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SEGMENT FOR MONITORING & CONTROL NEEDS

WS102- Wind Speed Sensor Datasheet & Installation Guide

ESENZ INNOVATIONS PVT LTD

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WS102 Introduction

This Wind Speed Sensor is sturdy designed to withstand even harsh Wind and also record even a slight breeze. It includes sealed bearings for long life.

Working Principle

The wind sensor assembly is cup and hub type. Three cups mounted on assembly hub are connected to a shaft, which rotates on precision-sealed ball bearings, which is again connected to to a magnet assembly. A pulse is produced whenever the shaft is rotated, These pulses are later converted into required output by the Signal Converter.

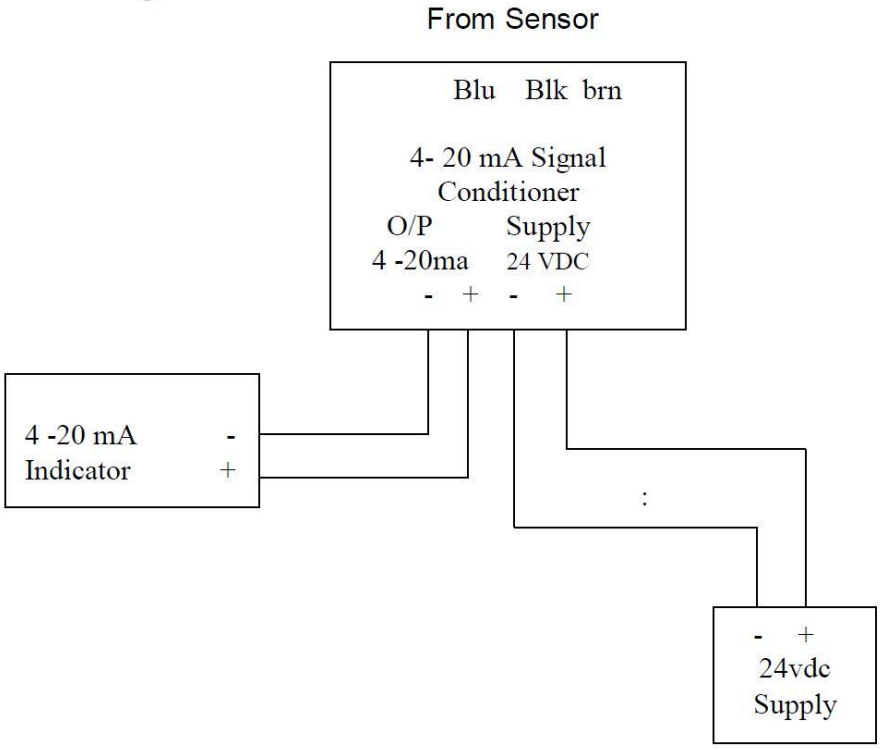
Specifications

Material	Control Head UV-resistant ABS
Sensor Type	3 Cups
Wind Cups	Polycarbonate
Range	0 to 250 km/hr
Startup wind speed	0.5 m/s or 1.8 km/hr
Accuracy	± 5% under standard conditions
MAKE	SIVARA make
Dimensions	3 cup dia. 15 cm
Operating Temperature	- 40 ~ 75 ° C

