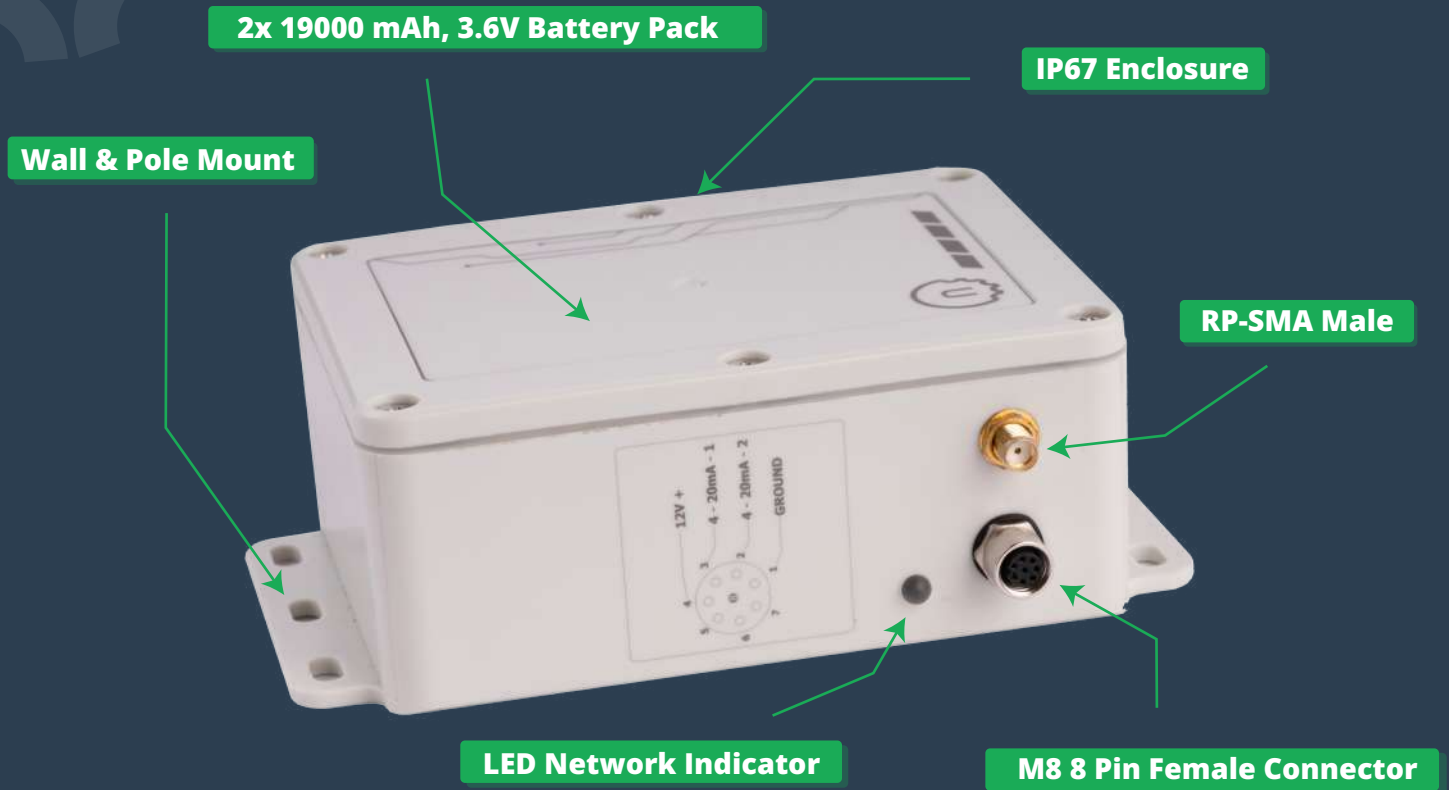


NORVI Controllers

Industrial & Automation Solutions

Water Level Data Logger Agricultural Data Logging Pressure Data Acquisition Environmental Data Logger



EC-M12-BC-C6-C-A

Battery-Powered Cellular IoT Data Logger

Industrial-grade remote monitoring solution featuring IP67 weatherproof protection, multi-network cellular connectivity (NB-IoT/LTE-M/2G), and extended battery life for autonomous operation in harsh environments.

