

# VT550 / Wind velocity meter

Documentation page: <https://vutlan.atlassian.net/wiki/spaces/DEN/pages/335708171/VT550+Wind+velocity+meter>

Product page: <https://vutlan.com/analog-sensors/102-vt550-wind-speed-meter.html>



## Function and purpose

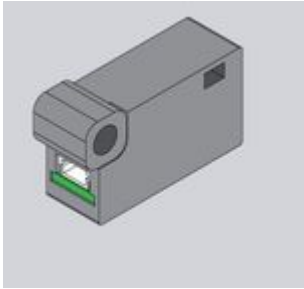
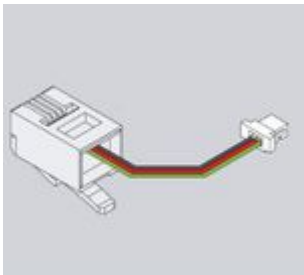
At installation on Air conditioners, fans, and other places to measure wind (airflow) velocity. Sensor controls airflow 0 - 3 m/s. The product page can be found here: "[VT550 / Wind velocity meter](#)"

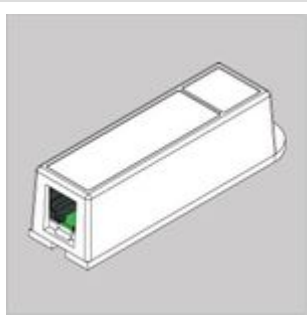
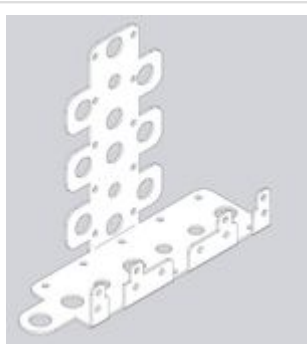


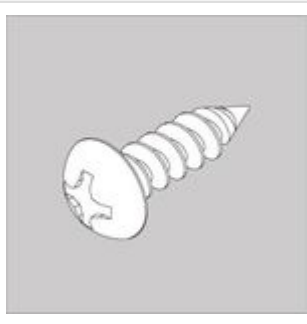
**i** The sensor can not be used on its own. It must be used together with Vutlan monitoring systems.

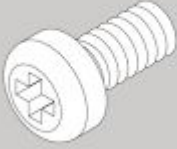


## Safety Instructions

- Regularly check that the meter is not covered with dust.

## Package contents

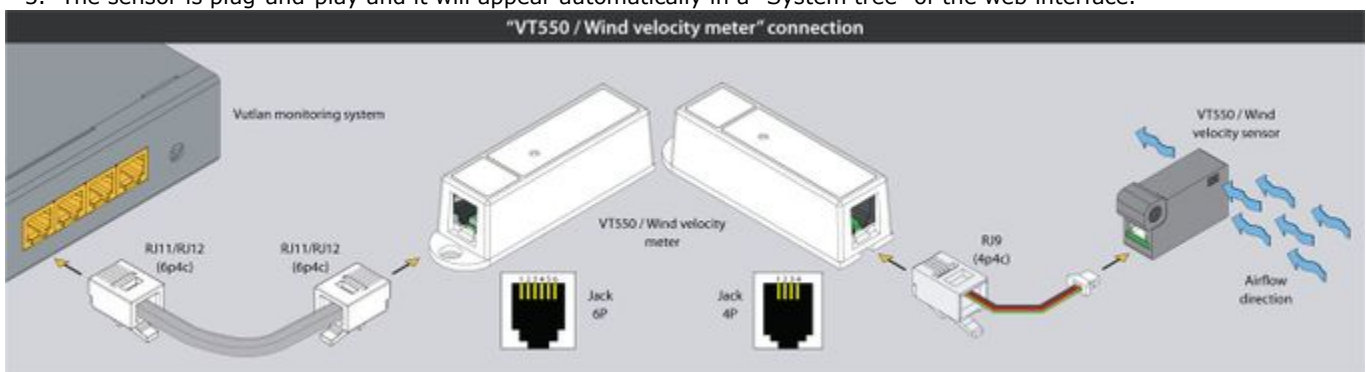
	Package content	Description
1		Wind velocity meter D6F
2		Terminal cable (3pin RJ9 to JST 1mm)

