# FDC600Y

## Intelligent Field Communication Box

## Brief Views

The intelligent field communication box is designed for use in open-air outdoor environments, offering all-weather outdoor electrical protection.

By installing various business modules, it enables the convergence and transmission of multiple services. The shell is made from high-quality cold-rolled steel plate (with options for galvanized or stainless steel), providing rainproof, dustproof, ventilated, heat-dissipating, and corrosion resistance properties. The pole-mount structure design is convenient for quick installation.

The built-in environmental parameter acquisition control module adjusts the internal fan to dissipate heat based on the temperature inside the box. The control module also triggers an audible alarm when the box door is illegally opened. A water sensor can detects the water level inside the box and issuing an alarm, while a smoke sensor can detect the smoke level inside the box and triggers an alarm if needed.

An optional 4G+GPS module allows for location tracking, with alarms sent via the web if the box is illegally moved. The power redundancy backup design ensures the long-term reliability of the equipment. With an optional battery power supply, the system will automatically switch to battery power if mains power fails.

The intelligent field communication box is equipped with web and CMS management functionality for easy monitoring and control.

Closed View

2pcs OLT module and
1pcs EYDFA module installed

# 1. Product Specification

## 1.1 OLT module specification

Refer to the OLT module FD1608Y-B0M datasheet

## 1.2 EYDFA module specification

Refer to the EYDFA module HF1915Y-C1M-1623W datasheet

## 1.3 Environmental parameter acquisition control module specifications

| Name | Parameter |
|---|---|
| Fan start temperature | 45 °C |
| Heater start temperature | -5 °C |

**Lights status and Results**

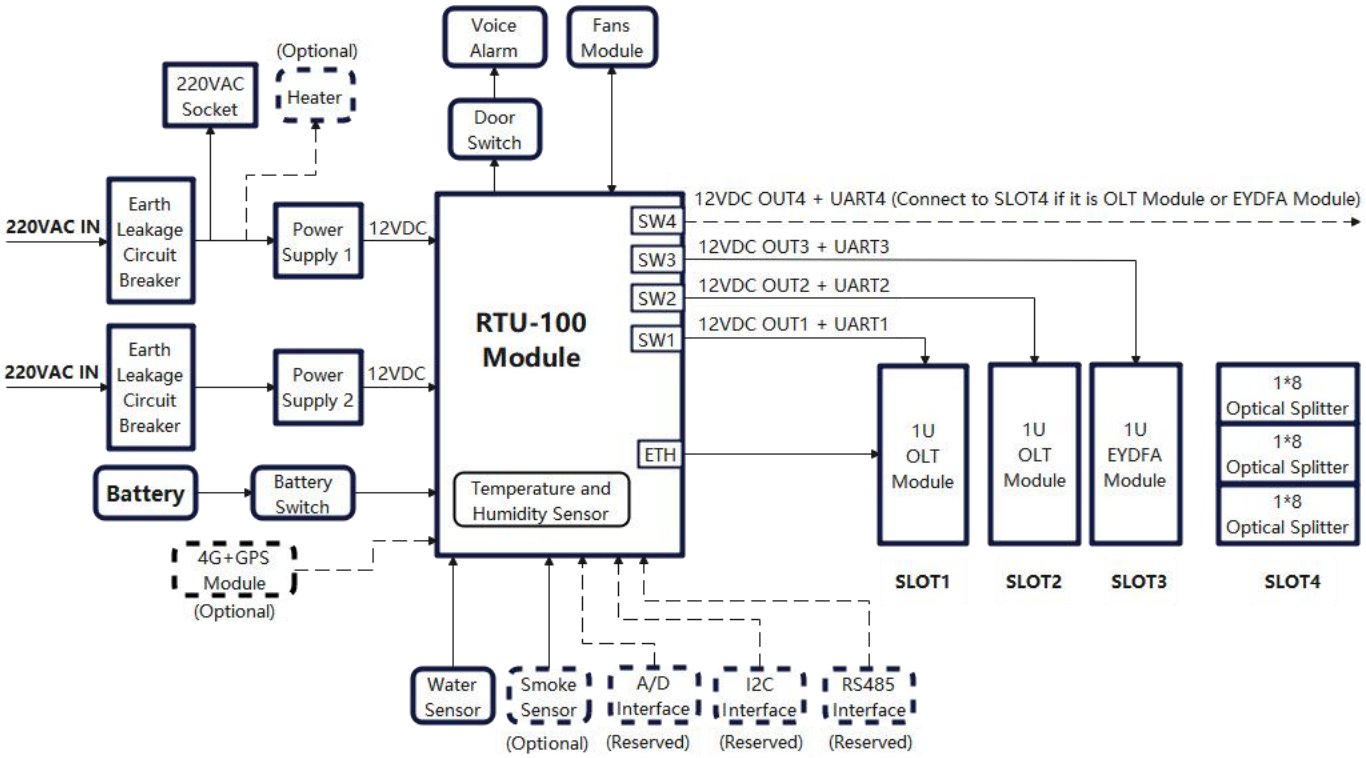
| Name | Light ON | Light Flashing | Light OFF | Notes |
|---|---|---|---|---|
| SYS | System working normal | / | System is unnormaled | Green light |
| WIFI | WIFI function open | Data transmitter | WIIF function off | Green light |
| ETH | ETH connect normal | Data transmitter | EHT unconnected | Green light |
| Battery Low | Battery over discharge protection | / | Battery voltage is normal | Green light |
| CHARGING | Battery is charging | / | Battery is not charging | Green light |
| CHARGED | Battery is fully charged | / | Battery is not fully charged | Green light |
| 14.4V Charging | 14.4V charge mode is selected | / | 14.4V charge mode is unselected | Green light |
| 12.6V Charging | 12.6V charge mode is selected | / | 12.6V charge mode is unselected | Green light |
| FAN1 | Fan1 is working | / | Fan1 is unworking | Green light |
| FAN2 | Fan2 is working | / | Fan2 is unworking | Green light |
| POWER | RTU-100 module power on | / | RTU-100 module power off | Green light |
| ALARM | With alarms | / | Without alarms | Red light |

