



**Communication Settings for
Allen Bradley (Micrologix 1000)**

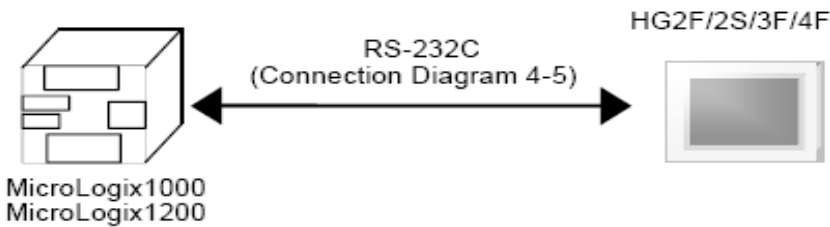
and

**IDEC Touchscreens
(5.7" HG2F, 10.4" HG3F and 12.1" HG4F)**

Introduction

The information here will help you configure IDEC touchscreens (5.7” HG2F, 10.4” HG3F, or 12.1” HG4F) and the Allen Bradley Micrologix PLC using Micrologix/SLC 500 (Full Duplex) protocol. For other supported Allen Bradley PLCs and communication settings/range of addresses, please refer to WindO/I-NV2 manual. Select “Host Interface,” then select Connection to a PLC.

<http://www.idec.com/Products/ENG/PDF/manuals/WindOI/V282/English/mainmenu.pdf>

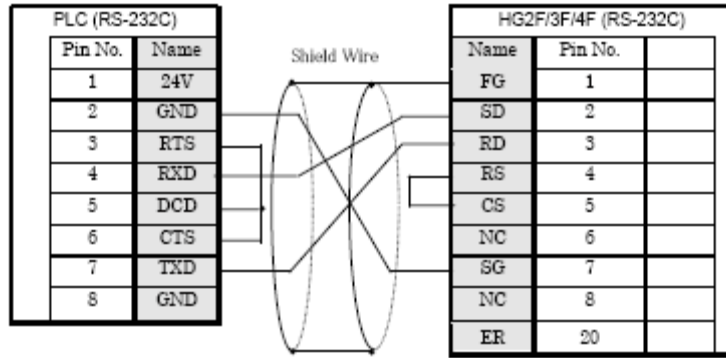


Micrologix 1500

Cable part number: HG9Z-2C135A (between Micrologix to HG2F/3F/4F)

Connection Diagram 4-5: MicroLogix (RS-232C) to HG2F/2S/3F/4F

HG2F/3F/4F



Connector

8 pin Mini Din Male Connector

D-Sub, 25 Pin Male

Communication Settings

4.4.1 MicroLogix, SLC 500 (Full Duplex)

Item	Setting
Baud Rate (bps) (*1)(*2)	1200, 2400, 4800, 9600, 19200
Data Bits (*2)	8 (fixed)
Parity (*1)(*2)	None or Even
Stop Bits (*1)(*2)	1
Flow Control	ER or None
Serial Interface	RS-232C
Driver (*1)	DF1 Full-Duplex (*4)
Control Line (*1)	No Handshaking (*4)
Error Detection (*1)	CRC (*4)
Embedded Response (*1)	Auto Detect
Duplicate Packet Detect (*1)	Enable
Node Address (*1)(*2)(*3)	0 to 254 (decimal)

(*1) Select using RSLogix software (set Chan0 to System of Controller-Channel Configuration).

(*2) The setting for this item must match the setting on the HG Series unit.

(*3) Select the HG2F/2S/3F/4F Node Address using the Node Address (HG) under "Project Settings" in WindO/I-NV2 software.

(*4) Be certain to select as indicated.