3		Wind velocity sensor
4		Metal bracket
5		Telephone cable 2m
6		Screws B4,8*13 - 1 pc
7		Screws B2.9x16 2pcs

8		Bolts M3x12 - 2 pcs
9		Nuts M3 - 2 pcs
10		Sticker - 1 pcs

### Connecting optical access sensor

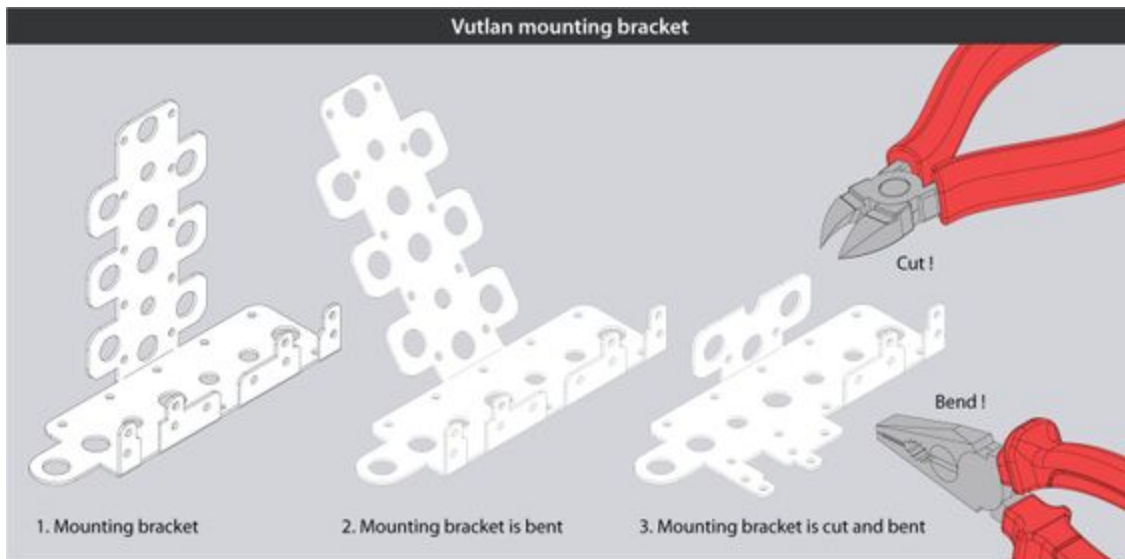
1. Connect the meter using RJ9 (4p4c) jack to 3 pin JST jack to the sensor.
2. Connect one end of the RJ11 / RJ12 cable to the monitoring unit into any analog ports (A1...A8) and the other end of RJ11/ RJ12 to the meter.
3. The sensor is plug-and-play and it will appear automatically in a "System tree" of the web interface.



Installation inside a rack or cabinet using a bracket

#### Mounting bracket

The mounting bracket is supplied with each "VT550 / Wind velocity meter". Use a wire cutter and pliers to cut and bend the bracket to Your needs.

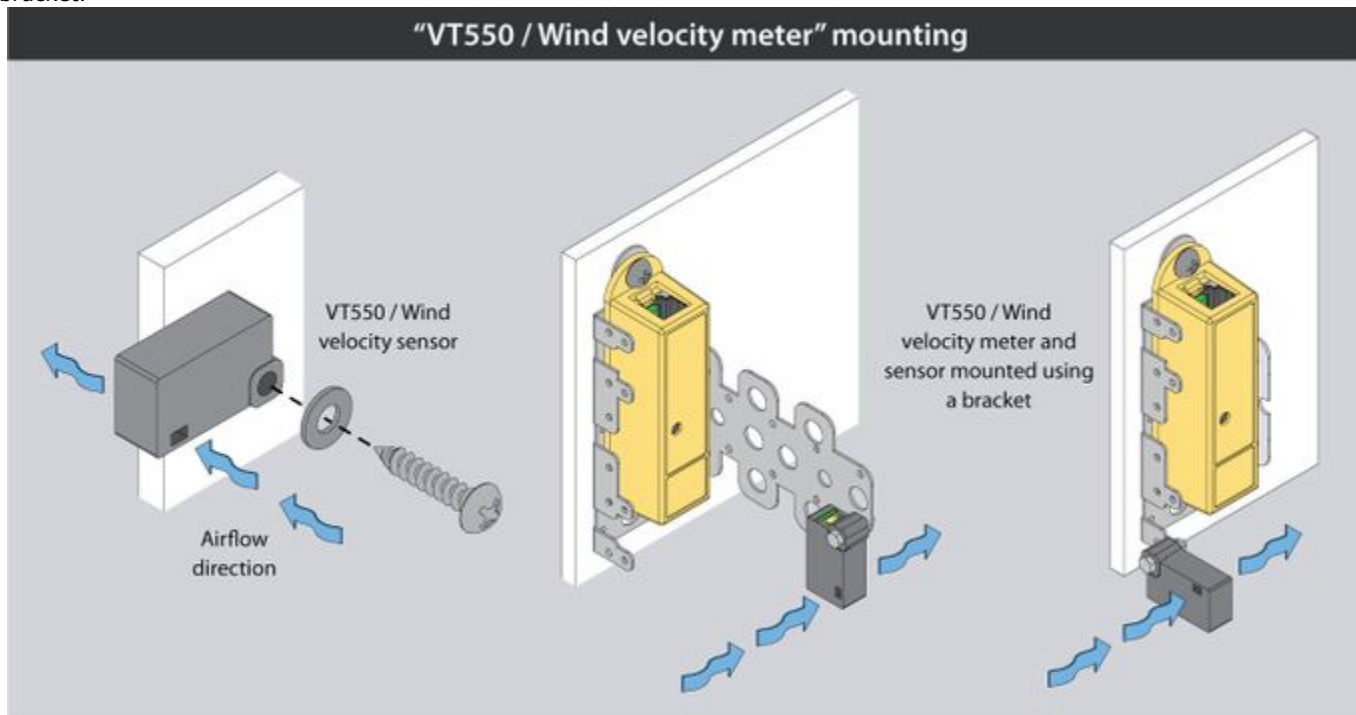


### Installation

**i** The sensor measures the speed of the wind. If you install it too far away from the the air-conditioner, there will be no wind velocity or very little.

