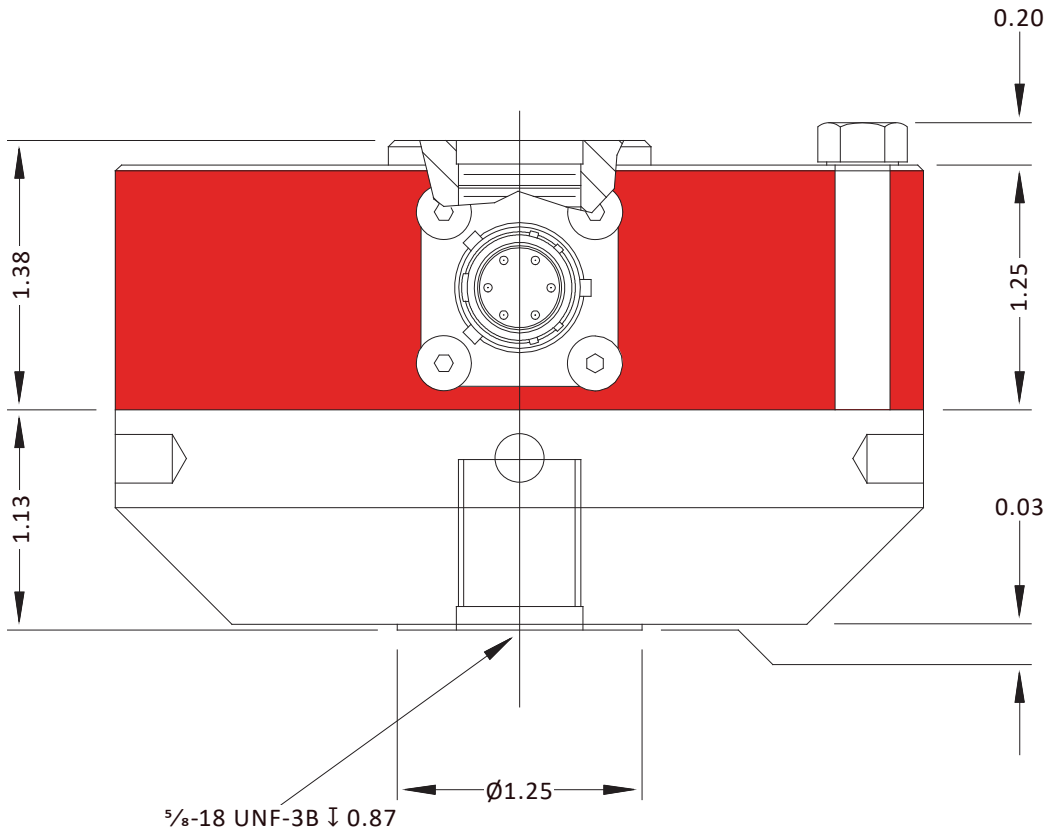


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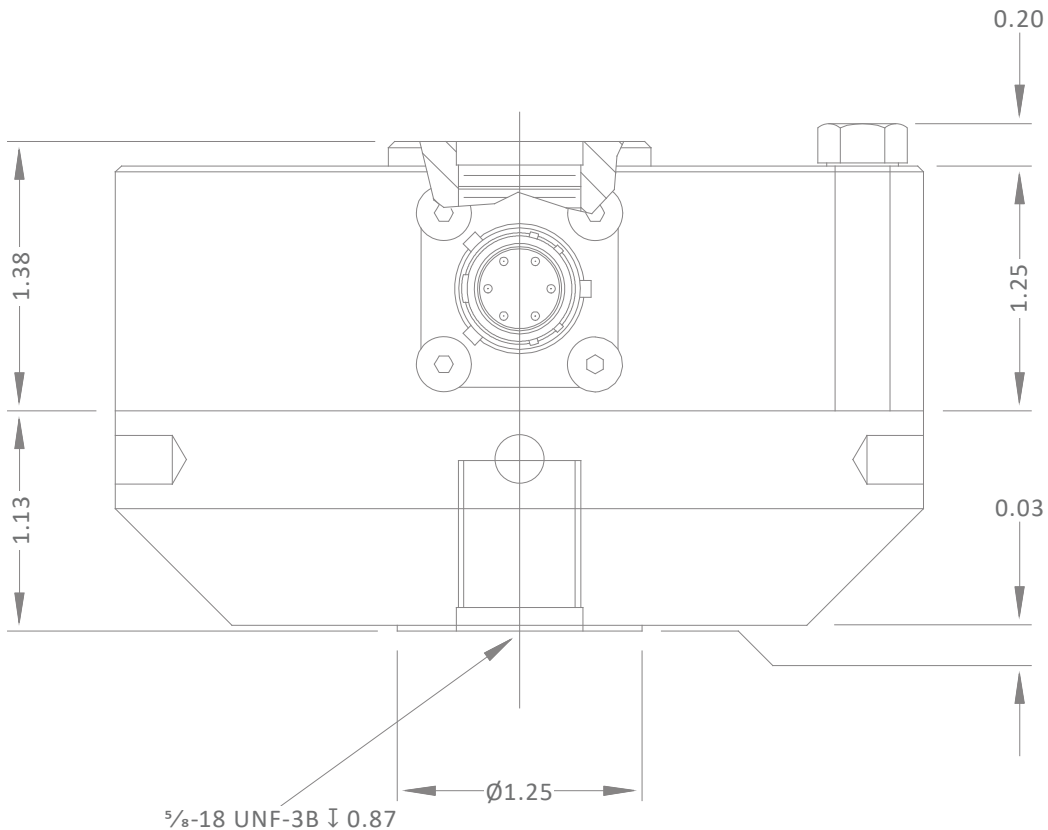
LOAD CELL FIELD GUIDE



