IRM-S01T Intelligent Temperature Sensor User Manual

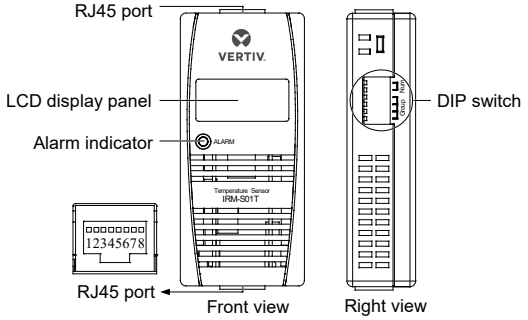
1 Overview

IRM-S01T intelligent temperature sensor (sensor for short) is used to measure and display environment temperature. It supports MODBUS protocol through RJ45 port in RS-485 mode to configure and collect data. It is applicable for indoor sites which need temperature control such as communication rooms and IT data centers.

1.1 Product Introduction

1.1.1 Appearance

The sensor's appearance is shown as the following figure.



Size (height × width × depth): 97mm × 44mm × 22mm Weight: about 100g

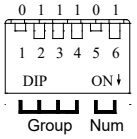
1.1.2 RJ45 Port

Two RJ45 ports are used in the electric connection of the sensor for power supply, communication and equipment connection in series. The definition of RJ45 ports is shown in the following table.

Pin	Pin1 and Pin2	Pin3 and Pin6	Pin4 and Pin5	Pin7	Pin8
Definition	+12V/24V	NC	GND	D+	D-

1.1.3 DIP Switch

The DIP switch is used to set sensor address to communicate with upper equipment through MODBUS protocol. The sensor address is composed of group number and serial number within the group. The DIP1 ~ DIP4 are used to set the group number and the DIP5 ~ DIP6 are used to set the serial number within the group. For example, the sensor address of 71 is set as shown in the following figure, among which 0111 means group number 7 and 01 means serial number 1 in the group.



Note: 1. DIP switch in the ON position means 1, or it means 0;
2. The sensor address cannot be set as 00, which is the broadcast address.

The settings of DIP1 ~ DIP6 are listed in the following table.

DIP1 ~ DIP4	Group		DIP1 ~ DIP4	Group		DIP1 ~ DIP4	Group		DIP5 ~ DIP6	Num
0 0 0 0	0		0 1 1 0	6		1 1 0 0	C		0 0	0
0 0 0 1	1		0 1 1 1	7		1 1 0 1	d		0 1	1
0 0 1 0	2		1 0 0 0	8		1 1 1 0	E		1 0	2
0 0 1 1	3		1 0 0 1	9		1 1 1 1	F		1 1	3
0 1 0 0	4		1 0 1 0	A						
0 1 0 1	5		1 0 1 1	b						

1.1.4 LCD Display Panel

The LCD display panel can display sensor address and temperature data in real time. For example, when the sensor address is 71, and the temperature data is 23.6°C, the LCD display panel indicates the data as shown in the following figure.

1.1.5 Alarm Indicator

When the temperature data is outside the the configured data range or the sensor fails, the alarm indicator flashes; when the temperature data is in the range of the configured data, the alarm indicator extinguishes.

1.2 Technical Specification

Technical Specification	Description
Operating voltage	9Vdc ~ 28Vdc
Measurable temperature range	-10°C ~ +50°C
Power consumption	0.2W
Temperature measuring precision	±1°C (10°C ~ 30°C)
	±2°C (other temperature range)

2 Installation

2.1 Environment Requirement

1. Operating environment should be free of conductive dust and metal-corrosive & insulation-breaking gases.

2. Avoid using the sensor in watery or foggy places.

3. Keep a clearance of more than 20mm around the sensor's airway to ensure ventilation inside and outside of the sensor.

4. Operating temperature: -10°C ~ +50°C; storage temperature: -30°C ~ +70°C; humidity: 5% ~ 95% RH (non-condensing).

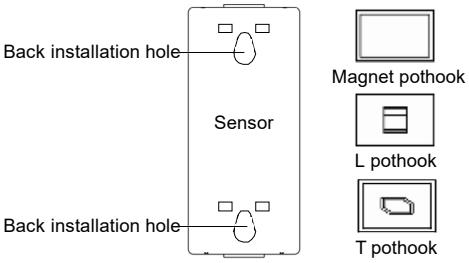
2.2 Unpacking Inspection

Unpack the sensor and visually inspect the sensor's appearance. If any damage is found, please contact the carrier immediately.

Check against the consignment list to make sure the sensor and accessories are complete and correct.

2.3 Mechanical Installation

Three modes are available for the sensor's mechanical installation. The installation accessories and modes are shown in the following figure.



Mode one: Insert the magnet pothook into the sensor's back installation hole, and the sensor can absorb on iron surface.

Mode two: Insert the L pothook into the sensor's back installation hole, and hang the pothook in the square hole of rack's column with care.

Mode three: Insert the T pothook into the sensor's back installation hole, insert the bulge of the T pothook into the installation slot of the rack's basic frame, and rotate the sensor 90 degree clockwise with care.

Note

The sensor can not only be installed through the three kinds of accessories above, but also can hang on fixed screws directly through the installation hole.

2.4 Cable Connection

Insert one end of the standard straight network cable into the sensor's RJ45 port, and insert the other end into the sensor appropriative port of upper equipment or sensor in series.

3 Maintenance

1. To clean the sensor, you should cut off the power and use a piece of soft cloth to wipe it.

2. Do not disassemble the sensor, or the inside subtle parts may be damaged.

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