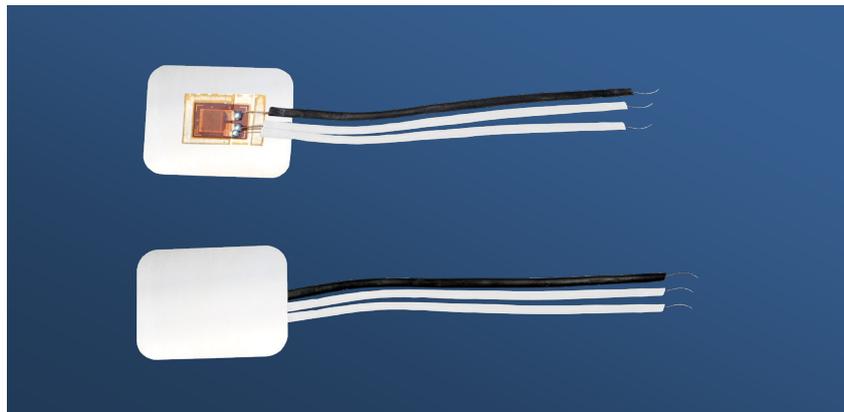

DATASHEET

WELDABLE STRAIN GAGE

FOR DYNAMIC STRESS/STRAIN MONITORING

MODEL EDS-40D



OVERVIEW

Encardio-rite offers model EDS-40D weldable strain gage, a precision strain gage with high frequency response, suitable for dynamic strain/stress monitoring. It is commonly called dynamic strain gage. Dynamic strain gages play a vital role in measuring structural health monitoring. They are specially designed for installation on the structural steel membrane, on which the stress/strain needs to be monitored, by spot welding. The strain gage generates a bridge signal output (mV/V) proportional to the stress on the structure.

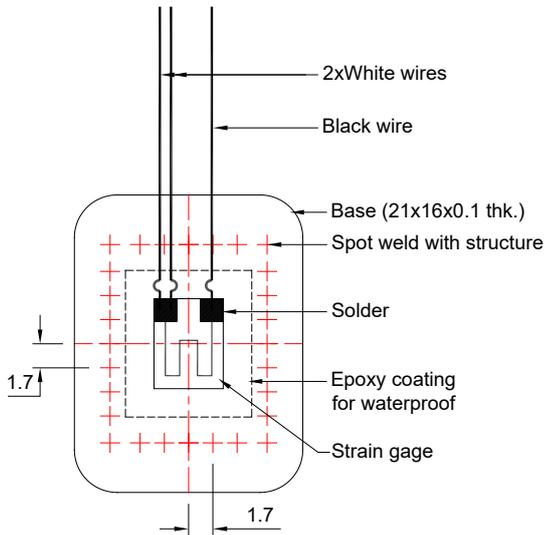
Model EDS-40D weldable strain gage is a strain gage of choice over vibrating wire strain gages in applications where stress changes very fast and dynamic monitoring is required. With the provision of waterproof installation, the dynamic strain gage are most suitable ones for long term reliability, when installed in hostile environments such as in bridge applications.

FEATURES

- Precision sensors with high frequency response
- Waterproof installation to withstand harsh weather conditions
- Maintenance free, suitable for unattended operation
- Cost effective solution for dynamic monitoring of strains/stresses.
- Simple user-friendly software
- Range of communication options for remote operation.
- Mains or solar power option with rechargeable battery backup.

DYNAMIC STRAIN GAGE

Model EDS-40D dynamic strain gage consists with a foil strain gage bonded on a thin carrier metal plate/shim in laboratory with high performance adhesive. It is supplied with pre-attached three lead wire.



It will be difficult or even impossible to bond the foil strain gage on the monitoring surface correctly and precisely using epoxy. The strain gage may not come in close contact with the surface. EDS-40D dynamic strain gage with the thin carrier metal plate is a good solution. The thin carrier metal plate can be spot welded to the structure surface using a series of spot weld/stiches around carrier metal, with spot welding machine. This creates a good bond between the strain gage and surface to be monitored, resulting in precise and reliable data. The installed strain gage is covered with suitable epoxy (RTV compound no. 744), making the installation completely waterproof.

EDS-40D dynamic strain gage is calibrated along with the carrier plate in the laboratory.

DATALOGGER

Model ESDL-30 datalogger

Encardio-rite offers model ESDL-30 advanced digital datalogger with multiple communication module options to suit different site requirements. ESDL-30 is a compact datalogger suitable for digital sensors with SDI-12 serial interface or Modbus (RS-485) output. The datalogger has 3 channels and can connect upto 160 sensors.



ESDL-30 datalogger

The datalogger has the facility to collect and store recorded data and transfer it to a central remote server at desired intervals over a wired or cellular telemetry link.

The data management software at the central server processes and analyses the data. In case any value breaches programmed alert level, the system sends an alarm to the stakeholders via SMS or email.

Model EDAS-101 datalogger

EDAS-101 datalogger option is available in case a wide variety of sensors having different outputs are required to be connected to same datalogger. Different types of control modules are available in EDAS-101 datalogger to suit various site requirements.

For more details on above dataloggers, please visit our website <https://www.encardio.com/geotechnical-instruments/geotechnical-data-collection-and-transmission>.

Data transmission

Telemetry through GSM/GPRS modem

In an area covered by any GSM/GPRS service provider network, the data from the dataloggers (EDAS-101, ESDL-30 and Gateway) can be transmitted to a remote server at a central location. The user will need a data SIM card for each GSM/GPRS modem. In case telemetry is not required, the GSM/GPRS modem is not provided.

Data transfer through Ethernet

Data from EDAS-101, ESDL-30 and Gateway can be transmitted to a local central server using Ethernet via signal cable or optical fiber cable

Readout/data retrieval using laptop, PC, mobile

Logged data from EDAS-101 and ESDL-30 dataloggers can be directly downloaded to a laptop using a RS-232 interface from. From Gateway, data can be downloaded using a USB port.

Power supply options

The ESDL-30 datalogger has different options for power supply like batteries, mains and solar power supply.

- 2 x D size 3.6 V/19 Ah Lithium cells, or
- 2 x D size 1.5 V Alkaline high power cells, or
- 12V SMF battery chargeable from AC mains or solar panel

Depending on the project requirement, installation location and other sensors being used at the project, choice of datalogger, communication network and power supply can be made. The dataloggers are housed in weatherproof enclosures making them suitable for harsh environment.



DATABASE MANAGEMENT SYSTEM

Encardio-rite offers public cloud based web data monitoring services to its customers. The advanced data management system can collect, store and process large amount of data from site. The real time data is presented in meaningful data, 24x7, with automated alarms for quick interpretation and evaluation.

The early warnings help in taking timely corrective actions to prevent damages/delays and in reducing operational costs. The data can be accessed by stakeholders from anywhere in the world, over laptop, PC, tablet or a smart phone.

SPECIFICATIONS

Weldable strain gage

Sensor Type	Weldable foil type
Sensor range	±3000 microstrain
Sensor length	21 mm
Gage factor	2.0
Gage resistance	350 Ohms
Resistance tolerance	±0.15%
Operating temp. range	-20 to 175°C

Datalogger

Input	Sensor with digital output
Scan/upload interval	5 seconds to 168 hours
Memory capacity	Flash Memory (64-Mbit); 2 Million data points
Communication port	RS-232 (Standard) 115 kbps
Temp. measurement range	-20 to +70°C with 0.1°C resolution
Temperature limit	-30 to 70°C
Humidity	100%
Antenna (in telemetry option)	Built-in or separately mounted antenna
Housing	Corrosion resistant weather proof enclosure