SEL-3010 Event Messenger

Features, Benefits, and Applications

The SEL-3010 Event Messenger is an alarm and event notification system that converts incoming computer text messages to voice messages delivered by telephone.

➤ **Process Data Included in Messages.** Send text messages that include specific process data such as fault locations, measurements, and other data captured at the time of the alarm. Respond immediately without the need to consult SCADA or other monitoring systems to determine the location or severity of the condition.

➤ **Inexpensive Monitoring Solution.** Use the SEL-3010 for locations where full-time monitoring or SCADA is impractical or too expensive.

➤ **Direct Communication With Operations Personnel.** Speed alarm response by sending critical alarms directly to responding personnel rather than to dispatch centers or central monitoring locations.

➤ **SCADA Backup.** Use the SEL-3010 as a backup system for critical alarms when SCADA or other remote monitoring equipment has failed.

➤ **Port Power Connection.** Power the SEL-3010 directly from the communications port of equipment including SEL communications processors to eliminate additional power conversion equipment and wiring.
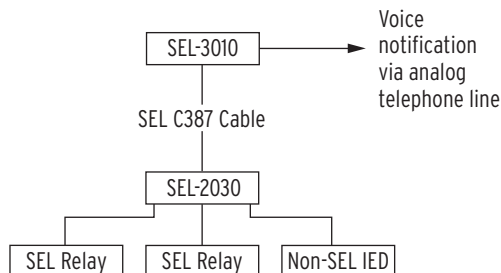
Quick Start

To test the SEL-3010 or demonstrate text-to-speech message conversion, see *Text-to-Speech Demo on page 7*. To install and use the SEL-3010 in an automatic dial-out application, follow these steps:

Step 1. **Establish data and power connections.** You can power the SEL-3010 from the data port through your data cable or from the power input connection on the front panel. See *Serial Port Interface (EIA-232 PORT) on page 7* and *Power Input (PWR) on page 8* for more information. Connect an ASCII terminal, or a computer running a terminal-emulation program.

Step 2. **Connect a telephone line.** Use the RJ-11 jack on the front panel of the SEL-3010. If you are behind a digital private telephone switch, you must arrange for an analog line or obtain additional equipment to connect the SEL-3010. Any telephone connection compatible with standard computer modems should work correctly with the SEL-3010.

Step 3. **Connect a speaker for local monitoring (not required).** See *Audio Output (SPKR) on page 8* for more information.

Step 4. **Enter the command mode.** To begin configuring your SEL-3010, enter the command mode by typing **+++**. See *Commands and Settings on page 9*.

Step 5. **Configure the header message.** The SEL-3010 sends a header message at the beginning of each message delivery sequence. If you are using SEL-3010 Event Messengers in multiple locations, you can use this message to uniquely identify the source of the information. See *Commands and Settings on page 9* for more information.

Step 6. **Configure the dialing list of telephone numbers.** You can program as many as four numbers. Include digits required to access an outside line and commas for a pause in the dialing sequence (for example 9,555-1234). See *Commands and Settings on page 9* for more information.

Step 7. **Exit the command mode.** After you have set the SEL-3010, leave the command mode by typing **ATO <Enter>**. See *Commands and Settings on page 9*.

Step 8. **Send a text message to the SEL-3010.** The message can contain as many as 160 ASCII characters. The SEL-3010 begins the dialing sequence automatically after receiving the message. See *Automatic Dial-Out Mode on page 4* for more information.

Step 9. **Receive the phone call and accept message delivery.** The SEL-3010 proceeds through the dialing list until messages are accepted by a person receiving the call. The SEL-3010 also redials the list if its attempts to deliver messages are unsuccessful. See *Automatic Dial-Out Mode on page 4* for more information.
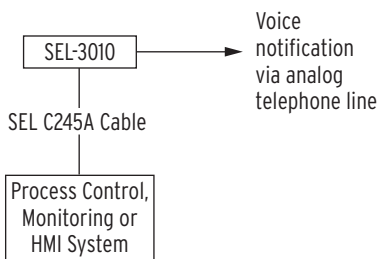
Applications

