






**Cabinet Environmental Temperature and
Humidity Monitoring Module
CMS055-S01
User Manual**

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| Symbol Definition | |
|---|---|
|  | WARNING: Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death. |
|  | RISK OF ELECTRICAL SHOCK: Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible. |
|  | ESD HAZARD: Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices |
|  | ATTENTION: Identifies information that requires special consideration. |
|  | TIP: Identifies advice or hints for the user. |

Safety& Caution Symbols

The following table lists Safety& Caution symbols used on equipments.













| No. | Symbol | Description |
|-----|---|---------------------------------------|
| 1 |  | Direct current (DC) |
| 2 |  | Alternating current (AC) |
| 3 |  | Ground (Earth) terminal |
| 4 |  | Protective earth (ground) terminal |
| 5 | | Reference ground (Earth) terminal |
| 6 |  | Frame or chassis |
| 7 |  | Equipotentiality |
| 8 |  | On (power) |
| 9 |  | Off (power) |
| 10 |  | Caution, risk of electric shock |
| 11 |  | Caution, hot surface |
| 12 |  | Caution, risk of danger |
| 13 |  | Electrostatic sensitive devices (ESD) |

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Cabinet Environmental Temperature and Humidity Monitoring Module CMS055-S01

Section 1 Product Overview

The cabinet environmental temperature and humidity monitoring module CMS055-S01 (hereinafter referred to as "CMS055") can monitor temperature, humidity and atmospheric pressure of the cabinet in a control system. It is usually used with an intelligent temperature control module thus building a cabinet environmental intelligent management system.

The module will display the measured data on the LCD of the front panel and it will also upload measured data and log to intelligent temperature controller through RS-485 communication, so the temperature controller can start or stop the cabinet according to the cabinet environment.

Section 2 Technical Specifications

Table 2-1 Technical specifications

| Parameter | | Description | |
|---------------------------------|---------------------------|--|---------------------------------|
| Model | | CMS055-S01 | |
| Working voltage | Working voltage | 24V DC ± 10% | |
| | Power distribution method | Unified distribution of in-cabinet bus | |
| | Power consumption | <0.5 W | |
| Temperature measurement | Measurement range | −20 to +70 °C | |
| | Measurement accuracy | ±1 °C | |
| Humidity measurement | Measurement range | 5% to 99% (RH) | |
| | Measurement accuracy | ±5% RH (@ 25 °C) | |
| Atmosphere pressure measurement | Measurement range | 30 kPa to 110 kPa | |
| | Measurement accuracy | ±0.15 kPa (@ 25 °C) | |
| EMC level | | Industrial III B | |
| Anti-corrosion | | G3 anti-corrosion | |
| IP rating | | IP20 | |
| Dimensions (W × H × D) | | 78 mm × 105 mm × 53 mm (3.07" × 4.13" × 2.09") | |
| Temperature | | Operating temperature | -20 to +70 °C |
| | | Storage temperature | -40 to +85 °C |
| Humidity | | Operating humidity | 10% to 90% (RH), non-condensing |
| | | Storage humidity | 5% to 95% (RH), non-condensing |

Section 3 Hardware Structure

The hardware structure of CMS055 is shown as Figure 3-1.

