

EM Technology



Application

The P-500-S is designed to measure force and stress through an EM sensor. It magnetically excites a steel sample through a primary coil inside an EM sensor and picks up the stress information in the sample from its sensing coil. It is a stand-alone measuring unit. The unit can be controlled through a standard interface. It can be used for:

- All DynaForce sensor, and EM sensor
- In-door application
- In field application
- Long time monitoring.
- Calibration



Description

The Model P500-S is a stand-alone and easy-to-use instrument for the type of EM sensors from IIS for 12.7mm (0.5") strand to 250mm cable bundle. The unit can take the temperature reading from the temperature sensor inside an EM sensor and compensate for the temperature effect of the steel. It is housed in a cast aluminum enclosure. A rugged, weather-resistant NEMA4X enclosure designed for use in field environments is available. The unit can store 16 types, total 1024 EM sensors parameters. A user friendly Windows® based software allows easy programming of sensor channels, selection of sensor types, setting of calibrations, taking measurement, etc.

FEATURES

- **Single channel stand alone EM sensor reading unit for stress and force measurement**
- **Applicable to all EM sensors**
- **Store 16 types, total 1024 sensors' operating parameter**
- **Auto-temperature compensation**
- **Remote accessible**
- **WatchDog**
- **Graphic LCD display with keypad**
- **Instant error message help for trouble shooting**

Technical Data

Number of Channel (s)	1
Measurement Range	1 to 95% Yielding Stress
Accuracy	0.5% F.S. (Dependent upon the size of an EM sensor)
Charging time	<20 second (Max)
Sample Rate	0.05Hz
Operating Temperature Range	-20°C to +80°C
Maximum Discharge Voltage	450 V
Interface	RS232C/RS485
LCD Display	Graphic LCD 128 X 64 Pixels
Protection	Lightning protector, Power Surge protector
Power Supply	AC 90-246, 60/50 Hz, 150W
Cover	NEMA4X/IP68 Enclosure
Dimensions: W x L x H	183.5x111x300mm
Weight	Approx. 5kg

Application

The P-500-Q, a fast-charge single channel unit, is designed to excite an EM sensor and collect the signal from its sensing coil with a high sampling rate. This feature allows an EM sensor to monitor the force or stress condition of its steel elements while the structural element is experiencing extreme events such as Typhoo, earthquake. It may be used for:

- In-door application
- In field application
- Long time monitoring.
- Calibration



Description

The Model P-500-Q, a fast-charge single channel unit, is a stand-alone and easy-to-use instrument for the type of EM sensors from IIS for 12.7mm (0.5") strand to 250mm cable bundle. The unit can take the temperature reading from the temperature sensor inside an EM sensor and compensate for the temperature effect of the steel. It is housed in a cast aluminum enclosure. A rugged, weather-resistant Nema4X enclosure designed for use in field environments is available. The unit can store 16 types, total 1024 EM sensors parameters. User friendly Windows® based software allows easy programming of sensor channels, selection of sensor types, setting of calibrations, taking measurement, etc.

FEATURES

- Stand alone EM sensor reading unit for stress and force measurement
- 0.1Hz Sample rate frequency
- Applicable to all EM sensors
- Store 16 types, total 1024 sensors' operating parameter
- Auto-temperature compensation
- Remote accessible
- WatchDog
- Graphic LCD display with keypad
- Instant error message help for trouble shooting

Technical Data

Number of Channel (s)	1
Measurement Range	1 to 95% Yielding Stress
Accuracy	0.5% F.S. (Dependent upon the size of an EM sensor)
Operating Temperature Range	-20°C to +80°C
Maximum Discharge Voltage	450 V
Charging time	7 second (Max)
Sample Rate	higher than 0.1Hz
Interface	RS485/RS232C
LCD Display	Graphic LCD 128 X 64 Pixels
Protection	Lightning protector, Power Surge protector
Power Supply	AC 90-246, 60/50 Hz, 150W
Cover	NEMA4X/IP68 Enclosure (Option)
Dimensions: W x L x H	183.5x111x300mm

Application

The P-500-MUTP-16-I is designed to extend a single channel unit into 16 channels. Therefore, through this multiplexer, a single channel unit can take measurement from as many as 16 sensors.

P-500-MUTP-16-I is designed for Powerstress P-500X.



