

æTHER

D Y N A M I C S

IoT Hardware - Product Catalogue

GPS Tracking · Fuel Monitoring · CAN Bus Analytics · Energy Management ·
Asset & Workforce Tracking



www.aetheriot.com



+91 80 6817 2080



info@aetheriot.com



281, 1st Floor, 7th Main Road, Mico Layout, BTM 2nd Stage, Bengaluru, Karnataka 560076, India

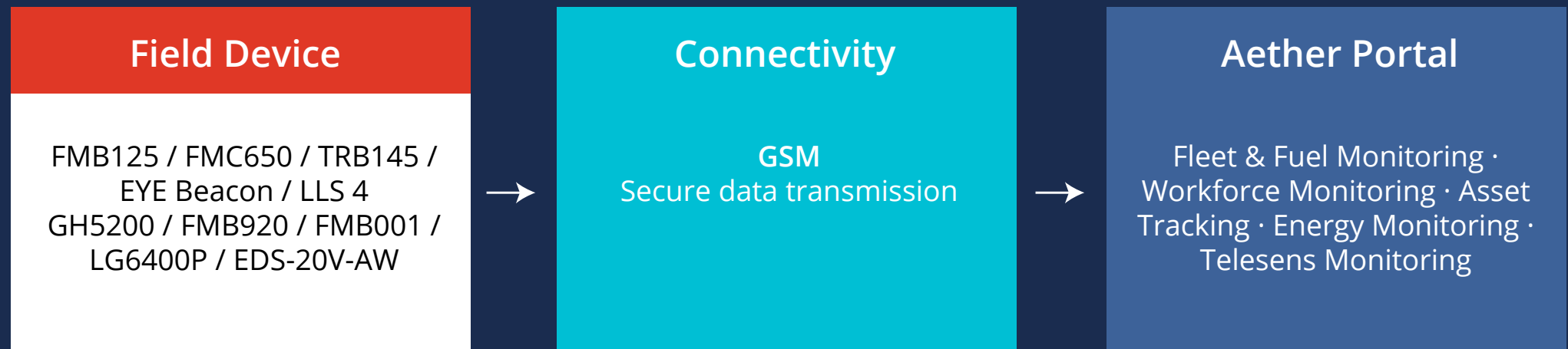
TABLE OF CONTENTS

Table of Contents	2
Aether Monitoring System Overview	4
1. FMB125 — Multi-Purpose IoT Telematics Gateway	5
2. FMC650 — Advanced CAN-Ready IoT Telematics Gateway	7
3. TRB145 — Industrial RS485 LTE IoT Gateway	9
4. FMB920 — Compact IoT Telematics Tracker	11
5. FMB001 — Plug & Play OBD Telematics Tracker	13
6. GH5200 — Workforce Safety & Tracking Device	14
7. EYE Beacon — BLE ID Beacon for Asset & Workforce Identification	16
8. LLS 4 — Digital Fuel Level Sensor	18
9. LG6400P — Multi-Function Energy Meter	20
10. EDS-20V-AW — Arc Weldable Vibrating Wire Strain Gauge	22
Solutions & Hardware at a Glance	24

AETHER MONITORING SYSTEM OVERVIEW

Introduction

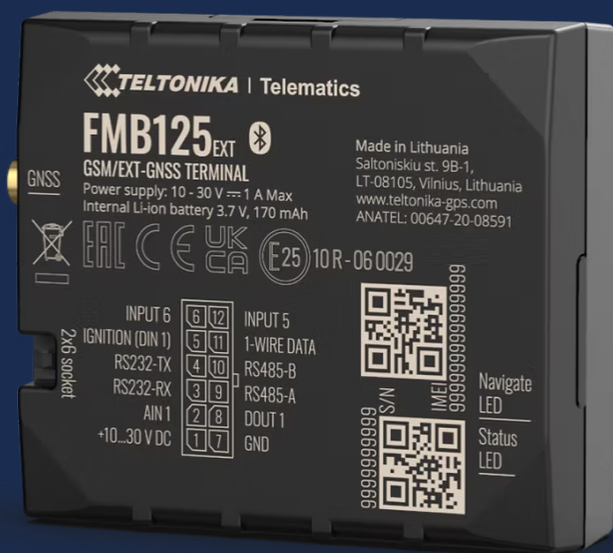
Supported devices such as IoT gateways, fuel sensors, FMC650 (for CAN data monitoring), BLE beacons, and energy meters send data to the Aether portal over GSM



