

1 Purpose

Sensor for measuring moisture or water content.

2 Measurement principle

The sensor uses a microwave resonator. The resonator is open to one side and covered with a white ceramic plate.

The resonator must have direct contact to the measured material.

3 Setup

Microwave sensor 87150.030/.031



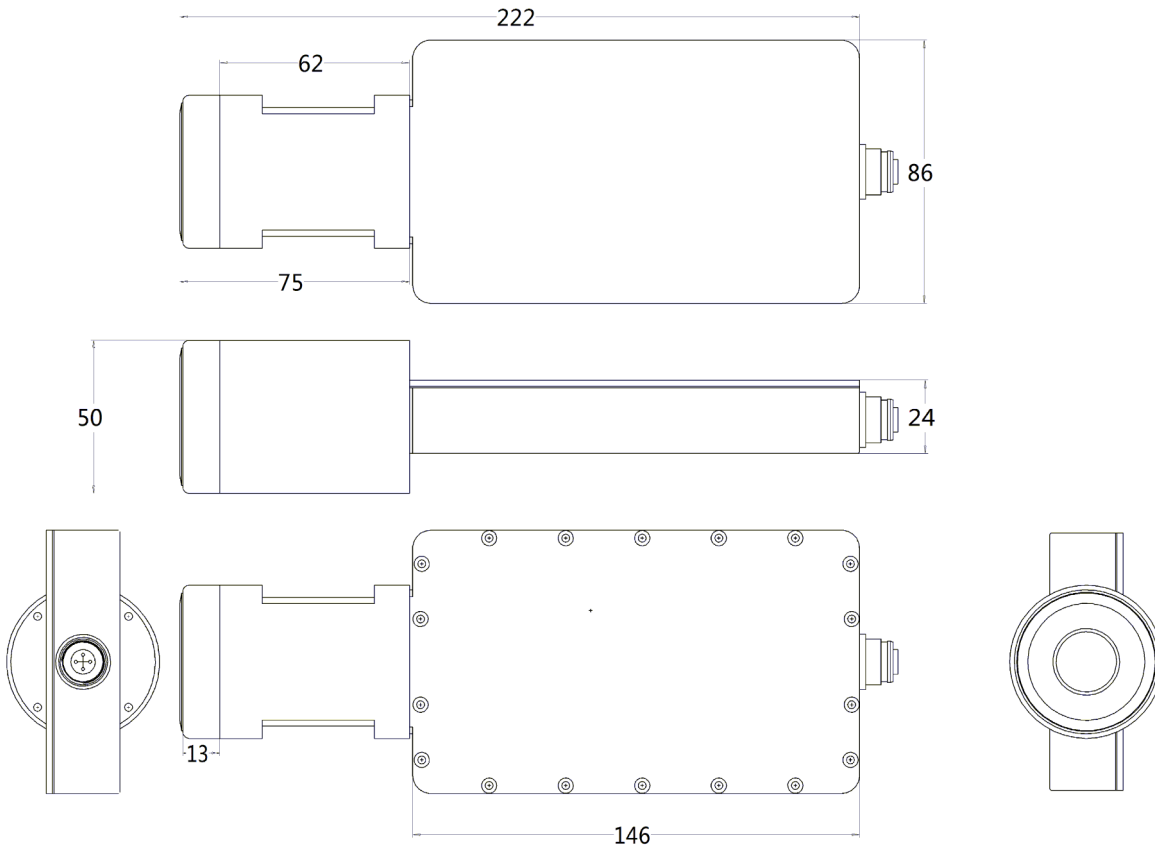
picture 1: Microwave sensor with straight resonator head

