

# SEL-735 Portable Operating Instructions



selinc.com  
info@selinc.com  
+1.509.332.1890

© 2011-2020 by Schweitzer Engineering Laboratories, Inc. All rights reserved.

All brand or product names appearing in this document are the trademark or registered trademark of their respective holders. No SEL trademarks may be used without written permission. SEL products appearing in this document may be covered by U.S. and Foreign patents.

Schweitzer Engineering Laboratories, Inc. reserves all rights and benefits afforded under federal and international copyright and patent laws in its products, including without limitation software, firmware, and documentation.

The information in this document is provided for informational use only and is subject to change without notice. Schweitzer Engineering Laboratories, Inc. has approved only the English language document.

This product is covered by the standard SEL 10-year warranty. For warranty details, visit [selinc.com](http://selinc.com) or contact your customer service representative.





# SEL-735 Power Quality and Revenue Meter

## Operating Instructions

### I. Key Features and Benefits

The SEL-735 meter combines leading power quality capabilities with exceptional revenue metering accuracy at an economical price.

- **Easily access data.** An optional touchscreen interface displays real-time waveforms, metered data, alarms, notifications, and settings.
- **Accurately allocate energy costs.** The SEL-735 outperforms ANSI and IEC accuracy standard requirements with a 0.06 percent Wh guarantee. It complies with ANSI C12.20-2015 Class 0.1, and IEC 62053-22:2003 Class 0.1 S accuracy class requirements over an extended operating range.
- **Capture every power quality disturbance.** Power quality reports with IEC 61000-4-30 Class A compliance and as much as 1 GB of onboard storage help visualize system conditions and store years' worth of data.
- **Share critical information securely.** Simultaneously communicate with as many as ten other devices using industry standard protocols including DNP, IEEE C37.118-2014 synchrophasor measurements, Modbus, and IEC 61850. Port security settings allow three permission levels that provide controlled read and write access to the ports.
- **One meter for multiple applications.** Standardize on one meter across multiple applications with wide current and voltage measurement ranges, field upgradability, retrofit options, and software-based wiring form changes.

### II. Capability Details

This section outlines essential installation information, including front-panel layout, rear-panel layout, labels, and dimensions.

#### A. Kit Contents and Accessories

The SEL-735 Portable Power Quality Meter Kit contains the following equipment:

- One SEL-735 Portable Power Quality Meter with a color touchscreen display
- Three voltage leads and three current leads
- One power supply cord to plug into a standard wall outlet
- One Cat 5 Ethernet cable
- One USB Type A to USB Type C cable

The following accessories are available with the SEL-735 portable power quality meter.

- Three 200:1 Clamp-On CTs, 0.6" Window, +/- 1% Accuracy, PN 915900209
- Three 1000:5 Clamp-On CTs, 2.0" Window, +/- 1% Accuracy, PN 915900210
- Three 1000:5 Split-core CTs, 4.5" Window, +/- 3% Accuracy, PN 915900211
- Three 2000:5 Split-core CTs, 6.0" Window, +/- 3% Accuracy, PN 915900212
- Three 3000:5 Split-core CTs, 8.0" Window, +/- 3% Accuracy, PN 915900213

## B. Front-Panel Layout

The front-panel interface consists of programmable pushbuttons and LEDs, a 480 x 800 pixel color touchscreen, a keypad, a test mode LED, and an optical communications port.

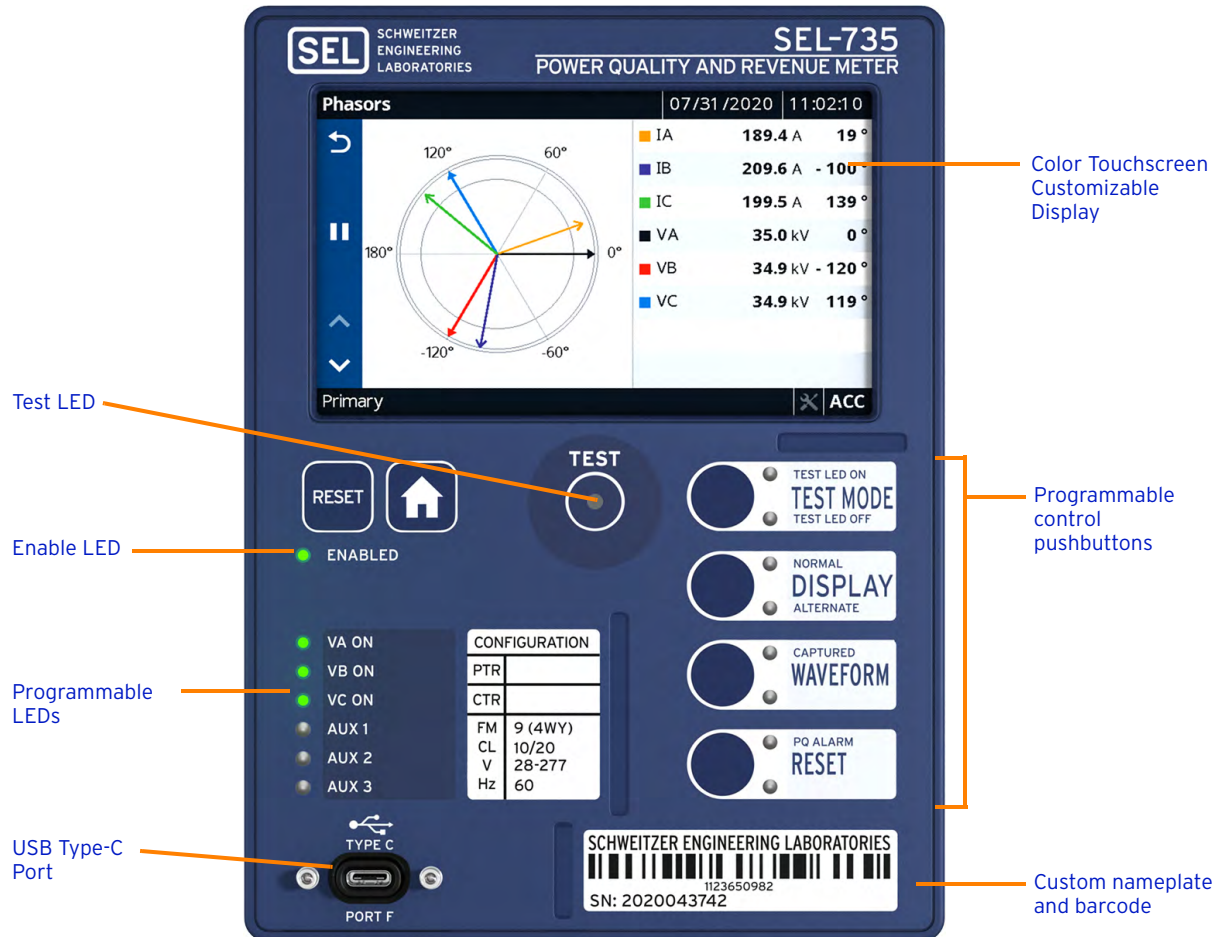



Figure 1 Front-Panel Layout

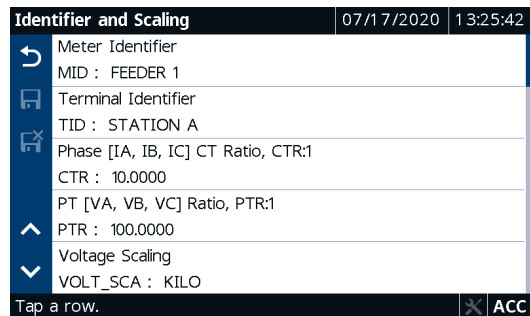
## III. Setup

This section provides instructions to change the CTR and PTR settings from the front-panel, to wire the meter to the system, to connect to the meter via the Ethernet port, and to establish communications via ACSELERATOR QuickSet® SEL-5030 Software.

