

**EASON**  
TECHNOLOGY

# ALLEN-BRADLEY MICROLOGIX / SLC500 & EASON 2000 FAMILY

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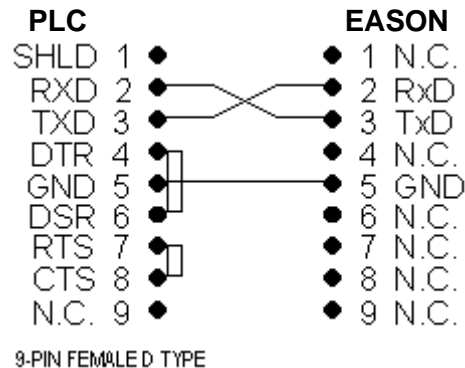
## How Eason PLC Drivers Work

When you add a PLC driver to your WinBuild 2000 project, you gain access to certain memory registers in your PLC (or similar) device. The software driver gives you the ability to easily read or write to these memory registers. The driver takes care of the details of the transmission protocol- all you need to know is address of the memory register inside the PLC you wish to read/write.

- Whenever your WinBuild 2000 application requires data from the PLC, it will automatically retrieve the current value.
- If your Eason program changes a PLC value, the driver will automatically write that value back down to the PLC.

## Connections

Communications to the Allen Bradley PLC via RS232 (DF1) only require a simple connection via Null Modem cable. DH+ or DH485 are not supported.



The SL5 Interface Driver allows the 2000 Series to communicate to the Allen Bradley SLC-500 (DH-485) through the 1747-KE DH-485 to RS-232-C Interface Module. The communications cable is Eason Technology's standard Null Modem cable.

The SLC-500 needs to have a 1747-KE interface module installed in it. If the processor is a stand-alone type (SLC500), you may have to add a two slot option rack to add this interface module. Some newer SLC-500's have a built-in serial port, this port can be used to gain direct access to SLC-500 by using the DF1 protocol.

Follow the setup guidelines for the 1747-KE module exactly. If possible, use your Allen-Bradley programming software to communicate to the SLC-500 once you perform all of the setup operations. In general you can use the default settings as long as you change the DF1 Port Setup Parameters, select the correct node address, and select FULL DUPLEX operation. If you want to check all of the parameters using a terminal connected to the setup port, use the following parameters:

DF1 Port Setup Parameters:

19.2K baud (this is not critical, the SL5 driver option can auto-baud and find your baud rate)  
8 data bits  
No parity  
1 stop bit.

DH-485 Port Setup Parameters:

Node Address - 2 Set the PLC to node address 1 (this is performed with the Allen-Bradley setup software for the PLC). The -SL5 interface will reside at node address 0.  
Max Node Address - 31  
Message Time-out - 1000ms  
Pass Through - Enabled  
Baud Rate - 19200

DF1 Protocol Menu:

Full Duplex

DF1 Protocol Full Duplex Setup Menu:

Duplicate Packet Detection - Disabled  
Checksum - CRC  
Constant Carrier Detect - Disabled  
Modem Init String - (blank)  
Embedded Response Detect - Embedded Response  
ACK Time-out - 1.0 Seconds  
ENQuery Retries - 2  
NAK Received Retries - 2

Be sure to return the 1747-KE module to the Run mode (jumper settings), and jumper the 1747-KE for RS-232.

Connect the DF1 port to the COM port on the 2000 Series product.

## **DRIVER CONFIGURATION**

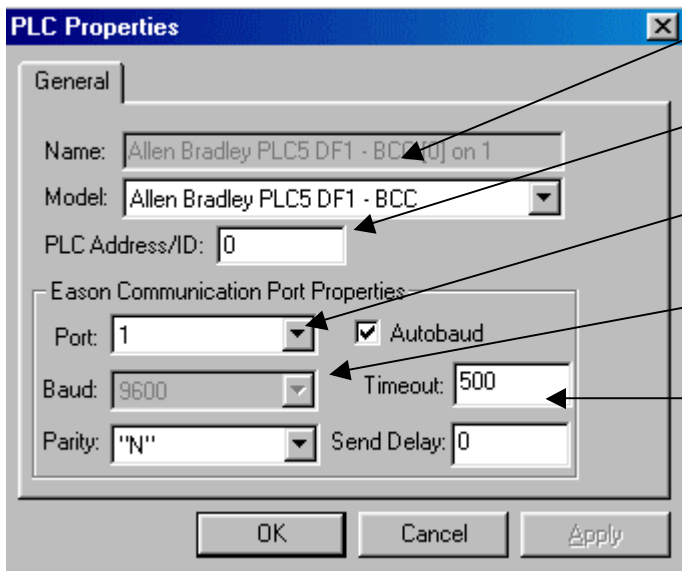
To add the Allen Bradley driver to your project, in WinBuild 2000 click "SETUP | PROJECT" and click on the "Drivers" tab.

Click "ADD"

Click on the "PLC: SLC500" driver, and click "OK"

The driver will now show up in your project drivers list.

Highlight the SLC500 driver in the list, and click on the "Properties" button. This will allow you to set the specifics of your PLC connection.



Select Driver

ID of AB PLC you are communicating to.

Eason Communication Port used to talk to PLC.

Select Baud & Parity, or use Autobaud Feature.

Timeout specifies how long Eason will wait for a response from AB.

Send delay not used in this driver.

## Driver Registers

The Allen Bradley SL5 driver gives you access to the following registers:

Bits:

Bf:e/b  
 f = file (3, 10-255)  
 e = element (0-255)  
 b = bit position (0-15)  
 example: B3:1/4 is bit 4, element 1 of file 3

Timers:

Tf:e/b  
 f = file (4, 10-255)  
 e = element (0-255)  
 b = bit position (0-15)

Counters:

Cf:e/b  
 f = file (5, 10-255)  
 e = element (0-255)  
 b = bit position (0-15)

Integers:

Nf:e/b  
 f = file (7, 10-255)  
 e = element (0-255)  
 b = bit position (0-15) – optional

To define a register you want to use in your project, just click “SETUP | TAGS” and click “New Tag”. Now fill in all the information to access your PLC tag:

PLC Contact and Tag Setup					
	Tag Name	Source	Address	Type	Default
1	LENGTH	MicroLogix/SLC500 - CRC [0] on 1	N7:10	Word	0

This example will now create a variable or TAG in your WinBuild 2000 project that will access the WORD address N7:10 in the Allen-Bradley PLC.

### **Making It All Work**

Create a simple program with the above tag, and download it into your 2000 Family unit. Reboot both the Eason and PLC, and you communications should start. (A valid value will show up in the data display box on your screen).

If not, try checking that you are using the correct COM port on the 2300 Series product. Make sure you are plugged into the DF1 port, not the configuration port on the 1747-KE. Make sure you are no longer in setup mode for the 1747-KE, and that the jumpers are set to RS-232.

Once you have added the driver, and created a TAG in your project, there is no more programming or setup required on your part.

If you want to display a PLC tag on the screen, just use a data display box, and associate it with the tag you created. The Eason will take care of reading from the PLC and displaying a current value.

If you change that value, the Eason will then write that new value back down to the PLC.

If your Eason BASIC code or Pseudocodes happen to require the PLC value in a calculation or evaluation, the driver will automatically read the value from the PLC, or write back if the value has changed.