 and plug in to a power receptacle. Turn the Power Switch to the ON and wait until the MAIN MENU is displayed. Press System Settings to go to the Setup Menu to set defaults.

STARTUP MODE:

Determines how ES601 performs after power is switched on.

Press the Startup Mode button to toggle between:

- Do not test line voltage at power-on (default)
- Test line voltage at power-on

PRE-TEST INSPECTION:

Press to enable/disable prompts for equipment physical inspection each time an automated test is started. Default is 'enable'.

POST-TEST COMMENT:

Press to enable/disable prompt for user comments at the end of an automated test. Default is 'enable'.

PROMPT FOR USER TIME:

Press to enable/disable prompt for user input of labor time at the end of an automated test. Default is 'enable'.

Press More Settings to view settings for MANUAL MODE TESTING.

PAUSE AFTER MEASUREMENT:

In MANUAL MODE, sets the time delay between measurements of a leakage current test. Default 1 second.

POWER-UP DELAY:

In MANUAL MODE, sets the time delay after powering the Test Receptacle, before leakage current is measured. Default 2 seconds.

STOP AFTER SUPPLY ON:

STOP BEFORE SUPPLY OFF:

In MANUAL MODE, determines whether a leakage test sequence stops to allow boot-up or shut down of equipment under test. To test leakage without stopping for power-on/power-off of equipment, set to defaults: 'NO' and 'NO' respectively. Refer to operator's manual for more details.

TEST MULTIPLE RESISTANCES:

TEST GROUND WIRE RESISTANCE:

TEST POINT-TO-PT RESISTANCE:

Configures ground resistance test in MANUAL MODE. For measurement of power cord resistance, set to defaults: 'NO', 'YES', and 'NO' respectively. Refer to operator's manual for more details.

Press More Settings to view time/date and other settings.

SET CLK:

Allows setting the internal real time clock. Press Set Clk to set the current time and date for the device.

FORMAT:

Select date format for the internal real-time clock. Press Format to toggle between:

- USA (MMM DD YYYY) (default)
- Europe (DD MMM YYYY)
- ISO (YYYY MMM DD)

EDIT ID:

ES601 I.D. is set at time of manufacture to "MY ES601", and can be edited using this utility which allows you to assign a unique I.D. to identify this ES601 within your equipment control system. Pressing Edit ID will activate the QWERTY touch keypad of ES601, allowing the user to type in an I.D. Press Enter on the keypad to save the unique name and return to the Systems Settings Menu.

NETWORK SETUP:

Allows you to input Ethernet settings (IP address, netmask, and gateway) for ES601. Addresses are entered with decimal delimiters. A touch keypad that provides for numerical input only is displayed in response to pressing any of the Change keys.

LABEL PRINTER SETUP:

Enables and configures output to an optional PM Tag printer. Enter title for PM Tags and equipment PM interval via this menu. Press Back to save changes to PM Tag printer setup.

PASSWORD ENABLED:

If the Password is enabled, it protects the Systems Settings Menu #3. Press Password Enabled to toggle between "YES" and "NO". Default is "NO".

EDIT PASSWORD: When pressed, Edit Password displays the QWERTY keypad for entering a password. The maximum length of the password is 17 characters. By default, the password is set to all-whitespace. The password is shown as it is typed for verification.

Press Main Menu on any Settings Menu to save changes and return to the MAIN MENU of ES601.

After configuring the settings as required, power ES601 off for at least 2 seconds, then re-apply power. When MAIN MENU is displayed, press System Settings and verify that any changes made are now active.

Connections (Connecting to ES601)

When using ES601, the operator is expected to be familiar with the particular Electrical Safety Standard to which the DUT is being tested. It is recommended the operator have access to the Standard and refer to the Standard during the test.