## 1.4 Operating Specifications of Intelligent Field Communication Box

| Name | MIN | Typ. | MAX | Unit |
|---|---|---|---|---|
| Store temperature | -40 | | 85 | ℃ |
| Storage humidity | 5 | | 95 | % |
| Operate temperature (with heater) | -25 | | 65 | ℃ |
| Operate temperature (no heater) | 0 | | 65 | ℃ |
| Work humidity (non-condensing) | 10 | | 90 | % |
| Power consumption (no heater) | N/A | | 120 | W |
| AC input voltage | 100 | 220V | 240 | V |

# 2. Product hardware design specification

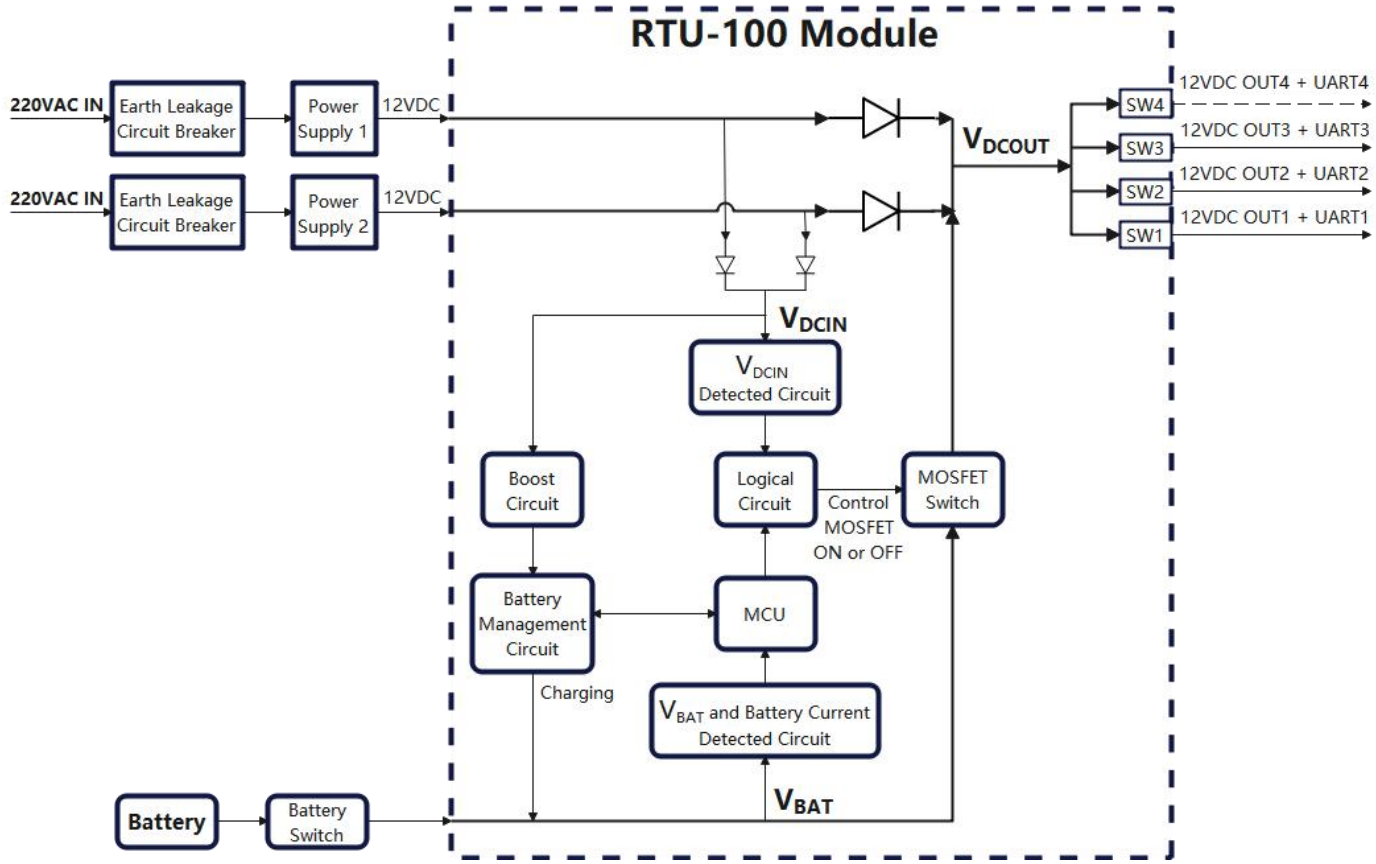
## 2.1 Hardware principle block diagram




**This intelligent field communication box is mainly composed of the following modules:**

OLT module, EYDFA module, power supply module, cabinet environment collection and control module (RTU-100 Module), among which the cabinet environment collection and control module includes power redundancy backup, power-off battery life control, environment collection control, etc.

## 2.2 Principle block diagram of battery charging,switching, and over discharge protection




**2.2.1 Battery charging:**

When 220VAC mains power is connected, the **Logical Circuit** controls the **MOSFET** to turn **OFF**, and the battery is in charging mode. The $V_{DCOUT}$ is provided by **Power Supply1** and **Power Supply2**.

**2.2.2 Battery switching:**

When 220VAC mains power is not connected, the **Logical Circuit** controls the **MOSFET** to turn **ON**, and the battery is in discharge mode. The $V_{DCOUT}$ is provided by **Battery**.