### A. Configure the CTR and PTR via the Front-Panel

The SEL-735 portable meter ships with default current and potential transformer ratios of 1. Follow the instructions to change the current transformer ratio (CTR) and the potential transformer ratio (PTR) from the front panel. You can also configure these settings via QuickSet once you establish communications to the meter.

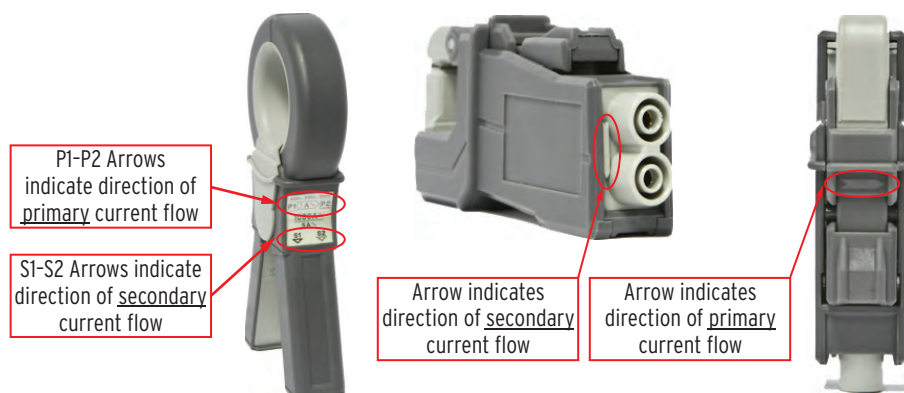
- Step 1. Navigate to the **Settings** app.
- Step 2. Press **General**.
- Step 3. Select **Identifier and Scaling**.
- Step 4. Select CTR and/or PTR.
- Step 5. Enter a valid Access Level 2 password.  
The default Access Level 2 password is TAIL.
- Step 6. Change the value.
- Step 7. Press the back button  to exit the menu.



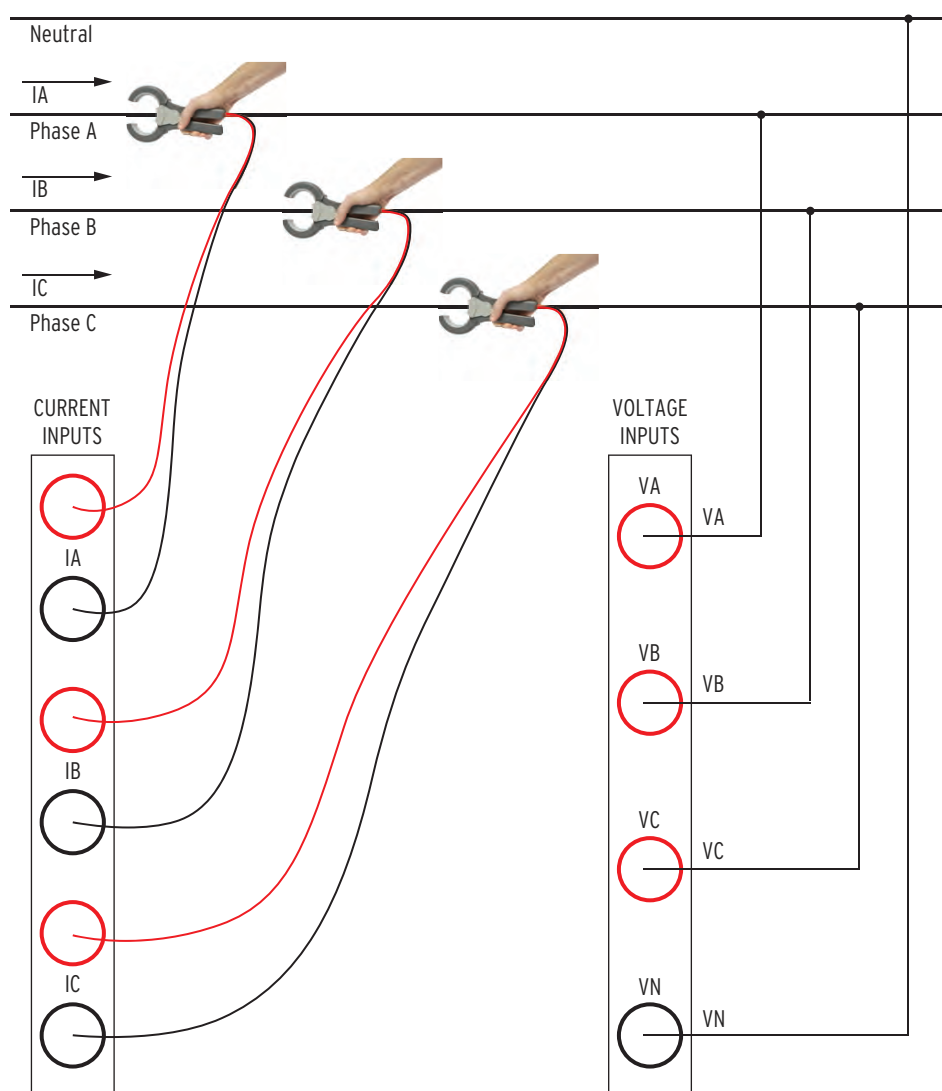
## B. Wire the Meter to the System

Your meter may have come with portable CTs and test leads. The portable CTs may be window-type or clamp-on CTs. This instruction details how to connect these types of CTs.

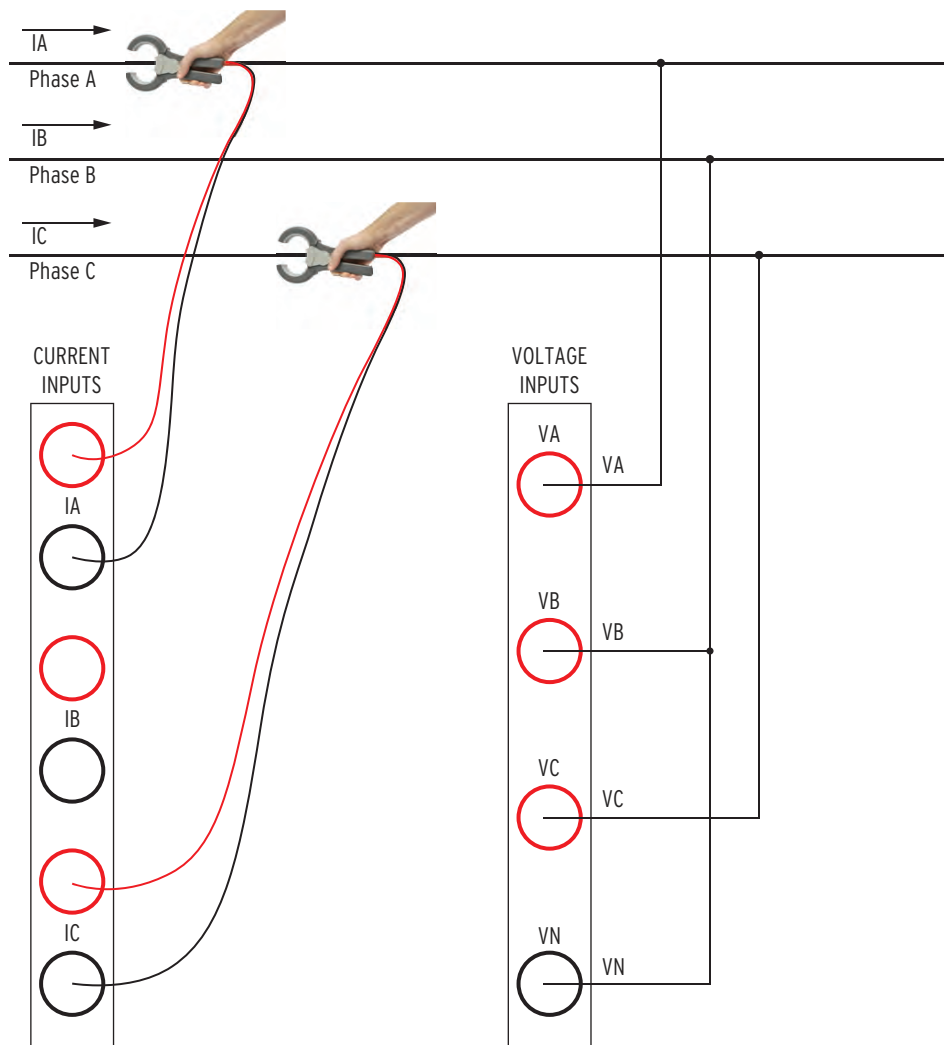
Refer to *Figure 2*, *Figure 3*, and *Figure 4* when connecting the CTs and voltage inputs to your system. *Figure 2* shows the arrows convention of the clamp-on CTs. On the large clamp-on CTs, the S1 arrows indicates the direction of secondary current flow. On the small clamp-on CTs, the arrow located on the bottom of the CT indicates the direction of secondary current flow.