Power Industry. Transmit fault location, time, and substation information directly to operations staff, eliminating the need to contact the operations center to confirm an alarm or obtain detailed alarm information (see *Figure 1*).

```
              SEL-3010  ──────►  Voice
                 │               notification
                 │               via analog
         SEL C387 Cable          telephone line
                 │
              SEL-2030
         ┌───────┼───────┐
    SEL Relay  SEL Relay  Non-SEL IED
```

Figure 1   SEL-2030 Sends Fault Location/Alarm Data to the SEL-3010

Industrial Process Control. Transmit alarms and include process data that convey the severity of the alarm. For example, a process temperature out of tolerance by 1°C might be advisory, while a temperature out of tolerance by 10°C might require immediate attention (see *Figure 2*).

```
              SEL-3010  ──────►  Voice
                 │               notification
                 │               via analog
         SEL C245A Cable         telephone line
                 │
        ┌──────────────────┐
        │ Process Control, │
        │ Monitoring or    │
        │ HMI System       │
        └──────────────────┘
```

**Figure 2   Industrial Process System Sends Alarm Message to the SEL-3010**

Public Works Remote Site Monitoring. Use the SEL-3010 to provide alerts via telephone voice annunciation much more economically than with full-time SCADA monitoring and communication.

Commercial Property Management. Automatically transmit maintenance alerts, warnings, and alarms for HVAC, refrigeration, standby generation, or other important facility equipment directly to mobile maintenance and repair staff.

Off-Shift Alarm Notification. Send alarms to the SEL-3010 to be transmitted by telephone to the on-call operator when operations staff is off-shift. This provides on-call response to critical alarms for municipal and industrial sites that are not staffed 24 hours a day.

Functional Description

The SEL-3010 converts text messages to speech and delivers these messages to operators, technicians, engineers, or other personnel through the telephone via an automated dial-out process or when someone dials-in to the SEL-3010. Text messages must be 160 characters or less and can contain any printable ASCII character. The SEL-3010 reads numbers rather than pronouncing each digit. The Event Messenger also properly interprets and pronounces times (hour:minute:second) and dates (numeric month/numeric day/year).
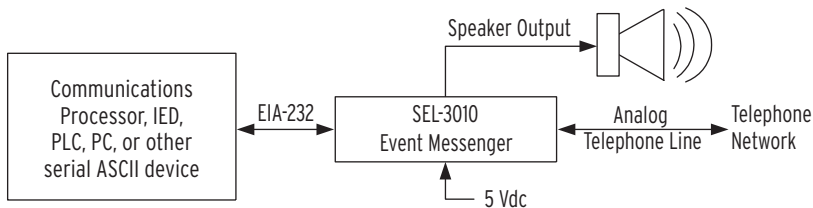
Figure 3   Functional Diagram

Automatic Dial-Out Mode

The SEL-3010 automatically dials out and transmits alarms via voice notification upon receiving an incoming text message. The SEL-3010 initiates a dialing sequence when one of the following occurs:

➤   The message reaches the maximum of 160 characters.

➤   The message contains a carriage return.

➤   No new message characters arrive for more than five seconds.

Before it begins to dial, the SEL-3010 waits for a valid dial tone. If it does not detect a dial tone, the SEL-3010 disconnects and waits for one minute before trying again. The SEL-3010 attempts to redial at one-minute intervals until it registers a dial tone. Upon detecting a valid dial tone, the SEL-3010 dials the first telephone number in the dialing list (the SEL-3010 stores as many as four telephone numbers).

NOTE: The remote telephone must ring for 0.7 seconds or longer (most of the duration of the first ring tone) for the Event Messenger to detect remote ringing.

When you answer the phone, the SEL-3010 plays greeting tones, and then annunciates the greeting message:

"Hello. This is an automated message system."

This greeting is followed by the header message that you programmed into the SEL-3010 (see *Table 3*). Then the SEL-3010 prompts you for input through the telephone keypad by giving you options:

> "Press 1 to listen to new messages. Press 2 to listen to all messages."

If the SEL-3010 detects that you have pressed the 1 key, it annunciates the new messages and marks these messages as delivered. If the SEL-3010 detects that you have pressed the 2 key, it annunciates all messages beginning with the oldest available message.