Technical Data

Number of Channels	16
Operating Temperature Range	-20°C to +80°C
Dimensions: W x L x H	230.5x170x55mm
Weight	Approx. 1kg

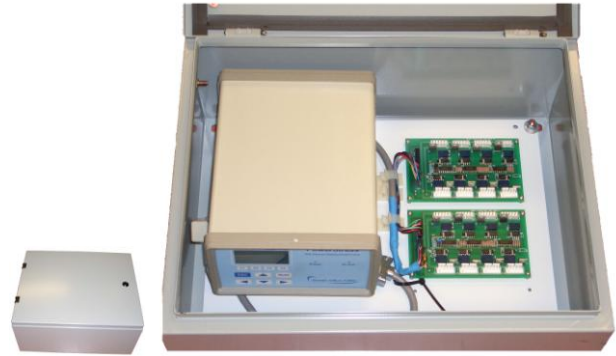
Application

The P-MH500 is designed to measure forces and stresses through EM sensors. It serially collects the data from EM sensors connected to it one after another. It magnetically excites a steel sample through a primary coil inside an EM sensor and picks up the stress information in it from its sensing coil. It is a stand-alone measuring unit. The unit can be controlled through a RS232 interface. It can be used for:

- In-door application
- In field application
- Long time monitoring.
- Calibration

Description

The Model PS-MH500 is a stand-alone and easy-to-use instrument for the type of EM sensors from IIS for 12.7mm (0.5") strand to 250mm cable bundle. The unit can take the temperature reading from the temperature sensor inside an EM sensor and compensate for the temperature effect of the steel. It is housed in a cast aluminum enclosure. A rugged, weather-resistant Nema4X enclosure designed for use in field environments is available. The unit can store 16 types, total 1024 EM sensors parameters. An user friendly Windows® based software allows easy programming of sensor channels, selection of sensor types, setting of calibrations, taking measurement, etc. With option MC-I-8 and MC-I-16, it can be configured as a 8 or a 16 channel unit.



FEATURES

- Multi-channel Stand alone EM sensor reading unit for stress and force measurement
- Applicable to all EM sensors
- Store 16 types, total 1024 sensors' operating parameter
- Auto-temperature compensation
- Remote accessible
- WatchDog
- Graphic LCD display with keypad
- Instant error message help for trouble shooting

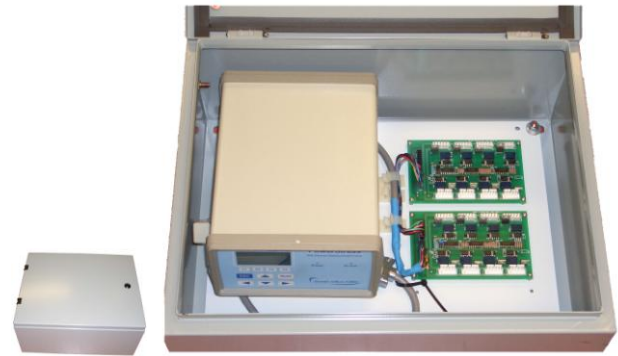
Technical Data

Number of Channels	8, 16
Measurement Range	1 to 95% Yielding Stress
Accuracy	0.5% F.S. (Dependent upon the size of an EM sensor)
Charging time	20 second (Max)
Operating Temperature Range	-20°C to +80°C
Maximum Discharge Voltage	450 V
Interface	RS485
LCD Display	Graphic LCD 128 X 64 Pixels
Protection	Lightning protector, Power Surge protector
Power Supply	AC 90-246, 60/50 Hz, 150W
Cover	NEMA4X/IP66 Enclosure
Dimensions: W x L x H	183.5x111x300mm
Weight	Approx. 15kg

Application

The P-MQ500 is designed to measure forces and stresses through EM sensors. It serially collects the data from EM sensors connected to it one after another. It magnetically excites a steel sample through a primary coil inside an EM sensor and picks up the stress information in it from its sensing coil. It is a stand-alone measuring unit. The unit can be controlled through a RS232 interface. It can be used for:

- In-door application
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- Calibration



Description

The Model PS-MQ500 is a stand-alone and easy-to-use instrument for the type of EM sensors from IIS for 12.7mm (0.5") strand to 250mm cable bundle. The unit can take the temperature reading from the temperature sensor inside an EM sensor and compensate for the temperature effect of the steel. It is housed in a cast aluminum enclosure. A rugged, weather-resistant Nema4X enclosure designed for use in field environments is available. The unit can store 16 types, total 1024 EM sensors parameters. An user friendly Windows® based software allows easy programming of sensor channels, selection of sensor types, setting of calibrations, taking measurement, etc. With option MC-I-8 and MC-I-16, it can be configured as a 8 or a 16 channel unit.

