
RELATIVE HUMIDITY AND TEMPERATURE SENSORS INSTALLATION AND USER MANUAL



VISIONSEN



Sensor Technology



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WARRANTY CONDITIONS

Products manufactured by VSIAS under the brand VISIONSEN are warranted by VSIAS against defects in material and workmanship under normal use and service conditions for two years from the date of shipment, unless otherwise stated in the relevant product manual.



Product manuals can be viewed online at www.visionsen.com.

Products not manufactured by VSIAS but resold by VSIAS are warranted only to the limits extended by the original manufacturer.

VSIAS's liability under this warranty is limited to the repair or replacement (at VSIAS's discretion) of defective products, which will be the sole and exclusive remedy under this warranty.

The customer assumes all costs associated with removing, reinstalling, and shipping to VSIAS any products deemed to be defective. VSIAS undertakes the return costs of these products.

This warranty will not apply to products that have been subject to alteration, misuse, neglect, improper servicing, acts of god or accidents of god, or have been damaged in transit.

Warranty for installation services performed by VSIAS, such as programming according to customer specifications, electrical connections to products manufactured by VSIAS, and product-specific training, are part of VSIAS's product warranty.

“VSIAS disclaims all warranties and conditions, express, implied or statutory, regarding the products, except as expressly stated herein, to the fullest extent permitted by applicable law.”

HELP

“Products cannot be returned without prior permission. The contact information below goes directly to VSIAS Engineering Industry Inc. Co. is aimed at its customers. Please use the contact addresses for the product you are returning.”



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S AFETY

“THIS SCOPE RELATES TO THE INSTALLATION, USE, MAINTENANCE AND WORKING ON OR AROUND SENSORS, TRIPOTS, MOUNTING STANDS AND ANY EQUIPMENT AND PARTS.

FAILURE TO INSTALL AND OPERATE SENSORS, TRIPOTS, MOUNTING STANDS AND ALL KINDS OF EQUIPMENT AND PARTS PROPERLY, FAILURE TO MAINTAIN THEM AND FAILURE TO OBSERVE THE WARNINGS INCREASES THE RISK OF DEATH, ACCIDENT, SERIOUS INJURY, MATERIAL DAMAGE AND PRODUCT FAILURE. TAKE ALL REASONABLE PRECAUTIONS TO AVOID THESE HAZARDS. BEFORE PERFORMING ANY WORK, CONSULT YOUR ORGANIZATION'S SAFETY COORDINATORS AND OCCUPATIONAL HEALTH EXPERTS FOR PROCEDURES AND REQUIRED PROTECTIVE EQUIPMENT..”

Use sensors, tripods, mounting stands and any equipment and parts only for the purposes for which they were designed. Do not exceed design limits. Be familiar with and follow all instructions provided in the product manuals. The guides can be accessed at www.visionsen.com or other contact addresses. You are responsible for compliance with applicable laws and regulations, including safety regulations, and for the integrity and location of any structure or system to which sensors, tripods, mounting stands and any equipment and parts are installed. Installation sites should be evaluated by a qualified engineer and handled by experienced technical personnel. If you have questions or concerns regarding the installation, use or maintenance of electrical connections of the systems, consult a licensed and qualified engineer or experienced technical personnel.

GENERAL

- Obtain necessary approvals and permits before performing field or installation work.
- Comply with occupational health guidelines.
- Use only qualified personnel for the installation, use and maintenance of all connections of mechanical parts. It is highly recommended to use licensed and qualified contractors.
- Read all applicable instructions carefully and understand the procedures thoroughly before starting work..
- If any drilling or cutting operations are to be performed during the assembly phase, wear eye protection and take other appropriate safety precautions.

- Do not allow installed products to be intervened by other than authorized personnel.
- Use only manufacturer-recommended parts, materials and tools.

