

TAC Menta® is a graphic application programming tool designed for the TAC Xenta series of controllers.

TAC Menta is a program that simplifies the application engineer's daily work. TAC Menta uses the basic functions of Windows, such as window handling and mouse/menu handling. Multiple instances of TAC Menta can be executed simultaneously.

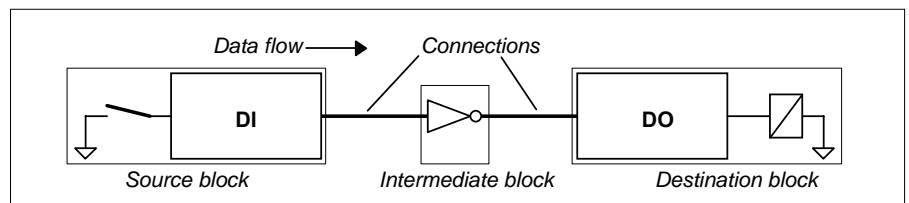
TAC Menta includes the following features:

- Program language
- Edit mode
- Simulation mode
- On-line functions
- OP Configuration Tool
- Download Wizard
- Help functions

PROGRAMMING

Programming Language

An application program is defined by its graphic representation, the function block diagram (FBD). The calculation of the FBD is executed at constant time intervals, defined by the user. Each execution is called a **program cycle**.



The two fundamental elements of the FBD are the **function blocks** (FB) and the connections. The FB process data from input signals to generate a single output signal. Each FB may have one or several parameters, used in the processing of the input signals. The parameters can be numeric values, or **constants** declared as a string of characters representing numeric values.

A **connection** is a link from one block to one or more blocks. Only connections between corresponding signal types are permitted.

The three signal types are:

- **Integer** (a signed 16 bit number)
- **Real** (a signed 32 bit number in IEEE format, precision of 7 digits) and
- **Binary** (0/1 = FALSE/TRUE).

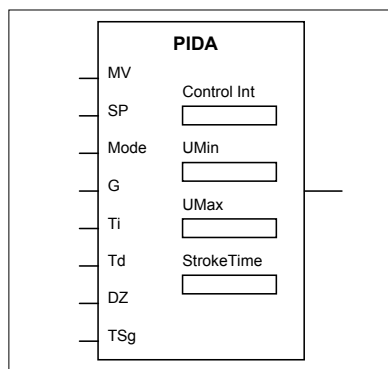
Signals may be declared as **public**. Public signals are accessible using TAC Xenta® OP or TAC Vista® via the network. A list of public signals is presented in the **Program specification**.

TECHNICAL DATA

Simple Blocks

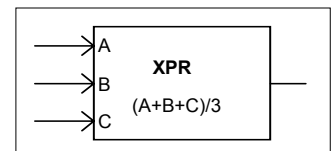
There are various types of simple blocks, each with a specific functionality. Each has a fixed number of inputs and parameters. Each simple block generates a single output signal. The parameters may be of different types, with each type allowing a predetermined range of values. There are 10 different groups of simple blocks:

- I/O blocks
- Signal sources
- Logical functions
- Nonlinear functions
- Delay blocks
- Accumulators
- Controllers and filters
- System variables
- Time schedules and alarms
- Transformation functions



Expression Blocks

The expression block is used when the programmer wishes to create a logical or arithmetical expression in just one block. The block may contain a variable number of inputs, an expression (may be complex), but only one output. The expression may contain capitalized (**A, B, C, ...**) analog inputs, or lower case (**a, b, c, ...**) binary inputs. The input variables are sorted in alphabetic order on the left side of the expression block. Constants may be included.



Operator Blocks

Operators are predefined expression blocks with unique graphical icons. The 5 groups of operators are:

- Constants
- Math operators
- Comparisons
- Bit operations
- Others

ENGINEERING MODES

Edit Mode

The TAC Menta Edit mode main window consists of a single **diagram window** with two scroll bars, where the selected FBD will be displayed. The programmer creates the FBD with the mouse, the function keys and the pop-up menus, by placing **function blocks** in the diagram window and drawing **connections** between the function blocks. Each FBD file may have an associated text file with the same file name. The text editor or word processor is user selectable. The text file can be used for a textual function description.

Simulation Mode

In Simulation mode, the application window has two sub-windows, the **Diagram window** and the **Trend window**. The diagram window displays either the FBD or a table with all public signals and parameters.

In Simulation mode, the application program can be executed continuously, in single steps (one cycle) or a specified number of cycles. During the simulation, the signal values may be observed. You may modify the signals, simulate the behavior of the **physical inputs**, and plot the signals in the **Trend window**

On-line Mode

The TAC Menta On-line mode is used for loading and commissioning the application program. The user may read/alter dynamically updated signal values while the application program is executing in the TAC Xenta unit. Time schedules can be uploaded, altered and downloaded back to the controller.

Demo Mode

TAC Menta can be run in Demo mode without a license. Demo mode allows the user to try out all the functions of the program (such as save, simulate, edit). However, the application can be saved as a demo application only. This means that it will not be possible to download the application to any TAC Xenta controller. A demo application can be opened in a licensed TAC Menta, but cannot be converted into a downloadable TAC Menta application.

TOOLS

OP Configuration Tool

The OP Configuration Tool is used to create custom TAC Xenta Operator Panel (OP) displays. In the OP, the information is presented as a number of 4 x 20 character displays, giving the operator access to plant status, alarms and parameters. The displays are structured as a menu tree, which may be different for each controller.

In the OP configuration tool, the OP displays can be created either graphically, or by importing a text file (DOP file). When the tool is invoked from the FBD window, there is an automatic link to the specification file of the current FBD.

Download Wizard

This tool simplifies upgrading the TAC Xenta system software, and loading the application program into several controllers.

Help Functions

TAC Menta includes a Windows on-line help system with complete information about the TAC Menta programming language, all function blocks, and TAC Menta procedures.

TECHNICAL DATA

System Requirements

Operating system Microsoft® Windows NT/2000

Windows NT version 4.0 including Service Pack 6
 Windows 2000 including Service Pack 2
 Windows XP Professional

Licensing

TAC Menta is shipped with a PSU locking device. Hardware locks are attached to the computer.

| License compatibility chart: | | |
|------------------------------|-----|------|
| | PSU | HASP |
| TAC Menta 3.44 - 3.46 | X | X |
| TAC Menta 4.0 ≤ | X | |

Ordering Information

Part Numbers

Original orders
 TAC Menta 4 CD LPT, with CD and LPT/PSU 0-008-8025
 TAC Menta 4 CD USB, with CD and USB/PSU 0-008-8026

Upgrades from previous versions of TAC Menta
 TAC Menta 4 CD, with PSU hardware lock 0-008-8027
 TAC Menta 4 CD LPT, with LPT/HASP 0-008-8028
 TAC Menta 4 CD USB, with LPT/HASP 0-008-8029

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