

# UNIVERSAL DIGITAL INDICATOR

## DATASHEET

MODEL EDI-55



### OVERVIEW

The Encardio Rite model EDI-55 Digital Indicator is a microcontroller-based device designed to provide seamless integration with a wide range of sensors, including both Encardio Rite and third-party sensors. Perfect for applications in geotechnical, structural, and environmental monitoring, this device ensures accurate and reliable data collection in demanding environments. It combines advanced functionality with ease of use, making it an essential tool for professionals in the field.

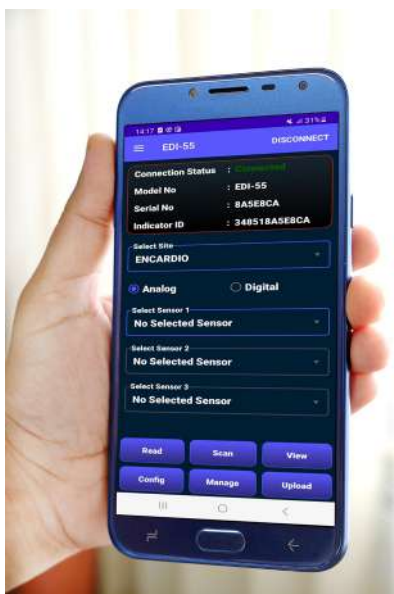
The EDI-55 uses an Android-based smartphone as the readout unit for easy data viewing and analysis. This integration allows for real-time access to sensor data directly on-site, presented in both graphical and tabular formats. This mobile interface simplifies data retrieval, configuration, and troubleshooting, allowing for immediate on-site verification and analysis of sensor performance. The measured readings can be viewed in raw format or directly in relevant engineering units using the appropriate polynomial or lookup table calibration methods, thus eliminating the need for manual calculations or external conversion tools.

Designed for efficiency, the EDI-55 can store up to 5,00,000 readings in its onboard non-volatile memory, each marked with precise timestamps. This makes it ideal for projects requiring long-term data logging and easy access to historical data. An internal 6V rechargeable sealed maintenance-free battery provides power to the indicator, ensuring reliable performance throughout extended field use without the need for frequent recharging. A separate universal mains adapter will be provided with the Digital Indicator to charge the internal battery from any AC mains supply.

Built to withstand harsh conditions, the EDI-55 is housed in a durable, splash-proof, impact-resistant enclosure that is IP65-rated, ensuring reliable operation even in extreme environmental conditions.

## FEATURES

- **Universal sensor compatibility:** Supports a wide range of sensors, including strain gage load cells, potentiometric, MEMS tilt sensors, thermistors, RTD (PT100), 4-20mA sensors, vibrating wire sensors.
- **Mobile app integration:** Uses an Android smartphone for real-time data visualization, configuration, and analysis.
- **Data logging:** Capable of storing up to 5,00,000 readings, with time-stamps for each entry.
- **Calibration storage:** Stores calibration coefficients for over 10,000 sensors for easy conversion to engineering units.
- **Long battery life:** Offers up to 100 hours of operation at 30-second scan interval using any of the three sensor types on a single charge.
- **Real-time monitoring:** Provides instant feedback via tables and graphs for immediate analysis and anomaly detection.
- **Durable housing:** Enclosed in splash-proof, impact-resistant plastic with weatherproof connectors.
- **Automatic data logging:** Functions as an automatic datalogger, storing readings either manually or through scheduled scans.
- **Data transfer:** Logged sensor data files can be uploaded to a remote server via the smartphone's internet connection.
- **Connectivity options:** Supports Bluetooth for easy data transfer and remote access.
- **User-friendly interface:** Simple controls with a status indicator for battery health, connectivity, and sensor monitoring.
- **Environmental protection:** IP65-rated, designed for rugged outdoor use in challenging environments.
- **Comprehensive software features:** The application provided with the indicator can display logged data as tables or various types of graphs, enabling thorough data analysis.





## SPECIFICATIONS

### Sensor compatibility

Sensor type	Excitation voltage	Output type	Accuracy	ADC resolution	Sensor output range
Strain gage load cell	5V DC	Wheatstone bridge (mV)	± 0.01% FS	24-bit	±30 mV
Potentiometric sensors	5V DC	Voltage output	± 0.01% FS	24-bit	0 - 2V
Voltage output sensors	External	Voltage output	± 0.01% FS	24-bit	±5V
Electrolytic tilt meter	12V DC	Voltage output	± 0.01% FS	24-bit	±2V
4-20mA sensors	24V DC	Current	± 0.01% FS	24-bit	0-25mA
MEMS tilt meter (Uniaxial/Bi-axial)	±12V DC	Dual voltage output	± 0.01% FS	24-bit	±5V per axis
VW (Vibrating wire) sensors	5V DC	Pulse output (Frequency)	± 0.01% of reading	24-bit	400-6000 Hz
Thermistors (Temperature measurement)	5V DC	Resistive	± 0.02% FS	24-bit	50 ohm – 110k ohm
RTD sensors (PT-100)	Current (Ratiometric)	Resistive	± 0.01% FS	15-bit	100 ohm at 0°C
Modbus (RS-485 Sensors)	12V (30mA max)	Modbus (RS-485)	Sensor dependent	N/A	Up to 32 sensors

### Hardware specifications

Parameter	Details		
Processor	32-bit ARM Microcontroller (bare microcontroller design)	Data format	CSV (Comma separated values) for easy export to spreadsheet software (e.g., Excel)
Memory	Minimum of 16 MB	Connectors	Circular rugged connectors for sensors and charging
Data storage capacity	Up to 5,00,000 data points (including time stamps)	Housing	Plastic enclosure, seahorse, Model: SE-120, IP-65 rated for dust and water protection
Battery	6V/4.5AH VRLA battery Standby: >1 year	Dimensions	220 mm (W) x 190 mm (H) x 100 mm (D)
Battery charging	On-board charging circuit Charging Time: 0-70% in 4 hours	Weight	2 Kg without battery
Data retrieval device	Mobile phone via bluetooth	Sensor cable	Multicore sensor cable compatible with suitable sensors.

## Operation mode

Mode	Details
Monitor mode	Real-time monitoring with configurable scan intervals
Datalogger mode	Configurable scan interval: 5 seconds to 168 hours
Sensor scan interval	Configurable in datalogger mode and real-time updates in monitor mode

## Environmental & Performance

Parameter	Details
Operating temperature range	-30°C to 70°C (up to -40°C to 80°C ideal)
Environmental protection	IP-65 rated for dust and water resistance
Data representation	Data shown in table or graph format via the mobile app



Typical schematic for multi-sensor data logging using EDI-55 data logger

\*All specifications are subject to change without prior notice

DATASHEET | 2502-25 R00



Dams



Mining



Tunnels



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Construction



Bridges



Landslides



Energy



Environmental Monitoring



Pipelines



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Smart Cities

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