# Quick Start Guide
## Zlinx™ I/O

**1**

# Modbus Mode

## Check for All Required Hardware

- ❑ Zlinx I/O Base Module and Expansion Modules
- ❑ ZZ-PROG1 Configuration Box or ZZ-PROG1-USB Module
- ❑ Straight-through serial cable or USB cable if using a ZZ-PROG1-USB Module
- ❑ This Quick Start Guide
- ❑ Zlinx Wireless Modbus I/O Manual on CD (Can be downloaded from the Web Site)
- ❑ Zlinx I/O Manager software on CD (Can be downloaded from the Web Site)

**Special Precautions for UL and UL Class I DIV 2 (C1D2)**
*Note 1:* Class 1, Div 2 is NOT applicable to ZZxD-Nx-MR (medium range), ZZ8D-Nx-xR (800 MHz) and ZZxD-Nx-xR-AU (Australian) modules.
*Note 2:* For C1D2 information on ZZ-8DO-R, separate sheet is attached.

WARNING – EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

WARNING – EXPLOSION HAZARD – WHEN IN HAZARDOUS LOCATIONS, TURN OFF POWER BEFORE REPLACING ANTENNA.

WARNING – EXPLOSION HAZARD – DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, AND D, OR UNCLASSIFIED LOCATIONS.

Maximum Ambient Air Temperature 80°C (176°F) except for ZZ-8DO-R.

**Wiring Terminals:**
Copper Wire Only
One Conductor per Terminal
Wire Range 28 to 16 AWG
Tightening Torque 1.7 lb-in
Temperature Rating of Field Wiring – 105° C (221° F) minimum sized for 60° C (140°F) ampacity.

Warning – 2 DIN rail end brackets (supplied with each expansion module) must be installed, one on each end of the assembled system on the DIN rail to mechanically secure the individual products.

**2**

## Select Modules

- ❑ Select a radio modem to match the type of Zlinx I/O Base Module (SR, MR or LR).
- ❑ Select a Base Module and Expansion Modules based on the type of I/O needed.
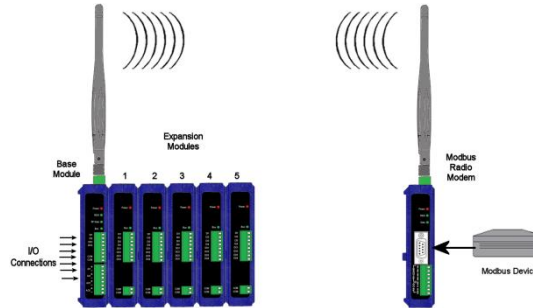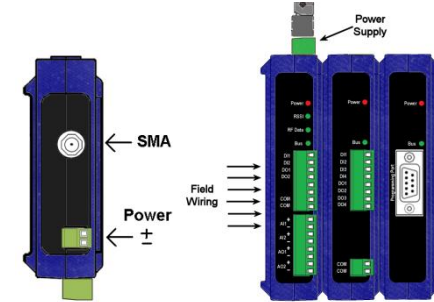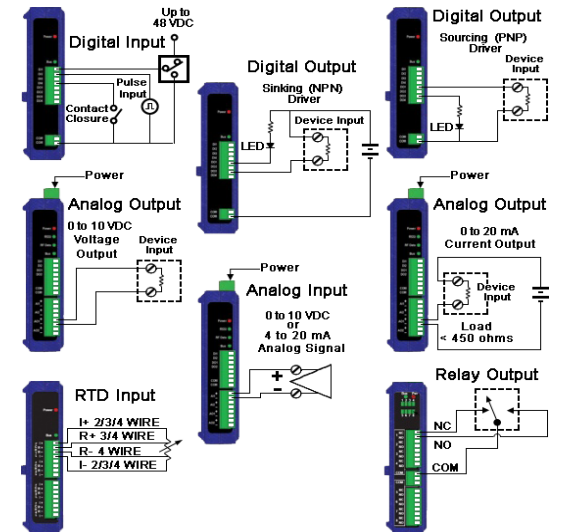


**3**

## Hardware Installation

- ❑ Perform an installation site survey to ensure adequate RF coverage and select a mounting location.
- ❑ Maximum Ambient Air Temperature for all modules is 80°C, with the exception of the ZZ-8DO-R, which is 65°C
- ❑ Mount and connect together the Base and Expansion Modules (Expansion Modules on the right side of the Base).
- ❑ Plug the Configuration Box into the right side of the Zlinx I/O system.
- ❑ Attach antennas to the Base Module and to the Modbus radio modem.
- ❑ Mount and connect together Modbus radio modem and Modbus device.
- ❑ Ensure that the Modules are attached appropriately.
- ❑ Connect field wiring to Zlinx I/O terminals.
- ❑ Connect power to the Base Module:
- ❑ Connect power to the Modbus radio modem:
- ❑ Refer to the Installation Manual for power and wattage requirements.



