# 9-1-2 Troubleshooting Errors Occurring in the DeviceNet Unit

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<th>Error log (Hex)</th>
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<td>208</td>
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<tr>
<td>Software settings errors</td>
<td>CPU Unit status error</td>
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<td></td>
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<td>C2 --- ---</td>
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<tr>
<td></td>
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<td>C5 --- ---</td>
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</tr>
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<tr>
<td>Software settings errors</td>
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<td>I/O area duplication</td>
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<td>209</td>
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<tr>
<td></td>
<td>Unsupported slave</td>
<td>d2 ---</td>
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</tr>
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<td>Non-existent slave</td>
<td>d5 ---</td>
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</tr>
<tr>
<td></td>
<td>Illegal vendor</td>
<td>d6 ---</td>
<td>0344</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>Illegal connection path</td>
<td>d6 ---</td>
<td>0344</td>
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</tr>
<tr>
<td></td>
<td>I/O size mismatch</td>
<td>d6 ---</td>
<td>0344</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>Illegal device</td>
<td>d6 ---</td>
<td>0344</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>Illegal product code</td>
<td>d6 ---</td>
<td>0344</td>
<td>211</td>
</tr>
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<td></td>
<td>Unsupported connection</td>
<td>d6 ---</td>
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</tr>
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<td>Remote I/O communications error</td>
<td>d9 --- Red (flashing)</td>
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</tr>
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<td></td>
<td>Slave scan list logic error</td>
<td>E7 ---</td>
<td>021A</td>
<td>217</td>
</tr>
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<td></td>
<td>Master scan list logic error</td>
<td>E8 ---</td>
<td>021A</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>Memory access error</td>
<td>E9 ---</td>
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</tr>
<tr>
<td>Networking errors</td>
<td>Node address duplication</td>
<td>F0 --- Red (lit)</td>
<td>0211</td>
<td>215</td>
</tr>
<tr>
<td></td>
<td>Bus Off detected</td>
<td>F1 ---</td>
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</tr>
<tr>
<td>CPU Unit exchange</td>
<td>Unit number duplication</td>
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<td>OFF ---</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>CPU Unit faulty (H2)</td>
<td>H2 ---</td>
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<td>219</td>
</tr>
<tr>
<td></td>
<td>DeviceNet Unit faulty</td>
<td>H3 Red (lit)</td>
<td>OFF ---</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>Node address setting error</td>
<td>H4 Red (flashing)</td>
<td>OFF ---</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>Communications speed setting error</td>
<td>H5 ---</td>
<td>---</td>
<td>219</td>
</tr>
<tr>
<td></td>
<td>CPU Unit faulty (H6)</td>
<td>H6 ---</td>
<td>000F</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>Input table not registered</td>
<td>H7 ---</td>
<td>0006</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>Simple backup function restore error</td>
<td>H8 ---</td>
<td>---</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>CPU Unit memory faulty</td>
<td>HA ---</td>
<td>0012</td>
<td>220</td>
</tr>
<tr>
<td></td>
<td>CPU Unit faulty (Hb)</td>
<td>Hb ---</td>
<td>0011</td>
<td>221</td>
</tr>
<tr>
<td></td>
<td>Routing table logic error</td>
<td>HC ---</td>
<td>021A</td>
<td>221</td>
</tr>
<tr>
<td></td>
<td>I/O refresh error</td>
<td>Hd ---</td>
<td>0347</td>
<td>221</td>
</tr>
<tr>
<td></td>
<td>CPU Unit service monitoring error</td>
<td>HE ---</td>
<td>0002</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td>CPU Unit watchdog timer error</td>
<td>HF ---</td>
<td>0001</td>
<td>223</td>
</tr>
<tr>
<td>Slave function</td>
<td>Remote I/O communications error</td>
<td>L9 --- Red (flashing)</td>
<td>0345</td>
<td>223</td>
</tr>
<tr>
<td>Unit errors</td>
<td>Special Unit error</td>
<td>OFF Red (lit)</td>
<td>OFF</td>
<td>0601</td>
</tr>
<tr>
<td>CPU Unit exchange</td>
<td>CPU Unit fatal error</td>
<td>--- --- --- ---</td>
<td>---</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td>Output OFF error</td>
<td>--- --- --- ---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

**Note**

1. The 7-segment display will alternate between the Unit's node address and the code given in the tables in this section.
2. When a (master function) structure error or verification error occurs, only the most recent error is displayed for each slave. If the Unit is set to stop
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removal I/O communications for a communications error, two errors can be displayed: The slave’s communications error and its most recent error.