1. FMB125 — GPS TRACKING & MONITORING DEVICE

Technical Specifications

Parameter	Detail
Device Type	Advanced 2G Tracking IoT Gateway Device
GNSS	GPS, GLONASS, GALILEO, BEIDOU — real-time location, route history, speed, geofencing
Cellular	2G GSM — Quad-band 850/900/1800/1900 MHz, secure cloud data transmission
SIM	Dual SIM
Fuel Sensor Ports	RS485/ RS232— supports fuel sensors and external devices
Bluetooth	BLE 4.0 — supports beacon detection
Digital I/O	1 Digital Input (DIN1), 1 Digital Output (DOUT1), 1 Analog Input (AIN1)
Power Input	10–30V DC with overvoltage protection
Backup Battery	170 mAh Li-Ion, 3.7V — maintains operation during power interruption
Operating Temp.	–40°C to +85°C
IP Rating	IP41
Warranty	2 Years



Teltonika **FMB125**

WHY USE THE FMB125?

Multi-Function Single Device

One FMB125 handles fleet tracking, fuel monitoring via RS232/RS485, BLE beacon detection for workers and pallets, and relay control via DOUT1 — reducing the need for multiple devices.

Dual Fuel Sensor Port Support

RS232 supports single sensor connection, while RS485 supports multiple fuel sensors

BLE Beacon Support

Built-in BLE 4.0 supports detection of BLE beacons — enables identification of workers and tagged assets

USE CASE

Use Case	Description
GPS Fleet Tracking	Real-time location, speed, route history, ignition status, geofence and alerts; running and idle status.
Fuel Level Monitoring	Connected via RS232/RS485 to fuel sensors; monitors fuel level, logs refuelling events, and detects unauthorized fuel draining
Fuel Level Alarm System	Configurable fuel level thresholds trigger DOUT1 output to activate external alarms such as relay-based alarm systems or sirens
Workforce & Asset Tracking (BLE)	Detects BLE beacons to support tracking of workers, pallets, tools, and equipment

2. FMC650 — ADVANCED 4G TELEMATICS TRACKING DEVICE

Technical Specifications



Parameter	Detail
Device Type	Industrial IoT Telematics Gateway with Dual CAN Interface
Cellular	4G LTE (Cat 1) with 2G GSM fallback
GNSS	GPS, GLONASS, Galileo, BeiDou, QZSS
CAN Interface	2× CAN Bus (CAN1 + CAN2) — J1939, J1708, standard CAN support
Interfaces	2× RS232, 1× RS485 — fuel sensors (LLS), RFID, external devices 4 Digital Inputs, 4 Digital Outputs, 4 Analog Inputs
Bluetooth	BLE — beacon and sensor support
Power Supply	8–32V DC with overvoltage and reverse polarity protection
Backup Battery	550 mAh Ni-MH
Memory	16 MB internal flash + MicroSD up to 32 GB
Dimensions	105 × 78 × 29 mm — 199 g
Operating Temp.	–40°C to +85°C
Warranty	2 Years

Teltonika **FMC650**

WHY USE THE FMC650?

Direct CAN Data Access

Reads engine and machine parameters — RPM, coolant temperature, fuel rate, torque, and fault codes directly from ECU via CAN Bus. Reduces dependency on external sensors for engine data.

