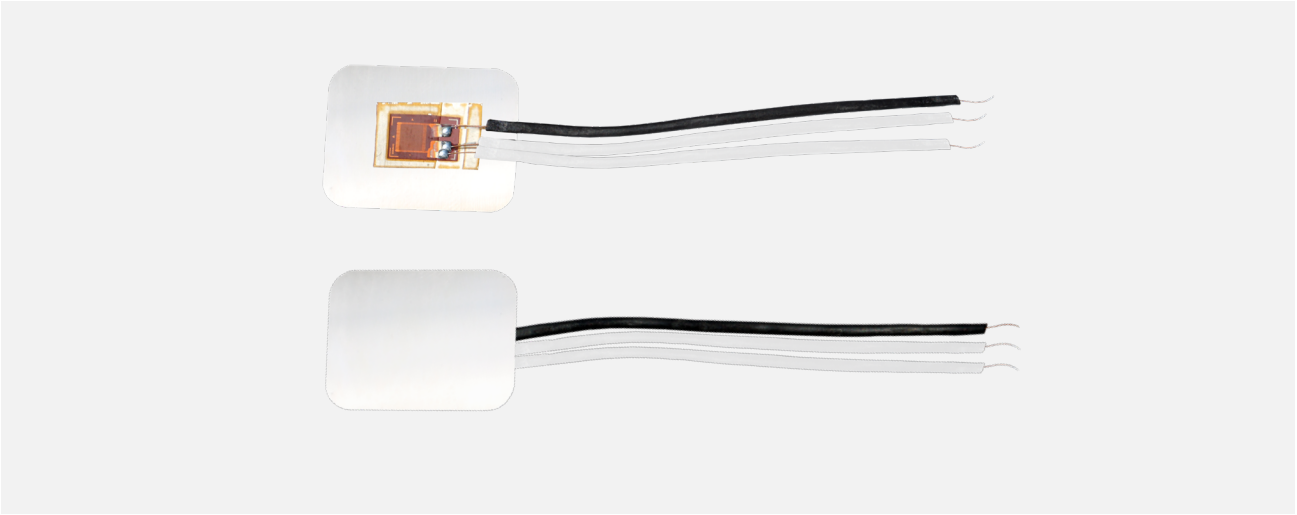
ENCARDIO RITE
METASENSING FOR MEGA STRUCTURES

WELDABLE STRAIN GAGE
FOR DYNAMIC STRESS/STRAIN MONITORING

MODEL EDS-40D

DATASHEET



OVERVIEW

The EDS-40D Weldable Strain Gage is a precision sensor designed for dynamic stress and strain monitoring in structural applications. It features a high-frequency response, making it particularly suitable for environments where rapid stress changes occur. The strain gage is installed on structural steel membranes through spot welding, ensuring a robust bond between the sensor and the monitored surface. This installation method results in a bridge signal output (mV/V) that is directly proportional to the stress on the structure.

In applications where stress changes occur rapidly and dynamic monitoring is essential, the EDS-40D strain gage is preferred over vibrating wire strain gages. Its waterproof installation ensures long-term reliability, even in harsh environments such as bridge applications. The strain gage consists of a foil strain gage bonded to a thin carrier metal plate using high-performance adhesive. It is supplied with pre-attached three lead wires, facilitating easy integration into monitoring systems.

The installation process involves spot welding the thin carrier metal plate to the structure's surface using a series of spot welds. This method creates a strong bond between the strain gage and the monitored surface, resulting in precise and reliable data. After installation, the strain gage is covered with a suitable epoxy (RTV compound no. 744), making the installation completely waterproof and suitable for long-term use in various environmental conditions.

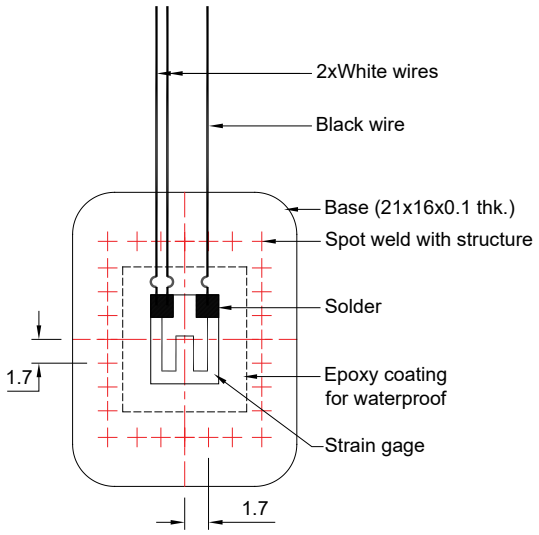
The EDS-40D dynamic strain gage is calibrated along with the carrier plate in the laboratory, ensuring accurate and consistent measurements. This calibration process guarantees that the strain gage provides reliable data for structural health monitoring applications.

FEATURES

- **High-frequency response:** Provides accurate measurements for dynamic stress and strain monitoring.
- **Waterproof installation:** Ensures durability and reliable performance in adverse weather conditions.
- **Maintenance-free** Operation: Designed for unattended operation, reducing the need for regular maintenance.
- **Precision measurement:** Offers high accuracy in stress and strain detection, critical for structural health monitoring.
- **Versatile datalogging:** The sensor is compatible with various data loggers, enabling data acquisition at desired frequencies and ensuring reliable and efficient data transmission. Encardio-Rite offers a range of NexaWave data loggers equipped with GSM/GPRS or RF communication capabilities. BDI STS terminal nodes can be used for dynamic data monitoring at sample rates up to 1000 Hz per channel.
- **Infrastructure data intelligence platform:** Proqio software facilitates data processing, analysis, and real-time visualization and generates instant alarms for critical events to all stakeholders.

SPECIFICATIONS

Weldable strain gage	
Sensor Type	Weldable foil type
Sensor range	±3500 µstrain
Resolution	1 µstrain
Accuracy	0.1% fs
Sensor length	21 mm
Gage factor	2.0
Gage resistance	350 Ohms
Resistance tolerance	±0.15%
Output signal	Analog
Operating temp. range	-20 to 175°C
Storage temp. range	-10 to 60°C
Water ingress	IP67
Fatigue life	105 cycles at 2500 µstrain
100 - 200 m (330-650 ft) cable reel	380 mm (~ 15 in) diameter (flange)



*All specifications are subject to change without prior notice

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