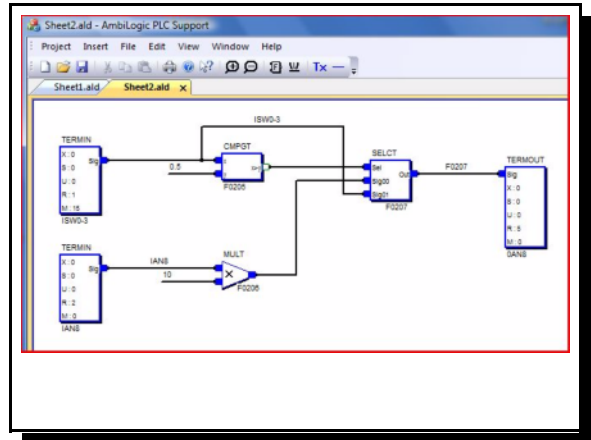


AmbiLogic_PLC Software

Features:

- Function Block Programming
- Add Notes to Diagrams
- Add Line Drawings to Diagrams
- Upload Programs to Processor Modules
- Verify Programs in Processor Modules
- Monitor Live Signals



The AmbiLogic_PLC software is designed to run on a Windows® personal computer (desktop or portable) and communicate with an AmbiLogic system via a standard RS-232 serial port.

The software is similar to a CAD package, and provides facilities for:-

- Opening and saving multi-sheet program diagrams
- Printing diagram sheets†
- Adding, moving, modifying or deleting functions
- Changing numbers of inputs on many functions
- Inverting or un-inverting digital function pins
- Adding, moving, modifying or deleting wires
- Adding, moving, modifying or deleting textual notes
- Adding, moving, modifying or deleting decorative lines
- Labelling function blocks with meaningful names
- Labelling wires with meaningful names
- Optionally displaying or hiding wire names
- Creating numeric constants and wiring these into the diagram
- Creating cross-references via which signals can connect between sheets, or between points a long distance apart on the same sheet
- Checking wiring on a single sheet for inappropriate connections and signal naming errors
- Checking and compiling multi-sheet diagrams
- Determination of order of execution of function blocks
- Resolution of circular execution races
- Generation of listings of function blocks in execution order with signal connections and error notes
- Generation of listings of constants and signals with connection lists and error notes
- Establishment of communication with AmbiLogic processor module
- Uploading compiled diagram into processor module
- Verifying diagram in processor module against diagram on PC ‡
- Monitoring signals in processor module and displaying them on PC.

† If you have facilities for printing to Adobe® .pdf files, you can generate documentation in this format directly from AmbiLogic_PLC software.

‡ Note that diagrams cannot be downloaded from the processor module and displayed on the PC. This prevents your competitors from downloading your diagrams.

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AmbiLogic_PLC Software

NEW in Revision 3.10

1. Bug Fixes

1.1. Buffer overrun with long signal names fixed.

1.2. Function Block pin allocations cleared at start of Wire Check. This means that if a pin which was previously connected is now left open, it will no longer inherit the old connection. This gave rise to invisible malfunctions in some diagrams which had been extensively modified. Now, what you see on the diagram is what you get.

1.3. mfc100u.dll and msucr100.dll are now included in the installer package and will be installed in the Program Files->AmbiLogic folder. On systems where these DLLs are not installed by default, the deficiency is addressed. On systems where incompatible versions of these DLLs are installed, the appropriate DLLs will be found first by the AmbiLogic software.

REV. 3.00 2011-05-02

1. Bug Fixes

1.1. Numerous incompatibilities between Unicode and Windows file management system fixed.

1.2. Vista-specific file path management issues worked around.

1.3. Memory leaks located and fixed - multiple "Project->Folder" operations now possible.

1.4. Internal string management upgraded to "secure" functions.

1.5. Broken links in help system fixed.

1.6. Auto-cranking bug in right-to-left wires fixed.

2. Improvements

2.1. Visual Studio 2010 look and feel.

2.2. Tabbed windows for easier navigation around the project.

2.3. Undockable toolbar for convenience.

2.4. Help system upgraded to compiled HTML for easier and smoother navigation: external browser no longer needed.

2.5. Help content revised to reflect changes in software, and to improve readability. Many new illustrations added.

2.6. Improved diagram sheet naming and "New Document" auto-naming to provide for consistency in projects with more than 9 sheets.

