

Industrial-grade design, user-friendly LoRa terminal

LT310 Series

Embrace wireless LoRa communication, simplifying the communication network



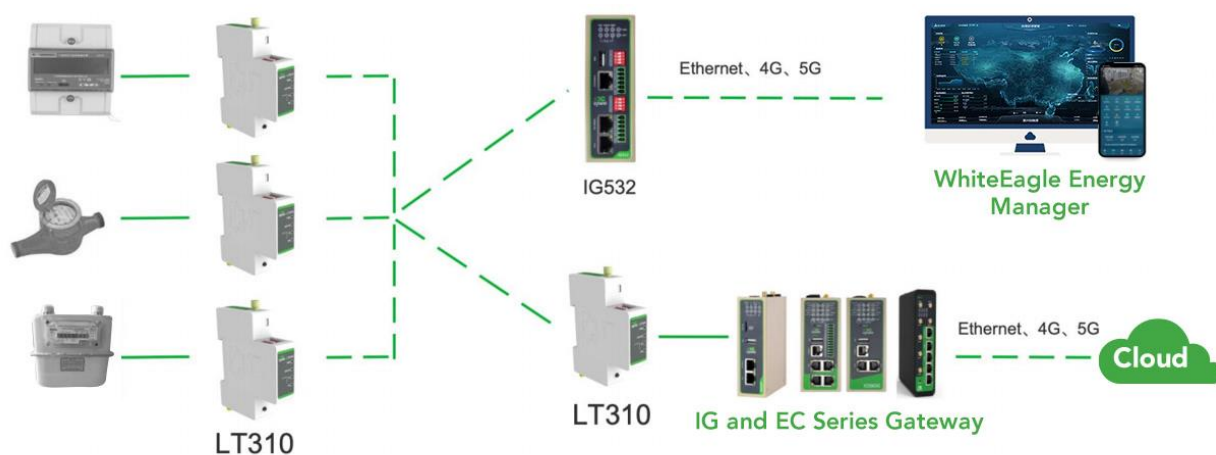
The LT310 series is a data transmission terminal based on LoRa wireless technology, supporting various modulation methods such as LoRa, FSK, and GFSK. It incorporates spectrum spreading technology to solve the long-distance communication challenges for small data packets in complex environments. Operating in the frequency range of 470MHz to 510MHz, it supports embedded self-organizing transparent transmission protocol and enables one-click networking.

Utilizing an industrial-grade chip solution, the LT310 operates in extreme environments, with a working temperature ranging from -35°C to 75°C , providing a stable data transmission channel for unmanned and harsh field conditions. The LT310 supports local configuration, remote configuration, remote upgrades, and various configuration and management methods, ensuring rapid, flexible, and efficient deployment. It supports star network topology, enabling effortless networking without complex configurations. With easy data pass-through capabilities, users can truly experience the convenience of wireless communication. The product utilizes ultra-low-power LoRa integrated chips, designed in a compact size, making it widely applicable in the M2M sector of the IoT industry.

The LT310 are suitable for long-distance communication in complex environments, such as:

- Low voltage distribution
- Industrial automation
- Smart environmental protection
- New energy
- Smart buildings
- Agriculture etc.

Application



Features and Advantages

- **Easily achieve self-networking, enhance anti-interference capability.**
 - Adopt self-networking design, one-click network access without manual parameter settings. simple and efficient networking process;
 - Significantly improve anti-interference capability, ensuring data integrity.
- **Long-distance Communication, Solving Long-Range Communication Challenges in Complex Environments**
 - Indoor communication range of up to 1km;
 - Outdoor communication range extending up to 5km;
 - No wiring required, addressing long-range wireless communication challenges in complex environments.
- **Ultra-low power consumption**

Supports sleep mode and wake-up mode. The device goes into sleep mode when there is no data transmission. It wakes up when there is data to transmit.

- **Multiple interfaces to meet multiple scenes**

Provides standard RS232 and RS485 interfaces, allowing direct connection to serial devices. Diverse device compatibility to fulfill on-site requirements to the maximum extent.

- **Remote configuration, remote upgrades, efficient device management**

Supports remote configuration and upgrades. Technical personnel can perform remote maintenance without being on-site, saving labor costs and significantly improving management efficiency.

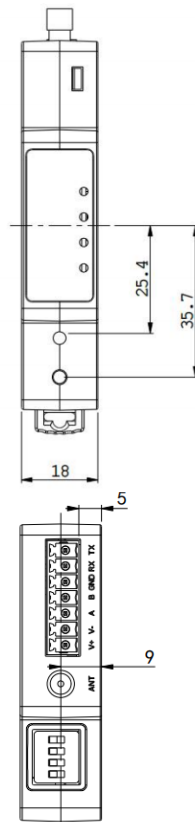
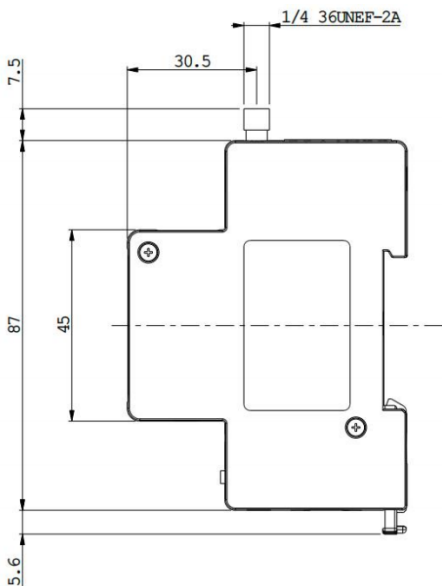
- **Fully Industrial-grade Design, ready for harsh industrial environments**

Designed with industrial standards, supports wide temperature range from -35°C to 75°C , operates on a wide voltage supply of $+5\sim 36\text{VDC}$, and has an IP30 protection level. Provides stable and secure network communication for demanding unmanned industrial sites.