Addressing

4.5.1 MicroLogix, SLC 500 (Full Duplex)

Bit Device

Device	HG Device Symbol	PLC Device Symbol	Address range	Read/ Write	Address Base
Output	O	O	0 to 1625515	R	10(*1)
Input	I	I	0 to 1625515	R	10(*1)
Bit	B	B	300000 to 325515, 900000 to 25525515	R/W	10(*2)
Timer Enable Bit	TEN	T(EN)	4000 to 4255, 9000 to 255255	R	10(*3)
Timer Timing Bit	TTT	T(TT)	4000 to 4255, 9000 to 255255	R	10(*3)
Timer Done Bit	TDN	T(DN)	4000 to 4255, 9000 to 255255	R	10(*3)
Counter Up Enable Bit	CCU	C(CU)	5000 to 5255, 9000 to 255255	R	10(*3)
Counter Down Enable Bit	CCD	C(CD)	5000 to 5255, 9000 to 255255	R	10(*3)
Counter Done Bit	CDN	C(DN)	5000 to 5255, 9000 to 255255	R	10(*3)
Counter Overflow Bit	COV	C(OV)	5000 to 5255, 9000 to 255255	R	10(*3)
Counter Underflow Bit	CUN	C(UN)	5000 to 5255, 9000 to 255255	R	10(*3)
Counter Update Accumulator	CUA	C(UA)	5000 to 5255, 9000 to 255255	R	10(*3)
Control Enable Bit	REN	R(EN)	6000 to 6255, 9000 to 255255	R	10(*3)
Control Queue Bit	REU	R(EU)	6000 to 6255, 9000 to 255255	R	10(*3)
Control Asynchronous Bit Done Bit	RDN	R(DN)	6000 to 6255, 9000 to 255255	R	10(*3)
Control Synchronous Done Bit	REM	R(EM)	6000 to 6255, 9000 to 255255	R	10(*3)
Control Error Bit	RER	E(ER)	6000 to 6255, 9000 to 255255	R	10(*3)
Control Unload Bit	RUL	R(UL)	6000 to 6255, 9000 to 255255	R	10(*3)
Control Running Bit	RIN	R(IN)	6000 to 6255, 9000 to 255255	R	10(*3)
Control Found Bit	RFD	R(FD)	6000 to 6255, 9000 to 255255	R	10(*3)

Allen Bradley: Data Files Format

Example of Allen Bradley Data Files format:

I:e.s/b or O:e.s/b or Nf:3/b

I = Input, O = Output, N= Integer file

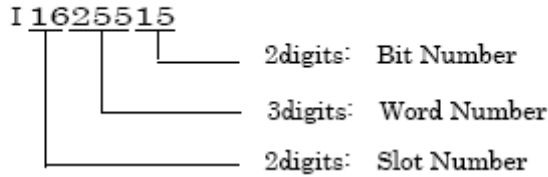
: = Element delimiter, e = Slot number, f = File number

. = Word delimiter. Only required when word number is used.

s = word number, / = Bit delimiter, b = Terminal number

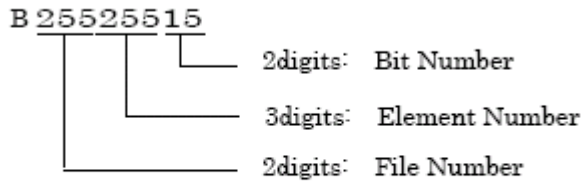
Example: AB data file converted to WindO/I-NV2 address format.

(*1) Address selection rule is as follows.



Example: Micrologix Address -- I:2.12/6, WindO/I-NV2 Address – I 0201296

(*2) Address selection rule is as follows.



Example:

MicroLogix1200 Address --- B10:123/5

WindO/I-NV2 Address --- B 1012305

Required Cables

- HG9Z-XCM1A (Connects PC and HG2F/3F/4F)
- HG9Z-2C135A (Connects Micrologix and HG2F/3F/4F), diagram 4-5
- 1761-CBL-PM02 (Connects PC and Micrologix)

Required Software

- Install WindO/I-NV2 (programming software for HG2F/3F/4F)
- Install Allen Bradley RSLinx and RSLogix500 (programming software for Micrologix)

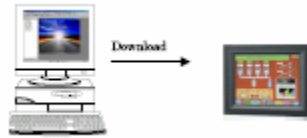
Devices used for testing

- Micrologix 1000
- HG2F-SS22VCF (5.7" display)

