

COTELEC présente WriteNow! Series

WriteNow! Series Single and Parallel In-System Programmers

1. WriteNow! - At a Glance

Overview

Congratulations for purchasing a WriteNow! In-System Programmer. Based on the proprietary WriteNow! Technology, the WriteNow! Series of In-System Programmers are a breakthrough in the Programming industry. The programmers support a large number of devices (microcontrollers, memories and other programmable devices) from various manufacturers and have a compact size for easy ATE/fixture integration. They work in standalone or connected to a host PC (RS-232, USB, LAN connections are built-in), and are provided with easy-to-use software utilities.

Features

- Support of microcontrollers, serial and parallel memories and other programmable devices
- High-speed, parallel programming
- Compact size (fixture friendly)
- Standalone operations or host controlled
- Designed for easy ATE interfacing
- Robust and reliable
- Support of several programming interfaces (JTAG, BDM, SPI/QSPI, I2C, UART, SWD, ICSP, FINE, SBW, SWIM, DAP, MDI, MUST/MICE, etc.)



The WriteNow! Lineup



- Large built-in internal memory for projects, images, etc.
- Programmable power supply output (1.5-13V)
- Programmable I/O voltage (1.6-5.5V)
- High-speed I/O
- LAN (isolated), RS-232 (isolated), USB 2.0 full-speed, and low-level interface (isolated)
- ISP I/O relay barrier (only available on the single-site model)
- I/O protection
- Wide range power supply (15-25V)

The shortest possible programming times are guaranteed due to a combination of highly optimized programming algorithms, local storage of programming data and high slew rate line driver circuitry.

Model Comparison

The following table summarizes the main features of the various WriteNow! family models.

WriteNow! Model Comparison

Feature	WN-PRG01A	WN-PRG02A	WN-PRG04A	WN-PRG08A
General Features				
Programming Sites	1	2	4	8
Power Supply	15-25V	15-25V	15-25V	15-25V
Device Type Support	Microcontrollers, Serial Memories	Microcontrollers, Serial Memories	Microcontrollers, Serial Memories	Microcontrollers, Serial Memories, Parallel Memories
Programming Protocols	UART, SPI, JTAG, I2C, BDM, SWD, etc.	UART, SPI, JTAG, I2C, BDM, SWD, etc.	UART, SPI, JTAG, I2C, BDM, SWD, etc.	UART, SPI, JTAG, I2C, BDM, SWD, etc.
Relay Barrier	Yes	No	No	No
ISP Lines				
Adj. Voltage Range	1.6-5.5V	1.6-5.5V	1.6-5.5V	1.6-5.5V
Adj. Voltage Resolution	100mV	100mV	100mV	100mV
Bidirectional Lines	6	12	24	48
Prog. Clock Out Lines	1	2	4	8
Programmable Power Supply (PPS)				
Range	1.5-15V	1.5-15V	1.5-15V	1.5-15V
Resolution	100mV	100mV	100mV	100mV
Channels	1	2	4	8
Host Interface				

Package Checklist

The WriteNow! package includes the following items:

1. WriteNow! unit.
2. 15V power supply.
3. Serial, USB and Ethernet cables.
4. WriteNow! test board.
5. 48-ways, female wire-wrap DIN41612 connector.
6. First user guide

Connectors Overview

WriteNow! has several connectors for interfacing to a host PC, to an Automatic Test Equipment (ATE), and to the target system(s) to be programmed. The following pictures show where, depending on the model, the various connectors are located.



1. The POWER connector accepts a DC voltage between 15V and 25V.
2. The LAN, USB and RS-232 connectors are used to interface the instrument to a PC.
3. The LAN RESET push button is used for factory settings.
4. The ISP connector(s) are used to interface to the target system(s) to be programmed.
5. The LOW-LEVEL INTERFACE connector (which is merged with the ISP connector in the WN-PRG01A model) is used to interface the instrument to an ATE or other systems.

For details and pinout of the various connectors, see the “Connectors” chapter.

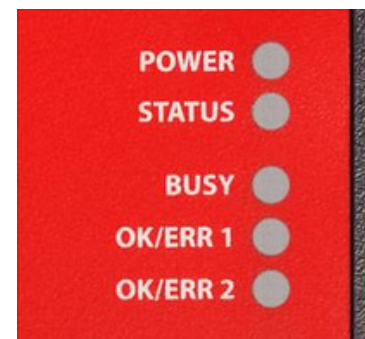
LEDs

The LEDs on the top cover of the instrument, from top to bottom, indicate:

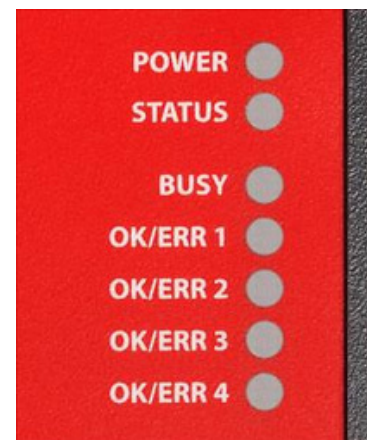
1. **POWER**: the instrument is turned on.
2. **STATUS**: indicates system warnings. Normally off, blinks if the system needs user action.
3. **BUSY**: turns on when programming (when a programming project is being executed).
4. **OK/ERR**: result of the programming. Each programming site has an OK/ERR LED, which turns green if the programming on that site has been successful, red otherwise.



