

## WISE-4610

# Advanced Industrial LoRa/LoRaWAN IoT Wireless I/O Module

## Startup Manual

### Overview

Thank you for purchasing the WISE-4610 module. This quick start guide is intended to help you with deploying the module. It includes information on the power requirements and application wiring. Should you require more instructions, please refer to the user manual.

### Input Power Requirements

The WISE-4610 has two pairs of external power inputs:

1. +Vs and -Vs (for line power or battery recharge)
2. Solar panel+ and solar panel- (for battery recharge)

Both power inputs support a standard industrial unregulated 24 V<sub>DC</sub> power supply. This series of modules also accept +10 to +50 V<sub>DC</sub> power input and 200-mV peak-to-peak power ripple. The immediate ripple voltage should be between +10 and +50 V<sub>DC</sub>.

### Battery Power

For modules with a lithium-ion battery, please note that the operating temperature is 0~60°C (32~140°F). For safety reasons, when the temperature is in the range of 45~60°C (113~140°F), the battery can only be recharged to 20%.

### Packaging List

- 1 x WISE-4610 wireless I/O module
- 1 x Waterproof antenna
- 1 x Mounting bracket

Note:

I/O board should be purchased respectively.

For more information on this and other Advantech products, please visit our website at:

<http://www.advantech.com>

For technical support and service:

<http://support.advantech.com/>

This startup manual is for WISE-4610 Series.

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### Quick Start for WISE-4610 Series

1. Download and install the USB driver from <https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>
2. Download and install WISE Studio from <http://support.advantech.com/>
3. To power the module, connect a DC power source to the +Vs and -Vs pins.
4. Connect the module to your computer via the micro-USB port
5. Open WISE Utility and click **Go To Serial Page**.



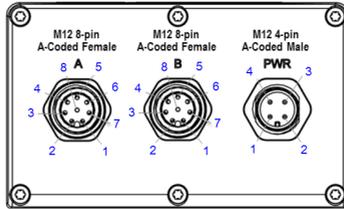
6. Press **Connect** to link the WISE-4610 and you will then see the web configuration page.
7. Use web configuration in WISE Utility or press **Open in Browser** to open the web configuration in any browser (Google Chrome is recommended).



8. Click **Information** to check whether your module has successfully connected to a LoRa network. Once connected, your I/O module is ready to be configured.