Dual CAN Line Support

Two CAN interfaces allow reading from multiple CAN networks such as engine and chassis systems — Suitable for vehicles and machines with multiple CAN networks

All-in-One Monitoring Device

Combines CAN data + GPS tracking + fuel data (from CAN or external sensor) + BLE tracking in a single installed unit. Reduces hardware requirement

External Device Connectivity

Supports external devices via RS232/RS485 such as fuel sensors, RFID readers, and temperature sensors — Enables combined CAN and sensor-based monitoring

USE CASE

Use Case	Description
CAN Bus Data Monitoring	Reads machine parameters such as engine RPM, engine hours, fuel rate, torque, coolant temperature, hydraulic pressure, and load data via dual CAN interfaces, commonly used in construction machinery and heavy equipment for performance and usage monitoring.
GPS Fleet Tracking	Real-time location, speed, route history, ignition status, geofence, alerts, running hours and idle status.
Fuel Monitoring	Monitors fuel level using external fuel sensors connected via RS232/RS485
Workforce & Asset Tracking (BLE)	Detects BLE beacons to support tracking of workers, pallets, tools, and equipment
Fuel Level Alarm System	Configurable fuel level thresholds trigger DOUT1 output to activate external alarms such as relay-based alarm systems or sirens

3.TRB145 — INDUSTRIAL RS485 LTE IOT GATEWAY

Technical Specifications

Parameter	Detail
Device Type	Industrial LTE IoT Gateway with RS485 Interface
Processor	ARM Cortex-A7 — 128 MB RAM
Cellular	4G LTE (Cat 1) with 3G / 2G fallback
Serial Interface	1x RS485 - supports Modbus RTU communication
USB	Micro-USB — local configuration
SIM	1× Mini-SIM (2FF)
Protocols	Modbus RTU, MQTT, HTTP, HTTPS
Power Supply	9–30V DC
Operating Temp.	–40°C to +75°C



Teltonika **TRB145**



WHY USE THE TRB145?

RS485 & Modbus Support

Supports RS485 devices using Modbus RTU protocol, enabling integration with a wide range of field devices — energy meters, PLCs, sensors, and flow meters

Remote Monitoring over Cellular

Collects data from RS485 devices and transmits to cloud platforms over 4G LTE. Enables real-time data access, visualization, and alerts without wired network infrastructure.

Multi-Device Connectivity

Supports multiple devices on a single RS485 bus — data collection from multiple connected systems through one gateway, reducing additional hardware requirements.

Direct Cloud Integration via MQTT

Transmits data directly to cloud platforms (e.g., AWS IoT Core) using MQTT protocol — eliminates dependency on intermediate servers and simplifies system architecture.

On-Device Data Processing (Lua)

Supports custom data formatting using Lua scripting, enabling conversion of raw Modbus data into structured, application-ready format — clean payloads without external processing.

Flexible Modbus Configuration

Allows direct configuration of Modbus (RS485) devices within the gateway — configure baud rate, parity, slave ID, and create custom Modbus requests to read specific register data.

USE CASE

Use Case

Description

Energy Meter Monitoring

Real-time monitoring of RS485/Modbus-based energy meters — capturing voltage, current, power, and energy consumption parameters.

Industrial Equipment & PLC Monitoring

Used to monitor PLC systems and Modbus-supported machines by collecting operational data for centralized monitoring.

Telesens Monitoring

Used to monitor structural and geotechnical sensors such as vibrating wire strain gauges, piezometers, and displacement sensors in infrastructure projects like metro projects, tunnels, bridges, dams, and construction sites.

Existing System Integration

Used to connect existing RS485-based devices to the cloud without replacing installed hardware.

4. TELTONIKA FMB920 - COMPACT IOT TELEMATICS TRACKER

Technical Specifications

Parameter	Detail
Device Type	Compact IoT Telematics Tracker
GNSS	GPS, GLONASS, Galileo, BeiDou — location, speed, and route tracking
Cellular	4G GSM/GPRS — data transmission to server
Digital I/O	1 Digital Input, 1 Analog Input, 1 Digital Output
Power Input	6–30V DC with internal backup battery
Backup Battery	~170 mAh
Memory	122 MB internal flash — stores data when network is unavailable
Operating Temp	-40°C to +85°C
Warranty	2 Years



Teltonika **FMB920**

WHY USE THE FMB920?

Compact & Easy Deployment

Compact design enables quick installation in vehicles and equipment — suitable for deployments where space and installation simplicity are important.