**Master Errors**

Remote I/O Communications Stopped by a Communications Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A0</td>
<td>---</td>
<td>---</td>
<td>0346</td>
</tr>
</tbody>
</table>

**Likely Cause**

Pin 3 on the master’s DIP switch is set to stop communications in the event of a communications error and communications have been stopped due to a remote I/O communications error, network power supply error, or transmission timeout.

**DeviceNet Unit Response**

Remote I/O communications as a master will stop. Remote I/O communications as a slave and message communications will continue.

**Flags Allocated for C200H DeviceNet Master Unit (CIO 

Bit 14 (the Error Flag) will be ON as well as bit 05 or 06 (the Sending Error Flag or Communications Error Flag).

**CIO Area Flags Allocated to DeviceNet Unit**

Bit 00 of n+10 (Unit Error Flag) will be ON together with one of the following combinations:

- Bit 02 of n+12 (the Remote I/O Communications Error Flag) and bit 01 of n+10 (the Master Function Error Flag) ON.
- Bit 07 of n+10 (the Network Power Error Flag) ON.
- Bit 08 of n+10 (the Send Timeout Flag) ON.

**Correction**

Perform error processing according to the cause:

- Remote I/O communications error (See error d9.)
- Network power supply error (See error E0.)
- Transmission timeout error (See error E2.)

Correct the cause of the error and then restart remote I/O communications by toggling bit 02 of n (the Remote I/O Communications Start Switch.)

**Structure Error:**

I/O Area Duplication

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d0</td>
<td>---</td>
<td>Red (flashing)</td>
<td>0343</td>
</tr>
</tbody>
</table>

**Likely Cause**

The slave’s I/O areas overlap. (Occurred with the scan list disabled.) Errors will occur in the active slaves.

**DeviceNet Unit Response**

Records the error in the error log. The master will periodically attempt to reconnect with the slave with the structure error.

**Flags Allocated for C200H DeviceNet Master Unit (CIO 

Bit 14 (the Error Flag) and bit 04 (the Structure Error Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**

Bit 01 of n+12 (the Structure Error Flag) and bits 00 and 01 of n+10 (the Unit Error Flag and Master Function Error Flag) will be ON.
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Structure Error: I/O Area Range Exceeded

**Likely Cause**
The slave’s I/O area isn’t within the allowed range. (Occurs with the scan list disabled.)

**DeviceNet Unit Response**
Records the error in the error log. The master will periodically attempt to reconnect with the slave with the structure error.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**
Bit 14 (the Error Flag) and bit 04 (the Structure Error Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**
Bit 01 of n+12 (the Structure Error Flag) and bits 00 and 01 of n+10 (the Unit Error Flag and Master Function Error Flag) will be ON.

**Correction**
Set the slaves’ node addresses again or use user-set allocations.

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d1</td>
<td>---</td>
<td>Red (flashing)</td>
<td>0343</td>
</tr>
</tbody>
</table>

Structure Error: Unsupported Slave

**Likely Cause**
The size of the slave’s input and/or output area exceeded 200 bytes. (Occurs with the scan list disabled.)

**DeviceNet Unit Response**
Records the error in the error log. The master will periodically attempt to reconnect with the slave with the structure error.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**
Bit 14 (Error Flag) and bit 04 (the Structure Error Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**
Bit 01 of n+12 (Structure Error Flag) and bits 00 and 01 of n+10 (Unit Error Flag and Master Function Error Flag) will be ON.

**Correction**
Use slaves with input and output areas of 200 bytes max.

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d2</td>
<td>---</td>
<td>Red (flashing)</td>
<td>0343</td>
</tr>
</tbody>
</table>

Verification Error: Non-existent Slave

**Likely Cause**
A slave registered in the scan list doesn’t exist or the local node’s (master’s) node address is registered in the scan list. (Occurs with the scan list enabled.)