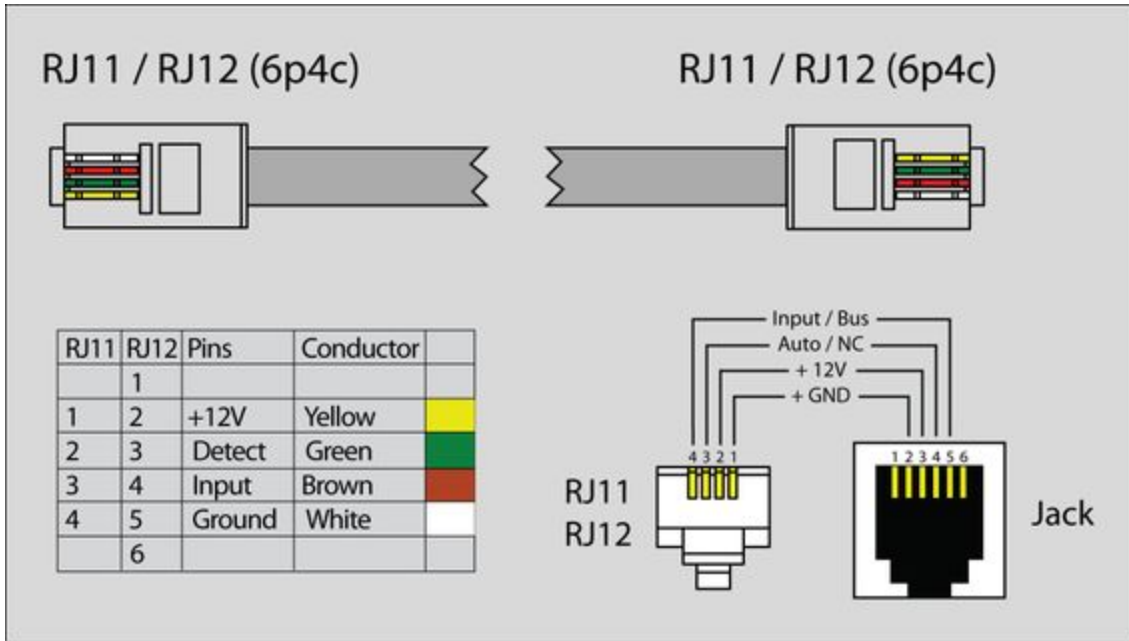
It is best to install the sensor as close as possible to the origin of the wind. The sensor should work in the stream and the correct installation distance should be obtained by trial and error.

The bracket steel thickness is 0.8 mm. Below You can find how users can mount the "VT550 /Wind velocity meter" with such a bracket.

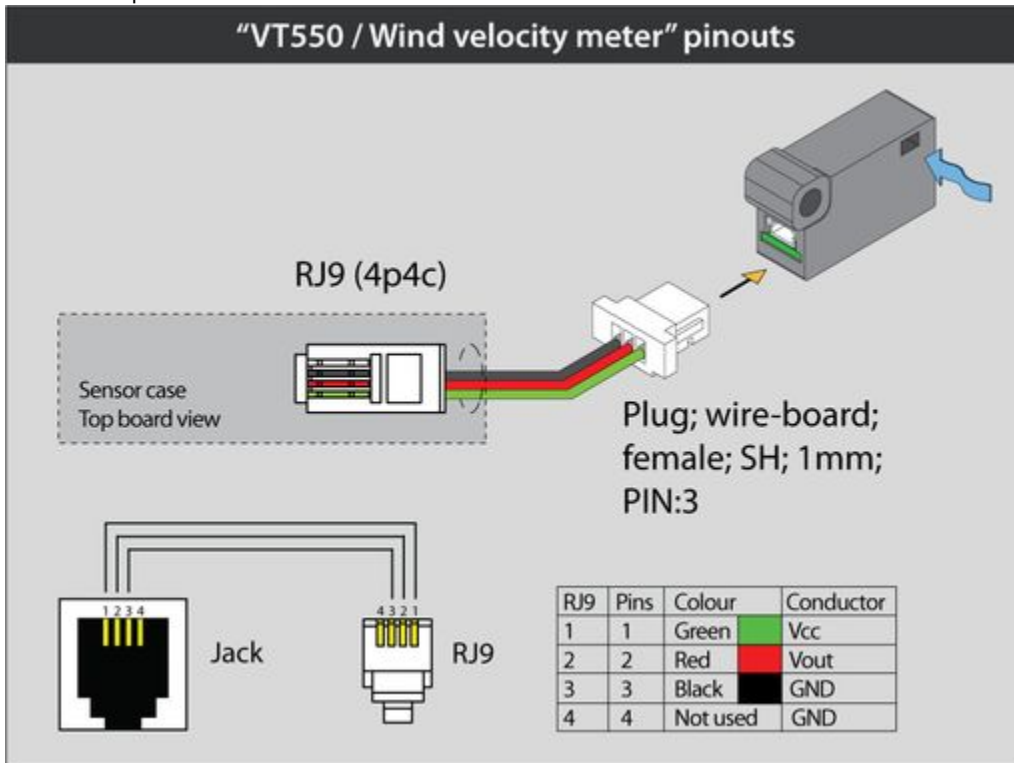


### Cable pinouts

"RJ11/RJ12" to "RJ11/RJ12" cable pinouts:



RJ9 4p4c to 3-pin JST cable pinouts:

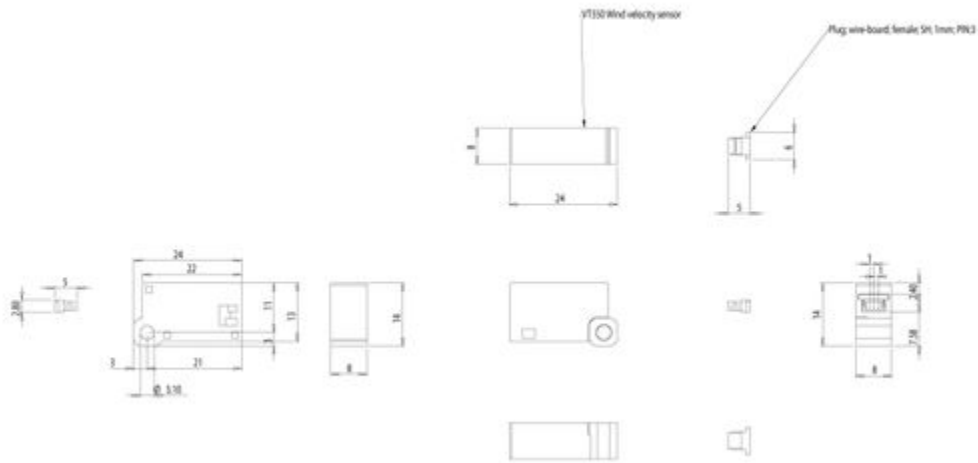


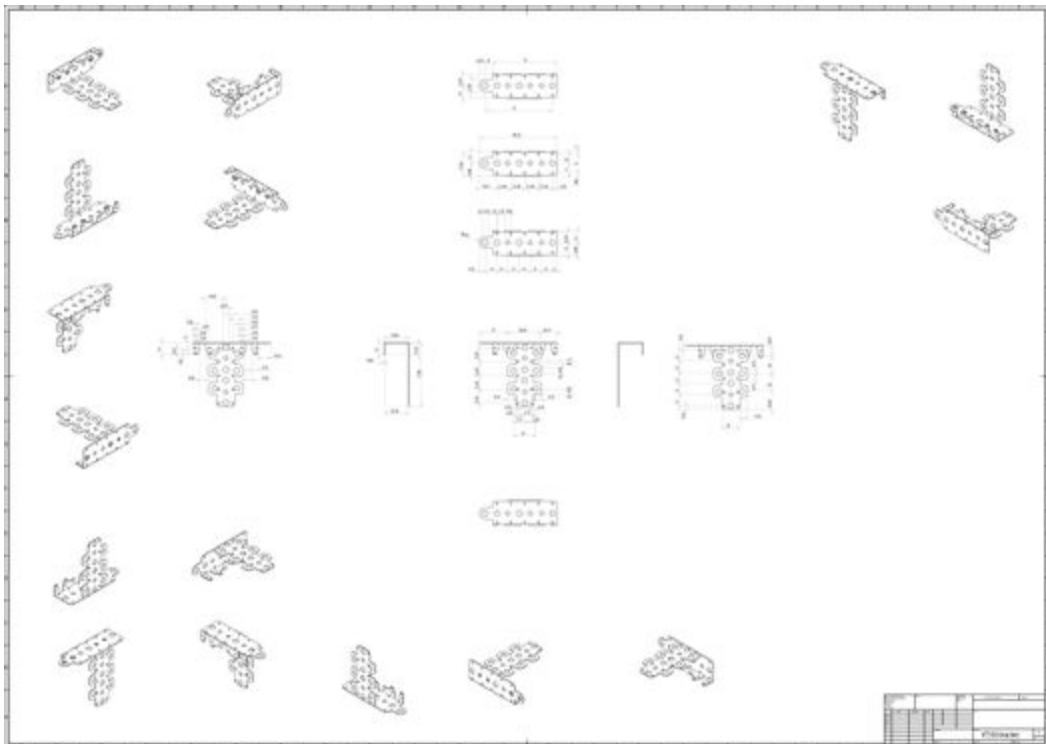
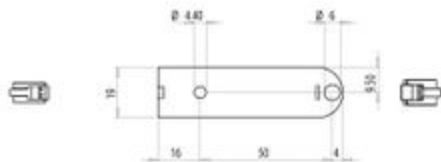
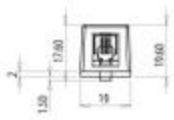
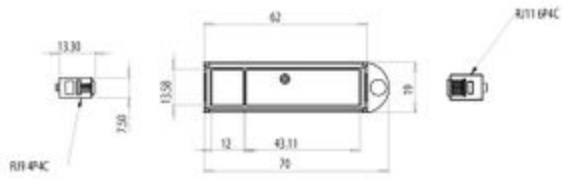
### Technical specifications

VT550 / Wind velocity meter	
Dimensions	600×18x18 mm
Weight	106 g
Inputs	RJ9 (4p4c)
Outputs	RJ11 / RJ12 (6p4c)

Operating temperature	Min. -10° C, Max.80° C
Operating humidity	Min. 5% - Max. 95% (Non-Condensing)
Mounting	Mounting bracket included for installation inside IT racks and cabinets
Power consumption	60mW
Max. distance from the monitoring unit	50 m
HS Code	9026 80 200
Components	Manufactured in E.U.
Special features	Response time 0.1 sec.
Other	The sensor is sold with preconfigured sensitivity.

