

IEC 61131-3

FEATURES

- ★ Standard language can be used by any programmer who is already familiar with IEC 61131-3
- ★ Choice of graphical or textual programming while attaining consistent results
- ★ Visual interactive debugging information
- ★ Real-time program execution
- ★ Powerful and familiar Trio Motion function block library
- ★ Program editor is built-in to *Motion Perfect v4*
- ★ Multi-tasking operation with user selectable priorities

Function Block Diagram (FBD)

The FBD editor is a powerful graphic tool to edit and manage FB diagrams according to the IEC 61131-3 standard. The function block concept is one of the most important features of the standard for supporting hierarchical software design. User functions blocks can be developed and then re-used in higher level programs.



The FBD editor supports advanced graphic features such as drag and drop, object resizing and connection line routing features, so that you can rapidly and freely arrange the elements of your diagram.

Ladder Diagram (LD)

The LD editor is a powerful graphical tool that enables you to enter and manage Ladder Diagrams according to the IEC 61131-3 standard. The editor enables quick input using a keyboard, and it supports advanced graphic features such as drag and drop.



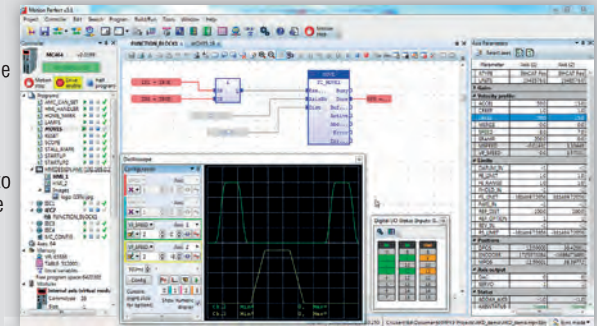
LD is probably the most widely recognised of the four supported methods because of its use in PLCs and its analogy to real world circuits. Programming in LD is best suited to applications where mostly binary variables are required and the interlocking and sequencing of digital I/O points is the primary control requirement.

With IEC 61131-3, programming of PLCs, distributed control systems, and motion controllers from different manufacturers is more manageable. IEC 61131-3 is the third part of the open international standard IEC 61131 for programmable logic controllers, first published in 1993 by the IEC then later revised in 2003.

Trio's latest MC4/5/6 range of controllers support Ladder Diagram (LD), Function Block Diagram (FBD), Sequential Function Chart (SFC), and Structured Text (ST) programming methods in addition to TrioBASIC. Trio controllers utilize a runtime IEC kernel with added motion and parameter functions like cams, gearing, and interpolated motion. Machine control projects can now be programmed to best meet the needs of the application in a simple but powerful environment.

With the addition of IEC 1131-6 programming, Trio controllers are now equipped to be a more powerful motion and machine control system. The Trio MC4/5/6 range allows multiple programs to run concurrently, eg. ST, LD and TrioBASIC, thus handling I/O and motion most efficiently.

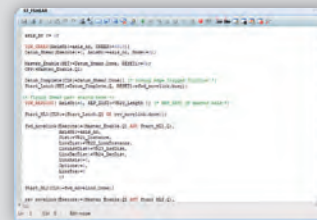
IEC61131-3 is **FREE** on all MC4/5/6 *Motion Coordinators*. A registration code to enable the feature can be obtained via Trio Distributor.



Structured Text (ST)

The ST editor is a dedicated editor supporting the Structured Text language of the IEC 61131-3 standard and has the following advanced features:

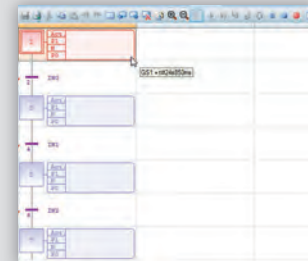
- Full syntax colouring
- "Intellisense" pop-up with Auto-completion
- Drag and drop of objects from toolbox
- Variable type and size assist
- View variable value in source code
- Tool tip with variable or function information



Sequential Function Chart (SFC)

The SFC editor is a powerful graphical tool that enables you to enter and manage Sequential Function Chart programs according to the IEC 61131-3 standard.

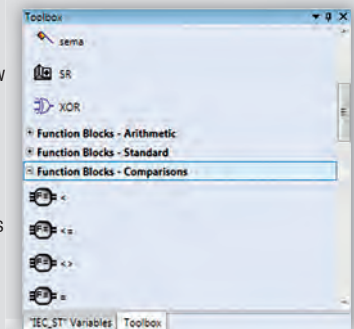
The editor supports advanced graphic features such as drag and drop, so that you can rapidly and freely arrange the elements of your diagram. It also supports automatic chart formatting when inserting or deleting items and thus enables quick input using a keyboard.



Toolbox & variable definition

Motion Perfect v4 includes a toolbox with a set of IEC 61131-3 standard functions that can be included in all of the supported methods. Functions are simply dragged into the graphical or text editor window to become part of the program.

An interactive program variable definition window helps to keep track of all local and global variables in use. Variables can be bound to the *Motion Coordinator's* inputs, outputs, VR and TABLE data. Use of these "super-global" variables allows the IEC programs to interact with programs written in BASIC and with the Uniplay HMI.



Motion Library

A library of all the motion functions in the *Motion Coordinator* is included with *Motion Perfect v4*. The motion library is in the toolbox so that functions like **MOVE**, **MOVEABS**, **CAMBOX** etc. are dragged into the program in the same way as the standard IEC functions. Motion functions in the IEC language run in axes in exactly the same way as they do from TrioBASIC.

The motion functions are powerful, well-structured and easy to learn. The consistent approach to motion within the *Motion Coordinator* means that programmers familiar with TrioBASIC have the added advantage that they can immediately recognise and start to use the functions.