ELECTRIC

- You could be killed or suffer serious bodily injury if a tripod, attachment, or tool you are installing, building, using, or maintaining comes into contact with overhead or underground power lines.
- Maintain a distance between overhead power lines and the structure to be installed that is at least one and a half times the height of the structure or the distance required by applicable code, whichever is greater.
- Before carrying out field or installation work, inform people or institutions that may be affected by the installation.
- Follow all electrical rules. Electrical equipment and related devices must be installed by licensed and experienced personnel.

WORKING AT HEIGHT AND WEATHER

- Be extremely careful when working at height.
- Use proper equipment and safety practices.
- Keep mechanical and electrical parts away from untrained or unnecessary personnel during installation and maintenance. Take precautions to prevent elevated tools and objects from falling.
- Wind, rain, snow, lightning, etc. Do not carry out any work or maintenance in harsh weather conditions such as.
- Periodically (at least once a year) check for corrosion, stress cracks, frayed cables, loose cable clamps, cable tightness, etc. Check for wear and damage and take necessary corrective action.
- Check electrical ground connections periodically (at least once a year).

“VSIAS employees reserve the right to refuse service for products exposed to contaminants that may cause health or safety problems.”

I NFO

Relative humidity sensor is a sensor that measures the humidity of the air in the environment. Relative humidity is a type of sensor used to express the amount of water vapor that the air can contain at a certain temperature as a percentage. In other words, it is a sensor used to measure instantaneous water vapor.

These sensors generally operate based on capacitive, resistive or thermal properties. They are converted into electrical signals according to the change in the amount of humidity in the air and connected to devices such as microcontrollers or data recorders, allowing instantaneous measurement of the relative humidity.

Relative humidity sensors are widely used in many fields. The main areas of use are; They can be listed as climate control units, agriculture and greenhouse cultivation, industrial applications, food and pharmaceutical industry, healthcare sector, growth rooms and anywhere that requires environmental monitoring.

It is an important sensor to monitor and control the humidity level in a particular environment.

In industrial applications, it provides the humidity data required to optimize system performance and improve or control its quality.

P RODUCT INTRODUCTION

Relative humidity sensors produced under the Visionsen brand are widely used in meteorology, climate control units, agriculture and greenhouse cultivation, industrial applications, food and pharmaceutical industry, healthcare sector, growth rooms and everywhere that requires environmental monitoring.

Depending on the end user's system preference, both analog outputs and digital communication via Modbus (RS485) are available.

Visionsen MB Series relative humidity sensors contain a microprocessor structure that stores calibration data, eliminating the need to reprogram data loggers or SCADA systems when installing a new switchboard.

Relative humidity sensors have a UV-resistant protective structure. Thanks to this structure, it is not affected by external environmental conditions and provides the most accurate humidity parameter to the end user. It gives the fastest and most accurate response to humidity changes.

Thanks to its product range, Visionsen can produce relative humidity sensors for different applications.

Visionsen humidity sensors provide durability and reliability for outdoor environments with IP68 standard communication and power cables. It also provides easy installation during the installation phase with its M12 circular connector.

INSTALLATION

The humidity sensor should be placed at the most accurate point where measurement is desired. It can be installed at any location in the designated area. However, it should not be placed in a location where water ingress may occur.