**Figure 2** Clamp-On CT Details



**Figure 3** Form 9 CT Wiring



**Figure 4 Form 5 CT Wiring**

The clamp-on CTs are labeled with arrows to indicate the direction of current flow. The CTs should be connected with the current flow following the direction of the arrows. Arrows on the secondary terminals also indicate the direction flow. Arrows pointing out of the secondary terminal indicate the direction of secondary current flow.

Split-core CTs are labeled with **H** and **X** indicating the direction of current flow. Primary positive current flow should flow into the window marked **H**. Secondary positive current flow then flows out of the terminal marked **X**.

Complete the following steps to connect the CTs and voltage inputs to the system to be measured.

Step 1. Ensure the working environment is safe.

Step 2. Connect the positive current lead (red) to the positive secondary terminal of the CT.

These leads are labeled **•IA**, **•IB**, and **•IC** and have the same label on both ends of each lead.

Step 3. Connect the other end of the positive current lead to the desired positive current input banana jack on the meter.

The positive current input jacks are red and labeled **IA**, **IB**, and **IC**.

Step 4. Connect the negative current lead (black) to the negative terminal of the CT.

These leads are labeled **IA**, **IB**, and **IC** and have the same label on both ends of each lead.

Step 5. Connect the other end of the negative current lead to the desired negative current input banana jack on the meter.

The negative current input jacks are black and labeled **IA**, **IB**, and **IC**.

Step 6. Perform one of the following steps to connect the CT, depending on the type of CT used,

- For clamp-on CT, clamp the CT around the conductor or conductors to be measured.
- For split-core CT, route the conductor or conductors through the window opening and then tighten the bolt that connects the transformer core.

Step 7. Connect the voltage inputs as shown in *Figure 3* or *Figure 4*.

Step 8. Ensure all connections are electrically and physically sound.

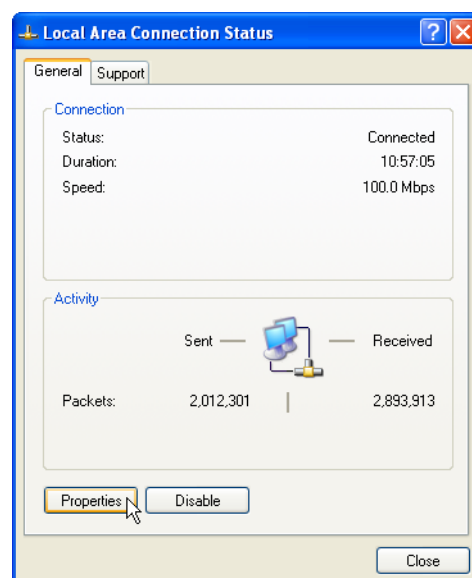


Figure 5 Local Area Connections Status

## C. Configure Windows for Ethernet Communications

You must configure Microsoft Windows for Ethernet communications to the SEL-735 portable meter properly before communicating with the meter. Please follow the steps below to configure the meter for Ethernet communications.

Step 1. Open **Windows Control Panel > Network Connections**.

Step 2. Double-click on **Local Area Connection**.

The **Local Area Connections Status** window shown in *Figure 5* opens.

Step 3. Select **Properties**.

The **Local Area Connection Properties** window opens (see *Figure 6*).

Step 4. Scroll down and highlight **Internet Protocol (TCP/IP)** (see *Figure 6*).

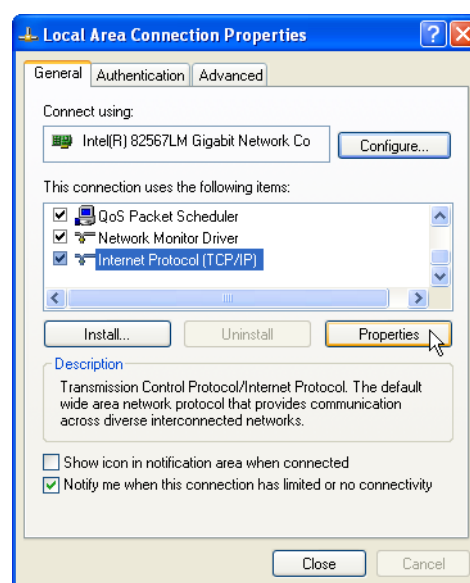


Figure 6 Local Area Connections Status



Step 5. Select **Properties**.

The **Internet Protocol (TCP/IP) Properties** window opens (see *Figure 7*).

Step 6. Select the **Alternate Configuration** tab.

Step 7. Activate the **User configured** control box (see *Figure 8*).

Step 8. Enter the meter's IP Address (**IPADDR**) first three octets in the IP address field.

Step 9. Enter the meter's Subnet Mask (**SUBNETM**) and Default Router (**DEFRTTR**) settings in the subnet mask and default gateway fields, respectively.

Step 10. Select **OK**.

#### EXAMPLE:

If the meter IP address is 192.168.0.2, then a valid alternate configuration IP address is 192.168.0.1.

#### NOTE:

The first three octets in Windows Alternate Configuration IP Address must match the first three octets of the meter IP address. The last octet must be different than the last octet of the meter's IP address. An IP address consists of four octets. For example, the IP address 192.168.0.1 contains the first octet of 192, the second octet of 168, the third octet of 0, and the fourth octet of 1.

## D. Connect to the SEL-735 Via the Ethernet Port

Complete the following steps to connect to the meter via the Port 1 Ethernet port.

Step 1. Connect an Ethernet cable from the meter Port 1 to your computer.

Step 2. From the meter front-panel, open the **Settings** application.

Step 3. Select **Port** to activate **Port Settings**.

Step 4. Select **Port 1**.

Step 5. Scroll through the Port 1 settings and verify that the settings are set according to *Table 1*.

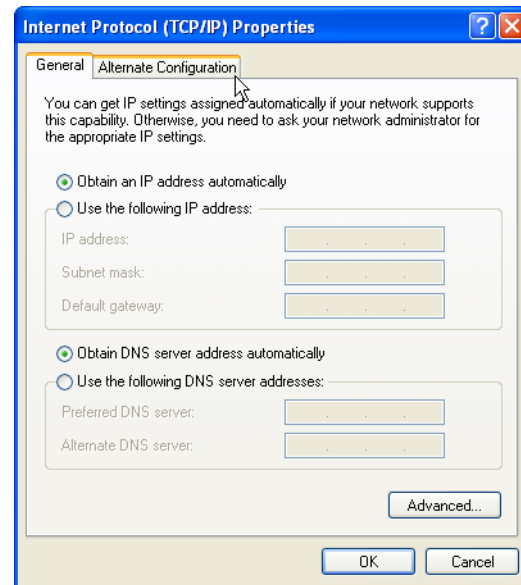


Figure 7 Internet Protocol (TCP/IP) Properties

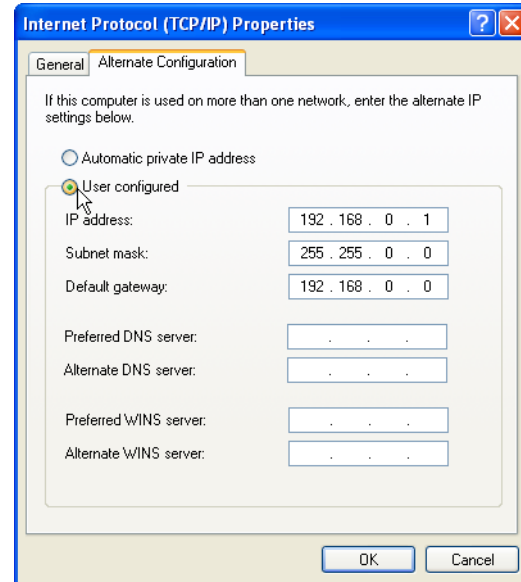


Figure 8 Internet Protocol (TCP/IP) Properties–Alternate Configuration

#### NOTE:

A menu option is active when a cursor appears under the menu item.