After annunciating the selected messages, the SEL-3010 provides an opportunity for you to replay or erase all messages by stating:

> "Press 2 to listen to all messages. Press 3 to erase all messages."

If you press the 3 key, the SEL-3010 takes the following action:

➤ Erases all messages.

➤ Annunciates "Messages erased. Good-bye."

➤ Disconnects.

You have 30 seconds to press a key. If the SEL-3010 determines that you have not pressed a telephone key within 30 seconds, it annunciates "Good-bye" and disconnects. After disconnecting, the SEL-3010 attempts to dial the next telephone number in the list.

The SEL-3010 begins the calling process by starting with the first telephone number in a list of as many as four numbers that you have programmed into the device (see *Table 3*). If no one answers or the line is busy when it dials the first number, it will dial the other listed numbers in order. Should the SEL-3010 dial the entire list without anyone answering, the Event Messenger waits for five minutes before redialing through the dialing list. If the second attempt at all phone numbers in the list is unsuccessful, the SEL-3010 waits for one hour before redialing. The SEL-3010 continues redialing attempts at one-hour intervals until someone answers. If the SEL-3010 receives a new message when it is waiting to redial, the SEL-3010 restarts the dialing process immediately.

Dial-In Mode

The SEL-3010 automatically answers incoming calls after a number of rings that you program into the device (see *Table 4*). If you set the number of rings to zero, the SEL-3010 does not answer incoming calls. Upon answering, the SEL-3010 annunciates the greeting message:

> "Hello. This is an automated message system."

This greeting is followed by the header message that you programmed into the SEL-3010. If there are no stored messages to give you, the SEL-3010 states:

"There are no messages. Good-bye"

and disconnects.

If there are undelivered messages, the SEL-3010 prompts you for telephone keypad input by stating:

"Press 1 to listen to new messages. Press 2 to listen to all messages."

If all messages were previously delivered, the SEL-3010 prompts you for telephone keypad input by stating:

"Press 2 to listen to all messages."

If the SEL-3010 detects that you have pressed the 1 key, it annunciates the new messages and marks these messages as delivered. If the SEL-3010 detects that you have pressed the 2 key, it annunciates all messages beginning with the oldest available message.

After the SEL-3010 annunciates the selected messages, it gives you an opportunity to replay or erase all messages by stating:

"Press 2 to listen to all messages. Press 3 to erase all messages."

If you press 3, the SEL-3010 takes the following action:

➤ Erases all acknowledged messages.

➤ Annunciates "Messages erased. Good-bye."

➤ Disconnects.

You have 30 seconds to press a key. If the SEL-3010 determines that you have not pressed a telephone key within 30 seconds, it annunciates "Good-bye" and disconnects.

Front-Panel LEDs

The front-panel LEDs operate as described in *Table 1*.

Table 1   LED Indication

LED Indication	PWR LED	COM LED
On	Normal operation	Receiving data or incoming ring
Fast flashing	Internal self-test failure	Incoming ringing
Slow flashing		Command mode
Off	No power or updating setting	Normal mode, waiting for data

___
NOTE: The SEL-3010 does not place or receive telephone calls while in command mode.

Text-to-Speech Demo

Step 1.   Connect SEL power supply 230-0600 to the front-panel connector on the SEL-3010.

Step 2.   Connect SEL Cable C245A between your computer and the SEL-3010.

Step 3.   Start a terminal emulation software package and configure communications for 9600 bits per second, 8 data bits, no parity, 1 stop bit, no flow control. Also enable "Send line ends with linefeeds" and "Echo typed characters locally" in the ASCII setup parameters.

Step 4.   Connect a single 8-ohm speaker or headphones to the audio output jack (see *Audio Output (SPKR) on page 8* for more information).

Step 5.   Type a message on your computer keyboard. Your message to the SEL-3010 can be as many as 160 characters. After you press **<Enter>**, reach 160 characters, or stop typing, the SEL-3010 automatically delivers the message via the speaker.

Installation and Maintenance

Use the following information to install the SEL-3010 Event Messenger.

