

## **WIRELESS RS-485 NETWORK SOLUTION**

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NEL-MESH Wireless MODBUS / RS485 to RF converter for ISM band applications operating in the 860 – 930 MHz frequency band. Which allows the application to reach 15db / 28dBm output power creating a mesh next work > 1000 meter. The converter collects the data from MODBUS (RTU) slave device and converts it to desired data format.

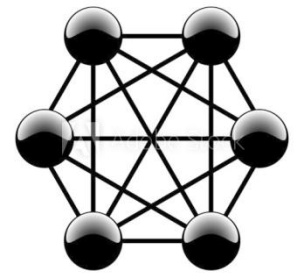
Any gateway (DCU) collects the data and sends to the cloud using GPRS. 4 LEDs inform about the substantial operating and error conditions. RF status is indicated by the Green LED. Sending or receiving data is indicated by a two-color LED yellow/orange. Orange color LED indicates the Configuration status.

#### HARDWARE SPECIFICATION

Parameter		Value
Wireless parameters	Frequency band	860 – 930 MHz
	Transmitting power	15 ~ 28dBm
	Receiving sensitivity	-114dBm (GFSK 10Kbps, BER < 0.1 % ) -105dBm (GFSK 100Kbps, BER < 0.1%)
	Transmission distance	1Km. Test condition: Open area, clear weather, 28dBm transmitting power, 5dBi antenna gain, height is greater than 2 meters, 0.268K air rate.
	Antenna	SMA
	M-Bus connection	Terminal pairs max. 2.5 mm <sup>2</sup>
	Dimension	110mm x 70mm x 73.5mm (L X B X H)
	Hardware parameters	Data interface
Working voltage		5v to 40v DC
Working current		Transmitting current: < 350mA@12V. Standby mode: <30mA@12V
Working temperature		-30°C~ +80°C
Storage temperature		-45°C~ +90°C
Working humidity		10~90%RH
Storage humidity		10~90%RH
Indications	LED1	RF Status
	LED2	RX
	LED3	TX
	LED4	Configuration status

**INTERFACE:**

- Antenna interface
- Reload button
- Power supply interface



Mesh Network

**HARDWARE PROTECTION:**

- Full wired terminal installation and protection for lightning strike
- High current protection for power supply and interface
- RS-485 anti-surge protection
- Over-current protection for power supply

**APPLICATIONS:**

The NEL-Mesh wireless transceiver can be deployed in the following applications to expand the communication capability:

- Industrial Automation and Industry 4.0
- Power and Energy Metering in Commercial buildings, Malls
- Submetering and Tenant Billing for Entire Apartment, Condominiums
- Education Facilities and Campus
- Industrial and Factory Facilities
- Renewable Energy Generation such as Solar PV, Wind and etc
- Any network with devices using RS485 communication.

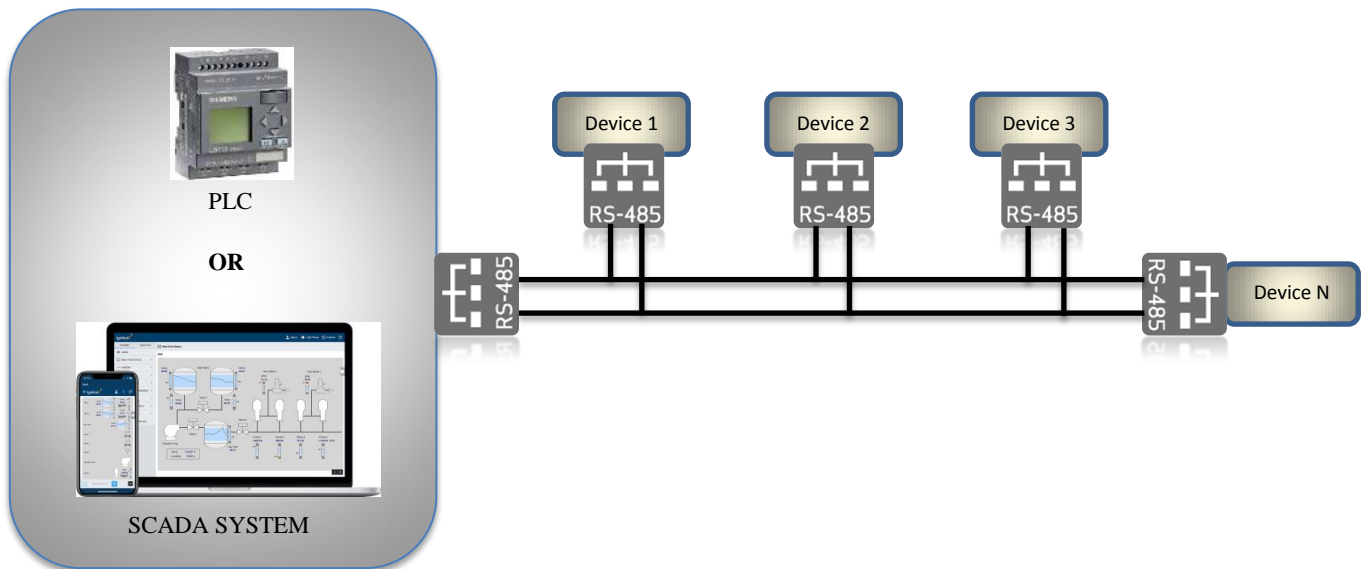
**MOUNTING:**

- Innovative Clips design facilitates Wall / Rail Mount to Enclosures by changing its position in Base plate.
- Protection - IP20 (finger protected) Protection against accidental contact.
- Closed cover available for front side mating connectors like D-sub OR for any other option.
- Dimension :110mm x 70mm x 73.5mm (L X B X H)

**NEL-MESH WIRELESS OPERATION:-**

**Traditional RS-485 network:-**

In a traditional RS485 network, each device requires wires, +, - (shield). All devices in same network need to be daisy-chained together from the first device to last to form a complete connection. The wiring process is labour-intensive and tends to be a challenge in most retrofit projects.



**With NEL-MESH:-**

The NEL-MESH wireless RS485 network solution completely eliminates the need for RS485 communication wiring. Each device, or group of devices can directly connect to NEL-MESH transceiver, and the job is done. The NEL-MESH transceiver transparently runs with any protocol and transmits data and commands wirelessly within a network. The NEL-MESH communicates from slave to master, from sensors and meters to data acquisition servers and gateways cost effectively and with minimal challenge.

