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SE-MON330 SOFTWARE MANUAL

REVISION 0-H-121218



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DISCLAIMER

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1. GENERAL

SE-MON330 is a PC-based application designed to access set-points, measured values, and trip records from the SE-330 Neutral-Grounding-Resistor Monitor, the SE-330HV Neutral-Grounding-Resistor Monitor, and the SE-330AU Neutral-Earthing-Resistor Monitor.

SE-MON330 (version 4.0 or higher) is compatible with previous and new revisions of the SE-330 series, using the RS-232 or mini-USB interface, respectively.

The screen images in this manual are shown as connected to a new revision of the SE-330 series.

Unless otherwise indicated, "SE-330" refers to all three monitor series in general.

2. SETUP

For an SE-330 (previous revision) with the RS-232 serial port, no additional driver is required when connected to a PC with an RS-232 serial port. If a USB converter is used for the serial connection, install the converter's USB driver prior to running SE-MON330.

For an SE-330 (new revision) with a USB interface, SE-MON330 should be installed prior to connecting the SE-330 so that the USB driver is properly installed. When the SE-330 is connected, a USB COM port will appear on the computer. This COM port is used by SE-MON330. If the USB COM port does not appear, refer to Section 5.

SE-MON330 opens the Communication tab during start up (Fig. 1). To connect, select a connection type and a target. The two connection type options are Serial/USB and Modbus TCP. The Serial/USB connection type (which is also used for an RS-232 connection) provides a COM port choice to connect to either the virtual port generated by the USB driver or the serial port for the RS-232 connection. Modbus-TCP requires the IP address of the SE-330 to connect. Click enable to connect.

NOTE: NGR Current (A) and NGR Voltage (V) may not display correct values without the System Parameters being set.

2.1 Initial CONFIGURATION TAB

The Initial Configuration tab is shown when connecting to an SE-330 (firmware version 3.00 or higher) for the first time (Fig. 2). This screen shows important settings that must be reviewed and configured before proceeding with other settings.

For SE-330 version 3.00, several Resistor-Fault parameters including Nominal NGR Resistance (ohms), NGR Short Mode, and NGR Short Trip Level (% Nominal) are shown. These new parameters are described in Section 2.4.

Once these parameters are confirmed, set the Essential Settings Verified parameter to Settings Verified.

2.2 SUMMARY TAB

The Summary tab displays several set-point values, metered values, configuration-switch settings, and trip status (Fig. 3).

The bottom status line displays the selected COM port, ONLINE or OFFLINE mode, the SE-330 series type, firmware version, trip status, diagnostic status, and the real-time clock value read from the SE-330.

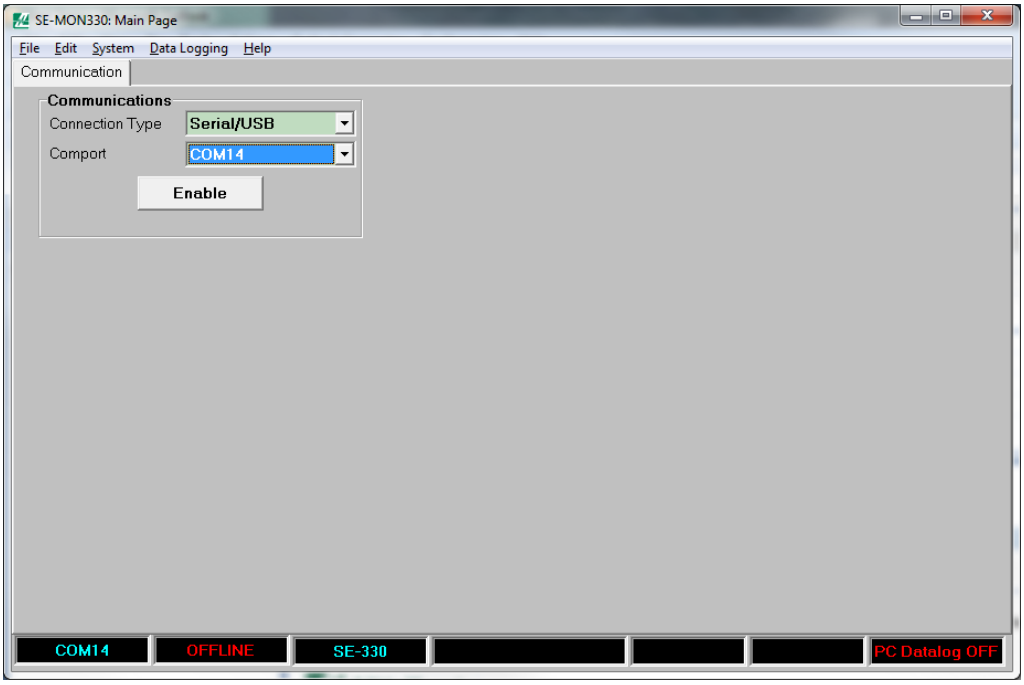


FIGURE 1. Communication Tab.

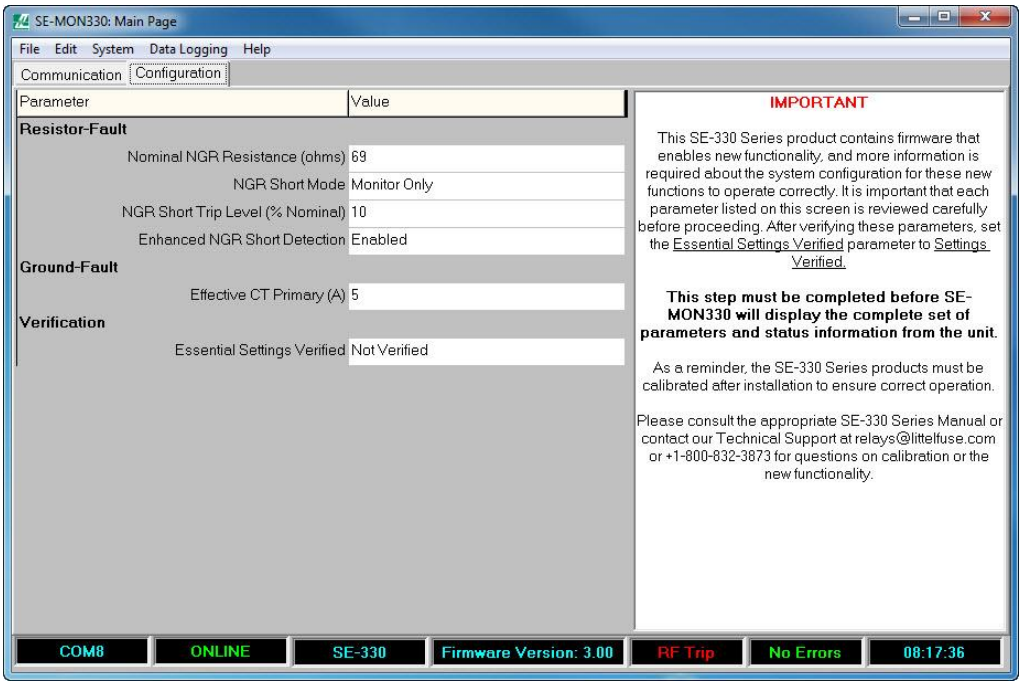


FIGURE 2. Initial Configuration Tab.



FIGURE 3. Summary Tab.

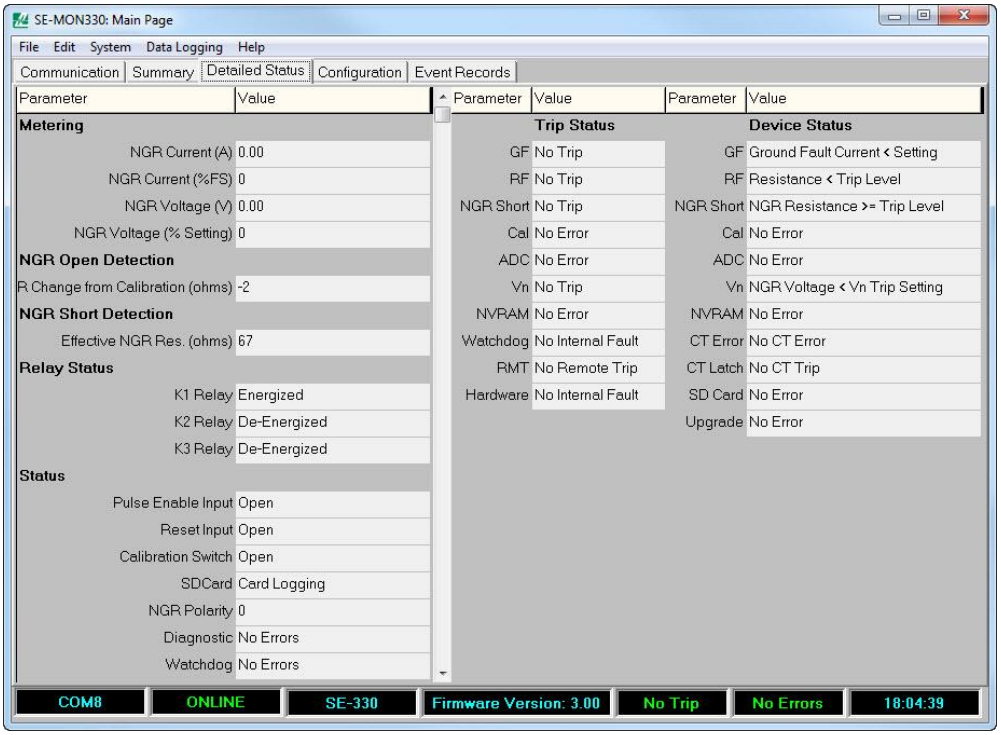


FIGURE 4. Detailed Status Tab.

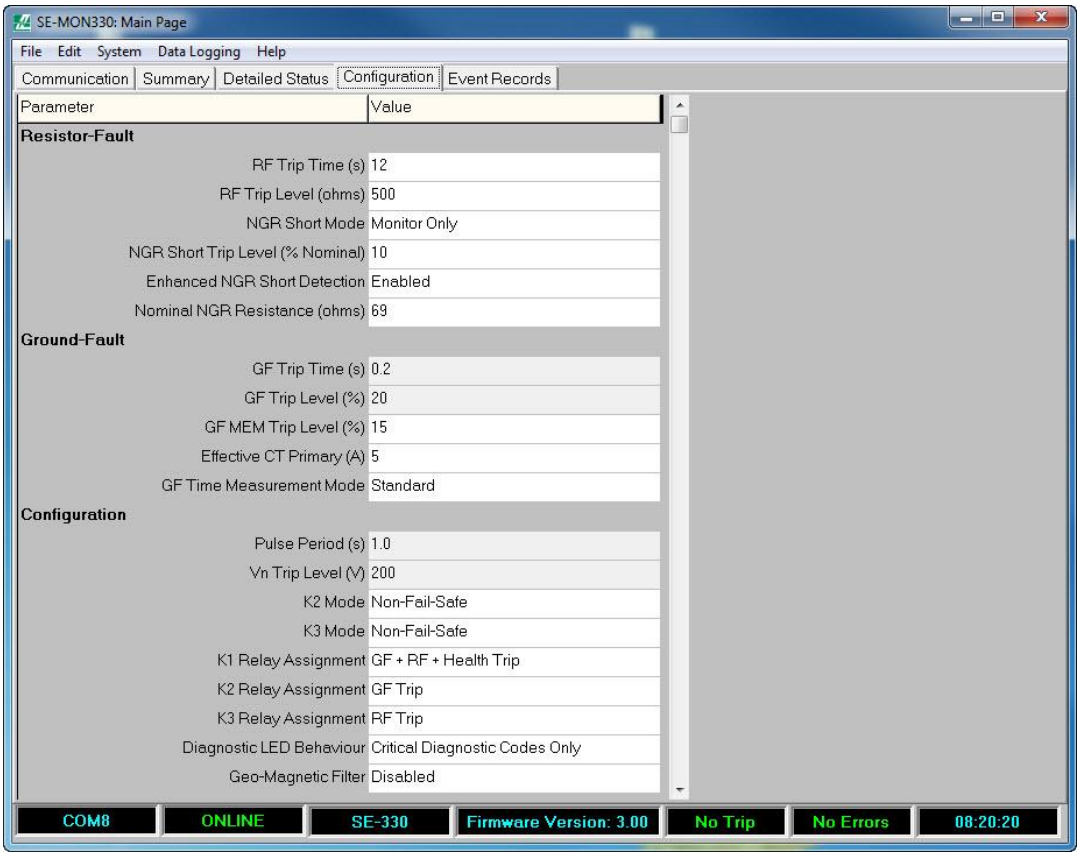


FIGURE 5. Configuration Tab.

2.3 Detailed Status Tab

The Detailed Status Tab (Fig. 4) displays information from the following categories:

- **Metering** displays NGR Current (A), NGR Current (% FS), NGR Voltage (V), and NGR Voltage (% Setting).
- **NGR Open Detection** displays the resistance change (ohms) based on the most recent successful calibration with the system.
- **NGR Short Detection** displays the Effective NGR resistance (ohms). The Effective NGR resistance is based on the active measurement of the SE-330 detection circuitry regardless of the energization state of the transformer. If the Enhanced NGR Short Detection mode is enabled (see Section 2.4.1) and both the NGR Current (% FS) and NGR Voltage (% Setting) values are greater than 3%, the Effective NGR resistance value will display the resistance calculation based on the NGR Voltage (V) and NGR Current (A) values.
- **Status** will display relay, trip, device, and general status information.
- **System Info** will display the date, time, serial number, hardware revision, and communications type (if applicable) from the connected SE-330.
- **Factory Diagnostics** will display additional status information from the SE-330 which can assist with testing and troubleshooting.