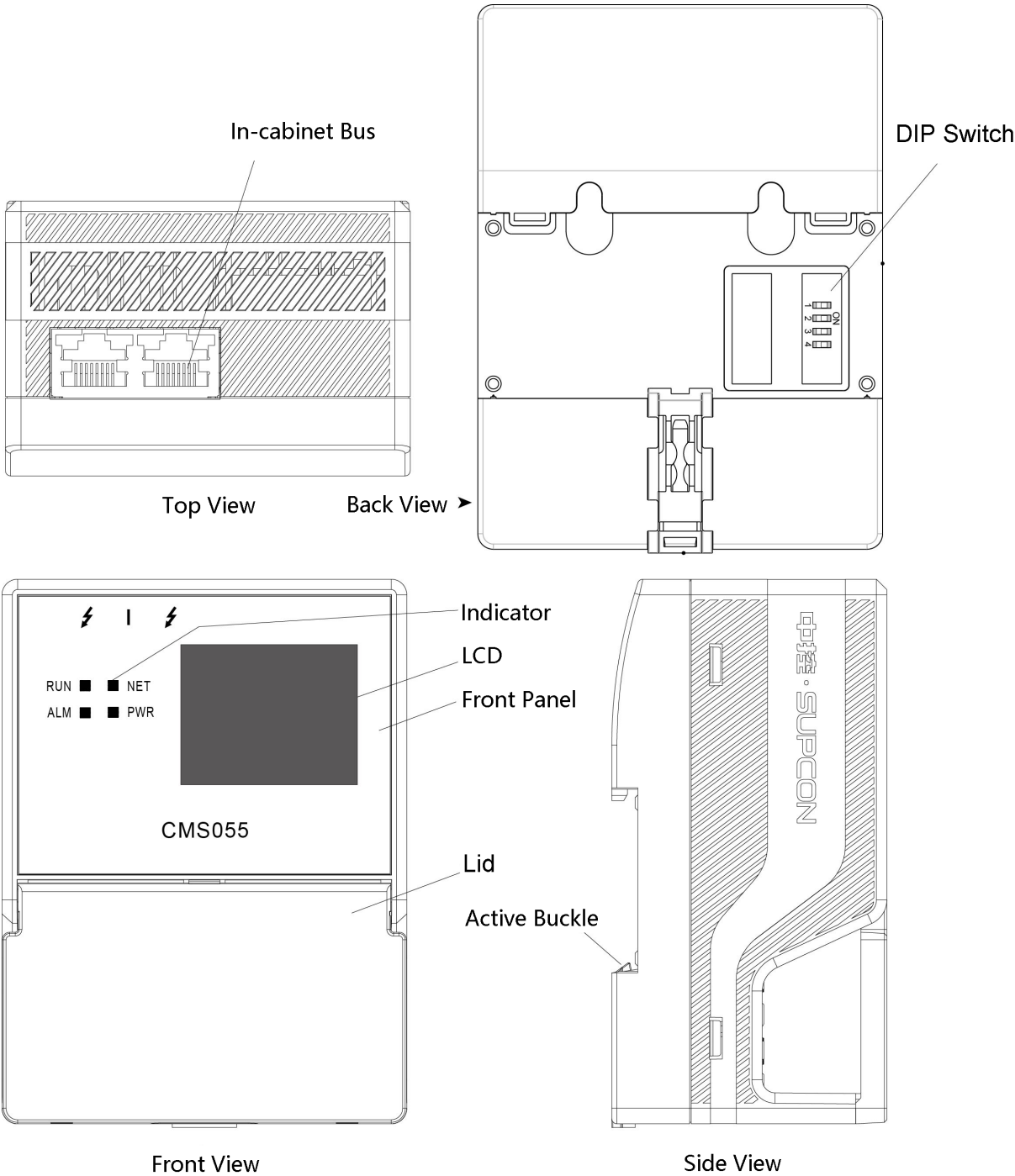


Figure 3-1 Structure diagram

Section 4 Setting Communication Address

4Pin DIP switch on the back of CMS055 is used to set communication address on the in-cabinet bus communication network, and the address range is from 1 to 15. The DIP switch 1 is low and 4 is high. The relationship between the switch position (ON or OFF) and the address is shown as the following table.

Table 4-1 The relationship between switch position and the address

| 4 | 3 | 2 | 1 | Address |
|-----|-----|-----|-----|---------|
| OFF | OFF | OFF | ON | 1 |
| OFF | OFF | ON | OFF | 2 |
| OFF | OFF | ON | ON | 3 |
| ... | ... | ... | ... | ... |
| ON | ON | ON | ON | 15 |

Section 5 Dimensions and Mounting



Risk of Electrical Shock:

Power supply of the module must be cut off before the mounting.

