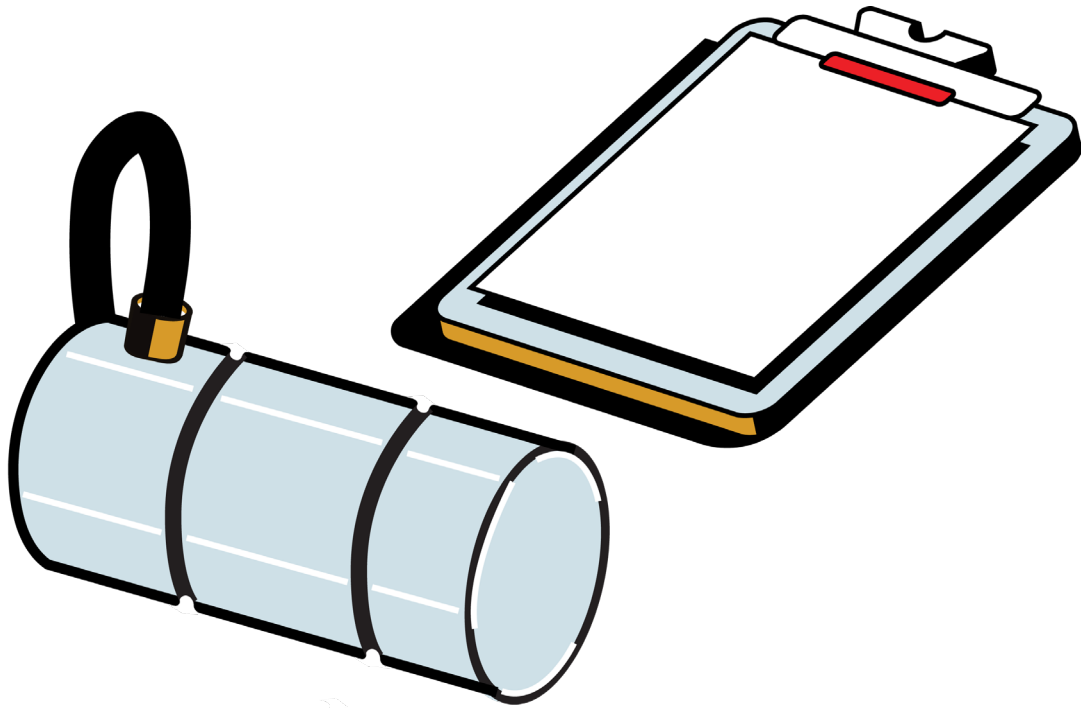
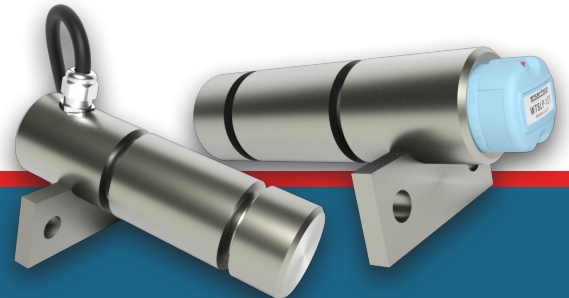


# Interface

## Load Pins



Load Pins v1.2 08-02-2023



# The Interface range of load pins are designed for the measurement of tensile and compressive forces across a wide range of applications, including crane/lifting, agriculture, industrial, marine, offshore, and infrastructure.

Other applications include crane weighing, center of gravity systems, vessel weighing, platform weighing, and general weighing. Line Tension Machined from high tensile stainless steel, our load pins are suitable for use in exposed situations including prolonged immersion in seawater. We offer a standard range of load pins, covering ratings up to 3,000K lbf, however, the nature of this type of product means that most load pins are manufactured to meet each customers specific dimensional requirements. Interface Load Pins are made with a dual-shear design and are designed which for center-loading with support from both ends. Interface load pins are strain gage based, the strain gages are installed in the inside-center, neutral axis of the load pin where they are protected from both physical damage and the environment. A full Wheatstone Bridge ensures the best specifications, while the physical design ensures proper alignment and anti-rotation of the application.