**Table 1 Ethernet Communication Required Settings**

Setting Name	Default Setting	Required Setting
EPORT	Y	Y
ETELNET	Y	Y
MAXACC	2	2
TPORT	23	(user configurable)
IPADDR	192.168.0.2	(user configurable)

Step 6. Make a note of the user configurable settings in order to configure QuickSet.

Step 7. Open QuickSet.

Step 8. Select **Communications > Parameters**.

The **Communication Parameters** window opens (see *Figure 9*).

Step 9. Set the **Active Connection** type to **Network**.

Step 10. Set the **Host IP Address** to the meter IPADDR setting.

The default is 192.168.0.2.

Step 11. Set the **Port Number** to the meter TPORT setting.

The default is 23.

Step 12. Set the **File Transfer Option** to **Telnet**.

Step 13. Set the **Level One Password** to the meter ACC level password.

The default password is OTTER.

Step 14. Set the **Level Two Password** to the meter 2AC level password.

The default password is TAIL.

Step 15. Select **OK**.

QuickSet is now connected to the meter and you may send and receive settings from QuickSet.

The transmit and receive lights should illuminate as shown in *Figure 10*, indicating network traffic. These indications are shown near the bottom left corner of QuickSet.

**Figure 9 QuickSet Communications Parameters Window**

SEL-735 002 Settings Driver	Driver Version: 5.2.0.1	Date: 8/12/2011 1:11:32 AM	Part #: 0735VX20944EXXXXXX16100XX	Port 1 : Port 1 (Ethernet)
TXD	RXD	Open: Connected	192.168.0.2 23	Terminal = Telnet File transfer = YModem

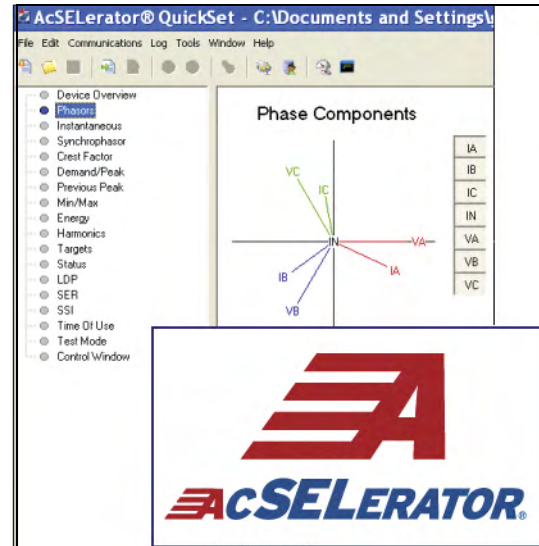
**Figure 10 QuickSet Communication Status**

## IV. QuickSet

### A. Overview

SEL ships all SEL-735 meters with QuickSet. Use QuickSet to perform the following tasks.

- Read and send configuration settings with an SEL-735.
- Save and open configuration settings on a PC.
- Monitor real-time power system data.
- Control the meter remotely.
- Configure the communications ports.
- Retrieve the LDP, SER, and VSSI reports.
- Display real-time and recorded waveforms from event reports.



### B. Install QuickSet

Install QuickSet by downloading it from [selinc.com/products/5030/](http://selinc.com/products/5030/), or, on the SEL website, select **Products > All Software Downloads**, check the **Configuration** checkbox, and select **ACSELERATOR QuickSet SEL-5030 Software**. Select **Download**, save, and then run Setup.exe. A wizard will guide an installation or an upgrade of QuickSet.

### C. Configure QuickSet Communications

From a Windows PC, open QuickSet by selecting **Start > SEL Applications > ACSELERATOR QuickSet** or by double-clicking the QuickSet icon. For initial communications, connect any available serial or optical port on the meter to the PC through use of an ANSI optical probe, an SEL-C234 or SEL-C287 serial cable, an SEL-C662 serial-to-USB cable, or an SEL-497 Type-A-to-Type-C USB cable.

To access the communications parameters in QuickSet, select **Communications > Parameters**. Figure 11 shows the default serial port parameters for the SEL-735.

The USB-C cable is a nonproprietary plug-and-play cable. The Device pull-down will display **SEL CP210x USB to UART Bridge** for an SEL-C662 cable, and **SEL Fast CDC USB Device** for an SEL-C497 USB-A to USB-C cable when plugged into the SEL-735 front port.

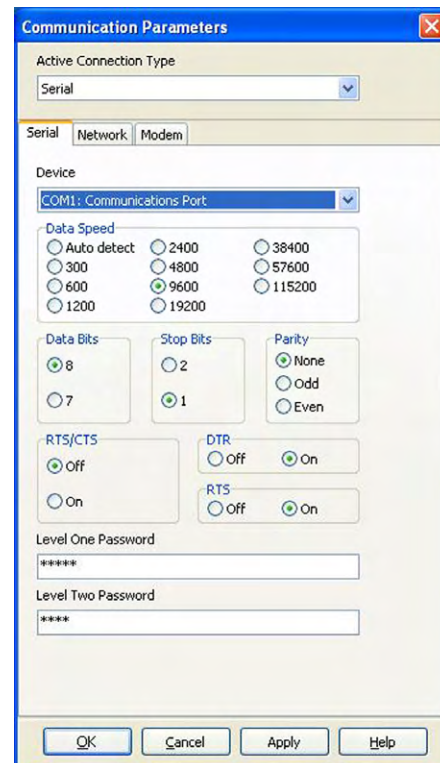


Figure 11 Default Communications Parameters

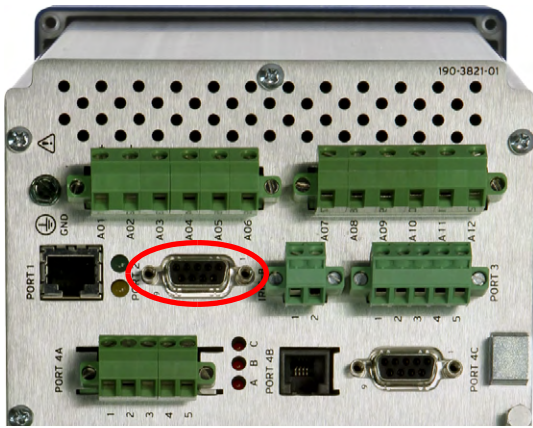


Figure 12 SEL-735 Serial Port 2 and Serial Port F

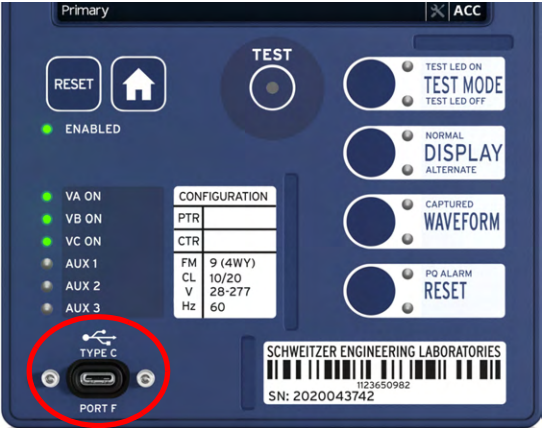


Figure 13 Cables for the SEL-735

D. Settings Editor

This section discusses how to read, modify, save, and send configuration settings within QuickSet.

