

# Chapter 2 Quick Start Guide

## 2.1 Getting Started

The quick start guide is intended to show a basic setup and programming of the XGB PLC. For more details on the features of the XGB PLC, refer to the rest of this manual.

### 2.1.1 Items Needed

You will need the following items to set up your PLC for this example:

1. A source of 24VDC power
2. A LSIS TG7-1H40S Terminal Board
3. A LSIS C40HH-05SB-XBI Terminal Board Connector (Other lengths are available)
4. 22-18 AWG stranded wire
5. A normally open test switch
6. A test lamp of 12-24VDC power supply
7. Small Philips or Flat screwdriver
8. A USB Type A to Type B Mini programming cable

## 2.2 XG5000

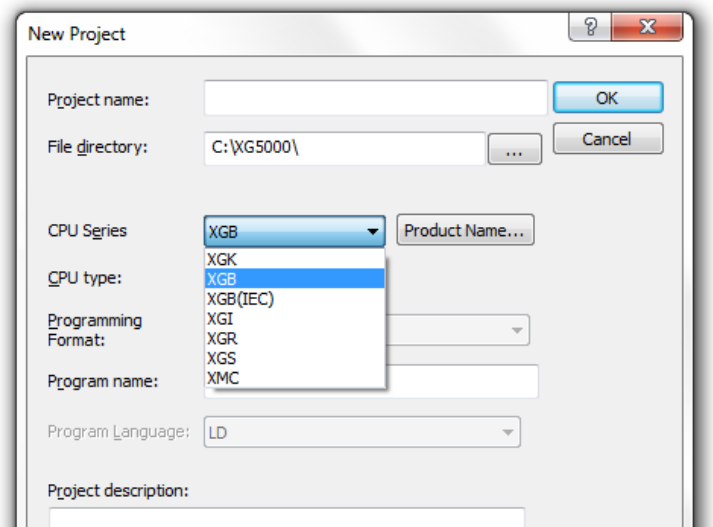
### 2.2.1 Install XG5000

1. Once you have downloaded the XG5000 installer, run the program and follow the on-screen steps to install XG5000.

## 2.3 Writing a Program

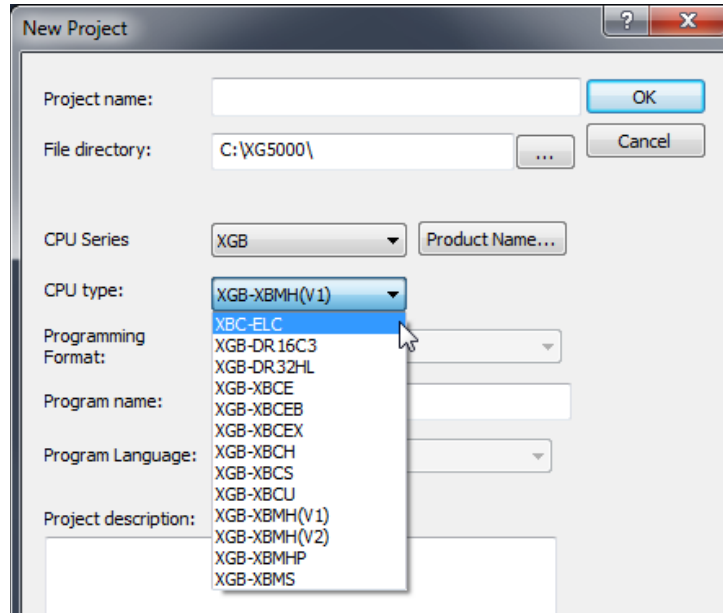
### 2.3.1 Opening a New Project

1. Open XG5000 software by selecting **Windows Start > All Programs > XG5000 folder > XG5000**.
2. If prompted to allow XG5000 to make changes to your computer, select **Yes**.
3. Create a new project by selecting **Project > New Project**
4. In the **New Project** window, give your project a name. Then select **XGB** from the **CPU Series** dropdown menu.