Connections
Serial Port Interface (EIA-232 PORT)

The EIA-232 serial port interface is a standard 9-pin connector including a 5-Vdc power supply input on Pin 1 as noted in *Table 2*.

Table 2   EIA-232 Communications Port Pin Assignments

Pin	Function
1	Power input
2	RXD (data out)
3	TXD (data in)
5	Signal common (GND)

The serial port operates as DCE at a fixed configuration of 9600 bits per second, 8 data bits, 1 stop bit, and no parity. The serial port is capable of automatically echoing incoming characters; default factory settings disable this feature. You can use the **ATE1** command to enable character echo, see *Table 3*.

You should use specific SEL cables and accessories to perform certain functions under various conditions:

➤ Use SEL Cable C387 to supply both data and power to the SEL-3010 from an SEL device that supplies 5 Vdc on Pin 1. Install the Pin 1 power jumper on that other device.

➤ Use SEL Cable C245A for a data connection to the SEL-3010 when using power via the front-panel power connector, PWR.

➤ Use an external power supply (SEL part number 230-0600) to power the SEL-3010 through the front-panel power connector, PWR.

Telephone Line (LINE)

The telephone line connection is a standard, nonisolated, RJ-11 jack conforming to the North American standards for signaling and voltage levels used in the United States, Canada, and some Caribbean nations. (Mexico is not included in this calling plan.) The SEL-3010 is certified to both FCC Part 68 and Industry Canada CS-03/Industrie du Canada No. CS-03 regulations. See *Appendix C: Regulatory Notifications* for specific advisories related to these regulations.

CAUTION: To reduce risk of fire use only No. 26 AWG or larger telephone-line cord.

Audio Output (SPKR)

The audio output connection provides as much as 100 mW output to a single 8-ohm speaker via a 1/8 inch (3.5 mm) stereo jack using the sleeve and tip.
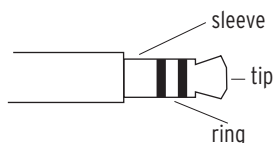
Figure 4   3.5 mm Stereo Jack

Power Input (PWR)

Power the SEL-3010 either through the serial port (see *Serial Port Interface (EIA-232 PORT) on page 7*) or through the front-panel power connector (center pin positive). The SEL-3010 requires 5 Vdc at a maximum of 330 mA.

SEL provides two power supplies for powering the SEL-3010 through the PWR receptacle. For 120/230 Vac operation use the 230-0600 wall-mounted power supply. For station dc battery operation use the SEL-9321 Low-Voltage DC Power Supply with the 240-1552 cable (order option SEL-9321_1X).

For compliance as UL Listed ITE (Information Technology Equipment) when using an external power adapter other than these SEL products, use a Listed Class 2 direct plug-in power adapter rated at 120-Vac input and 5-Vdc, 1-A output. The adapter must have a two-prong plug (NEMA 1-15P) or three-prong (grounded-type) plug (NEMA 5-15P).

Grounding

Attach a safety or earth ground to the SEL-3010 on the mounting bracket marked with the grounding symbol shown in *Figure 5*.

Figure 5   Grounding (Protective Earthing) Conductor Symbol

Commands and Settings

Terminal Mode

You can enter the command mode by sending **+++** to the SEL-3010. Once in the command mode, you can set the operating parameters of the SEL-3010 as shown in *Table 3*. When you have finished modifying the settings, exit the command mode using the command **ATO <Enter>**. The Event Messenger stores all settings in non-volatile memory.

Table 3   Command Summary (Sheet 1 of 2)

Command	Description
+++	Enter command mode.
ATO <Enter>	Exit command mode and return to normal mode.
ATI2 <Enter>	Display firmware version.
ATL*n* <Enter>	Set volume (both LINE and SPKR) (0–5 with 5 loudest). Default setting is 5.
ATS*n*=*m* <Enter>	Set the setting number *n* to a value *m* within the setting range (see *Table 4*).
ATS*n*? <Enter>	Display setting *n*.
AT&F <Enter>	Restore factory default settings.
AT+CMGW= <Enter>*text***<Ctrl+Z>**	Set the custom header text (160 characters maximum length).
ATD*m...m*	Dial telephone number *m...m*. The telephone number can contain as many as 32 digits, #, *, and commas. Commas (,) are dialing pause characters.

