

3302 Type - WiSen® 4-Channel Digital Interface Unit (Encardio)					
Encardio IPI (SDI-12, 2-Axis)					
Encardio IPI (SDI-12, 3-Axis)					
Encardio IPI (RS-485, 3-Axis)					
WiSen WSS Cell (RS-485, 3-Axis)					
Basics					
Primary Battery Power (Internal)	Qty. x 3 (3.6V Lithium primary D-Cell ER34615)				
Battery Connection	Standard Aluminium Battery Holder				
External Secondary DC Power	7- 32VDC @ Min. 2A 10.8V Battery Unit Solar Unit				
Mobile Network Stop Voltage	≥ 2.65VDC				
Local Storage	Min. 10 Yrs Storage @ T=1min				
Dimension (L x W x H)	180 x 140 x 60mm				
Weight	≤ 1.6kg				
Cable Gland	Qty. 1 x EMC-CMA12 for external RS232 connection (through cable diameter, 3-6mm); Qty. 1 x EMC-CMA14 for external DC input power connection (through cable diameter, 4-8mm); Qty. 4 x EMC-CMA14 for external sensors (through cable diameter, 4-8mm).				
Wire Connection	DC In- Spring type wiring terminal				
Supported Sensor Types					
Max. Number of IPIs Connected	Power \ Type	WiSen WSS Cell (RS-485, 3-Axis)	Encardio IPI (SDI-12, 2-Axis)	Encardio IPI (SDI-12, 3-Axis)	Encardio IPI (RS-485, 3-Axis)
	A. Internal Batteries	Single Channel ≤ 40			
	B. Internal Batteries + External Battery Unit				
	C. Internal Batteries + External 12VDC Adapter or Solar Unit	Single Channel ≤ 127	Single Channel ≤ 62	Single Channel ≤ 62	Single Channel ≤ 127
Primary Sensor					
Sensor Type	Range	Accuracy		Resolution	
WiSen WSS Cell	-90° to +90°	0.001° (3.6" or 0.0175mm/m) @ [-2.0°, 2.0°] & Better than 0.002° (7.2" or 0.0349mm/m) @ Any 1° over (-90°, 90°)		0.000001° (0.0036' or 0.00001745mm/m)	
Encardio IPI (SDI-12)	Please consult the manufacturer due to IPI variants.				
Encardio IPI (RS-485)					
External Interface					
Wireless Module	Compatible with 2G/2.5G/3G/4G of Micro SIM card				
Wired Port	RS232				
No. of Interface Channels	Qty. 4 Interface Type @ CH1&CH2 or CH3&CH4: RS485/SDI-12 (Hardware Switch)				
WSN Interface					
Mesh Wireless Interface	Wisen® Protocol				
Standard System Parameter					
Temperature	Measurement Range:-40 to 85°C; Accuracy: ±1°C, typical 0.5°C; Resolution: 0.1°C				

Voltage	Accuracy: $\pm 0.1V$
Industrial Standard	
Casing and Painting Materials	Aluminium-Alloy Die Castings 12 (Epoxy Polyester Powder Coating)
IP Rating	$\geq IP66$
Operating Temperature	-40 to 85°C
Fire Proof	Approved

Applications	
A.	The unit, as a completely stand-alone device, can be directly connected with RS485/SDI-12 typed IPI sensors while also capable of connecting with a remote server via e.g., 4G daughter board;
B.	Customised firmware is required so that other IPIs from various manufacturers can be made compatible with this unit.

Non-Standard Accessory	
A.	RS232 to USB connection cable from a unit to a PC for local parameter configuration;
B.	TTL to USB 1m cable to read the mesh data from a gateway in parallel to the mobile network data transmission;
C.	Daughter board: 2/3/4G GSM interface board (by default), or Wi-Fi/Ethernet/RS-485 interface daughter board;
D.	Outdoor adaptor, IP68: 110-240VAC to 12VDC@3.3A.

Highlights	
When connected to a remote server, "NET" LED will be constantly on.	

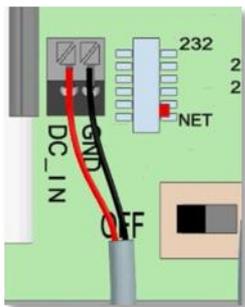


Figure. 12VDC@3.3A Adapter Connection

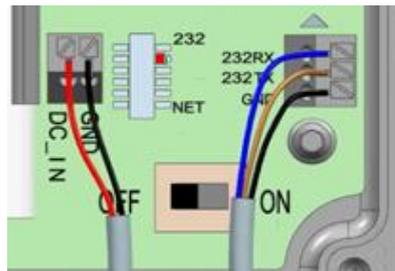


Figure. RS232 to USB Connection



Figure. TTL to USB Connection

Installation Guidance	
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Figure. Product Photos.

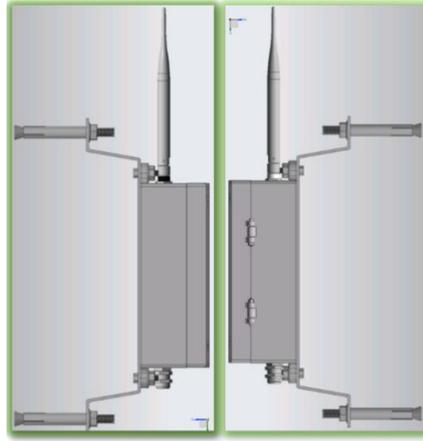


Figure. 4-Channel Digital Interface Unit Fixing Bracket.