## Drawings





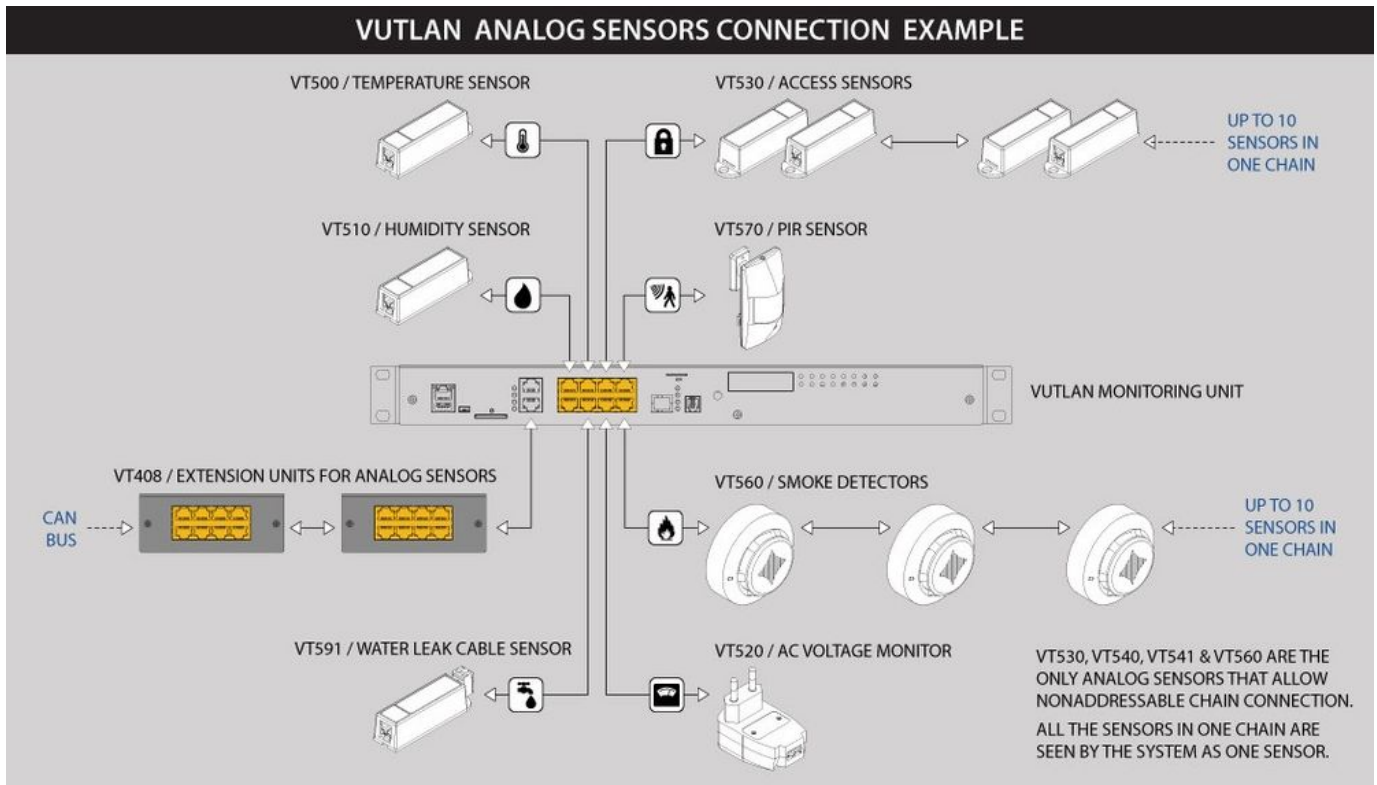
## Analog sensor connection

This section includes child pages:

- [VT420 / Converter 4-20mA](#)
- [Chain connection of analog sensors](#)
- [VT500 / Temperature sensor](#)
- [VT501 / Outdoor temperature sensor](#)
- [VT510 / Humidity sensor](#)
- [VT520 / AC voltage monitor](#)
- [VT520DIN / AC Voltage monitor \(link\)](#)
- [VT530 / Access sensor](#)
- [VT540 / Vibration sensor](#)
- [VT560 / Smoke detector](#)
- [VT570 / PIR sensor](#)
- [VT590 / Spot Water Detector](#)
- [VT593 / Spot leak sensor](#)
- [VT550 / Wind velocity meter](#)
- [VT591 / Leak sensor & WLC / Leak detection cable](#)