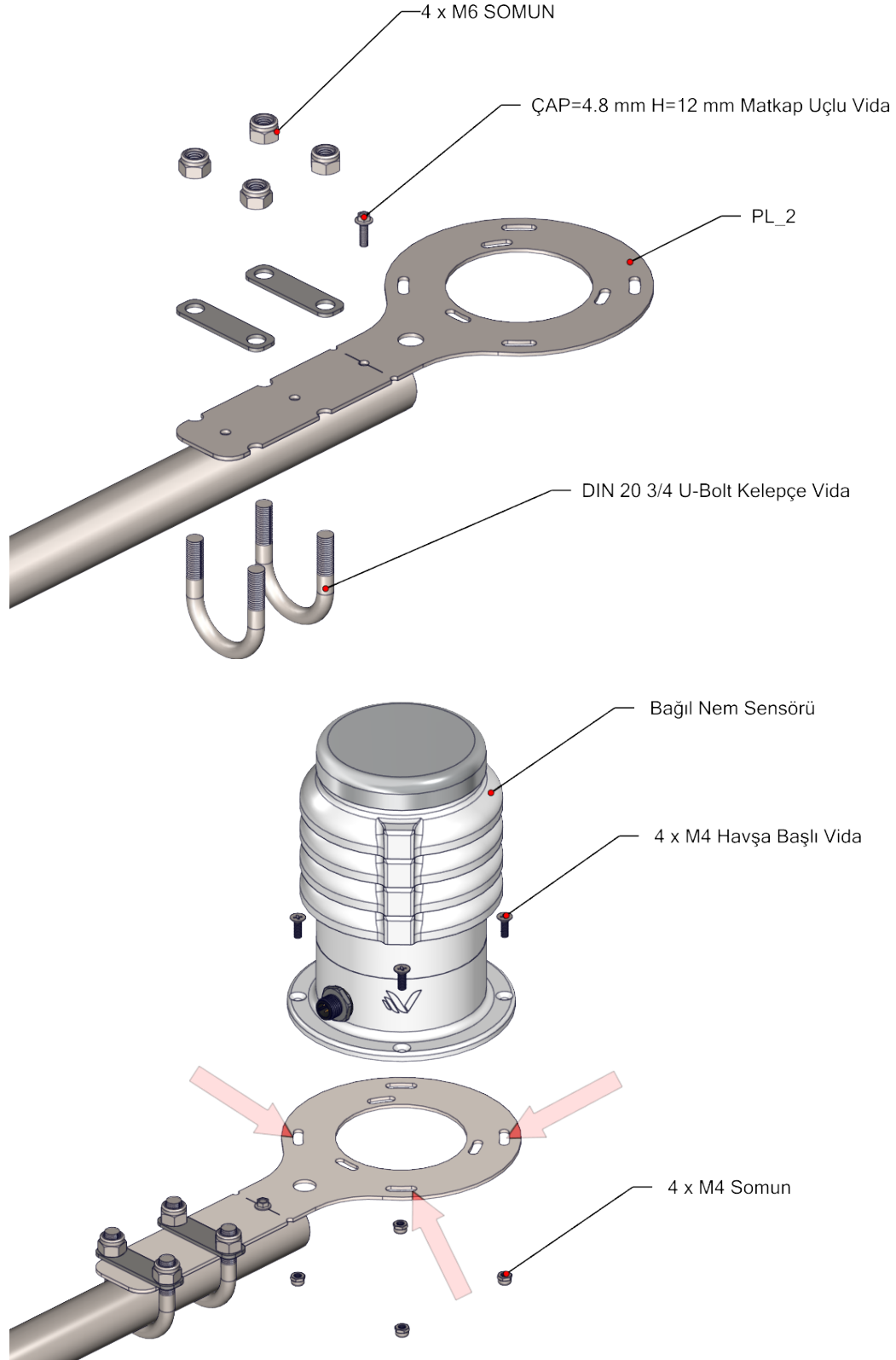
It is protected against solar radiation thanks to its naturally aspirated, 4-plate UV ABS radiation shield.