2.4 Configuration Tab

The Configuration tab displays all available items that can be configured for the connected SE-330 (Fig. 5).

2.4.1 Resistor Fault

RF Trip Time can be set within a range of 12 to 60 s.

RF Trip Level defaults to 500 ohms for 20 kohm sensing resistors, 2500 ohms for 100 kohm sensing resistors, and 5000 ohms for 200 kohm sensing resistors. This trip level can be adjusted within the range specified by each product manual.

The NGR Short Mode allows NGR Short Detection to be enabled. Select Trip and Monitor for full functionality, or the Monitor Only mode to display the NGR Short Detection status without tripping. This mode can also be disabled.

The NGR Short Trip Level (% Nominal) allows a selection between 10 and 70 percent of the nominal NGR resistance. If the nominal NGR resistance falls below this level for longer than the RF Trip Time setting, an NGR Short Trip will occur.

Enable the Enhanced NGR Short Detection mode to include a calculation of NGR resistance based on the measured voltage and current values (when available).

The Nominal NGR Resistance is the nominal resistance value of the neutral-grounding resistor. Ensure that the correct value is configured and the SE-330 is calibrated.

2.4.2 Ground Fault

The GF Trip Time is set on the front-panel of the SE-330.

The GF Trip Level is set on the front-panel of the SE-330 or SE-330HV as a percentage of the CT-primary rating (2 to 100).

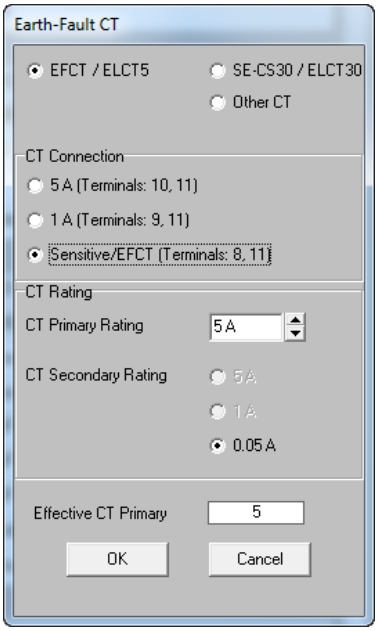
The EF Trip Level is set on the front-panel of the SE-330AU with one of the following ranges:

- 0.125 to 5 A using the EFCT series CT
- 0.75 to 30 A using the SE-CS30 series CTs or the ELCT30 series CTs

For the new revision of the SE-330 series the GF Trip Level can also be set to MEM.

When the GF Trip Level front-panel dial is set to MEM, the GF MEM Trip Level (%) can be set from 2 to 100% in 1% increments. The drop-down list displays the percentage along with the equivalent trip level current. The default setting is 15%.

The Effective CT Primary is based on the type of earth-fault CT used, and the connection to the SE-330. The following selection screen will be shown when configuring this value:



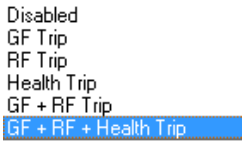
The Standard GF Time Measurement Mode uses a trip-time accumulator for detection of intermittent faults. If the Non-Accumulating Mode is selected, a ground-fault trip will occur if the measured ground-fault value is above the ground-fault trip level for the duration of the ground-fault trip time setting. See the SE-330 manual for more details.

2.4.3 CONFIGURATION

The Pulse Period (SE-330 only) and the Vn Trip Level settings are front-panel selectable.

A fail-safe or non-fail-safe mode can be selected for relays K2 and K3.

The K1, K2, and K3 Relay Assignment configuration allows each relay to be assigned to one or more functions as shown below:



The K1 relay has a default setting of GF + RF + Health Trip. The K2 relay has a default setting of GF Trip, and the K3 relay has a default setting of RF Trip.

The SE-330 can be configured to show critical diagnostic flash codes (default) or all diagnostic flash codes.

The Geo-Magnetic filter can be enabled on SE-330s with firmware version 2.40 or higher.

Refer to the SE-330 manual for more details.

2.4.4 NETWORKING

Available network settings will be displayed if available. The settings will vary based on the type of network installed.

NOTE: For Ethernet options, ensure that each port is configured with a unique IP address even if not used.

2.4.5 SNTP CLIENT

For the IEC 61850 protocol, synchronizing to a time server is necessary. The SE-330 includes an SNTP client and can be configured to synchronize with the system NTP server. These settings are located in the SNTP Settings area.

Enable the SNTP Client and set the NTP Server IP Address to the address of the system NTP server to synchronize to system time. For troubleshooting connection problems with the NTP Server, monitor the SNTP Client status. The status indicates problems such as NTP Server not found, NTP Server not running, and timeout, and will display SNTP Synced when operating correctly.

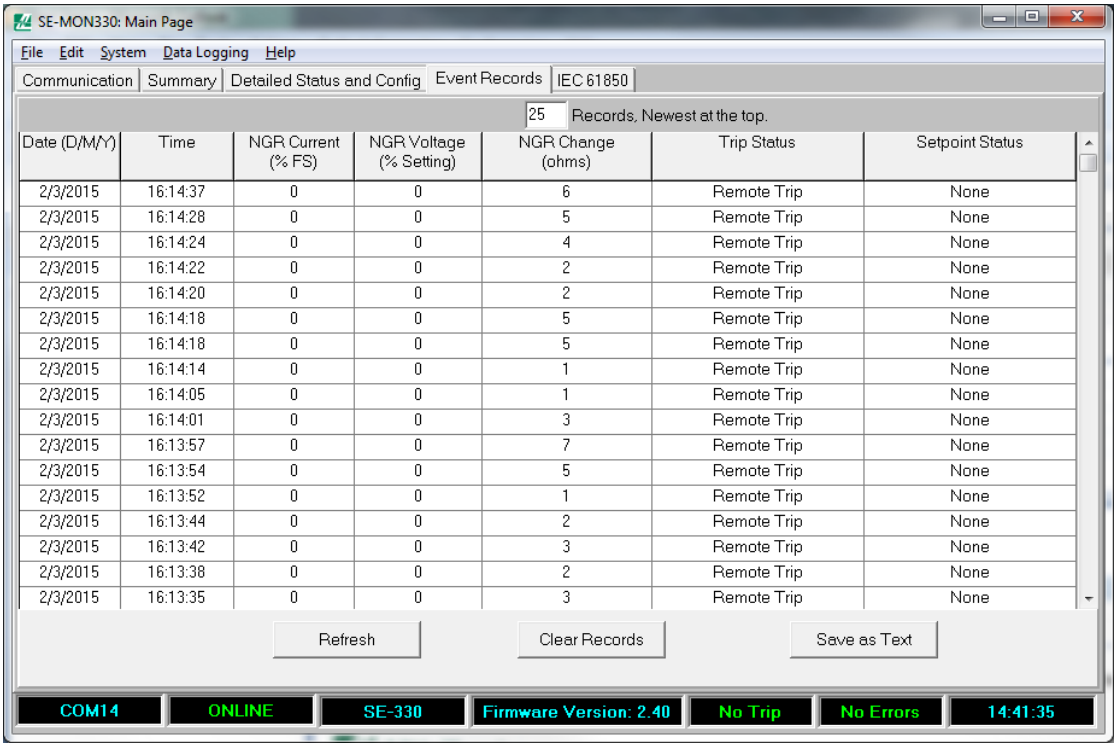
The Poll Period is the time between queries to the NTP server. The default value is 60 s which is typically sufficient to maintain time synchronization to 1 ms accuracy, but it can be configured for periods as low as 1 s.

The Timeout is the maximum time that the SNTP Client will wait for a response from the NTP Server. The default value is 5 s, and the minimum time is 1 s. If a request fails, no change is made to the SE-330 internal clock.

2.5 EVENT RECORDS TAB

The SE-330 series stores up to 100 events (10 events for the previous revision SE-330) with the most recent events on page one as shown in Fig. 6.

Clear Records will clear all event records from the unit. Save as Text will save all the events from the unit to a text file



Date (D/M/Y)	Time	NGR Current (% FS)	NGR Voltage (% Setting)	NGR Change (ohms)	Trip Status	Setpoint Status
2/3/2015	16:14:37	0	0	6	Remote Trip	None
2/3/2015	16:14:28	0	0	5	Remote Trip	None
2/3/2015	16:14:24	0	0	4	Remote Trip	None
2/3/2015	16:14:22	0	0	2	Remote Trip	None
2/3/2015	16:14:20	0	0	2	Remote Trip	None
2/3/2015	16:14:18	0	0	5	Remote Trip	None
2/3/2015	16:14:18	0	0	5	Remote Trip	None
2/3/2015	16:14:14	0	0	1	Remote Trip	None
2/3/2015	16:14:05	0	0	1	Remote Trip	None
2/3/2015	16:14:01	0	0	3	Remote Trip	None
2/3/2015	16:13:57	0	0	7	Remote Trip	None
2/3/2015	16:13:54	0	0	5	Remote Trip	None
2/3/2015	16:13:52	0	0	1	Remote Trip	None
2/3/2015	16:13:44	0	0	2	Remote Trip	None
2/3/2015	16:13:42	0	0	3	Remote Trip	None
2/3/2015	16:13:38	0	0	2	Remote Trip	None
2/3/2015	16:13:35	0	0	3	Remote Trip	None

FIGURE 6. Event Records Tab.

2.6 System Menu

2.6.1 Earth-Fault CT

From the System drop-down menu, select Earth-Fault CT to choose the CT type and the connection being used with the SE-330.

2.6.2 Voltage Setting

The V_N trip level can be entered for an SE-330 (previous version) with the RS-232 serial port. From the System drop-down menu, select Voltage Setting to specify the V_N Trip Level being used on the SE-330. Note that on the SE-330 with USB, the voltage setting is updated automatically when the SE-330 is connected.

2.6.3 Set Date/Time

To set the date and time (new revision SE-330 series only), connect to the SE-330 using the USB connection. Select Set Date/Time from the System menu. The unit will be set to the same date and time as the computer.

2.6.4 Reset to Defaults

The SE-330 can be configured to its default settings by choosing Reset to Defaults from the System Menu.

2.6.5 Remote Calibration

To initiate a remote calibration (new revision SE-330 series only), select Remote Calibration from the System menu. Select the Detailed Status and Config tab and confirm that the calibration trip state displays "No Error". In most cases, the Calibration Value will change from the previous value.

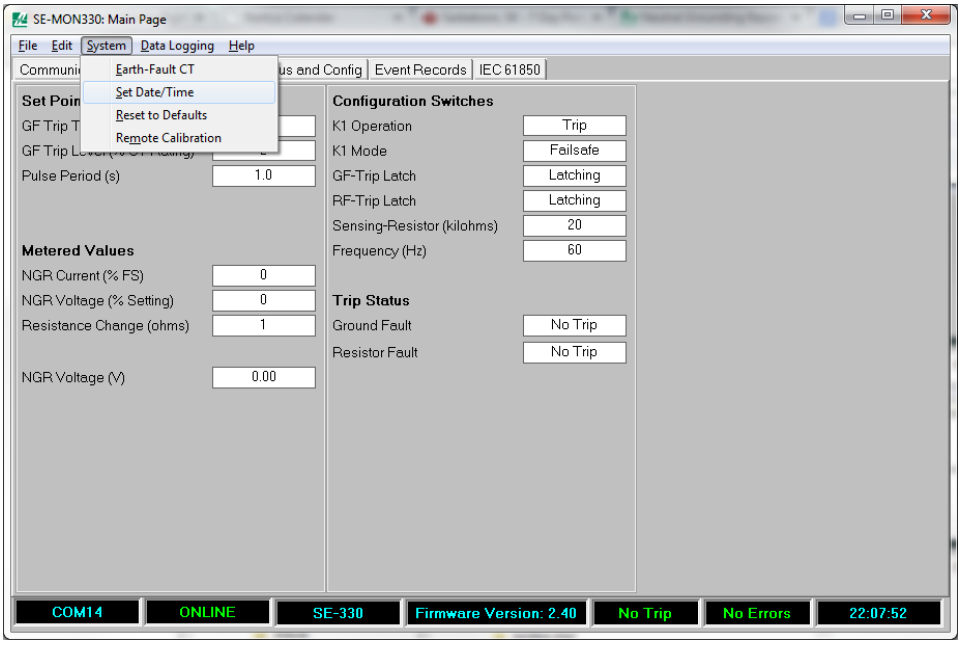


FIGURE 7. System Parameters Menu.

2.7 USING SET-POINT ASSISTANT

Selecting the Set-Point Assistant from the Help menu opens the Set-Point Assistant in a web browser. Using the System Parameters, the Set-Point Assistant recommends a sensing resistor type, ground-fault trip level, a V_N trip level, and the RES switch setting.

Users can select between four monitors: SE-325, SE-330, SE-330AU, and SE-330HV.

Enter the system's line-to-line voltage or line-to-neutral voltage. Once it has been entered, the other system voltage field will populate automatically.

Enter either the let-through current of the neutral-grounding resistor or the resistance of the neutral-grounding resistor. Once one field has been entered, the other field will populate automatically.

Select indoor or outdoor location.

If an SE-330, SE-330AU, or SE-330HV is selected, the primary rating of the connected CT must be defined before a ground-fault-trip setting is recommended. Select this parameter using the CT Selection drop-down menu.

Several recommendations are provided: the sensing resistor hardware, the ground-fault trip level, the minimum Vn Trip Level, and the S5 configuration. Users can select a different sensing resistor or ground-fault trip level and the other recommendation fields will update accordingly.

