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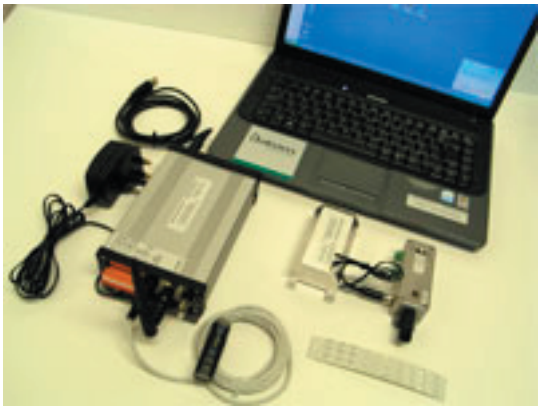
Series 430 Marine Trials Kit



DESCRIPTION

The Datum Electronics Series 430 Marine Trials Kit is a temporary fit system designed to measure the on-shaft torque for trials applications on rotating shafts between 160mm to 1100mm in diameter. The system is designed for marine shaft trials, but it has many other uses for large shaft applications including prop shafts or driveshaft.

Its basic operation involves the measurement of on-shaft torque, however the device can take up to 2 channels of data, plus speed if required. Other useful measurement examples include, torque, thrust, bending and load.

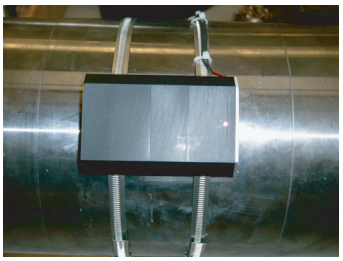
Measuring Torque on a shaft can provide an array statistical data providing useful information on shaft performance. The Datum Electronics Marine Trials Kit does more than just measure Torque; it can also be used to verify power outputs from engines and motors. The following data can also be measured and analysed:

Power Transmission
Torque Trials
Vibration and Torsional Acceleration
Power Transients
Peak Torque Levels
Power Delivery
Shaft Vibration

THE SHAFT

The first basic element of the system requires a shaft between 160 - 1100mm in diameter which is accessible. The trials application uses strain gauges on the shaft which can determine the shaft torque. Options also include a speed sensor, which when combined with the torque data, can also provide you with power of the shaft. One of the first and most important aspects in the installation of the Series 430 Marine Trials Kit is the on shaft application of the strain gauges. The strain gauges must be applied in the correct manner, the importance of attention to detail and precision adherence to instructions cannot be over stressed. The following is a guide for an effective strain gauged shaft; these are basic guidelines and act as a guide only.

- Clean the Shaft — Cleaning Kit Provided
- Mount On-Shaft Transmitter Electronics on shaft
- Test Transmitter
- Mount Speed Sensor
- Test Speed Sensor
- Bond Gauges to shaft
- Apply a base coating to gauges
- Connect Gauge wires to Transmitter
- Test connections and test transmitter data
- Calibrate System
- Set Zero Value
- Enter Calibration Data
- System ready to run



SYSTEM ADVANTAGES

The Datum Series 430 Marine Trials Kit has a number of advantages over other trials applications.

The system is simple and easy to install logging directly to a PC or laptop with the aid of its installation software Disk. Other advantages include:

- Measures Shaft Power, Shaft Torque & Shaft Speed as a basic function
- Easy to install with a step-by-step guide
- Logs, records and displays 'real time' data
- Portable & lightweight design
- User Friendly software
- Compatible with 2 data channels and shaft speed

The main advantage of the Series 430 Marine Trials Kit is how easy the instrumentation is to install, set up, test and operate.
The trials kit consists of three main component elements making this trials application system as easy and simple and possible.

ON-SHAFT ELECTRONICS

The On-shaft electronics consist of a transmitter module and battery supply. Both modules are held to the shaft with a strapping kit. Battery powered with PP3 batteries and a completely self-contained shaft unit that uses digital short range telemetry technology to transmit data to a receiver. The receiver has a transmission range of up to 30 metres and can sample raw data at up to 100 samples per second. The battery lasts for up to 10 hours and is suitable for test applications; batteries can either be replaced or re-charged as and when necessary. The trials kit has a system accuracy of 0.2% depending upon the size and diameter of the shaft. The level of torque being measured will be dependant upon the size of the shaft. The digital data telemetry system will give digital data output (RS232) torque only data as a basic configuration. The series 430 torque transducer will be used with full bridge strain gauges supplying torque signal to the transducer.

The transducer incorporates a separate transmitter and receiver module with a separate battery pack giving approximately 10 hours operational time. These can either be replaced or recharged as necessary and will be supplied with a 220VAC adapter for re-charging.

The torque measuring system will be fully operational at a temperature between -20C to 50C. The transducer will be despatched with full calibration certificate for both the equipment and sensors. All Datum Electronics products include one years warranty as standard, and will include all user handbooks in English. We will need accurate shaft specifications in order to calculate and verify the electronics ensuring that we give accurate data.

TORQUELOG DATA ACQUISITION SOFTWARE

Datum Electronics TorqueLog software is an easy and convenient way of collecting data. Compatible with Windows 2000 and XP, TorqueLog software provides a direct readout of Torque, Speed and Power on a Laptop or PC with additional facilities to read peak torque, log data to Excel and provide data for other applications. The Series 430 Torque Trials System will provide torque only data. With the separate speed information, and the torque data, we will be able to provide power output also.

The enhanced features of this software include:

- Calibrated Display of Torque in Nm or lbft
- Display of Speed in RPM
- Display of Power in kW or HP
- Peak Torque, Speed and Power Capture Facility
- Data logging of Torque (or Torque Speed and Power)

The Laptop will be connected through to the Series 430 Torque Trials Kit via either a Serial Port or USB connection, allowing you to have the data that you require at your fingertips, allowing you to process the information which can be printed, displayed graphically or quickly saved as a Microsoft Excel spreadsheet.

The TorqueLog software is easy to use and easy to install, and provides the user with data access at the touch of a button. The system will require a Laptop with 2 off serial ports and a 15VDC or 24VDC power supply.

RECEIVER UNIT

The Receiver Unit receives the data transmitted from the on-shaft transmitter module. The data is then converted and sent to a PC or laptop which will display and record the on-shaft data which will contain the torque data from the shaft and the speed data from the mounted speed sensor. Our TorqueLog software utilises the torque and speed data providing power output from the shaft. PC or laptop is not supplied.