

BluCloud Cellular Monitoring Unit

Cellular IoT Telemetry Platform · Made in the USA

A self-contained, long-life cellular telemetry unit that connects any compatible analog or digital sensor to the cloud over LTE-M or NB-IoT — with no WiFi, no gateway, and no site infrastructure required. Field-replaceable battery. IP65-rated polycarbonate enclosure with transparent lid. Remote configuration, OTA firmware updates, and SD card local data backup included.



CONNECTIVITY

LTE-M / NB-IoT

SENSOR INPUT

0–5 V / 4–20 mA

BATTERY (DEFAULT)

3.6 V · 9000 mAh

BATTERY LIFE

3–5+ years

ENCLOSURE

IP65

UNIT OP TEMP

–40 to +85 °C

LOCAL BACKUP

SD Card

Works With Any Compatible Analog or Digital Sensor

The BluCloud Unit is sensor-agnostic. Any sensor that outputs within the voltage or current ranges below can be connected directly — turning it into a cellular-connected IoT device with cloud dashboard, alerts, and data logging. No custom firmware or hardware modification required.

● 0–5 V DC Analog

● 4–20 mA Current Loop

● MODBUS RTU / RS-485 — *coming soon*

● Max cable: 200 ft

● Gasket-sealed cable entry

9000

MAH

Default battery

5+

YEARS

Target battery life

200

FT

Max sensor cable

550+

NETWORKS

Global cellular reach

190+

COUNTRIES

Coverage footprint



SENSOR INTERFACE & COMPATIBILITY

PARAMETER	VALUE
Analog voltage input	0–5 V DC
Analog current input	4–20 mA current loop
Digital protocol	MODBUS RTU / RS-485 (coming soon)
Maximum cable length	0–200 ft
Sensor cable entry	Gasket-sealed on underside of unit
Sensor power supply	Unit powers sensor via cable (0–5 V)
Sensor power control	Power-gated — sensor energized only during readings for battery longevity

CELLULAR CONNECTIVITY

PARAMETER	VALUE
Technology	LTE-M (Cat-M1) / NB-IoT
Generation	4G / 5G compatible
SIM	Multi-carrier eUICC — auto-selects strongest available network
Global coverage	550+ networks · 190+ countries
US coverage	Verizon, T-Mobile, AT&T and all major US carriers
OTA firmware	Yes — full remote update capability

SECURITY

- Data protection in transit and at rest
- Device integrity safeguards
- OTA firmware signing (secure remote updates)
- Multi-carrier SIM with eUICC security profile management

ENCLOSURE & PHYSICAL

PARAMETER	VALUE
Enclosure	Rugged polycarbonate, IP65
IP67 option	Available upon request
Dimensions	3.2 × 3.1 × 2.1 in (82 × 80 × 55 mm)
Assembled weight	0.55 lbs (250 g)
Impact rating	NEMA 4X (UL certified)
Certifications	FCC · IC · CE · GCF · PTCRB (cellular module) · UL/cUL E194432, NEMA 4X (enclosure)
Country of manufacture	United States
Warranty	1 year

IP67 UPGRADE AVAILABLE

Units requiring IP67 protection are available — same footprint, polycarbonate, clear cover. Contact BluCloud.

OPERATING TEMPERATURE — COMPONENT SUMMARY

TEMPERATURE RANGE BY COMPONENT

Unit electronics	 -40 to +85 °C ← system limit
ER26500 battery	 -55 to +85 °C
LiPo standard	 -20 to +60 °C (typical)
LiPo low-temp option	 -40 to +85 °C (variants avail.)
← -60 °C 0 °C +85 °C →	

SYSTEM OPERATING TEMPERATURE

The **system operating range is -40 °C to +85 °C**, limited by the cellular electronics. The default ER26500 battery exceeds this range and is never the limiting factor. For cold-climate rechargeable deployments, a low-temperature LiPo pack is recommended.