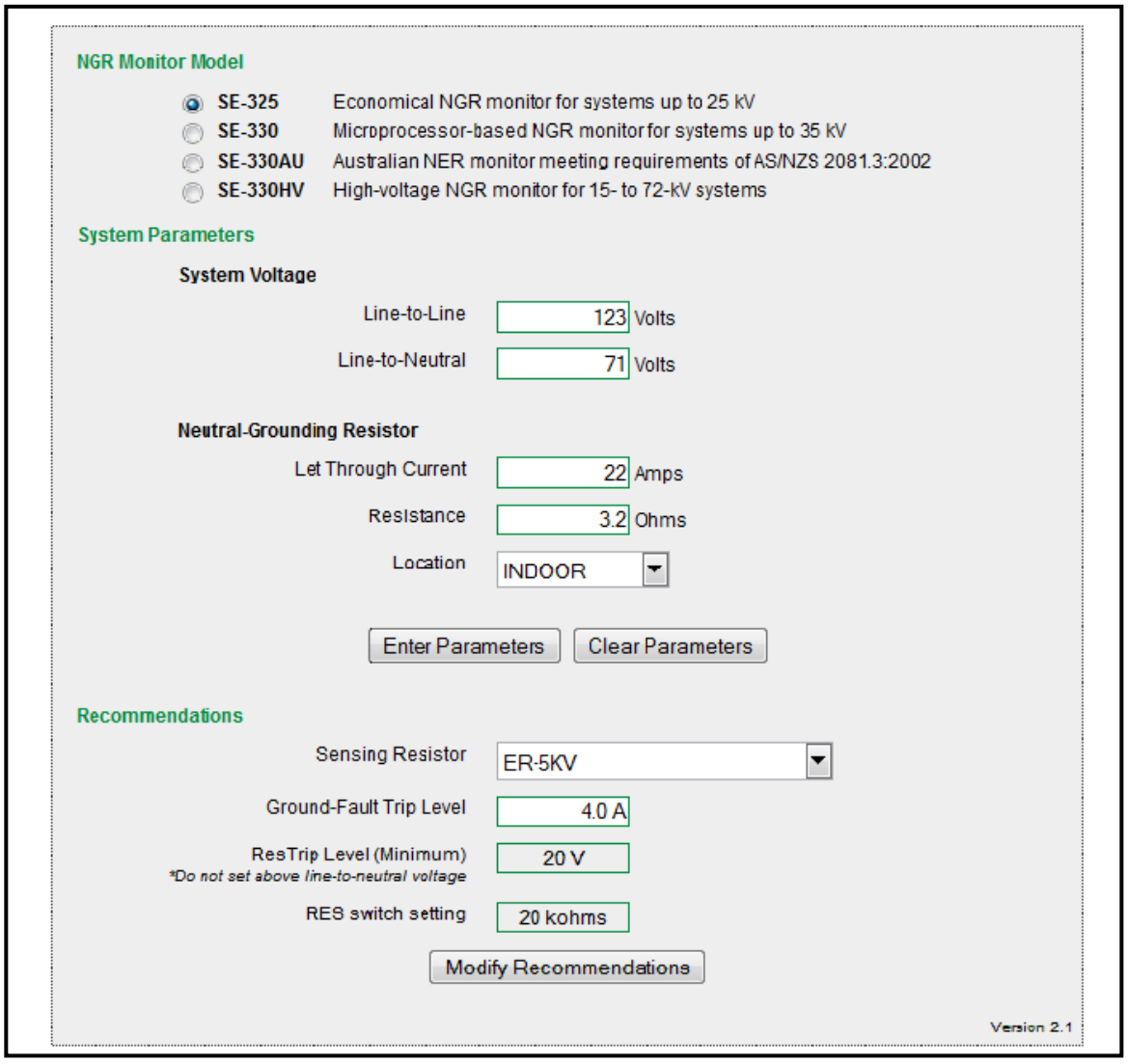


FIGURE 8. Set-Point Assistant.

3. DATA LOGGING DIRECTLY TO A PC

When connected to an SE-330, SE-MON330 will allow data logging directly to a file on the connected PC. For the SE-330 (new revision) with USB and SD capability, this data-logging feature is in addition to the SD card data logging feature.

To configure data logging, select Data Logging | Settings. Options are available to enable data logging, and select the data-log file location.

For the SE-330 (previous revision) with RS-232 port, the file name provided will have the month and day added to it (ie: SE330_0326.txt). For the SE-330 with the USB interface, the file name is automatically generated from the SE-330 model, serial number, and date (ie: SE330_123456789_0326.txt).

When enabled, all data will be logged to the selected file every 1.5 to 2 s for the duration of the day. The SE-MON330 data file closes at the end of the day (midnight) and a new file is created with the new date.

There is some variation in the data logging file details between the RS-232 and USB interface versions. These changes are described in the following sections.

3.1 DATA LOGGING DETAILS (FOR SE-330 WITH RS-232 INTERFACE)

Individual data items listed in the data logging file are saved on a per-line basis in the following order:

GF Trip-Time Setting (see Table 1)

GF Trip-Level Setting (see Table 2)

Pulse Time Setting (see Table 3)

NGR calibration (number is unitless)

NGR current in percent of CT rating (0 to 100)

NGR voltage in percent of Vn trip level setting (0 to 100)

NGR Change (ohms)

Relay Status (see Table 4)

Configuration Switch Status (see Table 5)

Record Head

Net Mode : Not used

Net GF Time : Not used

Net GF Trip Setting : Not used

Net Pulse Time : Not used

Net Switches : Not used

Trip Status (see Table 6)

Set-Point Status (see Table 7)

Port A (see Table 8)

Port G (see Table 9)

Port H (see Table 10)

TABLE 1. GF TRIP-TIME SETTING
(FRONT-PANEL SELECTION 0 to 10)

POSITION	SE-330/SE-330HV	SE-330AU
0	100 ms	100 ms
1	200 ms	120 ms
2	300 ms	140 ms
3	400 ms	160 ms
4	500 ms	180 ms
5	700 ms	200 ms
6	1 s	250 ms
7	2 s	300 ms
8	3 s	350 ms
9	5 s	400 ms
10	10 s	500 ms

TABLE 2. GF TRIP-LEVEL SETTING
(FRONT-PANEL SELECTION 0 to 10)

POSITION	SE-330/ SE-330HV	SE-330AU EFCT-x	SE-330AU CS30-x
0	2% CT Rating	125 mA	0.75 A
1	4% CT Rating	250 mA	1.5 A
2	6% CT Rating	300 mA	1.8 A
3	8% CT Rating	400 mA	2.4 A
4	10% CT Rating	500 mA	3.0 A
5	15% CT Rating	750 mA	4.5 A
6	20% CT Rating	1 A	6.0 A
7	40% CT Rating	2 A	12.0 A
8	60% CT Rating	3 A	18.0 A
9	80% CT Rating	4 A	24.0 A
10	100% CT Rating	5 A	30.0 A

TABLE 3. PULSE TIME SETTING
(FRONT-PANEL SELECTION 0 to 10, SE-330 Only)

POSITION	TIME
0	1.0 s
1	1.2 s
2	1.4 s
3	1.6 s
4	1.8 s
5	2.0 s
6	2.2 s
7	2.4 s
8	2.6 s
9	2.8 s
10	3.0 s

TABLE 4. RELAY STATUS (INTEGER)

BIT	DEFINITION
Bit 0, Spare	
Bit 1, K3:	1 = RF Indication Relay Energized 0 = Not Energized
Bit 2, K2:	1 = EF/GF Indication Relay Energized 0 = Not Energized
Bit 3, K1:	1 = Trip/Pulse Relay Energized 0 = Not Energized
Bit 4, Spare	
Bit 5, Spare	
Bit 6, Spare	
Bit 7, Spare	

TABLE 5. CONFIGURATION SWITCH STATUS
(INTEGER)

BIT	DEFINITION
Bit 0, S4:	1 = RF Latch 0 = RF Not Latched
Bit 1, S3:	1 = EF/GF Latched 0 = EF/GF Not Latched
Bit 2, S5:	1 = 20 k Sensor (200 k for SE-330HV) 0 = 100 k Sensor
Bit 3, S6:	1 = 50 Hz 0 = 60 Hz
Bit 4, S2:	1 = Fail Safe Trip-Relay Operation 0 = Non Fail Safe Operation
Bit 5, S1:	1 = Trip Configuration (K1) 0 = Pulsing Configuration (K1)

*S1 not applicable to SE-330HV and SE-330AU
*S2 not applicable to SE-330AU

TABLE 6. TRIP STATUS (HEX)

BIT	DEFINITION
Bit 0, EF/GF:	1 = Earth/Ground Fault Trip 0 = No Trip
Bit 1, RF:	1 = Resistor Fault Trip 0 = No Trip
Bit 2, CAL:	1 = Calibration Error 0 = No Error
Bit 3, ADC:	1 = A/D Error 0 = No Error
Bit 4, GRV:	1 = Voltage Trip 0 = No Trip
Bit 5, EE:	1 = EEPROM Error 0 = No Error
Bit 6, SYS:	1 = Internal Fault 0 = No Internal Fault
Bit 7, RMT:	1 = Remote Trip 0 = No Trip

TABLE 7. SET-POINT STATUS (HEX)

BIT	DEFINITION
Bit 0, EF/GF:	1 = Earth/Ground Fault Current >= Setting 0 = Earth/Ground Fault Current < Setting
Bit 1, RF:	1 = Resistance >= Trip Level 0 = Resistance < Trip Level
Bit 2, Not Used	
Bit 3, Not Used	
Bit 4, GRV:	1 = NGR Voltage >= Vn Trip Setting 0 = NGR Voltage < Vn Trip Setting
Bit 5, Not Used	
Bit 6, CT Error:	1 = CT Error (SE-330AU Only) 0 = No CT Error
Bit 7, CT Latch:	1 = CT Trip (SE-330AU Only) 0 = No CT Trip

TABLE 8. PORT A (HEX)

BIT	DEFINITION
Bit 0, S4:	1 = RF Latch 0 = RF Not Latched
Bit 1, S3:	1 = EF/GF Latched 0 = EF/GF Not Latched
Bit 2, S5:	1 = 20 k Sensor (200 k for SE-330HV) 0 = 100 k Sensor
Bit 3, S6:	1 = 50 Hz 0 = 60 Hz
Bit 4, S2:	1 = Fail Safe Trip-Relay Operation 0 = Non Fail Safe Operation
Bit 5, S1:	1 = Trip Configuration (K1) 0 = Pulsing Configuration (K1)
Bit 6, S7:	Spare
Bit 7, OC1:	Test Point

S1 not applicable to SE-330HV and SE-330AU
S2 not applicable to SE-330AU

TABLE 9. PORT G (HEX)

BIT	DEFINITION
Bit 0, POL:	Drive Polarity Output
Bit 1, DIAG:	Diagnostic Output
Bit 2, CAL LED:	Calibration LED Output
Bit 3, FLAG RST:	Trip Flag Reset Output
Bit 4, RST:	Trip Reset Input
Bit 5, CAL:	Calibration Switch Input
Bit 6, PEN:	Pulse Enable Input
Bit 7, R/W:	CPU R/W

TABLE 10. PORT H (HEX)

BIT	DEFINITION
Bit 0, PWM:	Analog Output
Bit 1, RF TRIP:	K3/Flag/LED Output
Bit 2, GF TRIP:	K2/Flag/LED Output
Bit 3, K1:	K1 Output
Bit 4, Spare:	
Bit 5, UH:	Unit Healthy Output
Bit 6, ABCS:	Anybus CS
Bit 7, CSPROG:	Flash CS

3.2 DATA LOGGING DETAILS (FOR SE-330 WITH USB INTERFACE)

Individual data items listed in the data logging file are saved in tab delimited format on a per-line basis in the following order:

Time
Format is HH:MM:SS

GF Trip Time (s)
The time in seconds corresponds to the front-panel setting.

GF Trip Level (%)
The percent of CT rating corresponds to the front-panel setting. MEM is indicated if the MEM setting is selected. For the SE-330AU, the trip level in mA for the EFCT is displayed.

GF MEM Trip Level (%)
Level is in % of CT-Primary Rating

Pulse Period (s)
Not included in AU and HV versions

V_N Trip Level (V)
Front-panel setting

Calibration Value
This unitless value is determined at the time of calibration and does not change unless SE-330 is re-calibrated.

K1 Operation
Pulsing or Trip

K1 Mode
Fail-Safe or Non-Fail-Safe

GF-Trip Latch
Latching or Non-Latching

RF-Trip Latch
Latching or Non-Latching

Sensing Resistor
20 kohm, 100 kohm, 200 kohm (SE-330HV only)

Frequency
50 Hz or 60 Hz

Upgrade
State of S8 configuration switch, Run or Upgrade

K2 Mode
Fail-Safe or Non-Fail-Safe

K3 Mode
Fail-Safe or Non-Fail-Safe

Serial Number
Serial number of SE-330

Pulse Enable
State of the Pulse-Enable input, Open or Closed. It does not apply to SE-330HV and SE-330AU.

SDCARD
Indicates state of SD Card as Inserted or Not Inserted

Remote Reset
State of remote-reset input, Open or Closed

CAL_OPEN
State of calibration switch, Open or Closed

K1 Trip Relay
K1 relay state, Energized or De-energized

K2 GF Relay
K2 relay state, Energized or De-energized

K3 RF Relay
K3 relay state, Energized or De-energized

Polarity
State of ER drive output, positive or negative

DIAGNOSTIC
The following diagnostic trips are supported: Calibration-Error Trip, Remote Trip, CT Error, A/D-Converter-Error Trip, SD Card Error, Watchdog Trip, CPU Trip, Non-Volatile Memory Error Trip, SD Upgrade Error.