**DeviceNet Unit Response**
Records the error in the error log.
- If a slave is involved, the master will periodically attempt to reconnect.
- If the master is involved, it will not send an OPEN frame to itself.
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Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)
Bit 14 (Error Flag) and bit 07 (Comparison Error Flag) will be ON.

CIO Area Flags Allocated to DeviceNet Unit
Bit 00 of n+12 (Comparison Error Flag) and bits 00 and 01 of n+10 (Unit Error Flag and Master Function Error Flag) will be ON.

Correction
Check the following:

- Matching master and slave baud rates
- Proper cable lengths (trunk and branch lines)
- Broken or loose cables
- Installation of terminators at both ends of the trunk line
- Excessive noise

Verification Error:
Illegal Vendor

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d6</td>
<td>---</td>
<td>Red (flashing)</td>
<td>0344</td>
</tr>
</tbody>
</table>

Likely Cause
The Configurator is set to check the vendor and the slave's vendor does not match the registered scan list. (Occurs with the scan list enabled.)

DeviceNet Unit Response
Records the error in the error log. The master will periodically attempt to reconnect with the slave with the verification error.

Verification Error:
Illegal Connection Path

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d6</td>
<td>---</td>
<td>Red (flashing)</td>
<td>0344</td>
</tr>
</tbody>
</table>

Likely Cause
The connection path was set with the Configurator and there is a mistake in the connection path setting in the scan list. (Occurs with the scan list enabled.)

DeviceNet Unit Response
Records the error in the error log. The master will periodically attempt to reconnect with the slave with the verification error.
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**Veriﬁcation Error: I/O Size Mismatch**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d6</td>
<td>---</td>
<td>Red (ﬂashing)</td>
<td>0344</td>
</tr>
</tbody>
</table>

**Likely Cause**
The slave's I/O data size does not match the registered scan list. (Occurs with the scan list enabled.)

**DeviceNet Unit Response**
Records the error in the error log.
The master will periodically attempt to reconnect with the slave with the veriﬁcation error.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**
Bit 14 (Error Flag) and bit 07 (Comparison Error Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**
Bit 00 of n+12 (Comparison Error Flag) and bits 00 and 01 of n+10 (Unit Error Flag and Master Function Error Flag) will be ON.

**Correction**
Inspect the slave and then create the scan list again.

---

**Veriﬁcation Error: Illegal Device**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d6</td>
<td>---</td>
<td>Red (ﬂashing)</td>
<td>0344</td>
</tr>
</tbody>
</table>

**Likely Cause**
The Conﬁgurator is set to check the device type and the slave's device type does not match the registered scan list. (Occurs with the scan list enabled.)

**DeviceNet Unit Response**
Records the error in the error log.
The master will periodically attempt to reconnect with the slave with the veriﬁcation error.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**
Bit 14 (Error Flag) and bit 07 (Comparison Error Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**
Bit 00 of n+12 (Comparison Error Flag) and bits 00 and 01 of n+10 (Unit Error Flag and Master Function Error Flag) will be ON.

**Correction**
Inspect the slave and then create the scan list again.

---

**Veriﬁcation Error: Illegal Product Code**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d6</td>
<td>---</td>
<td>Red (ﬂashing)</td>
<td>0344</td>
</tr>
</tbody>
</table>

**Likely Cause**
The Conﬁgurator is set to check the product code and the slave's product code does not match the registered scan list. (Occurs with the scan list enabled.)
DeviceNet Unit Response
Records the error in the error log.
The master will periodically attempt to reconnect with the slave with the verification error.

Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)
Bit 14 (Error Flag) and bit 07 (Comparison Error Flag) will be ON.

CIO Area Flags Allocated to DeviceNet Unit
Bit 00 of n+12 (Comparison Error Flag) and bits 00 and 01 of n+10 (Unit Error Flag and Master Function Error Flag) will be ON.

Correction
Inspect the slave and then create the scan list again.

Remote I/O Communications Error

Likely Cause
A timeout occurred during remote I/O communications using the master function. (The response from the slave timed out 6 consecutive times.)

DeviceNet Unit Response
Records the error in the error log.
The master will periodically attempt to reconnect with the slave with the error, but remote I/O communications will stop if the master is set to stop communications.

Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)
Bit 14 (Error Flag) and bit 06 (Communications Error Flag) will be ON.