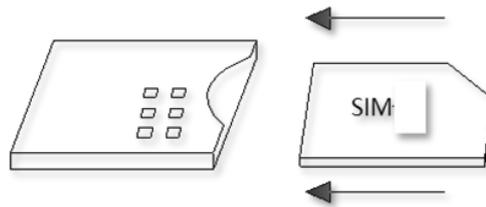


Figure. SIM Card Orientation

Wiring Sequence

Note 1: For the un-used IPI sensor wires, please isolate them from any potential contacts or shortcuts.

Note 2: Before powered on, CH1&CH2 and CH3&CH4 must be switched to the correct interface type, RS485 or SDI-12.

Node Terminal	WiSen WSS Cell	Encardio IPI (SDI-12)	Encardio IPI (RS-485)
	Wire Sequence	Wire Sequence	Wire Sequence
12V_Out	12VDC Positive	12VDC Positive	12VDC Positive
G	GND	GND	GND
A	RS485-A	--	RS485-A
B/S	RS485-B	SDI-12	RS485-B

IPI Configuration (after each Power On/Reboot)

Preparation:

- 1) On the 3302 Unit, switch “CH1&CH2” & “CH3&CH4” to RS-485 or SDI-12 interface types (according to the specific IPI types);
- 2) Ensure all external IPI sensors are connected correctly;
- 3) Power on the unit and view the data for at least 5T (at T=1min);

Note: after each Power On or Reboot, 3302 Unit is always at “No IPI Configuration” default status. The data will contain:

- A. Battery Voltage, External DC Voltage, Reference Voltage, Temperature, etc.;
- B. No IPI data (shown as CCCC).

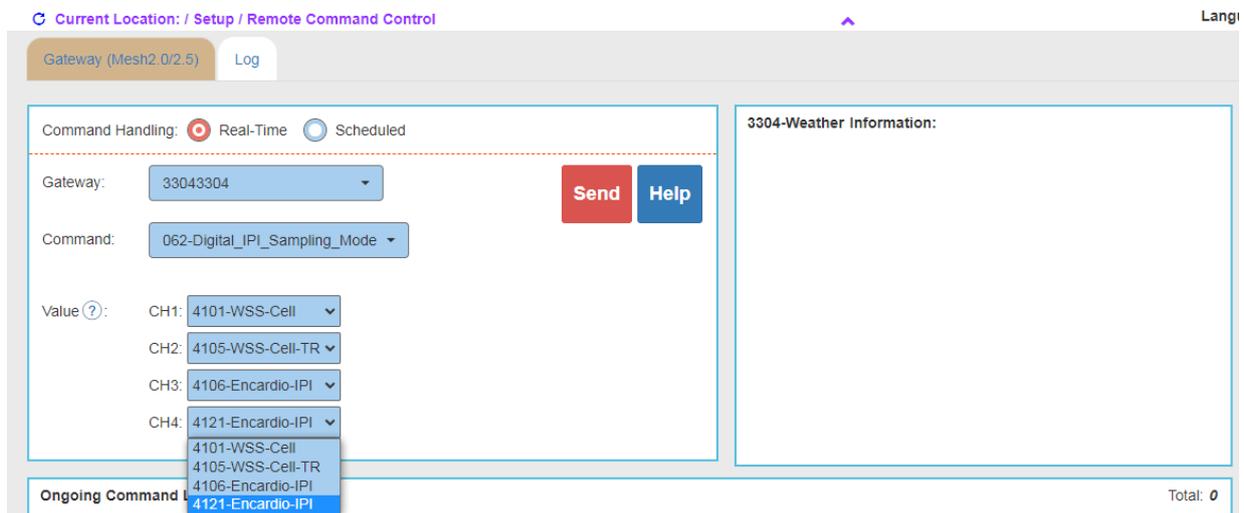
Configuration:

- 1) Visit “/Setup/Remote Command Control” page on Wisen Visualisation Platform;
- 2) Select the 3302 Unit SN;
- 3) Select Command- 062

Note:

- A. Content in 062 Command must be absolutely correct, otherwise no IPI sensor data can be sampled and the 3302 Unit will suffer from higher power consumptions;
 - B. At each Power On or Reboot on a 3302 Unit, ensure 062 Command is re-sent after the “Preparation” stage.
- 4) Define the IPI types connected at each channel;
 - 5) Click “Send”;
 - 6) The time to execute 062 Command is depending on:
 - A. the number of channels connected;
 - B. the IPI types;
 - C. the total number of IPIs

it is normally 3 to 5min (if T=1min), or 3-4 T (if T is relatively large) for IPI types recognition and real IPI data to be returned.



Current Location: / Setup / Remote Command Control Langi

Gateway (Mesh2.0/2.5) Log

Command Handling: Real-Time Scheduled

Gateway: **Send** **Help**

Command:

Value (?):

- CH1:
- CH2:
- CH3:
- CH4:

Ongoing Command:

3304-Weather Information: Total: 0

Figure. IPI configuration on Wisen Visualisation Platform.