# DT1000 GSCloud Monitoring Communication Module User Manual
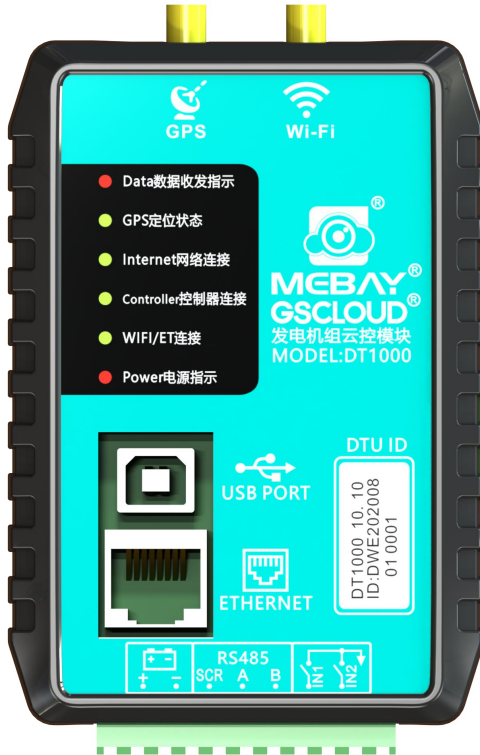
Software Version

| No. | Version | Date | Note |
|-----|---------|------|------|
| 1 | V1.0 | 2020-09-1 | Original release. |

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Symbol Description

| Symbol | Description |
|---|---|
| Note | Remind operators to operate correctly, otherwise it may cause the equipment not to work correctly. |
| Be care | It is indicated that potential hazards can damage equipment without proper precautions. |
| Warning | It is indicated if appropriate preventive measures are not taken, potentially dangerous situations may result in death, serious personal injury or significant property losses. |

Warning
1. The installation of this equipment must be carried out by professionals.
2. When installing and operating the controller, please read the entire instruction manual first.
3. Any maintenance and commissioning of the equipment must be familiar with all the equipment

Be Care
1. Please keep the good connection of the power supply of the controller. Do not share the connection lines of the positive and negative electrodes of the battery with the floating charger.
2. During the operation of the engine, do not disconnect the battery, otherwise it may cause damage to the controller.

# Catalogue

## Summary

DT1000 is the data acquisition and communication module of GSCloud® generator set cloud control system developed by our company, which is WIFI/ET version. Its main function is to connect the generator set controller to the interconnection network, to realize the computer PC terminal and mobile phone APP remote real-time monitoring generator set, to realize the remote control unit, remote data monitoring, remote fault diagnosis, unit position real-time positioning, maintenance management and so on.

It has RS485 communication port, which can read and write the commonly controlled data. The internal integration of GPS module can realize the positioning of the unit. The communication module adopts European lock terminal, the connection is firm and the installation is convenient.

## Main Features

◆ DT1000:Support WIFI/ET network,GPS, with RS485 and other functions;
◆ It can be connected to cloud server through WIFI wireless network or Ethernet interface, and one communication module can monitor one generator set;
◆ Using ARM kernel 32bit single chip microcomputer, processing speed, strong expansion ability.
◆ Wide range of working power supply DC (8 ≤ 36) V.
◆ With USB-B interface, DTU parameters can be set through the PC;
◆ It has good extended function, extensible environment detection, other equipment parameter detection and other modules.
◆ Data communication protocol using encryption algorithm.
◆ a compression algorithm is adopted to greatly reduce the flow consumption.
◆ the module is provided with the GPS positioning and the base station positioning function, and the real-time positioning of the unit can be realized.
◆ with two sets of programmable switch quantity input ports.
◆ When the generator set alarm, can immediately upload data to the server.
◆ the working state of the module is indicated by the LED indicating lamp, and the working state of the module is conveniently realized by the user in real time.
◆ The installation or screw fixation of the standard type 35mm guide rail is adopted.
◆ Modular structure design, ABS shell, light weight, compact structure, easy to install.

