

PEL 103 Configuration Guide / Info

- This PDF will show how to do an initial configuration on a PEL 103 unit. This unit **MUST** be set up on a computer and then can be installed to log data.

ADD AN INSTRUMENT

WHEN YOU FIRST CONNECT THE PEL103 TO THE DATAVIEW PROGRAM, THERE WILL BE AN ICON UP TOP THAT SAYS "ADD AN INSTRUMENT". CLICK ON ADD AN INSTRUMENT AND BE SURE THAT "USB" IS SELECTED. DO NOT TRY TO USE BLUETOOTH OR WIFI TO CONNECT THE UNIT TO THE PROGRAM

Add an Instrument Wizard

How do you want to communicate with an instrument connected to this computer or on a network?
This Wizard helps you add an instrument to your PEL Network.


Select the option which describes the type of connection you want to use:

A local instrument connected to this computer with:

- USB
- Bluetooth
- Wi-Fi direct
- Point-to-point Ethernet cable (APIPA mode)

An instrument connected to a network with:

- Ethernet (LAN or Wi-Fi)
- an IRD server

 Connect a USB cable between a USB port on the computer and the USB port of the instrument.

Click on Next to proceed.

< Back Next > Cancel Help

SELECTING DESIRED INSTRUMENT


THE PROGRAM WILL DISPLAY THE INSTRUMENT THAT IS CONNECTED TO THE COMPUTER. IT WILL USE THE UNITS SERIAL NUMBER. ONCE IT IS SHOWING YOUR INSTRUMENT YOU CAN CLICK NEXT TO PROCEED TO THE NEXT SCREEN.

Add an Instrument Wizard - USB

Select the desired instrument from the drop down list.

Instrument: Refresh

Show all communication ports

 Make sure that your instrument is powered on and is connected to a USB port on this computer.

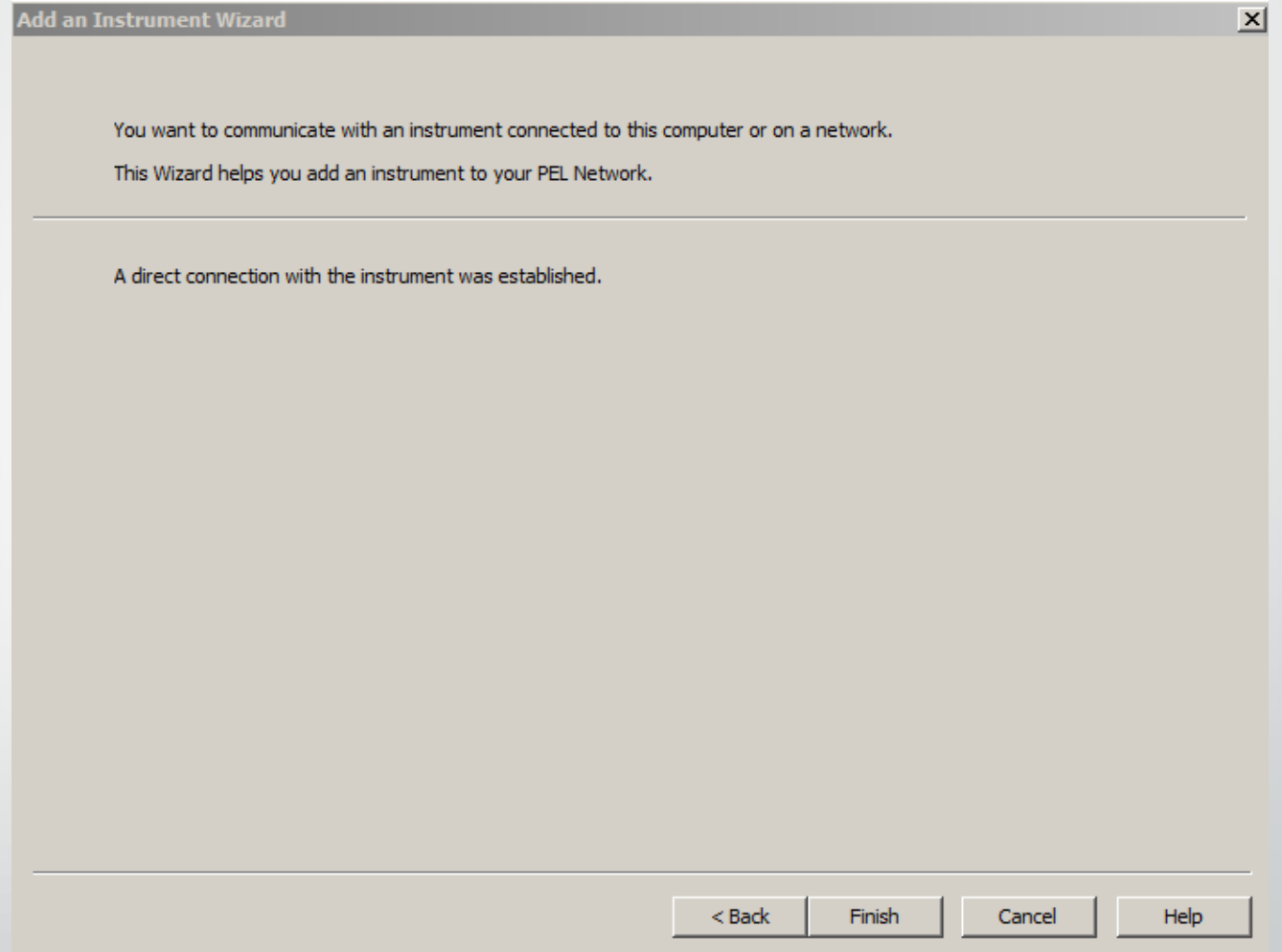
If the instrument does not appear in the list, open this computers Device Manager and look for an entry named PEL with a question mark and/or exclamation symbol under the Other devices group.

