

Multi-Interface Controller UC50x Series

Milesight

◆ Introduction

UC50x series is a multi-interface controller used for data acquisition from various sensors and equipments. It contains different I/O interfaces such as analog input, digital input, digital output, serial port and so on, which simplify the deployment and replacement of LoRaWAN® or NB-IoT/Cat.M networks. UC50x series can be easily and quickly configured by NFC or wired USB port. For outdoor applications, it provides flexible power like built-in solar panel or high-capacity battery and is equipped with an IP67-rated enclosure and M12 connectors to protect itself from water and dust in harsh environments.



UC501



UC502

◆ Features

- Easy to connect with multiple wired sensors through GPIO/AI/RS232/RS485/SDI-12 interfaces
- Waterproof design including IP67 case and M12 connectors

- Solar powered and built-in battery optional
- Store historical records locally and support retransmission to prevent data loss
- Quick wireless configuration via NFC

LoRaWAN® Version Only

- Ultra-wide-distance wireless transmission up to line of sight of 15 km
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud solution
- Supports multicast for control in bulk (UC501 only)

NB-IoT/Cat.M Version Only

- Support cumulative number report function for power saving
- Support multiple network protocols to be compatible with IoT platforms

◆ Specifications

| Model | UC501 | UC502 |
|------------------------------|---|------------------|
| Wireless Transmission | | |
| LoRaWAN® Version | | |
| 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 | |
| Work Mode | OTAA/ABP Class A, Class C | OTAA/ABP Class A |
| NB-IoT/Cat. M Version | | |
| Antenna | Internal Antenna | |
| Cellular Band | Cat M1: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/ B66/B85 Cat NB2: B1/B2/B3/B4/B5/B8/ B12/B13/B18/B19/B20/B25/B28/ B66/B71/B85 | |
| SIM Slot | 1 (Micro SIM-3FF) | |
| Application Mode | TCP/UDP/MQTT/AWS | |
| Data Interfaces | | |
| Interface Type | M12 A-Coded Male | |

| IO | | | |
|--|--|--|---|
| Ports | 2 × GPIO | | |
| Logical Level | Low: 0~0.9 V, High: 2.5~3.3 V | | |
| Maximum Current | 20 mA | | |
| Work Mode | Digital Input, Digital Output, Pulse Counter (Software Switchable) | | |
| Serial Port | | | |
| Ports | 1 × RS232 or RS485 (Software Switchable) | | |
| Baud Rate | 1200~115200 bps | | |
| Protocol | Transparent (RS232/RS485), Modbus RTU (RS485) | | |
| Analog Input | | | |
| Ports | 2 × Analog Input | | |
| Resolution | 12 bit | | |
| Input Range | 4~20 mA or 0~10 V (Switchable) | | |
| SDI-12 | | | |
| Ports | 1 × SDI-12 | | |
| Protocol | SDI-12 V1.4, Transparent | | |
| Power Output | | | |
| Ports | 2 × 3.3 V, 2 × 5/9/12 V(Switchable) | | |
| Power Time Before Data Collection | Continuous (3.3V), 0~10 minutes (5/9/12V) | | |
| Operation | | | |
| Power On & Off | Mobile App (via NFC), PC Software (via USB Type-C), Power Button (Internal) | | |
| Configuration | Mobile App (via NFC) or PC software (via USB Type-C) | | |
| Physical Characteristics | | | |
| Power Connector | 1 × M12 A-Coded Male Interface | | |
| Power Supply | <table border="0"> <tr> <td style="vertical-align: top;"> 1. 2 × 2550 mAh Chargeable Batteries 2. Solar powered (6V, 1.7W) 3. 5-24 VDC </td> <td style="vertical-align: top;"> 1. 3 × 9000 mAh Replaceable ER26500 Li-SOCl₂ Batteries 2. 5-24 VDC </td> </tr> </table> | 1. 2 × 2550 mAh Chargeable Batteries 2. Solar powered (6V, 1.7W) 3. 5-24 VDC | 1. 3 × 9000 mAh Replaceable ER26500 Li-SOCl ₂ Batteries 2. 5-24 VDC |
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| 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 |