WATCHDOG
The following sources may be displayed: MAIN_TASK, ADC_TASK, DFT_TASK, GF_TASK, PULSE_TASK, NGR_TASK, MONITOR_TASK, STATE_TASK, SDCARD_TASK, USB_CDC_TASK, USBD_EP0_TASK_INDEX, USBD_CONTROL_TASK_INDEX, USBD_TRANSFER_TASK_INDEX, USBD_CDC_ACM_TASK_INDEX, WATCHDOG_TASK, SOCKET_TASK, TCP_TASK, RTA_EIP_TASK, TCPRUN_TASK, TCPCON_TASK, IEC61850_TASK.

FLASHHEALTHY
Not Healthy or Healthy

BOOTSECTION
Boot identifier: None, Factory Default 0, Factory Default 1, Upgrade Image 0, Upgrade Image 1

DATE
Real-time-clock (RTC) date in DD/MM/YYYY format.

TIME
Real-time-clock (RTC) time in HH:MM:SS.ss format.

NGR Current (%FS)
NGR current in percent of CT rating.

NGR Voltage (% Setting)
NGR voltage as a percent of the V_N setting. Range is 0 to 100%

Resistance Change (ohms)
Resistance change in ohms relative to the initial calibration value of zero

Trip Status (see Table 11)

Set-Point Status (see Table 12)

NGR Current (A)
Current value in (A) calculated by using the **NGR Current (%FS)** parameter and CT-Primary rating setting.

NGR Voltage (V)
NGR voltage in (V) calculated by using the **NGR Voltage (% Setting)** parameter and voltage setting that corresponds to 100% full scale.

TABLE 11. TRIP STATUS

BIT	DEFINITION
Bit 0, EF/GF:	1 = Earth/Ground Fault Trip 0 = No Trip
Bit 1, RF:	1 = Resistor Fault Trip 0 = No Trip
Bit 2, CAL:	1 = Calibration Error 0 = No Error
Bit 3, ADC:	1 = A/D Error 0 = No Error
Bit 4, GRV:	1 = Voltage Trip 0 = No Trip
Bit 5, EE:	1 = EEPROM Error 0 = No Error
Bit 6, SYS:	1 = Internal Fault 0 = No Internal Fault
Bit 7, RMT:	1 = Remote Trip 0 = No Trip
Bit 8, HW:	1 = Hardware Trip 0 = No Trip

TABLE 12. SET-POINT STATUS

BIT	DEFINITION
Bit 0, EF/GF:	1 = Earth/Ground Fault Current >= Setting 0 = Earth/Ground Fault Current < Setting
Bit 1, RF:	1 = Resistance >= Trip Level 0 = Resistance < Trip Level
Bit 2, CAL:	1 = Calibration Error 0 = No Error
Bit 3, ADC:	1 = A/D Error 0 = No Error
Bit 4, GRV:	1 = NGR Voltage >= Vn Trip Setting 0 = NGR Voltage < Vn Trip Setting
Bit 5, EE:	1 = EEPROM Error 0 = No Error
Bit 6, CT Error:	1 = CT Error (SE-330AU Only) 0 = No CT Error
Bit 7, CT Latch:	1 = CT Trip (SE-330AU Only) 0 = No CT Trip

4. USING SE-MON330 TO UPDATE IEC 61850 SETTINGS

This section provides an overview of the IEC 61850 configuration screens. For a more detailed description of IEC 61850 interface and settings, please refer to the IEC 61850 manual which can be downloaded from www.littelfuse.com/se-330.

The IEC 61850 tab in SE-MON330 will be displayed when SE-MON330 is connected to an SE-330 with an optional IEC 61850 interface. See Fig. 9.

Initially all the fields will be blank. Choose one of the two following options:

- Select "Load from SE-330" which will read the settings directly from the unit.
- Select "Load from ICD File" and select the default ICD file (included with SE-MON330) or a previously saved ICD file.

The default ICD file can be found in the resources directory of the SEMON-330 installation. Typically this is: C:\Program Files (x86)\Littelfuse Startco\SE-MON330\resources\SE330.icd.

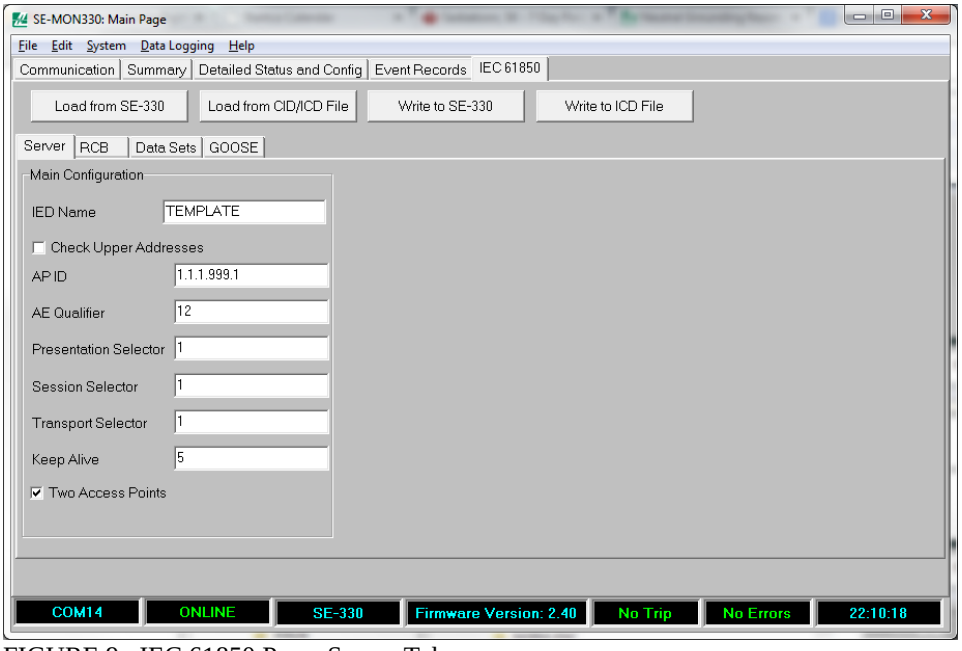


FIGURE 9. IEC 61850 Page, Server Tab.

The Report Control Blocks are edited through the RCB tab by selecting the RCB from the drop-down list and changing the values. See Fig. 10.

Data sets can be added (using the + button) or edited (using the pencil button). The default data sets (Measurement, Record, and GOOSE) cannot be edited. See Fig. 11.

When a data set is added or edited, the data set properties window will be shown. See Fig. 12. The data model is displayed on the left, and the data set fields are displayed on the right. The Logical Device, Logical Node and data set name are listed at the top and can be edited. To add a field to the data set, select it from the structure on the left and click the right arrow button between the structure and the included fields. To remove a field in the list, select it and click the X button. To change the position of a field, select it and click the up or down arrow button. Click OK to keep the changes, or Cancel to discard them.

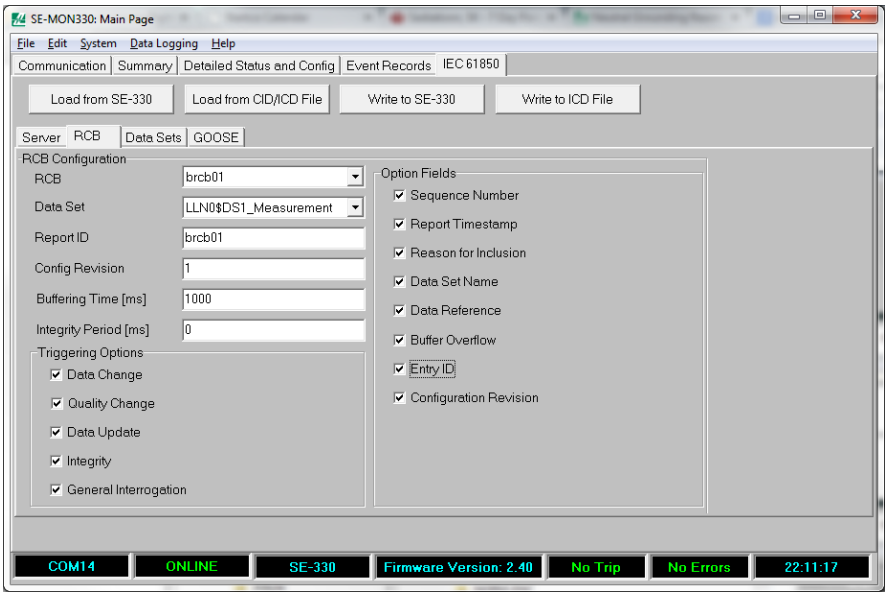


FIGURE 10. IEC 61850 Page, RCB Tab.

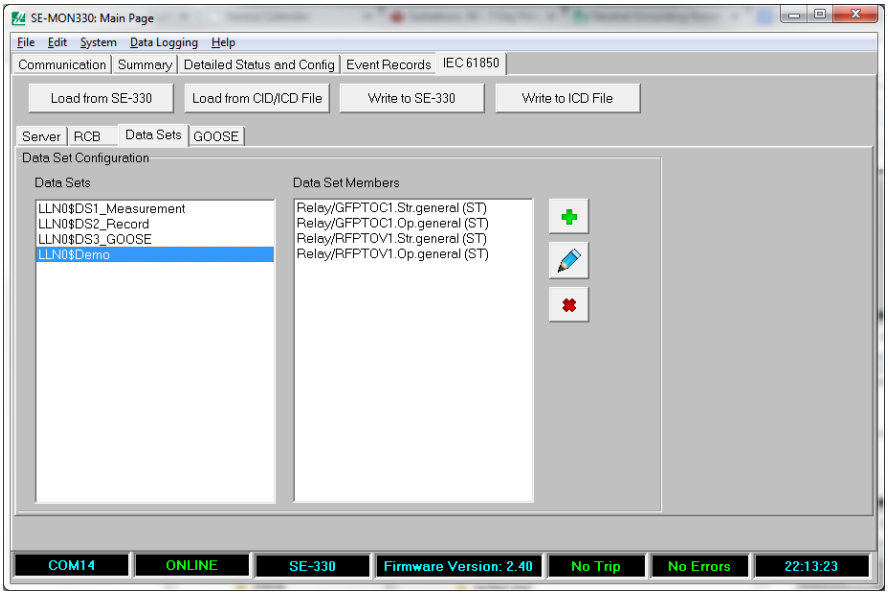


FIGURE 11. IEC 61850 Page, Data Sets Tab.

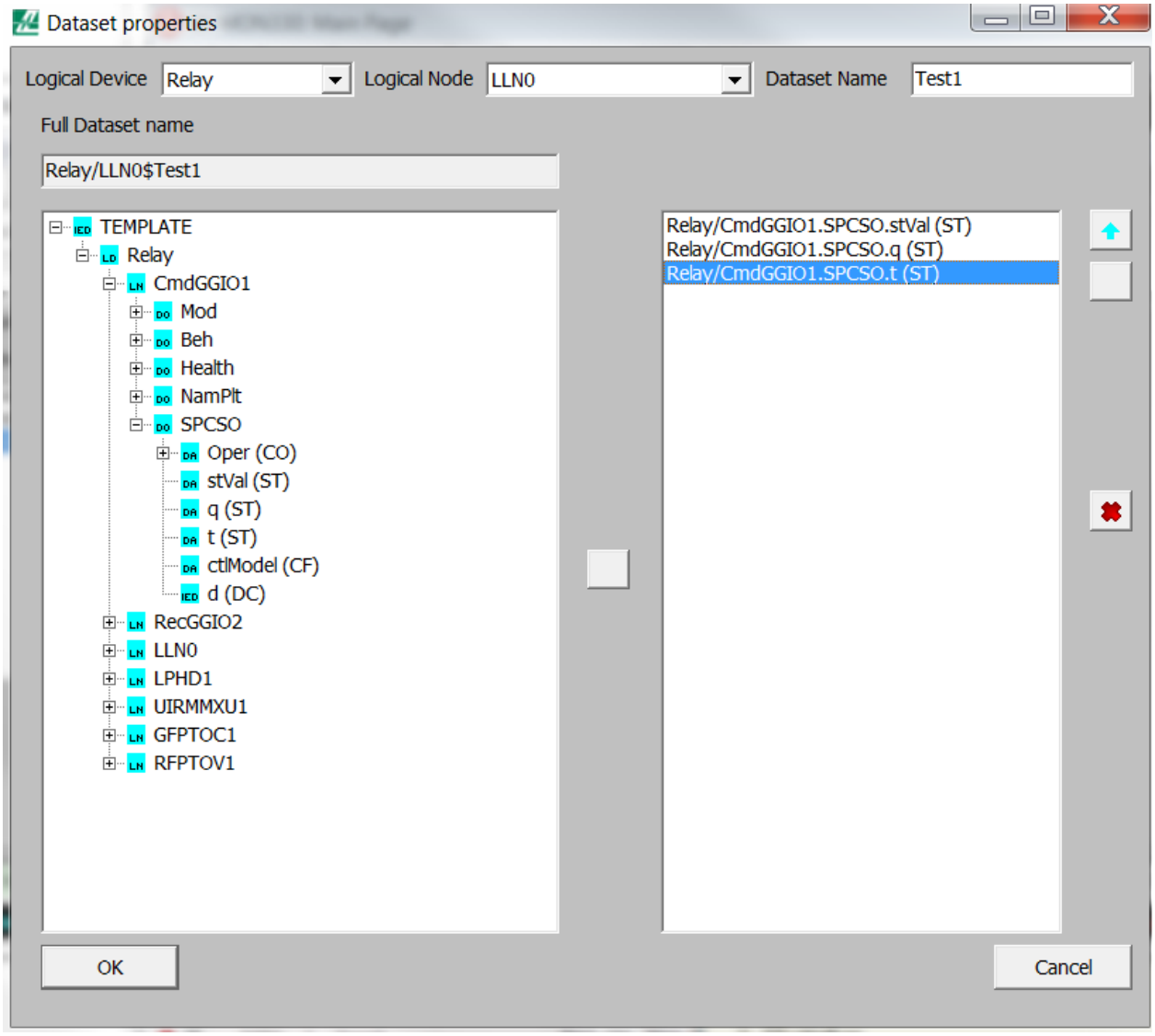


FIGURE 12. IEC 61850 Page, Dataset Properties.