# Application Wiring

Pin Assignment of WISE-S600 I/O Module with M12 Connectors

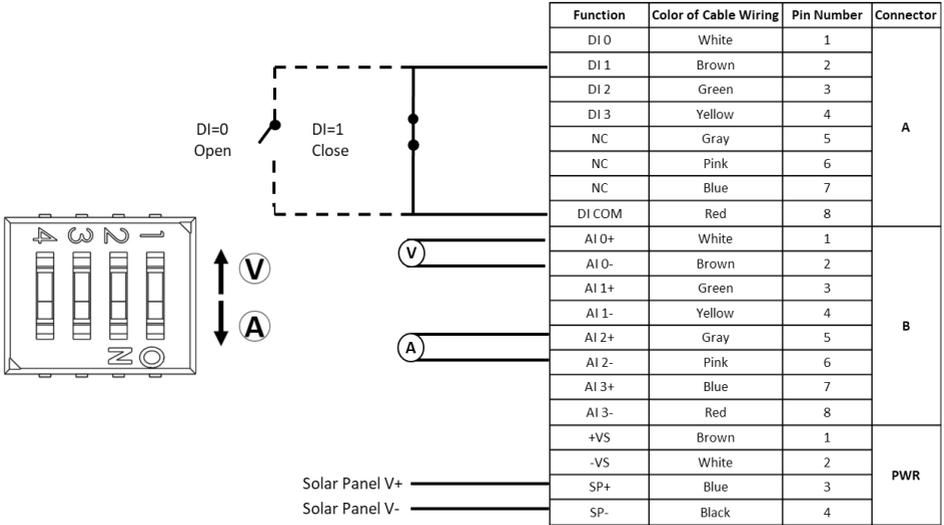


M12 Connector	Model Name	M12 Cable	WISE-S672	WISE-S614	WISE-S615	WISE-S617
	Pin Number					
	PCB P/N					
A	1	White	DI 0	DI 0	RTD0+	AI 0+
	2	Brown	DI 1	DI 1	RTD0-	AI 0-
	3	Green	DI 2	DI 2	RTD0 COM	+12V Out0
	4	Yellow	DI 3	DI 3	NC	+12V Out GND
	5	Gray	DI 4	NC	RTD1+	AI 1+
	6	Pink	DI 5	NC	RTD1-	AI 1-
	7	Blue	NC	NC	RTD1 COM	+12V Out1
	8	Red	DI COM	DI COM	NC	+12V Out GND
B	1	White	DATA0-	AI 0+	RTD2+	DI 0
	2	Brown	DATA0+	AI 0-	RTD2-	DI 1
	3	Green	RS-232 TX	AI 1+	RTD2 COM	DI COM
	4	Yellow	RS-232 RX	AI 1-	NC	DO 0
	5	Gray	DATA1-	AI 2+	RTD3+	DO GND
	6	Pink	DATA1+	AI 2-	RTD3-	RS-485 D+
	7	Blue	NC	AI 3+	RTD3 COM	RS-485 D-
	8	Red	RS-232 GND	AI 3-	NC	RS-485 GND
PWR	1	Brown	+VS	+VS	+VS	+VS
	2	White	-VS	-VS	-VS	-VS
	3	Blue	SP+	SP+	SP+	SP+
	4	Black	NC	SP-	SP-	SP-

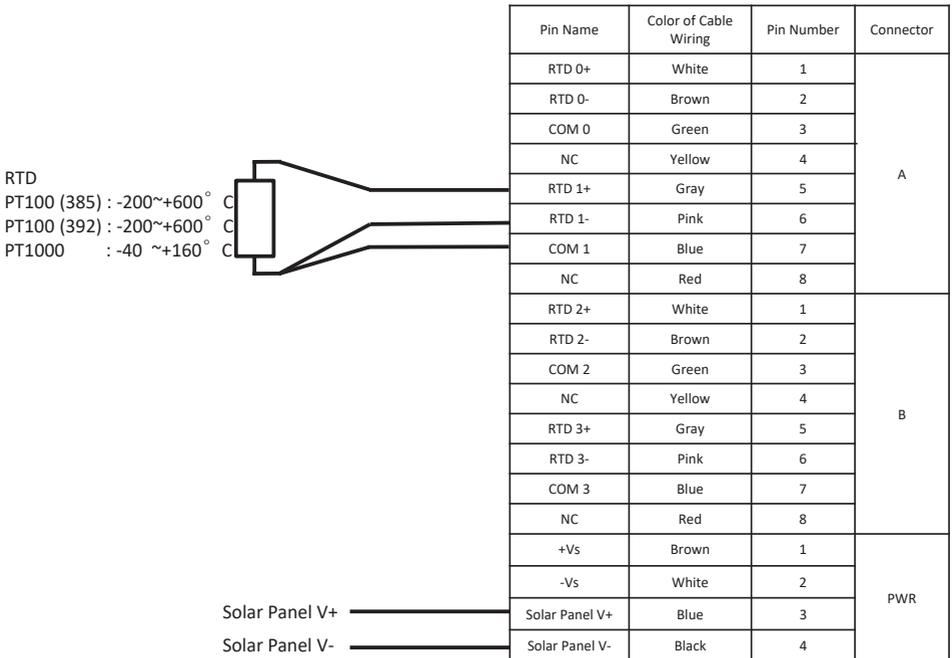
## Application Wiring (Cont.)

### Application Wiring of WISE-S600 Series I/O Module with M12 Connectors

WISE-S614 (4AI/4DI)

