



TS Load Cells are extremely accurate devices used to measure tension in any unwind, rewind, or intermediate web processing application. Their unique low-profile design minimizes space requirements, and maximizes potential web width. These load cells also offer the flexibility of a variety of mounting styles and coupling options.

They are ruggedly constructed with mechanical overload stops in both force directions, eliminating sensor damage and the need to recalibrate after extreme overloads. A full Wheatstone bridge arrangement of four foil strain gages, delivers the most accurate means of measuring web tension. In addition, these sensors incorporate a dual beam construction design to insure linear output under all loading conditions.

KEY
FEATURES

SPECS

General Specifications

Product Name:
TS Load Cells

Gage Resistance:
350 ohms nominal

Excitation Voltage:
10 vdc nominal

Output Signal:
21 mvdc nominal per sensor
at full load rating

Operating Temperature:
-30 to 95°C
Combined Non-linearity & Hysteresis:
0.5% of full scale maximum

Repeatability:
0.2% of full scale maximum

Deflection at Full Load:
0.016 inch (0.41mm)
maximum

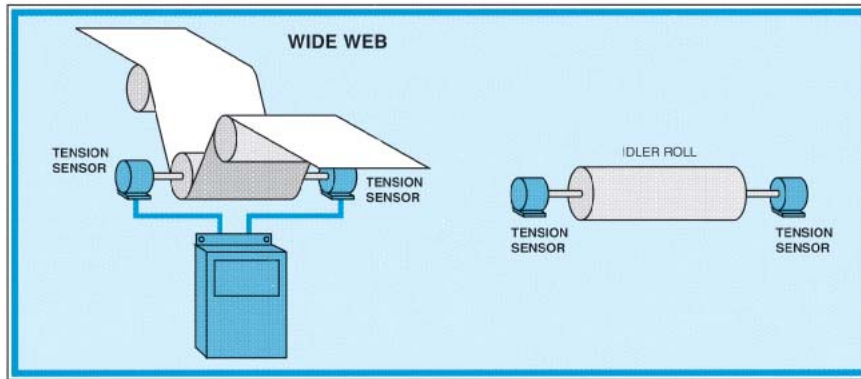
Temperature Effect on Zero:
0.02% of rating per °C

Key Features:

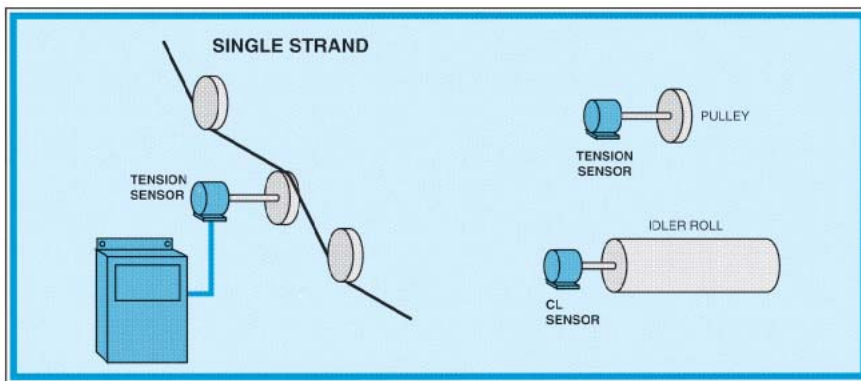
- Low-profile design allows maximum web widths.
- Multiple mounting options for maximum flexibility.
- Three coupling styles for use with any type idler roll—Split, In-roll and Wire Pulley.
- Capable of handling loads from 5 to 500 lbs.
- Ruggedly constructed for long life and dependability.
- Mechanical overload stops for protection even under severe overloads.
- Full Wheatstone bridge design for measurement accuracy.
- Inch and Metric models for international installations.

MEASURING WEB TENSION

WIDE WEB



NARROW WEB
OR SINGLE STRAND



Complementary Products:

MAGPOWR

- Tension Control Products
 - Tension Readout
 - Cygnus Tension Control
- Torque Control Products

FIFE

- Guiding Products & Systems

TIDLAND

- Slitting Products & Systems
- Winding Products

MAGPOWR

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TS Load Cells In-Roll Coupling



STUD MOUNT LOAD CELL



FLANGE MOUNT LOAD CELL



PILLOW BLOCK LOAD CELL

The In-roll Coupling design allows the TS Load Cell to be inserted directly into the end of an idler roll. Versatile and rugged, these sensors feature a spherical bearing to allow for smooth rotation of the idler roll, and to accommodate misalignment between the machine frames. This coupling type also eliminates the need for idler rolls with shafts and bearings, reducing the overall cost of the tension sensing system.