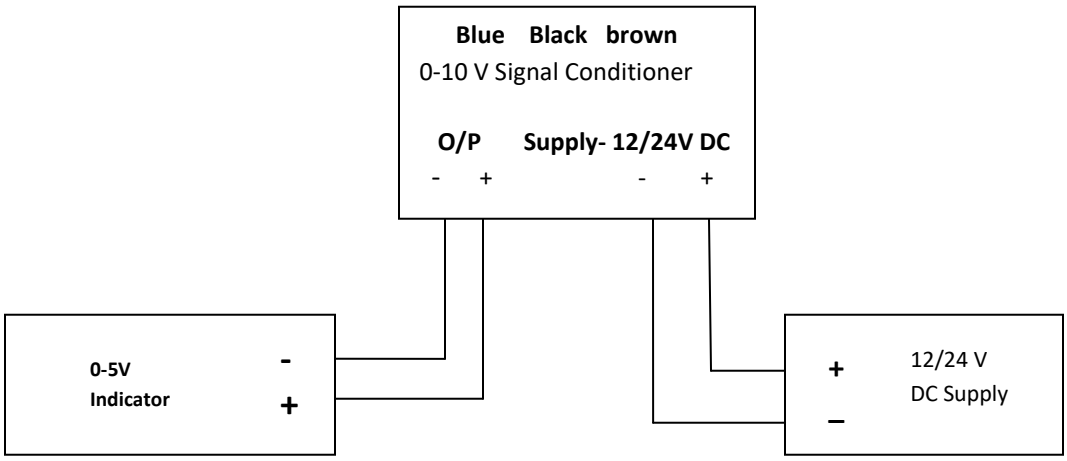
Diagram

I/O Specifications for 4-20 Mili amps Sensor Output

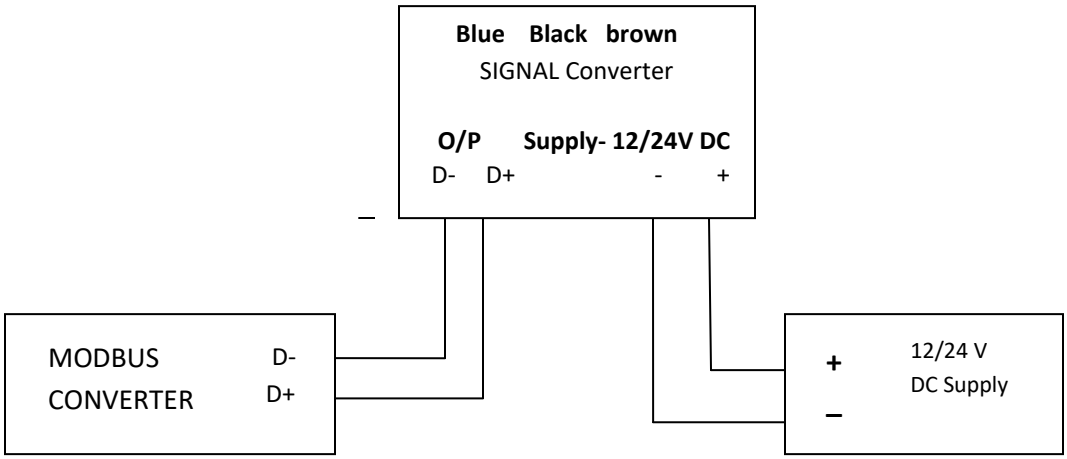
Wiring Details



I/O Specifications for 0-10 V Sensor Output



I/O Specifications for RS-485 Output



Output

Pulse output (Default) – 62 Hz = 250 Km/h

1) Current Output - 4-20 mA
2) Voltage Output - 0-5 Volts
3) Rs485 - MODBUS output (Optional - Additional Converter is required)

INSTALLATION

Parts of The wind speed sensor come in below different parts for assembly.

1) Sensor body- With cup and hub assembly,
2) "L" angle with U clamp to mount the sensor body
3) Allen key to mount the cup wheel on the sensor body.

Tools and Materials Needed

• Wrench or pliers , Wire cutters and stripper
• Multi meter and laptop with USB to rs485 converter for rs485 based sensors
• Cable ties and Electrical Tapes and any other generic tool as per site requirement

Mounting

The Anemometer is to be mounted by using the holes provided in the mounting plates and this assembly Can be mounted on any flat level surface**.**

The bracket of sensor should be mounted first on pole before fitting the wind cup and any kind of lubrication to bearing is not to be done as it may affect the reading or may also damage it. Do not open the Bottom side of sensor as it may damage the sensor

Orientation: The sensors axis should be very close to vertical axis and has be mounted at a place where there is free wind movement and no obstruction to wind flow from any side.

Steps for Mounting:

1. The L angle should be mounted on the pole with the U clamp provided and lightly tighten with Nuts provided , it should be mounted on top of pole position to avoid wind obstruction due to pole .
2. Carefully mount the sensor hub on the clamp and tighten the screws
3.) Gently insert the cup assembly onto the sensors SS shaft and tighten the screws on side if the wind cup very carefully by the Allen Key provided, any excess force or over tightening may damage the cup body .
4. Check whether the cups are freely spinning if not then readjust by loosening the screw with allen key till it freely spins and then tighten it .
4. After confirming that the sensor is properly oriented, tighten the nuts.

Calibration and Reading

In case of Modbus Output – sensors are pre calibrated and Gives default output.

In case of Analog Output -

- IF **Output**: 0 - 5 VDC (0 to 250 km/hr)
  Wind Speed in km/hr = 50*Sensor Output voltage (in Volt)
- IF **Output:** 4-20mA (0 to 250 km/hr)
  Wind Speed in km/hr = 15.625*(Output in mA - 4)

NOTE

These sensors are not manufactured or owned by esenz and are only resold. Warranty of this sensor is as per the terms and conditions of original manufacturer. There may be slight deviation in actual v/c expected value.All the accuracies and technical specs are as per the manufacturer, as this sensor do not come under any class and is of low accuracy compared to class 1 and class 2 sensors. For better accuracy and minimum errors, it's advised to use standard class 1 or 2 sensors

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