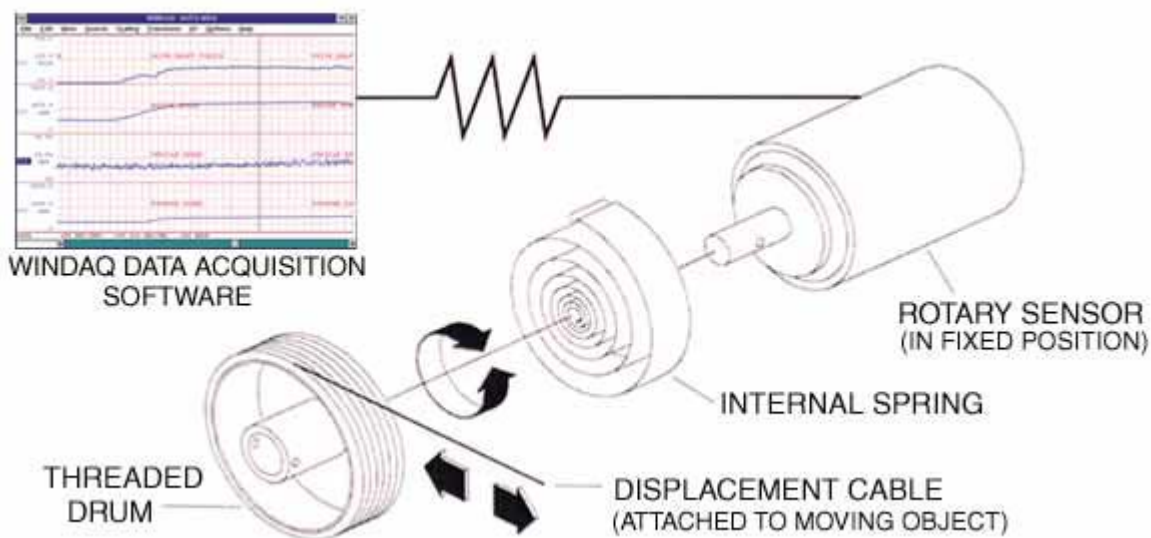


Acquiring Displacement Data with a “String Pot”

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Tape measures are used for a lot of things... measuring doorways, boards, furniture, etc. But what about the things we want to measure that aren't tangible? A situation like that calls for an electronic tape measure-- a kind of position transducer called a string potentiometer, or “string pot.”

String pots use the length of a spring-loaded cable which is pulled out of the unit to convert mechanical motion into an electrical signal. This signal can then be transmitted, recorded and analyzed by DATAQ Instruments' data acquisition hardware and WinDaq software. When the position transducer is mounted in a fixed position and the extension cable is attached to a moving object, as movement occurs, the cable extracts and retracts. An internal spring maintains tension on the cable. The threaded drum rotates a precision sensor that produces an electrical output proportional to the cable travel. DATAQ hardware can measure the position, direction or rate of motion of the moving object and WinDaq recording software can display it on your computer screen.



One application where this is used is the testing of the performance of cars. The extension cable is mounted on the brake pedal of the car. As the driver of the car applies pressure to the brake, the electric signal transmitted tells researchers how far the brake pedal needed to move in order for the car to stop. String pots can also be used to measure anything from throttle and steering position to shock absorber travel.

One advantage of using WinDaq software to analyze this data is that you can analyze two or more different waveforms at the same time. Not only can you see the position, but with the proper instruments, you could also be observing force, pressure and other measurements at the same time.

To try measuring position with a string pot for yourself, visit www.spaceagecontrol.com/requalpt.htm. You will be able to test out a complete position measurement system that provides:

Regulated Power Source

DATAQ Instruments Data Acquisition Hardware DI-148U-SP

Recording Software

12-Bits of Measurement Accuracy

Data Acquisition Rates up to 240 Samples/Second

Convenient Serial Port Interface Information and Diagram provided by Space Age Control, Inc. www.spaceagecontrol.com.