Connection instructions for AC-powered DUT:

- Whenever connecting or disconnecting a DUT or peripheral devices to ES601, the power switches of all equipment should be OFF.
- Connect the DUT power cable to ES601 Test Receptacle.
- Connect the Kelvin Cable to a grounded terminal on the enclosure of the DUT.
- AUX1 connects to electrically isolated input/output signals. Typically this connection would be for testing a transformer-isolated data communications interface on the DUT, such as an Ethernet Port. Review DUT documentation or check with the DUT manufacturer before making this connection, or performing tests of isolated input/output signals.
- AUX2 connects to any exposed ungrounded metal on the DUT. (Note AUX1 and AUX2 connections are optional depending on the characteristics of the DUT and the requirements of the testing standard.)
- DUT patient leads (or "applied parts"), if any, are connected to ES601 jacks AP1 through AP10 as required.

Refer to Operating Manual **Figure 6 - Connecting to a line-powered DUT** for the connection diagram.

Connection instructions for battery-powered DUT:

- Whenever connecting or disconnecting a DUT or peripheral devices to ES601, the power switches of all equipment should be OFF.
- The "TO DUT CASE" jack of ES601 connects to the enclosure of the DUT, or alternatively, to aluminum foil which is wrapped over the DUT if the enclosure is made of plastic.
- As required, AUX1 may connect to electrically isolated input/output signals. Most typically, this connection would be for testing a transformer-isolated data communications interface on the DUT, such as an Ethernet Port.
- Note the Test Socket and the Kevin Cable are not used for testing internally-powered devices.

Refer to Operating Manual **Figure 7 - Connecting for battery-powered DUT** for the connection diagram.

Connection instructions for Peripheral Devices:

Input connections are located on the left side of ES601. Input connections for data entry during tests are optional. Data can always be entered via the on-screen QWERTY keyboard.

- Connect a PS/2 keyboard or PS/2 barcode scanner to the PS/2 input.
- As an alternative to PS/2 barcode scanner, connect a RS-232 barcode scanner (DB9F) to the BARCODE input.
- Peripheral testing instruments, if used, should be connected to the RS-232 TESTER PORTS before powering up ES601. RJ-12 serial cables (PN: 3140-429) and adapters (PN: 3140-710 or 3140-711).
- Connect a Centronix printer cable to PRINTER PORT for direct printing.
- Connect RS-232 PORT to a serial printer or to a PC for outputting test record data via a terminal program (HyperTerminal or equivalent).

Testing with ES601

Manual and Automated Testing are discussed in detail in Chapters 5 and 6, respectively, of the Operating Manual.

ES601pc-HEMS Software for HEMS CMMS

Installation

Plug the Datrend Product USB into your computer and close the drive. The USB menu should appear unless your computer is set to ignore autorun applications. If the menu does not appear, use the file explorer utility on your computer to locate the USB drive and browse to locate the file called *StartHere.exe*. Execute this file to launch the USB menu.

To install *ES601pc-HEMS* application software, click the "ES601" button on the USB menu, followed by ES601/ES601-US Software/Install Es601pc-HEMS. The installer application will start up and guide you through the installation process. **Note:** to install this software, you must have *administrative privileges* on your computer, otherwise Windows will block installation of some files needed to run the software.

Installing USB Drivers

When installation is complete, connect ES601 to your PC using the USB cable provided. When ES601 is connected to the PC for the first time, Windows should detect the connection and automatically launch the New Hardware Wizard which will prompt you for the USB driver.

The USB drivers for ES601 are provided on the Datrend Product USB. If the Hardware Wizard asks for the files, direct the Hardware Wizard to your USB drive. Direct the Wizard to the ES601 CDM v2.08.28 Certified USB Driver WinXP-7-8 folder for your USB and the required driver files should then be installed by Windows.

Running ES601PC-HEMS

Double-click the "ES601pc-HEMS" icon on your Windows desktop to start the program. The main window of the program provides a number of modules which can be used to configure automated tests performed by ES601, and to transfer test results stored in ES601 to your PC. Modules of *ES601pc-HEMS* include Safety AutoSequence Editor, ECG AutoSequence Editor, Inspections and User Tester Editor and Safety Limits Editor.

Please See Chapter 7 of the Operating Manual for detailed information about using *ES601pc-HEMS* with the ES601 safety analyzer.

For Questions or Support, contact:

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