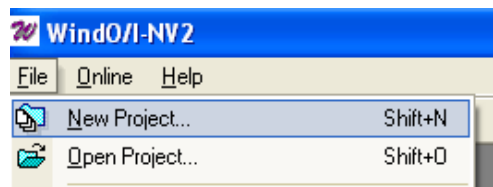
Step 1: WindO/I-NV2 Software

Configure the HG2F/3F/4F by creating a program in WindO/I-NV2 software

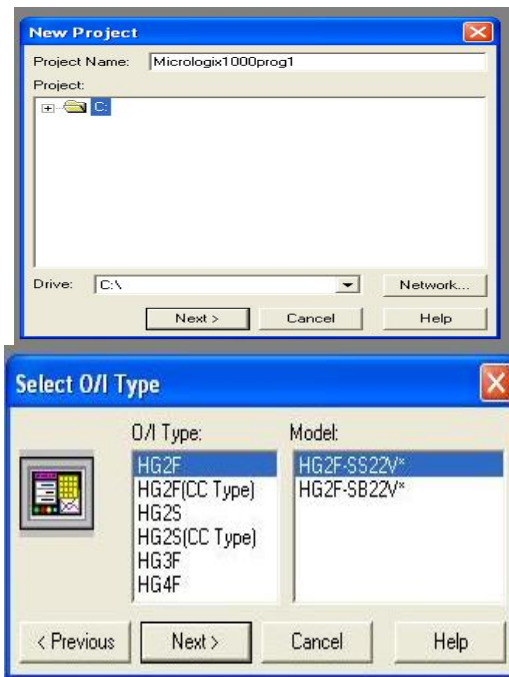
- 1) Connect the programming cable part number HG9Z-XCM1A from PC to HG2F/3F/4F (Serial 1 port).



- 2) Launch WindO/I-NV2 software. Select File/New Project.



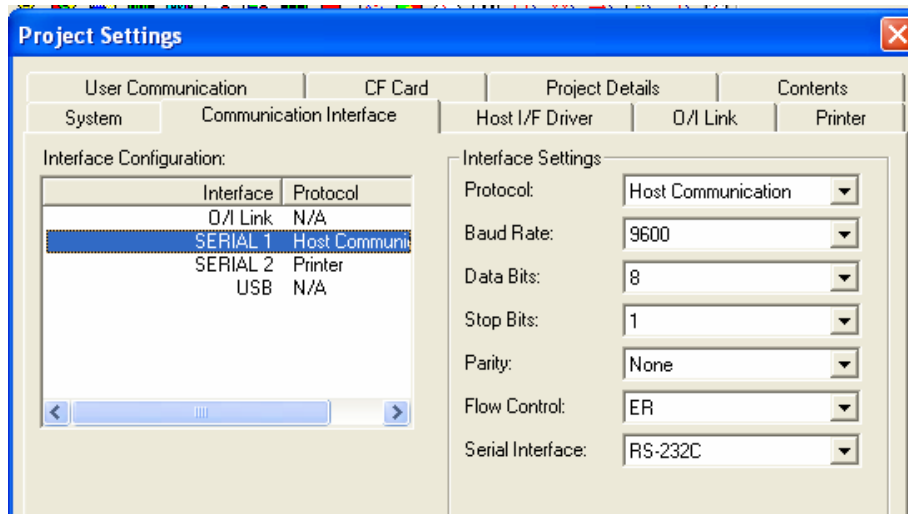
- 3) Create a project name. In this example, the project name is called Micrologix1000prog1.
- 4) Click the Next button to choose the O/I and Model type.



