江苏麦赫物联网科技有限公司

Jiangsu MAIHE Internet of Things Technology Co., Ltd

目录 Table of contents

公司简介 COMPANY INTRODUCTION

江苏麦赫物联网科技有限公司成立于 2014 年，坐落于苏州高新区，是一家专业从事智能传感器和油田物联网系统的产品研发、生产和销售的国家高新技术企业。公司的核心技术团队来自清华大学和相关科研院所，具有多年的雷达测控设备和油田计量仪器的研发应用经验。

公司产品主要应用在能源物联网领域，核心产品为微波原油含水率分析仪和微波覆冰传感器，产品凝聚了公司的自主研发成果，拥有完全独立的知识产权。公司已累计获得包括 15 项国内发明专利、2 项美国发明专利在内的多项专利授权，是中石油、中石化和中海油入围供应商单位，产品已经成功在国内外各大油气田、电力、风力发电领域应用。

目前，在苏州高新区科技招商、科投基金等各方面的支持下，企业实现了长足的发展，在技术研发与成果转化方面表现优异，多次荣获省部级科技进步一、二等奖，其微波原油含水率分析仪等相关技术经权威机构鉴定，达到了国际领先水平。

未来，麦赫科技将继续秉持“创新、品质、服务”的理念，不断突破技术瓶颈，为客户提供更优质的产品和服务，为能源物联网行业发展贡献力量。

Jiangsu Maihe IoT Technology Co., Ltd. was established in 2014 and is located in Suzhou High tech Zone. It is a national high-tech enterprise specializing in the research and development, production, and sales of intelligent sensors and oilfield IoT systems. The core technology team of the company comes from Tsinghua University and related research institutes, with years of experience in the research and application of radar measurement and control equipment and oilfield measuring instruments.

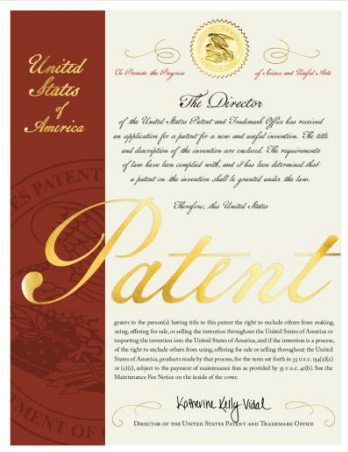
The company's products are mainly used in the field of energy Internet of Things. The core products are microwave crude oil moisture analyzer and microwave icing sensor. The products embody the company's independent research and development achievements and have completely independent intellectual property rights. The company has accumulated multiple patent authorizations, including 15 domestic invention patents and 2 US invention patents. It is a shortlisted supplier unit for PetroChina, Sinopec, and CNOOC, and its products have been successfully applied in major oil and gas fields, electricity, and wind power fields at home and abroad.

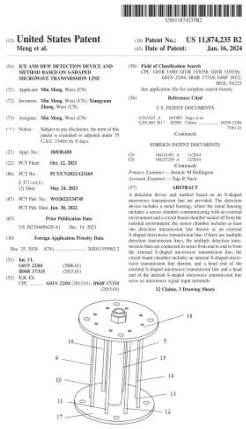
At present, with the support of various aspects such as Suzhou High tech Zone Science and Technology Investment Promotion and Science and Technology Investment Fund, the enterprise has achieved significant development, performed excellently in technology research and development and achievement transformation, and has won the first and second prizes of provincial and ministerial level scientific and technological progress multiple times. Its microwave crude oil water content analyzer and other related technologies have been appraised by authoritative institutions and have reached the international leading level.