CIO Area Flags Allocated to DeviceNet Unit
Bit 02 of n+12 (Remote I/O Communications Error Flag) and bits 00 and 01 of n+10 (Unit Error Flag and Master Function Error Flag) will be ON.

Correction
Check the following:

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d6</td>
<td>---</td>
<td>Red (flashing)</td>
<td>0344</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>d9</td>
<td>---</td>
<td>Red (flashing)</td>
<td>0345</td>
</tr>
</tbody>
</table>
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- Matching master and slave baud rates
- Proper cable lengths (trunk and branch lines)
- Broken or loose cables
- Installation of terminators at both ends of the trunk line
- Excessive noise

Software Switch Setting Errors

**CPU Unit Status Error**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

**Likely Cause**
The software settings operation couldn’t be performed because the CPU Unit wasn’t in PROGRAM mode.

**DeviceNet Unit Response**
The only response is the error code displayed on the 7-segment display. The error display will be cleared the next time that a settings operation is completed normally.

**Correction**
Switch the CPU Unit to PROGRAM mode and try the operation again.

**Unit Status Error**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

**Likely Cause**
The setting operation failed because the Unit could not perform the requested process in its current status. The most common causes of Unit status errors during settings operations are listed below:

- The master was stopped and a software switch operation relating to the master function was performed. (This does not include the master enable operation.)
- The scan list was enabled and a software switch operation was performed that can only be performed while the scan list is disabled. (Scan list enable and fixed allocation setting operations)
- The scan list was disabled and a software switch operation was performed that can only be performed while the scan list is enabled. (Clear scan list and Backup Unit settings file operations)
- The slave was stopped and a software switch operation relating to the slave function was performed. (This does not include the slave enable operation.)

**DeviceNet Unit Response**
The only response is the error code displayed on the 7-segment display. The error display will be cleared the next time that a settings operation is completed normally.

**Correction**
Change the Unit’s status to allow the operation and try the operation again.

**Structure Error**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
Troubleshooting with the DeviceNet Unit Indicators

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Likely Cause
The setting operation failed because a structure error occurred.

DeviceNet Unit Response
The only response is the error code displayed on the 7-segment display. The error display will be cleared the next time that a settings operation is completed normally.

Correction
Correct the cause of the structure error. (See errors d0 to d2.)

Incorrect Setting

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C5</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Likely Cause
There was an error in the parameters specified in the user settings and the requested settings could not be made.

DeviceNet Unit Response
The only response is the error code displayed on the 7-segment display. The error display will be cleared the next time that a settings operation is completed normally.

Correction
Check the parameters in the user settings and try the operation again.

Multiple Switches ON

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C6</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Likely Cause
Two or more software switches were ON simultaneously or a second software switch was turned ON before a prior operation was completed.

DeviceNet Unit Response
The only response is the error code displayed on the 7-segment display. The error display will be cleared the next time that a settings operation is completed normally.

Correction
Execute software switch operations one at a time.

Network Errors

Network Power Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E0</td>
<td>---</td>
<td>OFF or Red (flashing)*</td>
<td>0341</td>
</tr>
</tbody>
</table>

Note
The NS indicator will flash red if the error occurs during remote I/O communications, otherwise the indicator will be OFF.

Likely Cause
The communications power supply is not being supplied properly from the network.

DeviceNet Unit Response
Records the error in the error log. As long as power isn’t being supplied remote I/O communications will remain stopped and errors will be returned in response to requests for message transmissions. The indicator status, scanning, and message processing will
return to normal when the network power supply is restored, although scan-
ning will not resume if the DeviceNet Unit is set to stop remote I/O communi-
cations when a communications error occurs.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**

Bit 14 (Error Flag) and bit 05 (the Sending Error Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**

Bits 00 and 07 of n+10 (the Unit Error Flag and Network Power Error Flag) will be ON.

**Correction**

Check the network power supply and the wiring of the network cables.

### Transmission Timeout Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2</td>
<td>---</td>
<td>OFF or Red (flashing)*</td>
<td>0342</td>
</tr>
</tbody>
</table>

**Note**  
The NS indicator will flash red if the error occurs during remote I/O communi-
cations, otherwise the indicator will be OFF.

