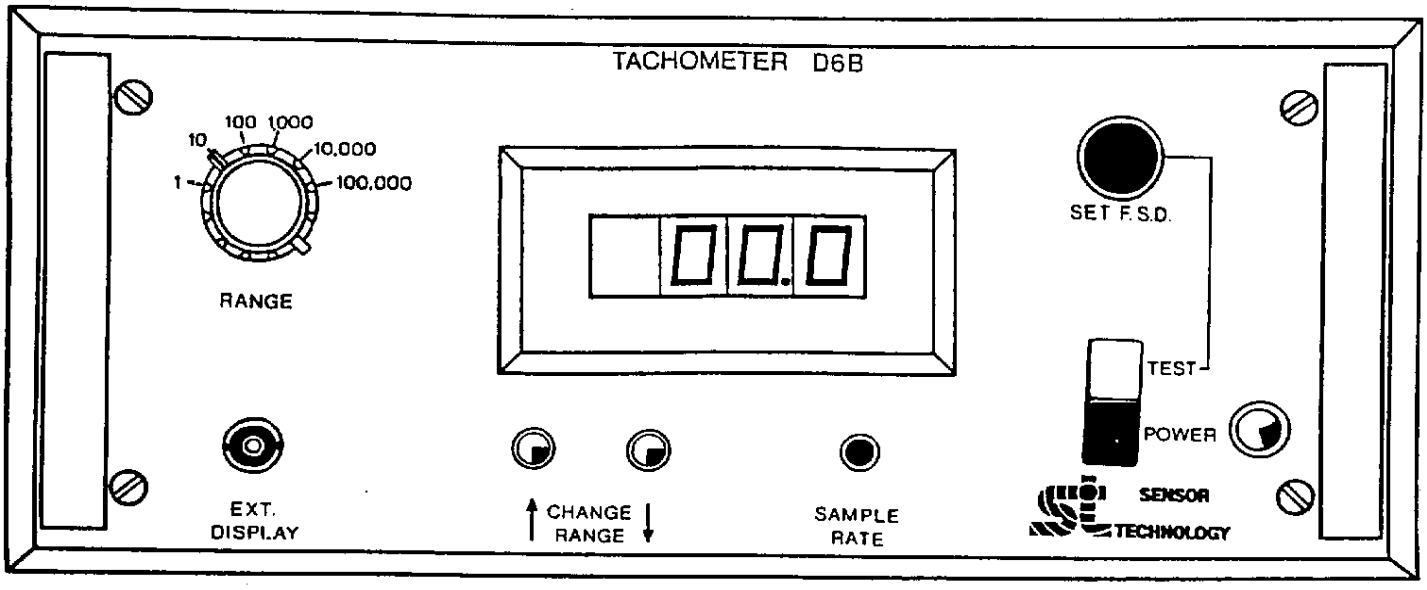
D6B Digital wide range R.P.M.indicator



HANDBOOK

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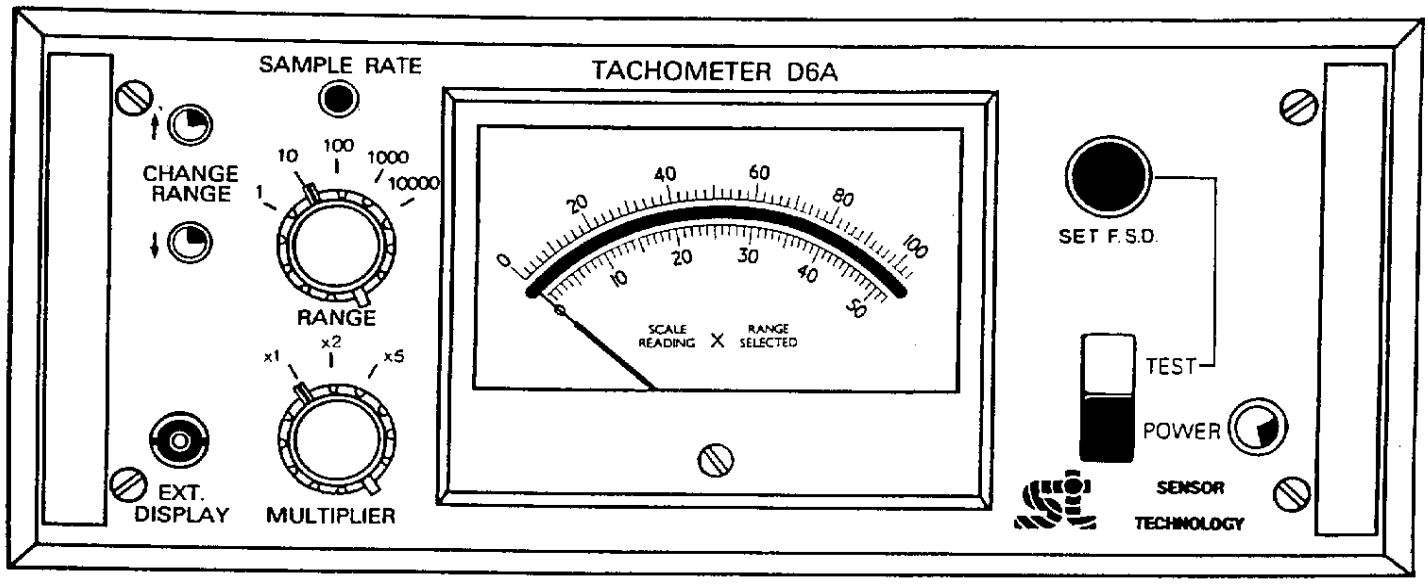
D6A Analogue wide range R.P.M.indicator