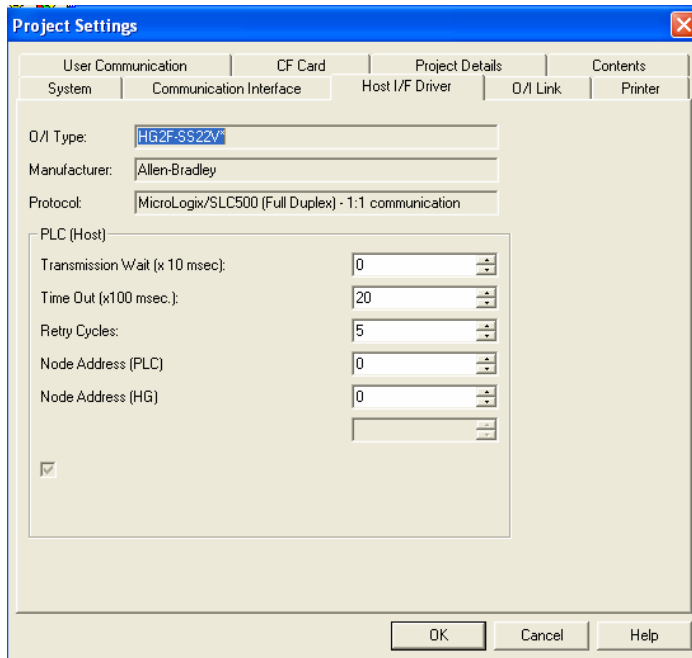
- 5) In the Host I/F Driver, select Allen Bradley as the manufacturer and MicroLogix/SLC500 (Full Duplex) as the protocol. Click the Next button to continue.




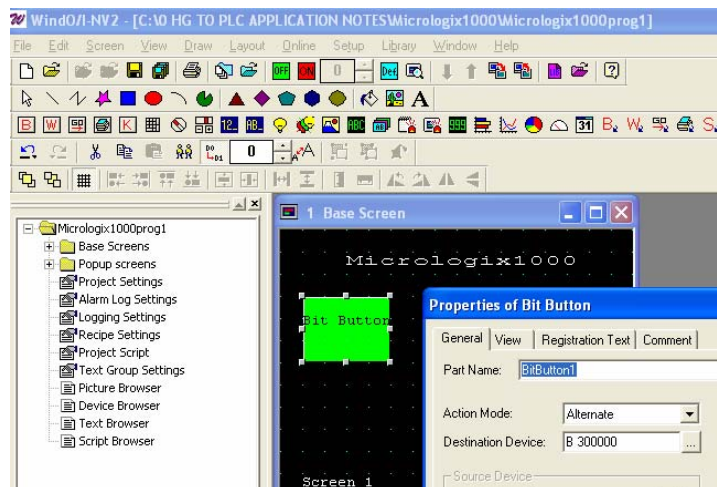
- 6) In Project settings, select the Communication Interface tab. Under Interface Configuration, select Serial 1 Host Communication. Then follow the Interface Settings below.



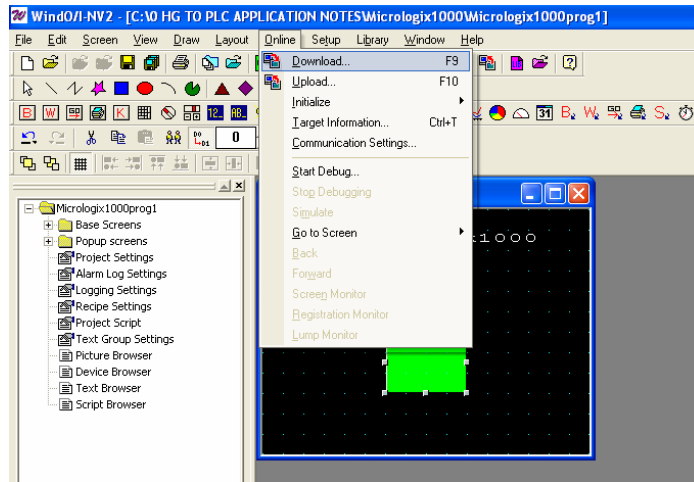
- 7) Select the Host I/F Driver tab. The only changes you need to make are the Node Address (PLC) and (HG). Make sure these settings match with the Micrologix node address settings. In this example, the Micrologix is Node 0; therefore the settings here for Node Address (PLC) and (HG) are both “0.” Select the OK button to continue.



- 8) Create Base Screen 1. For a basic example, select the Bit Button icon  and drop it on the screen.
- Double click on the bit button to view the Properties.
 - Action Mode: <select> Alternate
 - Destination Device select B: Binary, Address: 300000. This is equivalent to B3:0/0 in Micrologix PLC.
 - Click the OK button.