**4**

## Connect Field Wiring



**Refer to the User Manual for Input / Output Voltage and Current Ratings**

**5**

## Install Zlinx I/O Software

- ❑ Insert the I/O Manager software CD. Installation should launch automatically. If not, click Start, Run, [drive]:\ZlinxMgr.exe, where [drive] is your CD-Rom drive.
- ❑ Follow the prompts to install the Zlinx I/O Manager.

## 6  Start Zlinx I/O Manager

- Connect a PC serial port (COM1 to 16) to the Configuration Box using a straight-through serial cable or USB cable if using a ZZ-PROG1-USB Module.

- Click Start\Programs\B&B Electronics\Zlinx\Zlinx Manager\Zlinx Manager, then click Zlinx I/O and then Zlinx I/O Configuration.  It will auto-search for attached Zlinx Modules on startup.  Zlinx I/O will open and display the Information tab showing model numbers, version numbers of the attached Base and Expansion Modules.

  o  Make sure that all Base Modules have the same firmware revision*

  o  Make sure that all Expansion Modules have the same firmware version*
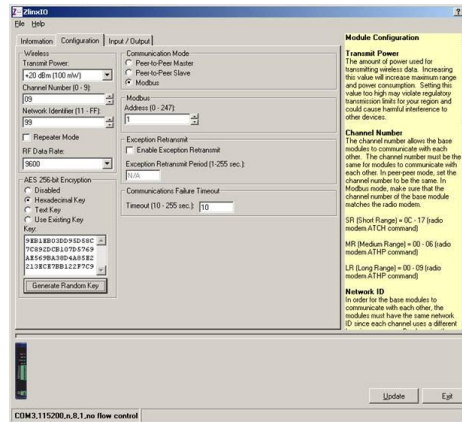
  *This can be verified under the Information tab.
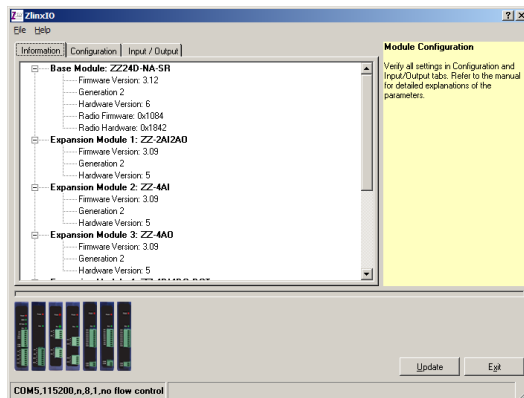


## 7  Configure Communication Mode

On the Configuration tab:

- Select the Modbus Mode to communicate with a Modbus RF modem.

- Set the Modbus address to the address number desired for the Module being configured.

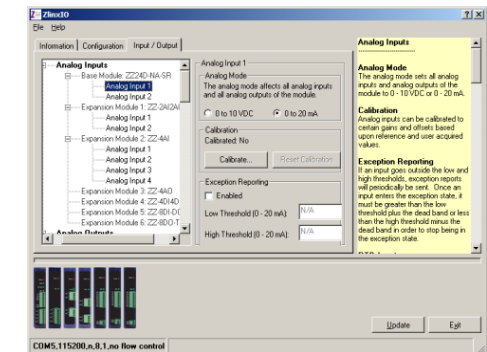

- Configure Wireless settings:

  o  Select the desired RF Transmit Power (not applicable for MR models).

  o  Select the desired OTA data rate (not applicable for SR, MR, and LR-868 models).

  o  Set the Channel Number to match the Modbus radio modem you will be communicating with.

  o  Set the Network Identifier to match the Modbus radio modem you will be communicating with.

  o  If using a MR or ZP9D-115RM-LR-xx radio modem, set the destination address (ATDT) to 0xFFFF.

  o  Set Repeater checkbox if the Base is to be a repeater.  Note that ONLY the (MR/ZZ9D-xx-LR-xx) version supports this.

  o  Select encryption (not applicable for MR models).

  **Note: Refer to the manual for more details concerning wireless settings.**

- Click Update to save configuration.

## 8  Configure Input/Output

- Set Analog Inputs and Outputs for 0 to 10 VDC or 0 to 20 mA as required (setting one sets all analog I/O for that module).

- Set Digital Inputs for Discrete or Counter, as required.

- Check *Enabled* checkbox and set appropriate values for parameters in *Exception Reporting* section to use the ability of reporting possible problems on devices.

- Set Calibration option if you desire to better match a sensor, or a portion of a signal, to the I/O.