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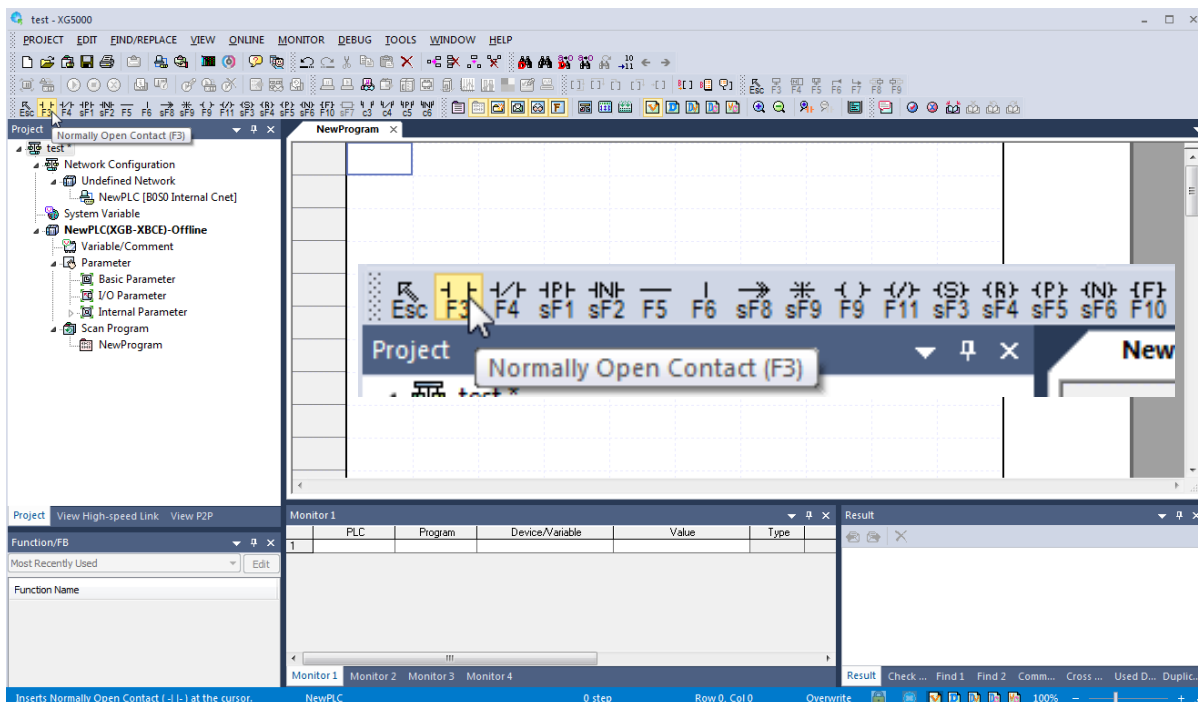
- Next select the **CPU Type** according to the chart below.



Software CPU Type Selection	Corresponding PLC Series
XGB-XBCE	E Type
XGB-XBCS	SU Type
XGB-XBMH(V1)	H Type
XGB-XBCU	U Type

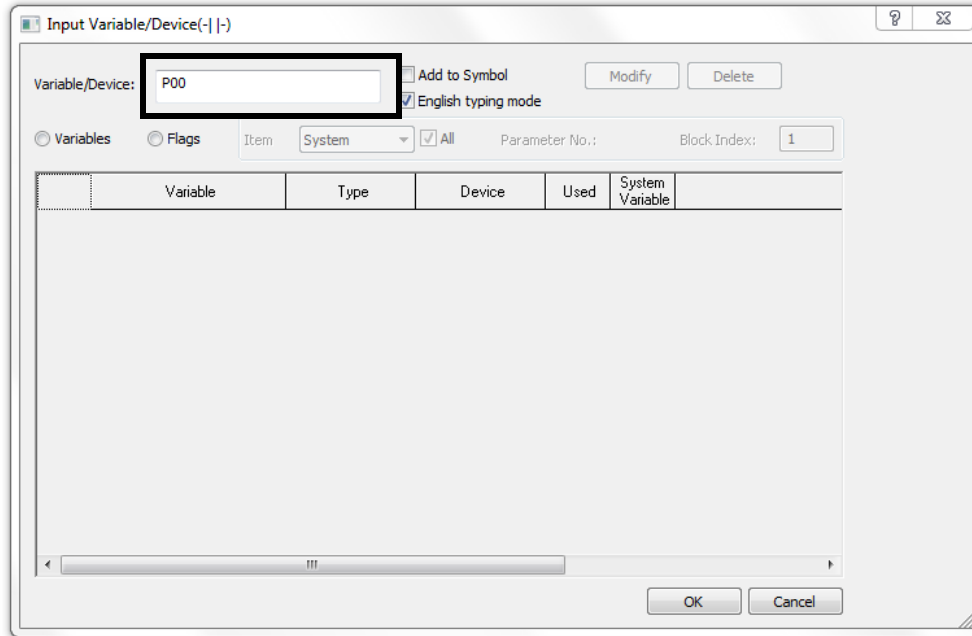
### 2.3.2 Writing a Ladder Logic Program

- Select the **Normally Open Contact** by clicking the icon in the top right of the XG5000 window and click the first cell in the first rung of the NewProgram Window to place the contact.

