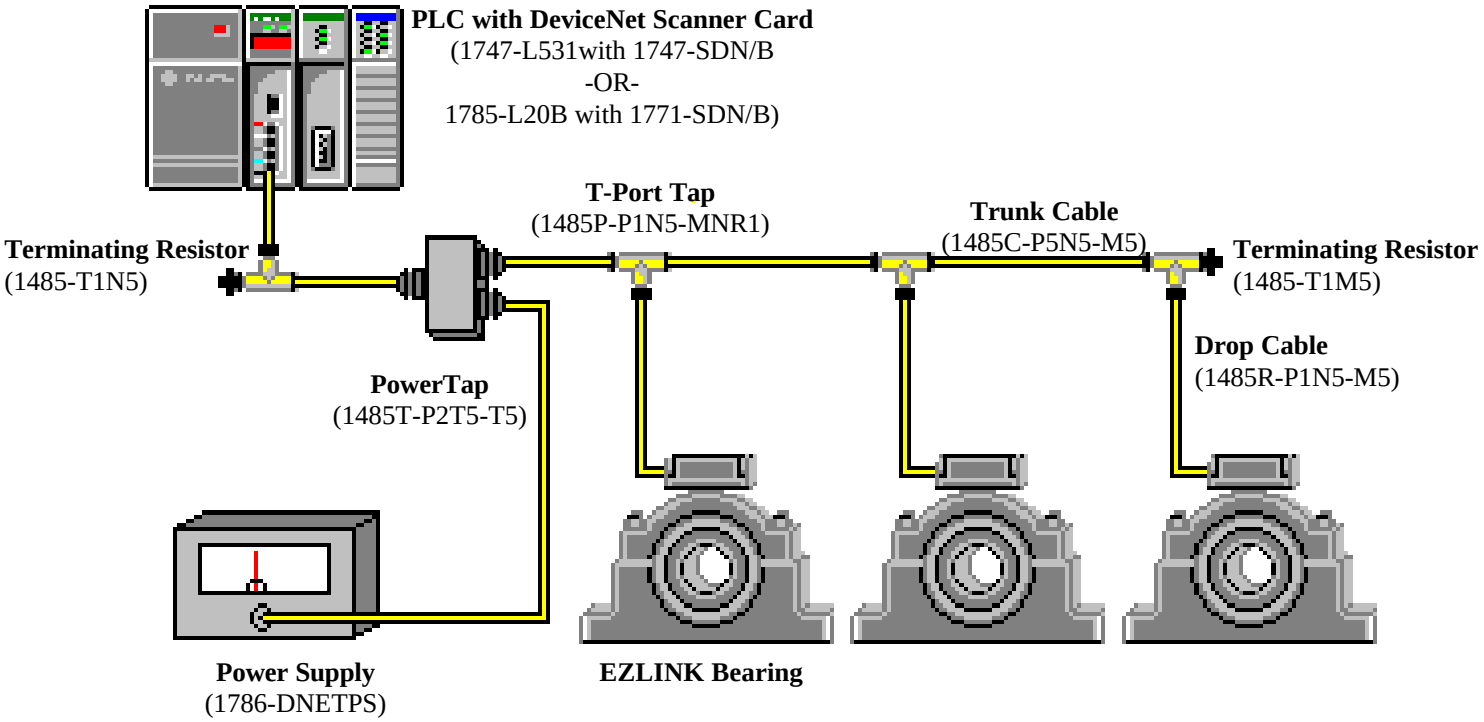


EZLINK DeviceNet System Components

As illustrated above, a typical EZLINK DeviceNet network consists of seven core components:

- *EZLINK Bearings and Gear Reducers*
  EZLINK modules mounted on new Dodge bearings, speed reducers, and gear boxes provide the best monitoring of your mechanical power transmission equipment.

- *Control/Monitoring Device*
  In this application note, we illustrate the use of a PLC to monitor the status of the EZLINK modules. Dodge recommends the use of Allen-Bradley PLC's such as the SLC 5/03 (1747-L531 with 1747-SDN/B) and the PLC-5 (1785-L20B with 1771-SDN/B).

- *Trunk Cable*
  Trunk cable is the backbone of the network. Thin (6.9 mm) and thick (12.2 mm) trunk cable is available. We recommend Allen-Bradley predetermined thick (1485C-P*X*N5-M5) and thin (1485R-P*X*N5-M5) cables (*X* = 1, 2, 3, 5, or 10m). Lengths of 50, 150, and 300, and 600m may be ordered but will require field attachable connectors).

- *Drop Cable*
  Drop cables connect EZLINK modules to the main trunk cable. We recommend Allen-Bradley cables 1485R-P*X*N5-M5 (*X*=1, 2, or 3m).