## Load Pin Benefits Includes:

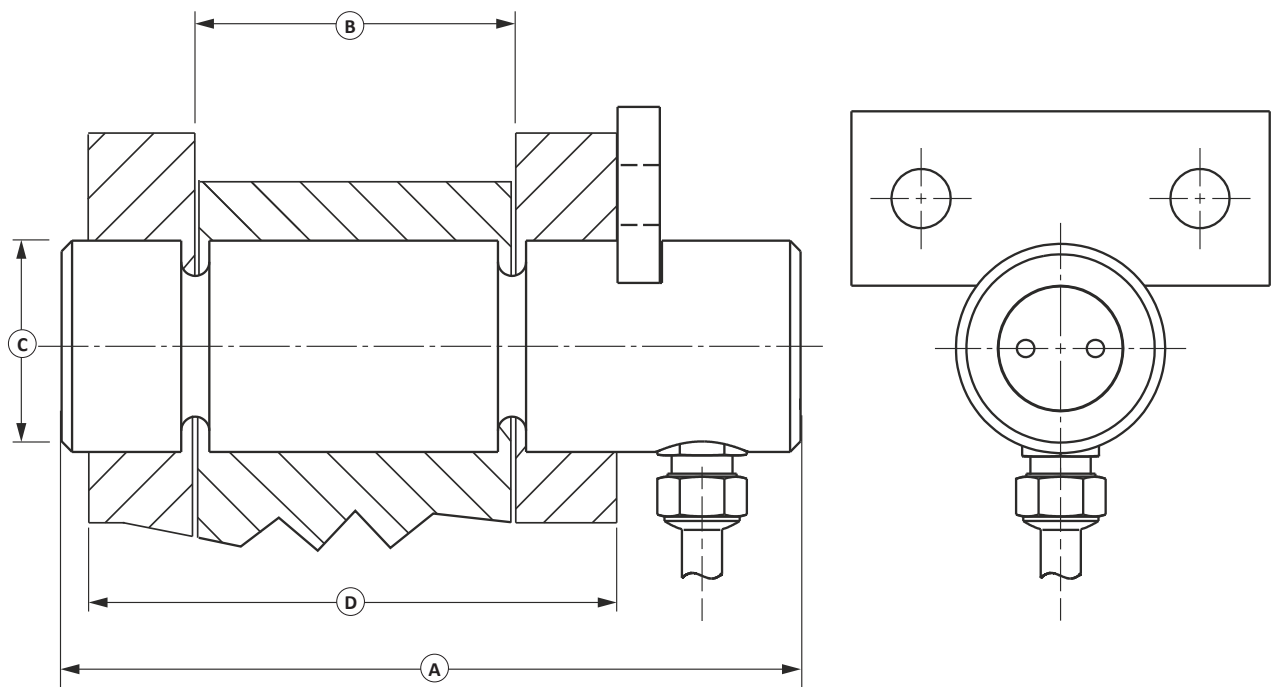
- Capacities range up to 3,000K lbf (1,360 MT)
- Low power consumption for long battery life
- Wireless communication
- 1,969 ft (600 m) range
- Configured and calibrated via PC using a base station and telemetry toolkit
- Compatible with Interface WTS Wireless Products
- Robust, lightweight housing
- Environmentally sealed to IP67
- Designed to replace pins or bolts that carry a load
- Stainless steel construction
- Used with clevises, or pulley shafts to monitor loads
- Custom designs

## Typical Applications:

- Crane Overload Protection
- Winch Force Monitoring
- Cable And Wire Dynamometers
- Hoist Overload Protection
- Tension/Compression Measurements
- Clevis Pin/Shackle Loading
- Sprockets and Pulley Axle
- Crane, Lifting, and Winch System
- Mooring Line Tension Measurements
- Hydraulic Systems
- Crane Weighing
- Center of Gravity Systems
- Vessel Weighing
- Platform Weighing
- General Weighing
- Line Tension

# Interface Load Pin Configuration

Interface Load Pins are made with a dual-shear design which are designed for center-loading with support from both ends. Interface load pins are strain gage based, the strain gages are installed in the inside-center, neutral axis of the load pin where they are protected from both physical damage and the environment. A full Wheatstone Bridge ensures the best specifications, while the physical design ensures proper alignment and anti-rotation of the application.



## SECTION ONE - DIMENSIONS

Dimension	in	mm	Dimension	in	mm
A:			C:		
B:			D:		

*\*Estimated - final dimensions may vary*

## SECTION TWO - APPLICATION

1. Static Force / Load	4. Tractor Draw Bar Pull	7. Conveyor Loading
2. Dynamic Force / Load	5. Mooring Linkage	8. Line Tensiometer
3. Hoisting Load	6. Fork Lift Loading	9. Other

## SECTION THREE - FEATURES

Capacity:		Output Signal:		Cable Length:	
tonne		mV/V		in	
K lbf		4-20mA		ft	
kN		0-10V		mm	
MT		RS485		M	
Bridge Type:		Axes Required:			
Single		Bidirectional			
Dual		X Only			
EN 60529 Protection Level:		X and Y			
IP65		ATEX Required:			
IP66		No			
IP67		ATEX"D"			
IP68		ATEX"N"			
IP69K		ATEX"I"			