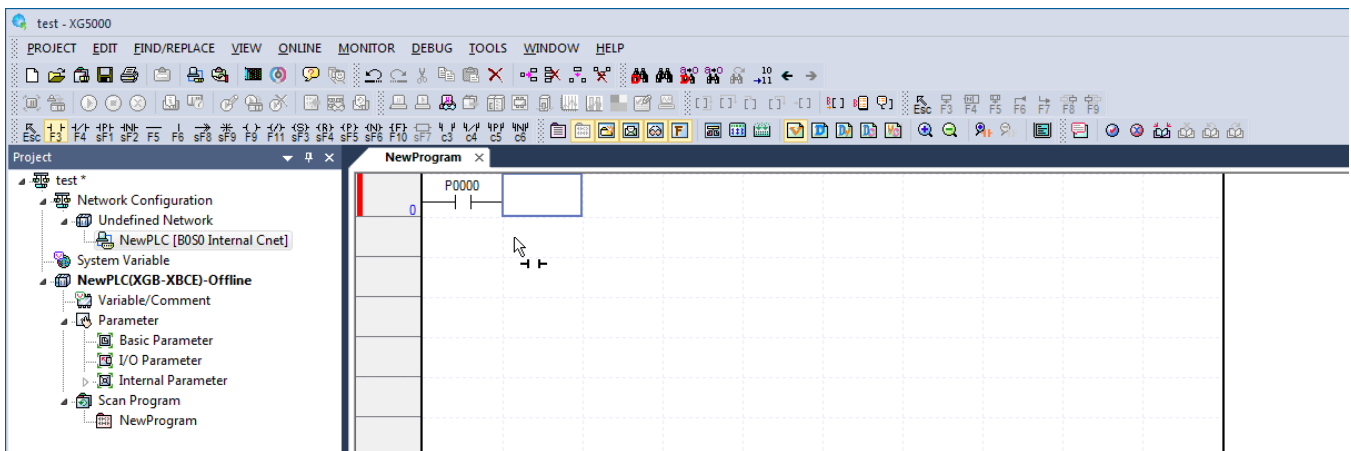


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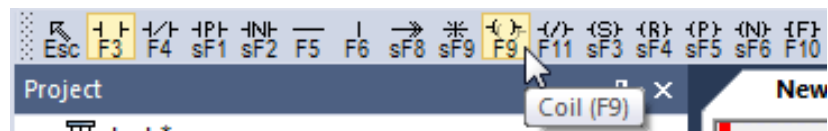
2. Upon placing the contact, the **Input Variable/Device** window will appear.



3. Input **P00** for the **Variable/Device** and click **OK** to insert the contact.

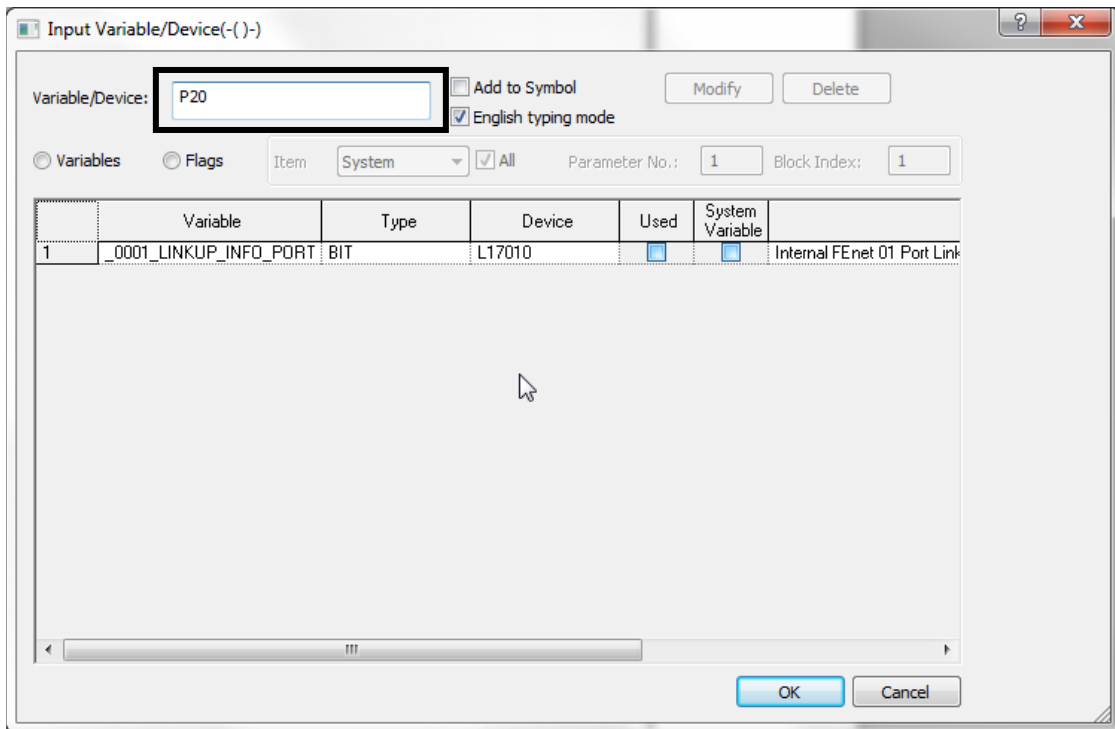


4. Next, select the **Coil** by clicking the icon or pressing **F9**. Pressing **F9** will automatically insert the coil in the last slot of the rung.