Microwave sensor 87150.039/.040



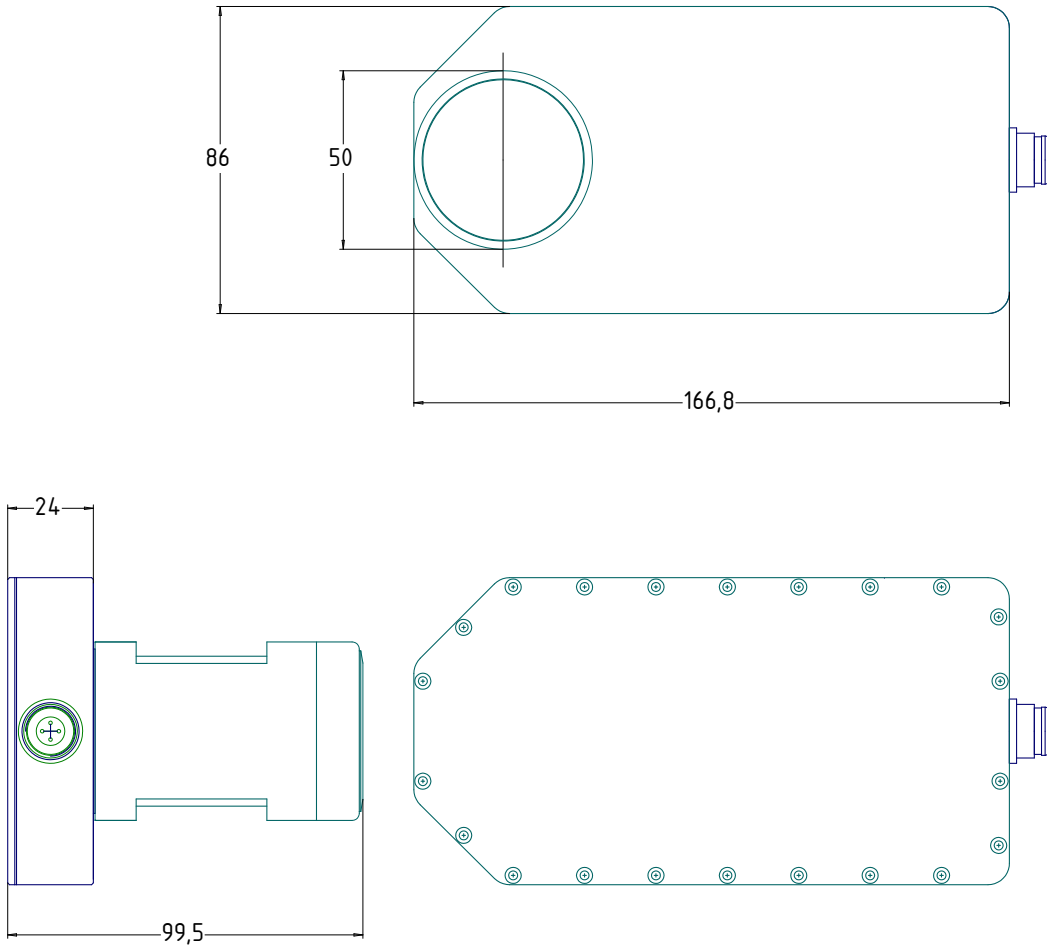
picture 2: Microwave sensor with resonator head under 90°

