

USER GUIDE FOR WIRELESS SENSOR MODULE

This document is applied for the following products

Item code	WS433-M12F-T (for Aus & NZ) WS433-M12F (for other regions)	HW Ver.	2.0	FW Ver.	1.03
Sensor modules support	ATE-11 or ATE-12-	Digital ambient temperature sensor			
	ATH-11 or ATH-12-	Digital ambient humidity / temperature sensor			
	ADP-	Digital ambient differential pressure sensor			

1. INTRODUCTION

WS433-M12F(-T) is a Sub-GHz wireless sensor module utilizes the Sub-GHz technology from Texas Instruments, USA. This wireless module can be connected to many kind of digital sensor modules. Please refer table as above.

This wireless module will automatically recognize the sensor module once plugged in. It will be configured the working parameters remotely by ModbusRTU master software or via Globiots platform.

This wireless module is ultra-low power design which can last up to 10 year with a single AA battery.

2. BATTERY RECOMMENDATION:

Standard product package does not include battery. WS433-M12F(-T) can operate with any kind of AA 1.5VDC battery. However, we do recommend customers to use the following batteries for best performances.

RECOMMENDED BATTERIES for WIRELESS SENSOR WS433

E91 AA Alkaline battery



-18 .. + 60 oC working temperature
10-year shelf life
3000 mAh Capacity
Price: 1X

WS433-M12F-H8.PNG

L91 AA Lithium battery



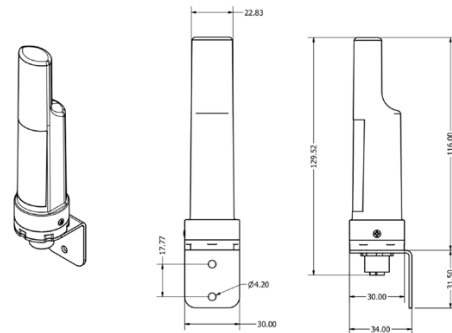
-40 .. + 60 oC working temperature
20-year shelf life
3500 mAh Capacity
Price: 3.5X

PRODUCT PACKAGE INCLUDES



WS433-M12F-H7.PNG

DIMENSION DRAWINGS OF WS433-M12F (UNIT: MM)



WS433-M12F-H5.PNG

3. SPECIFICATION:

Sensor modules support	Compatible with all DULP sensor modules produced by Daviteq. Refer to the sensor table in the first page. List of compatible sensor modules depends on FW version of WS433-M12F(-T) ** DULP (Digital Ultra Low Power)
Sensor port connector	M12-female, 4-pin A-coding
Data speed	Up to 50kbps
Transmission distance, LOS	500m
Antenna	Internal Antenna, 3 dbi
Battery	01 x AA 1.5VDC, up to 10-year operation, depends on configuration
Frequency Band	ISM 433Mhz, Sub-GHz technology from Texas Instrument, USA
Receiving Sensitivity	-110dBm at 50kbps
Transmit power	10dBm (10mW)
International Compliance	ETSI EN 300 220, EN 303 204 (Europe) FCC CFR47 Part15 (US), ARIB STD-T108 (Japan)
Security Standard	AES-128
Operating temperature of PCB	-40oC..+60oC (with AA L91 Energizer)
Housing	Poly-carbonate, IP67
Installation methos	L-type bracket SUS304 , by M4 screws or double-sided 3M tape (included)
Product dimension	125x30x30mm
Net weight (without battery)	< 60g
Box dimension	170x40x40mm
Gross weight	100g

4. INSTALLATION

Please find below steps of installation the wireless sensor module.

4.1 Locate the place to install the Module wireless:

Wireless module WS433-M12F(-T) utilize the ultra-low power 433Mhz RF signal to transmit/receive data with Wireless sensor co-ordinator (WR433-).

To maximize the distance of transmission, the ideal condition is Line-of-sight (LOS) between the two modules. In real life, there is no LOS condition. However, the two modules still communicate each other, but the distance will be reduced significantly.

Therefore, to maximize the transmission distance, please pay attention to the following conditions:

- DO NOT install the wireless module inside a complete metallic box or housing. The RF signal can not pass through metallic wall;
- This wireless module would be installed a semi-metallic box, because the RF signal can pass through the non-metal wall/are;
- The best case is to install the wireless module inside or Non-metallic box;

Some non-metallic materials: plastic, glass, wood, leather, concrete, cement...

4.3 Mounting the bracket:

The mounting bracket is made from hard metallic material. The following steps are for mounting this bracket;

- Locate the place where the wireless sensor is mounted, from that locate the position to mount the bracket;
Note: The bracket can be mounted on the wireless module in both direction, upward or downward
- The bracket will be fixed on the wall or surface by 2 x M4 screws (supplied by customer) or double-sided 3M tape (included in accessory bag in carton box);

4.5 Connect the sensor module onto wireless module:

The sensor module has M12-male connector which is matched with M12-female connector on wireless module;

Carefully plug the sensor module onto wireless module, using HAND to tighten slowly until stop;

Note: please do not over tightening by hand or other tool, it can damages the M12 connector;

4.2 Battery installation

INSTALL BATTERY IN WS433



WS433-M12F-H3.PNG

Steps for battery installation:

- Using Philips screw driver to unscrew M2 screw at the side of housing;
- Carefully pull out the top plastic housing in the vertical direction;
- Note: because of O-ring, it requires to have much pulling force at the beginning, therefore please do it carefully to avoid the damage of circuit board which is very thin (1.00mm);
- Insert the AA battery, please take note the poles of battery;
- Insert the top plastic housing and locking by M2 screw;

4.4 Mounting the wireless Module on bracket:

Placing the wireless module on bracket and secure it by 02 x M2 screws (supplied in accessory bag)

5. SUPPORT CONTACTS:

Manufacturer

daviteq

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