## SECTION FOUR - CONNECTOR/CABLE

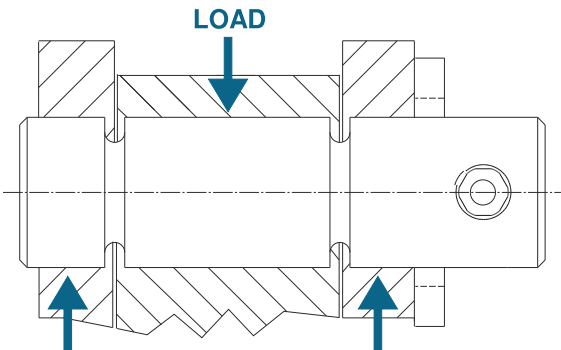
Radial Cable		Radial Connector	
Axial Cable		Axial Connector	
Recessed Cable		Recessed Connector	
Cable Length		Pin Output	

## ADDITIONAL NOTES

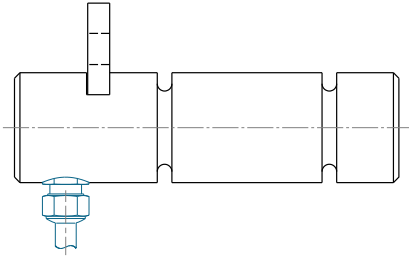
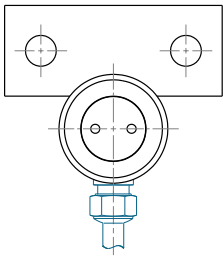
Notes:
--------

## MOUNTING CONFIGURATION

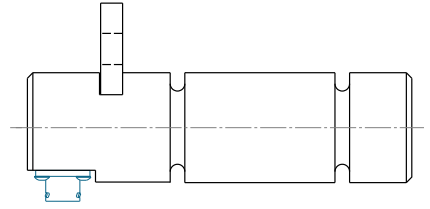
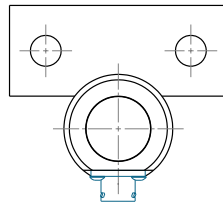
Various mounting configurations are available.  
**Shown:** Typical mounting with anti-rotational slot near the end; connector output at housing base.



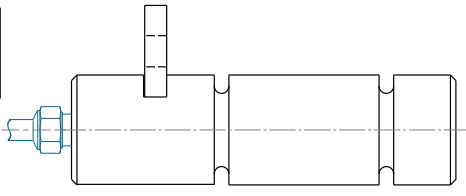
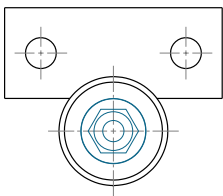
## CONNECTOR/CABLE OPTIONS



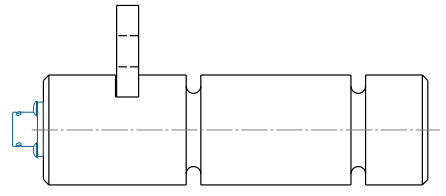
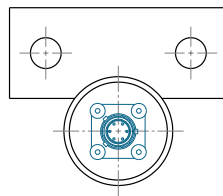
**RADIAL CABLE**



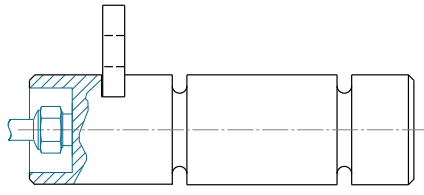
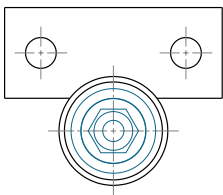
**RADIAL CONNECTOR**



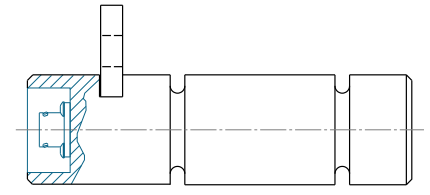
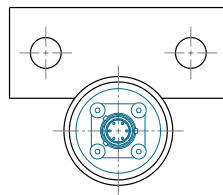
**AXIAL CABLE**



**AXIAL CONNECTOR**



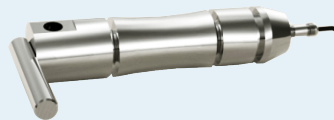
**RECESSED CABLE**



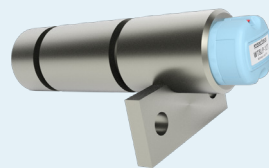
**RECESSED CONNECTOR**



**LP Stainless Steel Load Pin**  
Up to 3,000K lbf  
Up to 13.3 kN



**CLP Custom Design Load Pin**  
Dimensions to suit application  
From 100 kgs to 1500+ MT



**WTSLP Wireless Stainless Steel Load Pin**  
Up to 3,000K lbf  
Up to 13.3 kN



**ISHK/WTSSHK Load Shackles**  
2.2K lbf to 2,205K lbf  
1 mt to 1K mt  
Available with Amplification,  
Submersible, Wireless,  
and ATEX Options



