MAGPOWR®

A Maxcess International Company

# VERSATEC Versatile Tension Control
# Ultrasonic


LC-500G


LC-500G-S1

CE

As manufacturing capability evolves and the demands for finer wire, filament and textile material increase, so does the need for tension control in extremely light applications. To meet this critical need MAGPOWR has developed the LC-500G, 500 gram load cell.

With a full wheat-stone bridge strain gage configuration, the LC-500G meets the same industry leading specifications as all other MAGPOWR load cells. The LC-500G also employs 360 degrees of overload protection preventing the need for recalibration in the event of overload situations.

The LC-500G is designed to mount easily into almost any single strand installation. A pair of supplied jam nuts allow you to easily mount the unit into your machine frame with simple depth and orientation adjustment. The LC-500G is constructed from corrosion resistant, nickel-plated aluminum and is provided with a 1" diameter X 1/8" wide anodized aluminum pulley. For applications requiring special pulleys, the LC-500GS1 is available with provisions for a customer-supplied pulley.

## SPECS

### General Specifications

**Product Name:**
LC500G - Low Tension Load Cell

**Gage Resistance:**
350 Ohm

**Excitation Voltage:**
10 vdc nominal

**Output Signal:**
21 mvdc nominal at full load

**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:**
.014 in. (.36 mm) maximum

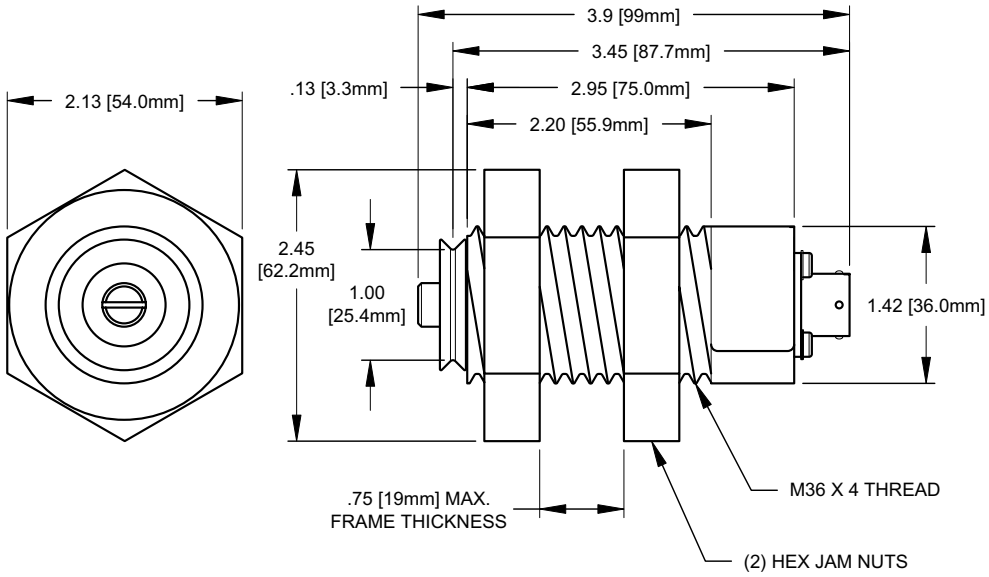
**Temperature Effect on Zero:**
0.02% of rating per °C

## KEY FEATURES

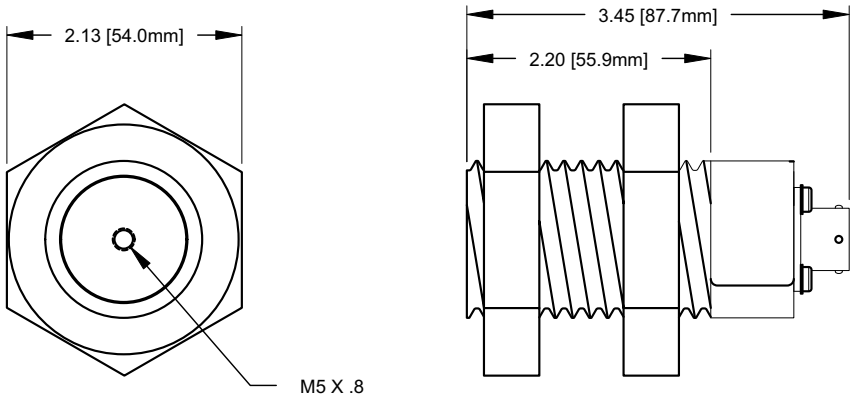
### Key Features:

- Easy to install.
- Precise control in extremely low tension applications.
- 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.

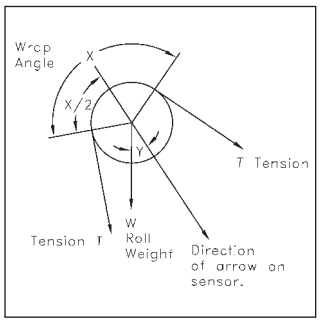
## LC-500G




## LC-500G-S1




# *Sizing - Single Strand Applications*




To select the load cell, the total load on the sensing roll must be calculated. This load consists of the tension com-ponents in the sensing plane, plus the pulley weight components in the sensing plane. The equation for this load is:

**LOAD = 2T (sin (X/2)) + (W cos Y)**

This is the total load. But, since tension transients are generally quite large, the "T" should be multiplied by 2. The final equation for load rating required for the sensor is then:

**L= 4T (sin (X/2)) + (W cos Y)**

To select a load cell, apply this equation and choose a load cell with a load rating greater than L. For example, if the pulley weight is 1 lb, the maximum web tension is 25 lb, the angle Y is 60 degrees, and the wrap angle is 90 degrees, the resulting load cell rating is:

**L=4 (25) (sin (90°/2)) + 1 cos 60°**
**L = 71.2 lb**

Therefore, use a TS-150-SW, TS-150-FW or TS-150-PW load cell.

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