

Circular Robot

Please read this information carefully.

This kind of robot is supported on a circular platform with the dimensions of a CD. Its main feature is modularity: the robot is capable to accommodate different sensor types. The execution of a task is made possible by programming a microcontroller. The robots can be programmed using a PC, through a high-level visual language, where the programmer just needs to implement a flowchart for the desired robot behavior inserting and linking blocks, allowing the robot to perform a set of different tasks only limited by the programmer's imagination.

1 – Robot Technical Manual

This manual permits an ample understanding of the different inherent details to the robot's construction. For advanced programmers, this manual explains how to program the robot through the low-level language for the microcontroller - assembly PIC. All the details concerning the high-level Robot Interface Programming Tool are included in the help files of this application.

2 – Robot Interface

This interface allows programming the robot through a flowchart based on a set of pre-defined blocks. After the program had been compiled it can be sent to the robot through one of the PC's Com ports. Only microcontrollers provided by IdMind can be programmed with this software tool.

This application should be installed in a PC containing at least one free serial port (Com1 or Com2). No problems were reported concerning the installation of the application over the win9x and winMe operating systems. It can also be installed over the win2000 and winXP operating systems, but in this case the installation should be made with administrative privileges (Com ports should be enabled for all users).

The application will be installed in the following folder:

C:\Program Files\prograf2\ (Windows English version)

Run the application following one of the shortcuts - "prograf2.exe" – that can be found after the installation in the desktop or in the menu Start\Programs.

All the details concerning the explanation of this application can be found in the Help Topics of it. The Help Topics includes also 8 program examples. These program examples can be opened at the installation folder (C:\Program Files\prograf2\).

Note: (for advanced programmers) after the robot program compilation, the file containing the assembly code – prog.asm - can be found in the installation folder.

Program Loader1

In the installation folder is also possible to find an application called: Loader1.exe. Through this application the user can download programs that were made and compiled using other programming tools for the PIC16F876 microcontroller, namely Microchip's

MpLab. This application can be downloaded freely in the following address:
<http://www.microchip.com/1000/pline/tools/picmicro/devenv/mplabi/mplab5x/index.htm>

The technical manual explains how to use Loader1. Please note that only files with ".hex" extension can be downloaded into the robot using this application.

Note: The high-level Robot Interface Programming Tool automatically launches this application after program compilation.

Program Sensors

This application (Sensors.exe) can be found in the installation folder. This application allows the user to see the values that are being read by the sensors.

To use this tool please follow these instructions:

Put the robot ready to be programmed (refer to technical manual or to the Help Topics of the Interface). Run the Loader1 application. Open the "sensors.hex" file that can be found in the installation folder. Send this file to the robot. Turn off the robot programmer board. Turn off and then on the robot main power. Open the installation folder and run the Sensors.exe file. Choose "Com 1" or "Com 2" depending on which port you are using. Press "START" and you will start seeing the sensors readings evaluating on the screen. In order to fix a value you can "STOP" the readings any time you like.

To uninstall the software package, the user just needs to delete the installation folder and the associated shortcuts from the desktop and from the menu Start\Programs.