4 Dimensions sensor with straight resonator head



picture 3 : Sensor dimensions in mm

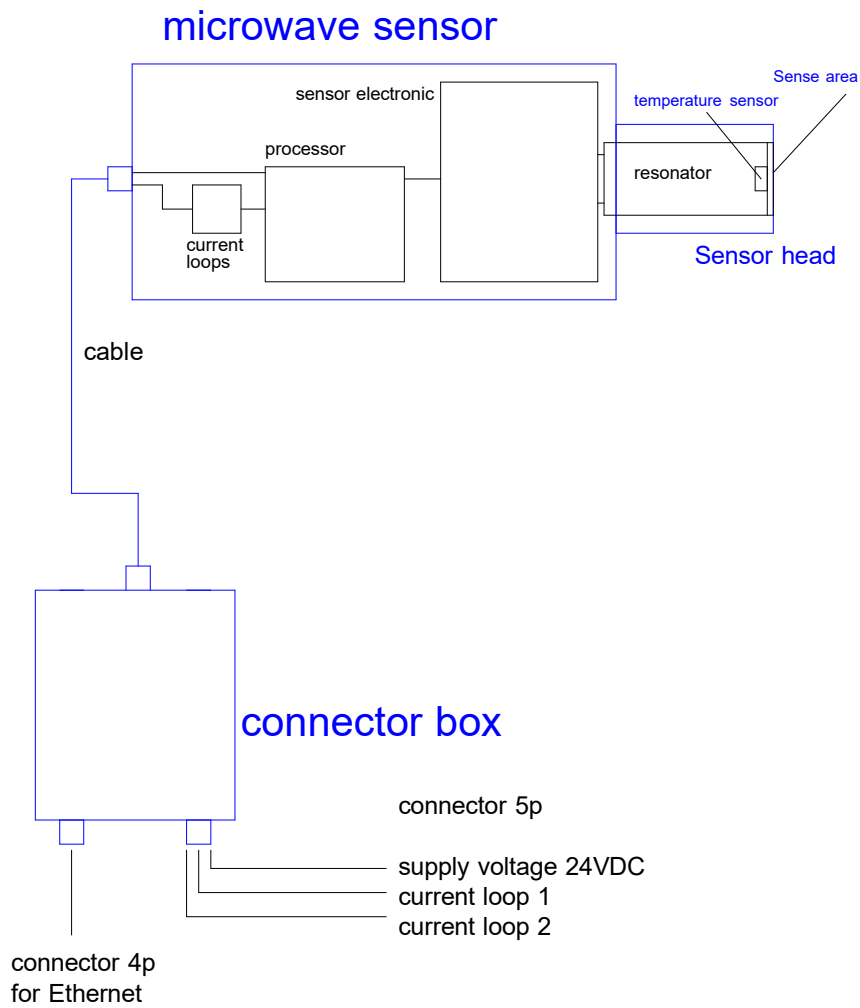
5 Dimensions sensor with resonator head under 90°



picture 4 : Sensor dimensions in mm

6 Connection

The Sensor must be connected via a connector box.



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picture 5 : block diagram of sensor with connector box

The power supply and the 2 current loops are available via a 5-pole M12 connector. The Ethernet connection (10/100 MBit) is feed through a 4-pole M12 connector.

7 Technical data

Description		
	Sensor for measuring moisture or water content	
Measurement principal		
	Resonance method	
	Measuring of dielectric constant	
	frequency range 1 GHz	
	Sensor in direct contact to measured material	
Measurement range		
	87150.030 / .039	0 ... 100 % moisture or water content
	87150.031 / .040	0 ... ca. 60 % moisture or water content depending on measured material
	Measurement volume	Up to 40mm depending on measured material
Power supply		
	Supply voltage	+22 ... +30V typ: +24V
	Supply current with connector box	
	operation current	ca. 280mA at 24V
	In rush current	<1A
Weight		
	Weight sensor	ca. 1,8 kg

8 Order information

WW-Sensor

Modell-Nr	Description	Connector
87150.030	- Sensor with straight resonator head - with current loop 4...20 mA - Measurement range up to 100% moisture	M12 8-pole connector
87150.031	- Sensor with straight resonator head - with current loop 4...20 mA - Measurement range up to 60% moisture depending on measured material	M12 8-pole connector
87150.039	- Sensor with resonator head under 90° - with current loop 4...20 mA - Measurement range up to 100% moisture	M12 8-pole connector
87150.040	- Sensor with resonator head under 90° - with current loop 4...20 mA - Measurement range up to 60% moisture depending on measured material	M12 8-pole connector

Connector box

Modell-Nr	Description	Connector
87152.0002.00A	Verteilbox for WW-Sensor	M12 4-pole connector M12 5-pole connector
87152.0002.00B	Verteilbox for WW-Sensor with LED signalling	M12 4-pole connector M12 5-pole connector

9 Company address

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