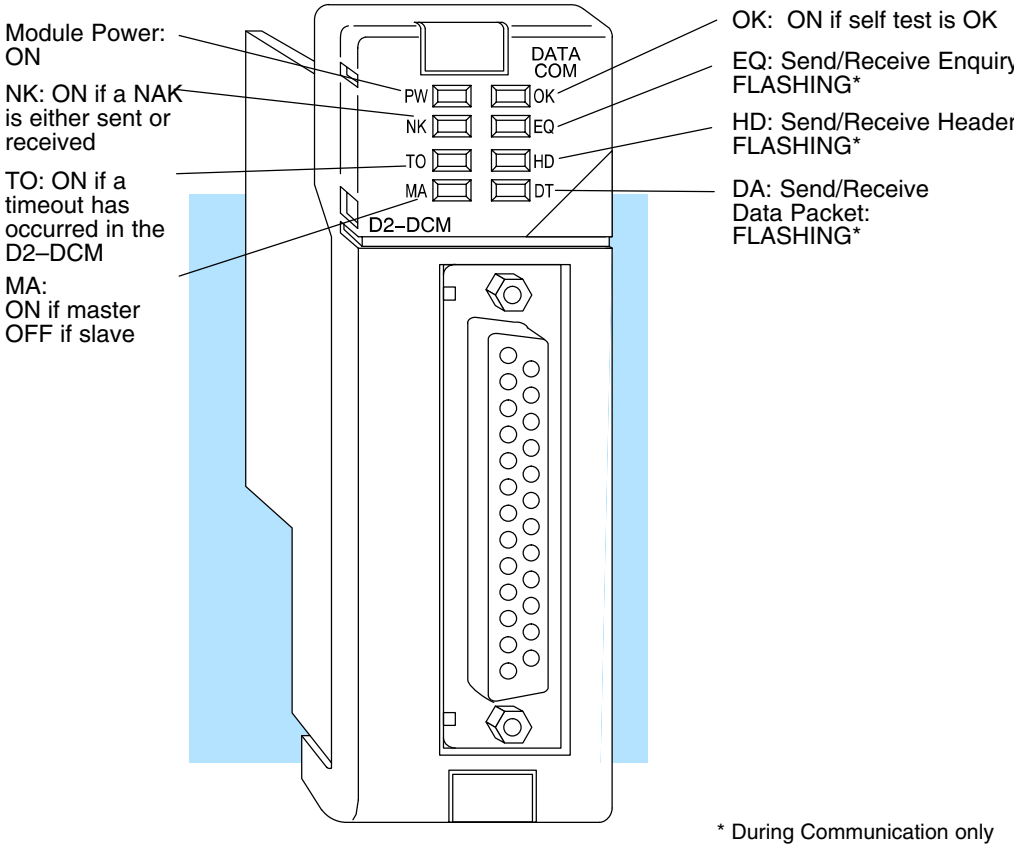
Verification and Troubleshooting

If you have used the guidelines shown previously in Step 3, Starting the Network, you are now ready to verify that the unit is operating properly. Check the D2–DCM indicators to verify the D2–DCM is operating correctly. The following diagram shows the proper indicator conditions.

Note: Online/Offline switch has been removed from the drawing for clarity.