GOOSE Control Blocks (GCB) and Network Inputs (NI) are edited in a similar way to report control blocks. Selecting the GCB or NI from the dropdown list will bring up the settings for that GCB or NI which can then be edited.



FIGURE 13. IEC 61850 Page, GOOSE Tab.

5. TROUBLESHOOTING

Ensure that the newest version of SE-MON330 is installed prior to connecting to an SE-330. SE-MON330 can be found at www.littelfuse.com/SE-330.

5.1 USB COM PORT

USB com port stopped working during operation, or shows as "in use":

Unplug and reconnect the USB cable.

USB com port fails to appear when plugging in a powered SE-330:

The driver might not be installed correctly. See Section 5.2 or 5.3 for more information.

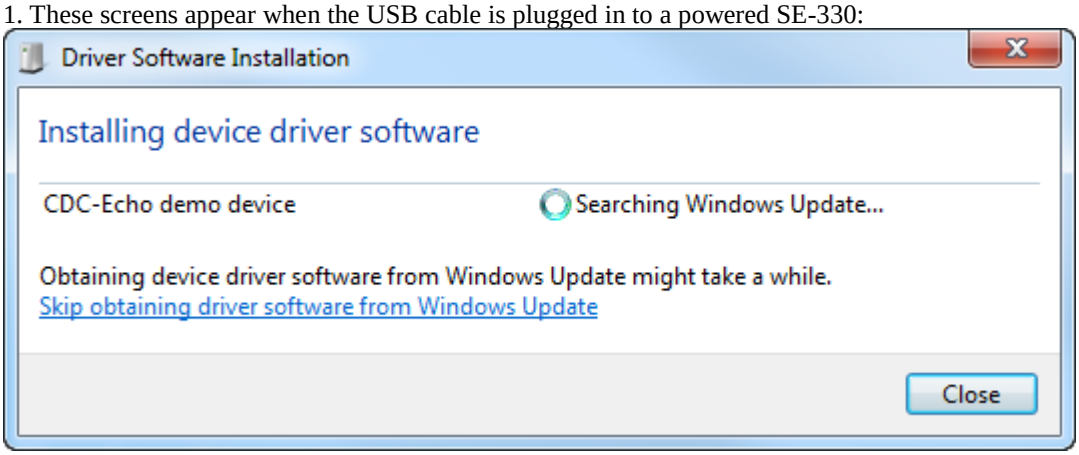
NOTE: Administrative access will be required to correctly install the driver.

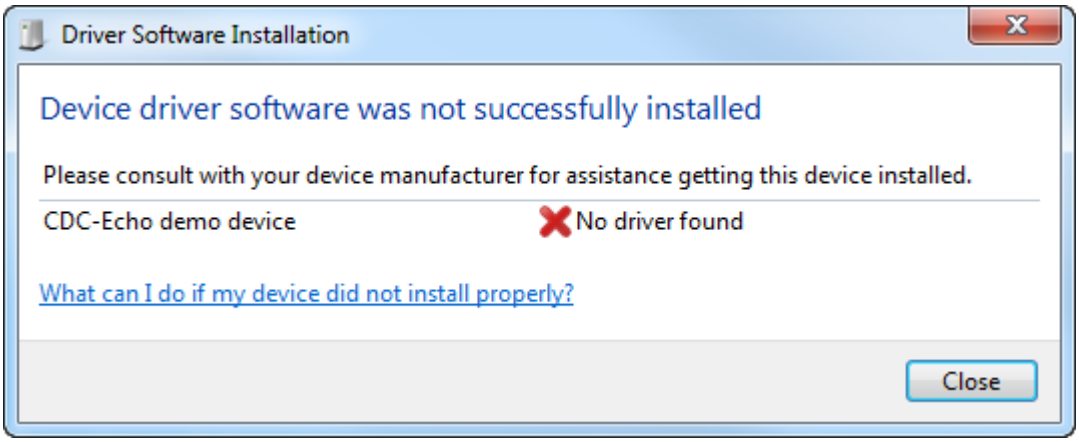
5.2 USB Driver Installation Instructions for Windows 7

It is recommended to install SE-MON330 before connecting to an SE-330 with a USB connection. However, if you have connected to an SE-330 first, please follow this guide.

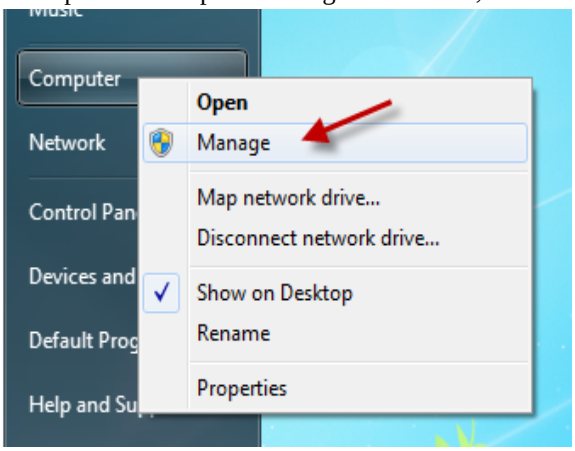
SE-MON330 can be found at www.littelfuse.com/SE-330. Install SE-MON330 before continuing with this guide.

1. These screens appear when the USB cable is plugged in to a powered SE-330:

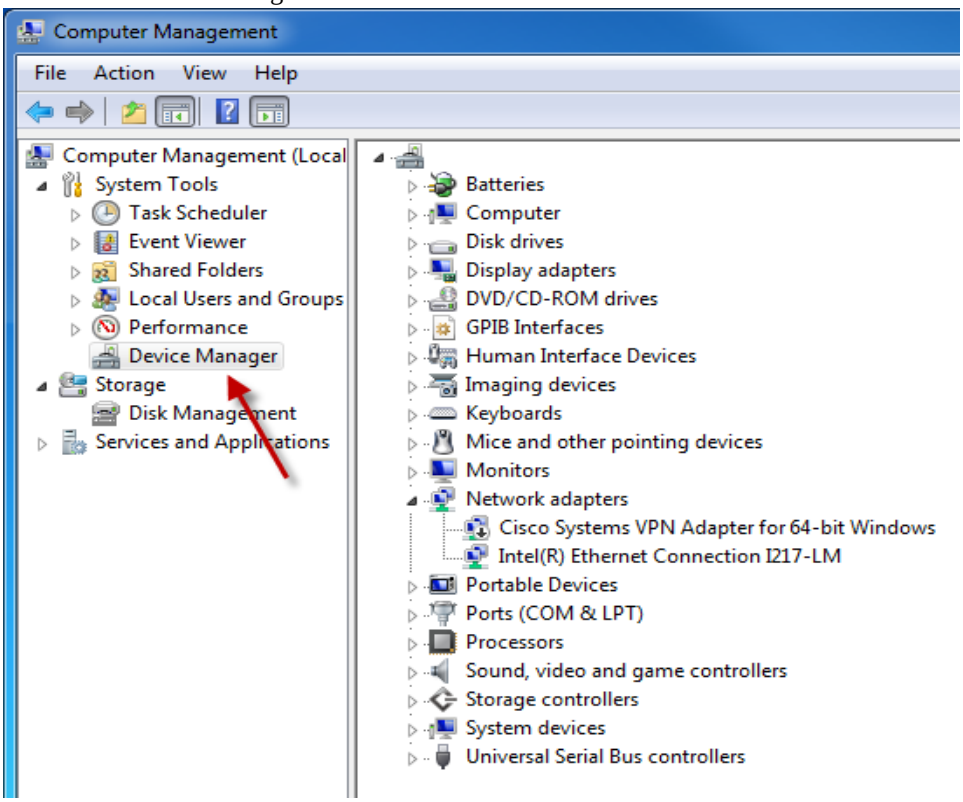




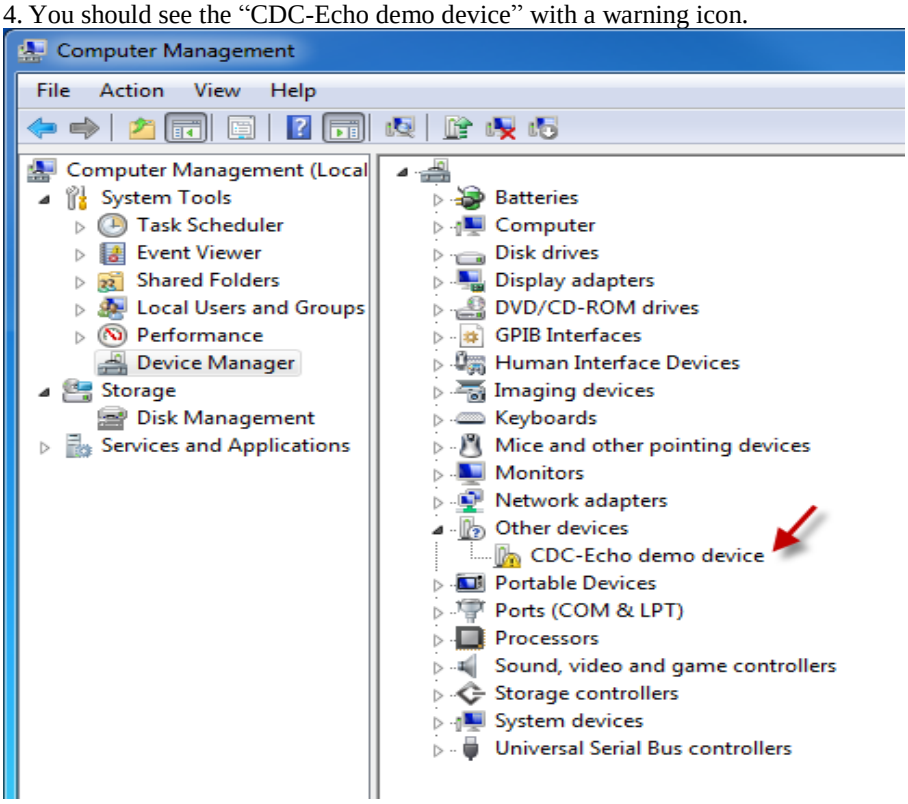
2. To open the Computer Management screen, click Start, right-click on Computer, and click Manage.



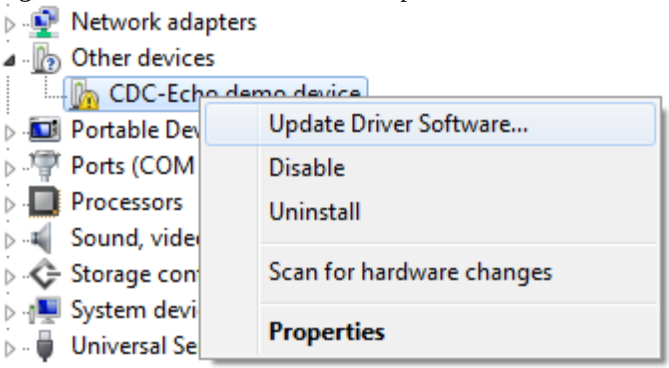
3. Click on Device Manager.



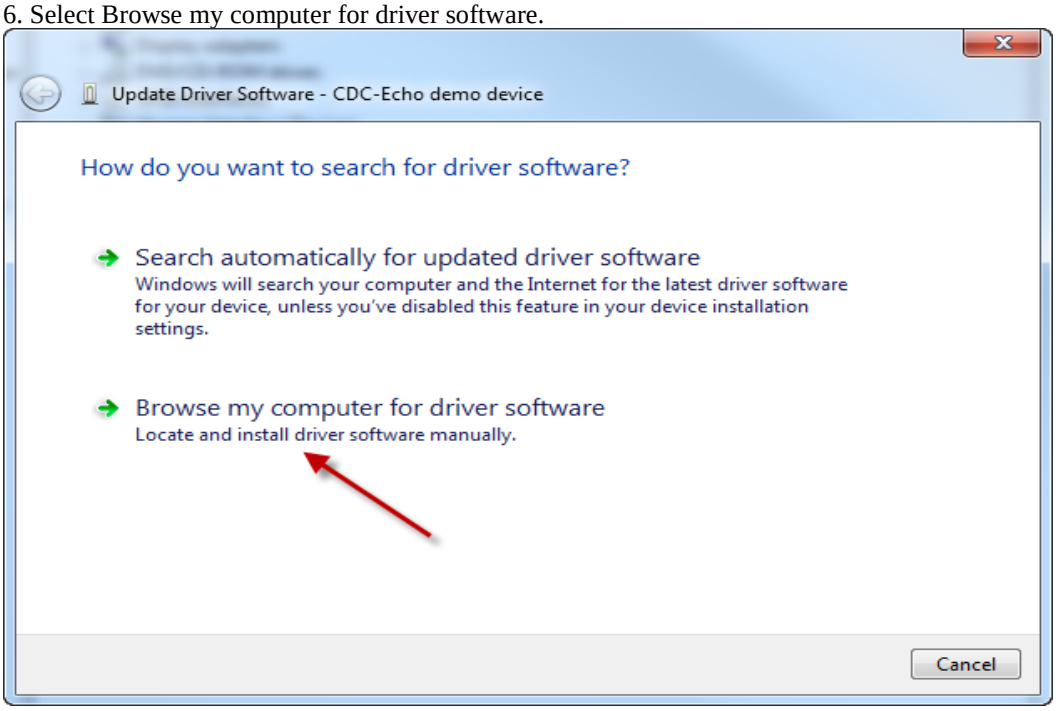
4. You should see the “CDC-Echo demo device” with a warning icon.



