
WIND SPEED SENSORS INSTALLATION AND USER MANUAL



VISIONSEN



Sensor Technology



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VSİAS INC. CO.
İVEDİK OSB. MAH. 2224. CAD. NO:116/1 Yenimahalle/ANKARA

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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.”



+90 (543) 874 27 27



İVEDİK OSB. MAH. MELİH GÖKÇEK BULVARI NO:61/7 Yenimahalle/ANKARA



info@vsias.com

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.” **GIRIS***



Wind speed sensors are devices used to measure wind speed in environmental conditions.

These sensors are widely used in fields such as meteorology, energy, marine, aviation, agriculture, greenhouse farming and environmental monitoring.

3 Cup Anemometer: This sensor is a rotating device with three horizontal cup-shaped wings. It measures the speed of the wind in proportion to its rotation speed.

They are also known as conventional sensors used to measure wind speed.

The advantages are:

- Simple and Durable Structure
- Direct Measurement
- Wide Usage Area
- Low Cost
- Easy Maintenance and Repair
- Low Energy Consumption

Thanks to the advantages listed above, it contributes to the wide usage areas of cup anemometers and their preference in many applications.

P RODUCT INTRODUCTION

Wind speed sensors produced under the Visionsen brand are widely used in areas that require meteorological measurement, especially in solar power plants, energy, maritime, aviation, agriculture and greenhouse cultivation.

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

Visionsen wind speed sensors contain a microprocessor structure that stores calibration data, eliminating the need to reprogram data loggers or SCADA systems when installing a new power plant.

Wind speed sensors have a 3-cup anemometer structure and have 3 scoops. Since UV-resistant buckets are produced from the mold structure, they do not lose their strength at high temperatures and low temperatures, and the material structure maintains its homogeneity and does not affect measurement uncertainty and accuracy.

Since the measurement is made with the optical method, the sensor gives the most accurate measurement results even at wind speeds that can be considered very low. Thanks to the aluminum protection, it is not affected by external environmental conditions and measurement accuracy is maintained.

Visionsen wind speed 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

When choosing your mounting system for the wind speed sensor, consider that you will occasionally need to access your wind speed sensor for preventative maintenance. Use the following guidelines to determine the best location to mount the wind speed sensor.

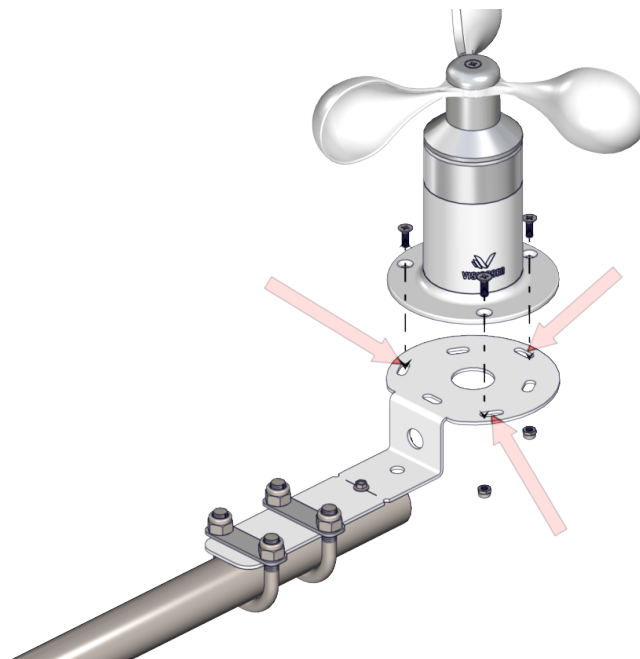
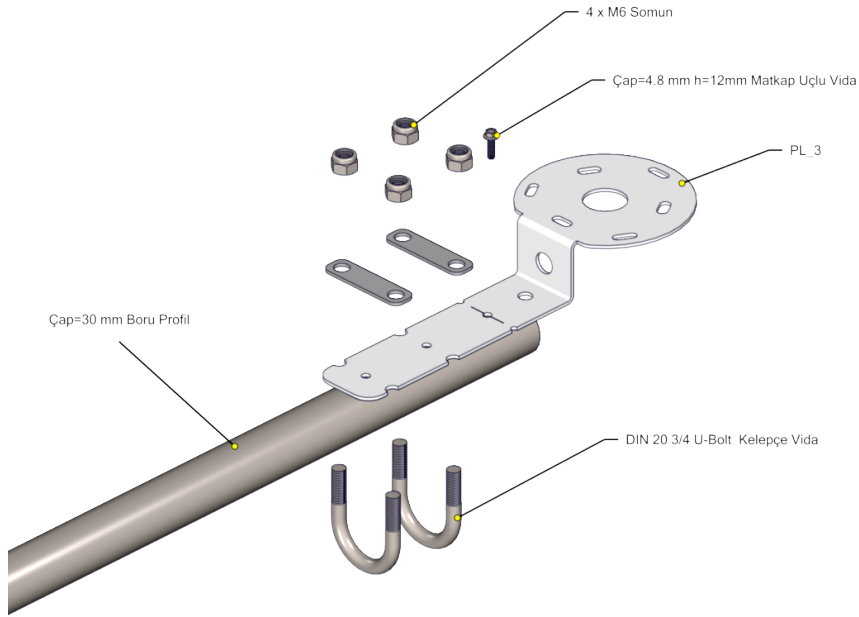
- Do not install the wind speed sensor in locations that may obstruct wind flow.
- Mount the wind speed sensor at least 2m high.
- The wind speed sensor can be mounted using the three holes in the bottom mounting section. This structure allows mounting on any flat surface.

