Tech-Wind AWOS Mast Technical Specifications

Dimensions and Physical Properties:

Overall Length: The mast is composed of 10-meter-long sections.

Section Length: Each section of the mast is 3 meters long.

Composition: The mast is composed of 4 sections.

Material Specifications:

General Construction: The mast is constructed from hot-dip galvanized iron pipes, providing substantial protection against corrosion and enhancing durability.

Section-specific Materials:

a. First Two Sections: Made from 104 cm diameter steel pipes. The steel used is likely a standard structural grade, offering good mechanical properties for support and stability.

b. Third Section: Made from a 76 mm diameter steel pipe, allowing for greater flexibility and reduced weight at a higher elevation.

c. Top Section: Made from a 60 cm diameter ST37 steel pipe, known for its good formability and welding properties, making it ideal for the topmost part of the mast.

Comprehensive Description:

The mast's construction uses progressively narrower diameter pipes as it increases in height, which helps reduce the overall weight and optimize the structure's response to wind loads. This material distribution not only ensures the structural integrity of the mast but also facilitates easier installation and maintenance. The use of ST37 steel for the topmost section reflects a careful choice to balance strength and weight, optimizing the mast for supporting weather observation instruments and related equipment.

Design and Construction:

The mast can be equipped with temperature and humidity shields, facilitated by a 60 cm long connection arm and installation hardware.

It is designed to accommodate lightning protection equipment.

Load Capacity:

Maximum Load: 50 kg. Sensors and attached equipment should be symmetrically arranged.

Wind Resistance: Models with guy wires can withstand wind speeds up to 160 km/h, while models without guy wires can withstand up to 120 km/h.

Environmental Considerations:

Corrosion Resistance: Certified to be corrosion-resistant for 15 years due to its hot-dip galvanization.

Operating Temperature Range: Functional between -40°C to +60°C.

Safety and Compliance:

Vibration Damping: Connections between sections are bolted, providing natural vibration damping.

Compliance: The mast complies with the World Meteorological Organization (WMO) Commission for Instruments and Methods of Observation (CIMO) guide.

SMM Approval: The mast has a SMM approval report, indicating compliance with specific standards.

Installation and Maintenance:

Installation: Detailed installation procedures are included within the user's manual.

Maintenance: Routine maintenance can be conducted using a hand winch system, facilitating easy adjustments and servicing.

Warranty and Support:

Warranty: A 2-year warranty is provided, covering defects in materials and workmanship.

Support: After-sales support services are available for troubleshooting or repairs during the warranty period.

Customization and Accessories:

Customization: Extra sensors can be added using multiple U-booms for various observational requirements.

Accessories: Connection arms for sensors can be custom-made to desired specifications and lengths. Guy wires are 8mm thick, made of galvanized steel core ropes, and can be anchored to the ground with adjustable-length iron anchors using hook-type tensioners.