**Likely Cause**

A transmission request was not completed normally for one of the following reasons:

- There is not even one device such as a slave in the network.
- The communications speed settings are not the same in all of the nodes.
- CAN controller error

**DeviceNet Unit Response**

Records the error in the error log.  
As long as transmission timeout is in effect, remote I/O communications will remain stopped and errors will be returned in response to requests for mes-
sage transmissions. The indicator status, scanning, and message processing will return to normal when the network power supply is restored, although scanning will not resume if the DeviceNet Unit is set to stop remote I/O communi-
cations when a communications error occurs.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**

Bit 14 (Error Flag) and bit 05 (the Sending Error Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**

Bits 00 and 08 of n+10 (the Unit Error Flag and Send Timeout Flag) will be ON.

**Correction**

Check the following:

- Matching master and slave baud rates
- Proper cable lengths (trunk and branch lines)
- Broken or loose cables
- Installation of terminators at both ends of the trunk line
- Excessive noise

### Node Address Duplication Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F0</td>
<td>---</td>
<td>Red (lit)</td>
<td>0211</td>
</tr>
</tbody>
</table>

**Likely Cause**

The master's node address is also set on another node.
Troubleshooting with the DeviceNet Unit Indicators

**Section 9-1**

**DeviceNet Unit Response**

Records the error in the error log.

- The Unit will go off-line and communications will be disabled. Error responses will be returned to all communications requests.
- The exchange of data with the CPU Unit will continue.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**

Bit 14 (Error Flag) and bit 01 (the Node Address Duplicated/Bus Off Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**

Bits 00 and 06 of n+10 (the Unit Error Flag and Duplicated Node Address Flag) will be ON.

**Correction**

Check the settings to eliminate the duplication and restart the DeviceNet Units.

**Bus Off Detected**

- **7-segment**
  - F1
- **MS indicator**
  - ---
- **NS indicator**
  - Red (lit)
- **Error log (Hex)**
  - 0340

**Likely Cause**

A Bus Off condition was detected.

**DeviceNet Unit Response**

Records the error in the error log.

- The Unit will go off-line and communications will be disabled. Error responses will be returned to all communications requests.
- The exchange of data with the CPU Unit will continue.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**

Bit 14 (Error Flag) and bit 01 (the Node Address Duplicated/Bus Off Flag) will be ON.

**CIO Area Flags Allocated to DeviceNet Unit**

Bits 00 and 05 of n+10 (the Unit Error Flag and Bus Off Flag) will be ON.

**Correction**

Check the following:

- Matching master and slave baud rates
- Proper cable lengths (trunk and branch lines)
- Broken or loose cables
- Installation of terminators at both ends of the trunk line
- Excessive noise

**Memory Access Errors**

**Message Monitoring**

**Timer List Logic Error**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6</td>
<td>Red (flashing)</td>
<td>---</td>
<td>021A</td>
</tr>
</tbody>
</table>

**Likely Cause**

There is an error in the contents of the message monitoring timer list stored in non-volatile memory.
Troubleshooting with the DeviceNet Unit Indicators

Section 9-1

DeviceNet Unit Response
Records the error in the error log.
Operation will continue using the default message monitoring timer values.

Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)
Bit 14 (Error Flag) and bit 03 (the Structure Error Flag) will be ON.

CIO Area Flags Allocated to DeviceNet Unit
Bits 00 and 13 of n+10 (the Unit Error Flag and Incorrect Message Monitoring Timer List Data Flag) will be ON.

Correction
Use the Configurator to register the message monitoring timer list again.

Slave Scan List Logic
Error

Likely Cause
There is an error in the contents of the slave scan list stored in non-volatile memory.

DeviceNet Unit Response
Records the error in the error log.
- The slave remote I/O communications will be stopped.
- Message processing and the exchange of data with the CPU Unit will continue. Normal operation will resume when the slave scan list is written normally. (Start the slave remote I/O communications.)

CIO Area Flags Allocated to DeviceNet Unit
Bits 00 and 03 of n+10 (the Unit Error Flag and Slave Error Flag) and bit 04 of n+14 (Invalid Setup Data Flag) will be ON.

Correction
Disable the slave, reset the allocations, and the enable the slave again or use the Configurator to reset the slave scan list.

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E7</td>
<td>Red (flashing)</td>
<td>---</td>
<td>021A</td>
</tr>
</tbody>
</table>

Master Scan List Logic
Error

Likely Cause
There is an error in the contents of the master scan list stored in non-volatile memory.