5.1 Dimensions

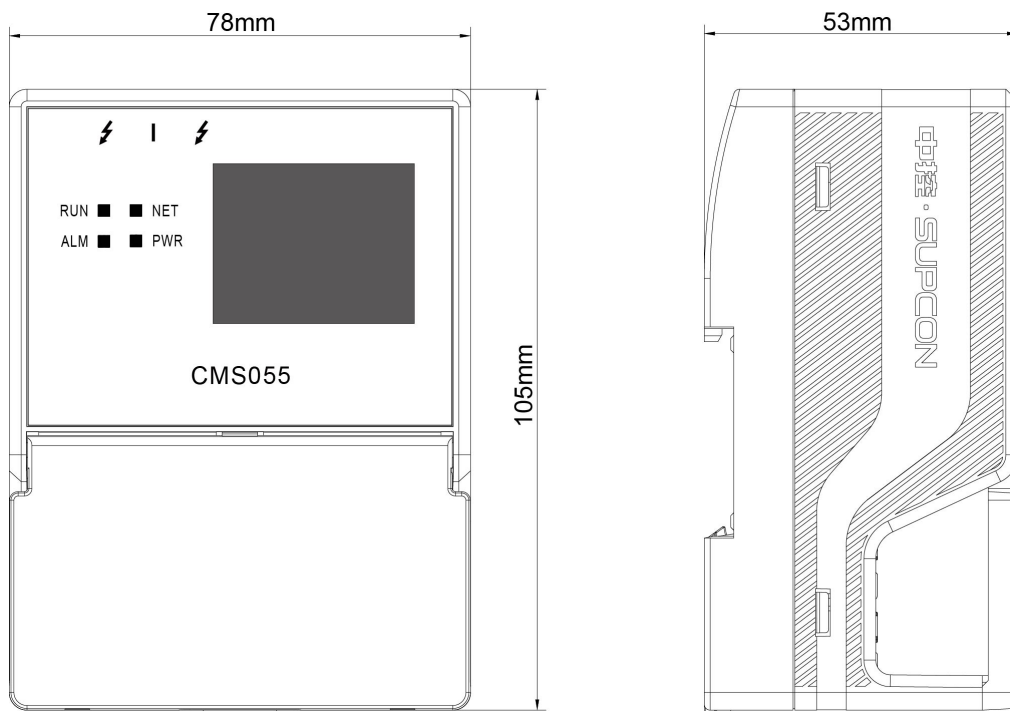


Figure 5-1 Dimensions

5.2 Mounting

The module applies standard DIN rail and it's generally mounted at the cabinet or the air outlet of the console.

- 1) Attach the side without a buckle of the module to the rail, as ① shows in Figure 5-2.
- 2) Rotate the module and fix the side of active buckle into the rail as ② shows in Figure 5-2 to complete the mounting.
- 3) Connect the wires and properly sort them.

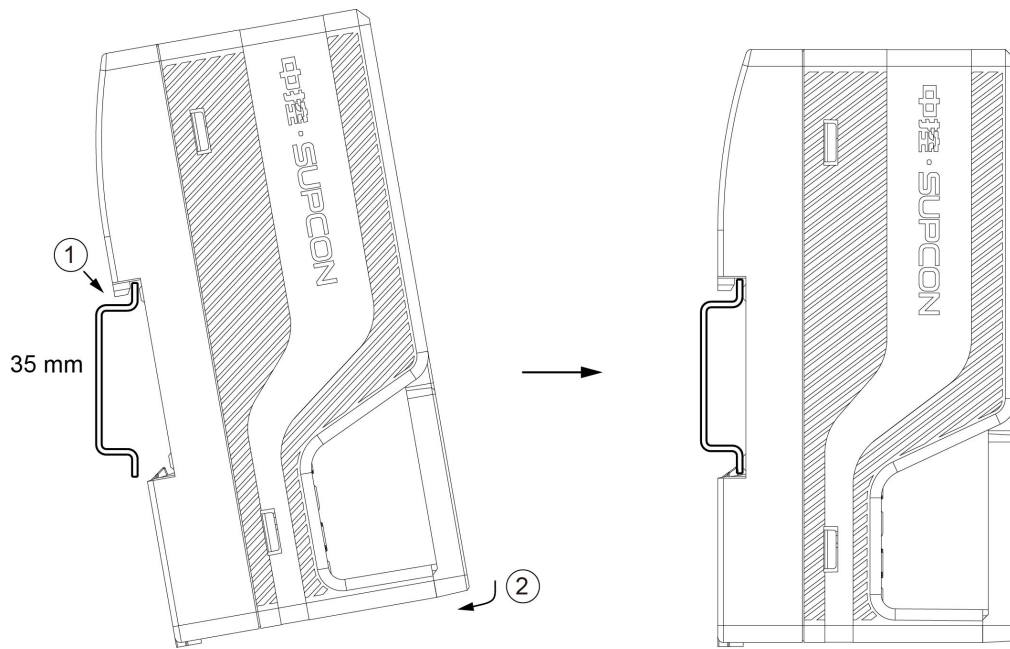


Figure 5-2 Mount the module

5.3 Disassembly

- 1) Cut off the power supply and disassemble the wires.
- 2) Pry open the active tab with the slotted screwdriver (medium or small size), as ① shows in Figure 5-3.
- 3) Rotate the module, as ② shows in Figure 5-3.
- 4) Remove the module from the guide rail and finish the disassembly.

