

## Series 420 Universal Marine Torsionmeter System

Needles Building, Trinity Wharf, East Cowes, Isle of Wight, PO32 6RF

T: +44 (0) 1983 28 28 34 F: +44 (0) 1983 28 28 35 E: web@datum-electronics.co.uk W: datum-electronics.co.uk

## Series 420 Universal Marine Torsionmeter System

### DESCRIPTION

The Series DMTM-SS Single Shaft Marine Torsionmeter System Kit provides a permanent, robust, simple to install and accurate tool to access and monitor the performance and efficiency of the ships transmission system(s).

It will accurately measure the on-shaft torque, the speed of the shaft(s) rotation and the power that is going through the shaft(s).

This product is supported by a growing Network of Worldwide authorised distributors and installers, visit our website for full details.

Simple to install by one of our trained representatives Worldwide  
The shaft assembly comprises:

- Strain gauge installation
- Signal transmitter
- Signal condition unit
- Power Coil

### SPECIFICATION

Utilising the vessels existing shaft(s) this becomes the basis for the marine torsionmeter. This limits the impact on the existing drivetrain, and there is no requirement for special couplings or spacers.

The first basic element of the system requires a shaft(s) between 200mm - 900mm in diameter which is accessible. This will cover most Marine Shafts and is also suitable for non-marine applications.

The maximum Torque and Power rating is scaleable and dependant on ships system. The maximum shaft speed is 1500rpm.

This product is suitable for Commercial shipping and Industrial applications.

All popular control outputs are available with this system including:

- RS485 to a ship PC or a bridge indicator.
- Analogue Output for 4-20mA, 0-10VDC,
- Digital Output via RS232 and USB (local logging).

Available for purchase from the UK, or from our reseller's world-wide, with short lead times, in some cases this can be available off the shelf.

The Universal Marine Torsionmeter System is has a high grade specification with a permanently installed analysis system. Flexible to each requirement with adaptable settings including input to Ship Management System, this is a truly robust solution for measuring torque on a large industrial/ ship shaft.

### Shaft Power Measurement Ship Efficiency (Programmes) Equipment Protection



**“ FLEXIBLE KIT FORMAT  
for all shafts between  
200-900mm diameter ”**

Non-size dependant, no unwanted bits and lower cost as there is no excess premium for large shafts.

The outputted data signals can be transmitted to:

Local Display Control Unit to provide a local display of torque, speed and power for the shaft(s) along with other tools such as recording and transmission of Shaft Running Hours and diagnostics, and then onwards to our optional remote display(s)

Torque Log software Marine upgrade version for simple PC platforms, providing data on Torque, Speed and Power, with various diagnostics and analysis tools. (Standard supplied option)

Various Data outputs available into ships control system(s) including, RS485 to a ship PC or a bridge indicator. The system also has output options for 4-20mA, 0-10Vdc, RS232 and USB (local logging).

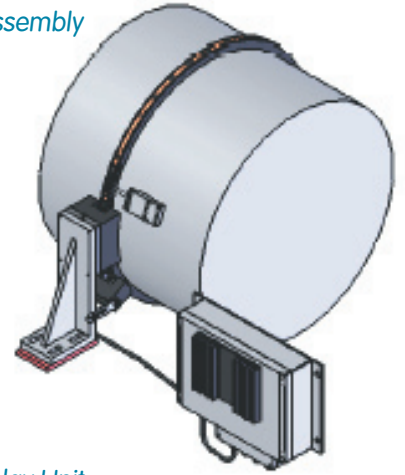
The System provides data on the actual power delivered that can be compared with the expected design performance together with ongoing data that will indicate any changes to this expected performance level.

## SYSTEM OUTLINE

### SHAFT ASSEMBLY (INCLUDING 1 OFF ROTOR AND 1 OFF STATOR)

Stator electronics module providing all outputs (RS485 to a ship PC or a bridge indicator. 4-20mA, 0-10Vdc, RS232 and USB (local logging). Bracket mountings for mounting stator assembly.

Shaft Assembly



### CONTROL DISPLAY UNIT

1 off Control Display Unit with Local indication of Torque and shaft power (as a function of measured torque & speed). This information is displayed on the integral Control Unit main display. The Control Unit also records & displays accumulated running hours for the shaft(s) so that the in-service life of propulsion equipment may be easily monitored. Once all the information has been processed the unit transmits Torque, Speed and Power data via RS485 to the optional remote display(s).

Control Display Unit



### ADDITIONAL REMOTE INDICATORS

Indicators with visual display of data (repeat of control display). These require a minimum of 1 off Control Display Unit to "drive" the remote displays. Can be Panel mounted if required, the remote display(s) receive RS485 Data from the Local Display control unit and display Torque, Speed and Power.

The display(s) also show direction of shaft rotation which is annotated by an illuminated legend, showing 'AHEAD' or 'ASTERN'. The Local Display control unit displays torque in kNm. It also calculates power from torque & speed data and uses the presence of speed signal to accumulate 'shaft running hours' for each shaft and this is displayed on the control unit.

Remote Indicator



### TORQUE LOG MARINE

Calibrated Data	
PORT SHAFT	STBD SHAFT
<b>ASTERN</b>	<b>AHEAD</b>
Torque (kNm)	Torque (kNm)
<b>5.2</b>	<b>0.0</b>
Speed (kNm)	Speed (kNm)
<b>23</b>	<b>23</b>
Power (kW)	Power (kW)
<b>12</b>	<b>0</b>
System Data	
System Full Scale	<b>50 kNm</b>
Direction Display	<b>on</b>
Port Direction Display	<b>Inverted</b>
Stbd Direction Display	<b>Normal</b>

For Indication purposes only

Will provide a cost effective means of displaying all of the above information on a simple PC based platform. This comprehensive software package which will run on a PC platform giving detailed information about the system and complete with logging facility.

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 enhanced features of this software include:

- Calibrated Display of Torque in Nm or lbf
- 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)

### STRAIN GAUGE KIT

Strain gauge kit for installation of system, including bonding and cleaning equipment

Strain Gauge Assembly toolkit option extra. Includes the following items to enable a complete on site installation to be carried out without worrying if you have all the specialist equipment and tools required for successful strain gauge installation.

Specialist Tools,

Special Heating equipment,

Clamps,

Gauge meter

"Dummy" transducer for diagnostics

Marking kit for accurate placement of gauges