- Check *Enabled* checkbox and set appropriate values for parameters in *Failsafe* section to go to the user-defined values for AO or DO in case of communication failure.

- Check *Use Output to Indicate Communication Failure* checkbox in *Dedicated Comm Fail Alarm* section to configure the first DO on the Base Module to be a communication failure alarm indicator.

- Check *Invert Output* checkbox to invert the logic of Digital Outputs on Base or Expansion Modules.

- Click Update button to apply the settings.



## 9  Operation

| LED | STATUS | FUNCTION |
|---|---|---|
| **Power** Red | Solid | Power applied |
| **RSSI** Tricolor | Off | No radio signal |
|  | Red | Weak radio signal |
|  | Yellow | OK radio signal |
|  | Green | Strong radio signal |
| **RF Data** Green | Off | No radio link data |
|  | Blinking | Radio link data TD/RD traffic |
| **Bus** Green | Off | No local bus data |
|  | Blinking | Local bus data TD/RD traffic |

Refer to Troubleshooting Section of the Manual if operation is not successful.

**B&B Electronics**

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# Quick Start Guide
## Zlinx™ I/O

**1**

# Peer-to-Peer Mode

## Check for All Required Hardware

- ❑ Zlinx I/O Base Module and Expansion Modules
- ❑ ZZ-PROG1 Configuration Box or ZZ-PROG1-USB Module
- ❑ Straight-through serial cable or USB cable if using a ZZ-PROG1-USB Module
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**Note 1: Class 1, Div 2 is not applicable to ZZxD-Nx-MR (medium range), ZZ8D-Nx-xR (800 MHz) and ZZxD-Nx-xR-AU (Australian) modules.**
**Note 2: For C1D2 information on ZZ-8DO-R, separate sheet is attached.**

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**THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, AND D, OR UNCLASSIFIED LOCATIONS.**

**Maximum Ambient Air Temperature 80°C (176°F) except for ZZ-8DO-R.**

**Wiring Terminals:**
**Copper Wire Only**
**One Conductor per Terminal**
**Wire Range 28 to 16 AWG**
**Tightening Torque 1.7 lb-in**
**Temperature Rating of Field Wiring – 105° C (221° F) minimum sized for 60° C (140°F) ampacity.**

**Warning – 2 DIN rail end brackets (supplied with each expansion module) must be installed, one on each end of the assembled system on the DIN rail to mechanically secure the individual products.**

**2**

## Select Modules

- ❑ Select the Base and Expansion Modules required for the location and coverage distances
- ❑ Ensure that two systems are complementary, i.e. the inputs of the Modules in System 1 (see figure below) match the outputs of the corresponding Modules in System 2.
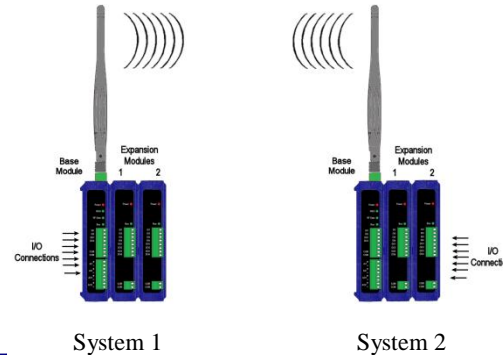


System 1          System 2
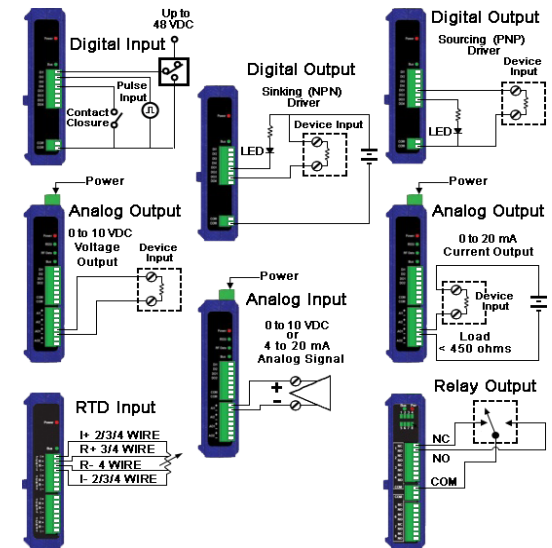
**3**

## Hardware Installation

- ❑ Perform an installation site survey to ensure adequate RF coverage and select a mounting location.
- ❑ Maximum Ambient Air Temperature for all modules is 80°C, with the exception of the ZZ-8DO-R, which is 65°C
- ❑ Mount and connect together two systems of the Base and Expansion Modules (Expansion Modules on the right side of the Base).
- ❑ Ensure that the Modules are attached properly.
- ❑ Plug the Configuration Box into the right side of the system.
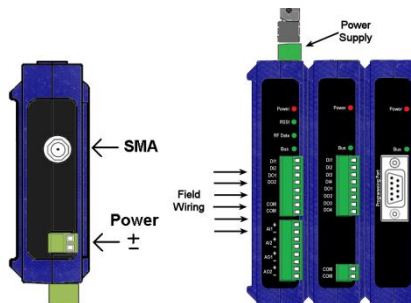