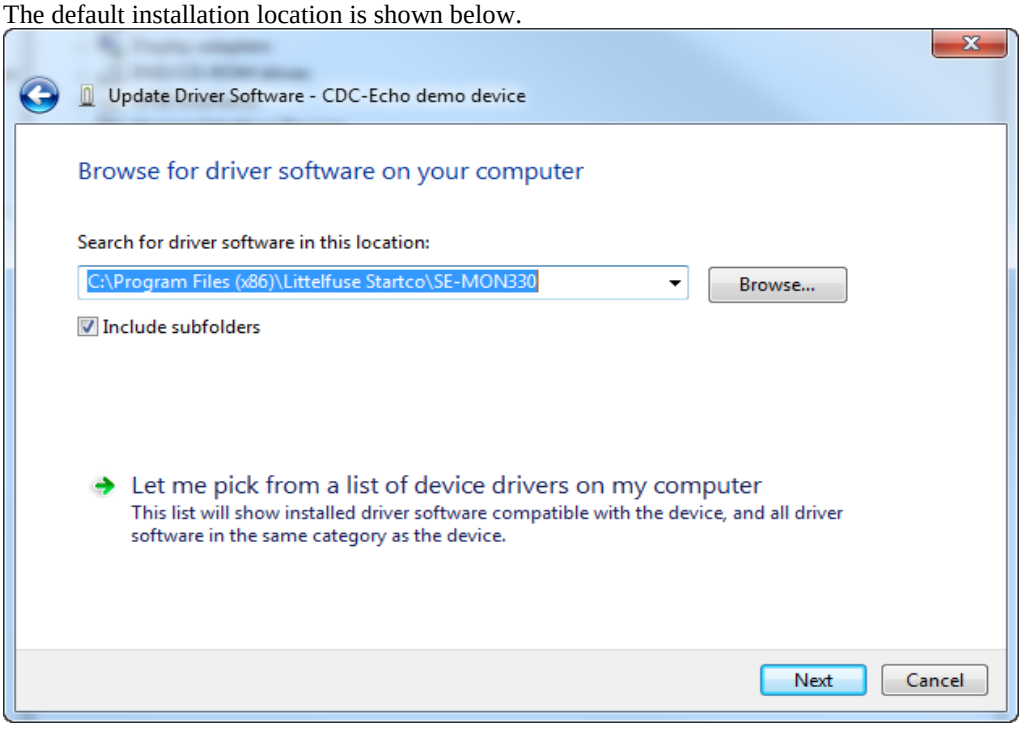
5. Right-click on the device and select Update Driver Software.



6. Select Browse my computer for driver software.

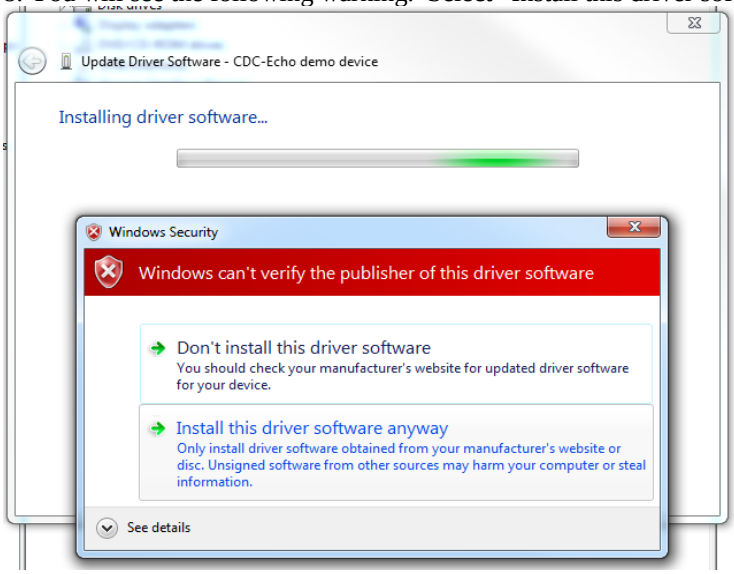


7. Ensure that SE-MON330 is installed before continuing. Navigate to the installation location of SE-MON330. The default installation location is shown below.

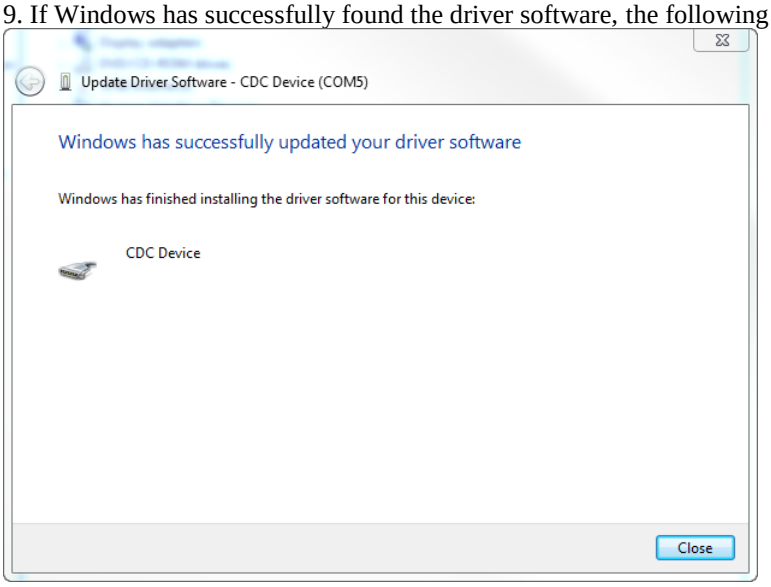


NOTE: The USB driver filename is called usb_cdc_ser.inf, but Windows should find it in the installation location automatically.

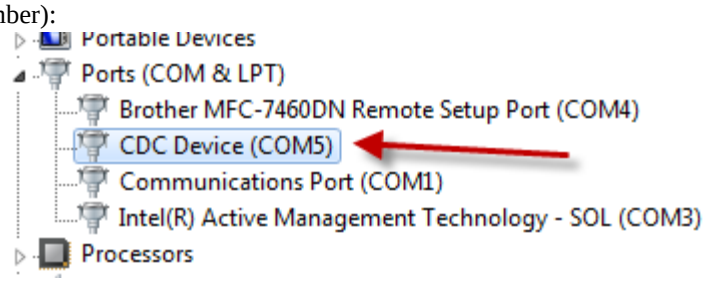
8. You will see the following warning. Select "Install this driver software anyway".



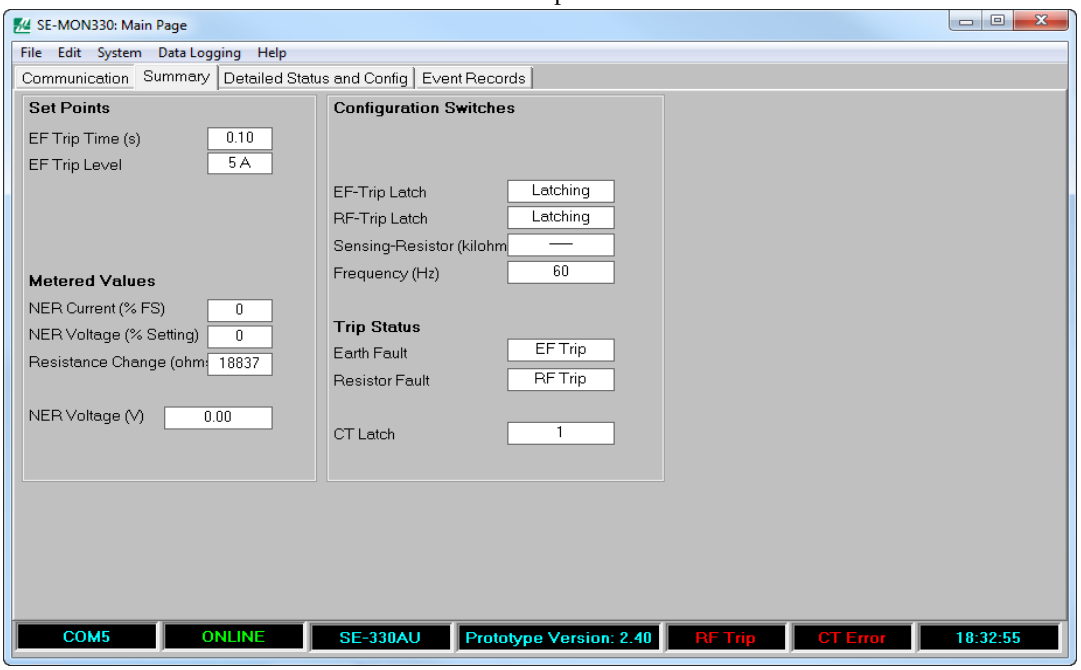
9. If Windows has successfully found the driver software, the following screen will be shown.



10. In the Ports area in Device Manager, ensure you see the following (COM number will vary, but remember this number):



11. Run SE-MON330 and select the relevant COM port. SE-MON330 should now connect successfully.



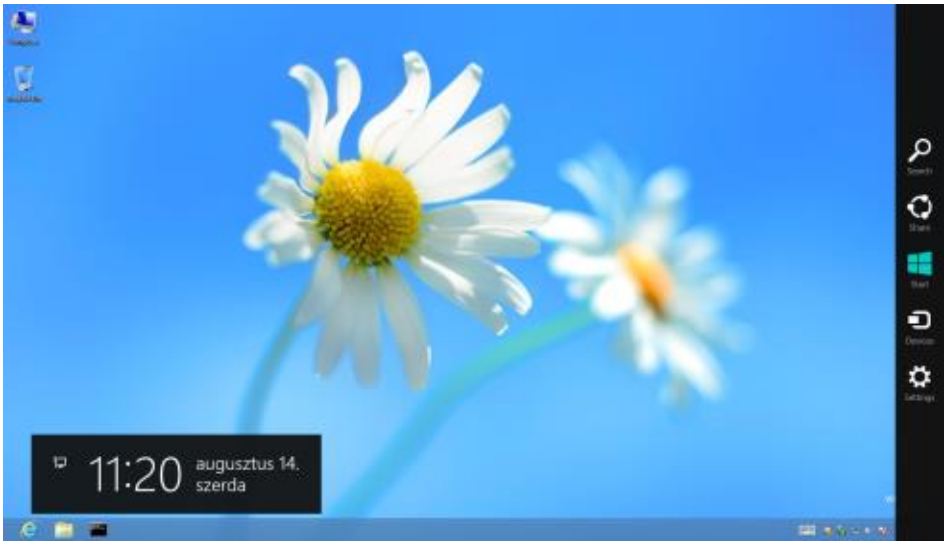
5.3 USB Driver Installation Instructions for Windows 8

The SE-330 will not connect to a Windows 8 PC automatically because it does not install drivers that have not been digitally signed by Microsoft.

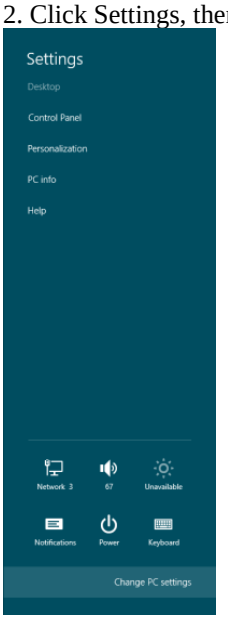
After installing SE-MON330, follow these steps to install the USB driver.

NOTE: Administrative access will be required to correctly install the driver.

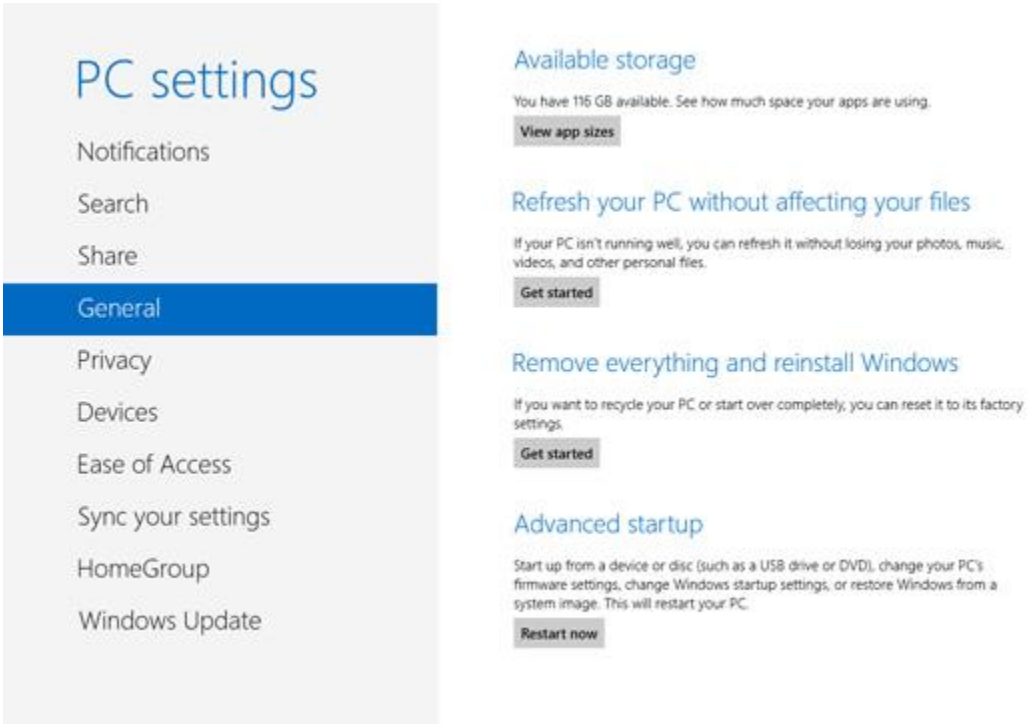
1. Hover the cursor over the bottom right corner of the desktop until the sidebar appears.



