

## WIRELESS REFERENCE STANDARD OF ACCURACY

wireless 1st-Class all-weather performance



### Wireless wind speed & direction sensor per WMO

Compact anemometer and wind direction vane sensor with ultra-low power & no dead spot. **Exceeds all World Meteorological Organization (WMO), NWS/NOAA, DWD, and MEASNET measurement standards.**

No wires to connect or batteries to change, no connectors to break. Featuring SigFox or LoRaWAN wireless Star-on-Star network technology for reliable and redundant data transmission.

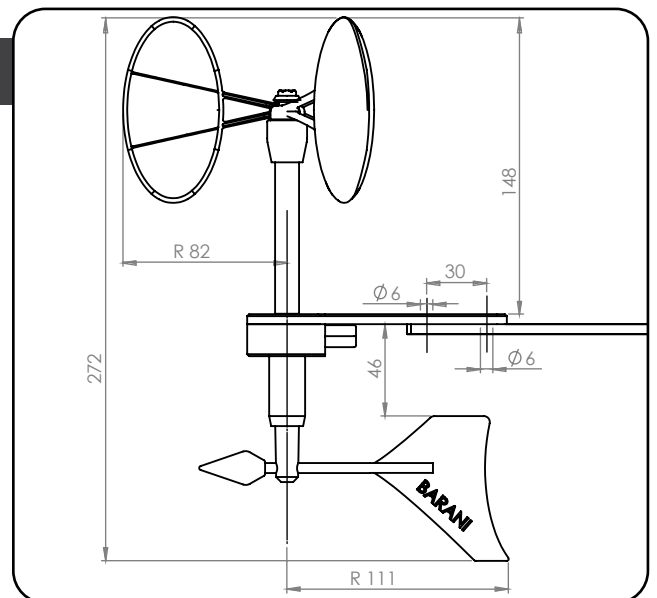
Elliptical cup design of the proven MeteoWind 2 is used to offer superb measurement qualities in a compact and cost-effective instrument made from anodized aluminum.

### Compact analog design with high dirt resistance

- Faster response than ultrasonic anemometers with  $< 0.3$  s time constant at only 4 m/s
- Higher reliability & data availability than ultrasonic anemometers in extreme weather
- Very low starting speed  $< 0.25$  m/s
- Flat elliptical cup shape offers superb snow shedding and very good hail resistance
- All-metal anodized-aluminum body and wind vane design

### Ultra-low power for wireless applications

- Uses IoT-Wind, an open communication protocol which permits direct connection to any Internet-of-Things (IoT) application and cloud platform.
- Magnetic wind vane sensor offers better than  $3^\circ$  accuracy.
- Anodized aluminum body and wind vane guarantee robustness, corrosion protection and longevity.
- Patented design of flat elliptic cups offers high-linearity
- aerodynamics and superb winter snow shedding even without heating.
- High response, linearity and accuracy with a very low  $< 1.5$  m distance constant.

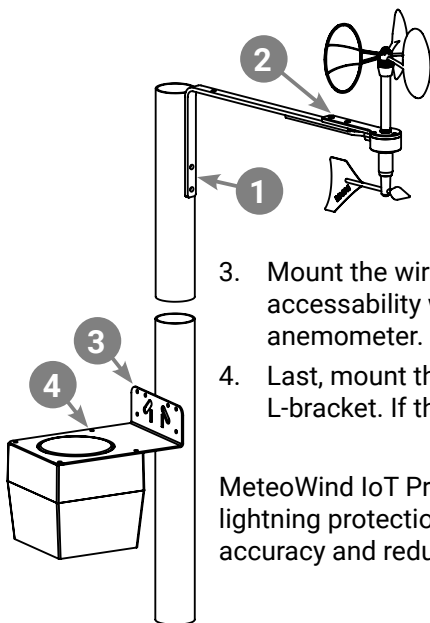


For applications where all-weather WMO accuracy and reliability is important.

## WIRELESS PRECISION WIND SENSOR

Measurement standards				
	Range	Resolution	Accuracy	Sampling rate
Wind speed	0-85 m/s gust	0.1 m/s	1% or ±0.2 m/s (the greater of)	2 pulses per revolution, 4 Hz
Wind Gust	Provides 3-second and 1-second wind gust data simultaneously collected at 4 Hz			
Wind direction	0-360°	1°	2° (no dead-spot)	1 Hz
Linearity	R <sup>2</sup> > 0.99995			
Tilt angle sensitivity	For horizontal wind speed measurement			
Starting wind speed	<0.25 m/s			
Default linearity constants (Calibration equation coefficients)	Quadratic linearization on weather.allmeteo.com portal: Wind speed in m/s = -0.00065 * (Hz) <sup>2</sup> + 0.6750*(Hz) + 0.2000 for ±0.2 m/s			
Distance constant (Delay distance)	Wind speed: < 1m (est.) (per ASTM D 5096-96), Wind direction: < 0.5 m (damping ratio = 0.2)			
Electrical specifications				
Output signal & communication	LoRaWAN or Sigfox wireless with NB-IoT coming soon			
Power consumption	350 µA (combined wind speed and wind direction and wireless transmission)			
Power and battery system	Solar charger with a Lithium-Ion battery for 4+ months of operation without sun			
Environmental ratings				
Operating temperature & humidity	-33 °C to + 80 °C, 0 % to 100 % RH (-45 °C is available for special order)			
Survival wind speed	>85 m/s (306 kph, 190 mph) gust			
IP – Protection rating	IP65W (DIN 40050) anemometer, IP67W wireless module with battery			
General specifications				
Weight (mass)	Anemometer = 210 g, Wireless module with battery= 500 g			
Dimensions	Anemometer rotor diameter = Ø 164 mm, Wind vane radius =111 mm, Total height = 272 mm			
Patented / Registered	OHIM 002153882-0001, 002153882-0002, 002153882-0003			
Mounting	Two M6 screws with nuts (includes a 90° stainless steel mounting arm)			

## Mounting instructions for MeteoWind IoT Pro wireless anemometer & wind vane



1. Mount the L-bracket onto a wall, fence, post, or mast, which will be used to support the anemometer. **Make sure it is pointing exactly North.**
2. Next, mount the MeteoWind Compact anemometer on the L-bracket with two screws, lock washers, and nuts. (Note: Always use lock-washers, lock-nuts or thread-lock compound because wind-induced vibrations will, over time, loosen mounting screws and nuts.) Secure the 5 meter wire along the L-bracket and mounting structure so that it does not move in the wind.
3. Mount the wireless transmitter box L-bracket as close to the ground as practical for easy accessibility while staying within reach of the supplied 5 meter connection wire to the anemometer. **Make sure it is pointing generally Southward** to keep the solar panel in the sun.
4. Last, mount the wireless transmitter box with the solar panel facing up, using 4 screws onto the L-bracket. If the L-bracket came preassembled with the box, this step will not be necessary.

MeteoWind IoT Pro offers simple construction, mounting, and simple electronics with integrated lightning protection for high levels of reliability. Its compact body size increases anemometer accuracy and reduces snow buildup for high data availability in winter.