* During Communication only

Troubleshooting Quick Steps

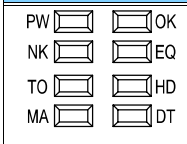
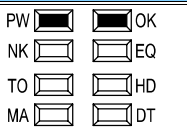
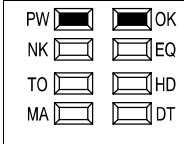
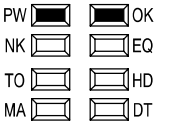
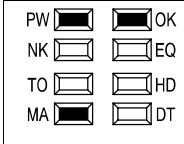
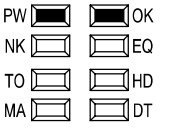
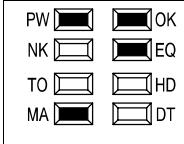
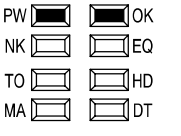
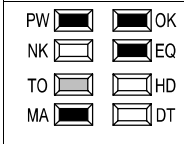
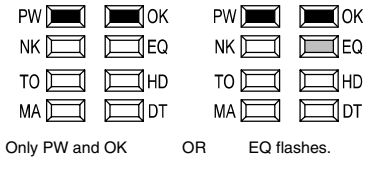
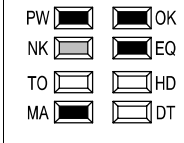
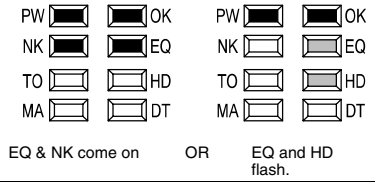
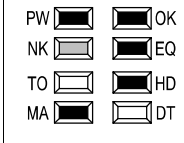
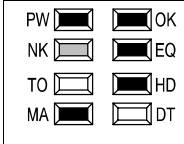
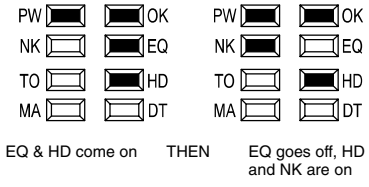
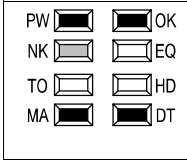
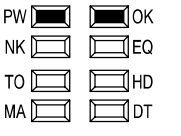
If the D2–DCM does not seem to be working correctly, check the following items. These items represent the problems found most often.

1. Cable and connections. Incorrectly wired cables and loose connectors cause the majority of problems. Verify you've selected the proper cable configuration and check the cable making sure it is wired correctly.
2. Dipswitch settings. Make sure you've set the D2–DCM to match the communication parameters required by the master station (D2–DCM, operator interface or host computer).
3. Incorrect protocol. Make sure your operator interface or personal computer software can use the ***Direct***NET, Hostlink, CCM2, or MODBUS® RTU protocol.
4. Communications program. Check the communications program for errors. Consult the ***Direct***NET Manual or the manuals that came with your host computer software or operator interface for details.

NOTE: If you need more in depth troubleshooting, see the chart on the next page. It provides several different indicator patterns that may help identify your exact problem.

Troubleshooting Chart The following chart identifies the indicator status, possible cause, and corrective action for a wide variety of commonly found problems.

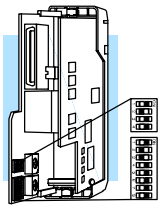
off on flash

Master Station Indicators	Slave Station Indicators	Possible Cause
 Power or OK is off.		1.Master PLC power is disconnected 2.D2–DCM is defective
 Power and OK are on. Master indicator is off.		1.Switch setting on master station is incorrect
 Power, OK, and MA are on. EQ does not come on when the communications program is executed.		1.The master station CPU not in RUN. 2.Online/Offline switch is set to OFF. 3.Communications program is not correct.
 Power, OK, and MA are on. EQ stays on, but NK, TO, or HD indicators do not come on at all.		1.COM Timeout is disabled. 2.RTS and CTS signals are not looped back on the D2–DCM end of the cable.
 Power, OK, and MA are on. EQ stays on, and TO flashes.		1.RLL Communications program is incorrect. 2.Settings are different. 3.Cable problem.
 Power, OK, and MA are on. EQ stays on, and NK flashes.		1.Settings are different. 2.Cable problem or Slave is offline.
 Power, OK, and MA are on. EQ and HD come on. TO flashes.		1.Settings are different.
 Power, OK, and MA are on. EQ and HD come on. EQ goes off. HD stays on, and NK flashes or stays on.		1.RLL Communications program is incorrect. 2.Settings are different.
 Power, OK, and MA are on. DT is on, but NK flashes on occasion.		1.Electrical noise.