## Connecting analog sensors

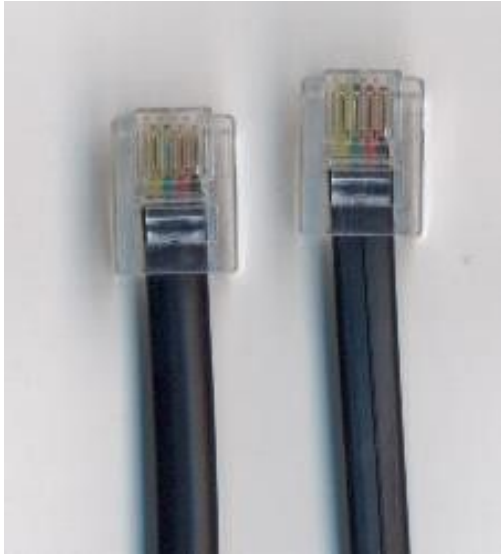
Connect the analog sensor by a supplied RJ-11 (6P4C) cable to any analog port "A1 .. A8" or "Sensor" port. The determination of the sensor type and connection will occur automatically.



**⚠** If strong electromagnetic interference is present, we recommend using a 3-pair cable CAN FTP for sensor connection!

## 6P4C RJ11 cable wiring/pinouts



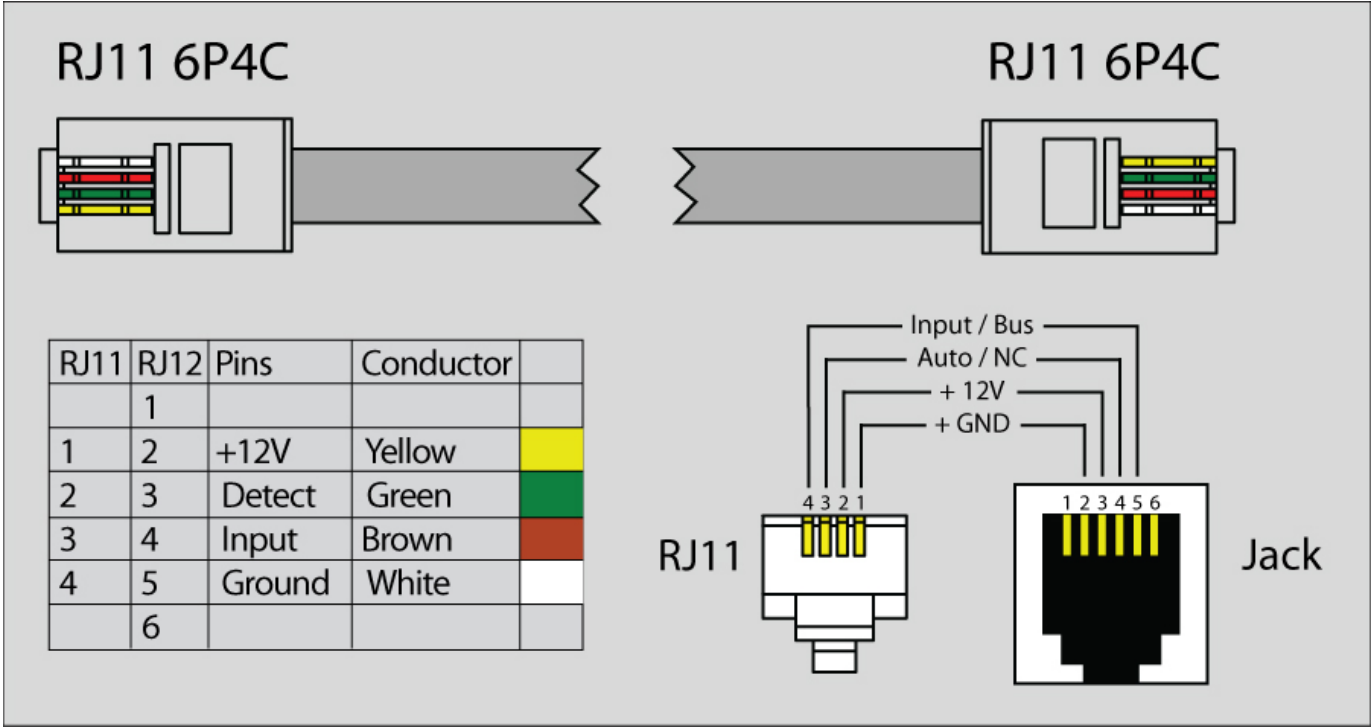


1- Yellow, 2- Green, 3- Red, 4 - Black

Colors are true for this telephone cable. Both ends match the colors and pinouts (identical).

Please refer to the RJ connectors comparison table:





Daisy chain connection

Some of the analog sensors can be connected in a daisy chain. Please refer to the article "[Chain connection of analog sensors](#)".

