



# CABLE RETRACTORS 101 (STRING POTS)



# CABLE RETRACTORS (STRING-POTS) 101

## DESIGN

String pots, also known as “cable retractors” or “rope length encoders” are combined with a rotary encoder to measure linear distances of up to 30m. The rotary encoder is attached to the “drum” inside the string-pot casing. When the cable is extracted from the string pot, the shaft of the Encoder spins giving an output or distance measurement. This combination acts like an electronic tape measure. There are two different styles of string-pot housings, which provide various different lengths of cable.

The **SLG** (Figure 1.) is a heavy duty style with aluminum housing for the drum and cable, and a plastic end cap for the spring coils. The lengths available for the **SLG** are 2m, 5m, 10m, 15m, 20m, 25m and 30m. The **SLG** is IP 65 rated.



Figure 1

The **ME** (Figure 2.) is a more compact design built with the drum and springs inside the same housing. Cable lengths are limited by this style of housing to lengths of 2.5m, 5m, 7.5m and 10m. The **ME** is IP 65 rated.

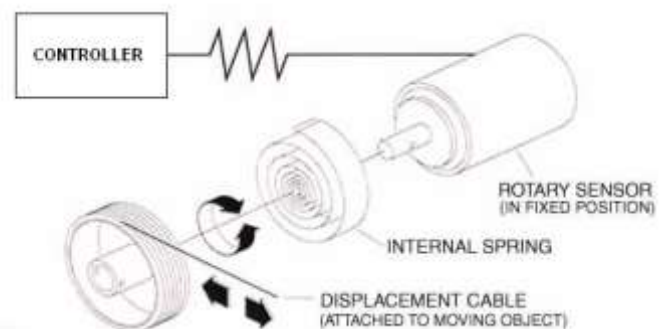


Figure 2

## CONSTRUCTION

The String pot has a threaded spindle inside a drum with a cable attached. The spindle is attached to a rotary spring that is set to a specific tension. The spring provides uniform tension throughout the whole length of cable and is backlash free. The end of the cable is connected with a coupling that is attached to the moving object to be measured.

There are different couplings attached to the end of the cables that vary in style depending on when the cable retractor was constructed.





1982-1999



1999-2005



2005-2009

Almost all rotary encoders can be mounted to a string-pot providing versatility for various measuring resolutions and communication interfaces.



## APPLICATIONS

There are many different applications for string-pots:

- Hydraulic Cylinder Position Measurement
- Oil and Chemical Processing
- Automotive and Aerospace Testing
- Structural Testing
- Factory Automation, Medical Devices
- Industrial Machinery

These are just a few of the many examples where a string-pot would be a viable solution. Almost any moving device that requires repetitive measuring and is capable of having constant cable contact is suitable for a string pot.

**TR** Electronic Center of Technical Excellence will work with you to develop the best solution for your Application.

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