KEY FEATURES

SPECS

General Specifications

Product Name:

TS Load Cells
– In-roll Coupling

Gage Resistance:

350 ohms nominal

Excitation Voltage:

10 vdc nominal

Output Signal:

21 mvdc nominal per sensor at full load rating

Operating Temperature:

-30 to 95° C

Combined Non-linearity & Hysteresis:

0.5% of full scale maximum

Repeatability:

0.2% of full scale maximum

Deflection at Full Load:

0.016 inch (0.41mm) maximum

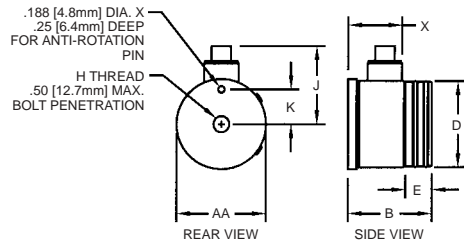
Temperature Effect on Zero:

0.02% of rating per °C

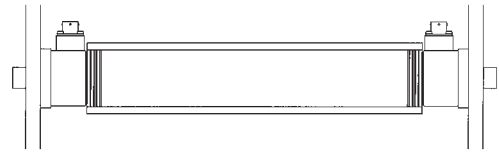
Key Features:

- In-roll Coupling designed to insert directly into the end of an idler roll.
- Capable of handling loads up to 500 lbs.
- Compact sensor allows maximum web widths.
- Stud, Flange & Pillow Block mounting options for maximum flexibility.
- Ruggedly constructed for long life and dependability.
- Mechanical overload stops for protection even under severe overloads.
- Full Wheatstone bridge design for measurement accuracy.
- Inch and Metric models for international installations.

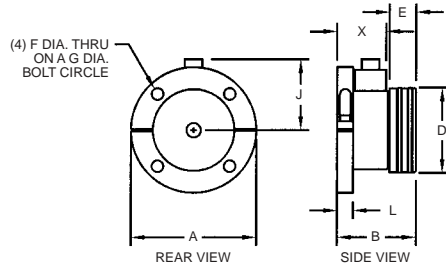
STUD MOUNT MODELS



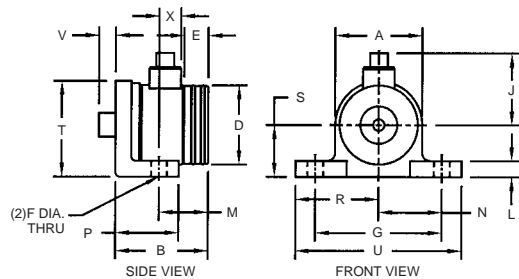
TYPICAL INSTALLATIONS



FLANGE MOUNT MODELS



PILLOW BLOCK MODELS



Complementary Products:

MAGPOWR

- Tension Control Products
 - Tension Readout
 - Cygnus Tension Control

Torque Control Products

FIFE

Guiding Products & Systems

TIDLAND

- Slitting Products & Systems
- Winding Products

MODEL	A	AA	B	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	X
TS-5-SR		2.13	2.19	52mm	0.53			1/2-13	2.1	0.88										1.57
TS-50-SR		2.13	2.19	52mm	0.53			1/2-13	2.1	0.88										1.57
TS-150-SR		2.60	2.43	62mm	0.76			1/2-13	2.3	1.00										1.57
TS-500-SR		2.60	2.43	62mm	0.76			1/2-13	2.3	1.00										1.57
TS-5-FR	3.13		2.19	52mm	0.53	0.31	2.50		2.1		0.50									1.57
TS-50-FR	3.13		2.19	52mm	0.53	0.31	2.50		2.1		0.50									1.57
TS-150-FR	4.0		2.43	62mm	0.76	0.38	3.25		2.3		0.50									1.57
TS-500-FR	4.0		2.43	62mm	0.76	0.38	3.25		2.3		0.50									1.57
TS-5-PR	2.3		2.69	52mm	0.53	0.38	3.25		2.1		0.50	1.44	1.63	1.8	2.1	1.38	2.5	4.3	0.5	0.82
TS-50-PR	2.3		2.69	52mm	0.53	0.38	3.25		2.1		0.50	1.44	1.63	1.8	2.1	1.38	2.5	4.3	0.5	0.82
TS-150-PR	2.8		2.93	62mm	0.76	0.50	4.00		2.3		0.50	1.55	2.00	2.0	2.6	1.63	3.0	5.3	0.5	0.69
TS-500-PR	2.8		2.93	62mm	0.76	0.50	4.00		2.3		0.50	1.55	2.00	2.0	2.6	1.63	3.0	5.3	0.5	0.69