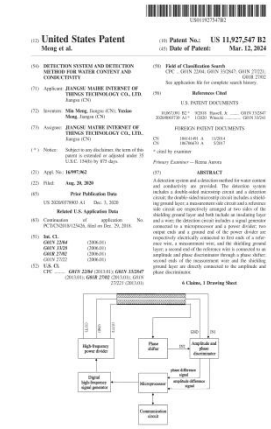
In the future, Maihe Technology will continue to uphold the concept of "innovation, quality, and service", constantly break through technological bottlenecks, provide customers with better products and services, and contribute to the development of the energy IoT industry.

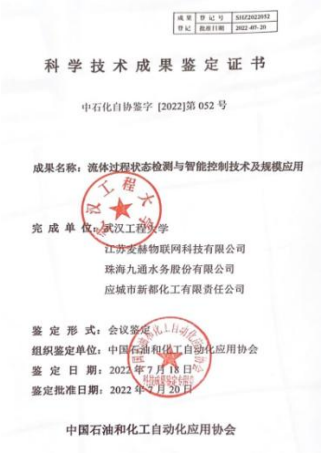
Company Profile

Intellectual Property and Award Certificates









Water cut analyzer for refined

Product overview

The finished oil moisture analyzer adopts the principle of microwave measurement to analyze the transmission characteristics of microwave signals in different media. Through signal conversion and amplification processing, combined with mathematical models, the water content in the medium is accurately measured. The product has high precision, strong anti-interference ability, and a wide range of applications. The unique structural design ensures that measurement is not affected by fluid morphology and state, adapts to a wide flow range, and is less affected by external factors. Equipped with RS485 communication interface and Chinese display, it can be connected to touch screen or computer to achieve process flow chart display, historical curve query, and real-time water content curve display. It supports querying the average water content during selected time periods.

Scope of application

- Diesel oil
- Energy and chemical industry
- Refinement of refined oil products
-

Functional

- Using microwave detection technology
- High precision control
- Fast response speed

Technical index

Medium temperature range	0℃～150℃
Working temperature range	-20~150℃
Working pressure range	0~2.5MPa
Supply Voltage	DC 12V~24V
Water content measurement range	0~10.00%
Water content measurement accuracy	±0.1%
communication bus	RS485
Communication protocol	Modbus RTU
Explosion proof level	EXDia Ⅱ BT4 Gb
Protection class	IP66
Contact with liquid material	316L stainless steel

Ice detection sensor

Product overview

The ice detection sensor utilizes microwave technology to distinguish the feedback of substances such as ice, water, and air on microwave signals, achieving monitoring of ice information in sensitive areas of the sensor and calculation of ice thickness. The icing of transmission lines in southern winter can easily lead to power failures, therefore, this sensor is crucial for power safety. In addition, ice and snow weather have a significant impact on road traffic, and automatic detection of road icing can help reduce accidents. At the same time, this product can also solve problems such as air conditioning pipes, water tank icing, and external unit frosting.

Technical index

Detection resolution	0.01mm
Maximum measured thickness	50.00mm
Communication methods	RS485
Communication protocol	MobusRTU/ automatically send
Working voltage	5VDC
Operation temperature	-40℃～85℃
Power	<1W (Ice melting device15W)
Protection class	IP67

Field

Power transmission and transformation

Water tankfreeze-proofing

Aviation

Traffic

Selection, technical indicators and characteristics

MHICE-PR（Ice detection sensor for power tower）

- Can detect weather conditions such as ice thickness and rain.
- Equipped with temperature detection sensors.
- Equipped with ice melting function, when the transmission line is undergoing ice melting, it can simultaneously send ice melting instructions to this sensor (the ice melting function requires separate power supply of 12VDC, 12W)
- It can actively transmit measurement data on a scheduled basis, and can also support master-slave transmission of data.
- Each device has a unique number, which should be included in communication for large-scale monitoring systems.