PROTECTION RATING

IP67

BATTERY CAPACITY

38,000 mAh

ANALOG INPUTS

2 × 4-20mA

CONNECTIVITY

NB-IoT/LTE-M

Technical Overview

System Architecture & Key Features

Product Description

The EC-M12-BC-C6-C-A is a professional-grade battery-powered cellular IoT data logger designed for long-term industrial monitoring applications. Built around the ultra-low-power STM32L072 microcontroller and featuring the SIM7070 multi-mode cellular modem, this device provides reliable wireless data acquisition for 3-5 years on a single battery charge.

With IP67-rated weatherproof construction, dual 4-20mA analog inputs, RS-485 Modbus interface, and integrated 12V sensor excitation, the EC-M12 connects directly to industrial sensors without external converters or power supplies.

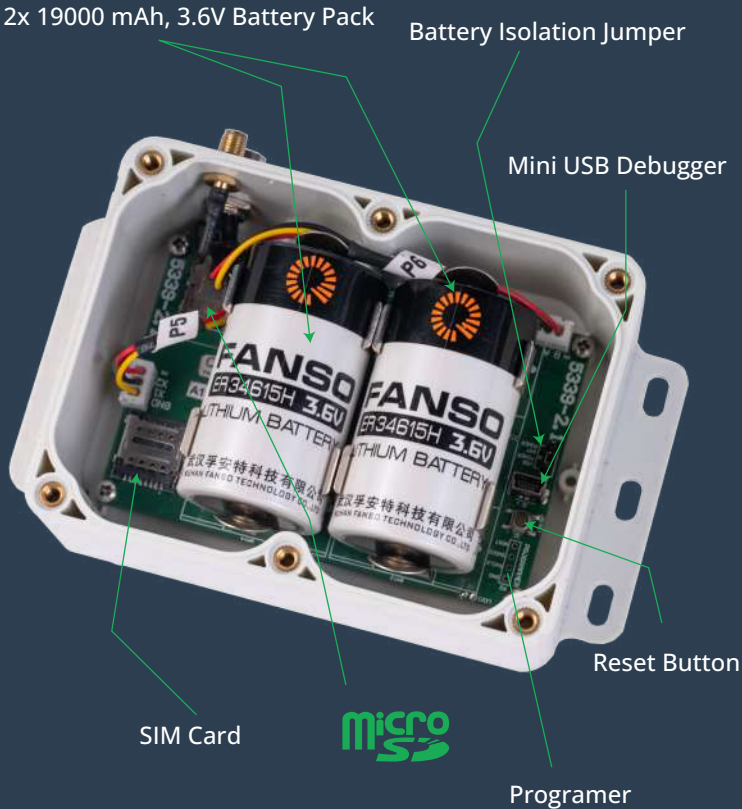
Core Technology

MCU: STM32L072 ARM Cortex-M0+

Modem: SIM7070 (Multi-mode cellular)

RTC: DS3231 (± 2 ppm accuracy)

Storage: microSD card (up to 128GB)



Key Features



IP67 Protection

Fully sealed enclosure rated for dust-tight and water immersion up to 1 meter



Multi-Network

NB-IoT, LTE-M, 2G with automatic fallback and carrier aggregation



Long Battery Life

38,000 mAh capacity, 3-5 year autonomous operation



Direct Sensor Connection

2 x 4-20mA inputs with 12V sensor excitation supply



RS-485 Modbus

Industrial communication protocol for multi-device networks



Local Storage

microSD data logging with automatic cloud sync

Technical Specifications

Detailed Hardware & Performance Data

PARAMETER	SPECIFICATION
Microcontroller	STM32L072 (ARM Cortex-M0+)
Flash Memory	192 KB
RAM	20 KB
Cellular Modem	SIM7070G
Network Support	NB-IoT / LTE-M / 2G
Frequency Bands	B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B28, B66
Analog Inputs	2 × 4-20 mA current loop
ADC Resolution	12-bit (0.004 mA)
Input Accuracy	±0.5% FSR
Sensor Excitation	12V DC ±5%, 100 mA/channel
RS-485	Modbus RTU protocol
Real-Time Clock	DS3231 (±2ppm, temp compensated)

