RS485/UART to LoRaWAN/NB-IoT Converter

OVERVIEW:

The Dragino RS485 series is a RS485 / UART to LoRaWAN/NB-IoT Converter for Internet of Things solutions. User can connect RS485 or UART sensors to the converter, and configure the converter to periodically read sensor data and upload via LoRaWAN and NB-IoT network to IoT server.

The Dragino RS485 outdoor converter can interface to RS485 sensor, 3.3v/5v UART TTL sensor or interrupt sensor. The RS485 converter provides a 3.3v output and a 5v output to power external sensors. Both output voltages are controllable to minimize the total system power consumption.

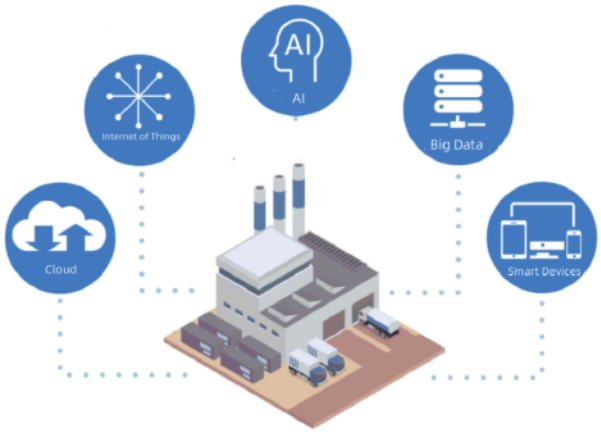
The Dragino RS485 series is IP67 waterproof and powered by 8500mAh Li-SOCI2 battery or solar panel with li-on battery, it is designed for long term use for several years.

It supports BLE configure and OTA update which make user easy to use.

Applications:

Smart City

Smart Farm



Smart Factory

Smart Building

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Model Variants

Variants	RS485-LB	RS485-LS	RS485-NB	RS485-NS
Apperance				
Connectivity	LoRaWAN	LoRaWAN	NB-IoT	NB-IoT
Configure Method	TTL, BLE, LoRaWAN	TTL, BLE, LoRaWAN	TTL, BLE, NB-IoT	TTL, BLE, NB-IoT
Upgrade Method	TTL, BLE, LoRa	TTL, BLE, LoRa	TTL, BLE	TTL, BLE
Hardware	MCU: 48Mhz ARM Flash: 256KB RAM: 64KB	MCU: 48Mhz ARM Flash: 256KB RAM: 64KB	MCU: 32Mhz ARM Flash: 196KB SRAM: 20KB	MCU: 32Mhz ARM Flash: 196KB SRAM: 20KB
Features	* +5v controllable output * 3 x Interrupt or Digital IN/OUT pins * 1 x RS485 Interface , 1 x I2C Interface * 1 x UART Interface , 3.3v or 5v * 1 x one wire interface * Ultra-low power consumption * Support multiply RS485 devices by flexible rules * Support Modbus protocol			
Battery & Power	* Li/SOCI2 Battery	* Solar + Li-on Battery	* Li/SOCI2 Battery	* Solar + Li-on Battery
Power Consumption	* Sleep Mode: 5uA @ 3.3v * LoRa Transmit Mode: 125mA @ 20dBm, 82mA @ 14dBm	* Sleep mode: 74uA@3.8V * LoRa Transmit Mode: 206mA@14dBm, 236mA@20dBm	* Sleep mode: 14uA@3.3V * Max Transmit power: 350mA@3.3V	* Sleep mode: 74uA@3.4V * Max Transmit power: 350mA@3.4V
Supply Voltage	2.5v ~ 3.6v	3.7v ~ 4.2v	2.5v ~ 3.6v	3.7v ~ 4.2v
Operating Temperature	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C	-40 ~ 85°C

Battery & Enclosure Option:

Li-SOCI2 Battery:

- Li/SOCI2 un-chargeable battery
- Capacity: 8500mAh
- Self-Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

Solar Version:

- 3000mAh Re-chargeable battery
- 0.9W on board solar pannel Suitable to used in the place where sun is sufficient

Wireless Option:

LoRaWAN®

- LoRaWAN 1.0.3 Class A
- Bands: CN470/EU433/KR920/US915/EU868/ AS923/AU915/IN865
- OTAA or ABP Mode.
- World Wide Unique LoRaWAN Key
- RX sensitivity: down to -139 dBm.
- Max +22 dBm - 100 mW RF output

NB-IoT

- NB-IoT Bands, B1/B2/B3/B4/B5/B8/B12/B13/B17/ B18/B19/B20/B25/B28/B66/B70/B85 @H-FDD
- Uplink via MQTT, MQTTs, TCP, or UDP
- Multiply Sampling and one uplink

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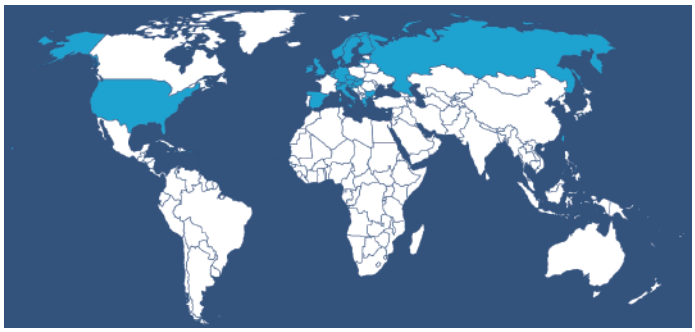
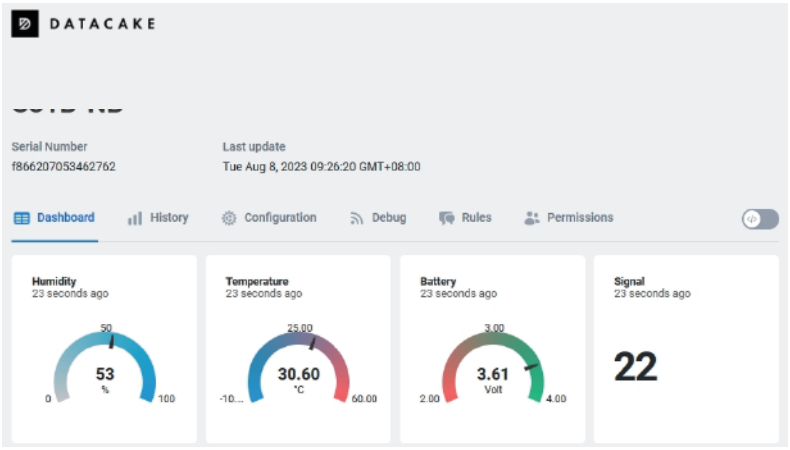
What is 1D version for NB-IoT version?

The 1D version of RS485 NB-IoT is with 1NCE SIM Card and DataCake IoT Service.

1NCE card provides 10 years lifetime for NB-IoT connection and Includes 500MB data traffic which is enough for 10 years normal uplink for the NB-IoT Sensor.

Coverage of 1NCE card is NB-IoT network coverage: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Malta, Netherlands, Norway, Puerto Rico, Russia, Slovak , Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.





1D version with DataCake IoT service pre-installed. This save a lot of work from user side to configure IoT server.

Below is Dash Board is the demo in DataCake.

Order Info:

Part Number: RS485-LB-XX-YY

XX: The default frequency band

- XX: Frequency Bands, options: EU433,CN470, EU868,IN865,KR920,AS923,AU915,US915

YY: The grand connector hole size

- M12: M12 hole
- M16: M16 hole

Part Number: RS485-NB-XX-YY

XX:

- **GE:** General version (Exclude SIM card)
- **1D:** with 1NCE* 10 years 500MB SIM card Pre-configure to DataCake server

YY: The grand connector hole size

- M12: M12 hole
- M16: M16 hole

Part Number: RS485-LS-XX-YY

XX: The default frequency band

- XX: Frequency Bands, options: EU433,CN470, EU868,IN865,KR920,AS923,AU915,US915

YY: The grand connector hole size

- M12: M12 hole
- M16: M16 hole

Part Number: RS485-NS-XX-YY

XX:

- **GE:** General version (Exclude SIM card)
- **1D:** with 1NCE* 10 years 500MB SIM card Pre-configure to DataCake server

YY: The grand connector hole size

- M12: M12 hole
- M16: M16 hole

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