

Axial Force Measurement Sensor

The ForceLink™ sensor, by Crane Nuclear, is designed to provide an accurate, continuous reading of stem force for actuated valves with two-piece stems. The sensor replaces the stem coupling block and provides the identical support and mounting functions while directly sensing the axial force acting on the valve stem.

The design is an offshoot of precision load cell technology. The body, machined from billet, precipitation-hardened stainless steel, has an internal web instrument circuit consisting of a full bridge of precision strain gages with integral temperature compensation and balance circuits, which are hermetically sealed inside the stainless steel block.

Setup consists of replacing the original coupling block with the ForceLink™ sensor, tightening the sensor's four hex-socket cap screws, and restoring any block-mounted feedback linkage. Once installed, the ForceLink™ sensor functions as a typical precision load cell. It can be read with most commercial signal conditioners, or used with either the CRANE Nuclear Universal Diagnostic System™ or the CRANE Nuclear VIPER™ 20 Diagnostic System.

FORCELINK™
Direct Thrust Measurement Sensor



AOV SIZE	SENSOR SIZE	ACTUATOR STEM MATING THREAD	VALVE STEM MATING THREAD
30, 34	FIA-6	5/8-18 UNF-2B	3/8-24 UNF-2B
40	F1A-8	3/4-16 UNF-2B	1/2-20 UNF-2B
45, 46	F1B-8	1-1/8-12 UNF-2B	1/2-20 UNF-2B
50, 60	F1B-12	1-1/8 UNF-2B	3/4-16 UNF-2B

FORCELINK™

Design

Unique split-body design utilizes an internal web structure with a series of strain gages to achieve high accuracy. Protected by US Patent Number 5,469,737.

Calibration Interval

Six (6) Years

Construction

The element body is machined from stainless steel billet for high yield strength. The strain gage system is sealed to withstand plant environments.

Full Scale Load Capacity

Size F1A 2,700 Lb. Force
Size F1B 4,500 Lb. Force

Overload Capacity

All Sizes 150% Full Scale

Output at Full Scale Load

2mV/V Nominal

Component Field Accuracy

±(2% of Reading or 0.5% FS),
Whichever is Greater

Excitation Requirement

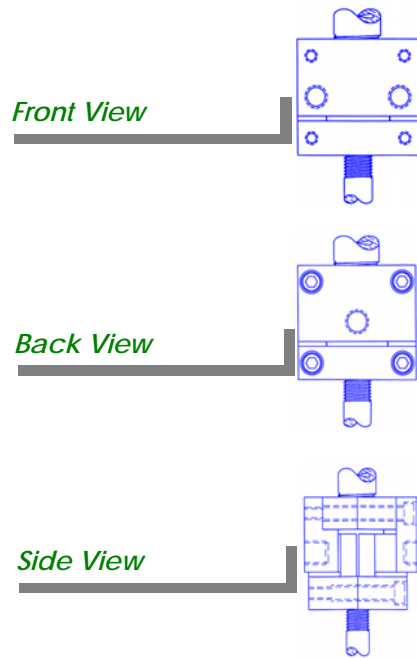
10 Volts DC/AC

Bridge Resistance

350 Ohms Nominal

Quality Standard

The ForceLink™ is supplied under a Quality Assurance Program that meets the requirements of ANSI 10CFR 50, Appendix B.



To find out more, contact Tony Morris,
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