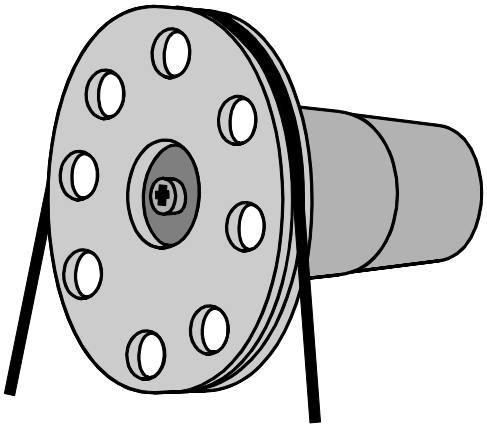
BLH®

Web Tension Measurement and Control Technology

Ultra-Low Tension - LTN Transducer

LTN Ultra-Low Tension Transducer Applications:

Fiber Optics Cable/Wire Labels/Filaments/Thread



- **Precision Accuracy - Repeatability Better Than 0.02% Rated Output**
- **Compact Size with High Overload Capability**
- **Easily Adapts to Customer Supplied Rods, Shafts, or Pulleys**
- **Measure Low Resultant Tension Forces with Small Wrap Angles**
- **Single Bolt Installation**
- **Wide Range of Operating Tensions**
- **Factory Calibration Eliminates Need for On-Site Test Weights**

Product Description

Cantilever mounted, narrow web LTN transducers are designed to measure single strand or narrow web tensions in any moving web material that requires ultra-low force measurement with high accuracy. The filament and fiber transducer offers excellent sensitivity in working ranges of less than 150 grams and permits accurate resolution at the milligram level. Accuracy and long-term reliability are assured through the LTN beam design along with the installation of bonded foil strain gages connected into a full Wheatstone Bridge. All units are designed to survive overloads of 300% rated capacity without sustaining damage, and are temperature compensated and calibrated to permit on-site push-button calibration.

LTN transducers are not limited by difficult applications. Repeatable tension signals are produced regardless of wrap angle and range of operating tension.

LTN design accommodates customer supplied sheaves or rods required for fiber optic/wire/ cable or filament applications.

New BLH DXp-40 Web Tension Transmitters measure and display tension data from multiple LTN transducers. Along with measurement, these units provide four analog control signal outputs and a digital RS-485, Allen-Bradley Remote I/O Interface.

LTN Specifications and Outline Dimensions

Performance (% Rated Output)

Capacity	1.3, 2.2, 4.4, and 6.6 pounds* (600gm, 1, 2, and 3 kilograms)
Rated Output (R.O.)	1.0 mV/V nominal
Nonlinearity	0.02% R.O.
Hysteresis	0.02% R.O.
Repeatability	0.02% R.O.
Creep (20 minutes)	0.02% R.O.

Temperature

Safe/Storage Range	14 to 122°F (-10 to 50°C)
Compensated Range	14 to 122°F (-10 to 50°C)
Temperature Effects:	
Zero Balance	0.0023% R O.PF (0.004%°C)
Output	0.0007% LoadPF (0.0012%/°C)

Overload Ratings: (% Rated Capacity)

Safe Load	300%
Ultimate Load	500%
Safe Side Load	300%
Ultimate Side Load	500%

Electrical

Recommended Excitation	10 Vac/dc
Maximum Excitation	15 Vac/dc
Input Resistance	420 ohms nominal
Output Resistance	350 ohms +/-5 ohms
Insulation Resistance	2 G-ohms
9 Pin 'D' Connector	see outline dimensions

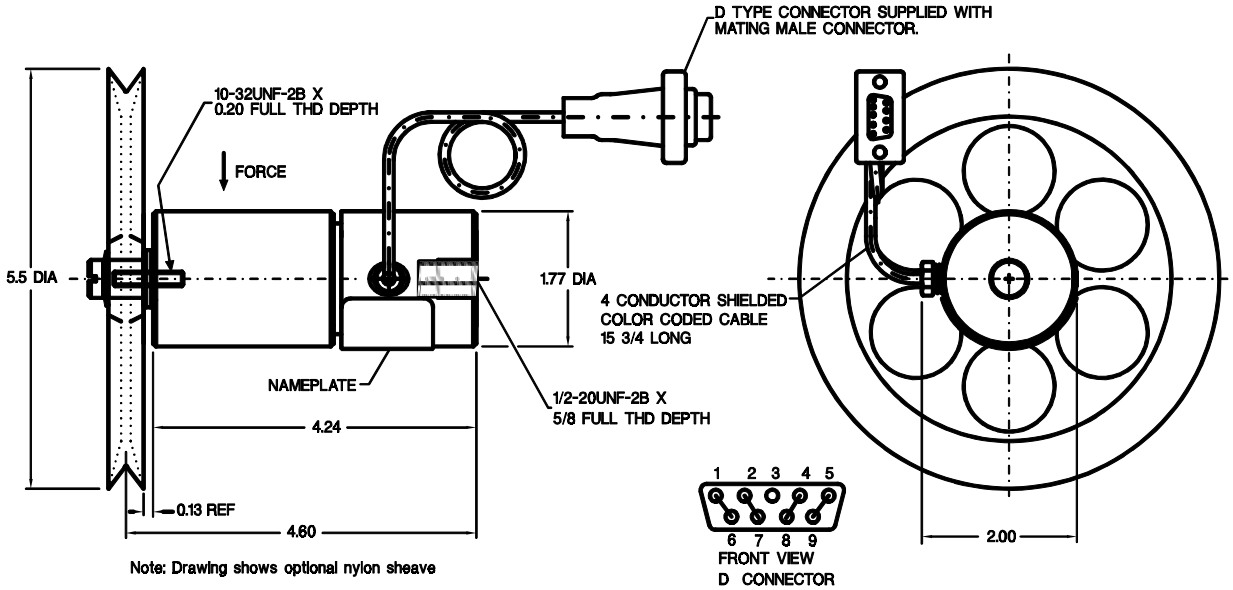
Material

Beam Housing	aluminum
Mounting Bolt	1/2-20 UNF-2 grade 3 min (not supplied by BLH)

Mechanical

Unit Weight	13 ounces
Deflection	0.008 inch (0.2 mm)

*includes housing load end dead weight of 0.30 lb



Note: Drawing shows optional nylon sheave

TENSION UNIT CONVERSIONS	
METRIC	ENGLISH
600 GM	1.3 LB
1 KG	2.2 LB
2 KG	4.4 LB
3 KG	6.6 LB

SIGNAL	FLYING LEADS	9-PIN D-CONN.
INPUT +	RED	1 & 6
OUTPUT +	GREEN	2 & 7
SHIELD	———	3
OUTPUT -	BLUE	4 & 8
INPUT -	WHITE	5 & 9

BLH is continually seeking to improve product quality and performance. Specifications may change accordingly.