

PRECISION CORROSION SURVEY & FIELD DATALOGGING

NEXUS DATALOGGER

Measure. Locate. Synchronise.

A precision multi-channel GNSS-enabled datalogger for CIPS surveys, test-post measurements, coupon monitoring and general field logging.



High-accuracy measurements with precise time and location context - built for confident defect investigation in the field.

Simultaneous AC + DC

Capture and view AC and DC components across enabled analogue channels, with TrueRMS or PeakRMS AC calculation.

High accuracy

32-bit ADC with ± 1 mV DC accuracy over the full channel range and strong mains/common-mode noise rejection.

GPS + timestamped data

GNSS-enabled survey measurements are tagged with accurate time and location data; coordinates update every second in Survey mode.

Pinpoint defects with confidence

Combine measurement accuracy, GNSS positioning and precise timing to identify and revisit areas of concern.

Wi-Fi + wired USB

Stream live Survey data to a Windows tablet or computer over Wi-Fi, with USB available as a wired connection.

Field-ready connections

Optional 4 mm breakout modules make pole, pipe, static and isolated channel connections quick and familiar on site.

MEASUREMENT CONFIDENCE

PRECISION MEASUREMENT

See both the signal and the interference

Nexus combines precision analogue measurement, configurable input characteristics and AC/DC analysis so field teams can understand what is happening at the test point - not just record a number.



ANALOGUE PERFORMANCE

+/-20 V pk-pk

Channel input range - All analogue inputs

+/-1 mV DC

Accuracy - Over full range on all channels

32-bit

ADC resolution - Precision conversion

10 MΩ / 100 MΩ / 1 GΩ

Selectable impedance - Four analogue input channels

AC / DC insight for real field conditions

60 dB

Normal-mode noise rejection at 50 Hz & 60 Hz

Helps suppress mains-frequency interference.

>100 dB

Common-mode noise rejection

Supports clean measurements in electrically noisy environments.

TrueRMS / PeakRMS

Selectable AC calculation

Choose the AC calculation method that fits the survey requirement.

In cyclic synchronous programmes, ON and OFF measurements are sampled within the configured cycle. The datalogger can display DC and AC values for each enabled channel, with ON and OFF values separated for cyclic operation.

Location and timing confidence

GNSS POSITIONING

1-second updates

In Survey mode the GNSS engine remains powered and coordinates update every second, tagging measurements with accurate time and location data.

SYNCHRONISED TIMING

+/-2 ms / 24 h

GNSS timepulse provides the reference for initial synchronisation so multiple Nexus dataloggers or switching equipment can be aligned.

FIELD WORKFLOWS & CONNECTIVITY

ONE INSTRUMENT. FIVE OPERATING MODES.

From live CIPS surveying to long-duration unattended logging

Switch between purpose-built operating modes from the integrated menu system, with synchronous GNSS timing available wherever aligned measurements matter.

Mode	Sync	Best for	Data path	Timing / location
Survey	Yes	Live CIPS survey capture	Real-time to Surveyor app	GNSS coordinates updated every second
Static	Yes	Fixed-point CIPS logging	Internal filesystem	Position stored locally; GNSS powers down after sync/location capture
Coupon	No	Coupon current + reference voltage	Internal filesystem	Low-power RTC timing
Sync Coupon	Yes	Coupon logging with aligned timing	Internal filesystem	Synchronised across multiple Nexus units
DataLog	No	Generic 4-channel logging	Internal filesystem	Lowest-power long-duration mode; >4 months logging feature

CONNECTED WHERE IT COUNTS

- Wi-Fi access point in Survey mode for live connection to the Surveyor application.
- USB provides a wired Survey connection and access to internally logged files.
- External 4 mm breakout modules provide familiar, fast on-site test connections.
- Backpack breakout version includes a 5-way round pole-switch connector for compatibility with existing CIPS equipment.
- GNSS synchronisation accuracy: +/-2 ms over 24 hours.



LIVE SURVEYOR APP

Survey mode streams in real time to a Windows tablet or PC.