## Parameters

| Options | Parameters |
|---|---|
| Working voltage | DC8V----36V Continuous |
| Power consumption | Standby：24V：MAX 1W |
| | Working：24V：MAX 5W |
| USB Device | Type B USB port |
| RS485 | Isolated |
| WIFI | SMA Port antenna and support 802.11b/g/n standard |
| GPS | SMA port |

| ETHERNET | RJ45 10/100Mbps self-adaption network interface |
|---|---|
| Switch value input 1 | Available if connecting with Battery - |
| Switch value input 2 | Available if connecting with Battery - |
| Working condition | -25-65℃ |
| Storage condition | -40-85℃ |
| Overall dimension | 106.5mm*74mm*31mm |
| Weight | 0.15Kg |

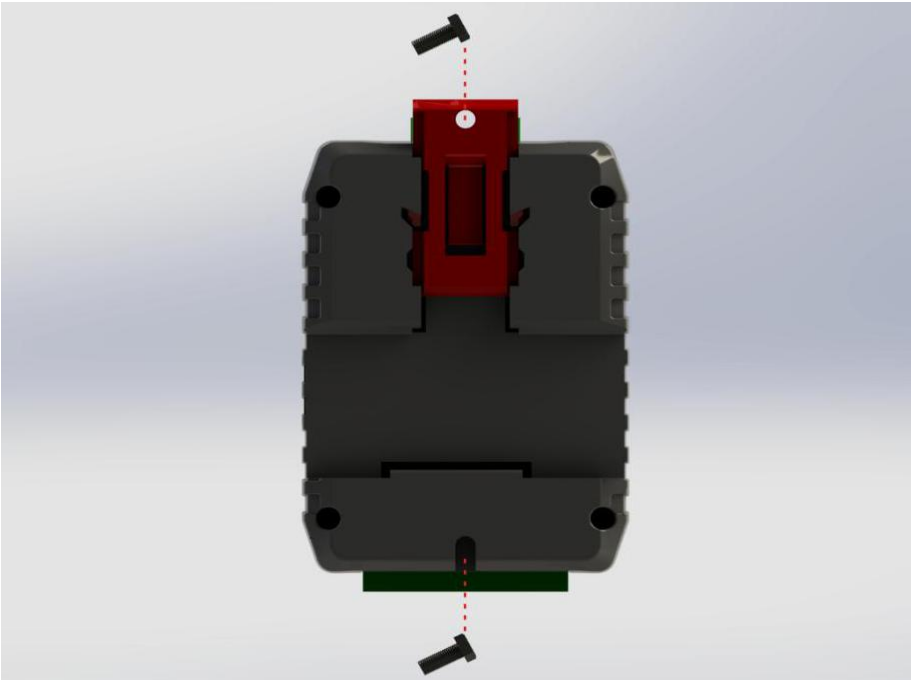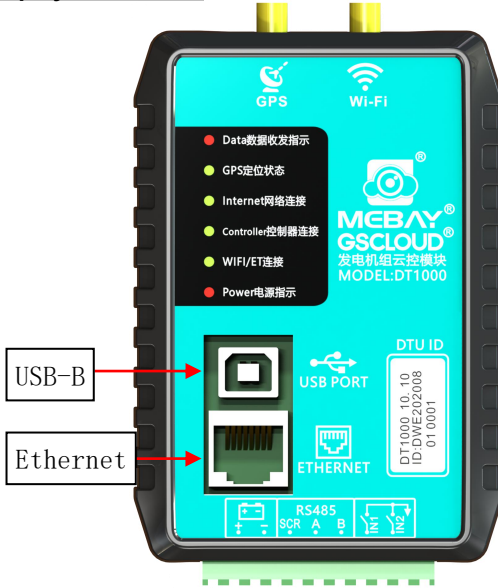**Overall Dimension and Wiring Diagram**
◆ **Overall Dimension:**
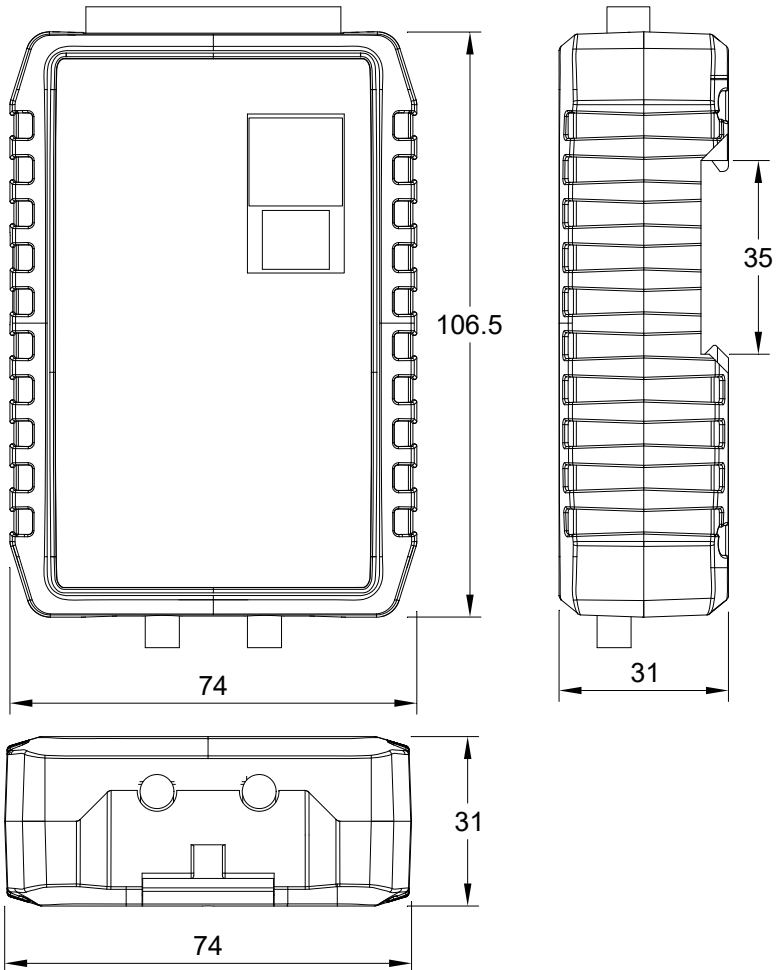
**Installation instruction**

