The purpose for this bulletin is to aid you in the troubleshooting of CanBus error codes on the DS 85 and Mentor LMI systems. These flowcharts cover LMI error codes E-61, E-62, E-63, E-64, and E-65.

Necessary tools consist of:

- Flat head screwdriver
- Voltage multi-meter
- Philips screwdriver
E61 - The CU does not see any CAN-Bus component

Connect the two cables on the Transducer block together.

Yes

Disconnect these cables and reconnect cable from console to transducer block.

Yes

No

Replacing the can bus cable between the angle sensor and transducer block.

Ohm out connector at the angle sensor. If the connector checks good, then replace can bus converter board.
E62 - The CU does not see any CAN-Bus component

- **E62**
  - Ohm the cable from the console to the transducer block
  - Cable checks good?
    - Yes
      - Replace pressure transducer.
    - No
      - Is power being supplied by sensor?
        - Yes
          - Replace pressure transducer.
        - No
          - Replace sensor.

<table>
<thead>
<tr>
<th>Connector</th>
<th>M12, 5 contacts</th>
</tr>
</thead>
</table>
| Pin Layout (CiA DR-303-1 7.2) | Pin 1 Shield  
|  | Pin 2 + Ub  
|  | Pin 3 Ground  
|  | Pin 4 CAN High  
|  | Pin 5 CAN Low |

E63 - The pressure transducer is available, but is reporting an internal error

In case of an E63, the pressure transducer is reporting an internal problem. You cannot troubleshoot any further, but need to replace the pressure transducer.
E64 - Error in the can bus data transfer of the length/angle sensor unit

- **E64**: Connect the two cables on the Transducer block together.
  - **E61**: Ohm the cable from the pressure transducer block to the angle sensor.
    - **Yes**: Replace transducer block.
    - **No**: Cable checks good
      - **Yes**: Check connector at angle sensor.
        - **Yes**: Replace can bus board in angle sensor.
        - **No**: Connector checks good
          - **Yes**: Replace can bus board in angle sensor.
          - **No**: Replace connector.
      - **No**: Replace the cable.

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**Diagram:**

- **Operator Control Station**
  - **LMI Display**
  - **Boom Angle Sensor**
    - **Pressure Transducer**
      - Extend Side (Piston Side)
      - Retract Side (Rod Side)
  - Pressure transducers located inside turret.
E65 - The cable reel unit is available, but is reporting an internal error

Open Cable Reel. Locate CanBus board and sensor locations.

Check and verify angle sensor voltages and signals as described below.

Are signals and voltages correct?

- Yes
- No

Replace sensor or board as described in angle sensor flow chart.

Check and verify length sensor voltages and signals as described in length sensor error flow chart. If sensor signal voltage is incorrect, replace sensor.

If you suspect a sensor error or problem with a sensor, compare the indicated physical value of the sensor on the display screen with the real value, i.e. length, angle, etc.

The voltages given are internal calculation values only; you will not be able to actually measure them anywhere on the electronics! Typical values to be expected are:

- Pressure transducers (piston and rod), 500mV @ 0 PSI; 4500mV @ maximum PSI
- Length sensor, 500mV @ retracted boom length; voltage extended depends on the various boom lengths.
- Angle sensor, 4500mV at 0°; 2500mV at 45°; or 500mV at 90°

**CAN-Bus electronics in angle sensor box.**

<table>
<thead>
<tr>
<th>X1 Pin</th>
<th>CAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CAN_SHLD</td>
</tr>
<tr>
<td>2</td>
<td>CAN +UB</td>
</tr>
<tr>
<td>3</td>
<td>CAN GND</td>
</tr>
<tr>
<td>4</td>
<td>CAN_H</td>
</tr>
<tr>
<td>5</td>
<td>CAN_L</td>
</tr>
</tbody>
</table>