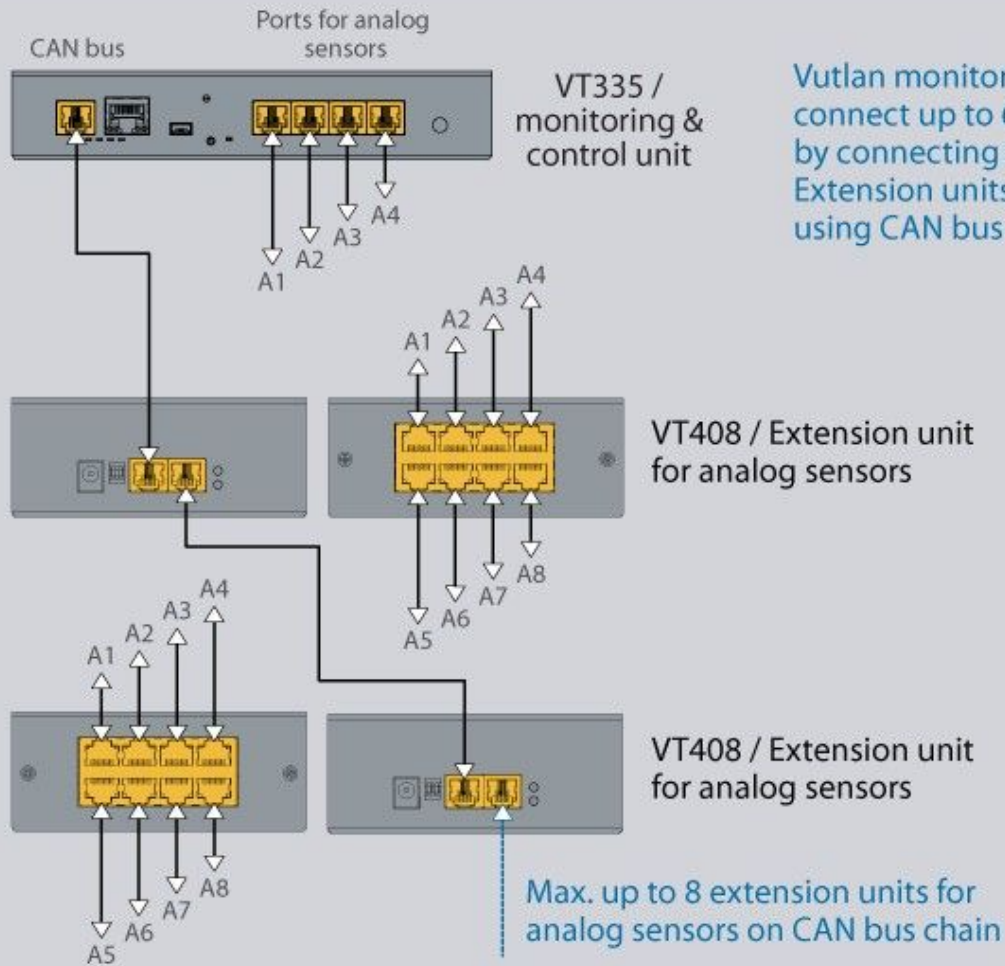
Maximum cable length test

Model		50m	100m	120m	150m	200m
VT407	AC current converter		ok			
VT410	DC voltage monitor					
VT420	Converter 4-20mA		ok			
VT500	Temperature sensor		ok			
VT501	Outdoor temperature sensor		ok			
VT510	Humidity sensor		x			
VT530	Access sensor		ok			
VT540	Vibration sensor		ok			
VT550	Wind velocity meter		x			
VT560	Smoke detector		ok			
VT570	PIR sensor		ok			
VT590	Spot water detector		ok			
VT591	Water leak sensor		ok			

Extending the number of analog sensors

Using CAN extension "[VT408 / Sensor extension unit](#)" it is possible to increase the number of analog sensors connected to the monitoring unit up to 80 sensors.

## VUTLAN ANALOG SENSORS CONNECTION EXAMPLE



Vutlan monitoring systems can connect up to 68 analog sensors by connecting 8 (eight) VT408 / Extension units for analog sensors using CAN bus chain.

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**SOLUTIONS**

Sensor configuration

### Settings tab

To configure a sensor, go to "Main menu" >> "System tree" and click on the sensor element in the tree. A modal window with sensor properties will pop up. Change the needed settings and click "OK" or "Apply" at the bottom of the "Properties" window.

# Temperature



Settings | Charts | All data

Name: MPU Temperature

ID: 201001

Type: temperature

Class: analog

Current state: Normal

Current value: 41.0 °C

Low alarm level: 0

Low warning level: 5

High warning level: 45

High alarm level: 50

Hysteresis type: value

Value: 0.30

K from (k\*x + b) ? 1.000

B from (k\*x + b) ? 0.000

OK Apply Cancel

All sensors include:

1	Name	The name is given by the system automatically. You can change it to anything you want.
3	ID	System ID of the element.
4	Type	Examples: temperature, humidity, vibration.
5	Class	Examples: analog, CAN, switch, discrete.
6	Hardware port	The external port number on the device panel to which the sensor is connected (if the sensor is external).

All sensors have threshold controls:

Current state	Normal
Current value	41.0 °C
Low alarm level	<input type="text" value="0"/>
Low warning level	<input type="text" value="5"/>
High warning level	<input type="text" value="45"/>
High alarm level	<input type="text" value="50"/>

In the picture above, the "Current value" equals 41.0 and is represented by the small triangle. Currently, the triangle is green because it is situated in the "Normal" range. Hence the sensor says that the "Current state" is "Normal". This value is used by the system's "Logic schemes" menu to notify the administrator or take action.