STL 6
Issue 2

D6B Digital wide range R.P.M.indicator



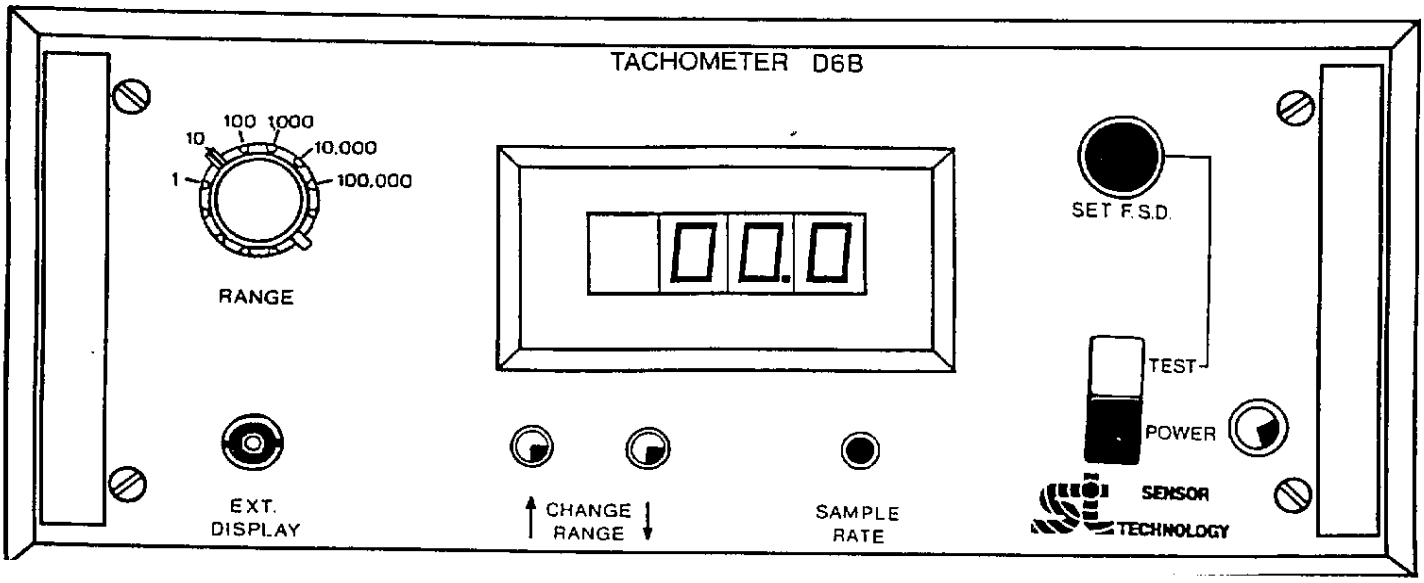
Using the digital output from either a standard optical R.P.M. pick-off fitted to a DORT rotary torque transducer or other external R.P.M. sensor (see Features) advanced analogue circuitry enables the D6A/B to display an exceptionally wide range of shaft speeds.

On the front panel rotary switches select the R.P.M. range. Lights indicate the signal sample rate and when a range changes is desirable. For interfacing with peripheral equipment such as oscilloscopes, recorders and plotters. BNC sockets are provided to give external outputs of 0 - +1 volt D.C. at full scale deflection on all speed ranges.

The D6A display is a 3.5" mirror scale analogue meter.

The D6B display is a .5in LED 3.5 digital panel meter.