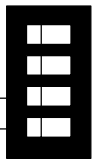
	Corrective Action
1.	1.Check the master PLC source power. 2.Replace the D2–DCM.
2.	1.Disconnect the master station PLC power, remove the D2–DCM and check positions 1 & 2 on SW3.
3.	1.Place the CPU in RUN mode. 2.Set the switch to the ON position. 3.Make sure the RX or WX instruction is being executed. Check the address, slot number, and amount and type of data used in the RX/WX instructions.
4.	1.Disconnect the PLC power, remove the D2–DCM and check position 3 on SW3. 2.Remove master station connector, ensure that RTS & CTS are connected according to the cable diagram.
5.	1.Check the address, slot number, and amount and type of data used in the RX/WX instructions. 2.Make sure baud rate, parity, and mode (HEX/ASCII) match between the master and slave. 3.Verify that the cable is wired properly.
6.	1.Make sure baud rate, parity, and mode (HEX/ASCII) match between the master and slave. 2.Verify that the cable is wired properly. Also, make sure slave is online.
7.	1.Make sure baud rate, parity, and mode (HEX/ASCII) match between the master and slave.
8.	1.Check the amount and type of data being transferred. (Byte count may be set to 1 or an odd number for a data type that requires 2 bytes.) 2.Make sure baud rate, parity, and mode (HEX/ASCII) match between the master and slave.
9.	1.Make sure the system has good earth grounds. Only one end of the cable shield must be grounded. 2.If you're using RS232C, try RS422.

Switch Settings & Port Pinouts

Switch Settings



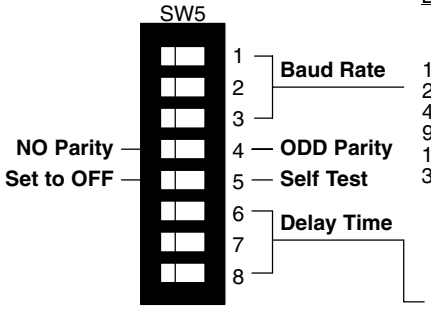
SW3



Switch Positions

Protocol	1	2
*Direct*NET Slave	OFF	OFF
*Direct*NET Master	OFF	ON
*Direct*NET Peer	ON	OFF
MODBUS® RTU	ON	ON

SW5



Switch Positions

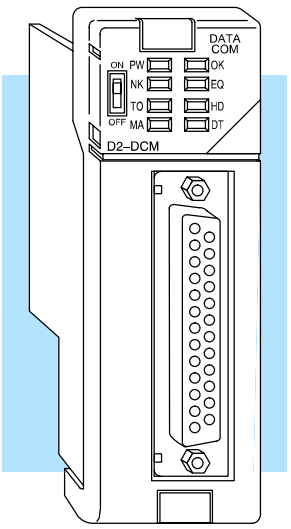
Baud	1	2	3
300	ON	OFF	OFF
600	OFF	ON	OFF
1200	ON	ON	OFF
2400	OFF	OFF	ON
4800	ON	OFF	ON
9600	OFF	ON	ON
19200	ON	ON	ON
38400	OFF	OFF	OFF

Switch Positions

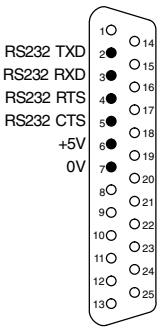
Time*	6	7	8
0	OFF	OFF	OFF
2	ON	OFF	OFF
5	OFF	ON	OFF
10	ON	ON	OFF
20	OFF	OFF	ON
50	ON	OFF	ON
100	OFF	ON	ON
500	ON	ON	ON

*Delay time in milliseconds

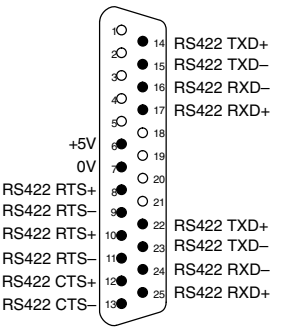
Port Pinouts



RS232C



RS422*



* RS422 pins are internally connected