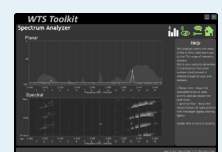
**WTS-BS-1 Wireless Handheld Display For Unlimited Transmitters**  
Roams Between Transmitters in Range



**WTS-BS-1-HA Wireless Handheld Display for Multiple Transmitters**  
Provides Summation of Up to 12 Transmitters



**WTS-BS-1-HS Wireless Handheld Display for Single Transmitters**  
Simple Operation



**WTS Toolkit**  
Setup & Scaling, Logging,  
& Graphing Software

The Interface range of load pins are designed for general use. They are a simple and versatile type of load cell that are used in a large variety of applications, including harsh environments such as sub sea, marine, and offshore. They are easily installed into machines by replacing any existing load bearing pin with no modifications to the equipment required. They are also very easy to install new or retrofit, and have a long design life to offer any years of trouble-free operation. The LP load pin range is entirely custom designed to meet specific customer requirements, and over 5000 different product variants have been manufactured to date. Machined from high tensile stainless steel, they are built to exacting standards and proof loaded to 150% of normal rated load. The LP load pin series can be supplied on its own or combined with our extensive range of instrumentation to provide a complete load monitoring system.

### Accuracy – (Max Error):

- Nonlinearity – %FS -  $\pm 0.2$  to 1.5 (typically) depending on pin geometry
- Nonrepeatability – %FS -  $\pm 0.1$

### Temperature:

- Compensated Range -  $+14$  to  $+158$  °F ( $-10$  to  $+70$  °C)
- Operating Range -  $-4$  to  $+158$  °F ( $-20$  to  $+70$  °C)
- Zero Temperature Coefficient – % of Rated Load / °C -  $\pm 0.1$
- Span Temperature Coefficient – % of Rated Load / °C -  $\pm 0.1$

### Electrical:

- Rated Output – mV/V (Nominal) - 1.5
- Zero Balance – %RO -  $\pm 1$
- Bridge Resistance – Ohm - 350, 1000, 5000
- Excitation Voltage – VDC MAX - 15.0
- Insulation Resistance – Megohm@VDC - 500 @ 500

### Mechanical:

- Standard Calibration - Compression
- Safe Overload – %Capacity - 150
- Ultimate Overload – %Capacity - 300
- Environmental Rating - IP67

### Available Options:

- |                                       |                       |
|---------------------------------------|-----------------------|
| • Integral Connector                  | • High Temperature    |
| • Amplification (5VDC, 10VDC, 4-20mA) | • Submersible         |
| • Wireless Communication              | • TEDS                |
| • Bidirectional Loading               | • Anti-Rotation Plate |
| • Dual Bridge                         | • Shackles            |
| • ATEX Approval                       |                       |

### Compatible with Wireless Hand-held WTS-BS-1:

- 8 digit display
- Fully functional tare capability
- Power-off transmitter from receiver enabled
- IP65 waterproof enclosure 3.5 x 5.9 x 1.4 in (88.9 x 149.86 x 35.56 mm)

The WTSLP is supplied as standard without any additional wireless devices to enable greater flexibility with the configuration and ordering of the product. The WTSLP can be used with any of the WTS range of wireless instrumentation, whether this be for a simple display system using the WTS-BS-1-HS, or more complex systems using multiple load cells and multiple wireless devices.

# Interface Load Pins

- Integral connector
- Amplification
- Wireless
- Bidirectional loading
- Anti-rotation plate
- Dual bridge
- ATEX Approval
- High Temperature
- Submersible
- TEDS
- Shackles

*Interface force measurement load pins are available in many design configurations for project designs requiring the highest performance.*

**To learn more about the Interface products or force measurement solutions call 480-948-5555.**

**Interface is the world's trusted leader in technology, design and manufacturing of force measurement solutions.**

**Our clients include a "who's who" of the aerospace, automotive and vehicle, medical device, energy, industrial manufacturing, test and measurement industries.**

Interface engineers around the world are empowered to create high-level tools and solutions that deliver consistent, high quality performance. These products include load cells, torque transducers, multi-axis sensors, wireless telemetry, instrumentation and calibration equipment.

Interface, Inc., was founded in 1968 and is a US-based, woman-owned technology manufacturing company headquartered in Scottsdale, Arizona.