

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 Mulesight D2D protocol to enable ultra-low latency and direct control without gateways
- Equipped with NFC for easy configuration
- Time and flow control via Mulesight IoT Cloud or Mulesight Development Platform
- Support multicast for control in bulk

◆ Specifications

Model	UC511	UC512
Wireless Transmission		
Technology	LoRaWAN [®] , Milesight D2D	LoRaWAN [®]
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 × Digital Inputs, Dry Contact	
Work Mode	Digital Input, Pulse Counter	
Input Frequency	≤ 4000 Hz	
Operation		
Power On & Off	Mobile App (via NFC), Power Button (Internal), Cable Connection	
Configuration	Mobile App(via NFC)	
Advanced Feature	Multicast, Data Storage, Data Retransmission, Data	Multicast, Data Storage, Data Retransmission, Data

	Retrievability, Milesight D2D Agent, Local Rules	Retrievability, Local Rules
Physical Characteristics		
Power Connector	M12 A-Coded Male (EA Version Only)	-
Power Supply	1. Solar Powered (6V, 1.7W) 2. 2 × 2550 mAh Chargeable Batteries 3. 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	IP68 (1m underwater, 7 days)	
Dimension	116 × 116 × 45.5 mm (4.56 × 4.56 × 1.79 in) (Connectors Excluded)	
Weight	IA Version: 425g EA Version: 467g	IA Version: 479g EA Version: 521g
Installation	Wall or Pole Mounting	
Approvals		
Regulatory	CE, FCC	
Environmental	RoHS	

* Tested under laboratory conditions and for guideline purposes only.