Reliable GPS Tracking

Collects and transmits location, speed, and route history, providing clear visibility of vehicle movement across your fleet.

Basic I/O Support

Supports digital and analog inputs such as ignition signals, enabling simple signal-based monitoring at the device level.

Platform-Based Operational Insights

Device data such as GPS and ignition signals can be used to derive operational insights — running time and usage patterns can be derived using platform-level processing.

USE CASE

Use Case

Description

Vehicle & Light Asset Tracking

Used for real-time tracking of vehicles, two-wheelers, and light equipment, including distance travelled (km), running usage, and basic operational monitoring.

5. FMB001 — PLUG & PLAY OBD TELEMATICS TRACKER

Technical Specifications

Parameter	Detail
Device Type	Plug & Play OBD Telematics Tracker
Cellular	GSM
GNSS	GPS, GLONASS, Galileo, BeiDou
Interface	OBD-II
Power Supply	Powered directly from OBD port
Digital I/O	1 Digital Input
Bluetooth	BLE 4.0 + LE
Backup Battery	170 mAh Li-Ion
Memory	128 MB internal flash
IP Rating	IP41



Teltonika **FMB001**

WHY USE THE FMB001?

Plug & Play Installation

Connects directly to the vehicle OBD-II port for quick installation without wiring.

Vehicle Data via OBD Interface

Reads available vehicle data such as speed and diagnostics (vehicle-dependent) for basic monitoring.

Combined Tracking & Vehicle Data

Supports real-time vehicle tracking along with data such as speed and basic vehicle information (vehicle-dependent) in a single device.

Usage Insights from Vehicle Data

Device and OBD data can be used to understand vehicle usage, running patterns, and basic performance.

USE CASE

Use Case

Description

Vehicle Tracking

Used to track vehicle movement and routes for cars and light vehicles.

6. GH5200 — WORKFORCE SAFETY & TRACKING DEVICE

Technical Specifications

Parameter	Detail
Device Type	Workforce Safety & Tracking Device
GNSS	GPS, GLONASS, Galileo, BeiDou — location tracking
Cellular	2G GSM/GPRS (Quad-band)
Bluetooth	BLE 4.0 + LE
Battery	1050 mAh Li-Ion rechargeable
Charging	5V DC (Micro-USB)
Memory	128 MB internal flash
Buttons	5 configurable buttons
Voice	Two-Way Voice Communication with predefined contacts
LED Indicators	3 status LEDs
Sensors	Built-in motion sensor
Dimensions	93 × 64 × 10 mm — 80 g
Operating Temp.	-20°C to +58°C
Protection	IP30



Teltonika **GH5200**

WHY USE THE GH5200?

Workforce Safety Monitoring

Monitors workers during site activities such as construction, maintenance, and field service — provides location visibility and supports safety monitoring during working hours.

Emergency Alert Capability

Configurable buttons for SOS and alert triggering. On trigger, the device sends an alert along with location data to predefined contacts or platform.

Man-Down & No - Movement Detection

Automatically detects falls or inactivity and sends alerts with location for quick response.

BLE Beacon Detection Support

Supports detection of BLE beacons such as Teltonika EYE Beacon to identify nearby tagged assets or workers.

Event-Based Voice Communication

Supports voice communication with predefined contacts, allowing communication during alerts or emergency situations.

Wearable & Easy to Carry

Lightweight and wearable device that can be easily carried using a belt clip or lanyard during daily operations.

USE CASE

Use Case

Description

Workforce Safety & Tracking

Monitors site staff, field teams, and security staff. Tracks location and generates alerts for SOS and no-movement events

Healthcare & Assisted Monitoring

Used in healthcare and assisted care facilities to monitor patients and send alerts in case of emergency situations.

Asset & Worker Identification (BLE Beacons)

Used with BLE beacons installed on assets or carried by workers to identify them during site operations.