Rapid Response Time
Advanced digital/analogue circuitry enable a measurement to be made with inputs of only two transitions through zero, that is, every 12° of shaft rotation on a 60 cycle per revolution input. This enables accelerations and decelerations to be accurately measured. Complex speed modulations are easily analyzed whereas conventional pulse counting techniques would only give an average figure.



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Features

Input. Modified sine wave at 60 cycles per shaft revolution from:

a) any of the range of standard optical rotary transducers.
b) purpose made R.P.M. sensors for which switched signal and lamp suipply facilities are provided on the rear panel of the instrument (5 pin DIN socket).

External Display. Socket giving 0 to +1 volt D.C. output for interfacing with chart records, oscilloscopes, digital voltmeters.

Ranges.
D6A Basic: 1. 100. 1K. 10K.
Multiplier: x1. x2. x5.
D6B 1. 10. 100. 1K. 10K. 100K.
Panel lamps indicate at 90% and 10% of each range when an upward or downward range change is desirable.

Calibration. Controls are provided to assist calibration checks.

Accuracy. Better than ±1% of full scale deflection - all ranges.

Power. Derived from D3A/B Transducer Display/Power Supply Module.

Case Dimensions.

Width	305 mm
Height incl.feet	43 mm
Depth	203 mm

Allow 50mm at rear for plug access.

Panel Dimensions.

Width	279 mm
Height	102 mm

Note: This unit is designed to fit standard modular cases with the other units in the 'D' range.

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1. Introduction

The D6B Tachometer is a versatile electronic instrument intended primarily for use with optical rotary transducers to measure and display the rotational speed of the transducer shaft (to this end these transducers may be fitted with optical grating angular speed sensors whose pulse output is compatible with the D6B input).

The instrument is directly calibrated in revolutions per minute and front panel controls allow selection from six ranges available, giving full-scale deflection from 1 to 100,000 r.p.m.

The instrument is powered from the D3A/B Transducer Display/ Power Supply Module via the 10 pin auxilliary services jumper lead which also enables it to be interfaced with other D-range instruments, such as power meters, chart recorders, limit detectors and digital displays etc. Additionally it can accept and display r.p.m. input signals from r.p.m. sensors (other than those built into optical rotary torque transducers) via the 5 pin DIN socket on the rear panel.

2. General Specifications

Power Requirements.	Power supply from D3A.
Accuracy.	$\pm\frac{1}{4}\%$ of FSD on meter.
	$\pm\frac{1}{4}\%$ of FSD on Electrical Outputs.
Length.	29.5 cms 11.5 ins.
Height.	11.7 cms 4.6 ins.
Width.	24.24 cms 9.5 ins.
Output	0 - + 1V DC.

3. Description of Controls

3.1 "Power" Push Button and Indicator Lamp

When this control is pressed and the D3A/B mains supply connected, the adjacent red indicator lamp will light up and the instrument is ready for use. Pressing the button again switches off the power to the instrument.

3.2 "Test" Push Button

When this control is pressed and held in the meter will display f.s.d. thereby verifying correct functioning of the r.p.m. display circuitry - should adjustment be necessary this is effected by the potentiometer mounted on the front panel under a screw on dust cap immediately above the "Test" Button.

3.3 Range Switch

Mounted on the left of the front panel this control is used to select the r.p.m. required from the fifteen ranges available.

3.4 External Display Sockets

(BNC on both front and back panels) provide for interfacing with peripheral equipment such as chart recorders and xy plots.

3.5 Tacho in Socket

(BNC on back panel) accepts the r.p.m. signal from the BNC Tacho Out Socket on the back panel of the D7 Optical Transducer Coupler Module.

3.6 External Input Socket

(5 pin DIN) on the back panel enables input signals from r.p.m. sensors other than those built into optical rotary torque transducers to be displayed on the D6B meter. A two position switch immediately adjacent to the DIN socket controls whether the input is via the "External Input" socket or via the "Tacho In" socket.

4. Operating Instructions

Connect the D6B to the D3A with the 10 pin jumper lead (connected to the Auxilliary Services socket on the back panel of both modules). Press in the Mains button on the D3A front panel and Power Button on the D6B front panel. The red indicator lamp should light up. Connect the rear-mounted "Tacho In" socket to the rear "Tacho Out" socket on the D7 Optical Transducer Coupler. Select the appropriate r.p.m. range with the "range" and "multiplier" switches. Press the "Test" button and adjust, if necessary, the f.s.d. position of the meter needle using the potentiometer as previously described. The instrument is now ready for use.