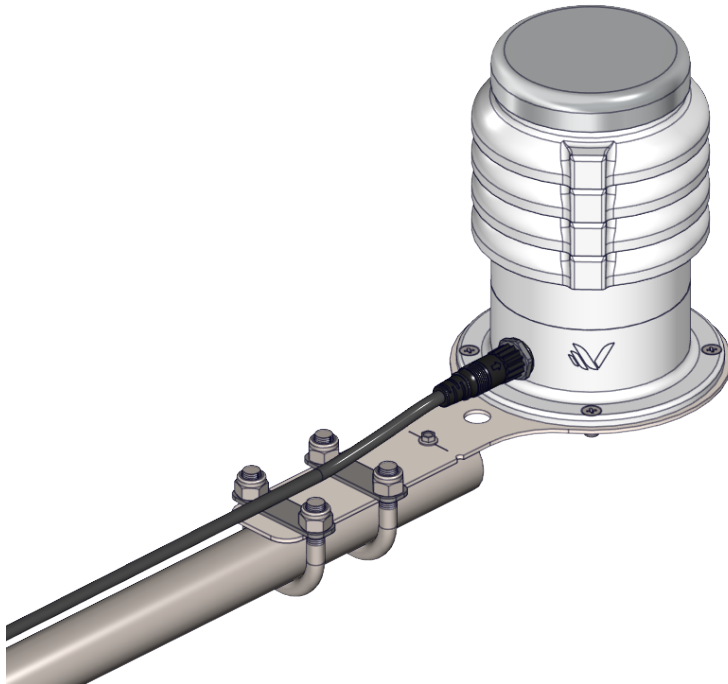
Dew formation and splashes will not damage the sensor, but erroneous measurement values will be recorded until all moisture on and directly around the sensor element has evaporated.

The protective filter must be installed carefully to check whether it operates within the humidity standard. Be careful not to touch the highly sensitive sensor element. Note that when you reattach them, the sensors will not measure accurately again until they are completely dry.

M ECHANICAL INSTALLATION

All sensor models can be placed on the desired surface through the M4 screw holes on the connection apparatus, or with the help of a clamp for pipe type placements.





ELECTRICAL INSTALLATION

Humidity sensors are manufactured with 3 m high quality PUR FLEX cable with waterproof IP68 connector.

POWER CONNECTION

The minimum supply voltage for MB Series humidity sensors models is 9 V DC. 12V DC voltage is recommended to ensure reliable performance. It is recommended to protect the output of the power supply with a fast-blow fuse with a maximum rating of 250 mA.

POWER CONSUMPTION

Humidity Sensor Voltage (V DC)	Current (mA)	Power (mW)
9	8	72
12	6	72
24	3	72

Maximum power consumption 72 mW at highest input voltage.

– Maximum input current 3 mA at lowest input voltage.

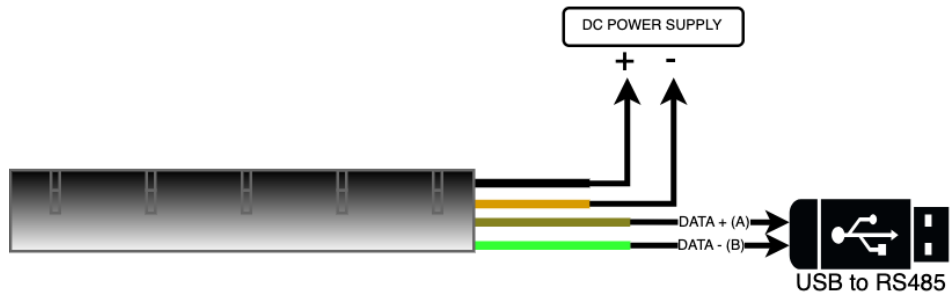
– Maximum inrush current 100 mA.

AN series (current output versions), 0% of a 4 mA output and 100% of a 20 mA full-scale output and 0% of a 0 V output and 1.5 V full-scale output It is set to represent 100.

COMPUTER CONNECTION



Power supply units for portable computers such as laptops can produce large voltage peaks. This may damage the digital interface of the device. Make sure there is galvanic separation between the inputs and outputs of the transducer.



Cable Color	Definition
White	9-28 V DC (+)
Brown	9-28 V DC (-)
Yellow	Data (+)
Green	Data (-)

C OMMUNICATION

Visionsen Smart Tool software allows configuring Modbus® based humidity sensors and monitoring real-time data.

CONNECTION SETTINGS

After connecting it to your computer with the USB-RS485 converter, you can observe the COM Port, Baud Rate, Stop Bits, Parity and Address settings of the sensor with Modbus® RTU communication protocol with the help of the Visionsen Smart Tool software you downloaded from www.visionsen.com after the connection is made. After configuring your new connection settings, you can click the "Send Settings" button.

