Series 430 Torque Trials Kit 2008

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Series 430 Torque Trials Kit

DESCRIPTION

The Datum Electronics Marine Trials Kit will supply all equipment necessary for assembly of a shaft torque (power) trials kit which can be utilised for industrial and marine ship shafts between 150mm - 1100mm as standard. An additional adaptor is also available for smaller shafts starting from 30mm in diameter.

ACCURATE POWER & TORQUE MEASUREMENT

Datum Electronics Series 430 Marine Torque Trials Kit has been designed to measure the torque, power and speed of shaft(s). For example, the Trials Kit can provide an accurate tool to assess and monitor propeller shafts by using strain gauge technology to provide a highly accurate non-contact method ofmeasuring shaft torque, power and speed.

STANDARD BATTERY

The standard built-in battery can last between and 20-24 hours. The batteries are charged in-situ, by plugging in the inclusive charger (It is necessary to stop the shaft rotating to achieve this whilst the battery charges).

UP TO 50 HOURS CONTINUOUS USE ~ Long Lasting Battery

Another feature available is to purchase the optional off shaft battery holder and charger unit. This enables batteries to either be replaced or re-charged as and when necessary. Additional batteries are also available.

This reduces the time the shaft is stopped so the battery can be swapped quickly.

An additional optional feature may be purchased to extend the operational time to approx. 50 hours continuous use with a separate charger and an additional On-shaft battery unit and two spare batteries.

SYSTEM ADVANTAGES

The Datum Series 430 Shaft Power & Torque 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 TorqueLog software. Other advantages include:

- Measurement 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
- Provides two data channels (Torque & Thrust) and shaft speed with an external sensor.

THE SYSTEM

The Datum Electronics Torque Trails Kit is simple and easy to install. The System provides a display of the torque on the shaft. The torque signal is derived from strain gauges installed on to the shafts. The signals are transmitted from the shaft rotor to the shaft stator unit providing a display of torque.

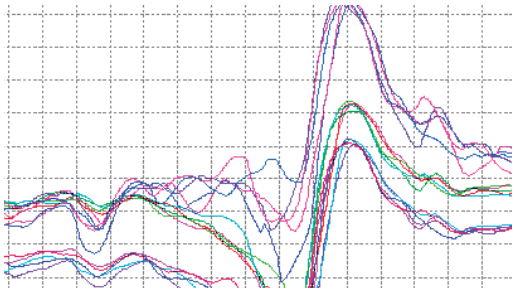
Measuring Torque on a shaft can provide an array statistical data providing useful information on shaft performance. The Datum Electronics Torque Trials Kit does more than just measure Torque; it can also be used to verify power outputs from engines and motors. The following data can also be measured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

POWER TRANSMISSION
TORQUE TRIALS
TORSIONAL ACCELERATION
POWER TRANSIENTS
PEAK TORQUE LEVELS
POWER DELIVERY
SHAFT VIBRATION

DATA ANALYSIS

The Datum Electronics Torque Trials Kit accurately measures the on-shaft torque (kNm). The data is transmitted from the shaft in a digital format that can be processed via the output options available.

The Trials Kit, transmits digital data (RS232) which can be easily monitored, analysed and recorded. Because the data is digital, it is noise immune and easy to process with a USB or serial interface or if required anlaogue outputs are also available. This provides a clear clean signal of Torque with a system reliability of 0.1%



DATA ACQUISITION SOFTWARE

TORQUE LOG 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 as standard and can be re-configured for other data signals as required with additional facilities to read peak torque, log data to Excel and provide data for other applications.

The enhanced features of this software include:

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

The TorqueLog software is easy to use and easy to install, and provides the user with data access at the touch of a button.

INSTALLATION OF TRIALS KIT

One of the advantages 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.

THE SHAFT

The first basic element of the system requires a shaft between 150 - 1100mm (minimum of 30mm with adaptor) in diameter which is accessible. The trials application uses strain gauges bonded to the shaft. One of the first and most important aspects in the installation of the Series 430 Trials Kit is the on shaft application of the strain gauges. Instructions are provided in the manual supplied.

ON-SHAFT ELECTRONICS TRANSMITTER

The On-shaft electronics consist of a transmitter module and battery supply. Both modules are held to the shaft with a supplied strapping kit. The data signal is transmitted off shaft to Receiver Module.

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.

Series 430 Torque Trials Kit

SERIES 430 TRIALS KIT

TRANSMITTER

Battery powered with L-ion type batteries and a completely self-contained shaft unit that uses digital short-range telemetry technology to transmit data to a receiver.

RECEIVER

Outputs Digital Data (RS232) via USB connection for logging to a laptop, notepad or PC. The receiver is supplied with a mains power adaptor The receiver has a transmission range of up to 30 metres and can sample raw data at up to 100 samples per second.

BATTERY UNIT

Standard battery lasts between 20 - 24 hours, with additional facility for up to 50 hours battery life if required.

TORQUELOG

Data acquisition software for PC/laptop for reading and logging torque, power and speed data from the shaft(s).

STRAIN GAUGE INSTALLATION KIT

See below for full details, the kit includes all equipment necessary for shaft installation direct to the shaft.

STRAIN GAUGE INSTALLATION KIT

Full bridge strain gauge for the on-shaft installation.
All gauges are full bridge gauges and they will be pre-wired for easy installation.

All bonding adhesives and cleaning materials required for treatment of the shaft before applying gauges including cleaning compound.

Strain Gauge Installation Manual, which will provide a step-by-step guide on full installation of the Kit.

Environmental covering material for the gauged area.

Banding Kit, for On-Shaft Electronics Module. We will also supply "banding kit", which will strap the Electronics/ battery power supply to the shaft.

All of the above is supplied as standard, additional quantities can be supplied for additional shafts.

> "Simple and easy to install logging directly to a PC or laptop with the aid of its installation software disk"

ADDITIONAL INFORMATION

DIGITAL DATA OUTPUT

The digital data telemetry system will give digital data as standard. Additional outputs are also available including analogue (4-20mA or 0-10VDC).

CALIBRATION

Full calibration can be achieved providing the customer is able to supply accurate information regarding Shaft Dimensions, Shaft Material specifications, i.e. Poisson's Ratio and Young's Modulus.(Value of Torque is calculated from the "Strain signal" from the shaft in mV/V X Shaft data X a Constant value.) A simple spreadsheet utility is provided with the software CD

WARRANTY

All Datum Electronics products include one year's warranty against faulty components and manufacturing as standard, and will include all user handbooks in English.

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