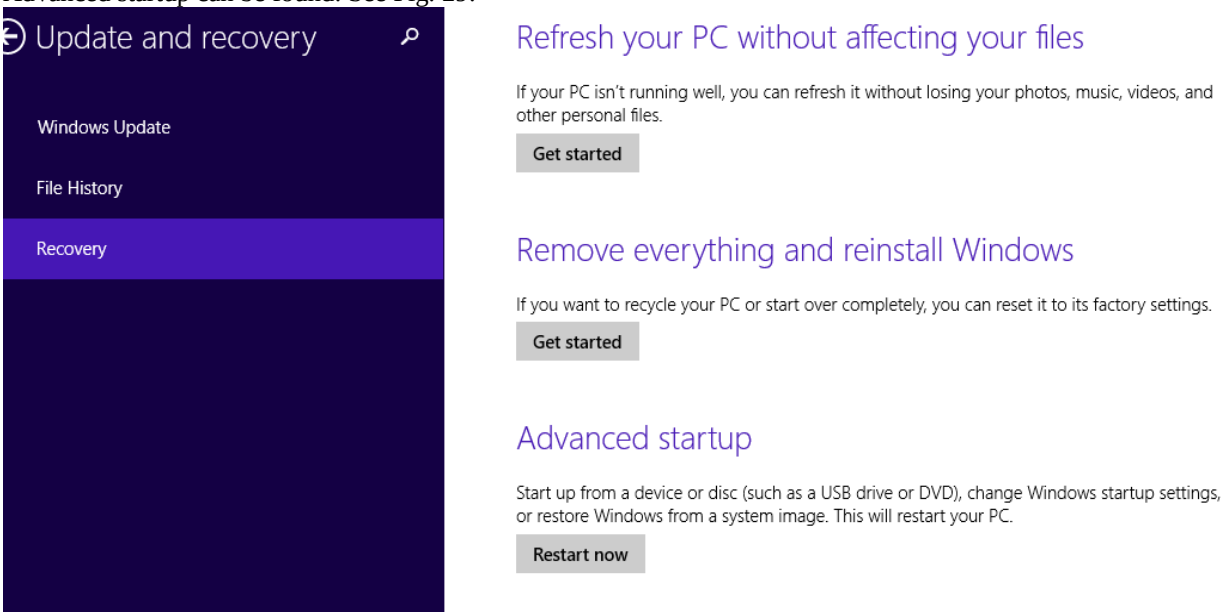
2. Click Settings, then Change PC Settings



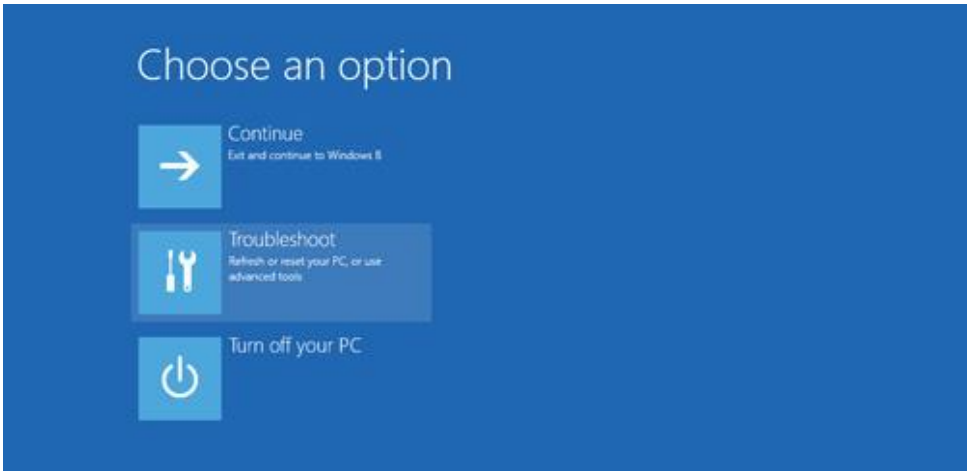
3. Click the General Tab and scroll down to Advanced startup.



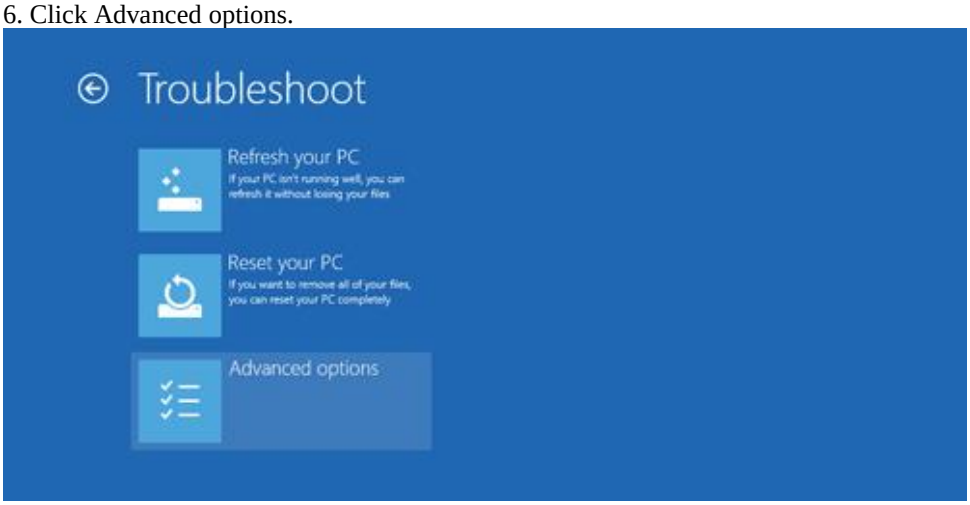
If the screen doesn't appear as in Fig. 28, the PC Settings may have an update and recovery option where the Advanced startup can be found. See Fig. 29.



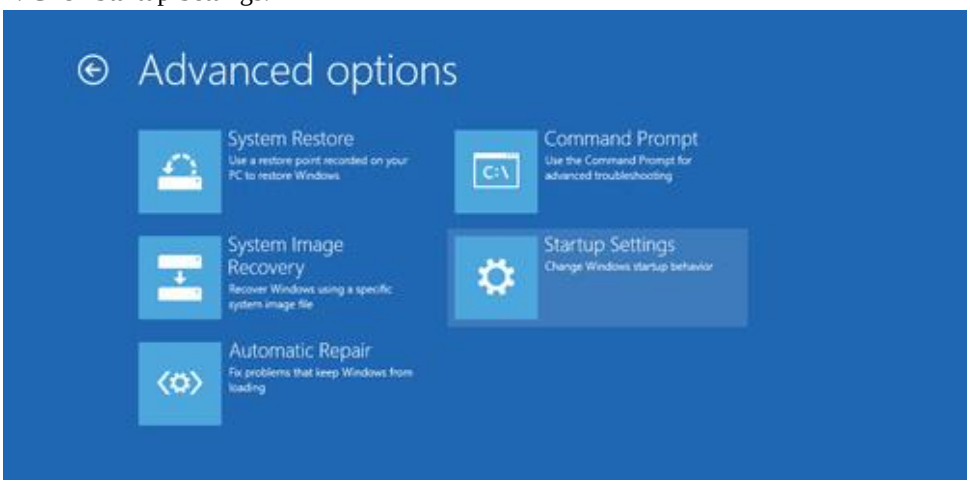
4. Click Restart Now.
5. Click Troubleshoot.



6. Click Advanced options.



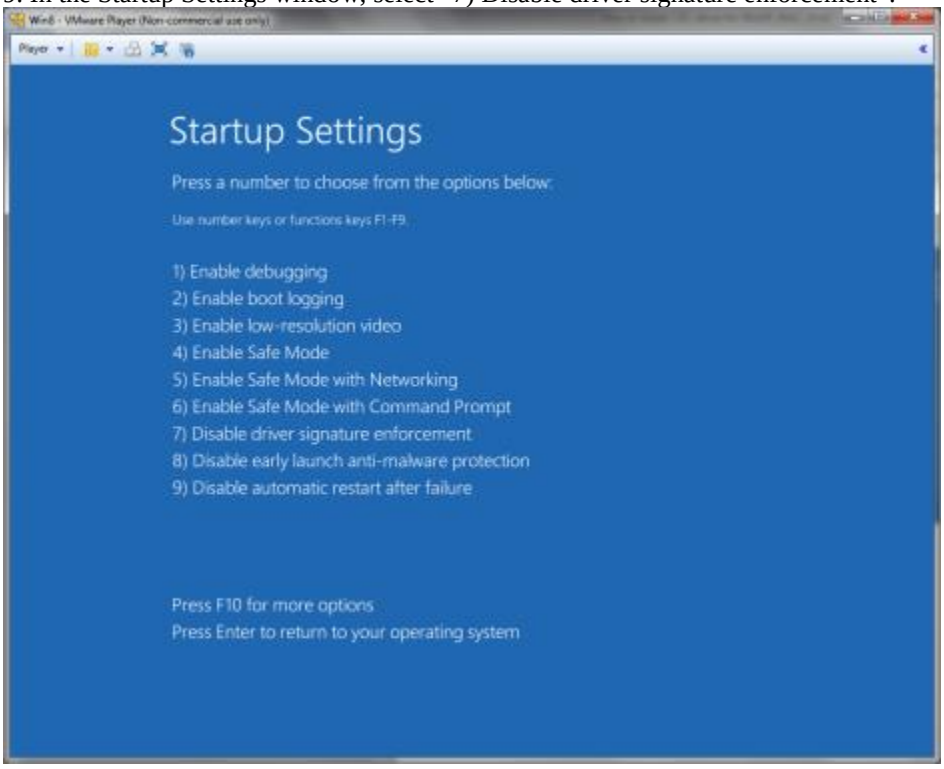
7. Click Startup Settings.



8. Click Restart. The PC will reboot.



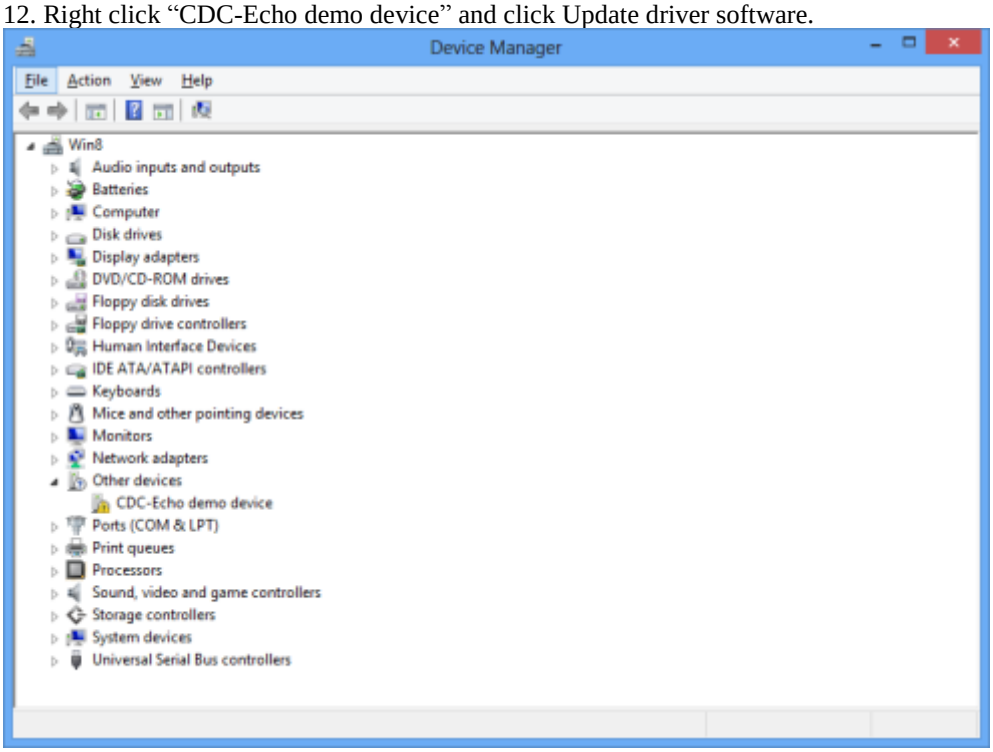
9. In the Startup Settings window, select "7) Disable driver signature enforcement".