If listed under Other device you will need to reinstall the driver.

< Back Next > Cancel Help

FINISH CONNECTING

ONCE THE PROGRAM SHOWS THAT
YOU HAVE ESTABLISHED A
CONNECTION WITH YOUR
INSTRUMENT, CLICK FINISH.



CONFIGURED SETTINGS

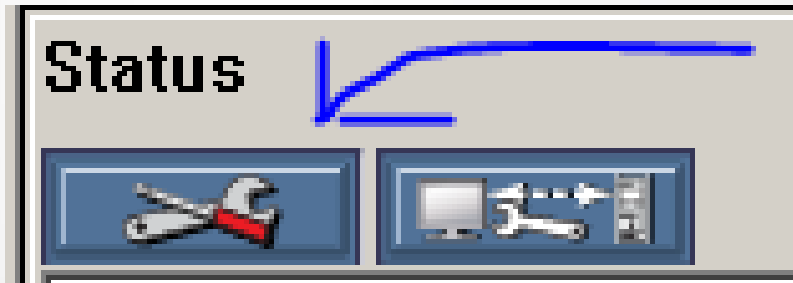
THIS SCREEN THAT FOLLOWS AFTER FINISHING THE CONNECTION WILL SHOW THE PARAMETERS THAT ARE CURRENTLY SET ON THE DEVICE.

The screenshot displays the 'PEL Control Panel - Untitled' application window. The interface includes a menu bar (File, Edit, View, Instrument, Tools, Help) and a toolbar with various icons. On the left, a 'Workstation' tree view shows a hierarchy: PEL Network > R6362 > Recorded Sessions > Real-time Data, along with 'My Open Sessions'. The main area is titled 'Status' and contains a table of device parameters.

General	
PEL model	PEL 103
PEL serial number	143874NH
PEL name	R6362
PEL location	
PEL date	6/3/2020
PEL time	9:05:00 AM
Control button	Unlocked
Battery voltage	9.34 V
Internal temperature	30.5 °C
Auto power off	Disabled
LCD contrast	100 %
LCD brightness	100 %
DSP firmware version	1.25
Microprocessor firmware version	1.19
Hardware version	C.D
Voltage presence duration	1809.13 h
Current presence duration	1710.35 h
Power on duration	2010.18 h

CONFIGURING YOUR INSTRUMENT

THE BUTTON AT THE TOP LEFT WITH THE WRENCH AND SCREWDRIVER IS WHAT YOU WILL SELECT TO MAKE CHANGES TO THE CONFIGURATION FOR YOUR TESTING