MHICE-AIR （ Microwave icing detection sensor for sounding balloons）

- Power supply:5V DC
- Consumption:<250mw
- Communicate:TTL
- Weight:<40g(Excluding wires)
- Lcing range:0-10.00mm
- Material: Lightweight stainless steel shell
- Communication protocol: ModbusRTU/user customization
- Accuracy of ice thickness measurement：±5%
- Temperature measurement accuracy：0.5° C
- BAUD：9600
- Protection class: IP67
- detection resolution:0.01mm

- Can detect weather conditions such as ice thickness and rain.
- Equipped with temperature detection sensors.
- Master slave transmission of data.
- Lightweight shell, lightweight, suitable for carrying on sounding balloons.
- Low cost, suitable for one-time use.
- Low power consumption, prolongs battery life.

Icing monitoring system for wind turbine blades

Product overview

The wind power generation blade icing monitoring system consists of core components such as the top ice detection sensor, meteorological instrument, blade icing detection sensor, and blade monitoring control cabinet. The blade icing detection sensor (MHICE-WIND) utilizes advanced microwave detection technology to accurately analyze the microwave feedback information of substances such as ice, water, and air, achieving effective monitoring of icing information in sensitive areas of the sensor. Furthermore, the system accurately calculates the ice thickness based on the strength of microwave signals and the distribution information of ice in the sensor area. This system is usually installed on the blades of wind turbines. By monitoring the icing situation on the sensors in real time, it can accurately reflect the icing situation at the current blade position, providing strong guarantees for the safe operation of wind farms.

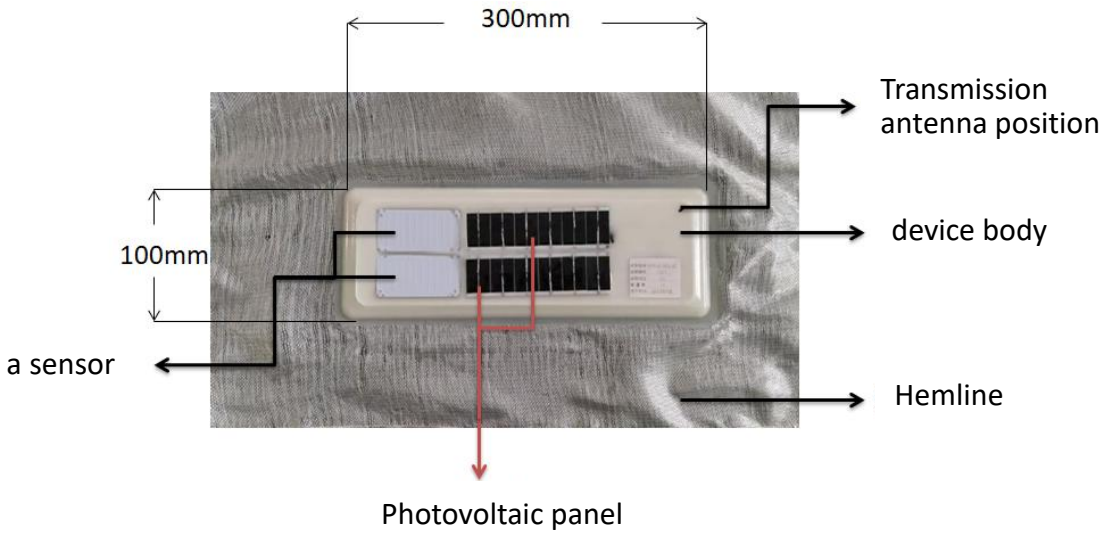
Technical index

Detection resolution	0.01mm
Maximum measured thickness	30.00mm
Communication methods	Wireless 433
Air rate	10K
Communication protocol	See communication section
Communication Distance	>100m(without obstacle)
Power supply mode	Embedded battery
Standby time	>72h
Operation temperature	-40℃～65℃
Protection class	IP66
Weight	<210g

Main features

- Can detect weather conditions such as ice thickness and rain.
- It has temperature detection, battery voltage detection, and charging voltage detection functions.
- Automatically transmit measurement data on a scheduled basis.
- The equipment is lightweight and flexible in design, making it easy to tightly adhere to the blades.
- Equipped with a photovoltaic charging module to charge the battery.