1. Toolbar and Icon Functions

QuickSet allows access to features through both menus and icons. This document describes how to access features using the menu structure. *Figure 14* illustrates the icon functions in the QuickSet toolbar.

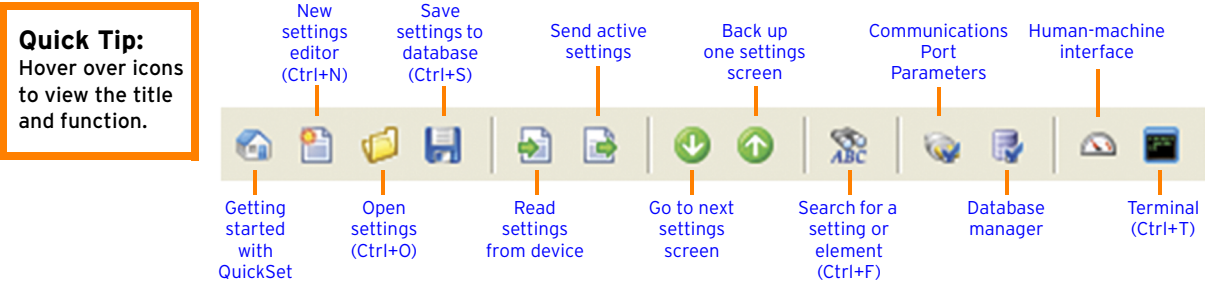


Figure 14 Icon Functions

## 2. Read Configuration Settings From the Meter Into QuickSet

Before editing configuration settings, QuickSet must read them from the SEL-735.

Select **File > Read** as shown in *Figure 15* to read meter configuration settings.

## 3. Modify Configuration Settings

A settings tree view appears when QuickSet successfully reads meter configuration settings from the SEL-735.

Select the plus sign (+) to expand a setting group, or select a group name to see all associated configuration settings as shown in *Figure 15*.

QuickSet automatically hides unavailable configuration settings and flags invalid configuration settings at the bottom of the screen.

Right-click on any setting for the previous or default value.

Figure 15 Meter Configuration Settings

## 4. Save Configuration Settings to the PC Hard Drive

Select **File > Save** to save changes made within QuickSet to the PC hard drive. Replace **New Settings 1** in the **Settings Name** text box with a unique name. Select **OK** to save the configuration settings to the QuickSet settings database on the PC hard drive.

## 5. Send Configuration Settings to the Meter to Update All Modified Configuration Settings

The **File > Send** command sends any changes made within QuickSet to the meter. QuickSet automatically selects modified configuration settings groups and warns if these settings will overwrite existing data or change active communications parameters.

Figure 16 Save Settings

## V. Commonly Used Configuration Settings

This section outlines commonly used meter configuration settings, including: Meter and Terminal Identifier, Current and Potential Transformer Ratios, Demand Metering, Daylight-Saving Time, Load Profile, Front-Panel Display, and Communications. After completing all configuration settings, remember to save. If using QuickSet, settings must be sent to the device to take effect.

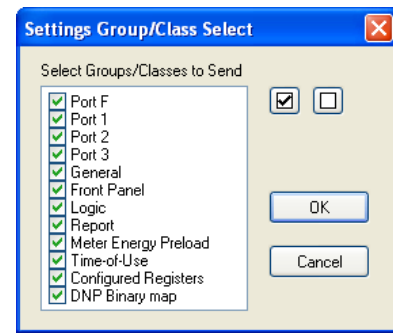


Figure 17 Settings Group/Class Select

### A. General Settings

The General settings include the Meter Identifier (MID), Terminal Identifier (TID), and Current and Potential Transformer Ratios (CTR and PTR).

To access General settings, expand **General > Identifier and Scaling** from the QuickSet settings editor tree.

Alternatively, on the front panel, select the **Settings** application and navigate to **General** to access the General settings.

#### 1. MID and TID Settings

Identifier settings include the MID and TID for easy meter identification. These configuration settings help uniquely identify each meter within a system.

##### Quick Tip:

The MID setting must match the MV-90® Master File Device ID setting if using MV-90 communications.

#### 2. Current and Potential Transformer Ratios

You can configure the meter to scale the following reports to report in primary units:

- Meter Reports (MET)
- Human Machine Interface (HMI)
- Load Profile (LDP)
- Display Points (DP)
- Distributed Network Protocol (DNP)
- Modbus®
- CTR and PTR settings
- Front-Panel LCD

SELOGIC® control equations are secondary quantities and are unaffected by CTR and PTR values.

Figure 18 MID, TID, CTR, and PTR Settings

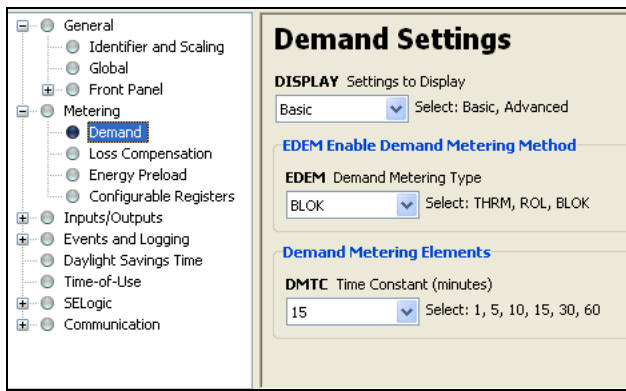


Figure 19 Demand Metering

To set the CT and PT ratios, choose **General > Identifier and Scaling** from the QuickSet settings editor tree. Note that the CTR and PTR values are net ratios. For example, a 1200:5 CT ratio equates to a CTR setting of 240.

## B.Demand Metering

The SEL-735 supports Thermal, Rolling, and Block demand types with intervals of 1, 5, 10, 15, 30, and 60 minutes.

To configure demand metering, choose **Metering > Demand** from the QuickSet settings editor tree.

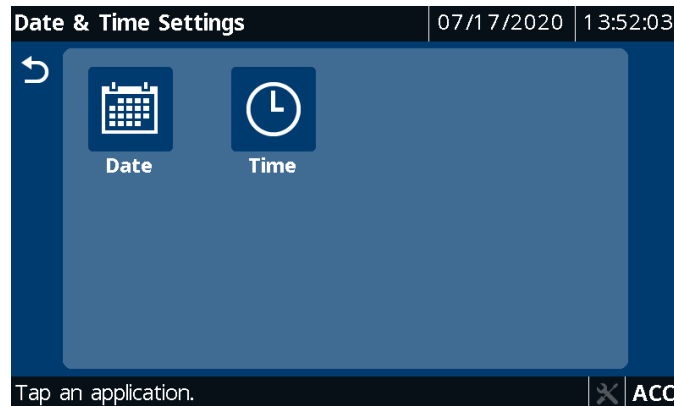
## C. Date and Time Configuration Settings

### 1. Set the Date and Time

1. To set time from the front panel, navigate to the **Settings** application.
2. Select **Date and Time**, and update the meter configuration accordingly.
3. To change the date format, navigate to **Settings > General > Identifier and Scaling** and then select the required format.

The SEL-735 internal time clock is accurate to 5 seconds per month at room temperature and accurate to 30 seconds per month at temperature ranges from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ . Use one of the methods listed below to improve time-clock drift.

- Connect an SEL communications processor to the SEL-735.
- Set the time periodically using the DNP or Modbus protocol.
- Set the time manually with the front panel or with QuickSet.
- Connect an IRIG-B time-code input to the SEL-735.