Table 3   Command Summary (Sheet 2 of 2)

Command	Description
ATM*n* **<Enter>**	Enable (*n*=2) or Disable (*n*=0) local speaker output.
ATDL	Redial last number used in ATD command.
AT\P*nm...m* **<Enter>**	In location *n* (1–4) store telephone number *m...m*. The telephone number can contain up to 32 digits, #, *, and commas. Commas (,) are dialing pause characters.
AT\F	Display list of phone numbers.
ATDN*n*	Dial the stored telephone number in location *n*, where *n* is 1–4. When the remote phone answers, the SEL-3010 requests pressing all keys in sequence (once, from 0 through 9) and confirms each key. This is a good telephone line/system check.
AT$B *n*	Change serial port data (baud) rate. *n* is 2400, 4800, 9600, 19200, 38400, 57600 bps. Default is 9600 bps.
ATE*n* **<Enter>**	Character Echo set to 0 for OFF or 1 for ON. Default = OFF.

Settings available through the **ATS** command are listed in *Table 4*.

Table 4   ATS Command Settings

Setting Number (n)	Description (Use ATSn Command to Display or Set)	Setting Range (m)	Default Value
0	Number of rings before answering	0–12 (0 disables auto answer)	4
6	Seconds to wait before dialing	0, 3–12 (0 disables auto dial out)	3
7	No answer timeout in seconds	10–60 seconds	30
8	Pause (in seconds) for comma (,) in phone number	1–5 seconds	2

Telephone Keypad

The telephone keys that you use during a call from or to the SEL-3010 are shown in *Figure 6*. To use these commands, be sure to activate dialing tones (DTMF) for your telephone.

1	listen to new messages	8	reduce volume (press between messages)
2	repeat all messages	9	increase volume (press between messages)
3	clear all stored		

Figure 6   Telephone Keypad and Corresponding SEL-3010 Functions

Mechanical Diagrams
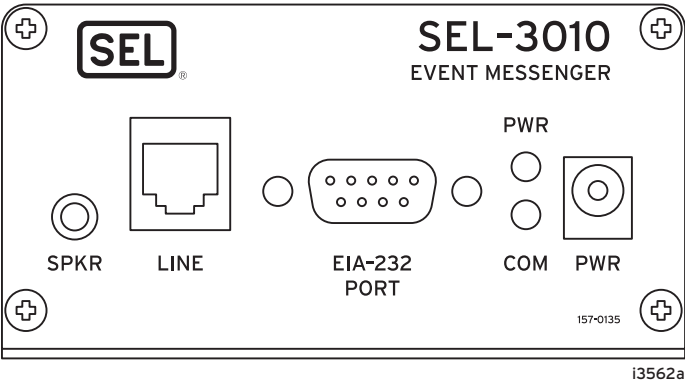

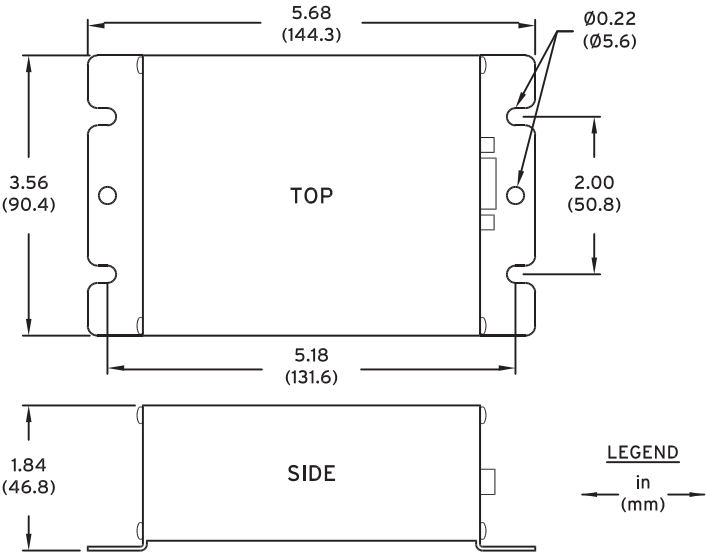**Figure 7   Front Panel**

Figure 8   Dimension Diagram

Specifications

General Specifications

Power Input Requirements

Rated: 5 Vdc ±10%
Burden: <330 mA

Serial Ports

1 front-panel, female 9-pin type, EIA-232

Telephone Line Connection

1 front-panel, RJ-11 connector

Audio Line Out

1/8" (3.5 mm) plug
As much as 100 mW into 8 ohms

Operating Temperature Range

–40° to +185°F (–40° to +85°C)