### Hysteresis

Sensors have the option of setting the hysteresis state. Hysteresis can be a time, a value or it can be disabled.

If the hysteresis is set in time, the sensor will transmit to a new state with a delay of the specified number of seconds in the corresponding field. The time counting will begin from the moment when the measured value of the sensor has left the current range.

Each state has its own field. Which determines the time that the sensor value must continuously hold for the state to change to the specified.

Hysteresis type	<input type="text" value="time"/>
Low alarm	<input type="text" value="1"/>
Low warning	<input type="text" value="1"/>
Normal	<input type="text" value="0"/>
High warning	<input type="text" value="1"/>
High alarm	<input type="text" value="1"/>

If you set the hysteresis by value, the sensor transition to a new state will occur when the measured value of the sensor exits beyond the current range, adjusted for the specified hysteresis value.

Hysteresis type	<input type="text" value="value"/>
Value	<input type="text" value="0.30"/>

You can calibrate the sensors. Use K and B coefficients. After the calibration, please, save the values in flash memory.

To save sensor properties in the device's flash memory press "" then "OK" to confirm.

### **i** Example: Why do we need to use Hysteresis

Let's say that we have a temperature sensor. Let's say that we have set up threshold values.

We have set the value 25.5 °C to be a threshold value between Normal/Alarm states.

If the temperature drops just below 25.5 °C You will have a "Normal" state.

If the temperature goes just above 25.5 °C You will have a "Warning" state.

Sometimes the temperature may stay at 25.5 °C and jump up and down by 0.1-0.3 °C. In this case, You will get too many notifications that the sensor is showing a Warning or Normal state.

In this case, we need to use a Hysteresis.

If the type "time" is chosen, the system will wait for a specified time before the State of the sensor is declared.

If type "value" is used, unless the temperature drops by a larger amount than specified, the sensor state will not be declared.

### Tuning the sensor value

Sensor readings can be tuned by a linear formula " $y = k * x - b$ "

#### Example VT407 + HAT-100Q1 / AC current converter:

Metered current for HAT: from 0 to 100A (This means that the range equals 100,  $k = 100$ )

The output of VT407 is 0-5V (That means that the range is equal to 5)

"b" = the value that the sensor shows in WebUI when there's no current. Let's say that  $b = + 0.021$

You should use the following formula for HAT:  $100/5*(x-y)$

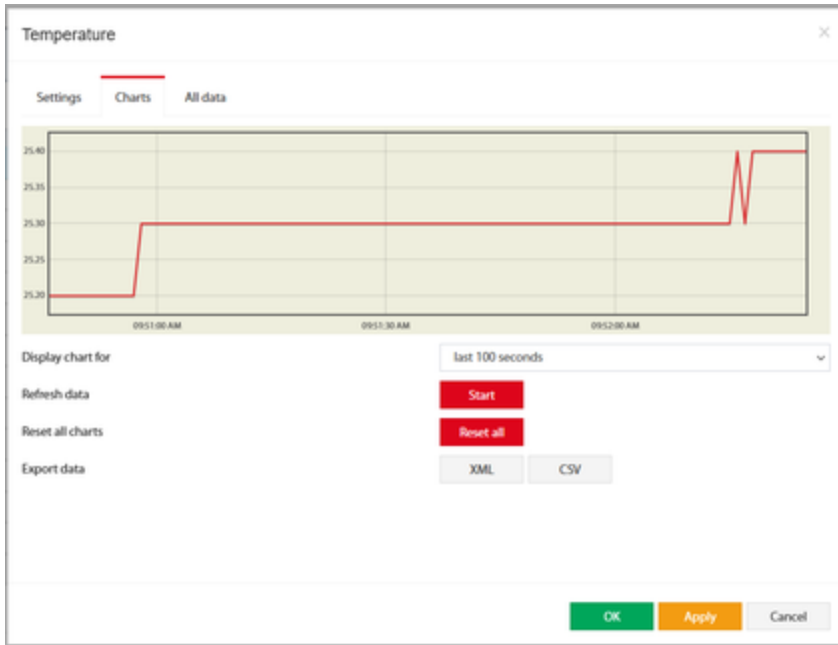
The expression formula would be  $20*(x-0.021)$

**i** Point is used as a decimal separator (3.14)

### Charts tab

The charts tab shows the following:

Display chart for	<ul style="list-style-type: none"><li>• last 100 seconds</li><li>• last 100 minutes</li><li>• last 100 hours</li><li>• last 100 days</li></ul>	
Refresh data	Start	Poll a sensor
Reset all charts	Reset all	Clears all saved data for the sensor.
Export data	XML or CSV	Exporting data through WebUI does not work for more than a couple of days and is very rough. If you need detailed log data, use the logging of sensor values to the media: Read more at: <a href="#">System Log</a> , <a href="#">Sensors dump files</a>



- [Tuning the sensor value](#)
- [Example: Using fuel tanks.](#)

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Remote Infrastructure Monitoring and Control

43 ul.Svornosti, 821 06 Bratislava,

Slovak Republic

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