

# Product Manual

LoRaWAN Data Transmission Terminal  
Model: IOT-L2S-F1&F2



## Company Profile

Heyuan Intelligence Co., Ltd. is headquartered in Aosheng Building, High-tech Development Zone of Jinan City in Shandong Province of China with a registered capital of 52,700,000RMB. It was successfully listed in the New Third Board (stock code: 836184) in March, 2016. Heyuan is committed to serving the fields i.e. intelligent network, energy management, electrical safety, IOT terminals, railway transportation. It is a service supplier for intelligent power, electricity safety and energy management integrating R&D, design, manufacture, sales and service.

Heyuan always adheres to enhancing the core competitiveness by technological innovation with the goal “to be a service expert in the electric power industry and a power expert in IOT industry”. Heyuan devotes itself to intelligent data collection and transmission from distribution network, power distribution, electricity consumption, distributed power generation, electric equipment management, and intelligent data acquisition management.

## Product Introduction

The LoRaWAN Data Transmission Terminal, Model IOT-L2S-F1&F2, is a universal communication interactive equipment which is designed and manufactured based on LoRa RF chip. It integrates two interfaces of industrial standard RS485 and supports a variety of protocols to realize the data transmission between wired and wireless devices. The RF chip SX1276 from Semtech is used as RF part to realize long-distance transmission. It supports LoRaWAN Class C protocol. It can be widely applied in the IoT, centralized metering and industrial control etc..



## Key Features

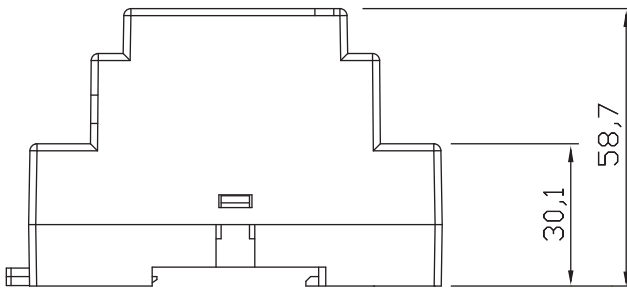
- 2 standard interfaces of RS485, supporting a variety of protocols and communicating with various automatic devices with **RS485** interfaces
- Equipped LoRa chips **SX1276** from Semtech for RF part
- **Supporting LoRaWAN Class C protocol**
- Wireless ultra-long transmission range with up to **8 km** barrier free
- Small size, easy to install
- Working temperature range:  $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$ , suitable in all kinds of harsh environment
- Wide operating voltage range with optional multi specification models
- 1 LoRaWAN module can connect up to **16** Modbus RTU protocol devices and **16** DL/T645 protocol devices simultaneously

## Parameter

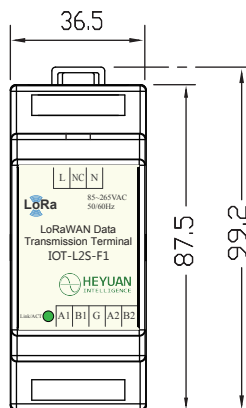
Product Parameter	
Power Supply	AC85-265V,50/60Hz or DC5-36V
Power Consumption	<1W
Protocols Supported by RS485	Modbus RTU, DL/T 645
RS485 Communication Baud Rates	1200-115200bps
Installation	Din rail mounted installation

RF Parameter	
Working Frequency Range	902MHz-928MHz
ISM Band	<b>915 MHz</b>
Antenna Impedance	50Ω
Output Power	14dBm100mA
Sensitivity	-139dBm(SF12, broadband125KHz)
Sending Packet Length	51-222bytes
Receiving Packet Length	51-222bytes
Communication Range	<b>6-8 km</b>