PARAMETER	SPECIFICATION
Battery Type	2 × ER34615H (Li-SOCl ₂)
Battery Capacity	19,000 mAh each (38,000 mAh total)
Nominal Voltage	3.6V
Sleep Current	< 2 µA
Active Current	80 - 100 mA (during transmission)
Expected Lifetime	3-5 years (15 min intervals)
Storage	microSD card (up to GB)
Operating Temp	-40°C to +85°C
Storage Temp	-40°C to +90°C
Humidity	0-95% RH (non-condensing)
Ingress Protection	IP67 (IEC 60529)
Dimensions (L×W×H)	146.00 × 89.99 × 50.00 mm
Weight	650 g (with batteries)
Enclosure Material	UV-resistant polycarbonate

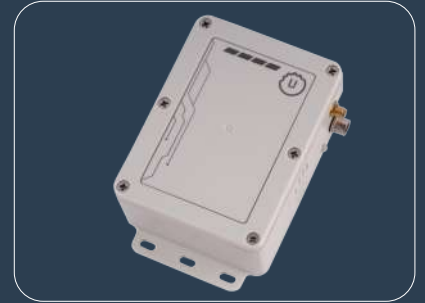


SYSTEM CONNECTIVITY

- ▶ 2 × 4-20mA analog inputs for direct sensor connection
- ▶ RS-485 Modbus RTU interface for industrial devices
- ▶ 12V DC sensor power supply (200 mA total output)
- ▶ SMA antenna connector for cellular module
- ▶ microSD card slot for local data storage
- ▶ USB-C port for configuration and firmware updates
- ▶ M12 or PG11 cable gland for weatherproof wiring

Applications & Use Cases

Industry-Specific Remote Monitoring Solutions



Target Industries



Water & Wastewater

Equipment health monitoring, process parameter tracking, temperature sensing, vibration analysis, and predictive maintenance systems.



Environmental

Air quality monitoring, weather stations, groundwater quality, stream flow measurement, and long-term environmental research.



Renewable Energy

Solar farm monitoring, wind turbine performance tracking, battery bank telemetry, and distributed energy resource management.

Compatible Sensors

4-20mA Sensors: Pressure transmitters, level sensors, flow meters, temperature sensors, pH probes, conductivity sensors, dissolved oxygen sensors

RS-485 Modbus Devices: Smart meters, multi-parameter sensors, PLC systems, industrial controllers, data acquisition modules

Ordering Information

Product Configurations & Support Services

Product Configurations

PART NUMBER	DESCRIPTION	CONFIGURATION
EC-M12-BC-C6-C-A	Standard configuration with batteries and antenna	NB-IoT/LTE-M/2G
EC-M12-BC-C6-C-A-NB	Unit without batteries (for custom power solutions)	NB-IoT/LTE-M/2G

Accessories & Spare Parts

PART NUMBER	DESCRIPTION
EC-M12-ANT-CEL-9	High-gain cellular antenna (9 dBi, SMA)
EC-M12-ANT-GSM	GSM External Antenna
EC-M12-BAT-PACK	Replacement battery pack (2 × ER34615H)
EC-M12-CABLE-M12-3M	M12 sensor cable, 3 meter length
EC-M12-MOUNT-POLE	Pole mounting bracket (50-100mm diameter)

Certifications & Compliance



Warranty & Support

- ▶ **Standard Warranty:** 1 year from date of purchase
- ▶ **Technical Support:** Email, Virtual and phone support (business hours)
- ▶ **Firmware Updates:** Fully customizable

Get Started Today

Transform your remote monitoring infrastructure with the EC-M12-BC-C6-C-A. Our technical team is ready to help you design and deploy the perfect solution for your application.

Contact Sales

Phone: +94 77 110 6897

Email: support@norvi.io

Hours: Mon-Fri, 8.30AM-6.00PM

Technical Support

Phone: +94 77 110 6897

Email: support@norvi.io

Portal: support.norvi.io

Online Resources

Website: <https://norvi.io/>

Documentation: norvi.io/docs/

Downloads: norvi.io/downloads

Available Resources



Technical Datasheet



Technical Datasheet



Technical Datasheet



Technical Datasheet

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Specifications subject to change without notice.

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