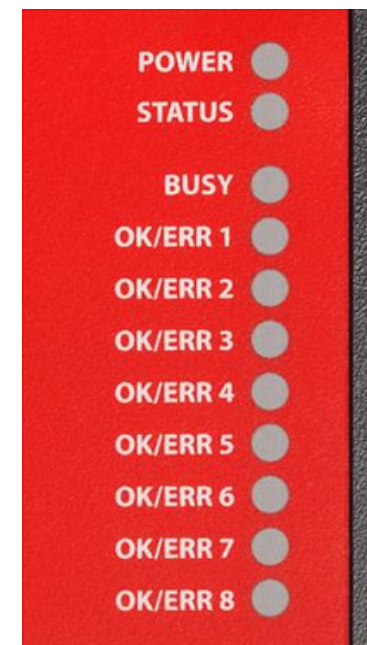
WN-PRG01A LEDs



WN-PRG02A LEDs



WN-PRG04A LEDs

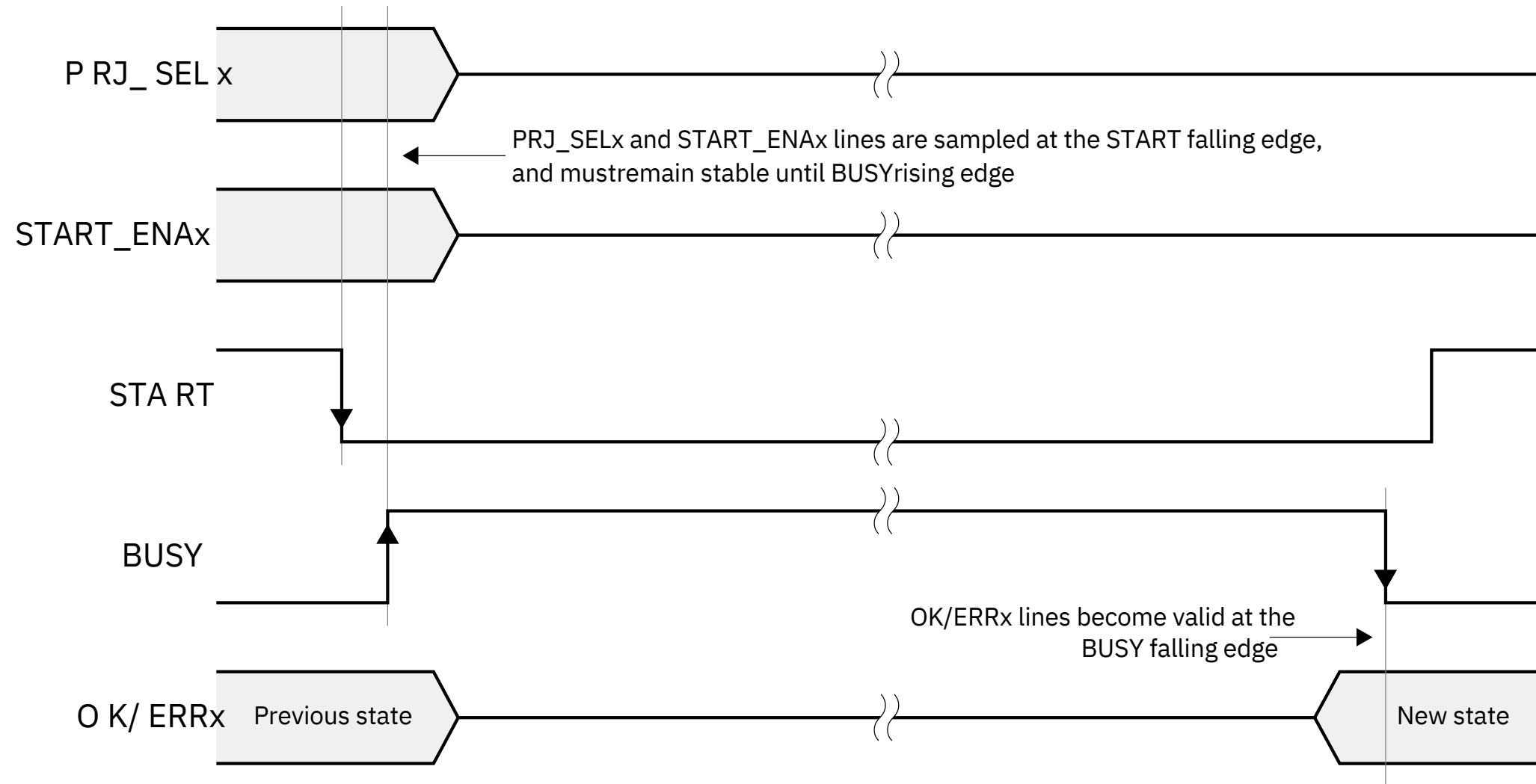


WN-PRG08A LEDs

Additional Documentation

This hardware manual provides information about how to set up WriteNow! and its hardware characteristics.

For any information about WriteNow! commands and their syntax, please refer to the WriteNow!⁸ Programmer's Manual, included (in PDF format) in the WriteNow! setup.



Low-Level Interface Signals Timing

Project Assignment

Before working in standalone mode, you must associate PRJ_SELx lines to a Project filename to execute.

To do so, in the WriteNow! Project Generator application select **Settings > Hardware Settings**. In the window that will appear, associate PRJ_SEL values to project names by clicking the **“Set Project”** button for each PRJ_SEL configuration you wish to setup.

4. Accessories

Algocraft supplies a series of accessories that have been designed to ease the integration to customers as well as saving on engineering time and costs.

Relay Barrier Modules



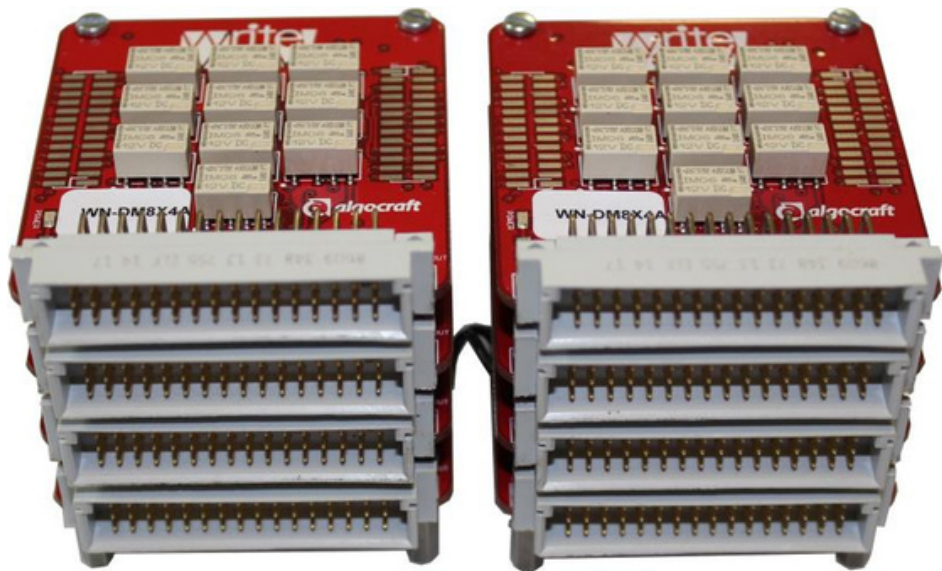
On the single-site WriteNow! model (WN-PRG01A), a relay barrier is provided on the ISP signals. On the others WriteNow! models (WN-PRG02A, WN-PRG04A and WN-PRG08A) is possible to connect externally a dedicated relay barrier module to ensures true galvanic isolation and reliability.

When you create a programming project using the Project Generator application, relays are by default closed at the beginning of the project (with **the #relay -o close** command) and opened at the end (with **the #relay -o open** command).

On all WriteNow! models, a special signal (SxRLY) is present (on the “ISP” connector), on every programming site. If the programming site is enabled, this signal is driven to 0V when a **#relay -o close** command is executed, and driven to 5.5V when a **the #relay -o open** command is executed). This is useful for driving an external relay barrier.

For more information, please see the **AN001_relaybarrier.pdf** in the **\doc** folder.

Demultiplexer Modules



The demultiplexer module is designed to increase the number of ISP lines to be managed. A stack of up to 4 boards could be mounted to each ISP connector. It is built as a tower in order to save space. The Reed relay technology ensures true galvanic isolation and reliability.

For the power supply: a special plug to plug power cable is provided with demultiplexer in order to power both the products through the WriteNow!'s 15V adapter.

No external lines are needed in order to control the multiplexer since the lines are provided by WriteNow! ISP connector A and B (available for external expansion module purpose).