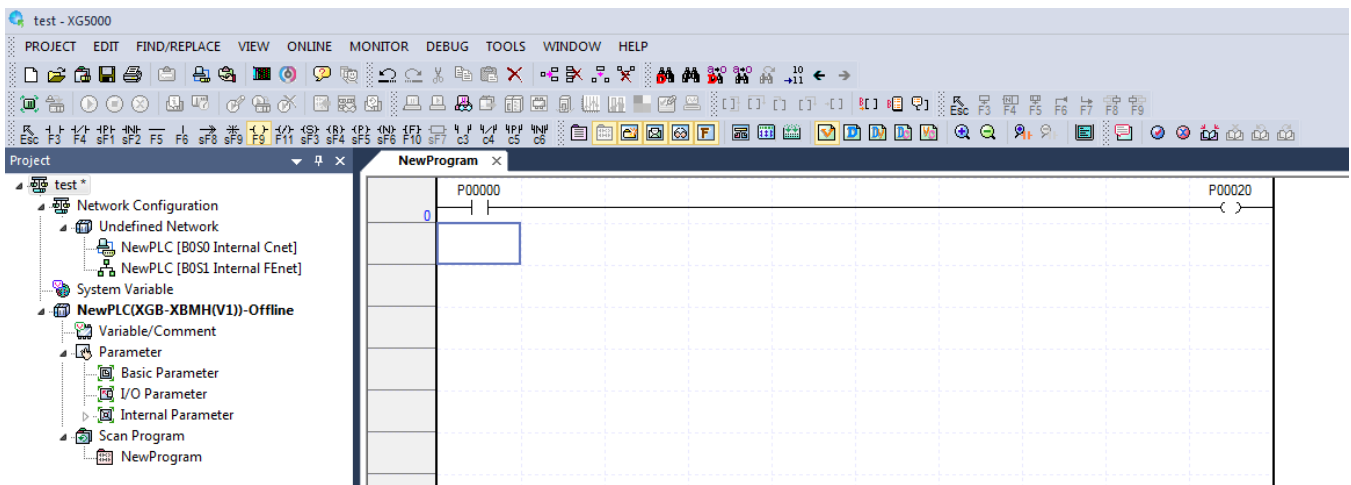


5. Then click the last cell in the first rung of the New Program Window to place the coil. The **Input Variable/Device** window will appear.

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6. Input **P20** for the **Variable/Device** and click **OK** to insert the coil.

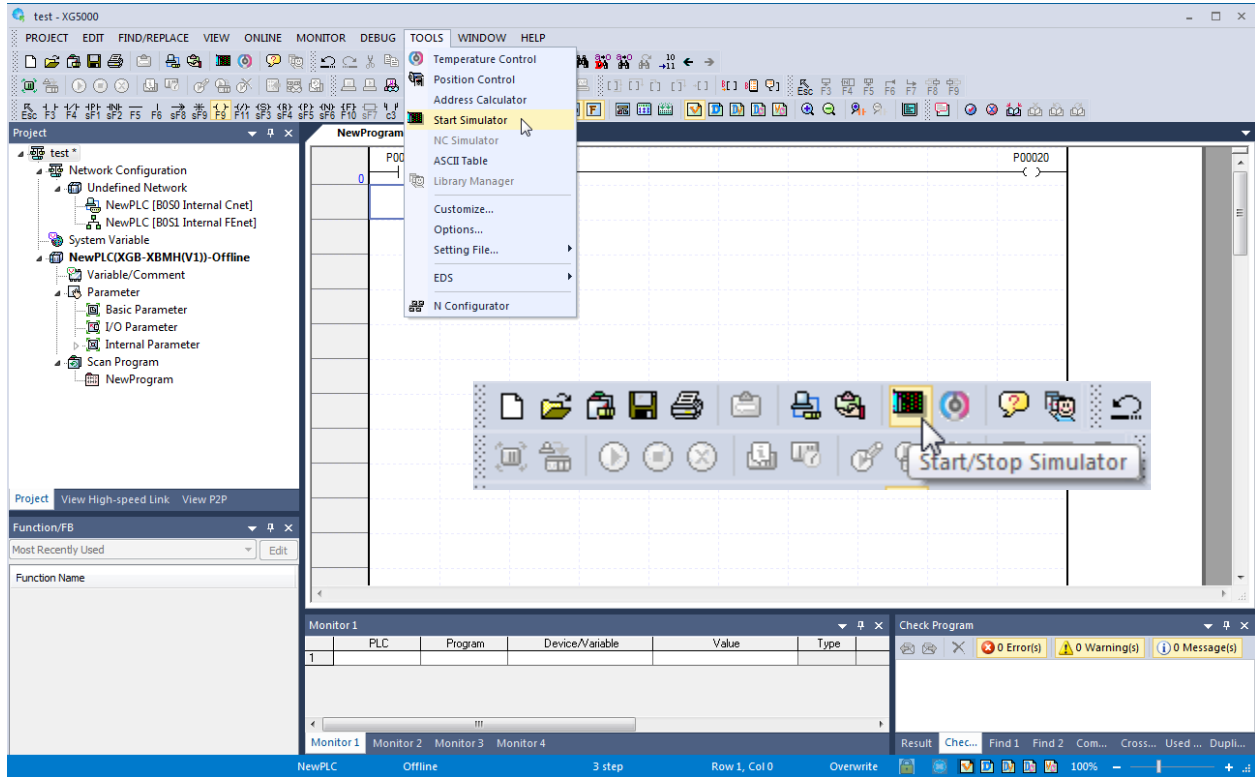


7. You have now written a simple Ladder Logic Program. This program will instruct the PLC to turn on the **P20** output coil when **P00** input is closed.

