MEAN FEATURES:
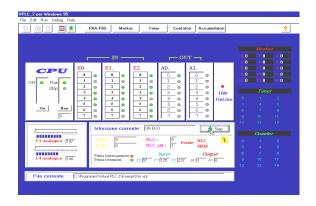- Cost-Effectivity
- Great Flexibility in applications
- Friendly and safe use
- Educational Effectivity
- Applicational Modules Available
- Manufactured according to CE rules
- ISO-9001 quality standard
- Practical Exercises book included

PLC-SIM is an innovative and cost-effective product, entirely designed and manufactured by our company, which supports both basic and advanced training courses on PLC.
It uses the **AWL** standard language (**DIN 192239**), one of the most diffused all over the world as it is adopted from all the main PLC manufacturers.

PLC-SIM allows the programming, simulation and checking of the industrial processes exactly like they happen in real-life avoiding the educational limits and the high costs of the real equipment.
A standard PC in basic configuration is only required as a support for the programming and simulation including all the editing, debug, storing and graphical display features.

In case of limited budgets availability, it is possible to purchase only the managing software **V-PLC** which can work autonomously granting at the same time the high educational effectiveness and the extreme fitting to the programming and debug techniques usually employed in Industry.

PLC-SIM allows, as a real industrial PLC, the direct connection with real external input/output devices (like switches, lamps, relays, remote controls, electronic drives, pneumatic components, and so on) to check practically the automation circuits and systems also of high complexity.

A wide range of application modules are available to perform practical experiments like: motor controls, dynamic process simulators, data and signal simulator panels and so on.

WHAT IS THE "PLC-SIM"

The **PLC-SIM** is a software and hardware device specially designed for educational purposes, to be connected to a PC through the RS-232 serial port, for the study and simulation of industrial medium size PLC. The system consists of four parts:

1) A remote input-output hardware device built in a desktop case mod**. PLC-PAD** which includes:
   1) no.24 ON/OFF 24 Vdc inputs (+50 Vdc max)
   2) no.16 ON/OFF relay outputs (free potential)
   3) no.2 analog normalized signal inputs (0÷10V)
   4) no.1 analog normalized signal output (0÷10V)
   5) no.1 PWM signal output (0÷16 KHz)
   6) no.2 industrial front connectors for I/O signals
   7) no.1 rear 64 ways connector for I/O signals
   8) no.2 status leds
   9) no.1 RS-232C standard serial port (PC connection)

The I/O signals pass through normalized industrial high reliable connectors suitable for intensive use.
The digital and the analog signals are acquired by the PC and their status is displayed in real time on the monitor. The remote device-PC data exchange is made by a high speed RS232 serial port which enables the use of any PC (even notebook) without any modification or upgrading.

2) A Software (for Windows 95/98/2000/NT) mod. **V-PLC** manages the PLC programs edited by means of any text editor. It uses an easy to learn and user friendly window graphical interface.
The program processing is displayed on the PC screen through a standard PLC front panel representation. The programming of the PLC is achieved using the standard AWL language (Instructions List) according to DIN 192239 rules which is used by Siemens to program its PLC SIMATIC S5-S7 family and also adopted by other important PLC manufacturers.
Ladder logic programming language will be available soon.
The software includes an Help on line function.
 V-PLC software can be purchased also separately as a stand alone product .

3) AC/DC adapter (220Vac/12Vdc-1A)

4) Educational Manual with exercises and instructions for use.

PERFORMANCES

The **PLC-SIM** allows to learn the operation and the programming of an industrial PLC and to simulate, in real mode, complex industrial processes. For its low price it represents the best cost effective solution to fit a complete laboratory including a number of workstations suitable for all the students. The students have the possibility to program, to perform changes or corrections and to check the program's operation in a very short time also connecting external devices. It is designed for educational purposes to cover the requirements of students and teachers aiming to learn quickly and easily the topics related to the PLC's programming and their use. The possibility to connect input/output external analog or digital devices (i.e. push buttons, lamps, relays, drives, etc,) directly to the hardware unit allows to manage even complex processes.

OPERATIONAL MODES

The system allows the development of programs of up to 10.000 statements that can be performed in run or step-by-step modes. The use of the step-by-step mode is particularly useful during the program DEBUGGING.
In this mode the display shows:
❑ the name of the program in execution
❑ the current instruction
❑ the ACC1 and ACC2 accumulators contents
❑ rising and falling accumulators edges
❑ the RLC register content
❑ the Timers (no 15 available)
❑ the Counters (no 15 available)
❑ the Merkers (no 15 available)
❑ the inputs and outputs status (analog and digital)
and others indications useful for checking the machine conditions (real time mode)

AVAILABLE FACILITIES :
❑ Loading of a program in ASCII format according to the **DIN 192239** standard
❑ Possibility to use any Text Editor selectable through a configuration file
❑ Selection of the serial port to be used for the PC connection (i.e. COM1, COM2, etc.)
❑ Possibility of inserting comments within the program
❑ On-Line Help for the main commands (printable)

FUNCTIONS

Available PLC standard functions:
❑ Main LOGIC functions: U, 0, UN, ON, S, R, =, U(,O(
❑ Functions acting on the ACCUMULATORS: L, T
❑ TIMER functions: SV, SI , SE , SA, SS
❑ COUNTER functions: ZV, ZR
❑ LOGIC functions between the ACCUMULATORS: UW, OW, XOW
❑ Comparing functions between the ACCUMULATORS: !=F, <=F, ><F, >=F, <F, >F, +F, -F
❑ JUMP functions: SPA, SPB
❑ Managing of OB, PB, FB, SB functional blocks

The analog inputs are mapped in EB3, EB4 and moved into the accumulators. The ACCUMULATORS can be loaded: by the L function, with DECIMAL (KF) or HEXADECIMAL (KH) constants or with the state of the inputs as BYTE (LEBx) or WORD (LEWx). There are available 15 Merkers, 15 Timers, 15 Counters widely covering any application need.

TECHNICAL DATA

❑ no 24 digital inputs 24 Vdc (50 Vdc max)
❑ no 16 digital relays outputs (Imax 2A at V=30Vdc)
❑ no 2 analog inputs (0÷10Vdc /0-255 steps)
❑ no 1 analog output (0÷10Vdc /0-255 steps)
❑ no 1 PWM output (0÷10V/0÷16 KHz)
❑ no 3 multi ways connectors for I/O remote connections
❑ no 1 Serial high-speed (9600 Baud) RS-232 port
❑ power supply: 12Vdc/1A (external adapter included)
❑ Pentium PC in Windows O.S. environment is required

It is possible to expand the PLC-SIM with application modules: ask for details .