### 2. Daylight-Saving Time (DST)

To enable DST, choose **Daylight Savings Time** from the QuickSet settings editor tree and select **Enable Daylight Savings Time Settings**. Enter or accept the default **Start Time** and **Stop Time**, then select **Start Dates** and **Stop Dates** to select the present DST schedule.

If the meter is connected to an external time source, disable the DST setting in the SEL-735 to avoid time-source conflicts.



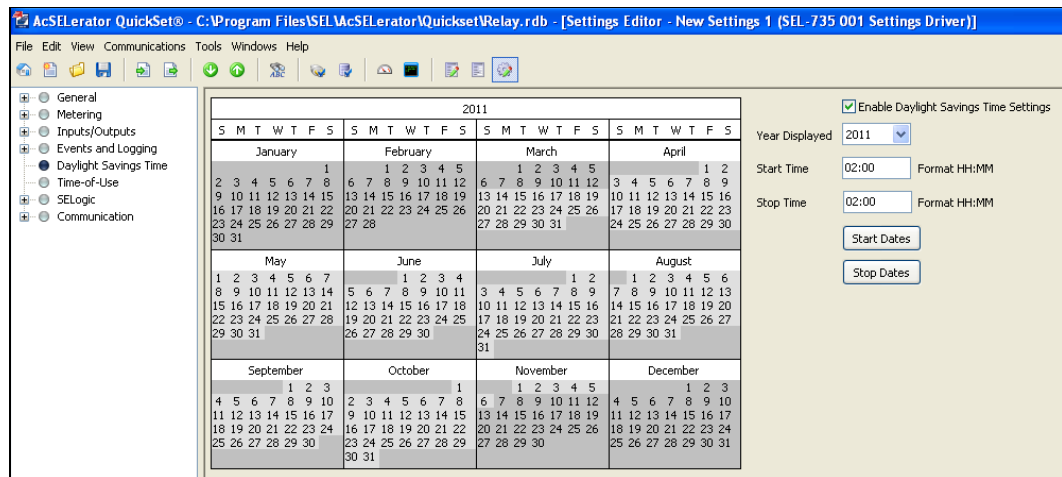


Figure 20 Daylight-Saving Time Settings

## D. Scaling and Display Settings

The VOLT\_SCA, POWR\_SCA, ENRG\_SCA, and PRI\_SCA configuration settings affect how the meter reports quantities to communications channels and internal and external interfaces. These are available under **General > Identifier and Scaling**. The meter always reports LDP1 energy values as change-over-internal (COI) in primary kilo units to ensure compatibility with MV-90 software. All other LDP recorders report energy as defined by the scaling settings.

## E. Communications and Protocol Settings

The SEL-735 supports SEL ASCII/Compressed ASCII, SEL Fast Operate/Fast Meter, MIRRORED BITS Communications, SEL Distributed Port Switch (LMD), Modbus RTU/TCP, DNP3 serial and LAN/WAN, FTP, TCP/IP, Y-Modem, SNTP, IEC 61850, Telnet, MV-90, and IEEE C37.118-2014 (Synchrophasor measurements), as shown in *Table 2*. The Ethernet port supports six simultaneous communications sessions, including five DNP3 LAN/WAN sessions. Port 4 supports three communications options, but only one is available at a time.

To change the communications parameters, select on the desired communications port followed by Communications in the QuickSet settings editor tree.

Table 2 Available Communications Protocols (Sheet 1 of 2)

Protocols	Ethernet <sup>a</sup> (Port 1 <sup>b</sup> )	Serial: EIA-485, Modem, and EIA-232 (Port 2, Port 3, Port 4 <sup>a, b</sup> )	Front Port USB-C	Front Port (EIA-232 and Optical)
SEL ASCII/Compressed ASCII	•	•	•	•
Modbus RTU		•		•
Modbus TCP	•			
DNP3	•	•		•
Fast Operate/Fast Meter		•	•	•
MIRRORED BITS		•		
Distributed Port Switch (LMD)		•		
FTP	•			
SNTP	•			
IEC 61850	•			
Telnet	•			



**Table 2 Available Communications Protocols (Sheet 2 of 2)**

Protocols	Ethernet <sup>a</sup> (Port 1 <sup>b</sup> )	Serial: EIA-485, Modem, and EIA-232 (Port 2, Port 3, Port 4 <sup>a, b</sup> )	Front Port USB-C	Front Port (EIA-232 and Optical)
Y-Modem	•	•		
MV-90	•	•		
IEEE C37.118-2014 (Synchrophasors)	•	•		

<sup>a</sup> Additional cost option.

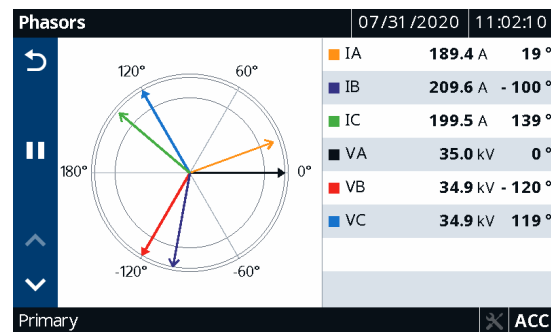
<sup>b</sup> The Ethernet port accommodates six simultaneous sessions that can include any combination of Telnet, Modbus, IEC 61850, Synchrophasors, or DNP3, but supports a maximum of five DNP3 LAN/WAN and Modbus sessions.

## VI. Touchscreen Display Monitoring

A real-time display on an 800 x 480 color touchscreen display provides visual indication of power quality and metering data.

### A. Phasor Display

Easily access metering phasors for commissioning, troubleshooting, and power system monitoring with real-time phasors.

**Figure 21 Phasor Display****Figure 22 Four-Quadrant Metering**

### B. Metering Data

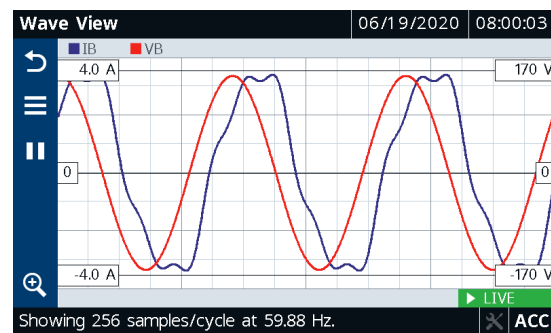
View instantaneous metering data with customizable screens. The SEL-735 supports four-quadrant metering to monitor power and energy accumulation in each quadrant for bidirectional metering.

### C. Real-Time Oscilloscope

Wave View displays voltage and current waveforms in real time, creating oscilloscope-like functionality.

### D. Rotating Display

Select screens of interest to rotate through the display for easy monitoring and system status.

**Figure 23 Waveform Display**

## E. Sequential Events Recorder (SER) Reports of Power Quality and CBEMA/ITIC Disturbances

By default, the SER reports the date and time of the following power quality disturbances.

- Harmonic disturbances if the user enables Harmonic Alarms.
- Voltage disturbances flagged as an SSI\_EVE bit.
- Assertion of the FAULT bit.

To view the SER, perform the following steps.

Step 1. Navigate to the Reports application on the Home screen and select **SER**.

Step 2. View SER by scrolling through the report pages.

Step 3. Use the refresh symbol to update SER, or use the trash can symbol to delete all records.

#	DATE	TIME	ELEMENT	STATE
1	07/17/20	14:23:46.029	SALARM	Deasserted
2	07/17/20	14:23:45.029	SALARM	Asserted
3	07/17/20	14:23:21.417	SALARM	Deasserted
4	07/17/20	14:23:20.417	SALARM	Asserted
5	07/17/20	14:22:57.079	SALARM	Deasserted
6	07/17/20	14:22:56.079	SALARM	Asserted
7	07/17/20	14:22:30.667	SALARM	Deasserted
8	07/17/20	14:22:29.666	SALARM	Asserted

## F. Test Mode

While in test mode, the SEL-735 stops collecting LDP and Demand data and places an asterisk next to records in the LDP report.