7. EYE BEACON — BLE ID BEACON FOR ASSET & WORKFORCE IDENTIFICATION

Technical Specifications

Parameter	Detail
Technology	Bluetooth Low Energy (BLE) 4.2 — supports iBeacon and Eddystone protocols
Dimensions	56.6 × 38 × 13 mm
Battery	CR2450, 600 mAh, non-replaceable
Battery Life	4 years at 3 s interval 8 years at 5 s interval (default) 10 years at 10 s interval (Tx = 2 dBm)
BLE Range	Up to 80 m ~30–40 m practical in industrial environments
Tx Power	Up to 8 dBm Sensitivity -88 dBm
Protection	IP67
Mounting	Screw / leash / strip / tape
Operating Temp	-20°C to +60°C



Teltonika EYE Beacon (BTSID1)

WHY USE THE EYE BEACON?

Long Battery Life

Built for long-duration deployments with a sealed battery life extending up to 8–10 years depending on transmission interval settings — minimizing maintenance.

Standard BLE Beacon Protocols

Supports both iBeacon and Eddystone, making it suitable for BLE identification and traceability use cases across multiple platforms and IoT gateways.

Rugged Industrial Design

IP67 protection with multiple mounting options (screw, leash, strip, tape) — suitable for industrial, warehouse, logistics, and outdoor environments.

Configurable via Mobile App

The official EYE App allows scanning, configuration, and firmware updates, including settings such as transmission power, advertising interval, and packet type.

Lost & Found Event Support

Can support lost-and-found workflows in configured BLE solutions, where beacon detection and loss events are used to monitor tagged assets or workers.

USE CASE

Use Case

Description

Worker Identification

Used as an identification tag in BLE-IoT workforce monitoring solutions. Each beacon is assigned to a specific worker for identification within the system.

Asset Identification & Tagging

Used on pallets, tools, cylinders, and other movable assets for identification and traceability across construction, warehouses, logistics, and industrial environments.

Logistics Asset Tracking & Identification

Used in logistics use cases such as trailers, containers, and other movable assets for identification and traceability in BLE-enabled tracking solutions.

8. LLS 4 — DIGITAL FUEL LEVEL SENSOR

Technical Specifications

Parameter	Detail
Device Type	Digital fuel level sensor
Measurement Principle	Capacitive
Interfaces	RS-232 / RS-485 (Omnicom LLS protocol)
Accuracy	Up to 99.2% (lab conditions); ~95%+ in real-world conditions after calibration
Supply Voltage	10–30V DC
Current Consumption	Up to 40 mA
Cable	Shielded, armoured with sealed connector
Measuring Range	Model-dependent — 700 / 1000 / 1500 / 2000 / 2500 / 3000 mm
Protection Rating	IP69K
Operating Temp.	-40°C to +80°C
Humidity	Up to 100%
Dimensions	78 × 74 × (24 + measuring part length) mm
Warranty	5 Years



Omnicomm LLS 4



WHY USE THE LLS 4?

Accurate Fuel Level Measurement

Provides reliable fuel level measurement in real operating conditions — shows current fuel level and helps monitor fuel usage and refuelling events up to 99.2% (lab); ~95%+ in real conditions

Stable Digital Communication

Supports RS-232 and RS-485 digital interfaces — ensures stable and noise-free data transmission with IoT gateways in electrically demanding environments.

Fuel Level Change Detection

Continuously monitors fuel level variations, helping identify unauthorized fuel loss and refuelling events — every event is timestamped with volume for accountability.

Built for Harsh Environments

IP69K-rated with sealed connectors and rugged construction — suitable for construction, mining, and heavy equipment environments exposed to dust and high-pressure water.

Flexible Fitment Across Tank Sizes

Available in multiple measuring lengths for different tank sizes — supports installation across a wide range of vehicles and equipment without custom modifications.

USE CASE

Use Case

Description

Vehicle & Equipment Fuel Monitoring

Monitors fuel level in vehicles and heavy machines — shows fuel level and helps monitor fuel consumption and refuelling events in real time.