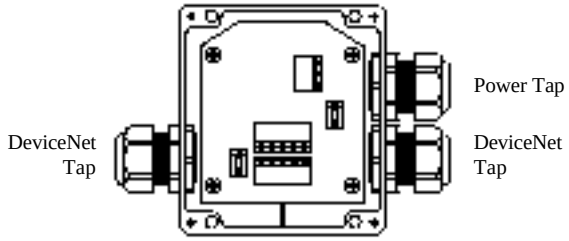
- *T-Port Tap*
  The T-Port Tap provides the connection point between the trunk line and the drop line. Dodge recommends the use of Allen-Bradley T-Port taps such as the 1485P-P1N5-MNR1.

- *Terminating Resistors*
  Without terminating resistors communication between the Control Device and the EZLINK modules will be unreliable. You will need both male and female terminating resistors such as the Allen-Bradley 1485-T1M5 and 1485-T1N5.

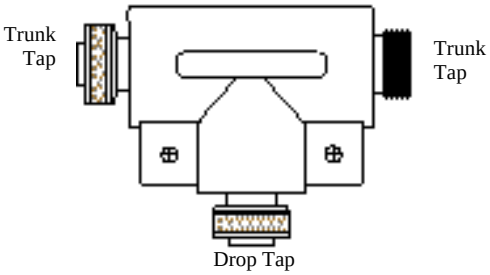
- *Power Supply and Power Tap*
  Provide power to all the EZLINK modules on the network. We recommend Allen-Bradley power supplies (1786-DNETPS) and power taps (1485T-P2T5-T5).

Network Setup

1. Install your PLC. Make sure the processor card is installed in the leftmost slot and the DeviceNet scanner card is the slot next to it.



2. Install the power supply near the PLC. Connect the power supply to the Power Tap. Run a short length of trunk cable from the power tap toward the PLC. Install a T-Port connector at the end of this trunk cable. Attach a terminating resistor to the unused T-Port tap. Connect a drop line to the bottom tap of the T-Port Tap and run this to the PLC.



3. Run the trunk cable from the Power Tap to each of the EZLINK modules. If required, cut the trunk cable near the modules and install field attachable connectors. Note: Use one *male* and one *female* connector at each cut.

4. Connect each section of the trunk cable to the next section with T-Port Taps. Attach a terminating resistor to the unused end of the last T-Port Tap on the network

5. Attach a drop cable to each one of the T-Port Taps.

EZLINK Commissioning

1. Attach a configuration tool to one of the drop lines on the network. The configuration tool may be a device like the Allen-Bradley Hand-Held Configuration Tool (2707-DNC) or a computer with a DeviceNet Network Card (e.g., Allen-Bradley 1784-PCD). This Application Note assumes the use of a personal computer running Allen-Bradley DeviceNet Manager software.

2. Start DeviceNet Manager on the computer. Select “Setup Online Connection” from the “Utilities” menu.

3. Click “Basic Device Configuration” from the “Utilities” menu. Update the module address by changing the information in the dialog box that pops up:

Each module must have a unique address between 0 - 63. Enter the address in the Data Attribute box (where the value “8” is shown above).

4. Click the “Save to Device” button on the dialog box.

5. Repeat steps 3 and 4 for each EZLINK module.

6. Close the “Basic Device Configuration” dialog box. Select “Network Who” from the “Who” menu. Wait for the process to finish.

7. Double-click on one of the EZLINK modules. Click on the line containing the alarm point you want to change. Click the “Modify Parameter” button. Change the value of the alarm by typing in the new value. Click OK. Once all the alarms have been adjusted, click the “Save to Device” button. Click “Modified Parameters” in the new dialog box.

8. Repeat step 7 for each EZLINK module.

PLC Commissioning

Note: The following assumes the use of an Allen-Bradley PLC. Similar steps are required for other vendors' PLC's.

1. If not already running, start the DeviceNet Manager software on the computer. Select "Setup Online Connection" from the "Utilities" menu.

2. Select "Network Who" from the "Who" menu. When the process is complete, double click on the PLC DeviceNet scanner card.

3. In the "17XX-SDN Module Configuration" dialog box, click the "Edit Scan List" button. In the "17XX-SDN Scan List Editor" dialog box, click the "Datatable Map" button.

4. Change the "Display Mode" to "Data Entry.

5. From the "Device Select" drop down menu, select an EZLINK module. Make sure "Data Map" is set to "Input".

6. Select "Poll Message" in to "Map Data From" drop down menu.

7. Select "Discrete Table" from the "Map Data To" drop down menu.

8. Click on a line that has no data in it (e.g., line I:1.5 below).

9. To the right of the "Map Data To" menu, change the "Bit" field to 8 and change the "No. Bits" field to 56.

10. Click the "Apply Segment" button.

11. Change the "Data Map" from "Input" to "Output". Repeat steps 10-12 for the output table.

12. Repeat steps 7-13 for each EZLINK module. When all the modules are mapped, click the "Close" button.

13. Save the configuration to the memory of the scanner card by clicking the "SDN" button in the "Save To" box on the 17XX-SDN Scan List Editor dialog.