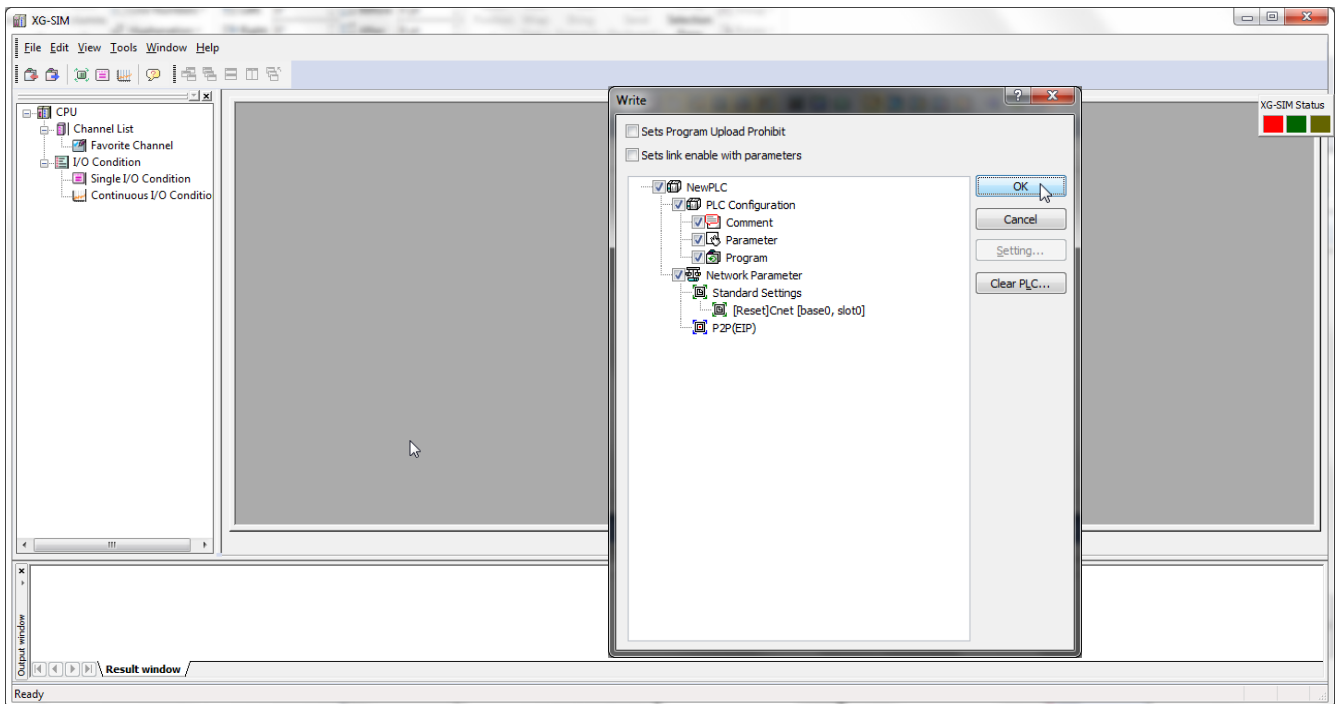
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### 2.3.3 Simulating Program Without PLC

1. The program can be simulated using XG5000 without needing to connect to a physical PLC.
2. To start the simulator, click either the taskbar icon shown below or **Tools > Start Simulator**.



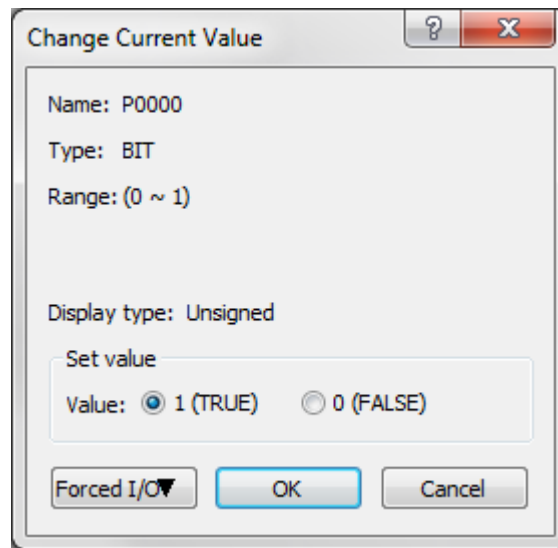
3. This will open both the **XG-SIM** window and **Program Write** window. Click **OK** to write the program into the simulator.



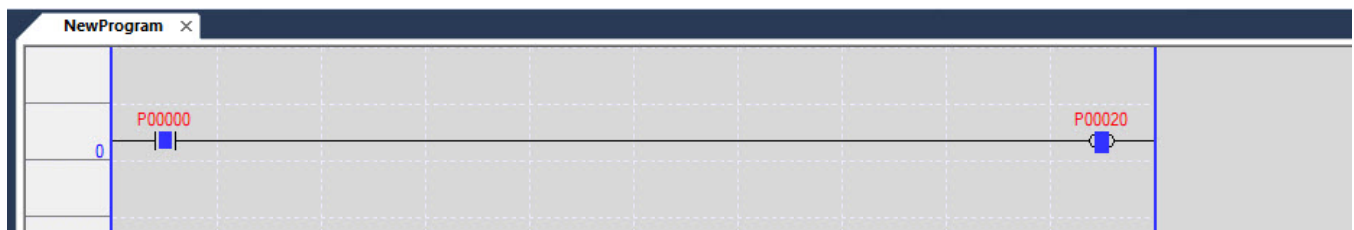
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4. The simulator allows you to control and test all functions of your ladder program. Double click the **P00** contact to open the **Change Value** window.



