Hello, this a video for Engineering Measurement & System Monitoring unit, learning outcome one where we have to measure mechanical quantities.

Here we are measuring velocity, in is on page 129 in the manual – characteristics of a slotted opto transducer. So that is one of the options on the shaft where there is a motor driving it. First there is the optic type where the light beam is broken by the disc and turns the light is off, when the light is on we take a reading of the voltage and when it is off. It is the optic one we are doing, the next one is the reflective, then inductive, hall effect and the last one is a tachogenerator which produces a greater voltage the faster it goes. The other types all produce a pulse so the time is measured between pulses and this can be converted to RPM.

For this experiment we are going to change the speed of the motor and take say ten readings which are put in a table motor drive voltage and the pulses per second. Then multiply by sixty to get revolutions per minute. Following that draw a graph drive voltage against RPM. So, to start our motor we turn the potentiometer and the volt meter on the board indicates the input to the motor. The first setting for the motor is at two volts and we can see it spinning. What we have here is a counter, there are different settings - free run which will keep counting, then counter for one second and the other button put to count. When the reset button is pushed it will start counting. This is done for each motor speed. It is an option do a free run for sixty seconds by using a stopwatch.

Thank you for listening.