Type Tests and Standards

Cold: IEC 60068-2-1:1990, Test Ad; 16 hr @ –40°C
Dry Heat: IEC 60068-2-2:1974, Test Bd; 16 hr @ +85°C

Certifications

FCC: TIA/EIA-1S-968 (formerly Part 68)
                      Part 15: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

Industry Canada/   CS-03
  Industrie du Canada ICES-003/NMB-003: This Class A digital apparatus complies with Canadian ICES-003. This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications. Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada. Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

Safety: UL 60950-1, CAN/CSA 22.2 No. 60950-1
ISO: Designed and manufactured using ISO 9001 certified quality program.

Voice Annunciation

Text-to-speech conversion
Storage and buffering for 15 messages
Message delivery and deletion controlled through telephone keypad controls
Dial-in mode allows message playback/erase functions
Dialing list:
   4 telephone numbers (32 characters per number)
Automatic dial-out sequencing and redial

Serial Data Communication

EIA-232 DB-9 female
2400, 4800, 9600, 19200, 38400, 57600 bps; default is 9600 bps
8 bits
No parity
1 stop bit

Additional Information

Application Guides

See SEL Application Guides for more detailed information on applying the SEL-3010. You can obtain Application Guides by visiting www.selinc.com.

Factory Assistance

We appreciate your interest in SEL 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 USA
Telephone: +1.509.332.1890
Fax: +1.509.332.7990
Internet: www.selinc.com
Email: info@selinc.com

Appendix A: Firmware/Hardware and Manual Versions

Determining the Firmware Version in Your Product

To find the firmware revision number in the Event Messenger use the serial port command **ATI2 <Enter>** in the command mode (see *Table 4*) to display the firmware version. The FID label will appear as follows, with the Part/Revision number in bold:

FID=SEL-3010-R**xxx**-Vx-Z00x00x-Dxxxxxxxx

The firmware revision number is after the "R," and the release date is after the "D." For example:

FID=SEL-3010-R100-V0-Z010001-D20030109

is firmware revision number 100, release date January 9, 2003.

Table 5 lists the firmware versions, a description of modifications, and the product manual date code that corresponds to firmware versions. The most-recent firmware version is listed first.

Table 5   Firmware/Hardware Revision History

Firmware Identification (FID) Number/ Description of Changes	Manual Date Code
SEL-3010-R102-V0-Z001001-D20081001 ➤ Updated to support shorter pulse tones on new cell phones.	20081001
SEL-3010-R101-V0-Z001001-D20060508 ➤ Manual update only (see *Table 6*).	20071214

SEL-3010-R101-V0-Z001001-D20060508
   ➤ Firmware and hardware updates for improved call-progress detection.
   ➤ Input DTMF interrupts message output.
	20060508

SEL-3010-R100-V0-Z001001-D20030109 ➤ Hardware update for increased audio level.	20050929
SEL-3010-R100-V0-Z001001-D20030109 ➤ Initial release.	20030109

Determining the Manual Version

The date code at the bottom of each page of this manual reflects the creation or revision date. *Table 6* lists the product manual release dates and a description of modifications. The most recent product manual revisions are listed at the top.

Table 6   Instruction Manual Revision History

Revision Date	Summary of Revisions
20081001	➤ Added ATM command information in *Table 3*.
20071214	➤ Updated *Factory Assistance on page 13*.
20060508	➤ Documented additional commands in *Table 4*. ➤ Added *Appendix C: Regulatory Notifications*.
20050929	➤ Updated current-draw specification.
20030109	➤ Initial release.