◆ **35mm guideway installation:**
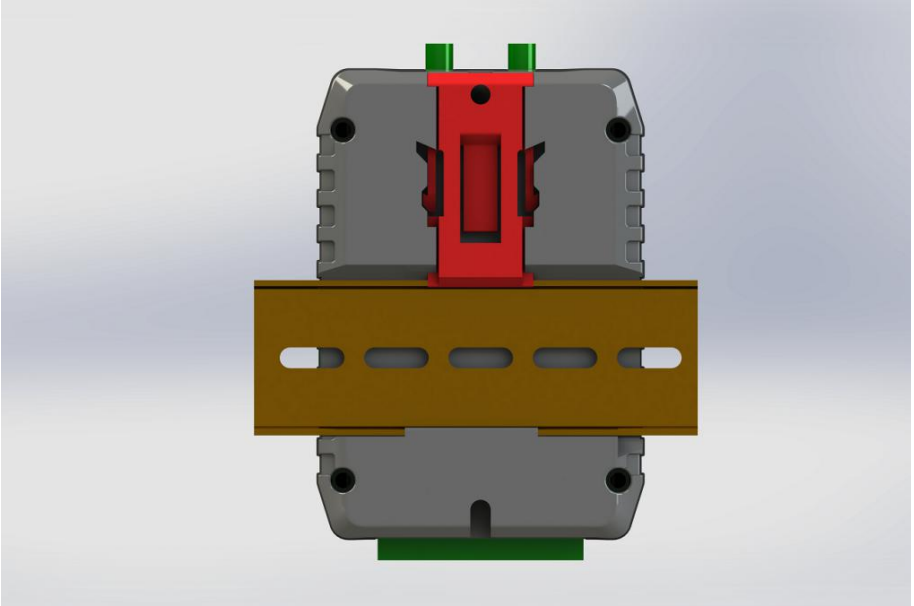


◆ **Screw (M4) installation:**

**Panel and display Instruction**



◆ **Panel instruction**

| Indicator name | Main function |
|---|---|
| Data | DTU sends data in red for LED lights and green for LED lights when receiving data. |
| GPS | The GPS module successfully obtains the positioning information and lights it up. |
| Internet | Lights up after a successful connection to the Internet network. |
| Controller | When the DTU is successfully connected to the controller, the LED lights up. |
| WIFI/ET | When the DTU connects to the WIFI/ET successfully, the LED lights up. |
| Power | After the module is turned on, the LED lights up. |

