



**BBOX**<sup>®</sup>  
STRUCTURAL MONITORING

# **BBOX 2.0 Data Logger**

Technical Datasheet





The BBOX 2.0 Data Logger is designed to deliver maximum flexibility and adaptability in the continuous structural monitoring of buildings and infrastructures. Its modular architecture allows the management of a high number of triaxial accelerometric sensors — as well as other sensor types — through a single central unit, ensuring reliable performance across diverse applications.



## Applications

- Structural health monitoring
- OMA (Operational Modal Analysis)
- Seismic Structural Monitoring
- Structural Response Monitoring in Critical Events

## Sensor Management

- Up to 20 low-noise triaxial accelerometric sensors (BBOX 2.0)
- Sampling rates: 1000 Hz, 500 Hz, 250 Hz, 125 Hz, 62.5 Hz, 32 Hz
- Remote parameter configuration
- Operating modes:
  - Threshold mode
  - Timed mode
  - Inclinator mode
- Remote-programmable seismic event triggers
- Independent trigger thresholds per sensor
- Variable recording duration, defined by start/stop thresholds
- Pre-trigger and post-trigger functions
- Environmental Sensors (ESA Unit):
  - Supports 4–20 mA input: IEPE accelerometers, temperature probes, crack meters, displacement transducers, strain gauges, hydrometers, etc.
  - Up to 6 sensors per ESA unit



## Data Storage & Transmission

- Mass memory: 32 / 64 GB
- Recorded data can be transmitted either to the cloud or to edge computing devices for real-time analysis

## CPU & System

- ARM processor
- 256 MB RAM
- Linux operating system

## Synchronization

- Internet (NTP + UTC time)
- GPS external module (PPS + UTC time)
- High-precision internal clock (backup in case of temporary loss of absolute reference)
- Multi-logger systems: synchronization through a Master unit

## Remote Access & Configurability

- Internet connection via Ethernet, Wi-Fi, GSM
- Secure remote access via OpenVPN
- Alarm management and notifications
- Configuration through dedicated web interface
- Remote diagnostics and software updates

## Power Supply

- AC/DC adapter (24 Vdc – 30 W)
- Integrated UPS backup (24/72 hours)
- Alarm notification in case of power loss
- Optional: external battery pack and solar panels

## Operating Environment

- Operating temperature range: -20 ÷ +60 °C
- Storage temperature range: -30 ÷ +70 °C
- Designed for long-term operation in harsh environments

## Mechanical Specifications

- Enclosure: ABS material
- Protection rating: IP66 (when installed inside dedicated cabinet)
- Dimensions (mm): 200 × 200 × 70
- Weight: 700 g





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# BBOX 2.0 DATALOGGER

## Key Features



### BBOX 2.0 Datalogger

- Management of up to 20 BBOX accelerometric sensors
- Real-time processing capacity: 60,000 data points per second
- Automatic detection of critical values with remotely configurable thresholds
- Full compatibility with environmental, thermal, humidity, advanced inclinometer, and vibrometer sensors
- Reliable data transmission via LAN or 4G/5G
- Integrated UPS ensures operation even during blackouts
- Remote configuration, diagnostics, and software updates



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