Appendix B: Firmware Upgrade Instructions

Overview

SEL may occasionally offer firmware upgrades to improve the performance of your SEL-3010 Event Messenger. The SEL-3010 Event Messenger stores firmware in Flash memory, so it is not necessary to change physical components. A firmware loader feature is included in the SEL-3010 Event Messenger. These instructions are a step-by-step guide to upgrading the device firmware using a downloaded file from a personal computer to the Event Messenger via serial port.

Important Note Regarding Settings

The firmware upgrade procedure may result in lost settings as a result of new features and changes in the way memory is used. It is imperative to have a copy of the original Event Messenger settings available in case they need to be reentered. Carefully following these upgrade instructions will minimize chances of inadvertently losing settings.

Required Equipment

➤ Personal computer

➤ Terminal emulation software that supports text file transfer

➤ SEL-3010 programming cable (SEL-C245A or SEL-C662)

➤ CD containing firmware upgrade file

Upgrade Procedure

The instructions below assume you have a working knowledge of your personal computer terminal emulation software. In particular, you must be able to modify your serial communications parameters (baud rate, data bits, parity, etc.), disable any hardware or software flow control in your computer terminal emulation software, and transfer files (e.g., send text files).

Step 1.   Connect your personal computer to the SEL-3010 serial port using the SEL-C662 (DTE mode) or SEL-C245A programming cable. Turn on the power to the unit.

Step 2.   The serial port default is 9600 bps, 8 data bits, 1 stop bit, and no parity. If you have changed the serial port default data rate setting, you will connect at the rate previously configured.

Step 3.   Establish a serial Console session by entering **+++** in the terminal window. The SEL-3010 should respond with OK if successful. If unsuccessful, check the cable and terminal emulation settings.

Step 4.   Enter boot mode by typing **AT^H <Enter>**. The SEL-3010 will respond with the following:

```
Caution—This halts the SEL-3010 application, and enters Boot Mode.
Are you sure? (Y/N)
```

Step 5.   Type **Y <Enter>** and the SEL-3010 will respond with the following:

```
SEL-3010 terminating...
Goodbye

Entering Boot Mode.
```

Step 6.   The SEL-3010 should be in Boot Mode and display the !> prompt. The default data rate in Boot Command Mode is 9600 bps. If needed, adjust the serial communications parameters to 9600 bps.

Step 7.   Execute the **REC <Enter>** command to initiate a firmware upgrade. The SEL-3010 will respond with the following:

```
Caution! This erases the 3010 F/W
Are you sure? (Y/N)
```

Step 8.   Type **Y <Enter>** at the prompt and the SEL-3010 will respond with the following:

```
Erasing
OK
Waiting for data from the PC.
```

NOTE: The current SEL-3010 firmware is still programmed into Flash memory at this point and has not been erased or overwritten. Once reprogramming commences, power must remain applied to the SEL-3010 until reprogramming is complete.

Step 9.   When the SEL-3010 responds with *Waiting for data from the PC*, transfer the firmware upgrade file (.hex) using the Xmodem file transfer option of your terminal program, making sure to select **Xmodem with CRC**. You must start sending this file within 40 seconds of the prompt. If it takes longer than 40 seconds, the process will be canceled and you will need to return to *Step 7*.

Step 10.   When the SEL-3010 completes the download, it responds with the following:

```
OK—Restarting.
```

Upgrade Verification

Perform the following steps to verify that the correct firmware version was loaded:

Step 1.   Connect your personal computer to the SEL-3010 serial port using the SEL-C662 (DTE mode) or SEL-C245A programming cable. Turn on the power to the unit.

Step 2.   The serial port default is 9600 bps, 8 data bits, 1 stop bit, and no parity. If you have changed the serial port default data rate setting, you will connect at the rate previously configured.

Step 3.   Establish a serial Console session by entering **+++** in the terminal window. The SEL-3010 should respond with OK if successful. If unsuccessful, check the cable and terminal emulation settings.

Step 4.   Type **ATI2 <Enter>** to display the current firmware version.

Verify that this version matches the upgrade version from the upgrade CD.

Appendix C: Regulatory Notifications

FCC Part 68 Requirements

1.   This equipment connects to the telephone network of premised wiring using a compatible modular jack which is Part 68 compliant. When connecting a telephone cable, you must use a minimum No. 26 AWG and FCC-compliant telephone cable. See Installation and Maintenance for details.