Stationary Fuel Tank Monitoring

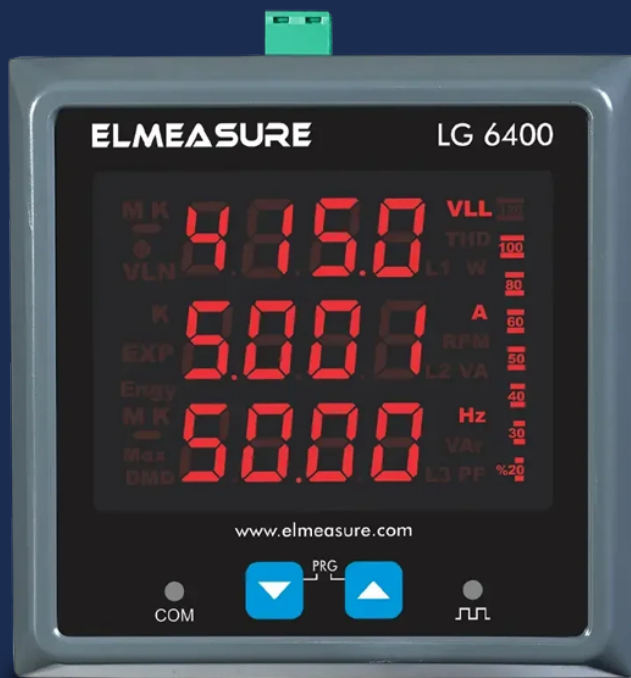
Used in fixed fuel storage tanks at industrial locations and sites — provides continuous visibility of fuel levels and inventory.

Generator Fuel Monitoring

Used in DG sets and backup power systems — shows fuel level and helps monitor fuel availability for uninterrupted generator operation.

9. LG6400P — MULTI-FUNCTION ENERGY METER

Technical Specifications



Elmeasure LG6400P

Parameter	Detail
Device Type	Digital multifunction energy meter (panel mount)
Phases	Single Phase / Three Phase (Star & Delta)
Parameters Measured	Voltage (V), Current (A), Active Power (kW), Apparent Power (kVA), Reactive Power (kVAR), Energy (kWh, kVAh, kVARh), Power Factor, Frequency
Measurement Type	True RMS (Root Mean Square)
Accuracy Class	Class 0.5 (typical); Class 1 available
Communication	RS485 — Modbus RTU
Display	LED display for local parameter viewing
Power Supply	80–300V AC/DC
Operating Temp.	-10°C to +55°C
Mounting	Panel-mounted (96 × 96 mm)
Application	DG panels, LT panels, MCC panels, feeder panels, and distribution boards
Integration	Can be connected to IoT gateways for remote monitoring



WHY USE THE LG6400P?

Comprehensive Electrical Monitoring

Measures all essential electrical parameters — voltage, current, power, energy, and power factor — from a single panel-mounted device, eliminating the need for multiple instruments.

True RMS (Root Mean Square) Measurement

Ensures accurate readings even in non-linear and fluctuating load conditions — suitable for industrial electrical systems with variable loads and harmonics.

RS485 Modbus Communication

Supports standard Modbus RTU over RS485, enabling seamless integration with IoT gateways, PLCs, and monitoring systems for remote data access.

Local + Remote Monitoring

Displays real-time electrical parameters on the energy meter display and supports remote monitoring via IoT gateways, enabling visibility at both the panel and a central monitoring dashboard

Standard Panel Installation

Fits standard 96 × 96 mm panel cutouts, suitable for installation in DG panels, LT panels, MCC panels, and distribution systems.

USE CASE

Use Case

Description

Electrical & Industrial Energy Monitoring

Used in LT, MCC, and distribution panels across industrial facilities to monitor electrical parameters and track energy usage.

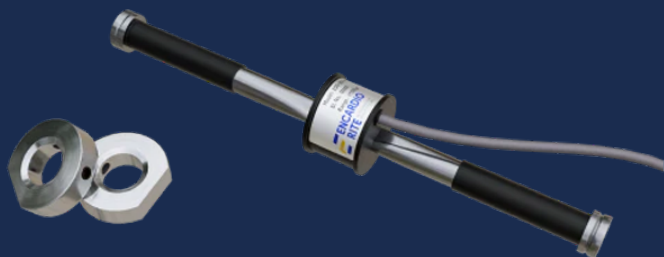
Generator (DG Set) Monitoring

Used with generator systems to monitor load, energy generation, and electrical parameters during operation.