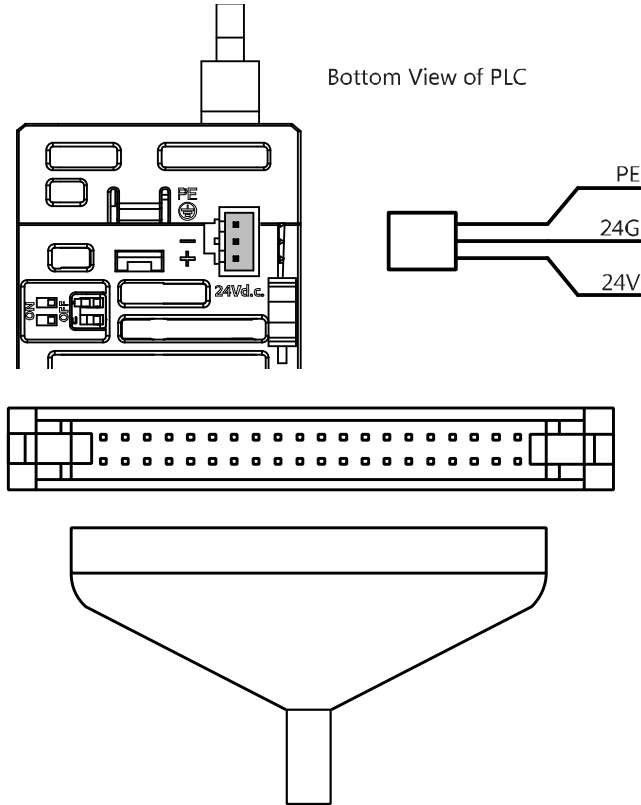
5. Click **OK** to activate **P00** which will cause **P20** to turn on.



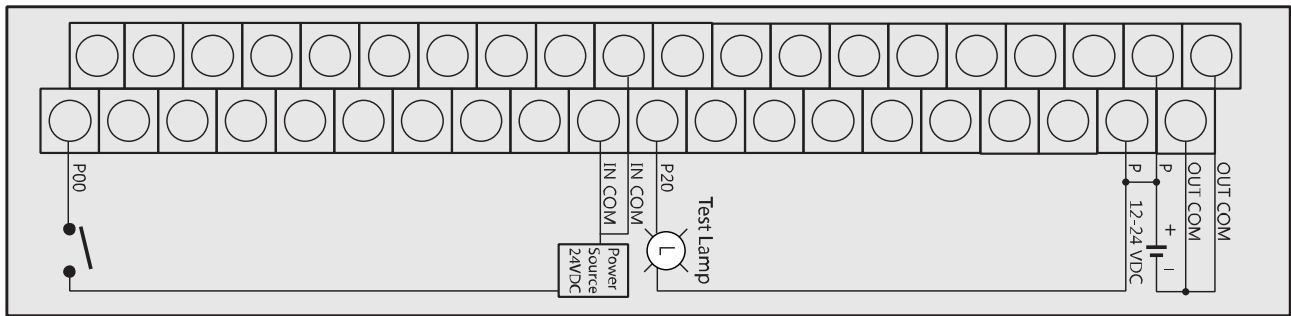
**2.4 Installation and Wiring of PLC**

**2.4.1 Connect Power Wiring**

1. We are going to wire PLC and test program using PLC hardware.
  - a. Connect power and I/O wiring to PLC according to the drawing below.
  - b. The **Test Switch** will be wired to input **P00** using power from a 24VDC supply.
  - c. The **Test Lamp** will be wired to output **P20** sharing power from the 12-24VDC supply powering the P terminal (Photocoupler Power). Either P terminal can be used.
  - d. For more details see Chapter 3: Installation and Wiring.

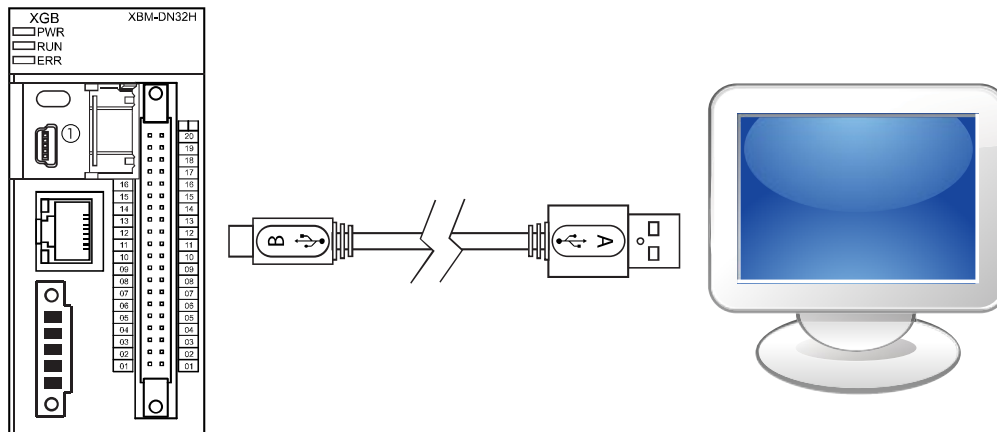


P01	P03	P05	P07	P09	P0B	P0D	P0F	NC	COM	P21	P23	P25	P27	P29	P2B	P2D	P2F	P	COM
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	B19	B20
P00	P02	P04	P06	P08	P0A	POC	P0E	NC	COM	P20	P22	P24	P26	P28	P2A	P2C	P2E	P	COM
A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16	A17	A18	A19	A20



