SE-330 SERIES (NEW REVISION) ETHERNET/IP INTERFACE

Revision 3-E-121117

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Specifications are subject to change without notice. Littelfuse Startco is not liable for contingent or consequential damages, or for expenses sustained as a result of incorrect application, incorrect adjustment, or a malfunction.
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1. **GENERAL**

This document describes the EtherNet/IP features supported by the new revision SE-330, SE-330AU, and SE-330HV. Unless otherwise indicated, “SE-330” refers to all three monitor series in general. The SE-330 supports Explicit and Polled I/O messaging as defined by the ODVA EtherNet/IP Specification.

SE-330 ordering options 3, 4, and 5 include dual Ethernet ports with support for fiber-optic or RJ45 interfaces. See Figs. 1, 2, and 3.

There are some operational differences between the original SE-330 EtherNet/IP interface and the SE-330 EtherNet/IP (new revision). The operational differences are as follows:

- The device IP address is now set using SE-MON330
- Only one Input and one Output assembly is supported
- Assembly Class 4, Instance 101 and 102 is no longer supported
- Assembly Class 4, Instance 150 (Output) is identical except the “Clear Event Records” bit has been removed

2. **SE-330 ETHERNET/IP INTERFACE**

2.1 **SE-330 NETWORK SETTINGS**

The IP address, subnet mask, and gateway are configured using SE-MON330.

**NOTE:** EtherNet/IP is currently supported only on Port 1. The second port is available for using Modbus/TCP. Ensure that each port is configured with a unique IP address even if not used.

2.2 **RSLOGIX5000 SETUP**

Add a Generic EtherNet/IP Module as a New Module to the PLC. The Comm Format for the SE-330 is DATA-INT. The Input Assembly is instance 100 with a size of 6, the Output Assembly is instance 150 with a size of 1, and the Configuration Assembly is instance 1 with a size of 0.

2.3 **LED INDICATION**

Two LED’s on the top panel of the SE-330 indicate the network status of each port. The NS LED is OFF when EtherNet/IP is initializing. The NS LED flashes green after EtherNet/IP is initialized and is steady green when a connection is established. The NS LED flashes red when an I/O connection has timed out.

**NOTE:** On loss of an I/O connection, the NS LED remains flashing red until a new connection is established.

FIGURE 3. Top View of SE-330 (SE-330-X5-XX) with Dual Fiber SC Ethernet Network Communications.
3. **ETHERNET/IP OBJECTS**

The module supports the following objects:

<table>
<thead>
<tr>
<th>CLASS</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x01</td>
<td>Identity</td>
</tr>
<tr>
<td>0x04</td>
<td>Assembly</td>
</tr>
</tbody>
</table>

### 3.1 **IDENTITY OBJECT**

**Identity Object Class Services**

- Get_Attribute_Single: Returns contents of specified attribute.

**Identity Class 1, Instance 0 Attributes**

<table>
<thead>
<tr>
<th>ATTRIBUTE NUMBER</th>
<th>ATTRIBUTE NAME</th>
<th>SERVICES</th>
<th>DESCRIPTION</th>
<th>DEFAULT, MINIMUM, MAXIMUM</th>
<th>DATA TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Revision</td>
<td>Get</td>
<td>Revision of this object.</td>
<td>1</td>
<td>UINT</td>
</tr>
<tr>
<td>2</td>
<td>Max Instance</td>
<td>Get</td>
<td>Maximum number of instances.</td>
<td>1</td>
<td>UINT</td>
</tr>
</tbody>
</table>

**Identity Object Instance Services**

- Get_Attribute_Single: Returns contents of specified attribute.
- Set_Attribute_Single: Modify the specified attribute.
- Reset: Performs reset services based on the parameter.

**Identity Class 1, Instance 1 Attributes**

<table>
<thead>
<tr>
<th>ATTRIBUTE NUMBER</th>
<th>ATTRIBUTE NAME</th>
<th>SERVICES</th>
<th>DESCRIPTION</th>
<th>DEFAULT, MINIMUM, MAXIMUM</th>
<th>DATA</th>
<th>SE-330 REGISTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vendor ID</td>
<td>Get</td>
<td>Identification of each vendor by number.</td>
<td>691</td>
<td>UINT</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Device Type</td>
<td>Get</td>
<td>Generic</td>
<td>43</td>
<td>UINT</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Revision</td>
<td>Get</td>
<td>Major revision must match the eds value (Major.Minor).</td>
<td>A2 02 C6 C6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Status</td>
<td>Get</td>
<td>Summary Status of the device.</td>
<td>0, 0, 255</td>
<td>WORD</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Serial Number</td>
<td>Get</td>
<td>Serial number of SE-330.</td>
<td>N/A, 0, 999999999</td>
<td>UDINT</td>
<td>2/3</td>
</tr>
<tr>
<td>7</td>
<td>Product Name</td>
<td>Get</td>
<td>Human readable identification.</td>
<td>“Littelfuse SE-330”</td>
<td>SHORT_STRING</td>
<td></td>
</tr>
</tbody>
</table>
3.2 Assembly Object