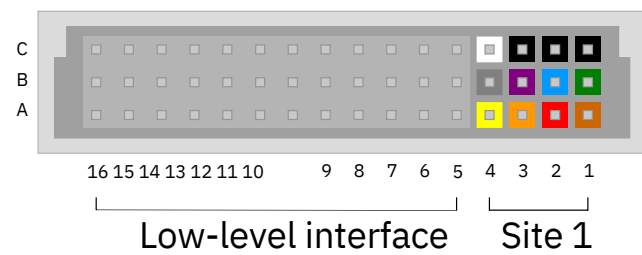
Models	Number of boards in parallel	Demux model		
		Number of board in demultiplexer		
WN-PRG01A	1	-	-	-
WN-PRG02A	2	WN-DM2X2A 4	WN-DM2X3A 6	WN-DM2X4A 8
WN-PRG04A	4	WN-DM4X2A 8	WN-DM4X3A 12	WN-DM4X4A 16
WN-PRG08A	8 15	WN-DM8X2A 16	WN-DM8X3A 24	WN-DM8X4A 32

5. Connectors

ISP Connectors

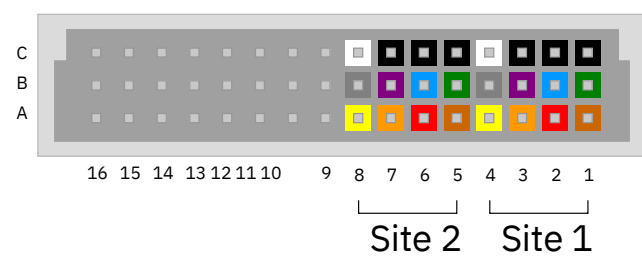
WriteNow! WN-PRG01A, WN-PRG02A and WN-PRG04A models have one ISP connector; the WN-PRG08A model has two ISP connectors. Furthermore, in the WN-PRG01A model, the ISP connector also includes low-level interface signals.

WN-PRG01A ISPConnector



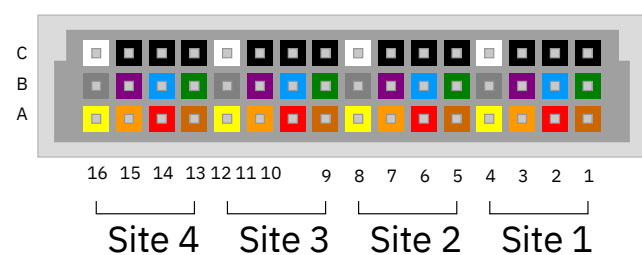
WN-PRG01A ISP Connector

WN-PRG02A ISPConnector



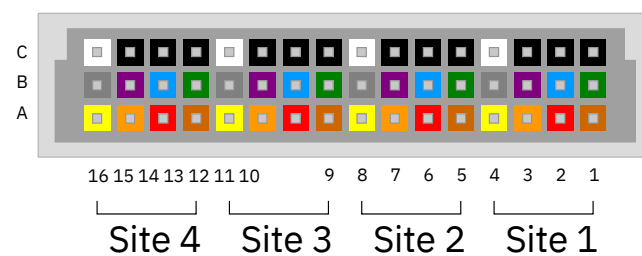
WN-PRG02A ISP Connector

WN-PRG04A ISPConnector

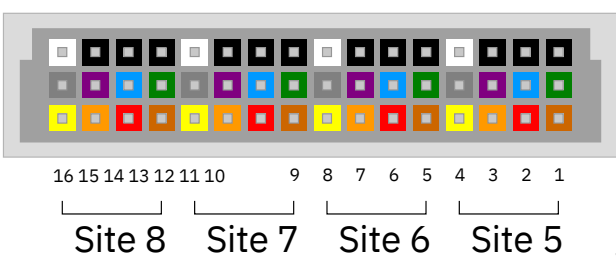


WN-PRG04A ISP Connector

ISP AConnector



ISP BConnector



WN-PRG08A ISP Connectors

Electrical Specifications

Feature	Value
Maximum Ratings	
Power supply voltage	30V
ISP SxL0[1..7] voltage	-0.7-6.5V
ISP SxL0[1..7] current	±60mA
ISP SxPPS voltage	-0.7-18V
ISP SxPPS current(*)	380mA
ISP SxRLY voltage	-1.0-30V
Low level interface PRJ_SELx, START, START_ENAx, BUSY, OK/ERRx voltage	-0.7-6.0V
Operating Ranges	
Power supply voltage	12-25V
ISP SxL0[1..7] voltage	0-5.5V
ISP SxPPS voltage	1.5-15V
ISP SxPPS current	300mA
ISP SxRLY voltage	0-28V
Low level interface PRJ_SELx, START, START_ENAx, BUSY, OK/ERRx voltage	0-5.0V
Physical and Environmental	
Operating conditions	
Storage conditions	
EMC (EMI/EMS)	0-40°C, 90% humidity max (without condensation) -10-60°C, 90% humidity max (without condensation) CE

(*) Current limited, recovers automatically after fault condition is removed.

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