METRIC MODELS

Units are in inches

TS-2-SRM		54	55.6	52mm	13.3			M12	51.6	22.2										39.8
TS-25-SRM		54	55.6	52mm	13.3			M12	51.6	22.2										39.8
TS-75-SRM		66	61.7	62mm	19.4			M12	57.2	25.4										39.8
TS-250-SRM		66	61.7	62mm	19.4			M12	57.2	25.4										39.8

Units are in millimeters

Note: The TS model load cell coupling is capable of accommodating a large amount of roll misalignment. However, to minimize web steering it is recommended that the tension sensing roll be installed with the same accuracy as other rolls in the machine.



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TS Load Cells Split Coupling



STUD MOUNT LOAD CELL



FLANGE MOUNT LOAD CELL



PILLOW BLOCK LOAD CELL

With its unique split coupling design, the TS Load Cell delivers precise web tension control in either **dead-shaft** or **live-shaft** idler roll applications. As shipped from the factory, the load cell is configured for dead-shaft operation. For applications where the shaft itself must rotate, a single set screw may be removed from the coupling to allow its rotation on an internal bearing.

The compact TS Load Cell allows maximum web widths, and can accommodate misalignment due to thermal expansion of the idler roll shaft during machine operation. The split coupling also allows the idler roll to be easily installed once the load cells have been mounted to the machine frames.

KEY FEATURES

Key Features:

- Unique split coupling design accommodates applications using either dead-shaft or live shaft idler rolls.
- Capable of handling loads up to 500 lbs.
- Compact sensor allows maximum web widths.
- Stud, Flange & Pillow Block mounting options for maximum flexibility.
- Ruggedly constructed for long life and dependability.
- Mechanical overload stops for protection even under severe overloads.
- Full Wheatstone bridge design for measurement accuracy.
- Inch and Metric models for international installations.

SPECS

General Specifications

Product Name:
TS Load Cells
- Split Coupling

Gage Resistance:
350 ohms nominal

Excitation Voltage:
10 vdc nominal

Output Signal:
21 mvdc nominal per sensor at full load rating

Operating Temperature:
-30 to 95° C

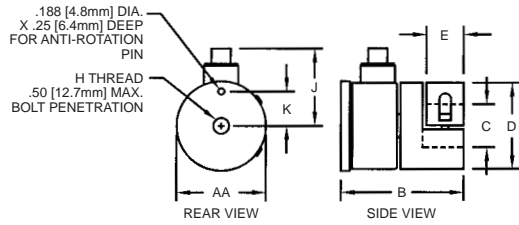
Combined Non-linearity & Hysteresis:
0.5% of full scale maximum

Repeatability:
0.2% of full scale maximum

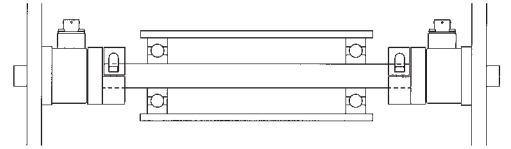
Deflection at Full Load:
0.016 inch (0.41mm) maximum

Temperature Effect on Zero:
0.02% of rating per °C

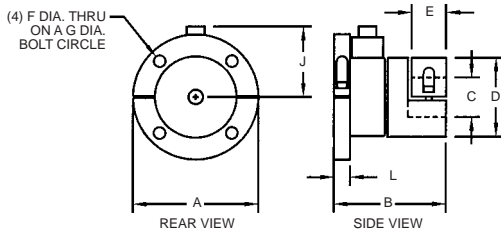
STUD MOUNT MODELS



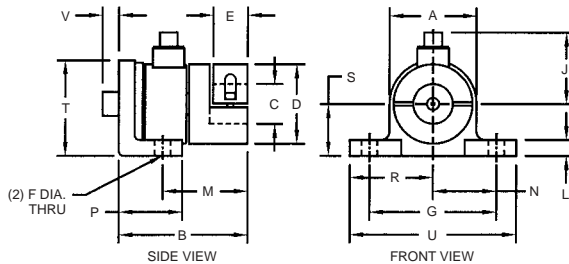
TYPICAL INSTALLATION



FLANGE MOUNT MODELS



PILLOW BLOCK MODELS



Complementary Products:

MAGPOWR

- Tension Control Products
 - Cygnus Tension Control
- Torque Control Products
 - Magnetic Particle Brakes

FIFE

- Guiding Products & Systems

TIDLAND

- Slitting Products & Systems
- Winding Products

MODEL	A	AA	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V
TS-5-SC		2.13	3.00	0.875	2.07	0.75			1/2-13	2.1	0.88									
TS-50-SC		2.13	3.00	0.875	2.07	0.75			1/2-13	2.1	0.88									
TS-150-SC		2.60	3.56	1.250	2.50	1.08			1/2-13	2.3	1.00									
TS-500-SC		2.60	3.56	1.250	2.50	1.08			1/2-13	2.3	1.00									
TS-5-FC	3.13		3.00	0.875	2.07	0.75	0.31	2.50		2.1		0.50								
TS-50-FC	3.13		3.00	0.875	2.07	0.75	0.31	2.50		2.1		0.50								
TS-150-FC	4.0		3.56	1.250	2.50	1.08	0.38	3.25		2.3		0.50								
TS-500-FC	4.0		3.56	1.250	2.50	1.08	0.38	3.25		2.3		0.50								
TS-5-PC	2.3		3.50	0.875	2.07	0.75	0.38	3.25		2.1		0.50	2.25	1.63	1.8	2.1	1.38	2.5	4.3	0.5
TS-50-PC	2.3		3.50	0.875	2.07	0.75	0.38	3.25		2.1		0.50	2.25	1.63	1.8	2.1	1.38	2.5	4.3	0.5
TS-150-PC	2.8		4.06	1.250	2.50	1.08	0.50	4.00		2.3		0.50	2.68	2.00	2.0	2.6	1.63	3.0	5.3	0.5
TS-500-PC	2.8		4.06	1.250	2.50	1.08	0.50	4.00		2.3		0.50	2.68	2.00	2.0	2.6	1.63	3.0	5.3	0.5

METRIC MODELS

TS-2-SCM		54	76.2	30.0	52.5	19.1			M12	51.6	22.2									
TS-25-SCM		54	76.2	30.0	52.5	19.1			M12	51.6	22.2									
TS-75-SCM		66	90.4	30.0	63.5	27.5			M12	57.2	25.4									
TS-250-SCM		66	90.4	30.0	63.5	27.5			M12	57.2	25.4									

Units are in inches

Note: The TS model load cell coupling is capable of accommodating a large amount of roll misalignment. However, to minimize web steering it is recommended that the tension sensing roll be installed with the same accuracy as other rolls in the machine.

Units are in millimeters



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TS Load Cells Wire Pulley



STUD MOUNT LOAD CELL



FLANGE MOUNT LOAD CELL



PILLOWBLOCK MOUNT LOAD CELL

The Wire Pulley version of the TS Load Cell is specifically designed to provide accurate, reliable control for single strand applications. Capable of handling loads up to 500 lbs (227 Kg), the durable, nickel-plated aluminum pulley can accommodate virtually any kind of material. Stud, flange and pillow block mounting options are available to ensure compatibility with your existing system.

SPECS

General Specifications

Product Name:
TS Load Cells
– Wire Pulley

Gage Resistance:
350 ohms nominal

Excitation Voltage:
10 vdc nominal

Output Signal:
21 mvdc nominal per sensor
at full load rating

Operating Temperature:
-30 to 95° C

Combined Non-linearity & Hysteresis:
0.5% of full scale maximum

Repeatability:
0.2% of full scale maximum

Deflection at Full Load:
0.016 inch (0.41mm)
maximum

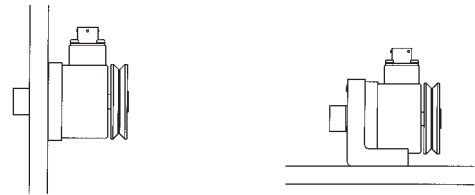
Temperature Effect on Zero:
0.02% of rating per °C