DeviceNet Unit Response
Records the error in the error log.
- The master remote I/O communications will be stopped.
- Message communications and the exchange of data with the CPU Unit as a slave will continue. Normal operation will resume when the master scan list is written normally. (Start the master remote I/O communications.)

CIO Area Flags Allocated to DeviceNet Unit
Bits 00 and 01 of n+10 (the Unit Error Flag and Master Function Error Flag) and bit 04 of n+12 (the Invalid Scan List Data Flag) will be ON.

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E8</td>
<td>Red (flashing)</td>
<td>---</td>
<td>021A</td>
</tr>
</tbody>
</table>
**Troubleshooting with the DeviceNet Unit Indicators**

**Section 9-1**

**Memory Access Error**

**Correction**
Clear the scan list and register the scan list again or use the Configurator to reset the master scan list.

**Likely Cause**
An error occurred in the Unit’s non-volatile memory itself. This error will occur in the following cases.

1. An error occurs reading the identity information during initialization
2. All error log records cannot be used during initialization or registering an error log record
3. An error occurs while reading or writing the error log
4. An error occurs while reading or writing the master function enabling data or the master scan list
5. An error occurs while reading or writing the slave function enabling data or the slave scan list
6. An error occurs while reading or writing the message monitoring timer
7. An error occurs while reading or writing the communications cycle time set value
8. An error occurs while reading the identity information during Identity object server processing

**Note**
This error does occur for checksum errors while reading data.

**DeviceNet Unit Response**
Registers an error record with error code 0602 in the RAM error log area.

For error 1:
Normal operation continues

For error 2 or 3:
Remaining writes to EEPROM are all ignored. Other than that, normal operation continues. (Error records continue to be written to RAM.)

For error 4:
The master remote I/O communications are stopped. Other operations continue.

For error 5:
The slave scanning is stopped and other operations continue.

For error 6:
The default values are used for the message monitoring timer and operation continues.

For error 7:
The communications cycle time is set automatically and operation continues.

For error 8:
Operation continues.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**

Bit 14 (Error Flag) and bit 00 (the Incorrect Switch Settings/EEPROM Error Flag) will be ON.
Troubleshooting with the DeviceNet Unit Indicators  

Section 9-1

CIO Area Flags Allocated to DeviceNet Unit
Bits 00 and 04 of n+10 (the Unit Error Flag and Unit Memory Error Flag) will be ON.

Correction
Replace the Unit if the error recurs.

CPU Unit Exchange Errors

Unit Number duplication

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Red (flashing)</td>
<td>OFF</td>
<td>---</td>
</tr>
</tbody>
</table>

Likely Cause
The unit number is duplicated on another Unit.

DeviceNet Unit Response
Stops operation.

Correction
Set the unit numbers correctly and restart the DeviceNet Units.

CPU Unit Faulty (H2)

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H2</td>
<td>Red (flashing)</td>
<td>OFF</td>
<td>---</td>
</tr>
</tbody>
</table>

DeviceNet Unit Response
Stops operation.

Correction
Set the unit numbers correctly and restart the DeviceNet Units.

DeviceNet Unit Faulty

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3</td>
<td>Red (lit)</td>
<td>OFF</td>
<td>---</td>
</tr>
</tbody>
</table>

DeviceNet Unit Response
Stops operation.

Correction
Replace the CPU Unit if the error recurs when the CPU Unit is restarted.

Node Address Setting Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H4</td>
<td>Red (flashing)</td>
<td>OFF</td>
<td>---</td>
</tr>
</tbody>
</table>

Likely Cause
The node address set on the rotary switches is out-of-range (64 or higher.)

DeviceNet Unit Response
Stops operation.

Correction
Replace the DeviceNet Unit if the same error recurs when the Unit is mounted to another CPU Unit.

Communications Speed Setting Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H5</td>
<td>Red (flashing)</td>
<td>OFF</td>
<td>---</td>
</tr>
</tbody>
</table>

Likely Cause
The communications speed is set incorrectly.
Troubleshooting with the DeviceNet Unit Indicators

Section 9-1

CPU Unit Faulty (H6)

DeviceNet Unit Response
Stops operation.