- ❑ Attach the antennas to the Base Modules.
- ❑ Connect field wiring to Zlinx I/O terminals.
- ❑ Refer to the Installation Manual for power and wattage requirements

**4**

## Connect Field Wiring



**Refer to the User Manual for Input / Output Voltage and Current Ratings**

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## Install Zlinx I/O Software

- ❑ Insert the I/O Manager software CD. Installation should launch automatically. If not, click Start, Run, [drive]:\ZlinxMgr.exe, where [drive] is your CD-Rom drive.
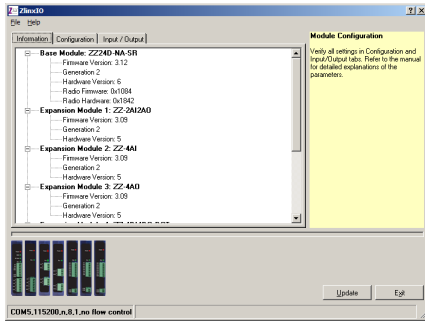- ❑ Follow the prompts to install the Zlinx I/O Manager.

**6**

## Start Zlinx I/O Manager

- ❑ Connect a PC serial port (COM1 to 16) to the Configuration Box using a straight-through serial cable or USB cable if using a ZZ-PROG1-USB module
- ❑ Click Start\Programs\B&B Electronics\Zlinx\Zlinx Manager\Zlinx Manager, then click Zlinx I/O and then Zlinx I/O Configuration. It will auto-search for attached

**(B** **B&B ELECTRONICS**

Zlinx Modules on startup. Zlinx I/O will open and display the Information tab showing model numbers, version numbers of the attached Base and Expansion Modules.

- o Make sure that all Base Modules have the same firmware revision*
- o Make sure that all Expansion Modules have the same firmware version*

*This can be verified under the Information tab.



## 7  Configure Communication Mode

On the Configuration tab:

- ❑ Select Peer-to-Peer (P2P) Master on one set of Zlinx I/O Modules and P2P Slave on the other set of Zlinx I/O Modules.
- ❑ Configure System 1 (see figure in Section 2) as described below:
  - o Set the P2PMaster address to match the Slave.
  - o Set Polling Rate to update at an acceptable rate.
  - o Set Retry Count for number of tries before lost communication indication is required.
  - o Configure the Wireless settings:
    - ▪ Select the desired RF Transmit Power (not applicable for MR models).
    - ▪ Select the desired OTA Data Rate (not applicable for SR, MR, and LR-868 models).
    - ▪ Set Channel Number to match the device you will be communicating with.
    - ▪ Set Network Identifier to match device you will be communicating with.
    - ▪ Select Encryption (not applicable to MR models).

    **Note: Refer to the manual for more details concerning wireless settings.**

- o Click Update to save configuration.

- ❑ Configure System 2 (see figure in Section 2) as described below:
  - o Set the P2P Slave address to match the Master.
  - o Set Polling Rate to update at an acceptable rate.
  - o Set Retry Count for number of tries before lost communication indication is required.
  - o Configure the Wireless settings:
    - ▪ Select the desired RF Transmit Power (not applicable for MR models).
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    - ▪ Set Channel Number to match device you will be communicating with.
    - ▪ Set Network Identifier to match device you will be communicating with.
    - ▪ Select Encryption (not applicable to MR models)

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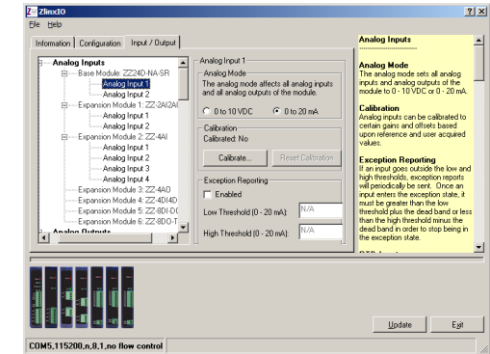
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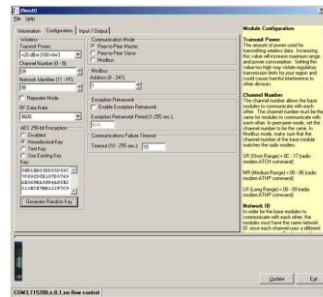


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