AUTOMATIC FILES

Internal logging creates mode folders and timestamped files for each new log.

USB FILE ACCESS

Logged data is available through the filesystem when connected by USB.

TECHNICAL SPECIFICATION

NEXUS DATALOGGER SPECIFICATIONS

Core instrument data at a glance

Key technical values below are taken from the Nexus Datalogger User Guide Rev. 1 (issued 23/05/25).

Specification	Nexus Datalogger
GNSS receiver	72 channel; GPS L1C/A, SBAS L1C/A, QZSS L1C/A / SAIF, GLONASS L1OF, BeiDou B1I, Galileo E1B/C
GNSS antenna	1.5742 MHz L1 active antenna; gold female RPSMA; cable up to 15 m (5 m standard); timing 5 ns/m
GNSS sensitivity	Cold start -148 dBm; hot start -157 dBm
Cycle time / timebase	1 to 30 s in 1 s steps
Off time	0.1 to 15 s in 0.1 s steps
Switching offset	0.1 to 15 s
Synchronisation	GPS timepulse reference for initial synchronisation; +/-2 ms over 24 h
Analogue input range	+/-20 V pk-pk on all inputs
Coupon input range	+/-5 V pk-pk
Analogue accuracy	+/-1 mV DC over full range on all channels
ADC resolution	32-bit
Channel filtering	Normal-mode noise: 60 dB at 50 / 60 Hz; common-mode noise: >100 dB
Input impedance	Analogue CH1-CH4 selectable: 10 MΩ, 100 MΩ or 1 GΩ; coupon input 10 MΩ voltage / 1 Ω current
AC calculation	TrueRMS or PeakRMS
Display / controls	Yellow 128 x 64 OLED, 6 user buttons, 4 status LEDs
Survey connectivity	Wi-Fi or USB to Windows PC / tablet running Surveyor application
Internal logging	Internal memory / filesystem; USB file access; timestamped files created per log
Low-power logging	DataLog feature: >4 months logging
Power	2 x dual 3.6 V Li-ion battery packs; internal USB charging; supplied external charger option
Protection	IP65 water and dust resistant
Operating temperature	-20 °C to +50 °C
Dimensions	120 mm (L) x 80 mm (W) x 60 mm (D)
Weight	0.5 kg
Construction	Rugged two-piece plastic enclosure; high-visibility black / blue housing

Note: The silver cellular antenna connection is reserved for future updates/functionality in the current user guide.

DESIGNED FOR FIELD DEPLOYMENT

COMPACT, RUGGED AND QUICK TO CONNECT

A small footprint without sacrificing field usability

Nexus is designed around practical corrosion-survey workflows - easy connections, clear status information and a compact housing that can fit into constrained test-post installations.



FIELD FORMAT

120 x 80 x 60 mm

Handheld enclosure

0.5 kg

Instrument weight

IP65

Water and dust resistant

M28-ready footprint

Compact form factor suitable for M28 post installations.

Built for real survey crews

Bright high-contrast OLED

The 128 x 64 yellow OLED and six-button keypad provide a clear local interface for dim field conditions, including status, timing and analogue pages.

Flexible GNSS antenna options

Internal and external GNSS antenna support in selected synchronous modes; the device automatically selects the stronger available signal where both are supported.

4 mm breakout modules

Bring CH1-CH4 and survey switch functions out to accessible test points for fast setup at test posts and field locations.

Long-duration logging

Non-synchronous modes use a low-power real-time clock, while DataLog supports deep low-power operation for unattended campaigns.

APPLICATIONS

- CIPS surveys
- CIPS test-post measurements
- Fixed-point static logging
- Coupon / sync-coupon monitoring
- General multi-channel voltage logging

R&R CORROSION LTD

Unit 21 Castle Street
Castlepark Industrial Estate
Ellon, Aberdeenshire AB41 9RF
Scotland, U.K.

+44 (0) 1358 729644
info@rrcorrosion.com
www.rrcorrosion.com

Specifications are subject to change. Refer to the current Nexus Datalogger User Guide for operating instructions, safety information and full mode-specific details.