## Dimension



Side View



Top View

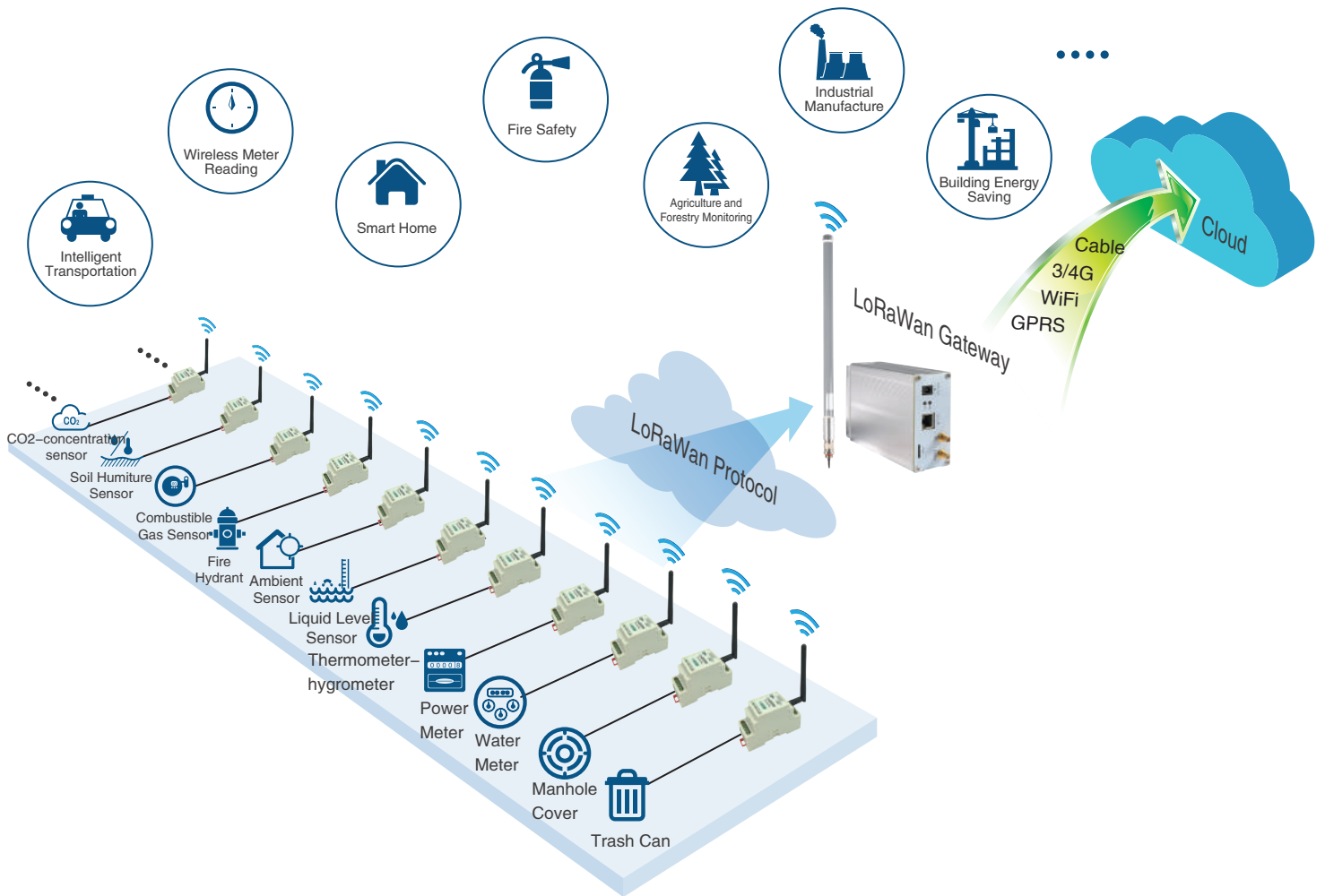
## Terminal Definition

Terminal Definition	
L	Line L of Power Input
N	Line N of Power Input
NC	Null
A1	RS485-1 communication interface A
B1	RS485-1 communication interface B
G	Grounding
A2	RS485-2 communication interface A
B2	RS485-2 communication interface B

## Model Selection

Model	RS485	Power Supply Voltage	Wireless Parameters	
			Working Frequency	Networking Modes
IOT-L2S-F1	2	AC85-265V	915MHz	LoRaWAN
IOT-L2S-F2	2	DC8-36V	915MHz	LoRaWAN

## Example of Application System



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