GENERAL CONFIGURATION

ON THIS SCREEN YOU CAN SET THE NAME AND LOCATION AS WELL AS OTHER PARAMETERS. YOU WILL WANT TO MAKE THE FOLLOWING SELECTIONS ON THIS SCREEN

- DISABLE AUTO POWER OFF
- SELECT "AGGREGATED MAX VALUES UPDATED WHILE RECORDING ONLY"
- MAKE SURE THE LOCK OUT CONTROL IS **UNCHECKED**
- MAKE SURE **NOT TO** ENABLE PASSWORD PROTECTION
- CLICK ON SET CLOCK TO MAKE CERTAIN YOUR DATE
- MAKE SURE TO FORMAT THE SD CARD TO CLEAR OFF THE PREVIOUS CUSTOMER'S PARAMETERS

Configure

General | Communication | Measurement | Current Sensors | Recording | Meters

Instrument identification
Model: PEL 103 AEMC Serial number: 134943QGH
Name: PEL 103-134943QGH (32 characters max)
Location: Office (32 characters max)

Auto power off (ride through)
 3 min
 10 min
 15 min
 Disable

LCD
Contrast: _____
Brightness: _____

Aggregated MAX Mode
 Aggregated MAX values updated while recording only (maintained when not recording)
 Aggregated MAX values updated all the time

Lock out the Control button on the instrument front panel
This will prevent the start and stop of recording, also the enabling and disabling of Bluetooth at the instrument.

Enable password protection
Password: _____ (16 characters max)
This password will be required when configuring the instrument via Bluetooth and Ethernet network connections.

 The instrument dock differs from this computer's dock by -13 days.

COMMUNICATION TAB

- THE NEXT SCREEN WILL BE YOUR COMMUNICATION TAB. IT IS ADVISED TO TURN OFF BLUETOOTH CAPABILITY AND LET ALL TRANSMISSIONS BE DONE VIA USB AS IT IS MUCH MORE RELIABLE
- DHCP **SHOULD NOT** BE ENABLED

Configure

General Communication Measurement Current Sensors Recording Meters

Bluetooth

Enable Bluetooth

Pairing code: 0000

Name: PEL 103 (26 ASCII characters max)

Visibility:

Visible

Invisible

LAN

MAC address: 00:0B:3C:70:F9:4A

Enable DHCP

IP address: Subnet mask:

Gateway address: Port: (1 to 65535)

Save to file Load from file

OK Cancel Help

MEASUREMENT TAB

- SELECT YOUR ELECTRICAL HOOK UP CONFIGURATION FROM THE DIAGRAMS. (What type of power system is being measured?)
- TYPICALLY IT WILL BE SOME FORM OF A THREE PHASE SYSTEM
- **DO NOT** SELECT "SET A VOLTAGE TRANSFORMER RATIO"
- SET NOMINAL FREQUENCY FOR 60Hz
- MAKE SURE "LOAD" IS SELECTED, **NOT** "SOURCE"

Configure [X]

General | Communication | Measurement | **Current Sensors** | Recording | Meters

Electrical hook-up

Source Load

- 1-phase 2-wire (single phase / V1 - I1)
- 1-phase 3-wire (split phase)
- 3-phase 3-wire Δ (2 current sensors - no I2)
- 3-phase 3-wire Δ (3 current sensors)
- 3-phase 3-wire open Δ (2 current sensors - no I2)
- 3-phase 3-wire open Δ (3 current sensors)
- 3-phase 3-wire Y (2 current sensors - no I2)
- 3-phase 3-wire Y (2 current sensors)
- 3-phase 3-wire Δ balanced (U12 - I3)
- 3-phase 4-wire Y**
- 3-phase 4-wire Y balanced (V1 - I1)
- 3-phase 4-wire Y 2½ (no V2)
- 3-phase 4-wire Δ
- 3-phase 4-wire open Δ
- DC 2-wire
- DC 3-wire
- DC 4-wire