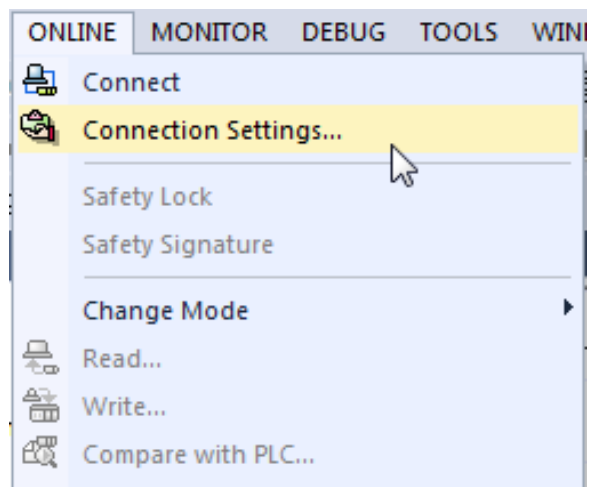
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- e. Next, connect the PLC to your computer using the Comm. 1 port and cable.



## 2.5 Writing Program to PLC

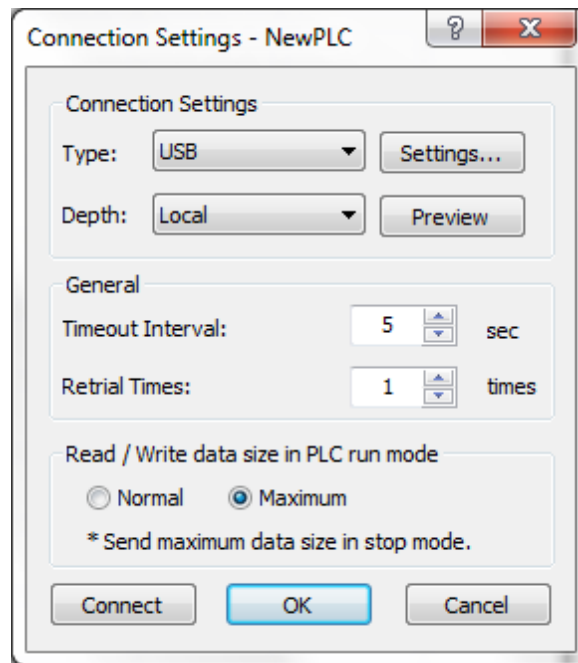
1. Return to XG5000 and the test program we have written.
2. Open the connection settings by clicking: **Online > Connection Settings**



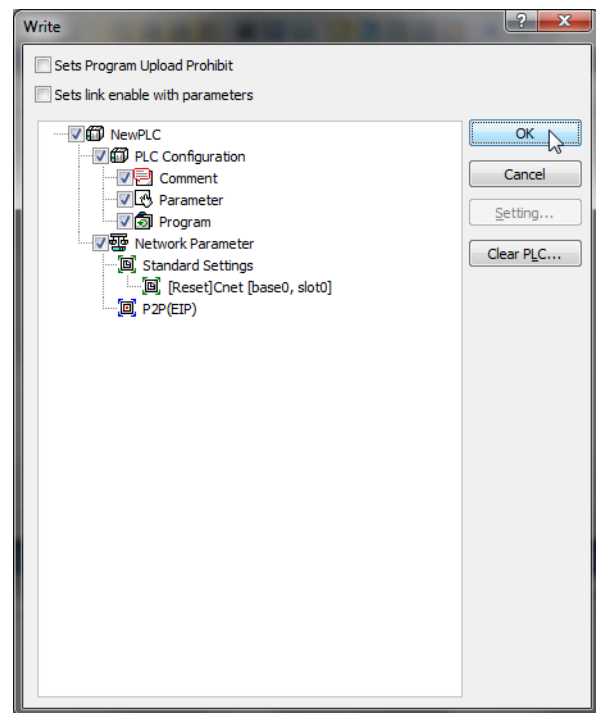
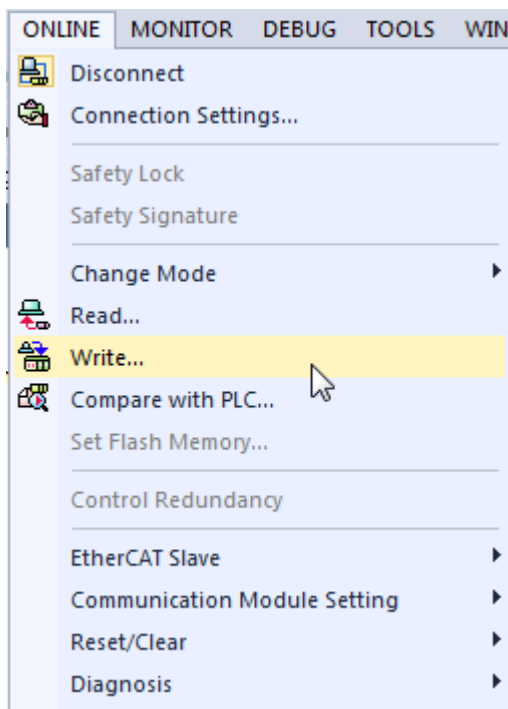


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- This will show the **Connection Settings Window**. Since we are using an H-type PLC in this example, set **Type** to **USB** and **Depth** to **Local**. XG5000 software will automatically detect the PC port where the PLC is connected.