◆ **Port description:**

| No. | Function | Description | Cable cross sectional area |
|---|---|---|---|
| 1 | Power + | DC8V to 36V continuous power supply | 1.0mm$^2$ |
| 2 | Power - | | 1.0mm$^2$ |
| 3 | RS485-SCR | RS485 port | 0.5mm$^2$ |
| 4 | RS485-A | | 0.5mm$^2$ |

| 5 | RS485-B | | 0.5mm$^2$ |
|---|---|---|---|
| 6 | Aux. Input 1 | Ground connected is active (B-). | 0.5mm$^2$ |
| 7 | Aux. Input 2 | Ground connected is active (B-). | 0.5mm$^2$ |
| 8 | USB Device | Type B USB port | |
| 9 | Ethernet RJ45 | RJ45 interface network cable | |

**Operation**

◆ **Communication and port functions:**

RS485 port：Connect to the RS485 port of the generator controller through the

RS485 port:
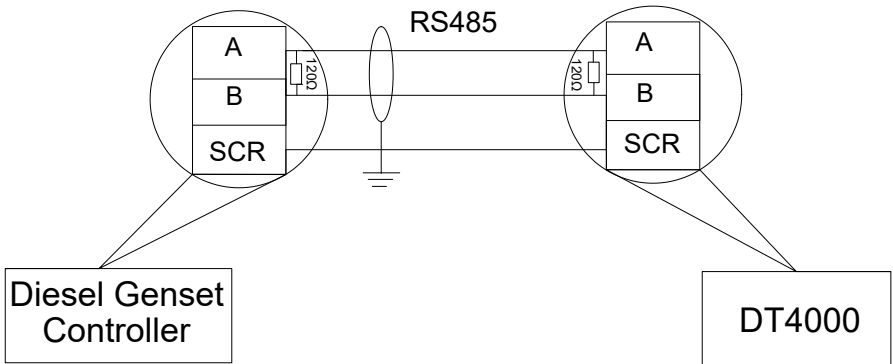


USB Device：USB port and PC USB port connection, can be parameter settings,

module ID and registration password.

◆ **WIFI port** ：Connect the WIFI IPX antenna to the Antenna port (50 Ω /SMA female socket); Support 802.11b/g/n standard.

◆ **ETHERNET RJ45:** Connect the network cable to the RJ45 network interface.
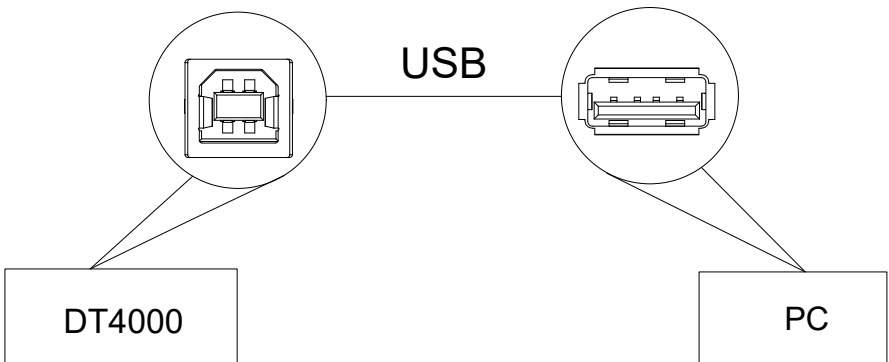
◆ **GPS port**：When using GPS positioning function, GPS antenna is connected to DTU module,

antenna port: 50 Ω / SMA master, active antenna.