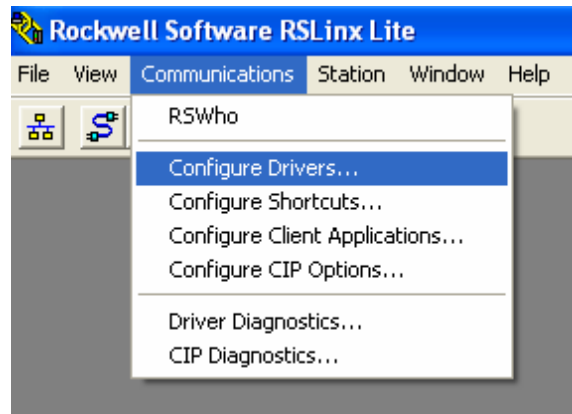
9) Finally, download the project to the HG2F/3F/4F. Select Online then Download.



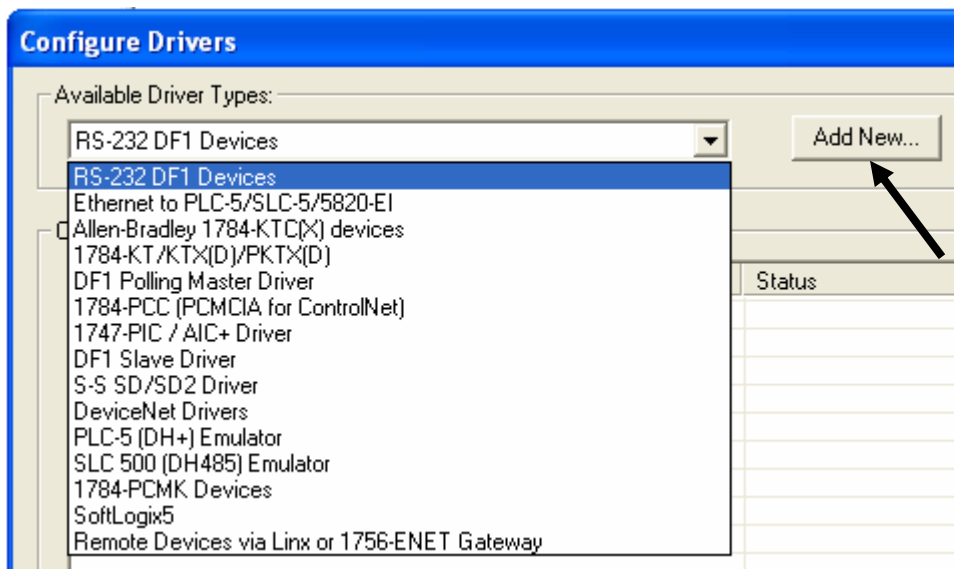
Step 2: RSLinx and RSLOGIX Software

Configure Micrologix 1000 PLC

- 1) Connect programming cable part number 1761-CBL-PM02 from PC to Micrologix programming port.
- 2) Launch the RSLinx software. The RSLinx allows you to configure the AB driver. Select Communications / Configure Drivers.



- 3) Configure Drivers:
 - a) Select RS232 DF1 devices.
 - b) Click the Add New
 - c) Choose a name for the driver and click OK



- 4) Next, follow the settings below except the Comm Port (select your own comm. port). These communication settings should match the touchscreen settings.

Configure Allen-Bradley DF1 Communications Device

Device Name: AB_DF1-1

Comm Port: COM4 Device: SLC-CH0/Micro/PanelView

Baud Rate: 9600 Station Number (Decimal): 00

Parity: None Error Checking: CRC

Stop Bits: 1 Protocol: Full Duplex

Auto-Configure

Use Modem Dialer Configure Dialer

Ok Cancel Delete Help

- 5) Once the settings are done, click the OK button and it should show you that the driver is in the Running status.

