

NOVALog 3.0

Multiparameter datalogger for in-situ testing and load tests – up to 24 channels



The new **NOVALog** data acquisition unit has been redesigned to deliver enhanced performance during in-situ tests, load tests, and monitoring activities. It maintains the core philosophy of the original version—**compact design, ease of use, and versatility**—while introducing a fully updated hardware platform that is more powerful, lighter, and user-configurable.

Designed for applications such as Flat Jack Tests, Load Tests (on slabs, piles, beams, bridges, pull-out tests, etc.), multiparameter measurements, and environmental monitoring, NOVALog supports a wide range of analog sensors: vibrating wire gauges, load cells, displacement transducers, inclinometers, environmental sensors, and groundwater level probes.

Higher performance and more channels available

The new version integrates a high-performance A/D converter that enables synchronous sampling up to 200 Hz, improving data quality even in high-frequency tests.

The number of inputs has been increased to 24 channels through three 8-channel ADC modules, significantly enhancing flexibility in test configurations.

- Lighter and easier to handle
- The system adopts a new lithium battery pack that replaces the former lead-acid unit:
- Weight reduced from 5.7 kg to 1.3 kg
- Increased autonomy and improved portability
- Intelligent battery status management
- This weight reduction makes the unit more practical and easier to transport.
- Stable power supply even on construction sites

To minimize electrical noise and interference when operating from mains power, the board integrates a dedicated DC filter that suppresses disturbances from 220 V supply lines, ensuring cleaner signals even in environments with unstable power sources.

- User-replaceable components and greater configuration autonomy
- Maintenance has been simplified with choices aimed at improving field operability:
- 5×20 mm cartridge fuse, easily replaceable
- New board with 4-pin circular connectors and dip-switch configuration for user-modifiable channel setup
- Option to install a more robust monitor, resistant to shocks and vibrations
- Mechanical and structural improvements to enhance overall durability
- Intuitive software, fully operational without a PC

The interface remains simple and immediate: a large touch-screen display allows users to configure tests, view graphs, and save data without requiring a computer or external software. Standard configurations are preloaded, while data are automatically saved in the internal memory and can be quickly exported via USB.

New functionalities

The new NOVALog generation introduces advanced operational features:

Manual acquisition control

- Programmable acquisition steps, including asynchronous modes
- Note insertion during the test, linked to specific measurement points
- Ability to reopen a data session directly on the unit
- Real-time computed formulas
- Option to view and record data in real time on an external PC (optional)

Applications

- Load tests on slabs, beams, piles, anchors, plates, and bridges
- Flat jack tests
- Pumping tests and hydrogeological investigations
- Multiparameter measurements in construction sites and laboratories
- Environmental and geotechnical monitoring

Key features

- Compatible with most analog sensors on the market
- 24 input channels with synchronous sampling up to 200 Hz
- Lightweight, rechargeable internal lithium battery
- User-friendly interface with touch-screen display
- Accurate measurements displayed directly in engineering units
- Automatic data storage and USB transfer
- Electrical noise filtering for stable power supply
- Reinforced components and simplified maintenance

Technical features

Sensor input types	0–5 V, 0–10 V, 0–20 mA, 4–20 mA (optional: vibrating wire, mV/V, ohm)
Number of inputs	24 channels (3 ADC modules with 8 channels each)
Ambient temperature sensor	Integrated
A/D converter	High-performance 24-bit converter with synchronous readings
Sampling rate	Up to 200 Hz (synchronous on all channels)
Power supply	Internal lithium battery (reduced weight). External 220 V supply with integrated DC filter for noise suppression
Monitor	12" resistive touch screen, IP65
Total accuracy	±0.01 % FS
Internal memory	Capacity for over 100,000 data points (expandable on request)
Operating autonomy	Extended, >8 h
Enclosure	Polypropylene IP67 carrying case
Dimensions	460 × 360 × 180 mm
Operating temperature	–20 °C ... +80 °C
Sensor input connectors	New 4-pin circular connectors, configurable via dip-switch (IP67 protection)
Protection fuse	5×20 mm, user-replaceable
Total weight	≈ 5.5 kg (with lithium battery, approx. –4.5 kg compared to the previous version)

Accessories:

The NOVALog control unit is configured in the production phase (or later) based on the testing needs and the type of sensors and data to be managed.

STANDARD

- Battery charger;
- Touch-screen pen.

OPTIONALS

- Extended battery;
- Expansion with 12 or 18 channels.
- UART functionality: functionality for the “real time” exchange of serial data between control unit and PC. It allows you to view and store data directly on your PC.