Nominal voltage and ratios

Set a voltage transformer ratio

Primary: V (50...650000) Phase-to-phase Phase-to-neutral

Secondary: V (50...1000) Phase-to-phase Phase-to-neutral

Nominal frequency

Auto 50 Hz 60 Hz 400 Hz

Save to file Load from file

OK Cancel Help

CURRENT SENSORS TAB

- AMPFLEX / MINIFLEX
 - YOU CAN SET THE RANGE FOR THE CURRENTS THEY ARE EXPECTED TO DEAL WITH. THE METER WILL STILL RECORD OUTSIDE OF THIS RANGE BUT WHEN MAKING YOUR REPORT TO VIEW, THE GRAPH WILL BE "ZOOMED IN" OR "ZOOMED OUT" TO GET THE BEST FIELD OF VIEW ON THE GRAPH. THE MOST COMMON SETTINGS ARE 400A OR 2000A.
 - MN193 CLAMP AND 5A ADAPTER BOX ARE SPECIALIZED SETTINGS AND TYPICALLY WILL BE LEFT UNCONFIGURED
 - CURRENT SENSOR WITH BNC ADAPTER (not common)
 - NOMINAL CURRENT SHOULD BE SET TO 100A WITH AN OUTPUT VOLTAGE OF 1V

Configure [X]

General | Communication | Measurement | **Current Sensors** | Recording | Meters

Current measurement: Line current sensors

Instrument current sensor: No current sensor connected to the instrument

AmpFlex / MiniFlex

Range: 100 A 400 A 2000 A 10000 A

Number of primary wraps: (1, 2 or 3)

MN93A clamp (5 A)

An external CT is used

Primary: A (5...25000)

Current sensor with BNC adapter

Nominal current: A (1...25000)

Output voltage: 1 V

5 A adapter box

An external CT is used

Primary: A (5...25000)

Save to file | Load from file

OK | Cancel | Help

RECORDING TAB

- SESSION NAME
 - THIS ALLOWS YOU TO SAVE A FILENAME TO YOUR LOG STUDY
- RECORDING PERIOD
 - "RECORD NOW" CHECKED WILL BEGIN LOGGING AS SOON AS SETUP IS COMPLETE
 - "SCHEDULE RECORDING" CHECKED WILL SCHEDULE YOUR START TIME SO THE LOGGING BEGINS AT A CERTAIN DAY AND TIME
 - DURATION CAN BE SET FROM 8 HOURS TO NO LIMIT
 - AGGREGATION PERIOD
 - THIS SHOULD BE SET AT 15 MINUTES. THIS IS THE TYPICAL TIME USED FOR STANDARD LOAD STUDIES

Configure [X]

General | Communication | Measurement | Current Sensors | **Recording** | Meters

Session name (40 characters max) Increment

Recording period

Record now Duration: 3 weeks

Schedule recording

Start date: 3/ 1/2019 Start time: 2:19:58 AM PEL local time

End date: 3/22/2019 End time: 3:19:58 AM

Aggregation period: 15 min The aggregation starts at rounded aggregations

Recording options

Record aggregated trends for currents, voltages, powers...

Record one second trend for current, voltage, energy, power factor, THD, ...

Record individual one second harmonics (to the 50th) for current and voltage

The maximum recommended recording duration for proper SD-Card operation is: 1 year
The number of sessions on the SD-Card should not exceed 32.

Installed SD-Card status

0.00% of the SD-Card space has been used.
7574 MB is available on the installed SD-Card. 7575 MB is the total capacity of the SD-Card.

2 MB needed for the specified recording settings

RECORDING TAB – CONTINUED

THERE IS A SETTING FOR “RECORD ONE SECOND TREND”

THIS IS A VALID SETTING BUT WITH ONE READING EVERY SECOND THE STORAGE WILL FILL WITHIN 8 HOURS. MOST CUSTOMERS WILL NOT NEED THIS MUCH DETAIL FOR A LOAD STUDY.

AT A STANDARD AGGREGATION PERIOD (15 MINUTES) THE PEL103 WILL HAVE NO PROBLEM LOGGING FOR 30 DAYS

- Record one second trend for current, voltage, energy, power factor, THD, ...
- Record individual one second harmonics (to the 50th) for current and voltage

METERS TAB

- THIS TAB WILL ESSENTIALLY BE UNUSED ON ALMOST ALL USES OF EQUIPMENT. NO INSTRUCTIONS WERE GIVEN ON HOW TO SET THESE PARAMETERS AS IT IS **EXTREMELY** UNCOMMON FOR THESE TO BE CHANGED.
- THIS IS USED FOR CALCULATING WATT-HOURS.

