LoRaWAN ® Solenoid Valve Controller UC51x Series

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

➢ Two GPIO interfaces for flow monitoring or valve status monitoring

➢ Transmission distance up to 15 km with line of sight

➢ Store locally 1000 historical records and support retransmission to prevent data loss

➢ 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®	
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, 5/9/12 VDC Switchable	
Solenoid Support	2 Wires 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)	
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 to +60°C	-30°C to +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.