

LoRaWAN[®] Solenoid Valve Controller

UC51x Series

Milesight

◆ Introduction

UC51x series LoRaWAN[®] Solenoid Valve Controller is a device used to remotely control DC latching solenoids of the valve. It contains 2 solenoid interfaces and 2 GPIO interfaces, which can be easily controlled locally or remotely.

Besides ultra-low-power LoRaWAN[®] technology, UC51x series also provides a built-in solar panel and high-capacity battery power supply for long-term operation. For outdoor applications, it equips with an IP67-rated enclosure and M12 connectors, providing protection against water and dust under harsh environments.



UC511



UC512

◆ Features

- Compatible with standard DC latching solenoids
- Waterproof design including IP67 case and M12 connectors
- Solar-powered and built-in chargeable batteries

- OPEN/CLOSE control by mobile App locally or commands remotely
- Support multiple local rules allows for flexible control without network
- Two GPIO interfaces for flow monitoring or valve status monitoring
- Transmission distance up to 15 km with line of sight
- Support Milesight D2D protocol to enable ultra-low latency and direct control without gateways
- Equipped with NFC for easy configuration
- Time and flow control via Milesight IoT Cloud
- Support multicast for control in bulk

◆ Specifications

Model	UC511	UC512
Wireless Transmission		
Technology	LoRaWAN®, Milesight D2D	
Antenna	Internal Antenna or External Antenna (Hardware Optional) External Antenna (EA) Version: 1 × 50 Ω SMA Female Connector	
Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4	
Tx Power	16dBm (868 MHz)/20dBm (915 MHz)/19dBm (470 MHz)	
Sensitivity	-137dBm @300bps	
Working Mode	OTAA/ABP Class A, Class B, Class C, Class C to B	OTAA/ABP Class A, Class B
Data Interfaces		
Interface Type	M12 A-Coded Male	
Solenoid Interface		
Ports	2 × Solenoid Interfaces	
Solenoid Support	2 Wires DC 12V Latching Solenoids	
Cable Length	1.5m (by Default)	
GPIO Interface		
Ports	2 × GPIO Interfaces, Dry Contact	
Work Mode	Digital Input, Pulse Counter	
Operation		
Power On & Off	Mobile App (via NFC), PC Software (via USB Type-C), Power Button (Internal), Cable Connection	
Configuration	Mobile App(via NFC) or PC Software (via USB Type-C)	
Advanced Feature	Multicast, Data Storage, Data Retransmission, Milesight D2D Agent, Local Rules	

Physical Characteristics		
Power Connector	M12 A-Coded Male (EA Version Only)	-
Power Supply	<ol style="list-style-type: none"> Solar Powered (6V, 1.7W) 2 × 2550 mAh Chargeable Batteries 5-24 VDC (EA Version Only) 	3 × 9000 mAh Replaceable ER26500 Li-SOCl ₂ Batteries
Battery Life*(20 min interval + control valve 4 times per day, 25°C)	When battery level is full and does not charge: Class A: Around 3 years Class B: Around 350 days Class C: Around 25 days	Class A: >10 years Class B: Around 5 years
Operating Temperature	-20°C~60°C	-30°C~70°C
Ingress Protection	IP67	
Dimension	116 × 116 × 45.5 mm (4.56 × 4.56 × 1.79 in) (Connectors Excluded)	
Installation	Wall or Pole Mounting	
Approvals		
Regulatory	CE, FCC	
Environmental	RoHS	

* Tested under laboratory conditions and for guideline purposes only.