Configure Drivers

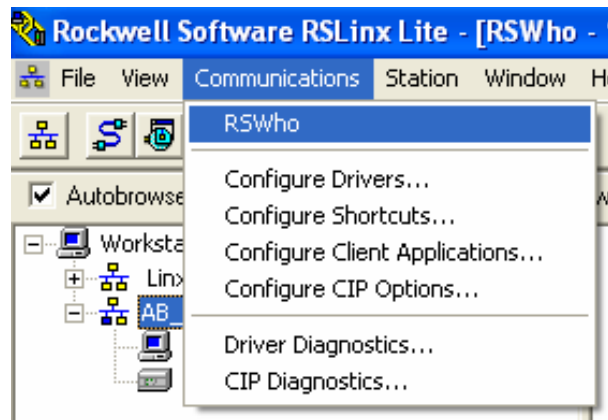
Available Driver Types:

Configure Drivers

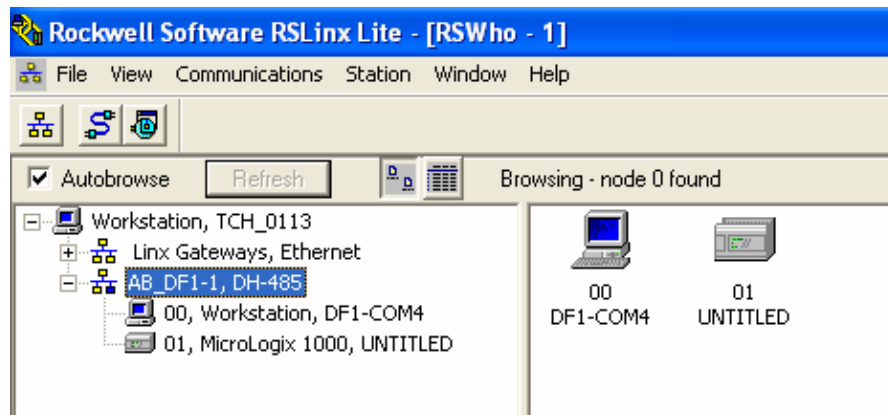
Name and Description	Status
AB_DF1-1 DH485 Sta: 0 COM4:PORT CONFLICT	Running

Close Help Configure... Startup... Start Stop Delete

- 6) Once you have confirmed that the driver is running, click the Close button to close the dialogue box. Next, go to Communications and select RSWho to confirm that your PC is communicating with Micrologix PLC.

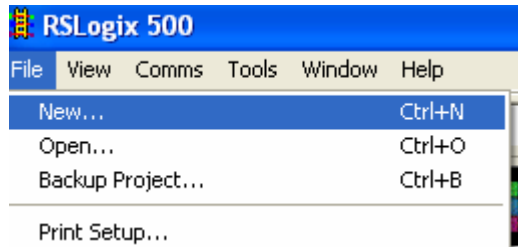


- 7) The picture below shows that you have successfully configured the PC to talk to the Micrologix PLC.