Caution: To prevent damage to the wind scoops, whenever possible, mount the sensor/mount combination properly on the pole before installing the wind speed sensor unit.

M ECHANICAL INSTALLATION

The wind direction sensor comes with PL_3 mounting bracket. 3 M4 screws located under the sensor come mounted on the apparatus.

You can mount it by using the 3 holes on the mounting bracket and following the instructions in the installation section. If it is desired to be placed on a pipe, it can be mounted with the help of 2 3/4 U-Bolt Clamp screws.





ELECTRICAL INSTALLATION

Wind speed sensors are produced with 3 or 4 wires, 3 m high quality PUR FLEX cable and waterproof IP68 connector, depending on the model.

POWER CONNECTION

The minimum supply voltage for all models of MB Series single irradiance sensors 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

Wind Speed Sensors 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.

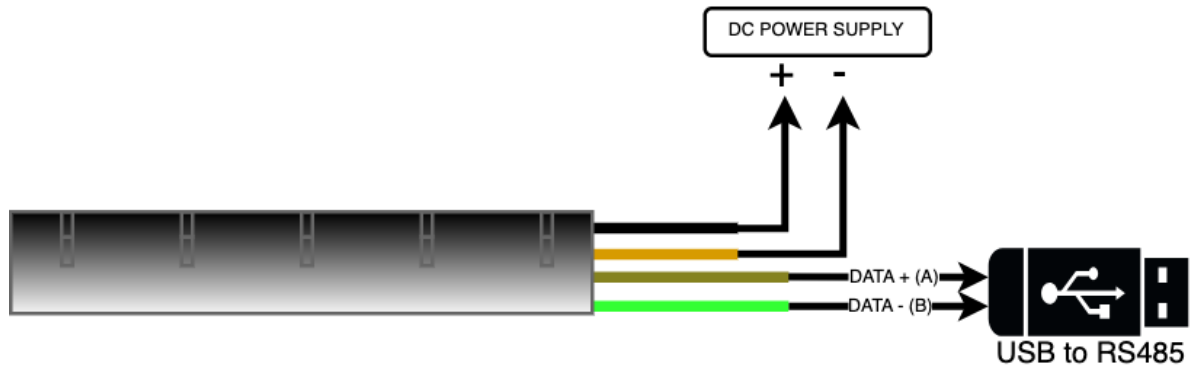
- Maximum input current 3 mA at lowest input voltage.
- Maximum inrush current 100 mA.