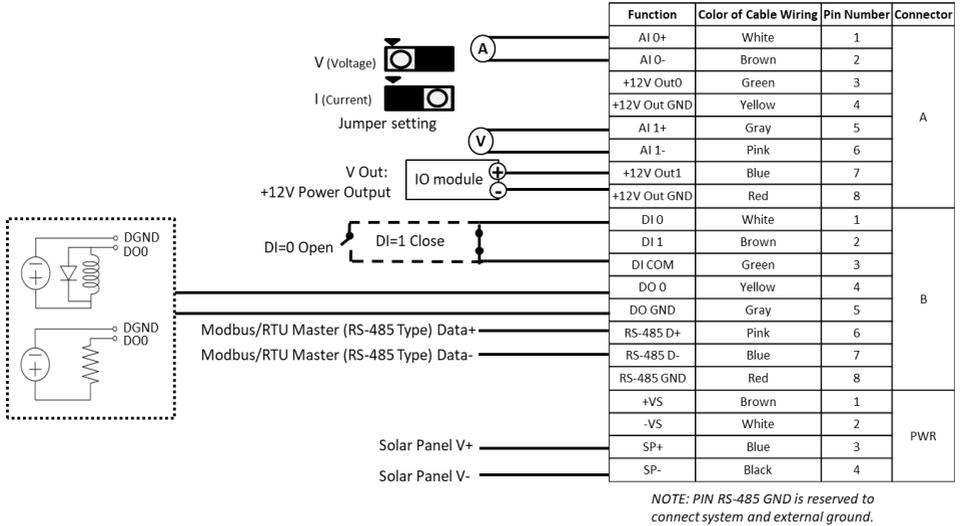


### WISE-S615 I/O Application Wiring

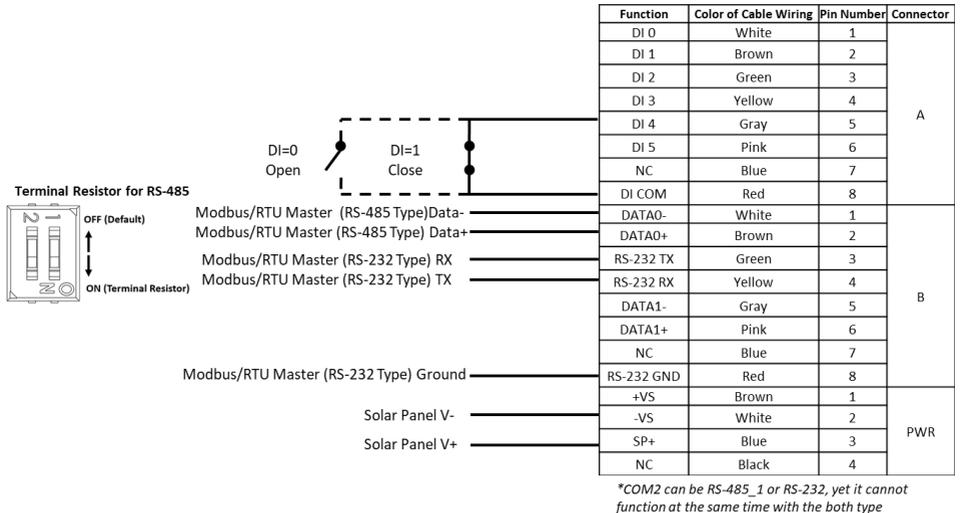


# Application Wiring (Cont.)

## WISE-S617 (2AI/2DI/1DO/1RS-485)



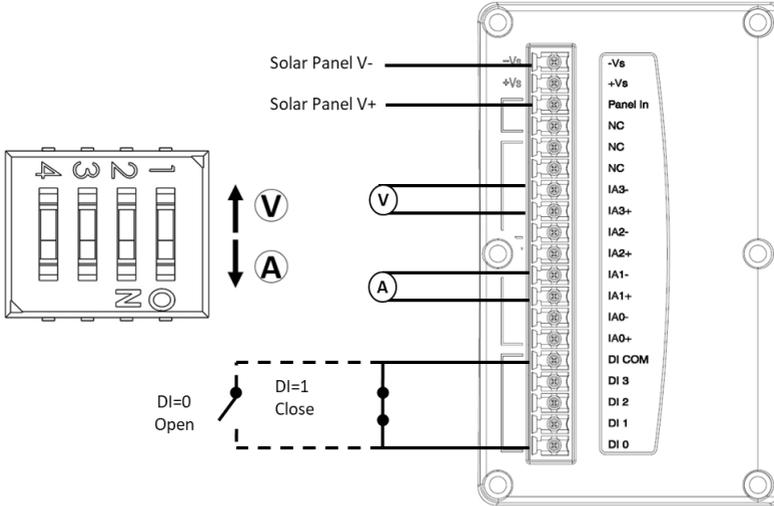
## WISE-S672 (6DI/1RS-485/1RS-232 or 1RS-232)