Correction
Set the communications speed correctly and restart the DeviceNet Units.

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H6</td>
<td>Red (flashing)</td>
<td>OFF</td>
<td>000F</td>
</tr>
</tbody>
</table>

I/O Table Not Registered

Likely Cause
The CPU Unit's I/O table is not registered.

DeviceNet Unit Response
Records the error in the error log. (The time information is set to all zeroes.)
Stops operation.

Correction
Replace the CPU Unit if the error recurs when the CPU Unit is restarted.

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H7</td>
<td>Red (flashing)</td>
<td>OFF</td>
<td>0006</td>
</tr>
</tbody>
</table>

Simple Backup Function

Restore Error

Likely Cause
Restoring data from the Memory Card failed for the simple backup function.

DeviceNet Unit Response
The data in the Memory Card is not restored, and the settings in the Unit remain as they were before the simple backup operation was performed.

Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)
---

CIO Area Flags Allocated to DeviceNet Unit
---

Correction
Create the I/O table.

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H8</td>
<td>Red (flashing)</td>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

CPU Unit Memory Faulty

Likely Cause
A parity error occurred while reading the routing table.

DeviceNet Unit Response
Records the error in the error log and continues processing
The routing table is treated as missing.
Troubleshooting with the DeviceNet Unit Indicators

Section 9-1

Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)
Bit 14 (Error Flag) and bit 03 (the Structure Error Flag) will be ON.

CIO Area Flags Allocated to DeviceNet Unit
Bits 00 and 12 of n+10 (the Unit Error Flag and Routing Table Error Flag) will be ON.

Correction
Register the routing table in the CPU Unit again and restart the CPU Unit.
Replace the CPU Unit if the error recurs.

CPU Unit Faulty (Hb)

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hb</td>
<td>Red (flashing)</td>
<td>---</td>
<td>0011</td>
</tr>
</tbody>
</table>

Likely Cause
A timeout occurred while reading the routing table.

DeviceNet Unit Response
Continues processing but data exchange with the CPU Unit is stopped.
The routing table is treated as missing.
Records the error in the error log.

Routing Table Logic Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC</td>
<td>Red (flashing)</td>
<td>---</td>
<td>021A</td>
</tr>
</tbody>
</table>

Likely Cause
There is an error in the contents of the routing table.

DeviceNet Unit Response
Records the error in the error log.
The routing table is treated as missing and processing continues.

I/O Refresh Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hd</td>
<td>Red (flashing)</td>
<td>---</td>
<td>0347</td>
</tr>
</tbody>
</table>

Refer to 1-6-3 Creating Routing Tables. Set the routing table in the CPU Unit correctly and restart the DeviceNet Units.
Troubleshooting with the DeviceNet Unit Indicators

Section 9-1

Likely Cause
The I/O areas set in the master scan list or slave scan list do not exist in the CPU Unit. This error can occur when the Unit is mounted to a different CPU Unit with a different number of EM banks or EM that has been converted to file memory.

Note This error may occur during remote I/O communications, too.

DeviceNet Unit Response
Records the error in the error log.
Stops remote I/O communications for the function (master or slave) using the non-existent area.
There is a possibility that this error will occur again. If it does occur again, restart remote I/O communications to return the system to normal operation.

Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)
Bit 14 (Error Flag) and bit 03 (the Structure Error Flag) will be ON.

CIO Area Flags Allocated to DeviceNet Unit
Bit 00 of n+10 (Unit Error Flag) will be ON together with one of the following combinations:

- Bit 05 of n+12 (the Master I/O Refresh Error Flag) and bit 01 of n+10 (the Master Function Error Flag) ON.
- Bit 05 of n+14 (Remote I/O Refresh Error Flag) and bit 03 of n+10 (the Slave Error Flag) ON.

Correction
Check the master scan list and slave scan list and reset with a correct allocation.

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HE</td>
<td>Red (flashing)</td>
<td>---</td>
<td>0002</td>
</tr>
</tbody>
</table>

CPU Unit Service Monitoring Error

Likely Cause
Servicing from the CPU Unit is not at fixed intervals. Servicing is normally monitored at 11 s.