AN series (current output versions) include a 4 mA output providing 0 m/s and a 20 mA full scale output providing 60 m/s and a 0 V output providing 0 m/s and 1.5 V luk is set so that the full-scale ascent represents 60 m/s.

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 wind speed sensors and observing 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 has four tabs: "Bağlantı Ayarları" (selected), "Register Adresleri", "Cihaz Ayarları", and "Kalibrasyon".

The "Bağlantı Ayarları" tab is active and contains two sections:

- Seri Bağlantı Ayarları**: This section includes a "COM Port" dropdown menu set to "COM3", a "Yenile" button, a "Baud Rate" dropdown menu set to "9600", "Stop Bits" radio buttons for "1" (selected) and "2", "Parity" checkboxes for "None" (checked), "Even", and "Odd", an "Address" input field containing "1", and a "Bağlantıyı Kes" button.
- Yeni Bağlantı Ayarları**: This section includes a "Baud Rate" dropdown menu set to "9600", "Stop Bits" radio buttons for "1" (selected) and "2", "Parity" checkboxes for "None" (checked), "Even", and "Odd", an empty "Address" input field, and an "Ayar Gönder" button.

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.

Visionsen Smart Tool
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Bağlantı Ayarları
Register Adresleri
Cihaz Ayarları
Kalibrasyon

Işınım 1	31
Işınım 2	32
Sıcaklık 1	15
Sıcaklık 2	19
Nem	16
Basınç	17
Rüzgar Yön	21
Rüzgar Hız	20
Oransal Işınım	0
Kirlilik Anlık	0
Kirlilik Oto	33
Sıcaklık 3	40

Adresleri Değiştir

Ayar Gönder

Işınım 1	61 W/m ²	Basınç	NA	Kirli. Oto	NA
Işınım 2	0 W/m ²	Rüz Yön	NA	Oran. Işın.	NA
Sıcaklık 1	NA	Rüz Hız	NA		
Sıcaklık 2	NA	Sıcaklık 3	NA		
Nem	NA	Kirli. Anlık	NA		

Bağlantı Başarılı
⋮

MODBUS® TABLE AND CONFIGURATION SETTINGS

Default communication parameters for wind speed 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.

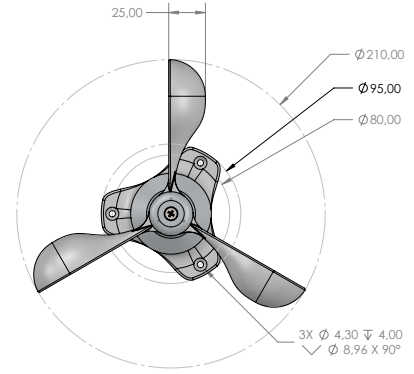
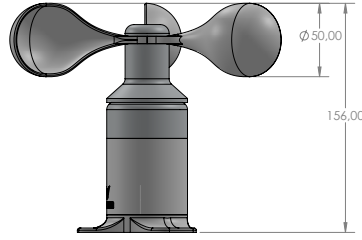
For more details about installation, monitoring and data recording, you can contact the contact addresses.

Adress		Type	Gain	Unit	Description
Hexadecimal	Decimal				
0x14	20	uint16	10	m/s	Wind Speed


TECHNICAL DRAWINGS

WIND SPEED SENSORS MODELS

- WSS-PL
- WSS-AN
- WSS-MB



BU TEKNİK RESİMDEKİ TÜM HAKLARIN MÜLKİYETİ VSİAS MÜHENDİSLİK ENDÜSTRİ A.Ş. AİTTİR. VSİAS MÜHENDİSLİK ENDÜSTRİ A.Ş. VAZİRLİĞİNİ OLMADAN, KİŞİSEL YADA TAMAMEN ÇOKAĞILTMA YAPILMASI YASAKTIR.

Cizim		Ölçek		Başlık	
Baş.Tarih	Makine MDR, Üretim GÜÇLÜGE			RH_MD_V.0.1	
Biri.Tarih					
Kontrol		A3			

Akis Belirtilmediği Sürece Ölçüler mm dir.