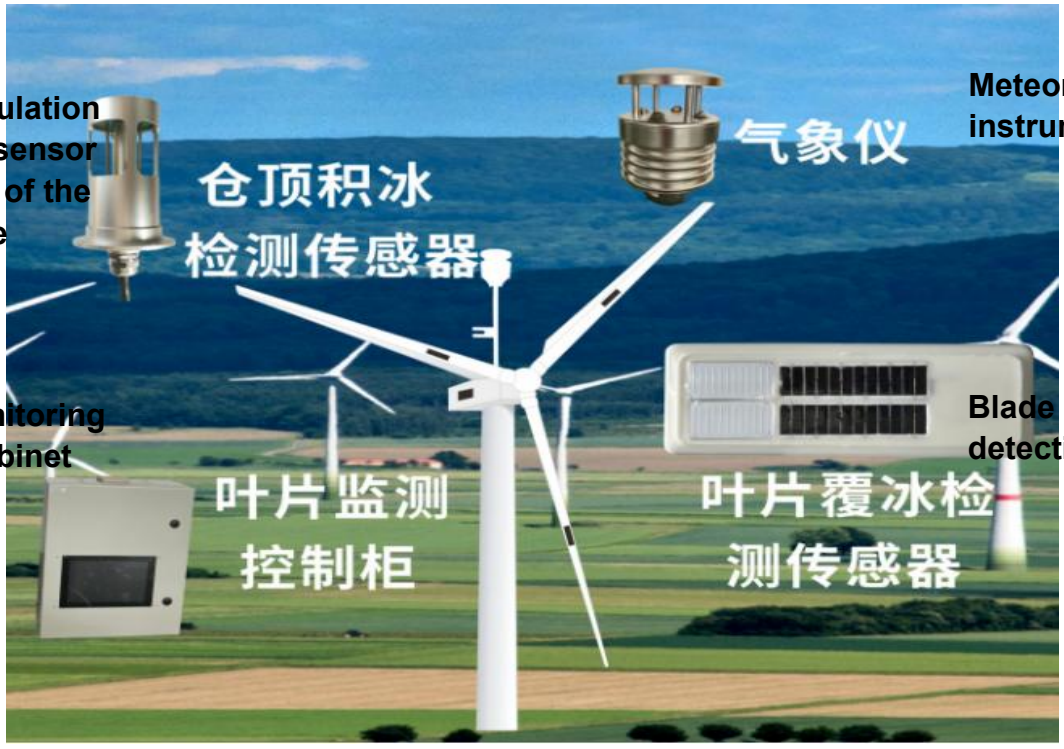
Physical structure



Field application

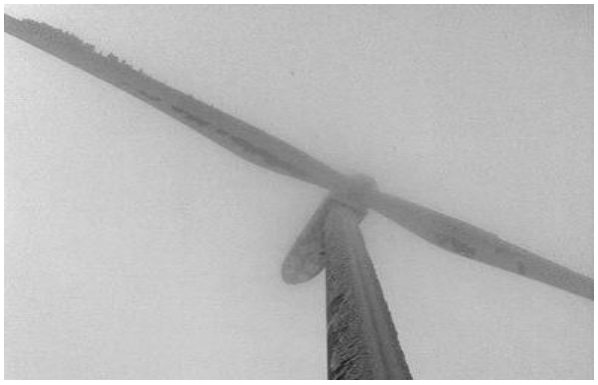
Ice accumulation detection sensor on the top of the warehouse

Meteorological instrument



Blade monitoring control cabinet

Blade icing detection sensor



MAIHE

江苏麦赫物联网科技有限公司

Jiangsu MAIHE Internet of Things Technology Co., Ltd

URL：http://www.maxhz.cn

Mob：0512-67724388

MAIHE Technology
WeChat official account