To place the meter into test mode, select the Test Mode application or press the front-panel **TEST MODE** pushbutton. The display indicates a rotating disc, pulse count, and accumulated energy. Press the **Back** icon at the end of an accuracy test to restore normal meter operation.

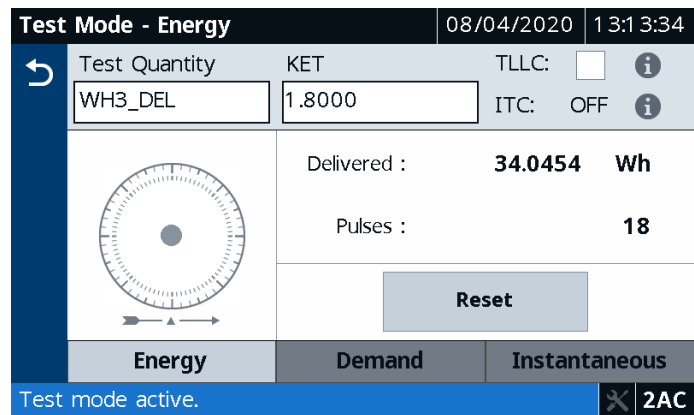


Figure 24 Test Mode

## VII. Human-Machine Interface (HMI)

The QuickSet HMI displays instantaneous meter information, captures reports, and allows test and control of the SEL-735. To access the Meter and Control interface, choose **Tools > HMI > HMI** in the main QuickSet window.

To maneuver through the windows, select on the HMI tree-view list until the required display appears on the right side.

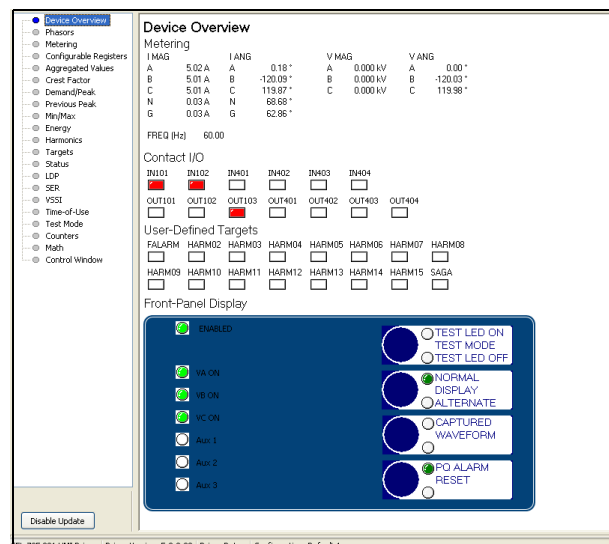


Figure 25 Device Overview Window

## A. LDP and SSI

The QuickSet HMI displays Load Profile and Voltage Sag/Swell/Interruption (VSSI) reports. To capture any of these reports, select the required date range and select **Export**.

### 1. Load Profile (LDP)

The SEL-735 adds an entry to the load profile recorder at the interval set by the LDAR setting. This entry contains the time stamp, the present value of the selected LDLIST analog quantities, and a checksum.

### 2. Load Profile (LDP) Recorders' Programmed Values

By default, the SEL-735 records the following variables in the LDP recorders.

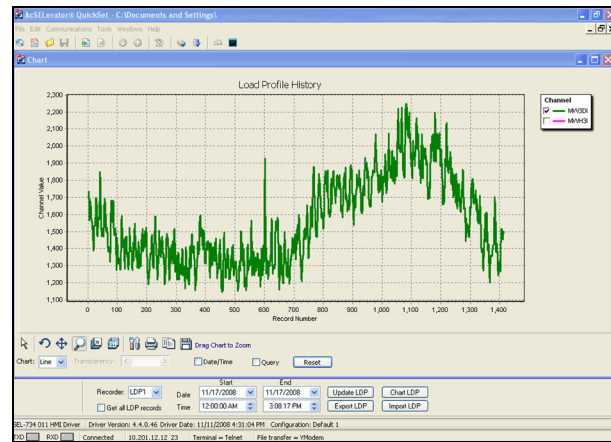
**Table 3 Load Profile Programmed Values**

Recorder	Values	Interval
LDP1	Three-phase accumulated energy and peak demand	15 minutes
LDP2	Aggregated voltage, current, imbalance, and THD	3 seconds
LDP3	Aggregated frequency	10 seconds
LDP4	Aggregated voltage, current, imbalance, and THD	10 minutes
LDP5	Short- and long-term flicker	10 minutes
LDP6	Aggregated voltage, current, imbalance, and THD	2 hours

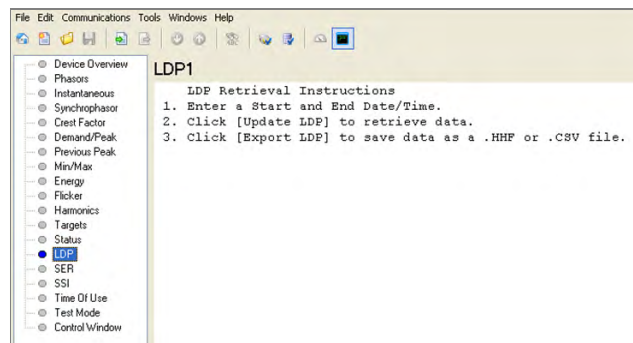
Perform the following steps to retrieve and chart any LDP report.

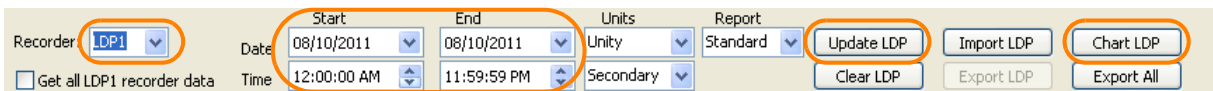
- Step 1. Navigate to the LDP view in the QuickSet HMI.
- Step 2. Select the LDP recorder that you want to retrieve.
- Step 3. Select a start and end date and time.
- Step 4. Select **Update LDP**.

- Step 5. QuickSet retrieves these LDP data from the SEL-735. When the transfer is complete, the LDP text report displays on the screen.



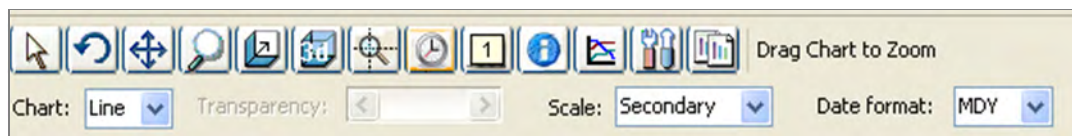
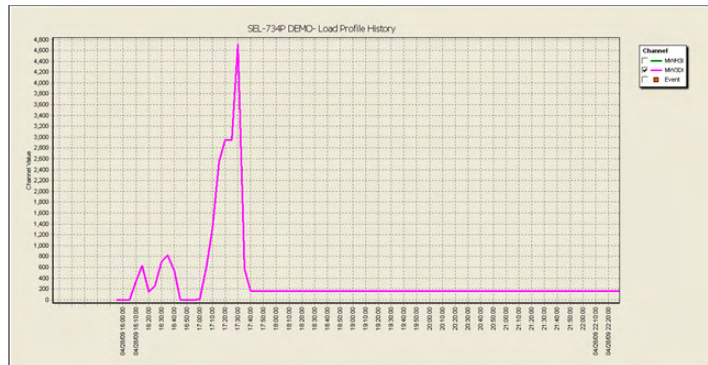
**Figure 26 LDP Graph in HMI**





Step 6. To chart LDP data, select **Chart LDP**.

Step 7. Hover your mouse over the charting tools for a description of each capability.

