

CTR2-L



Industrial LoRaWAN® Operated Low Power Turbidity Sensor

- Compatible with all LoRaWAN® frequencies
- Wide range of industrial applications
- High accuracy
- Designed to meet outdoor applications
- Long-term durable performance in harsh environment
- Ultra-low power
- Pre-configured with no need of programming or hardware setting



TECHNICAL SPECIFICATION

Sensor

• Measurement principle	850 nm Diffusion IR nephelometry at 90°	
• Measure ranges	5 to 4000 NTU in 5 ranges:	0 to 4500 mg/L
	• 5 - 50 NTU	Calibration:
	• 5 - 200 NTU	• Range 0-500 mg/L
	• 5 - 1000 NTU	according to NFEN872
	• 5-4000 NTU	• Range >500 mg/L
	• AUTOMATIC	according to NFT901052
• Accuracy	<5% of the reading	
• Resolution (1NTU-mg/L)	0.01 to	
• Temperature compensation	Via CTN	
• Storage Temperature (°C)	-10 to +60	
• Operation Temperature (°C)	0 to +50	

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 (More than 5 years for most applications)

Physical

• Materials	Sensor Head: PVC, DELRIN, Quartz, PMMA, Polyamide, cable: polyurethane, Enclosure: POM
• Max Pressure on Sensor Head	5bar
• Weight (g)	~850 (for 3m cable)
• Protection Rate	IP68 for sensor head and IP66 or IP68 and UV Protected enclosure



www.10sorex.com



Sales@10sorex.com



+1 (424) 400-4964

CTR2-L

Communication

• LoRaWAN® Version, Class	1.0.2revB, Class A (Class C on request)
• LoRaWAN® Frequency Zone	AS923, EU868, US902-928, AU915-928 (other zones available on request)
• LoRaWAN® Activation Type	OTA (default), ABP
• Sampling Type	Periodic (default), Event triggered
• Sampling Period	Configurable via downlink (default 4 hours)
• Transmission Type	Per sample (default), Event triggered, Conditional
• Parameter Configuration	Over-the-air via LoRaWAN® downlinks Locally via wireless connectivity
• Firmware Update	Locally via Wireless Connectivity, Over The Air

NETWORK CONNECTION AND VISUALIZATION

Network Integration

- Integratable to all main networks (Actility, Alibaba, Cisco, Digita, Everynet, Helium, Kerlink, kpn, Loriot, machine-Q, Objenious, Orange, Orbiwise, Proximus, Senet, Sens, Swisscom, TATA, The Things Network (TTN), TTI 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, ALSO AllThingsTalk, 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


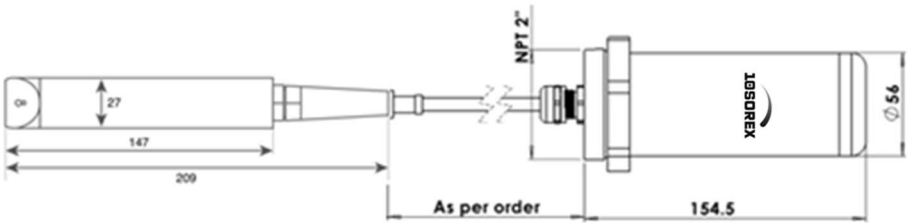

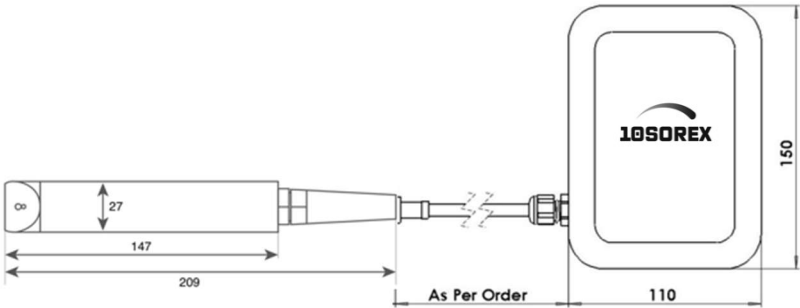


Composable & API first



CTR2-L

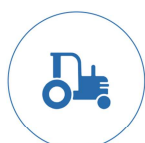
MODEL GUIDE

Model	Option / Schematic
C Model 	 <p>IP68 sensor head, connected to POM enclosure IP68 enclosure: with cable gland, without on/off switch, and with internal antenna IP66 enclosure: with sensor connector, on/off switch, and external antenna</p>
E Model 	 <p>IP68 sensor head, connected to IP65 ASA enclosure with on/off switch</p>

INDUSTRIES



Water &
Wastewater



Agriculture &
Farming



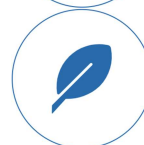
Oil & Gas



Marine &
Oceanography



Mining &
Construction



Environmental
Monitoring

APPLICATIONS

- Bore Hole Mineral Level
- Water Resources
- Surface Water, Rivers and Catchments
- Sea Water

- Wastewater Tank
- Industrial Wastewater
- Regulatory Automated Reporting
- Drinking Water



CTR2-L

ORDERING CODE

CTR2-L									
	LoRaWAN Frequency Zone								
	AS (AS923)		AUx (AU915-928) (Sub Band x)			EU (EU868)		USx (US902-928) (Sub Band x)	
	LoRaWAN Activation								
	A (Over The Air Activation - OTAA)				P (Activation By Personalization - ABP)				
	Measurement Range								
	A: 5 – 50NTU		B: 5 – 200NTU		C: 5 – 1000NTU		D: 5 – 4000NTU		E: Automatic
	Enclosure								
	C5: Cylindrical				E5: Rectangular				
	Cable Length								
	S: 3m				Other options available on request				
	Device Activation								
	S: With On/Off Switch				X: No Switch (Always On)				
	Antenna Option								
	E: External				I: Internal				
	Options								
(On request) ¹									
CTR2-L	AS	A	A	C5	S	S	E		

Sample Product Code:

- CTR2-L-AS-A-A-C5-S-S-E

LoRaWAN® turbidity sensor, frequency of AS923, Over The Air Activated, measurement range of 5 – 50NTU, In cylindrical enclosure, standard cable length, with on/off switch and external antenna.

¹ Product Options:

- EP:** sensor with external power supply connector for 12V supply (only for E type enclosure, adaptor is not included)
- EPB:** connector for 12V supply with internal battery backup (only for E type enclosure)
- HG:** high-gain external antenna
- WF:** Active WiFi module on device for communication/ firmware update through Mobile phone NFC module (only for E type enclosure)
- HCB:** high-capacity battery (only for E type enclosure)