DeviceNet Unit Response
- Records the error in the error log.
- Stops master and slave remote I/O communications.
  Performs the following processing if it receives FINS frames that must be passed along to the CPU Unit:
  - Returns an error response (0302 Hex) to commands requiring a response.
  - Discards other frames and stores an error record (010B Hex) in the error log.

Note Remote I/O communications will not restart automatically for this error. First confirm that the error has been eliminated and then perform the procedure to start remote I/O communications.

Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)
There is no status notification because communications with the CPU Unit are disabled.

CIO Area Flags Allocated to DeviceNet Unit
There is no status notification because communications with the CPU Unit are disabled.
Troubleshooting with the DeviceNet Unit Indicators

Section 9-1

**CORRECTION**

Inspect the CPU Unit's operating environment.

**CPU Unit Watchdog Timer Error**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HF</td>
<td>Red (flashing)</td>
<td>---</td>
<td>0001</td>
</tr>
</tbody>
</table>

**Likely Cause**

An error occurred in the CPU Unit.

**Note**

The CPU Unit's watchdog timer error can occur during initialization.

**DeviceNet Unit Response**

- Records the error in the error log.
- Stops master and slave remote I/O communications.
  Performs the following processing if it receives FINS frames that must be passed along to the CPU Unit:
  - Returns an error response (0302 Hex) to commands requiring a response.
  - Discards other frames and stores an error record (010B Hex) in the error log.

**Flags Allocated for C200H DeviceNet Master Unit (CIO n+24)**

There is no status notification because communications with the CPU Unit are disabled.

**CIO Area Flags Allocated to DeviceNet Unit**

There is no status notification because communications with the CPU Unit are disabled.

**Correction**

Replace the CPU Unit.

**CPU Unit Fatal Error**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

**DeviceNet Unit Response**

Output data is set to 0. (With the master, these are output bits. With the slave, these are input bits to the other master.)

**Output OFF Error**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

**Likely Cause**

The Output OFF Bit (A50015) was turned ON in the CPU Unit.

**DeviceNet Unit Response**

Output data is set to 0. (With the master, these are output bits. With the slave, these are input bits to the other master.)

**Slave Errors**

**Remote I/O Communications Error**

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L9</td>
<td>---</td>
<td>Red (flashing)</td>
<td>0345</td>
</tr>
</tbody>
</table>
Likely Cause
A timeout occurred during remote I/O communications using the slave function.

DeviceNet Unit Response
Records the error in the error log.
If slave has outputs, the status of those outputs is determined by the hold/clear outputs setting for communications errors.

CIO Area Flags Allocated to DeviceNet Unit
Bits 00 and 03 of n+10 (the Unit Error Flag and Slave Error Flag) and bits 02 and 03 of n+14 (the Remote I/O Communications Error Flag for OUT1/IN1 and Remote I/O Communications Error Flag for OUT2/IN2) will be ON.

Correction
Check the following:
• Matching master and slave baud rates
• Proper cable lengths (trunk and branch lines)
• Broken or loose cables
• Installation of terminators at both ends of the trunk line
• Excessive noise

Unit Errors
Special Unit Error

<table>
<thead>
<tr>
<th>7-segment</th>
<th>MS indicator</th>
<th>NS indicator</th>
<th>Error log (Hex)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>Red (lit)</td>
<td>OFF</td>
<td>0601</td>
</tr>
</tbody>
</table>

DeviceNet Unit Response
Records the error in the error log.
Stops the Unit.
Correction
Restart the CPU Unit. Replace the DeviceNet Unit if the error recurs.

9-2 Error Log Functions
Errors detected by the DeviceNet Unit are stored in the error log along with the date and time of their occurrence. The error log can be read, cleared, and monitored using FINS commands or a Configurator.

9-2-1 Error Log Table
Error Log Table
Each time an error occurs, one record is stored in the error log table that is stored in RAM in the DeviceNet Unit. The table can store up to 96 records for unit version 1.1 or later, and up to 64 records for earlier versions. If another error occurs when the table is full, the oldest record will be erased and a new record will be stored.
The error log table records the following information.
• Error code
• Detail code
• Time of occurrence (The CPU Unit’s time is used for the time stamp.)

Error Log Storage Area
When an error is detected, information on the error and the time stamp are stored in the Unit’s internal RAM as an error log record. Serious errors are recorded in EEPROM as well as RAM. The error log records in EEPROM are