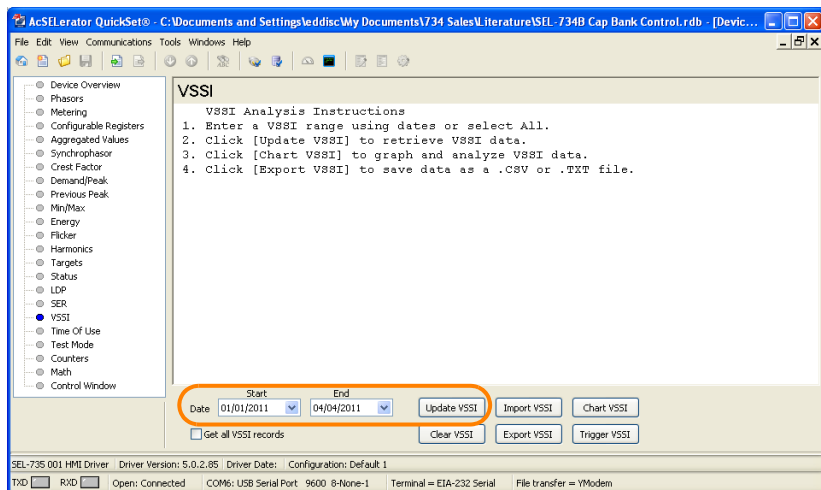


## B. Voltage Sag/Swell/Interruption (VSSI) Recorder With CBEMA/ITIC Analysis

By default, the SEL-735 records voltage sags, swells, and interruptions with 1 ms accuracy. Enable and configure VSSI in the Voltage Sag/Swell/Interruption Settings window of QuickSet HMI.

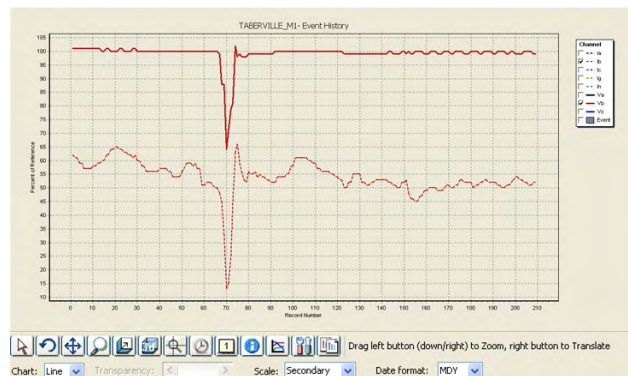
The SEL-735 records any VSSI that deviates more than 10 percent from the nominal voltage of 120 V. To see whether the SEL-735 has recorded any voltage deviation, perform the following steps.

- Step 1. Navigate to the VSSI view in the QuickSet HMI.
- Step 2. Enter a VSSI date range.



- Step 3. Select **Update VSSI**.
- Step 4. Select **Chart VSSI** to view a summary of any voltage disturbance in the QuickSet HMI.
- Step 5. Select the check box of any voltage or current phases to view.

Anytime a current value drops to zero, the chart indicates that the load was lost because of a voltage disturbance.

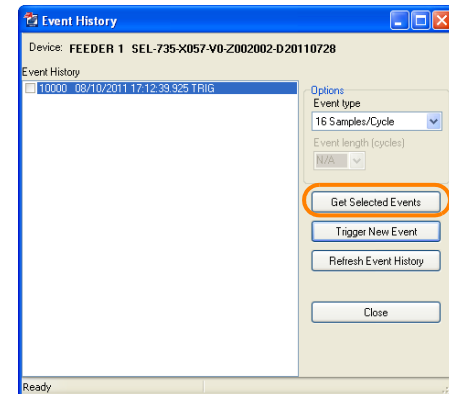
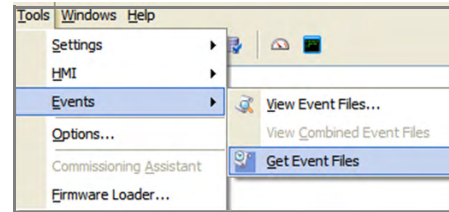


## C. Event Report Waveform Capture of Power Quality Disturbances

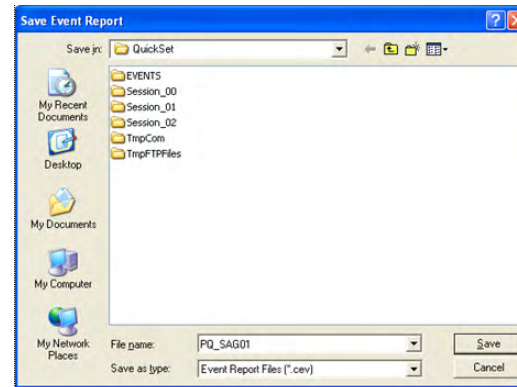
The SEL-735 can sample waveforms as high as 512 samples/cycle.

Perform the following steps to retrieve and view waveform event reports.

- Step 6. To see whether the meter has captured waveform event reports, select **Tools > Events > Get Event Files**.
- Step 7. If events appear under the Event History list, do the following.
- Select the desired event.
  - Select **Get Selected Events**.
- After the event is retrieved, QuickSet prompts you to save an event file.



- Step 8. Select a location of your choice, and select **Save**.
- Step 9. To view the saved event report, select **Tools > Events > View Event Files**.
- QuickSet prompts you to open an event report.
- Step 10. Select the event report that you previously saved, and select **Open**.
- Step 11. QuickSet displays the waveform event report and presents additional options for viewing and analysis.



## VIII. Security and Passwords

### A. Security

The SEL-735 supports five access levels to prevent unauthorized entry. *Table 4* describes the default passwords and the capabilities of the first four access levels. Access Level C (not listed in *Table 4*) should not be entered except as directed by SEL. The user must enter Access Level 1 before entering Access Levels E, 2, or C.

**Table 4 Default Passwords and Access Levels**

Access Level	Access Level Command	Terminal Prompt	Default Password	Capability
0	0AC	=	NA	Entry access level
1	ACC	=>	OTTER	View configuration settings and meter data
E	EAC	E=>	BLONDEL	Reset demands and perform all Access Level 1 commands
2	2AC	=>>	TAIL	Change configuration settings, reset all data, and perform all Access Level 1 and Access Level E commands

## B. Changing Passwords

To prevent unauthorized access, set strong passwords as described in the steps below. For example, the password **OTTER** is weak because it is a six-character word found in the dictionary. The password **O#h”pVw&** is strong because it is random, undefined, and contains eight characters.

Step 1. On the touchscreen display, navigate to **Settings > Change Password**.

Step 2. Enter the name of the access level for which you want to change the password.

Step 3. Enter the current password for that access level.

Step 4. Type the new password in the **New Password** field and press **Submit**.

The message **Password Successfully Changed** confirms the update.

The screenshot shows a 'Change Password' interface. At the top, it displays the date '10/23/2020' and time '10:39:49'. Below this is a section titled 'New password:' with a text input field containing seven asterisks (\*\*\*\*\*). To the right of the input field is a blue button labeled 'SUBMIT'. Below the input field is a virtual keyboard with rows of letters (QWERTYUIOP, ASDFGHJKL, abc ZXC VBN M, 123 #+= Space, ← →) and a bottom row with 'Step 3 of 3' and an 'ACC' button.

Figure 27 Control Window

## IX. Technical Assistance

We appreciate your interest in SEL metering products and services. If you have questions or comments, please contact us at:

Schweitzer Engineering Laboratories, Inc.  
 2350 NE Hopkins Court  
 Pullman, WA 99163-5603 U.S.A.  
 Tel: +1.509.338.3838  
 Fax: +1.509.332.7990  
 Internet: [selinc.com/support](http://selinc.com/support)  
 Email: [info@selinc.com](mailto:info@selinc.com)









**SCHWEITZER ENGINEERING LABORATORIES, INC.**

2350 NE Hopkins Court • Pullman, WA 99163-5603 U.S.A.  
Phone: +1.509.332.1890 • Fax: +1.509.332.7990  
selinc.com • info@selinc.com



\* P M 7 3 5 - 0 2 \*