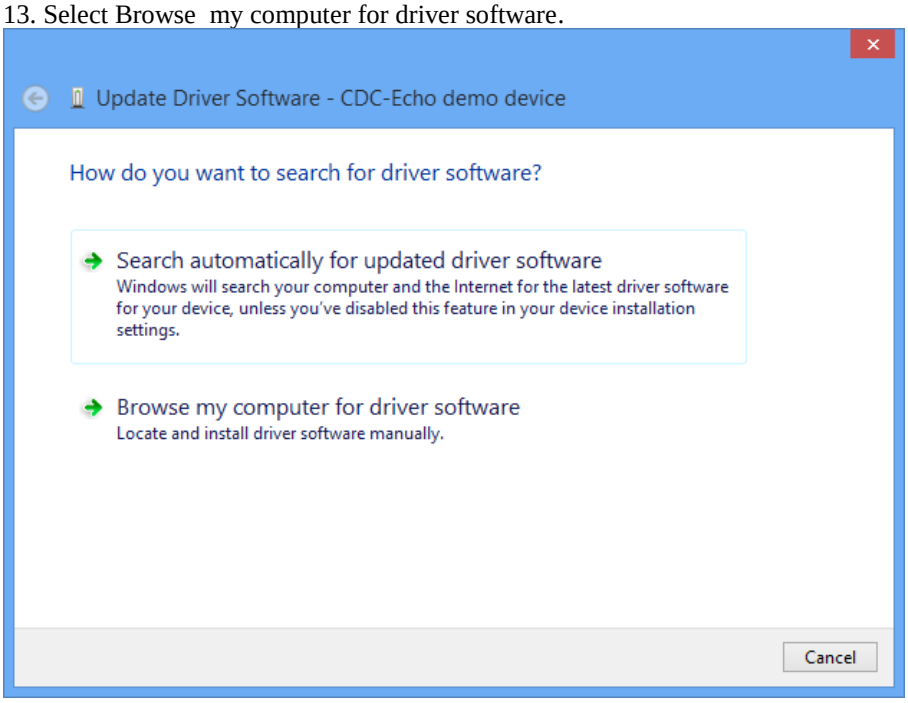
After windows starts continue with the next steps:

10. Plug in the device.
11. Open Device Manager (Select search and enter device manager).

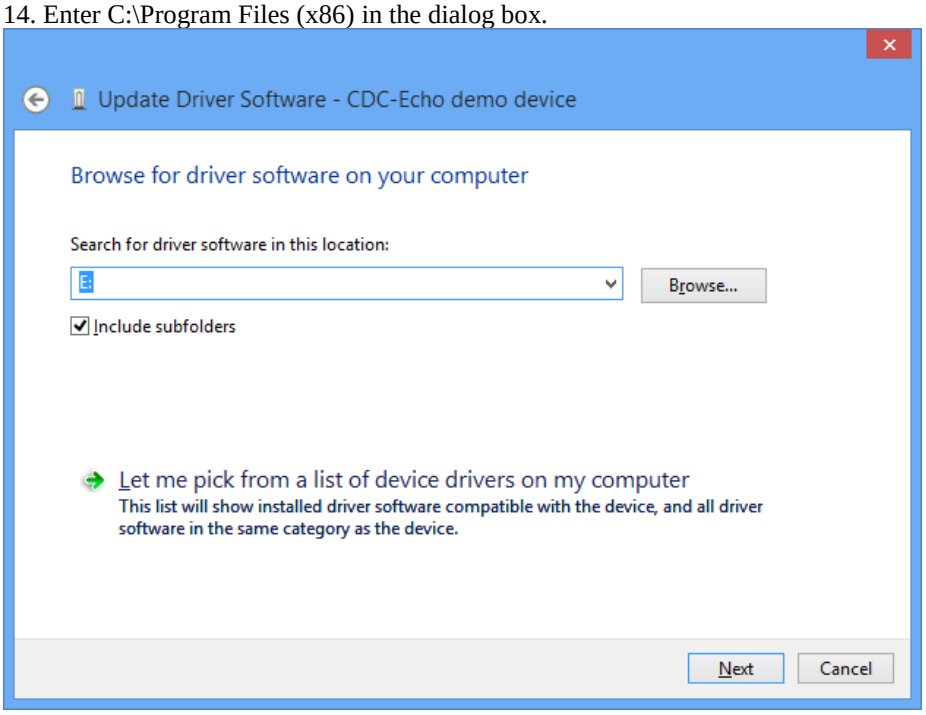
12. Right click “CDC-Echo demo device” and click Update driver software.



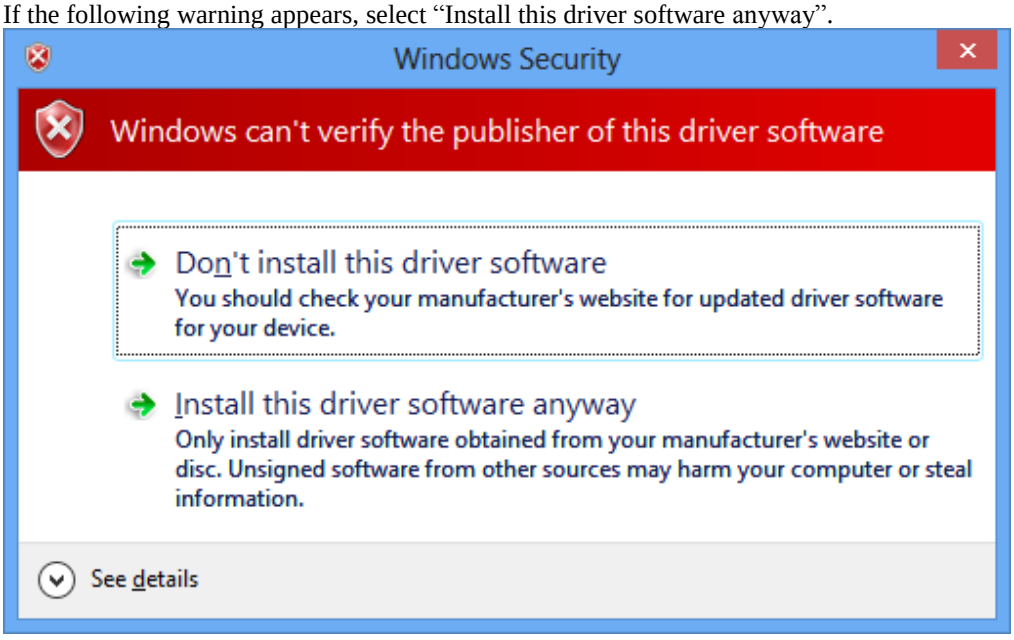
13. Select Browse my computer for driver software.



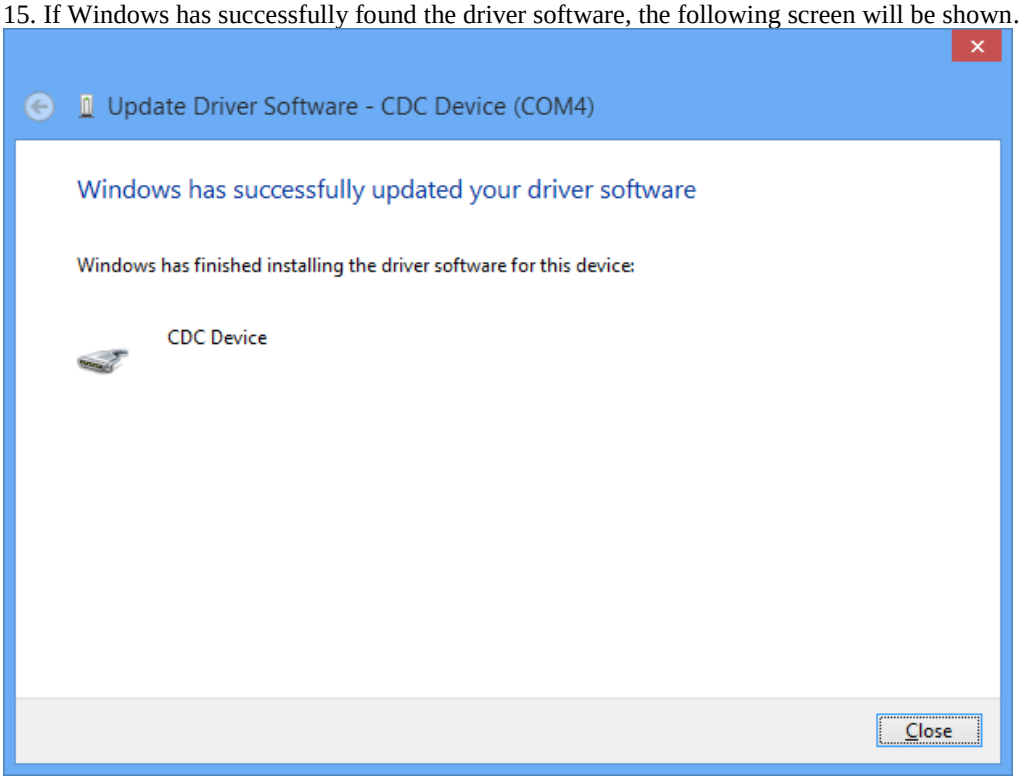
14. Enter C:\Program Files (x86) in the dialog box.



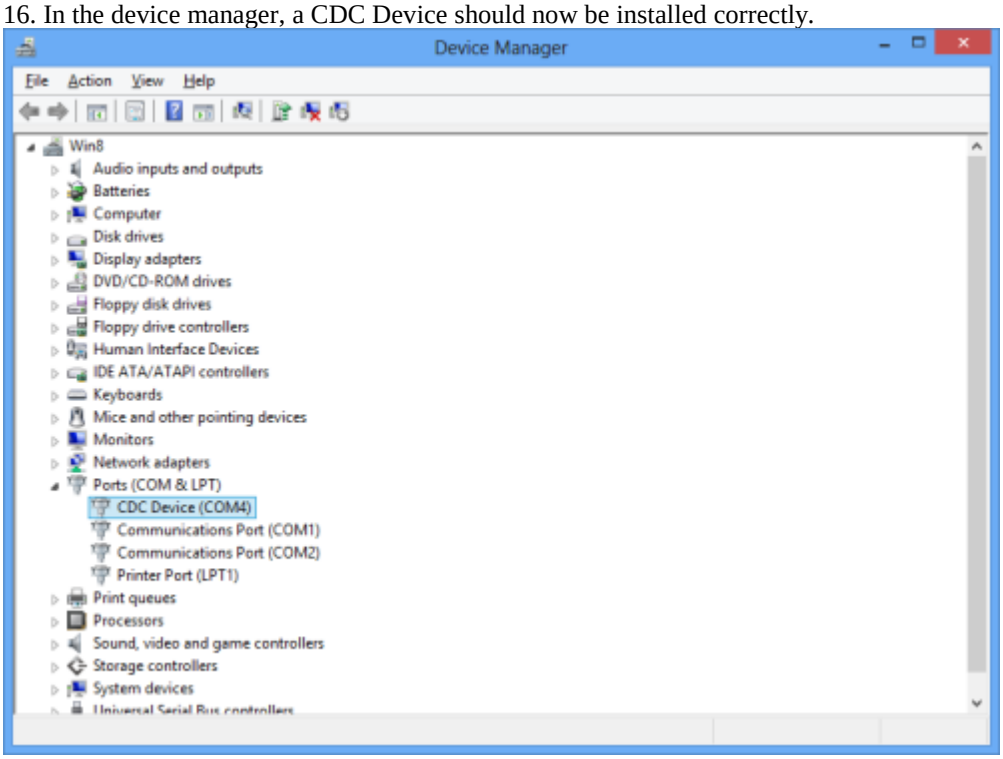
If the following warning appears, select “Install this driver software anyway”.



15. If Windows has successfully found the driver software, the following screen will be shown.



16. In the device manager, a CDC Device should now be installed correctly.



5.4 USB Driver Installation Instructions for Windows 10

A computer running Windows 10 should automatically install the USB driver for the SE-330. Administrative access may be required. Please contact your IT department for further assistance.

APPENDIX A
SE-MON330 SOFTWARE REVISION HISTORY

MANUAL RELEASE DATE	MANUAL REVISION	SOFTWARE REVISION
December 12, 2018	0-H-121218	4.0
December 11, 2017	0-G-121117	3.8
May 16, 2016	0-F-062415	3.7
August 19, 2015	0-F-062415	3.6
June 24, 2015	0-F-062415	3.5
April 2, 2015	0-E-040215	3.4
June 6, 2014	0-D-060614	3.3
December 4, 2013	0-C-120413	3.2
October 17, 2013	0-B-101713	3.1
September 11, 2013	0-A-091113	3.0

MANUAL REVISION HISTORY

REVISION 0-H-121218

SECTION 2

Section 2 updated with additional descriptions for SE-330 firmware version 3.00.

REVISION 0-G-121117

SECTION 2

Diagnostic LED Behaviour added.

REVISION 0-F-062415

SECTION 2

Fig. 4 updated.

REVISION 0-E-040215

SECTION 2

Section 2 updated.

SECTION 3

Sections 3.1 and 3.2 updated.

SECTION 5

Section 5.2 updated, Section 5.3 added.

REVISION 0-D-060614

SECTION 2

Setup procedure updated.

SECTION 5

USB Driver Installation Instructions for Windows 8 added.

REVISION 0-C-120413

SECTION 2

Section 2.6 updated.

SECTION 4

IEC 61850 update process added.

REVISION 0-B-101713

SECTION 2

Added Sections 2.4 and 2.5.

REVISION 0-A-091113

Initial release.

SOFTWARE REVISION HISTORY

SOFTWARE REVISION 4.0

Added support for SE-330 firmware version 3.00.

SOFTWARE REVISION 3.8

Added support for SE-330 firmware version 2.60.

SOFTWARE REVISION 3.7

Improved handling of Resistor-Fault trip time and trip level.

SOFTWARE REVISION 3.6

Improved communication with SE-330AU units.

SOFTWARE REVISION 3.5

Added support for adjustable resistor-fault trip level.

SOFTWARE REVISION 3.4

Backwards compatibility with all revisions of SE-330.
Added support for geo-magnetic filter and adjustable resistor-fault trip time.

SOFTWARE REVISION 3.3

Added support for Modbus TCP.
Updated user interface.
Added support for remote calibration.

SOFTWARE REVISION 3.2

Added support for IEC 61850 and DeviceNet communications options.

SOFTWARE REVISION 3.1

Added support for communications options.

SOFTWARE REVISION 3.0

Added support for the new revision of SE-330, SE-330HV, and SE-330AU