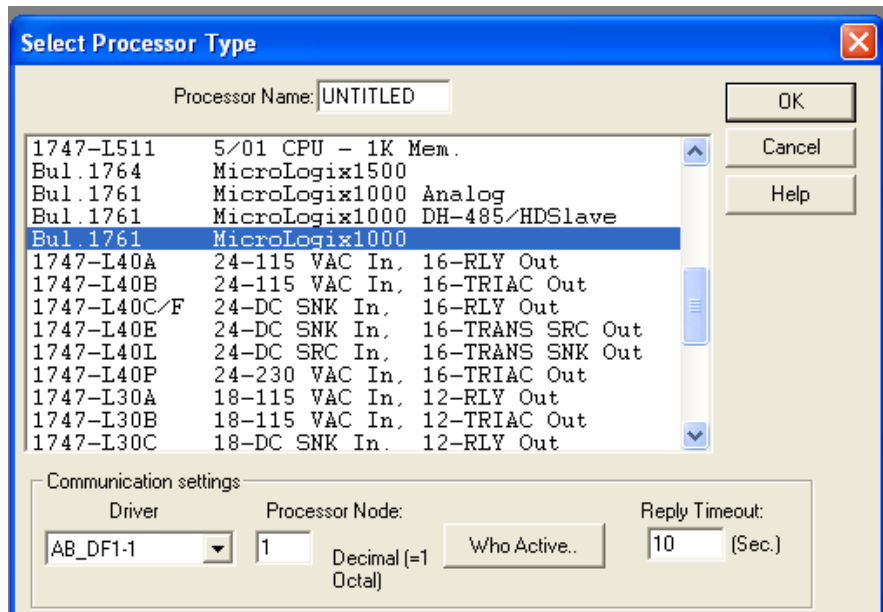


Step 3: Create a simple ladder logic using RSLogix500 software

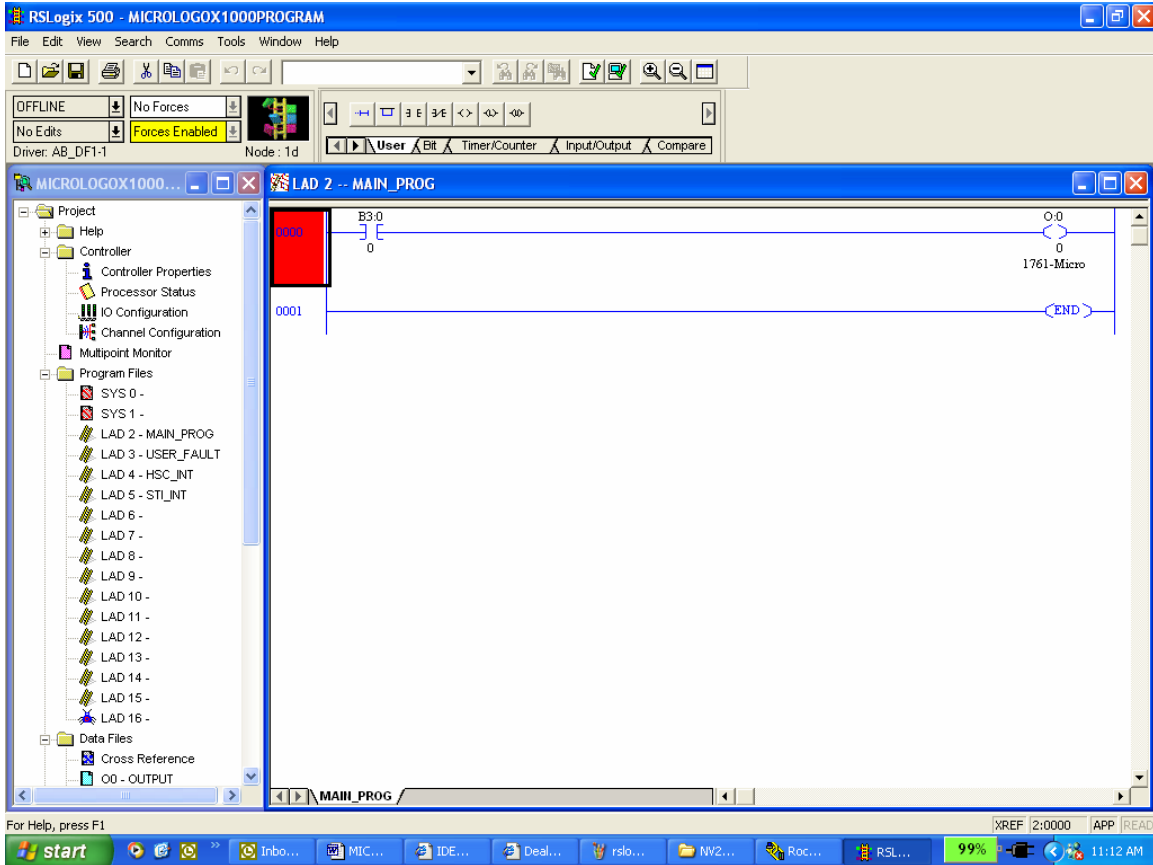
- 1) Launch RSLogix500 and select File/New.



- 2) Select the Processor type: Micrologix 1000



- 3) Create simple ladder logic as shown below. The normally open contact is assigned B3:0/0 and the output coil is assigned O0:0/0. Then download the project by selecting Comms / Download.



Once the ladder logic is downloaded to the Micrologix PLC, you can connect the cable part number HG9Z-2C135A (between the PLC and HG2F/3F/4F).

On the touchscreen, press the bit button and see if the output on the PLC is triggered. If so, then the communication is successful. You may now continue with your project.