**2.2.3 Battery over discharge protection:**

When 220VAC mains power is not connected, the **Logical Circuit** controls the **MOSFET** to turn **ON**, and the battery is in discharge mode. And when the battery voltage is below the over discharge protection threshold, the **MCU** will send a signal to the **Logical Circuit** to forcibly turn **OFF** the **MOSFET**. The $V_{DCOUT}$ is equal to zero.

## 2.3 Main configuration of intelligent field communication box

| Name | Quantity | Remark |
|---|---|---|
| OLT module | Max 2 (with EYDFA module) | Individually packaged |
| | Max 3(without EYDFA module) | |
| | Max 4(without EYDFA module and Optical Splitter module) | |
| EYDFA module | Max 1 | Individually packaged |
| Optical Splitter Module | Max 3 | One 1*8 port module is configured by default |
| Earth Leakage Circuit Breaker | 2 | |
| Switching power supply | 2 | |
| 220VAC Socket | 1 | |
| Control Module | 1 | RTU-100 Module |
| Fan | 2 | |
| Water Sensor | 1 | |
| Smoke Sensor | 1 | Optional |
| Battery (28AH) | 1 | Optional |
| 4G+GPS Module | 1 | Optional |
| Heater (45W) | 1 | Optional |

| Mechanics | | |
|---|---|---|
| Bare metal Dimensions (length*width*height) | 580*350*530mm | OLT module and EYDFA module are not installed |
| Bare metal weight | 20 Kg | |
| Packing Dimensions (length*width*height) | 760*655*535 mm | |
| Packed weight | 36 Kg | |