DATA COLLECTION, STORAGE & CLOUD

PARAMETER	VALUE
Sampling rate	User-configurable — sub-second to daily; typically 1 sec–1 hr for battery longevity
Transmission interval	User-configurable — hourly to daily
Local data backup	SD card — stores readings locally; syncs on cellular reconnect
Cloud dashboard	Web + iOS & Android mobile app
Alerts	Email, SMS, push notification
Remote configuration	Yes — OTA remote monitoring & config
Tap-to-transmit	3 taps → reading transmitted 30 sec after last tap

BATTERY & POWER

Default Battery Default · 3.6 V · 9,000 mAh · Field-replaceable Default <table><tr><td>Voltage</td><td>3.6 V nominal</td></tr><tr><td>Capacity</td><td>9,000 mAh</td></tr><tr><td>Size</td><td>C-size (26 mm × 50 mm)</td></tr><tr><td>Battery temp</td><td>–55 °C to +85 °C</td></tr><tr><td>Self-discharge</td><td><1% per year @ 20 °C</td></tr><tr><td>Replacement</td><td>Field-replaceable (primary cell)</td></tr></table>	Voltage	3.6 V nominal	Capacity	9,000 mAh	Size	C-size (26 mm × 50 mm)	Battery temp	–55 °C to +85 °C	Self-discharge	<1% per year @ 20 °C	Replacement	Field-replaceable (primary cell)	LiPo Pack Options Customer-supplied · External power deployments Optional <table><tr><td>Chemistry</td><td>Lithium Polymer (LiPo)</td></tr><tr><td>Rechargeable</td><td>Yes — via USB-C or external DC power input</td></tr><tr><td>Supply</td><td>Customer-supplied — contact BluCloud for compatible voltage/size specifications</td></tr><tr><td>Low-temp option</td><td>Low-temperature rated LiPo packs available — specify at order</td></tr><tr><td>Replacement</td><td>Field-replaceable</td></tr></table>	Chemistry	Lithium Polymer (LiPo)	Rechargeable	Yes — via USB-C or external DC power input	Supply	Customer-supplied — contact BluCloud for compatible voltage/size specifications	Low-temp option	Low-temperature rated LiPo packs available — specify at order	Replacement	Field-replaceable
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POWER PARAMETER	VALUE
Target battery life (default)	3–5+ years (field conditions, standard check-in interval)
External power input	Supported — accepts external DC power (e.g. solar, grid)
Charging port	USB-C (on-board)
Low-power mode	Ultra-low standby — sensor and modem power-gated between transmissions
Low-battery indicators	Low battery & critical battery LED alerts + cloud notification



EXAMPLE COMPATIBLE SENSOR TYPES (0–5 V & 4–20 mA)

Submersible Level / Pressure

Any 0–5 V or 4–20 mA submersible pressure transducer. Suitable for wells, tanks, and open water monitoring.

Ultrasonic Level

Non-contact ultrasonic level sensors with 4–20 mA output (e.g. LV-MaSonar-EZ style). Suitable for tanks, open channels, lift stations.

Flow Sensors

4–20 mA electromagnetic, vortex, or turbine flow transmitters. Suitable for pipe flow monitoring and irrigation.

Temperature Transmitters

4–20 mA RTD or thermocouple transmitters for ambient or process temperature monitoring.

Pressure / Differential Pressure

General-purpose 4–20 mA pressure transmitters for tanks, reservoirs, or process lines.

MODBUS Instruments — coming soon

MODBUS RTU / RS-485 support is in active development. Multiparameter sensors, smart sensors, and SCADA-compatible instruments.

DIAGNOSTIC LED INDICATORS & PHYSICAL CONTROLS

FAULT CONDITION	LED COLOR
Low battery	● Red
Critical battery	● Red
Low connectivity	● Red Flash
Radio not responding	Lights Flash
SIM absent	Lights Flash
No tower / registration failed	Lights Flash
TCP server issue	None
Call aborted (AT command / power loss)	None

CONTROL FEATURE	SPECIFICATION
External switch connections	2 switch connections
Tap-to-transmit	3 external taps → transmit reading 30 sec after last tap
Water ingress prevention	Tap mechanism prevents water from shorting contacts
LED visibility	Visible through transparent lid — no lid removal needed for status check

ELECTRONICS	VALUE
SoC sleep current	<2.5 μ A (PSM mode)
System sleep current	<10 μ A
LTE TX peak current	490 mA
On-board flash	NOR flash (firmware & config storage)