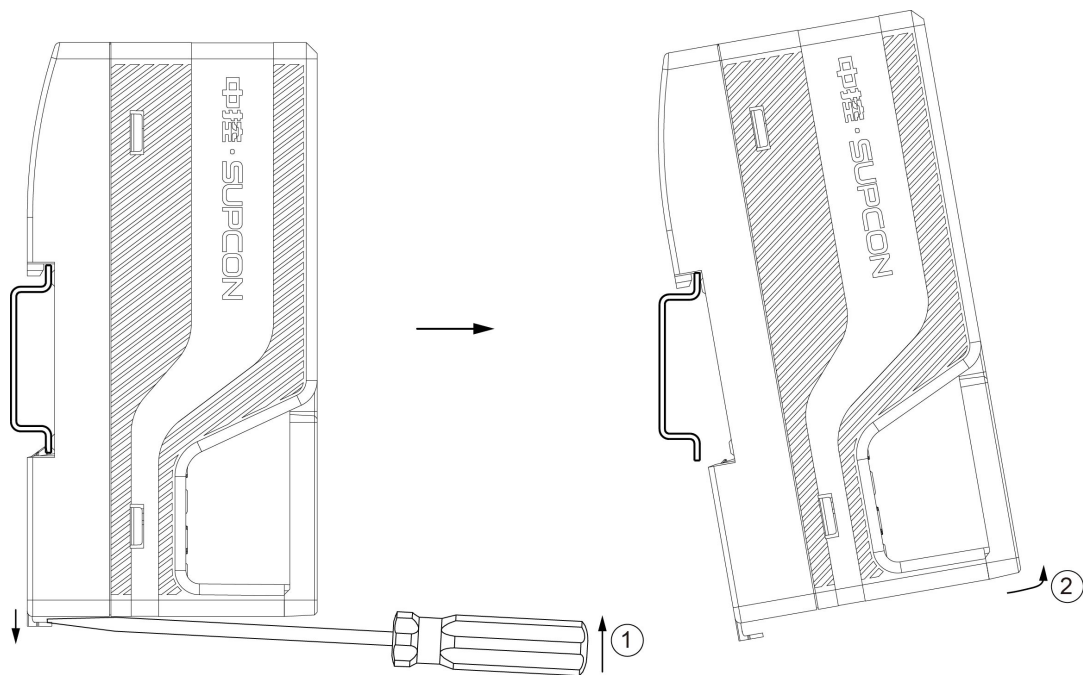


Figure 5-3 Disassemble the module

Section 6 Wiring Instruction

As shown in the figure below, a cascaded network can be built through the two RJ45 ports on CMS055-S01 to realize data communication and power supply with intelligent temperature control module, power supply monitoring module and so on.

In the cascaded network, CMS011 must be the first to cascade, and only one port is required for the last device. The connecting cable should be a category 5e straight-through type Ethernet cable.

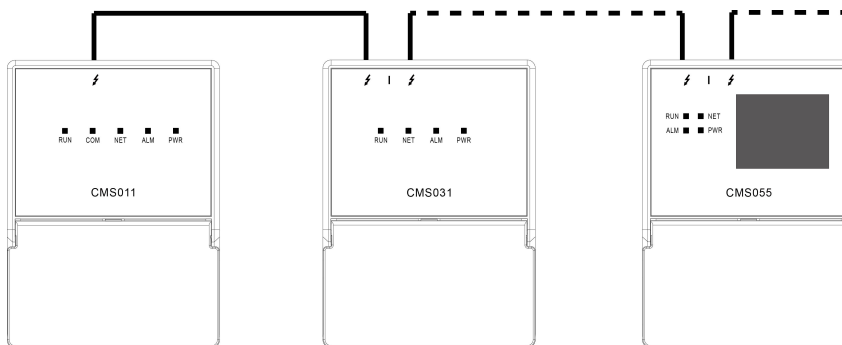


Figure 6-1 Wiring diagram

Section 7 Fault Analysis and Troubleshooting

There is a group of indicators on the module panel which indicate the module operating status. When the fault occurs, you can troubleshoot according to the table below.

Table 7-1 Indicator's illustration

| Indicator | Status | Indication and solution |
|-----------|----------------------|---|
| RUN | Green flashing | No configuration |
| | Solid green | Normal |
| | Solid red | Module fault |
| NET | Green on for seconds | With data transmission |
| | Off | Without data transmission |
| ALM | Solid green | Normal |
| | Solid red | Module alarm |
| PWR | Solid green | Normal |
| | Off | The power supply is abnormal. Please check the power supply or change the module. |

Section 8 Appendix A- Logs

| Serial number | Type | Logs |
|---------------|--------------------|--|
| 1 | Fault information | Communication fault of RS-485 |
| 2 | | I2C communication fault of temperature and humidity transducer |
| 3 | | I2C communication fault of air pressure transducer |
| 4 | Alarm information | High temperature alarm |
| 5 | | Low temperature alarm |
| 6 | | High humidity alarm |
| 7 | | Low humidity alarm |
| 8 | | High air pressure alarm |
| 9 | | Low air pressure alarm |
| 10 | Data information | Configuration data area error |
| 11 | | Calibration data area error |
| 12 | Cold and hot reset | Module cold reset |
| 13 | | Module hot reset |
| 14 | Configuration | Successful configuration |
| 15 | | The first time to receive time synchronization |
| 16 | Other events | Clear log record |
| 17 | | Log circular recording |

Section 9 Revision

Table 9-1 Revision history

| Version | Applicable product model | Remarks |
|-----------------|--------------------------|---------|
| V1.0 (20230327) | CMS055-S01 V10.10.00 | |
| | | |