FEATURES

- Multi-channel Stand alone EM sensor reading unit for stress and force measurement
- 0.1Hz Sample rate frequency
- Applicable to all EM sensors
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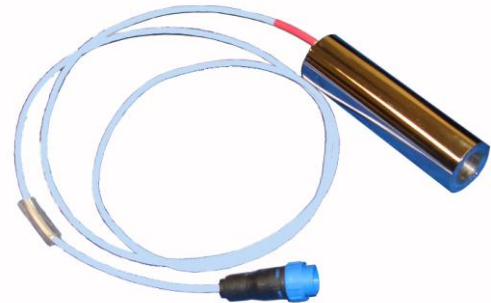
Technical Data

Number of Channels	8, 16
Measurement Range	1 to 95% Yielding Stress
Accuracy	0.5% F.S. (Dependent upon the size of an EM sensor)
Charging time	7 second (Max)
Operating Temperature Range	-20°C to +80°C
Maximum Discharge Voltage	450 V
Interface	RS485
LCD Display	Graphic LCD 128 X 64 Pixels
Protection	Lightning protector, Power Surge protector
Power Supply	AC 90-246, 60/50 Hz, 150W
Cover	NEMA4X/IP66 Enclosure
Dimensions: W x L x H	183.5x111x300mm
Weight	Approx. 15kg

Application

The EM-I-XXX is designed to monitor the force in steel strand bundle for heavy civil industry. It measures stress or force in a steel structural member in a direct and non-contact way. It may be used for:

- Cable stayed bridge,
- Steel Hanger
- PC Tendon
- Earth Anchor
- Nuclear power plant



Description

The EM sensor, EM-I-XXX, is based on the magnetoelastic phenomenon of ferromagnetic material discovered in 1862., that is the magnetic properties of ferromagnetic material are dependent on applied mechanical stress, such as pull, bend and torsion. EM sensor has been approved to be an effective means of non-contact and direct determination of the stress (i.e. force) in steel components. The cover of the sensor is carbon steel with chrome coating. Polyurethane fills the inside of the sensor. All circuit and connection are protected using epoxy sealant

FEATURES

- Non-contact force measurement
- High reliability and accuracy,
- Robust, cannot be overloaded
- Resistant against dust, water, pressurized water, chemicals, vibrations, radioactive radiation
- Carbon steel with chrome coating
- Less influence from surrounding ferro material
- Embedded temperature sensor
- Polyurethane filling
- Easy to install, Mounting slots provided

Technical Data

Measurement Range	Absolute stress 1770 MPa
Temperature sensor	3000 ohm @25°C
Temperature accuracy	0.5°C , in the range of -20°C to +80°C
Operating Temperature Range	-20°C to +80°C
Primary Coil Resistance	25 ohm to 30 ohm
Secondary Coil Resistance	40 ohm to 100 ohm
Standard lead Length	2m
Maximum lend Length	250m
Extension Cord	AWG 16 to 14, 6 contacts, twisted
Dimensions	ID: 18 to 50mm
Weight	Approx. 0.5 to 10kg

Application

The EM-II-XXX is designed to monitor the force in steel strand bundle for heavy civil industry. It measures stress or force in a steel structural member in a direct and non-contact way. It may be used for:

- Cable stayed bridge,
- Steel Hanger
- PC Tendon
- Earth Anchor
- Nuclear power plant



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The EM sensor, EM-II-XXX, is based on the magnetoelastic phenomenon of ferromagnetic material discovered in 1862., that is the magnetic properties of ferromagnetic material are dependent on applied mechanical stress, such as pull, bend and torsion. EM sensor has been approved to be an effective means of non-contact and direct determination of the stress (i.e. force) in steel components. The cover of the sensor is carbon steel with chrome coating. Polyurethane fills the inside of the sensor. All circuit and connection are protected using epoxy sealant

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- Carbon steel with chrome coating
- Less influence from surrounding ferro material
- Embedded temperature sensor
- Polyurethane filling
- Easy to install, Mounting slots provided

Technical Data

Measurement Range	Absolute stress 1770 MPa
Temperature sensor	3000 ohm @25°C
Temperature accuracy	0.5°C , in the range of -20°C to +80°C
Operating Temperature Range	-20°C to +80°C
Primary Coil Resistance	20 ohm to 40 ohm
Secondary Coil Resistance	5 ohm to 50 ohm
Standard lead Length	2m
Maximum lend Length	250m
Extension Cord	AWG 16 to 14, 6 contacts, twisted
Dimensions	ID: 50 to 200mm
Weight	Approx. 0.5 to 10kg