The screenshot displays the Visionsen Smart Tool software interface. The window title is "Visionsen Smart Tool". The interface is divided into four tabs: "Bağlantı Ayarları" (selected), "Register Adresleri", "Cihaz Ayarları", and "Kalibrasyon".

The "Bağlantı Ayarları" tab is active, showing two sections:

- Seri Bağlantı Ayarları**: This section contains the following settings:
 - COM Port: COM3 (dropdown menu)
 - Baud Rate: 9600 (dropdown menu)
 - Stop Bits: 1 (radio button selected), 2 (radio button unselected)
 - Parity: None (checkbox checked), Even (checkbox unselected), Odd (checkbox unselected)
 - Address: 1 (text input field)
 - Buttons: "Yenile" (Refresh) and "Bağlantıyı Kes" (Disconnect Connection)
- Yeni Bağlantı Ayarları**: This section contains the following settings:
 - Baud Rate: 9600 (dropdown menu)
 - Stop Bits: 1 (radio button selected), 2 (radio button unselected)
 - Parity: None (checkbox checked), Even (checkbox unselected), Odd (checkbox unselected)
 - Address: (empty text input field)
 - Button: "Ayar Gönder" (Send Settings)

REGISTER ADDRESSES

If you want to change the register addresses defined in the Modbus® map, the desired address can be written in the section of the relevant sensor and a new register address can be defined after pressing the "Send Settings" button.

Bağlantı Ayarları
Register Adresleri
Cihaz Ayarları
Kalibrasyon

Işınım 1	<input type="text" value="31"/>
Işınım 2	<input type="text" value="32"/>
Sıcaklık 1	<input type="text" value="15"/>
Sıcaklık 2	<input type="text" value="19"/>
Nem	<input type="text" value="16"/>
Basınç	<input type="text" value="17"/>
Rüzgar Yön	<input type="text" value="21"/>
Rüzgar Hız	<input type="text" value="20"/>
Oransal Işınım	<input type="text" value="0"/>
Kirlilik Anlık	<input type="text" value="0"/>
Kirlilik Oto	<input type="text" value="33"/>
Sıcaklık 3	<input type="text" value="40"/>

Adresleri Değiştir

Ayar Gönder

Işınım 1	<input type="text" value="61 W/m<sup>2</sup>"/>	Basınç	<input type="text" value="NA"/>	Kirli. Oto	<input type="text" value="NA"/>
Işınım 2	<input type="text" value="0 W/m<sup>2</sup>"/>	Rüz Yön	<input type="text" value="NA"/>	Oran. Işın.	<input type="text" value="NA"/>
Sıcaklık 1	<input type="text" value="NA"/>	Rüz Hız	<input type="text" value="NA"/>		
Sıcaklık 2	<input type="text" value="NA"/>	Sıcaklık 3	<input type="text" value="NA"/>		
Nem	<input type="text" value="NA"/>	Kirli. Anlık	<input type="text" value="NA"/>		

Bağlantı Başarılı

MODBUS® TABLE AND CONFIGURATION SETTINGS

Default communication parameters for RHS-MB and RHST-MB series humidity sensors are as follows:

Modbus® Baud Rate:9600

Parity: None

Data Bits:1

Stop Bits:1

Address:1

If you are using the software on-premise, make sure the software is pre-installed on the laptop.

For more details about installation, monitoring and data recording, you can contact the contact addresses.

Adress		Type	Gain	Unit	Description
Hexadecimal	Decimal				
0x10	16	uint16	10	%	Relative Humidity
0x28	40	int16	10	°C	Ambient Temperature

TECHNICAL DRAWINGS

RELATIVE HUMIDITY AND TEMPERATURE SENSORS SENSORS MODELS

- RHS-P
- RHS-AN
- RHS-MB
- RHST-P
- RHST-AN
- RHST-MB