⚠**Note: GPS antenna needs to be placed outside the open, otherwise the position information is inaccurate or can not get the position information.**

⚠**Note: The GPS antenna and the WIFI antenna cannot be reversed.**

◆ **System application diagram**

| Diesel Genset Controller | — | DT1000 | — | Router | | | |
|---|---|---|---|---|---|---|---|
| Diesel Genset Controller | — | DT1000 | — | Router | — | Cloud server | Cell Phone / PAD / PC |
| Diesel Genset Controller | — | DT1000 | — | Router | | | |
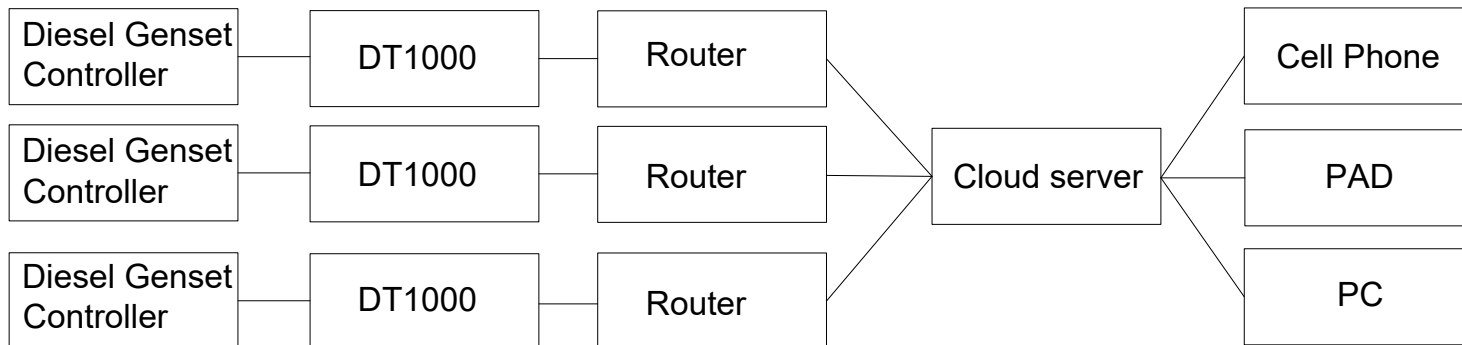
◆ **Typical Wiring Diagram**
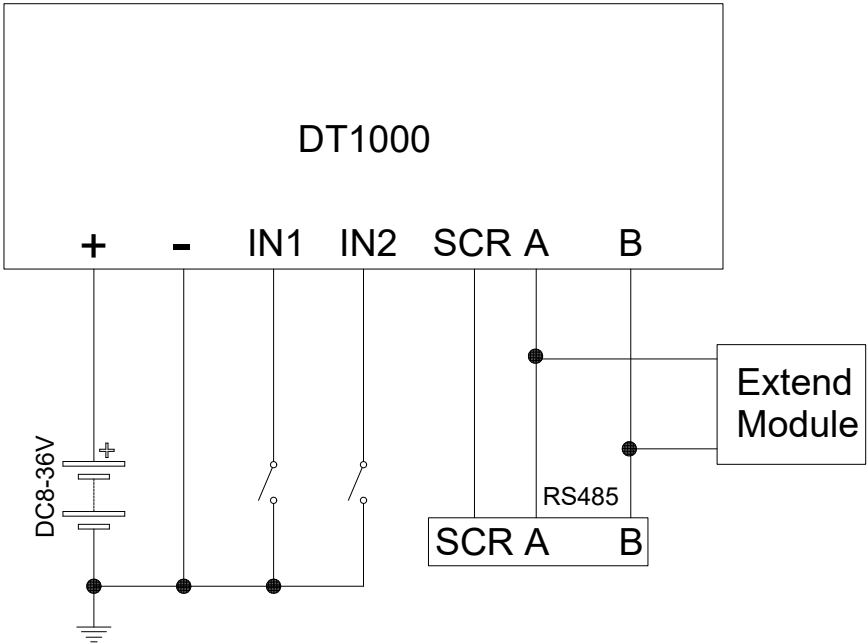


Parameter list.
**1. GPS**

| No | Parameter | Range *(default)* | Notes |
|---|---|---|---|
| 1 | GPS functional enable | 0-1*(1)* | 0:manual input;<br>1:GPS module acquisition position |
| 2 | Set Longitude | -180°-180° *(0.00000)* | Manual entry of communication module GPS location, altitude |
| 3 | Set latitude | -90°-90° *(0.00000)* | |
| 4 | above sea level | -9999.9-9999.9m *(100.0m)* | |

