



kintech
engineering



DATASHEET

GEOVANE

TRUE NORTH, THE RIGHT WAY!

A patented solar compass developed by Kintech Engineering to accurately obtain the True North (geographic) orientation of its mechanically-coupled wind vane.

DESCRIPTION

A patented invention that finally solves the inherent uncertainties in wind direction measurements. Being equipped with high-resolution optoelectronic sensors, composed of 2048 photo sensing pixels, the Geovane uses the Sun to measure the True North orientation of the sensor coupled to it, resulting in more accurate direction measurements than ever possible before. The Geovane offers three type of outputs: frequency, analog voltage and digital over a RS-485 serial interface.

Benefits:

- Delivers the highest wind direction accuracy available today.
- Ensures error-free wind vane alignment by removing mounting bias.
- Supports reliable veer measurement (IEC 61400.12.1, 2017).
- Requires no maintenance or calibration.
- Extremely low power consumption.

APPLICATIONS

Wind resource assessment, site calibration, power performance studies, airports, critical infrastructure and meteorology.

TECHNICAL DATA

General

Operating voltage	6... 30 VDC
Recommended operating voltage	12 VDC
Operating temperature	-25... 85°C
Weight	0.815 kg
Housing	Anodized aluminum and glass
Protection (IEC 60529)	IP67

True North Orientation Measurement

Reference	True North
Output range	0... 380° (clockwise, see user guide)
Absolute accuracy	<1°
Sun detection rate	1, 5, 10 (default setting), 30, 60 s

GEOVANE METMAST | SOLAR COMPASS

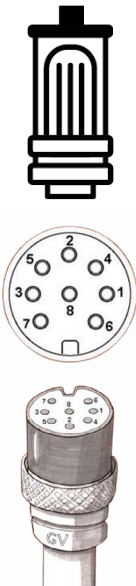
CABLE RECOMMENDATION

Signal cable up to 150m: **0.5 mm² section + shield.**

The number of wires needed will depend on which output from the Geovane is selected to connect to the logger. This document covers the three most common options (see here below): all connector pins available (cable with 8 wires is needed), connection via analog signals (cable with 6 wires is needed) or digital-only communication (a cable with 4 wires is needed).

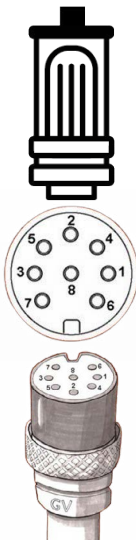
PINS WHEN USING BOTH ANALOG AND DIGITAL SIGNALS

This enables both Option A and/or Option B when configuring the Geovane in Atlas (see below).

Sensor Model	Sensor Pin		Kintech Cable Colors Cable directly from sensor		Orbit 360		
					Section	Terminal	Type
	1	Out (V1+)	○	White	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal
	2	RS-485 A	●	Pink	RS485	33 37 41	A1, A2, A3
	3	Supply (+)	●	Green	RS485	36 40	(+)
	4	RS-485 B	●	Grey	RS485	34 38 42	B1, B2, B3
	5	Out (V2+)	●	Blue	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal
	6	Out (Hz)	●	Red	Frequency Channels	2 5 8 11 14 17 20 23 26 29	Signal
	7	Supply (-)	●	Brown	RS485	35 39	(-)
	8	Out (V-)	●	Yellow	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)
	Shield		●	Yellow Green	Power Input		⏏

PINS WHEN USING ANALOG SIGNALS

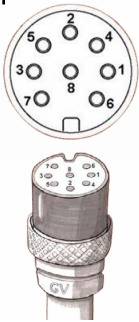






This enables Option A when configuring the Geovane in Atlas (see below).

Sensor Model	Sensor Pin		Kintech Cable Colors Cable directly from sensor		Orbit 360		
					Section	Terminal	Type
	1	Out (V1+)	○	White	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal
	3	Supply (+)	●	Green	RS485	36 40	(+)
	5	Out (V2+)	●	Grey	Analog Channels	48 52 56 60 65 69 73 77 81 84 85 86 90 91 92	Signal
	6	Out (Hz)	●	Pink	Frequency Channels	2 5 8 11 14 17 20 23 26 29	Signal
	7	Supply (-)	●	Brown	RS485	35 39	(-)
	8	Out (V-)	●	Yellow	Analog Channels	47 51 55 59 64 68 72 76 80 87	(-)
	Shield		●	Yellow Green	Power Input		⏏

GEOVANE METMAST | SOLAR COMPASS

PINS WHEN USING DIGITAL SIGNAL

This enables Option B when configuring the Geovane in Atlas (see below).

Sensor Model	Sensor Pin		Kintech Cable Colors Cable directly from sensor		Orbit 360		
					Section	Terminal	Type
	2	RS-485 A		White	RS485	33 37 41	A1, A2, A3
	3	Supply (+)		Green	RS485	36 40	(+)
	4	RS-485 B		Yellow	RS485	34 38 42	B1, B2, B3
	7	Supply (-)		Brown	RS485	35 39	(-)
	Shield			Yellow Green	Power Input		

Note: Alternatively, the Geovane can also be powered directly from the battery, or from outputs o1...o6, provided that these are manually configured as “Always ON”. In this second case, the supply (+) pin #6 must be connected to terminals 67, 71, 75, 79, 83, or 89.

REQUIRED DATA LOGGER VERSION

Minimum data logger required for analog connection: **ORBIT 360 BASIC PLUS**.

Minimum data logger required for digital communication: **ORBIT 360 PREMIUM**.

Minimum **firmware** required: **any**

HOW TO CONFIGURE IN ATLAS

Option A (analog interfacing)

The frequency output signal from the instrument must be connected to one of the frequency channels (FRQ1 to FRQ10).

The two analog outputs must be connected to two analog channels (ANL1 to ANL15).

We will assume the factory configuration: True North orientation mapped to the frequency output, Tilt X mapped to analog output 1, and Tilt Y mapped to analog output 2. This configuration can be modified by the user if desired, for example to route the orientation through one of the analog outputs. Refer to the [complete user guide](#) for more information on this.

Frequency channel

- Group: Frequency channels / Serial instrument variables
- Sensor type: Geovane
- Sensor model: True North Orientation
- Slope: 3
- Offset: -30

Analog channels

- Group: Analog channels / Serial instrument variables
- Sensor type: Geovane
- Sensor model: Tilt X
- Slope: 45
- Offset: -112,5
- Group: Analog channels / Serial instrument variables
- Sensor type: Geovane
- Sensor model: Tilt Y
- Slope: 45
- Offset: -112,5

Option B (digital interfacing)

The variables from the digital output signal can be assigned to analog channels according to the list here below.

Example:

Serial bus 1 baud rate: 9600bps

Bus: Serial 1 >>> ID: A >>> Sensor model: Geovane >>> Name: True North Orient.

- Group: Analog channels / Serial instrument variables
- Sensor type: Serial instrument
- Sensor model: GEOVANE.
 - o Sensor model: True North Orient.
 - o Sensor model: Tilt X
 - o Sensor model: Tilt Y

Important! Please make sure you are working with the latest version of Atlas. To check for new updates click the “Check for updates” button in the left-hand menu located in the main dashboard.