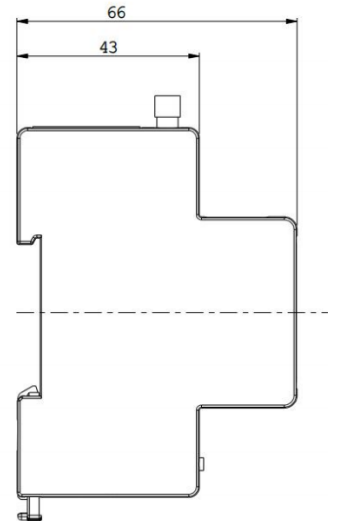
- **Type C Online Debugging, Uninterrupted Data Transmission**

Equipped with a Type C debugging serial port, allowing uninterrupted data transmission during device debugging.

Dimensions (mm)



DIN Rail Mounting



Product Specifications

Hardware Specifications			
Item	LT310		
Interfaces			
Serial Port	1*RS232 and 1*RS485 interface (cannot be used simultaneously), built-in 15KV ESD protection, industrial terminal.		
Debug Port	1*Type-C debug port		
DIP Switch	1*RS485 pull-up resistor, 1*RS485 pull-down resistor, 1*relay/node mode, 1*low power mode.		
Antenna	1*standard SMA male antenna interface, characteristic impedance 50Ω.		
Reset Button	Pinhole reset button		
Network Button	Button		
Hardware Watchdog	Supports		
LoRa Wireless Parameters			
Communication Frequency	470MHz – 510MHz		
Indoor Communication Range	1km		
Outdoor Communication Range	3.5km		
Transmit Power	-9dBm-22dBm, configurable		
Communication Theoretical Rate	0.15Kbps-46.8Kbps		
Sensitivity	-140dBm		
Channel	80		
Mechanical Feature			
Installation	DIN-rail	Protection Rating	IP30
Housing	Plastic	Dimensions	18*100.1*66mm
Power Consumption			
Power Consumption (Receiving)	13.2 ~ 13.4mA@12 VDC; 26.1 ~ 26.2mA@5 VDC		
Power Consumption (Send)	60.3 ~ 61.2mA@12 VDC; 107.3 ~ 115.1mA@5 VDC		
Power Consumption (Sleep)	3.1 ~ 3.2mA@12 VDC; 7.3 ~ 7.4mA@5VDC		
Power Supply			
Power Input	DC 5-36V		
Power Interface	Industrial terminal block, industrial terminal block, inbuilt power reverse protection and overvoltage protection		
Ambient Temperature and Humidity			
Working Temperature	-35~ 75℃	Storage Temperature	-40 ~ 85℃
Ambient Humidity	5 ~ 95% (non-condensing)		
Indicator			
LED	PWR, STATUS, TXD, RXD		
EMC Index			
Electrostatic Discharge	EN61000-4-2, level 3		
Radiated RFI Immunity	EN61000-4-3, level 3		
Electrical Fast Transients/Burst	EN61000-4-4, level 3		
Surge	EN61000-4-5, level 3		
Conducted RFI	EN61000-4-6 ,level 3		
Power Frequency Magnetic Field Immunity	EN61000-4-8, horizontal / vertical 400A/m (>level 2)		
Ring Wave Immunity	EN61000-4-12,level 3		
Physical Features			
Shock	IEC60068-2-27	Vibration	IEC60068-2-6
Free Fall	IEC60068-2-32		

Software Specifications	
Item	LT310
Operation System	
Networking	Star, tree
Working Characteristics	
Working Mode	Normal Mode, Periodic Sleep, Deep Sleep
Working Type	Relay, node
Communication Function	Serial port transparent transmission
Wake up Method	Wake up on the air, wake up on serial port data.
Security	
Cyber Security	Data encryption, default aes128 encryption.
Reliability	
Embedded Watchdog	Device self-diagnosing, auto-recovers from operation faults
Maintenance and Management	
Upgrade Method	Local or remote firmware upgrade
Log	Local debug logs
Remote Management	Client software configuration

Ordering Guide

Model code:LT310-<Area>-<W/NA>		
Model	Area	Frequency
LT310-AS	Asia	470MHz

About Us

InHand Networks is a leading IoT solutions provider founded in 2001, dedicated to driving digital transformation across industries and empowering customers to unlock their full potential and achieve accelerated growth.

We specialize in delivering industrial-grade connectivity solutions for diverse sectors, such as enterprise networks, industrial and building IoT, digital energy, smart commerce, and mobility. Our comprehensive product portfolio and services cater to various applications worldwide, including smart manufacturing, smart grid, intelligent transportation, smart retail, etc. With a global footprint spanning over 60 countries, we serve customers in China, the United States, France, Germany, the United Kingdom, Italy, and beyond.



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