2.   This equipment connects to the telephone network via USOC RJ11C.

3.   This equipment complies with Part 68 of the FCC rules. On the rear of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

4.   The REN (Ringer Equivalence Number) helps determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line might result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact your telephone company to determine the maximum REN for your calling area. For products approved after July 23, 2001, the REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 06 is a REN of 0.6).

5.   If the terminal equipment causes harm to the telephone network, the telephone company will notify you in advance. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

6.   The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

7.   If trouble is experienced with this equipment, please contact SEL for repair and warranty information:

> Schweitzer Engineering Laboratories, Inc.
> 2350 NE Hopkins Court
> Pullman, WA 99163 USA
> +1.509.332.1890

If the trouble is causing harm to the telephone network, the telephone company may request that you remove the equipment from the network until the problem is resolved.

8.   This equipment cannot be used on public coin service provided by the telephone company. In addition, connection to Party Line Service is subject to state tariffs. (Contact the state public utility commission, public service commission or corporation commission for information.)

Important Safety Instructions

When using this device, follow these basic safety precautions to reduce the risk of fire, electric shock, and injury to persons:

• Do not use this product near water.

• Do not install the unit and avoid using during an electrical storm. There might be a remote risk of electric shock from lightning.

• Make sure the unit is properly grounded prior to connecting to the telephone wiring.

Save these instructions.

Importantes Mesures de Sécurité

Certaines mesures de sécurité doivent être prises pendant l'utilisation de matériel téléphonique afin de réduire les risques d'incendie, de choc électrique et de blessures. En voici quelques unes:

• Ne pas utiliser l'appareil près de l'eau.

• Éviter d'utiliser le téléphone (sauf s'il s'agit d'un appareil sans fil) pendant un orage électrique. Ceci peut présenter un risque de choc électrique causé par la foudre.

• Assurez-vous que le dispositif est correctement mis à la terre avant d'y raccorder la ligne téléphonique.

Conserver ces instructions.

Industry Canada Requirements

Notice: The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, might give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution might be particularly important in rural areas.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Conditions De l'IC Canadienne

Avis: L'étiquette d'Industrie Canada identifie le matériel homologué. Cette étiquette certifie que le matériel est conforme aux normes de protection, d'exploitation et de sécurité des réseaux de télécommunications, comme le prescrivent les documents concernant les exigences techniques relatives au matériel terminal. Le Ministère n'assure toutefois pas que le matériel fonctionnera à la satisfaction de l'utilisateur.

Avant d'installer ce matériel, l'utilisateur doit s'assurer qu'il est permis de le raccorder aux installations de l'entreprise locale de télécommunication. Le matériel doit également être installé en suivant une méthode acceptée de raccordement. L'abonné ne doit pas oublier qu'il est possible que la conformité aux conditions énoncées ci-dessus n'empêche pas la dégradation du service dans certaines situations.

Les réparations de matériel homologué doivent être coordonnées par un représentant désigné par le fournisseur. L'entreprise de télécommunications peut demander à l'utilisateur de débrancher un appareil à la suite de réparations ou de modifications effectuées par l'utilisateur ou à cause de mauvais fonctionnement.

Pour sa propre protection, l'utilisateur doit s'assurer que tous les fils de mise à la terre de la source d'énergie électrique, des lignes téléphoniques et des canalisations d'eau métalliques, s'il y en a, sont raccordés ensemble. Cette précaution est particulièrement importante dans les régions rurales.

Avertissement: L'utilisateur ne doit pas tenter de faire ces raccordements lui-même; il doit avoir recours à un service d'inspection des installations électriques, ou à un électricien, selon le cas.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

The REN (CANADA) of this equipment is 0.6.

Avis: L'indice d'équivalence de la sonnerie (IES) assigné à chaque dispositif terminal indique le nombre maximal de terminaux qui peuvent être raccordés à une interface. La terminaison d'une interface téléphonique peut consister en une combinaison de quelques dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas 5.

Le REN (CANADA) pour cet équipement est 0.6.

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