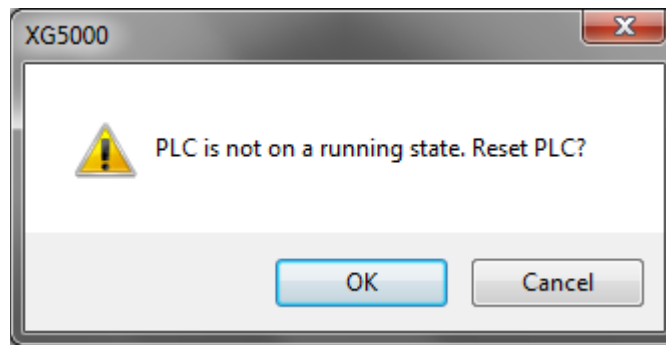


- Then click **Connect** and **OK**.
- Now that the PLC is connected to your PC. Click **Online > Write**. The **Write Window** will appear. Click **OK**.

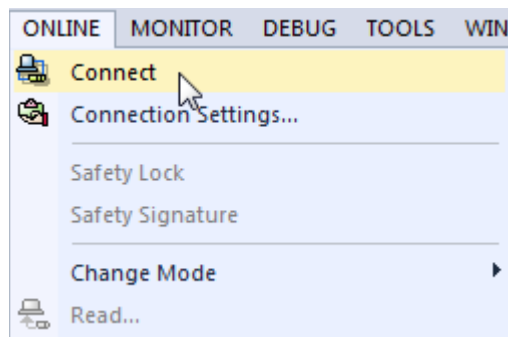


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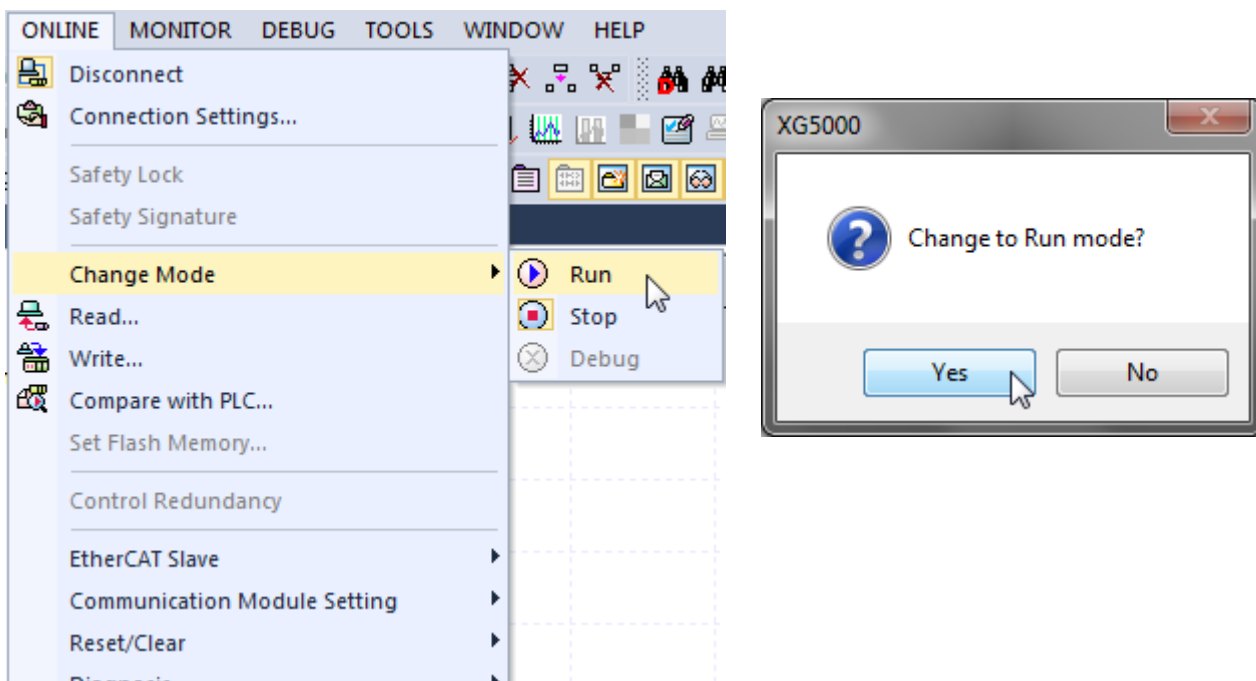
6. Since the PLC was not running when we wrote the program to it, XG5000 will prompt to reset the PLC. Click **OK**.



7. To reconnect with the PLC click **Online > Connect**.



8. To run the PLC with its new program, click **Online > Change Mode > Run**.



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- You can now test the program by closing the switch connected to **P00** which will cause output **P20** to turn on.

