



Chengdu Alinkwise Future Technology Co., Ltd.

D2L/P LoRaWAN DTU Spec.

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Product Overview

The D2L/P Series is an industrial LoRaWAN DTU with an RS485 interface. It wirelessly connects RS485 devices such as meters, sensors, flow meters, and PLCs to a LoRaWAN gateway and platform, and supports remote control from the platform.

It supports active polling and transparent transmission. In polling mode, the DTU reads slave data by schedule or remote command, supporting Modbus-RTU and user-defined protocols. In transparent mode, it forwards data between RS485 and LoRaWAN.

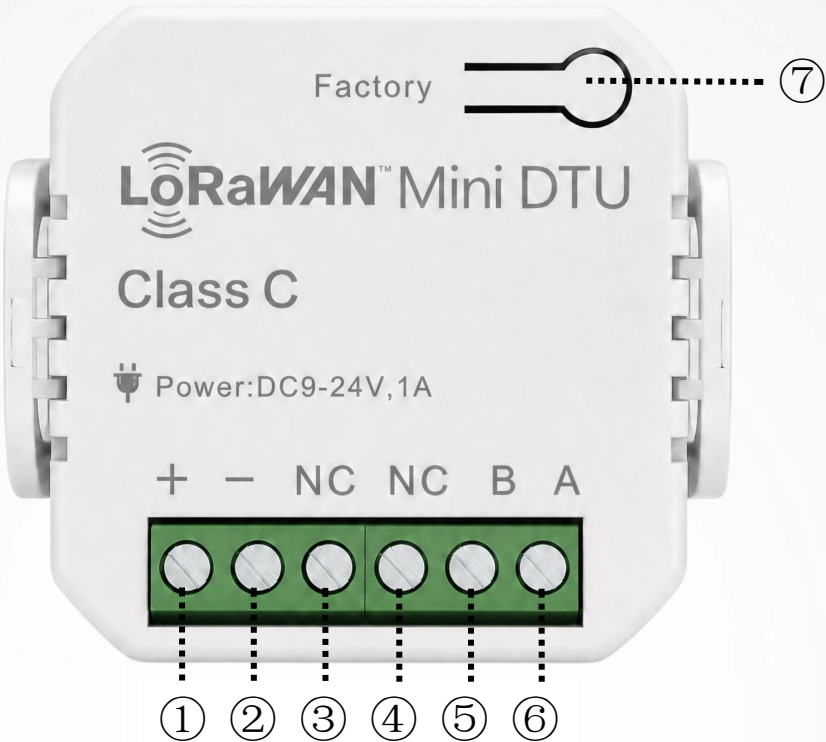
Built-in LoRaWAN 1.0.3 supports Class A/Class C, OTAA/ABP activation, fixed SF, ADR, and configurable power, frequency, and channel settings for different site networks.



Key Features

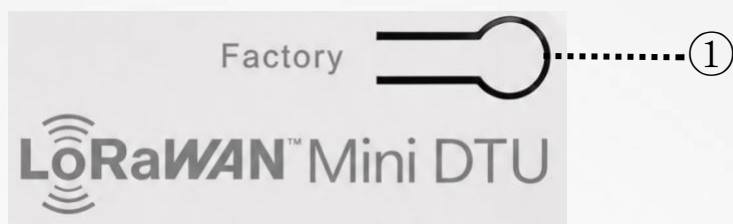
- D2L 17 dBm max.; D2P 25 dBm max.
- 1 RS485 port (A+/B-), active polling and transparent mode
- LoRaWAN 1.0.3 protocol stack, Class A/Class C
- Custom RS485 polling commands, intervals, and remote polling
- RS485 over LoRaWAN transparent data transmission
- Modbus-RTU frames and user-defined protocols
- LoRaWAN heartbeat and communication parameter settings

Interface Description



No.	Name	Description
1	Power input positive (+)	DC 9 to 24 V input
2	Power input negative (-)	
3	NC	Not connected
4	NC	Not connected
5	RS485-B (B-) port	RS485 communication port
6	RS485-A (A+) port	
7	Factory reset button	Hold 3 s until the green LED flashes rapidly, then release to restore factory settings.

LED Indicator Status



No.	Name	Description
1	Slow green flash	Normal operation
2	Double green flash	Configuration mode; uplink paused
3	Fast green flash	1. Factory reset in progress 2. OTAA delayed join: about every 50 ms 3. OTAA joining: about every 100 ms
4	Green LED off	1. OTAA join failed or not joined 2. Device stopped abnormally 3. Device powered off
5	Steady green on	Device fault or abnormal state

Electrical Specifications

Item	Description
Power Supply	DC 9 to 24 V (recommended supply ≥ 1 A)
Current	Max. 0.5 A (D2L); max. 1 A (D2P)
Power Consumption	Average ≤ 0.5 W (depends on transmission interval/mode)

LoRa/LoRaWAN Parameters

Param.	Description
Output Power	-1 to 17 dBm (D2L); -1 to 25 dBm (D2P)
RX Input Power	<10 dBm
Bandwidth	125 kHz (fixed)
Spreading Factor	SF7 to SF12 adjustable (approx. 5.5, 3.1, 1.8, 1.0, 0.6, 0.3 kbps)
RX Sensitivity	-135 dBm (SF12, BW125 kHz)
Harmonics	<-40 dBm (@1 GHz)
Frequency Bands	EU433, CN470, CN779, EU868, AS923, AU915, KR920, etc. LoRaWAN regional plans (configured by delivery version)
RS485	RS485 configurable parameters: Data bits: 8; Stop bits: 1 or 2; Parity: none, odd, even Baud rates: 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps RS485 default parameters: Baud rate: 9600 bps; Data bits: 8; Stop bit: 1; Parity: none

Physical Specifications

Item	Description
Dimensions	50mm x 45mm x 20mm
Weight	Approx. 0.25 kg
Temperature	-20 to 60°C (operating); -40 to 85°C (storage)
Humidity	5% to 95% RH (non-condensing)

Interfaces

Item	Description
Power Port	3.81 mm terminal block
RS485 Port	3.81 mm terminal block

Packing List

No.	Name	Qty.	Description
1	Main Unit	1	LoRaWAN DTU main unit
2	3M Adhesive Pad	1	For adhesive mounting
3	Expansion Screws	2	For wall mounting

Installation

1. Bracket



2. Align



3. Snap in



Revision History

Ver.	Date	Changes
V1.0.0	2026-05-11	Initial release
V1.0.1	2026-05-28	Optimized description and parameters
V2.0.0	2026-06-30	Updated