Mod. SM.3

High precision Soil Temperature, Moisture and Conductivity sensor

Highlighted specs

- High precision
- IP68 waterproof
- No corrosion from fertilizers
- AISI 316L electrodes
- WMO standards compliant
- High dynamic response (VWC)
- Available with various signal output
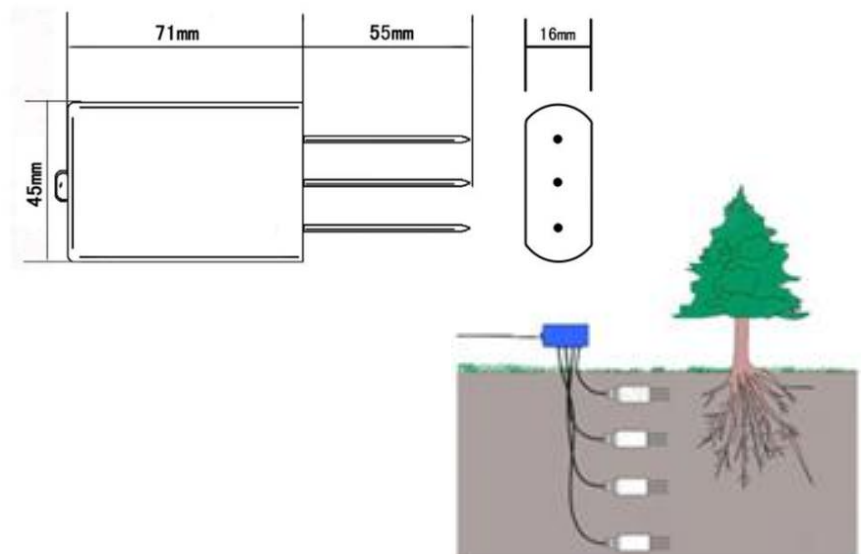- According to CE norms

The SM-3 soil moisture sensor is a very precise sensor and integrates **temperature, conductivity and soil moisture** measurements in a **single instrument**. The operating principle is based on the FDR (Frequency Domain Reflectometry 70MHz) system for a precise measurement of the soil dielectric constant and therefore to measure the soil moisture content volume. For the temperature part it uses a PT100 thermo-resistance sensor. Steel spikes are inserted into the surface of the ground or in the section for a quick measurement of the ground parameters. It can be permanently left in the ground or used just to make quick and accurate measurements. This sensor is built according to the WMO standards (World Meteorological Organization).

Measure	Humidity (VWC)	Temperature	Conductivity (EC)
Range	0-100% m^3	-40°C ÷ +80°C	0 – 20 mS/cm
Accuracy	± 3% (0-50%) ±0,03 m^3/m^3	± 0.2°C	± 2% FS
Resolution (m^3/m^3)	<0.002 m^3/m^3	<0.05°C	<0.001mS/cm
Signal Output	4÷ 20mA, 0÷2V, ModBus RS485		ModBus RS485
Responce time	< 1s		
Power supply and consumption	12÷24Vdc (max 12mA ÷ 60mA)		
Measure area	7cm ray around probe		
Made of	ABS		
Size	71 x 45 x 16mm (spikes Ø4 x 55mm); 5m cable		
Operative range	-30 ÷ +70°C		
Protection	IP68		
Spikes	Inox 316L		

Size and connections

Wire	Analog output	Modbus RS485 output
Red	+ 12/24 Vdc	+ 12/24 Vdc
Black	GND common	GND common
Blue	Out temperature °C	N.C.
Brown	Out humidity Rh%	N.C.
Yellow	N.C.	RS485A
White	N.C.	RS485B

NOTE: EC available only with ModBus output

Order Code

Sensor	High Precision Soil Temperature, Moisture and Conductivity Sensor	**SM.3**		
Output	0÷2Vdc (MCS option)		A	
	4÷20mA (MCS option)		B	
	RS485 / Modbus (MCS option)		C	
Accessories	CS05 – Cable 5m sensor-datalogger			05
	CS10 – Cable 10m sensor-datalogger			10
	CSxx – Cable xx* m length, sensor-datalogger – to be specified at order			xx

*specify the length for no standard measures · example of order code · **SM.3** · **A** · **10**