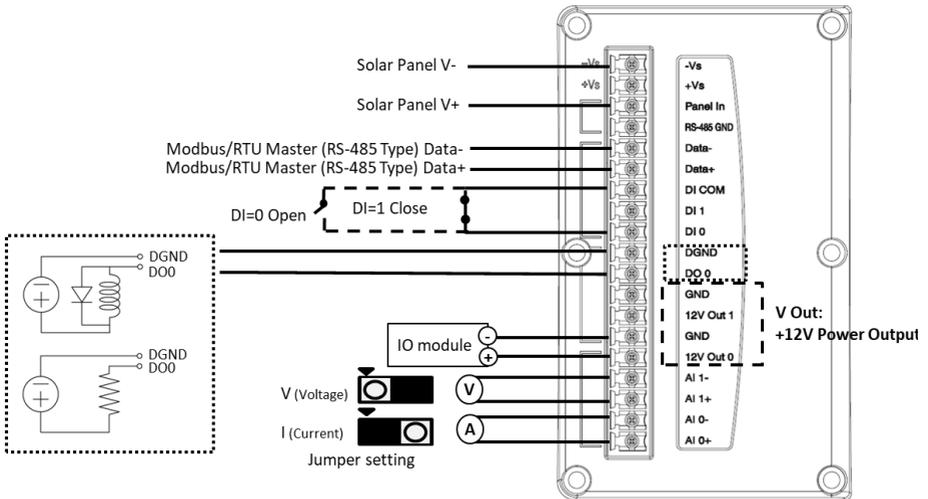
# Application Wiring (Cont.)

## Application Wiring of WISE-S600T Series I/O Module with Terminal Block

WISE-S614T (4AI/4DI)



WISE-S617T (2AI/2DI/1DO/RS-485)



## Notes

- Please install the CP210x USB to UART Controller driver.
- USB is not able to power up the module, and please ensure to remove the USB cable before RF transmitting.

## Module Configuration

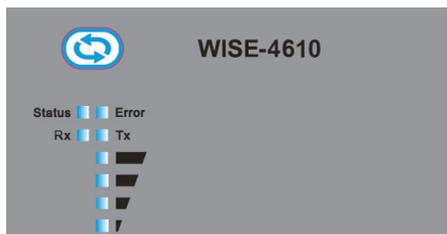
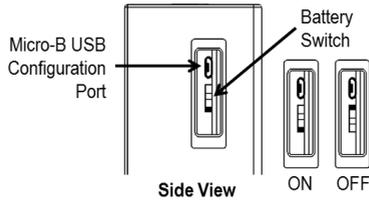
There are three ways to power up the WISE module, battery power, solar panel power and line power.

Open the rubber cover on the side of the WISE module and you can see a battery switch for turning on/off the battery power.

For the solar power, it is not only to recharge the battery but also to power up the device.

Please refer to the application wiring section for solar panel power and line power pin assignment.

Also, there is a USB port for the device configuration via WISE Studio but please note that the WISE device cannot be powered via USB.



## Led Indicators

The LED indicators are described as follows:

LED	Color	Indication	Behavior
Status	Green	Fast Blink (0.2 sec ON, 0.3 sec OFF)	Wait for connecting or connecting
		Slow Blink (0.2 sec ON, 1.8 sec OFF)	Connecting and normal at work
Error	Red	Fast Blink (0.2 sec ON, 0.8 sec OFF)	Application errors <ul style="list-style-type: none"> <li>• Network registration timeout</li> <li>• I/O error</li> </ul>
		Slow Blink (0.2 sec ON, 2.8 sec OFF)	<ul style="list-style-type: none"> <li>• Low battery voltage (<math>V \leq 20\%</math>)</li> <li>• Low RTC battery voltage</li> </ul>
		Off	No error
RF RX	Green	On	Receiving data from Gateway
		Off	NA
RF TX	Yellow	On	Sending data to Gateway
		Off	NA
Signal Strength*4	Green	On (after pressing membrane button)	Main battery capacity <ul style="list-style-type: none"> <li>• All OFF – <math>V \leq 20\%</math></li> <li>• 1 ON – <math>20\% &lt; V &lt; 40\%</math></li> <li>• 2 ON – <math>40\% \leq V &lt; 60\%</math></li> <li>• 3 ON – <math>60\% \leq V &lt; 80\%</math></li> <li>• 4 ON – <math>V \geq 80\%</math></li> </ul>