**2. WIFI/ET**

| No | Parameter | Range *(default)* | Notes |
|---|---|---|---|
| 1 | DHCP Enable | 0-1 *(1)* | 0:Manual input;<br>1:Auto obtain IP address. |
| 2 | IP Address | 0-255 *(192.168.0.1)* | All changes of Ethernet (like IP address, Subnet address) are active after module rebooting. |
| 3 | Subnet Mask | 0-255 *(255.255.255.0)* | |
| 4 | Default Gateway | 0-255 *(192.168.0.1)* | |
| 5 | DNS Address | 0-255 *(192.168.0.1)* | |

| 6 | SSID | (0-65535) | **32 characters** |
|---|------|-----------|-------------------|
| 7 | Password | (0-65535) | **64 characters** |

### 3. Switch input function setting

| No | Parameter | Range (default) | Notes |
|----|-----------|-----------------|-------|
| 1 | Aux. Input 1 | 0-9*(0：disable)* | 0：disable |
| 2 | Aux. Input 2 | 0-9*(0：disable)* | 1：Remote Control Inhibited |
| | | | 2：Access Alarm Input |
| | | | 3：Fire Alarm Input |
| | | | 4：Louver status input |
| | | | 5-9：Reserved |

### 4. Communication Settings

| No | Parameter | Range (default) | Notes |
|----|-----------|-----------------|-------|
| 1 | 485 baud rate | 9600-38400*(19200)* | Baud rate of Communication between DTU and Controller. |
| 2 | Running data upload interval | 10-170S*(10)* | The interval between uploading data to the server while the generator is running. |
| 3 | Standby data upload interval | 90-170S*(90)* | The interval between uploading data to the server while the generator is standby. |

### 5. Model selection of generator controller

| No | Parameter | Range (default) | Notes |
|----|-----------|-----------------|-------|
| 1 | MEBAY | DC20D MKII *DC4/5/6/7XD series* MEC20 DSE6120 HGM6120 HGM6110 DC18D DC8/9XD series | Select the model of the generator controller connected to the DTU. Can match the DC4xDR series, DC5xDR series, DC6xDR series and DC7xDR series DC8XDR, DC9XDR generator controller produced by MEBAY. It also supports MEC20 Thomson series and other types of controllers. |

### 6. Extended module setting

| No | Parameter | Range (default) | Notes |
|----|-----------|-----------------|-------|
| 1 | Temperature and humidity module | *0:Disable* 1:Enable | Sets whether the temperature and humidity detection module is enabled. |
| 2 | Alarm value for excessive ambient temperature. | 0-80*(40)* ℃ | When the ambient temperature is higher than this setting value, upload the alarm information with too high ambient |

| | | | temperature, and disable this alarm when set to the minimum value. |
|---|---|---|---|
| 3 | Alarm value of too low ambient temperature | -30-50*(4)* ℃ | When the ambient temperature is lower than this setting value, upload the alarm information of the environment temperature is too low, set to the maximum value to disable this alarm. |
| 4 | Temperature, humidity and CO module. | *0:Disable*<br>1:Enable | Sets whether the temperature, humidity and carbon monoxide concentration detection module is enabled. |
| 5 | CO concentration over high alarm value | 0-2000ppm<br>*(250ppm)* | When the carbon monoxide concentration is higher than this setting value, upload the carbon monoxide concentration alarm information, set to the maximum value to disable this alarm. |

**Fault Finding**

| Symptoms | Possible Solutions |
|---|---|
| Controller no response with power. | Check power voltage.<br>Check controller connection wiring. |
| All LED lights are on. | Check network cable to the RJ45 network interface.<br>Check if the WIFI IPX antenna is connected to the antenna port. |
| Network LED not light up | Check whether the Ethernet parameter settings are normal.<br>Check whether the network cable is normal. |
| GPS Not Gained Location | Check GPS parameters are enabled or not.<br>Check GPS antenna is connected or not and placed outdoor or not.<br>Check that the GPS antenna is placed outside the open room. |
| RS485 Communication Abnormal | Check connections<br>Check settings of genset ID and baud rate are correct or not.<br>Check that A and B of RS485 are reversed. |
| USB Port Communication Abnormal | Check connections<br>Check whether the USB port of the computer is normal<br>Check whether the driver is installed normally<br>Check that the controller is properly energized |