MSS2-N

NB-IoT **LTE-M**

NB IoT - Cat-M1 Low Power Multi-point
Soil Moisture, Temperature and Conductivity Sensor

- Compatible with most standard communication protocols (UDP, LwM2M, MQTT, NIDD, etc.)
- Ruggedised and maintenance-free
- High accuracy and repeatability
- Designed to meet outdoor applications
- Long-term durable performance in harsh environment
- Ultra-low power

TECHNICAL SPECIFICATION

Sensor

•	Measurement principle	Measure dielectric constant properties of the soil medium and displays them as a volumetric water content (VWC%), Soil Temperature and Soil Salinity
•	Accuracy	Moisture: +/- 2% @ 0% VWC to 50% VWC (with respect to dielectric) Salinity: +/- 5% @ 0-4dS/m at 10%-30% VWC Temperature: +/- 1 °C @ 25 °C (Useable salinity range: 0 to 6dS/m)
•	Resolution	Moisture resolution: 0.01% Salinity resolution: 0.001dS/m Temperature resolution: 0.01 °C

Power

•	Power Supply	Built-in Replaceable Lithium Battery, External Power (option)
•	Rated Voltage (V)	3.6
•	Battery Lifetime	50,000+ readings and 10,000+ transmission (With UDP protocol/ More than 10 years for most applications)

Physical

•	Materials	Enclosure: ASA or POM Probe: UV-stabilized ABS plastic
•	Weight (g)	~1100
•	Protection Rate	IP66 or IP68 and UV Protected enclosure

Communication

•	SIM Card Type	4FF Nano-SIM, from any Network Provider
•	Firmware Update	Over The Air, Locally via Wireless Connectivity
•	Sampling Period	Configurable via downlink (default 4 hours)
•	Power Consumption	Power Saving: < 5uA, Transmission: < 200mA
•	Communication Standards	Cat-NB1 (NB-IoT) / Cat-M1 (option of back support by GPRS)
•	Communication Bands	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 and B39

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• Data Rates	Cat-M1: 375Kbps (DL)/375Kbps (UL), NB-IoT: 32Kbps (DL)/70Kbps (UL)
• TX Power	23dBm
• Min Receiver Sensitivity	Cat-M1: -107dBm NB-IoT: -113dBm
• Antenna	Internal (Default)/ External (customised options available)
• Optional Features	• Attach without PDN (Packet Data Network) • Support for IPV6 • SMS communication • Mobility support (Cat-M1 only)

NETWORK CONNECTION AND VISUALIZATION

Network Integration

- Pre-configured or configurable to all main narrow band networks (3, A1, AT&T, China Mobile, DU, Etisalat, KPN, M1 Singapore, Optus, Orange, Proximus, Spark, Sprint, Swisscom, Telefonica, Telstra, T-Mobile, Verizon, Vodafone, 1NCE, Emnify and any other network)

Visualization And Data Management

- 10Sorex white label microservice platform and Integratable to all main IIoT platforms directly or through the API(AWS, Azure, PTC ThingWorx, Bosch IoT, Cisco Jasper & Kinetic, Sierra Numerex, MathWorks ThingSpeak, GE Digital Predix, LandisGyr, Siemens MindSphere, Cumulocity, myDevices, Ubidots, TagoIO, AllThingsTalk Maker, HPE IoT and any other major IoT platform).

10Sorex Platform Main Features

- Encrypted ultra-low power communication protocol
- Advanced device inventory
- Integration APIs for enterprise systems
- Multi-tenant role-based access control
- Data export and import
- White-label platform for enterprise runs on private account
- Variable alarm setting for high and low thresholds and multi-channel alerting
- Sampling and transmission interval configuration
- Transmission condition configuration
- Other configurations and customization available on request

 Encrypted & ultra-low power

 Integratable

 Dynamic alerting
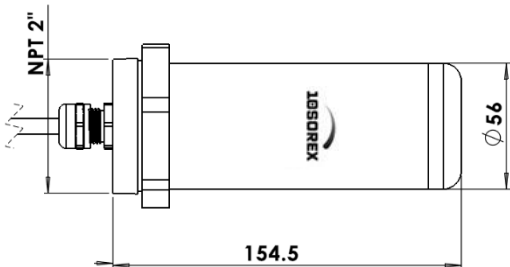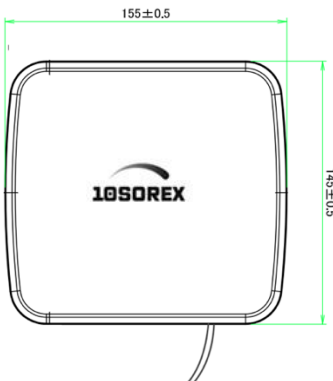
 Multi-tenant

 Scalable

 Composable & API first

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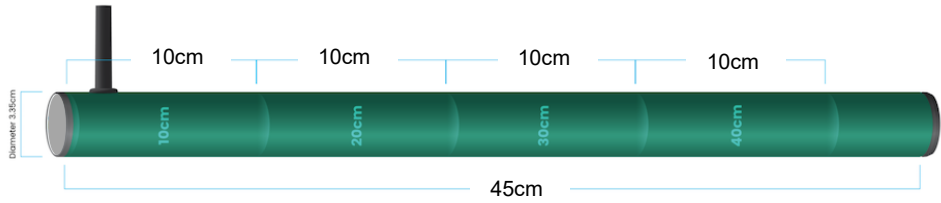
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MODEL GUIDE

Model	Option / Schematic
C Model	NPT 2" Ø 56 154.5
E Model	155±0.5 145±0.5
Sensor Head	Diameter 3.35cm 10cm 10cm 10cm 10cm 10cm 20cm 30cm 40cm 45cm

INDUSTRIES

- Agriculture & Farming
- Water & Wastewater
- City & Councils
- Marine & Oceanography
- Environmental Monitoring
- Smart Building

APPLICATIONS

- Precision Irrigation Systems
- Soil Behaviour Analysis

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ORDERING CODE

MSS2-N						
	Communication Type					
	C: LTE Cat-M1	Other options on request				
		Sensor Type				
		MT4: 4 level moisture and temperature sensor (total 8 data point)				
		MTS4: 4 level moisture, temperature and salinity sensor (total 12 data point)				
			Enclosure			
			C6: Cylindrical	**E6:** Rectangular		
				Device Activation		
				S: With On/Off Switch	**X:** No Switch (Always On)	
					Antenna Option	
					I: Internal	**EHG:** High Gain External
						Options
						(On request)
MSS2-N	**C**	**MT4**	**C6**	**S**	**I**	

Sample Product Code:

- **MSS2-N-C-MT4-C5-S-I**
  LTE Cat M1 Operated 4 level soil moisture and temperature sensor, with cylindrical enclosure, activated by on-off switch and internal antenna.

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