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LOAD CELL FIELD GUIDE



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Interface[®], Inc.

7418 East Helm Drive

Scottsdale, Arizona 85260

480.948.5555

www.interfaceforce.com

FORWARD

by Joel Strom, CEO

The creation of this instructional guide was driven by a statement in Interface®'s mission to always go above and beyond. We believe this informative reference is a helpful resource from the company that is recognized as pioneers in force measurement and load cell design and manufacturing.

Our team of the most innovative load cell engineer's best understand their design, capabilities, multitude of uses, and capacities. They are eager to share their knowledge and collective expertise to help other engineers and designers with load cell fundamentals to help make better force measurement decisions.

The Interface® Load Cell Field Guide was first published in 2014. As a result, we have heard how much the book helps fellow engineers around the world learn about the intricacies of load cell design and about some of the many applications of load cells in force measurement. In our new edition, we updated essential information to provide more value to load cell users and force measurement enthusiasts.

Interface® has been designing and manufacturing load cells since our founding in 1968. We are extremely proud of our history and our products. As we move into our 2nd 50, we continue our commitment to provide the absolute best in force measurement solutions.

We know our customers rely on our products to make their products perform at their best. Our purpose is to enable innovation across all industries. Innovation that improves people's lives and keeps them safe.

This means quality in products and production are cornerstones for our business. Interface® is an integrated manufacturing operation. Whether we are making standard off the shelf Interface® LowProfile® load cells, modified minis, or our custom designed torque or wireless solutions, we control the process from the initial customer quote until the products ship out the door. We believe that beyond a great design, the process and control of the process are what enables a load cell to have the accuracy and dependability of an Interface® Load Cell.

The load cell starts in our factory as a raw piece of steel, aluminum, or other metal that is then machined, gaged, wired, finished, and finally calibrated. As you can understand from this book, strain gages are what make a load cell a load cell. How they are made and how they are handled is critical to the operation and accuracy of a load cell. That is why we chose to be one of the only load cell companies in the world that manufactures its own strain gages.

I hope this book helps strengthen your understanding of load cells and force measurement. However if you have additional questions, if there are some things that you would like an even greater understanding of, or if you just want some input on a concept or idea you are considering, just visit our website interfaceforce.com or call us at 480-984-5555 to talk to one of our sales engineers.

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THE LOAD CELL PRIMER



THE “ELASTIC FORCE TRANSDUCER”

People have known for centuries that heavy objects deflect spring supports more than light ones do. Take, for example, a fly fisherman as he casts his line and catches a fish. The fishing pole is a flexible tapered beam, supported at one end by the fisherman’s grip and deflected at the far end by the force of the line leading to the fish. If the fish is fighting vigorously, the pole is pulled down quite a bit. If the fish stops fighting, the pole’s deflection is less. As the man pulls the fish out of the water, a heavy fish deflects the pole more than a light one does.

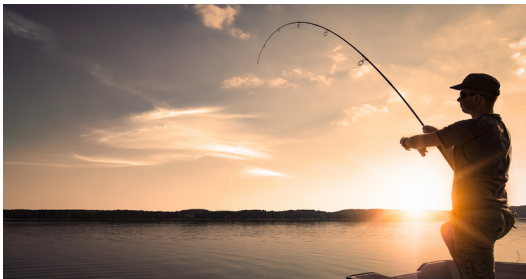


Figure 1. Bending beam deflection

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