

# POLISHED ROD DYNAMOMETER TRANSDUCER DATA SHEET

A popular and versatile transducer that gathers accurate data with minimal effort. The data gathered by the device allows for the software analysis of polished rod power requirement, pumping unit beam loadings, rod loadings, pump power requirements, and pump performance.

This unit is available in both a standard and wireless version.

## Features

- Measures polished rod load and position with accuracy.
- Easily and safely installed in less than one minute.
- Position of plunger in pump barrel is unchanged, generating more accurate well performance data.
- Works with the Echometer Well Analyzer.
- Available in a wireless version for use with the Echometer Wireless Well Analyzer.
- Contains Load measuring sensitive semi-conductor strain gauges.
- Accurate accelerometer.

## Specifications

- Dimensions 1-1/4" x 2" x 5"
- Weight 12 oz

## Additional Product Information

The polished rod transducer is very popular and versatile for several reasons. First, the transducer obtains dynamometer data that is sufficiently accurate for most pumping unit analysis with a minimum of effort. Also, the position of the plunger in the pump barrel is not changed as occurs in some horseshoe dynamometer analysis.



For this reason, the polished rod transducer analysis may be more representative of actual well performance than an analysis using a horseshoe transducer that raises the plunger in the pump. Second, the polished rod transducer can be installed in less than 30 seconds. The polished rod transducer is simply clamped to the polished rod below the carrier bar. Third, the polished rod transducer will gather load and position data that allows the calculation and determination of a surface dynamometer card, a pump card and traveling and standing valve tests. This allows the software analysis of polished rod power requirement, pumping unit beam loadings, rod loadings, pump power requirements, and pump performance.

The polished rod transducer is 1-1/4" x 2" x 5" in size. It weighs 12 ounces. It contains both load measuring sensitive semi-conductor strain gauges and an accurate accelerometer. The polished rod transducer can be easily transported and easily installed on a well to obtain dynamometer analysis when using the portable Well Analyzer and software.

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The polished rod transducer measures the change in diameter of the polished rod and converts the change in diameter to the change in load on the polished rod. Software guides the operator in properly installing the transducer onto the polished rod. The acceleration data is twice integrated in software to determine polished rod position. The change in loads and the calculated positions from the acceleration data are used to generate a surface card.

Software generates a pump card using a wave equation from the acquired load and position data. The surface and downhole cards are calibrated by software using the principle that the pump card should have a zero mechanical load below the pump on the downstroke when the traveling valve is open. Software performs these calculations and displays a surface and pump card.

Note: that a crooked hole or viscous oils will affect this behavior. The horseshoe transducer should be used in special cases where the drag or damping factor on the sucker rods cannot be estimated with reasonable accuracy. Please refer to the technical paper on the polished rod transducer for details of calculating loads, ease of installation and versatility of the transducer.

## Wellsite Optimization Services

Senior Tech (now Hamdon Energy Solutions) provides oil and gas well optimization services that both enhance and sustain well efficiency and production. With effective optimization solutions and a mobile service fleet, SeniorTech (now Hamdon Energy Solutions) offers professional expertise and a diverse selection of optimization equipment across Canada and internationally.

Service areas include:

- Production Optimization
- Regulatory Compliance
- Training
- Equipment Repair and Maintenance

**Senior Tech (now Hamdon Energy Solutions) is an authorized Echometer distributor in Canada and internationally, providing equipment sales, rentals, training and service. Echometer's Well Analyzer equipment is used to determine well productivity, reservoir pressure, overall efficiency, equipment loading and well performance, which are calculated based on a combination of measurements of surface pressure, acoustic liquid level, dynamometer, power and pressure transient response.**



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