KEY FEATURES

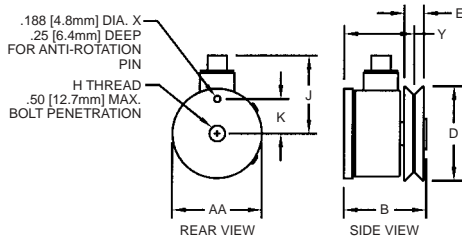
Key Features:

- Wire Pulley design ideal for any single strand application.
- Nickel-plated aluminum pulley handles loads up to 500 lbs.
- Stud, Flange & Pillow Block mounting options for maximum flexibility.
- Ruggedly constructed for long life and dependability.
- Mechanical overload stops for protection even under severe overloads.
- Full Wheatstone bridge design for measurement accuracy.
- Inch and Metric models for international installations.

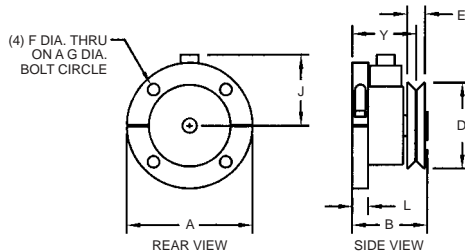
TYPICAL INSTALLATIONS



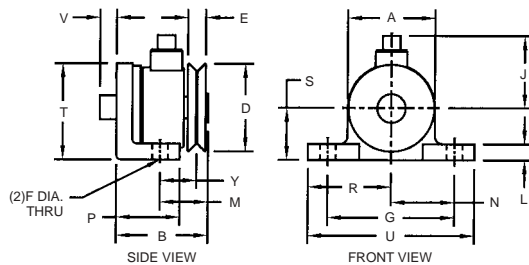
STUD MOUNT MODELS



FLANGE MOUNT MODELS



PILLOW BLOCK MODELS



Complementary Products:

MAGPOWR

- Tension Control Products
- Cygnus Tension Control
- Torque Control Products
- Magnetic Particle Clutches

FIFE

- Guiding Products & Systems

TIDLAND

- Slitting Products & Systems
- Winding Products

MODEL	A	AA	B	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	V	Y
TS-5-SW		2.13	2.19	2.05	0.45			1/2-13	2.1	0.88										1.93
TS-50-SW		2.13	2.19	2.05	0.45			1/2-13	2.1	0.88										1.93
TS-150-SW		2.60	2.39	2.73	0.57			1/2-13	2.3	1.00										2.03
TS-500-SW		2.60	2.39	2.73	0.57			1/2-13	2.3	1.00										2.03
TS-5-FW	3.13		2.19	2.05	0.45	0.31	2.50		2.1		0.50									1.93
TS-50-FW	3.13		2.19	2.05	0.45	0.31	2.50		2.1		0.50									1.93
TS-150-FW	4.0		2.43	2.73	0.57	0.38	3.25		2.3		0.50									2.03
TS-500-FW	4.0		2.43	2.73	0.57	0.38	3.25		2.3		0.50									2.03
TS-5-PW	2.3		2.69	2.05	0.45	0.38	3.25		2.1		0.50	1.44	1.63	1.8	2.1	1.38	2.5	4.3	0.5	1.18
TS-50-PW	2.3		2.69	2.05	0.45	0.38	3.25		2.1		0.50	1.44	1.63	1.8	2.1	1.38	2.5	4.3	0.5	1.18
TS-150-PW	2.8		2.89	2.73	0.57	0.50	4.00		2.3		0.50	1.51	2.00	2.0	2.6	1.63	3.0	5.3	0.5	1.15
TS-500-PW	2.8		2.89	2.73	0.57	0.50	4.00		2.3		0.50	1.51	2.00	2.0	2.6	1.63	3.0	5.3	0.5	1.15

METRIC MODELS

Units are in inches

TS-2-SWM		54	55.6	52.0	11.4			M12	51.6	22.2										49.1
TS-25-SWM		54	55.6	52.0	11.4			M12	51.6	22.2										49.1
TS-75-SWM		66	60.7	69.4	14.4			M12	57.2	25.4										51.5
TS-250-SWM		66	60.7	69.4	14.4			M12	57.2	25.4										51.5

Units are in millimeters

Note: The TS model load cell ("no-coupling" option) is available for use with your pulley. Consult factory.



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