Assembly Class (4), Instance (0) Attributes

<table>
<thead>
<tr>
<th>ATTRIBUTE NUMBER</th>
<th>ATTRIBUTE NAME</th>
<th>SERVICES</th>
<th>DESCRIPTION</th>
<th>DEFAULT, MINIMUM, MAXIMUM</th>
<th>DATA TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x01</td>
<td>Revision</td>
<td>Get_Attribute_Single</td>
<td>Revision of this object.</td>
<td>1, 1, 1</td>
<td>UINT</td>
</tr>
</tbody>
</table>

3.2.1 Input Assembly

Assembly Class (4), Instance (100), Attribute (3) – Input 1 (6 Words)

<table>
<thead>
<tr>
<th>WORD</th>
<th>BIT9</th>
<th>BIT8</th>
<th>BIT7</th>
<th>BIT6</th>
<th>BIT5</th>
<th>BIT4</th>
<th>BIT3</th>
<th>BIT2</th>
<th>BIT1</th>
<th>BIT0</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>Hardware Trip</td>
<td>Remote Trip</td>
<td>Internal Error</td>
<td>EEPROM Error</td>
<td>NER/NGR Volts</td>
<td>ADC Error</td>
<td>CAL Error</td>
<td>RF Trip</td>
</tr>
<tr>
<td>1</td>
<td>Flash Upgrade Error</td>
<td>SD Card Error</td>
<td>CT Latch</td>
<td>CT Error</td>
<td>EEPROM Error</td>
<td>NER/NGR Detect</td>
<td>ADC Detect</td>
<td>CAL Detect</td>
<td>RF Detect</td>
<td>EF/GF Detect</td>
</tr>
<tr>
<td>2</td>
<td>Diagnostic State(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>NER/NGR Current (% of CT Rating)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>NER/NGR Voltage (% of Setting)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Delta Ohms (Ohms)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Bits 10 – 15 are zero.

(1) Diagnostic state:
0 = None
1 = Calibration
2 = Remote Trip
3 = CT Latch Error
4 = ADC Error
5 = SD Card Error
6 = Watchdog Trip
7 = Hardware Error
8 = NVRAM Error
9 = Flash Upgrade Error
10= USB Error

3.2.2 Output Assembly

Assembly Class (4), Instance (150), Attribute (3) – Output 1 (1 Word or 2 Bytes)

<table>
<thead>
<tr>
<th>WORD</th>
<th>BIT7</th>
<th>BIT6</th>
<th>BIT5</th>
<th>BIT4</th>
<th>BIT3</th>
<th>BIT2</th>
<th>BIT1</th>
<th>BIT0</th>
<th>Remote Calibration</th>
<th>Remote Trip</th>
<th>Fault Reset</th>
</tr>
</thead>
</table>

4. Specifications

Protocol ...................................... EtherNet/IP
Ports ............................................. 2, EtherNet/IP on port 1 only
IP Addresses .................................... 1 per port
  Port 1 Default.............................. 192.168.1.100
  Port 2 Default.............................. 192.168.2.100
Number of Connections ................... 8 total
Connectors ..................................... Copper and/or fiber, refer to Figs. 1, 2, and 3 and ordering information in the product manual

Copper:
  Connector ..................................... RJ45
  Cable ......................................... CAT5
  Length ....................................... 100 m (328')
  Interface .................................... 10BASE-T, 100BASE-Tx

Fiber:
  Connector ..................................... SC
  Cable ......................................... SC Multimode
  Length ....................................... 2,000 m (6,561') per segment
  Interface .................................... 100BASE-Fx
  Center Wavelength ....................... 1300 nm
  Operating Wavelength ................. 1270 to 1380 nm
APPENDIX A
SE-330 SERIES (NEW REVISION) ETHERNET/IP INTERFACE REVISION HISTORY

<table>
<thead>
<tr>
<th>MANUAL RELEASE DATE</th>
<th>MANUAL REVISION</th>
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<tbody>
<tr>
<td>December 11, 2017</td>
<td>3-E-121117</td>
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<tr>
<td>June 25, 2015</td>
<td>3-D-062515</td>
</tr>
<tr>
<td>July 17, 2014</td>
<td>3-C-071714</td>
</tr>
<tr>
<td>February 3, 2014</td>
<td>3-B-020314</td>
</tr>
<tr>
<td>November 29, 2013</td>
<td>3-A-112913</td>
</tr>
</tbody>
</table>

MANUAL REVISION HISTORY

Revision 3-E-121117

Section 2
Note updated.

Section 4
Specifications updated.

Revision 3-D-062515

Section 4
IP Addresses updated.

Revision 3-C-071714

Section 2
Remote calibration feature added.

Section 3
Input and Output assembly sections added.

Revision 3-B-020314

Section 2
Figs. 1, 2, and 3 added.

Section 4
Specifications added.

Revision 3-A-112913
Initial release.