

# WINCH INSTRUMENTATION

## LINE TENSION, LINE LENGTH & LINE SPEED INDICATION PANEL ASSEMBLY



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### **Introduction**

The instrumentation consists of length measuring, speed measuring and tension monitoring systems

The instruments are housed in a weatherproof case with facilities for remote reading of length speed and tension. The Housing incorporates a heater to dry out condensation should it occur, this is connected constantly to the mains supply.

Length and speed operate from a rotary encoder fitted to the winch drum assembly. Tension is recorded from a load cell again mounted on the winch itself.

### **System Description**

The measuring system records the length of cable by means of pulses derived from a rotary encoder driven by the winch. This feeds the master counter 0-735P21000 which can be supplied with an RS422 signal output to drive remote instruments, computers, or chart recorders, etc. The counter can be prescaled to indicate Meters, Fathoms or what is required. The counter is also fitted with two preset outputs that can be used to give warning signals at different set points if required.

### **Rotary Encoder**

The rotary encoder is driven from the winch drum or the flaking sheave and may be geared up to give 1000 pulses per metre. The counter should be prescaled to the number of pulses per metre to record meters. (Calibration Factor) counter program. The pulses are in the form of two channels phased by 90 degrees apart quadrature to give bi-directional counting.

### **Speed Measuring System**

The speed measuring system utilises the same signal from the rotary encoder. The signal is connected to a Frequency to analogue Rate Meter Part No. Tico 735. This unit converts the digital signal from the encoder to an analogue 4 to 20 Milli Amp DC signal to feed the meters. The unit is fully programmable and may be fitted with relay outputs to signal over and under speed. See Rate Meter Tico 735.

### **Tension Measuring System**

The tension is monitored by means of a load cell fitted to the winch. The load cell receives an excitation voltage from the amplifier and sends a signal back to the amplifier which in turn is connected in series to the analogue meter and the alarm unit which incorporates a digital readout.