2.7. Main menu rearranged into more logical order.

2.8. New popup menu when empty space right-clicked provides Redraw, WireCheck, Save and SaveAs functions.

2.9. Windows Installer configuration improved.

2.10. Auto-cranking of Dec-lines removed. Lines can now be drawn at any angle.

2.11. Connection dots added to pins. Easier to see where to connect wires to.

2.12. Connection dots on wire junctions makes diagrams clearer.

2.13. Removed the need to wire start-to-finish. Reversed wire segments will auto-correct.

AmbiLogic_PLC Software

Specifications

1. PC Requirements:
Intel or AMD based personal computer running 32-bit or 64-bit Windows® (Vista onwards)
10 Mb spare on hard disk
256 kB RAM
1024 x 768 display resolution or better
RS-323 COM port capable of 115,200 baud
2. Supplied Media:
CD or
Download from www.ambilogic.com.au/downloads
3. License Conditions:
Freeware: the software can be copied and distributed provided that it is maintained in its original format with all copyright notices, installers and identifiers intact.
Regardless of distribution channel, the copyright remains vested in AmbiLogic Pty Ltd.
4. Diagram Size:
Limited only by the target processor. CPDA-01 will run up to 240 function blocks.

Functions Available with CPDA-01:-

1. Terminals

TERMIN Analogue or digital input terminal
TERMOUT Analogue or digital output terminal

2. Logic Gates

AND AND gate, 2 to 15 inputs
OR OR gate, 2 to 15 inputs
XOR XOR (parity) gate, 2 to 15 inputs
VOTE Voting gate (how many of my inputs are TRUE?) 2 to 15 inputs
BITAND Bitwise AND of integers - 2 to 15 inputs
BITOR Bitwise OR of integers - 2 to 15 inputs
MASKIN Bitwise AND of integer and mask, with shift to bring LSB of mask to bit 0.
MASKOUT Shift integer to align with mask, then AND shifted integer and mask.

3. Latches & Memories

LATSR Set/Reset latch - Set is edge-triggered, Reset overrides
LATDET D Latch with edge-triggered clock, Preset and Clear

4. Timers & Counters

TIMER Countdown timer, 1/16 sec to 1 million seconds (12 days)
CLOCK Continuously repeating countdown, period as above
COUNT Up/down counter, preset and clear, edge-triggered clock.
Counts -16 million to + 16 million
PREVSCAN Returns the value of the input signal on the previous scan, i.e. 1/16 sec ago.

AmbiLogic_PLC Software

Functions Available with CPDA-01 (continued)

5. Analogue Functions

RAMP Analogue version of up/down counter. Can be preset, cleared, ramped up or down
SAMPH Sample/Hold. Output follows input or holds its value.
PREVSCAN Returns the value of the input signal on the previous scan, i.e. 1/16 sec ago.

Signal Selection

SELECT Select which input signal is routed to output. 2 to 14 signals can be routed.
HIEST Selects most positive signal. 2 to 15 inputs.
LOEST Selects most negative signal. 2 to 15 inputs.
BIGST Selects signal with greatest magnitude. 2 to 15 inputs.
SMLST Selects signal with smallest magnitude. 2 to 15 inputs.

Comparison

CMPEQ Output TRUE if input signals equal. Output can be inverted.
CMPGT Output TRUE if $x > y$. Output can be inverted.
CMPLT Output TRUE if $x < y$. Output can be inverted.
INRANGE Output TRUE if $x \geq \text{Lo}$ AND $x \leq \text{Hi}$. Output can be inverted.

Basic Arithmetic

ADD Sum of inputs. 2 to 15 inputs.
SUB $x - (\text{sum of all other inputs})$. 2 to 15 inputs.
MULT Product of all inputs. 2 to 15 inputs.
DIV $x / (\text{product of all other inputs})$. 2 to 15 inputs.
QUOT Largest integer which does not exceed (x / y) .
REM Remainder after extraction of quotient.
RATIO Fast $(x * y) / z$.

Trigonometric

SINE Sine of input angle
COS Cosine of input angle
TAN Tangent of input angle
ASIN Angle whose sine is fractional part of input.
ACOS Angle whose cosine is fractional part of input
ATAN Angle whose tangent is input.

Logarithmic

LOG2 Logarithm of input to base 2.
ALOG2 Antilog of input to base 2.
POW Raises x to the power y .

AmbiLogic_PLC Software

WARNING SAFETY-CRITICAL SYSTEMS

A Safety-Critical system is a system whose failure or malfunction could cause death, significant injury or loss of property.

AmbiLogic products contain electronic and software content, both of which carry a remote but real possibility of failure. AMBILOGIC DOES NOT WARRANT OR REPRESENT THAT ITS PRODUCTS ARE INFALLIBLE.

It is the therefore responsibility of the designer of any safety-critical system which incorporates AmbiLogic products to ensure that:-

1. The system is designed so that any failure of an AmbiLogic component will not cause death, injury or loss of property.
2. The system incorporates independent monitoring means which detect the failure of any of the electronic control elements.
3. The system has alternative and independent means of control which enable it to be controlled and shut down in an orderly manner.
4. Any other industry-specific safety requirements are fully implemented.