Configure [X]

General | Communication | Measurement | Current Sensors | Recording | **Meters**

Duration meters

- Reset duration of power on
- Reset duration of voltage presence
- Reset duration of current presence

The selected meters will be reset when the OK button is selected.

Partial Energy Meters

- Reset partial energy meters now (when OK button is selected)
- Reset partial energy meters at the start of each new session

Partial metering period: 1 day [v]

The partial energy meters are reset at the end of the selected period.
They also start accumulating on calendar transitions.

Total Energy Meters

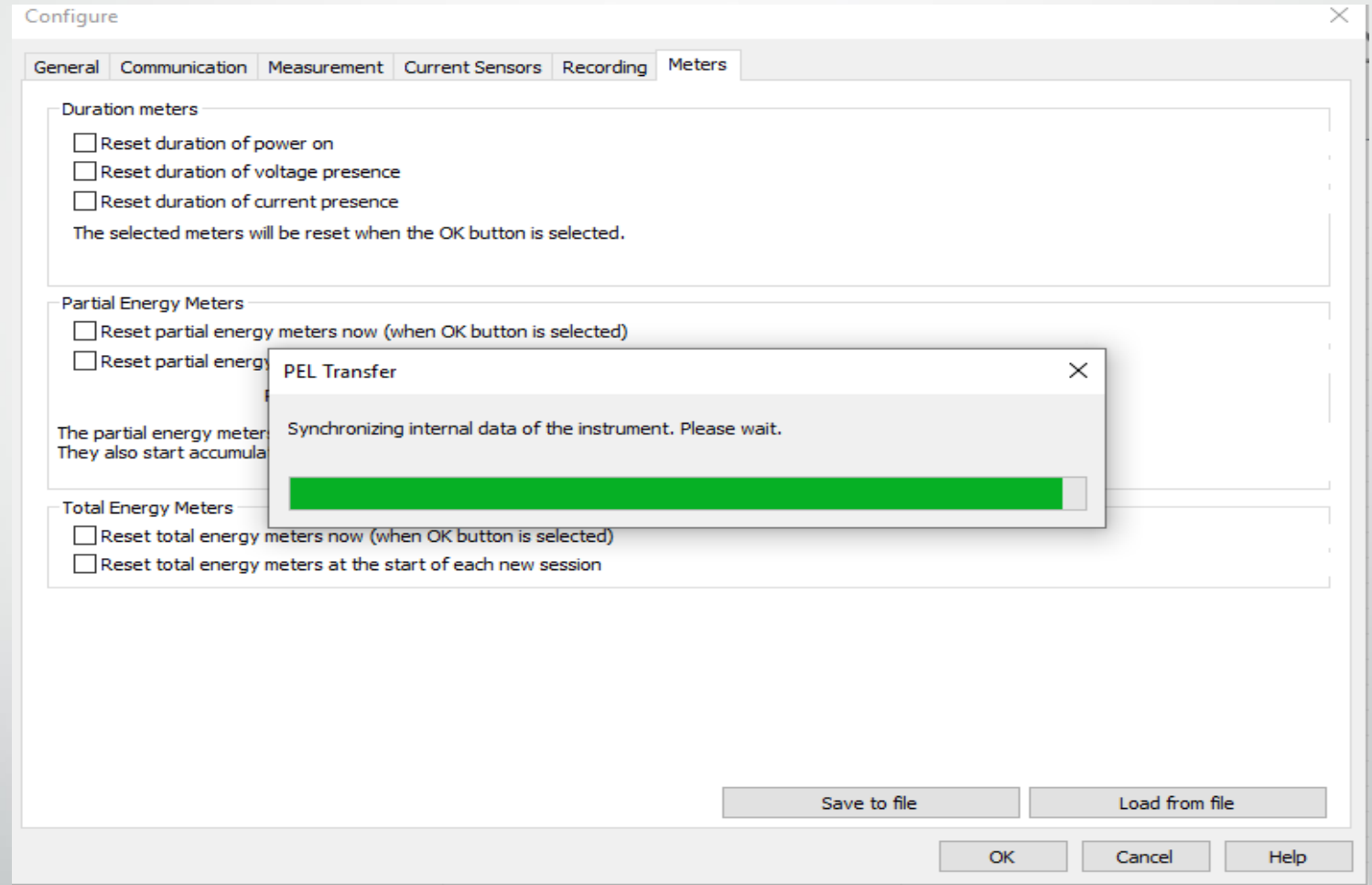
- Reset total energy meters now (when OK button is selected)
- Reset total energy meters at the start of each new session