10. EDS-20V-AW — ARC WELDABLE VIBRATING WIRE STRAIN GAUGE

Technical Specifications

Parameter	Detail
Device Type	Vibrating Wire Strain Gauge — Arc Weldable
Measurement Principle	Vibrating wire — frequency output proportional to strain (frequency squared relationship)
Range	±1500 μ strain
Accuracy	±0.1% full scale (laboratory conditions)
Resolution	1 μ strain
Nonlinearity	<0.5% full scale
Active Gauge Length	150 mm
Output	Vibrating wire frequency signal
Thermistor	Built-in — 3000 Ohm at 25°C (YSI 44005 or equivalent)
Protection	IP67
Fatigue Life	10 ⁵ cycles at 2500 μ strain
Cable	4-core shielded — 1 m standard (custom length on request)
Operating Temp.	-20°C to +80°C
Dimensions	174 × 28.5 × 30 mm
Warranty	12 months (as per manufacturer terms)



WHY USE THE EDS-20V-AW?

High Accuracy & Long-Term Stability

Vibrating wire technology provides precise strain measurement with high stability over long durations — suitable for structural monitoring where reliable data is required over years.

Stable Frequency -Based Output

Outputs a frequency signal instead of voltage, ensuring stable signal transmission even over long cable distances and in electrically noisy environments.

Built-In Temperature Monitoring

Integrated thermistor measures temperature alongside strain, helping improve accuracy by accounting for thermal effects during structural analysis.

Rugged Construction for Harsh Environments

Stainless steel construction with sealed design and IP67 protection, suitable for use in wet, humid, and harsh site conditions.

Remote Monitoring via IoT Gateways

Frequency and temperature data can be integrated with IoT gateways using suitable interfaces, enabling continuous remote monitoring and data analysis.

Flexible Installation Options

Supports installation on steel structures (arc weldable) and concrete surfaces (with mounting blocks), making it suitable for various structural monitoring applications

USE CASE

Use Case

Description

Structural Monitoring (Bridges, Steel & Concrete Structures)

Installed on steel and concrete structural members to measure tensile and compressive strain and monitor structural behaviour.

Tunnel & Underground Monitoring

Used in tunnels and underground structures to monitor stress distribution and structural behaviour.

Pile & Foundation Monitoring

Installed on piles, struts, and diaphragm walls to measure load distribution and structural response

Construction & Infrastructure Monitoring

Used during and after construction to monitor stress changes and ensure structural safety.

SOLUTIONS & HARDWARE AT A GLANCE

Quick Reference

Six ready-to-deploy solutions — each built around specific hardware combinations. The same devices serve multiple solutions, maximising your investment.

Solution	FMB125	FMC650	TRB145	EYE Beacon	LLS 4	LG6400P	Relay + Alarm	EDS-20V-AW	FMB920	FMB001	GH5200
Fleet & Fuel Monitoring	✓	—	—	—	✓	—	—	—	—	—	—
Workman Tracking	✓	—	—	✓	—	—	—	—	—	—	✓
Pallet & Asset Tracking	✓	✓	—	✓	—	—	—	—	—	—	—
Energy Monitoring	—	—	✓	—	—	✓	—	—	—	—	—
CAN Bus Monitoring	—	✓	—	—	—	—	—	—	—	—	—
Fuel Level Alarm System	✓	—	—	—	✓	—	✓	—	—	—	—
Aether Telesens	—	—	✓	—	—	—	—	✓	—	—	—
Vehicle Tracking	✓	✓	—	—	—	—	—	—	✓	✓	—

Devices in this Catalogue:

FMB125 — IoT Telematics Gateway · FMC650 — CAN Bus Gateway · TRB145 — RS485/Modbus Gateway
 FMB920 — Compact Tracker · FMB001 — OBD Plug & Play · GH5200 — Workforce Safety Device
 EYE Beacon — BLE Asset Tag · LLS 4 — Fuel Level Sensor · LG6400P — Energy Meter · EDS-20V-AW —
 Vibrating Wire Strain Gauge