

EnSense Sensing Node(ESN-100)

Intelligent Data Logger -Multi-Sensing Solution

- ✓ Various environmental sensing (Air, Hydrology , Smart city,...)
- ✓ Smart Device Management (Real-time data, Power management, ...)
- ✓ Optional Acceseory (Solar , wind speed & direction, ...)



Feature

- LTE compliant, real-time data
- FCC, CE safety certificated
- Support HTTP, MQTT protocaols
- Low power consumption, 3 days operation on internal battery
- IP68 rating, robust enclosure anti-corrosion
- Standard RS485 interface able to connect various sensors
- Easy install for surface water monitoring and wastedwater
- Smart remote management(real-time data, power status,GPS deviation warning...)

ESN-100 is a cost-effective and reliable Intelligent data Logger, by using *ST* high-performance MCU and 4G LTE communication continuous uploading real-time data and the device is managed and maintained by smart remote management system.

Intergrate standrad interface, the RS485 sensors ports are able to connect multiple sensors, such as water pressure, water level, water flow, micro switch.

IP68 rating enclosure and compact light weight device can be easily installation and maintenance in any surface water, such as sewer, river and lake.

Low power consumption, built-in battery has passed safety regulations and shipping standard(UN38.3) optional solar power solution or lead-acid battery for continuous operation. Its the best choice for all kinds of environmental monitoring, at present, it has been widely used in water quality, hydrology, wastewater, smart city, flood monitoring and other applications.

Function

1. Environmental Sensing: Plug and play multi-sensors, water quality, pressure, level, flow...
2. IoT technology: Sensing data collection, upload. Cloud algorithm, storage and alarm notification.
3. Smart remote management: Device online inspection, abnormal equipment analysis, reduce labor and time cost.

RF Specifications

Model name	EnSense Sensing Node		
Wireless	LTE		
Standard/Protocol	Up to non-CA CAT1 with 1.4 to 20 MHz RF bandwidth		
Frequency	FDD-LTE	WCDMA	GSM
	B1/B3/B7/B8/B20/B28A	B1/ B8	B3/ B8
Sensitivity	B1: -101.5dBm (10M) B3: -101.5dBm (10M) B7: -99.5dBm (10M) B8: -101dBm (10M) B20: -102.5dBm (10M) B28: -102dBm (10M)	B1: -110dBm B8: -110.5dBm	-109dBm
Data rate	Max 10 Mbps(DL) Max 5 Mbps (UI)	Max 384 Kbps (DL) Max 384 Kbps(UL)	Max 107 Kbps (DL) Max 85.6 Kbps(UL)

Logger Specifications

General	
Certification	CE, FCC, NCC
Shell	ABS (IP68 rating)
MCU	Ultra-low-power Arm Cortex-M4 MCU 80 MHz 1 Mbyte of Flash
RTC	crystal controlled calendar clock and NTP server auto time synchronization
Built in battery	Battery pack 2s2p 8.4V 6700mAh (UN38.3 passed)
Memory	16g SD card (Capable of storing over 100,000 records.)
Output I/O	
I2C	1 channel 8-pin M12 A-coding connector
UART	1 channel 8-pin M12 A-coding connector
Input I/O	
4~20mA	1 channel 5-pin M12 A-coding connector
RS-485	1 channel 5-pin M12 A-coding connector (Baud rate: 9600)
GPIO	1 channel 8-pin M12 A-coding connector (Compatible with Omron limit switch)
Operating	
Operating Temperature	-10~+55°C
Operating Humidity	0 ~ 100%RH, Non-condensing
Storage temperature	-40~85°C
Power Supply	100~240VAC or 12VDC(Lead-acid Battery) or Solar power
Consumption	3w
Installation	Wall or pole mount
Dimension	210(L) x 130(W) x 60(H) mm
Weight	2 (kg)

Solar Solution Specification

Solar Panel		50Ah Lead-acid Battery	
Cell	Crystalline silicon(c-Si)	Voltage	12V
Maximum Output Power (P_M)	30W	Capacity	50Ah
Open-circuit Voltage (V_{OC})	22.4V	Dimensions	197 x 165 x 175 mm
Maximum Voltage (V_{MP})	18.2V	Weight	15.3 kg
Maximum Current (I_{MP})	1.65A	22Ah Lead-acid Battery	
Short-circuit Current (I_{SC})	1.79A	Voltage	12V
Dimensions	345 x 380 x 35 mm	Capacity	22Ah
Weight	3 kg	Dimensions	181 x 76.2 x 167 mm
		Weight	6.2 kg

Specifications of outdoor switch box (Features a locking mechanism)

Material	Stainless steel SUS304, 1.2mm Tthickness
Dimensions	300(H) x 300(W) x 200(D) mm
Weight	6.43 kg