Save to file | Load from file

OK | Cancel | Help

Synchronizing Setup

Once all configuration tabs are complete, clicking the "OK" button will synchronize the changes to the PEL unit.



PEL 103 HELPFUL KNOWLEDGE

- THE PEL₁₀₃ IS NOT DESIGNED TO BE RAN OFF OF ITS INTERNAL BATTERY. THE BATTERY IS FOR BACKUP PURPOSES ONLY IN THE EVENT OF A LINE POWER LOSS. THE UNIT WILL NEED TO BE CONNECTED TO EITHER 110 POWER OR HAVE THE INCLUDED LINE POWER ADAPTER CONNECTED TO POWER THE UNIT.
- WHEN THE LOG IS FINISHED YOU CAN TRANSMIT YOUR REPORT TO YOUR PC VIA USB, THIS IS **HIGHLY UNRECOMMENDED**. THE BEST WAY IS TO PULL THE SD CARD FROM THE UNIT AND INSERT IT DIRECTLY INTO THE USB CARD READER. IF YOU USE THE USB CONNECTION IT CAN TAKE 4-5 HOURS TO TRANSMIT THE REPORT TO PC
- THE PEL₁₀₃ WILL **ALWAYS** DISPLAY A BLINKING GREEN "REC" LIGHT THAT BLINKS EVERY 4-5 SECONDS. THIS DOES NOT MEAN THAT THE UNIT IS RECORDING. TO VERIFY THAT THE UNIT IS RECORDING YOU NEED TO MAKE SURE THE GREEN "REC" LIGHT IS BLINKING **TWICE** EVERY 4-5 SECONDS.

PEL 103 Notes








- *The advantages of the PEL103 are four fold:*
- 1) The unit can be powered by the bus with the 2137.77 adaptor. This is included with our rentals, it snaps onto the top right ports on the PEL 103. This will allow it to run off of line power.
- 2) There's a wide variety of current probes available for it, including 5A current probes where the unit can multiply up the current values. You can also multiply up by voltage ratios too.
- 3) The unit can record DC voltage and current, using the J193 current probe.
- 4) The data is recorded to a removable SD card, so you can always get your data even if the computer won't talk.
- ***The disadvantage is that a computer is required to setup the configuration on the unit.***
- ***The unit does not record any power quality data; no waveforms, no transients, no momentary surges or waveform deformation. Just load related data and harmonics.***

PEL 103 Notes continued

- The PEL 103 is a basic power datalogger – it will record currents, voltages, power factor, frequency, kw, kwh, kva, kvah, kvar and kvarh. It records these values on 1 second increments for up to a month. The unit does not sample waveforms, so it's not a power quality analyzer. It won't document anything about the power quality or any events that may have happened while it was recording.
- The PEL requires a computer for configuration, but the data can be extracted by removing a memory card, Bluetooth, USB or Ethernet. It cannot be configured without a computer which we can provide.

PEL103 File Example

Below is an example of what the PEL files should look like on the SD memory card.

Name	Date modified	Type	Size
 1SH000.DAT	5/3/2017 9:14 AM	DAT File	283 KB
 1ST000.DAT	5/3/2017 9:14 AM	DAT File	55 KB
 AGGREGAT.DAT	5/3/2017 9:14 AM	DAT File	3 KB
 CONFIG.DAT	5/3/2017 9:14 AM	DAT File	1 KB
 ETOTAL.DAT	5/3/2017 9:14 AM	DAT File	1 KB
 EVENTLOG.DAT	5/3/2017 9:14 AM	DAT File	1 KB
 SESSION	5/3/2017 9:10 AM	DataViewControlP...	1 KB

Type: DAT File
Size: 60 bytes
Date modified: 5/3/2017 9:14 AM