

## Low Tension Transducer

### FEATURES

- Capacity range: 20, 50, 100, 200, and 500 lb (9.1, 22.7, 45.4, 90.7, and 227 kg)
- Single bolt mounting with visual alignment marks for direct measurement of resultant force
- Repeatability better than 0.02% rated output
- Wide range of operating tensions (rangeability)
- Minimal deflection allows high operating speeds
- Factory calibrated for minimum start-up time
- Stainless steel construction with high overload capability

### APPLICATIONS

- Converting equipment
- Winders/unwinders
- Coaters
- Laminators
- Printing presses

### DESCRIPTION

LTT technology combines precision strain gage force transducers with dead shaft mounting options to produce the highest accuracy web tension measurement systems available. LTT series transducers, developed for low force web tension applications, incorporate a differential bending beam design with a full Wheatstone Bridge strain gage configuration. This design provides stable, accurate, and repeatable measurement over a wide range of operating tensions while virtually eliminating temperature drift.

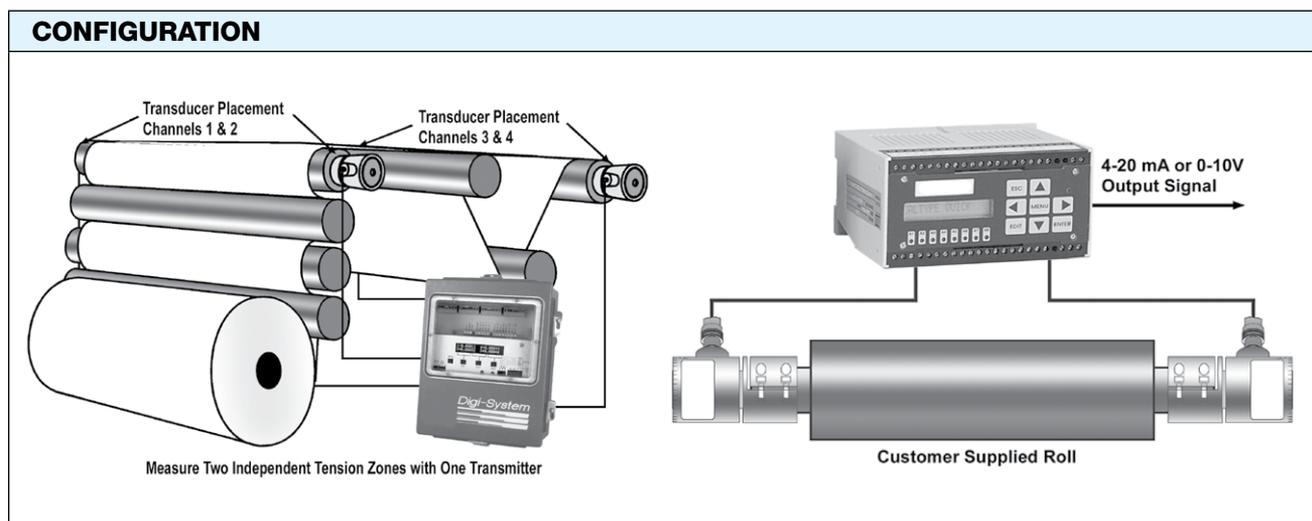
All LTT capacities are equipped with mechanical overload protection.



Available with a mounting configuration for dead shaft applications (with horizontal or vertical support surfaces), the LTT can be rotated to measure the resultant tension force, not just a component of the force.

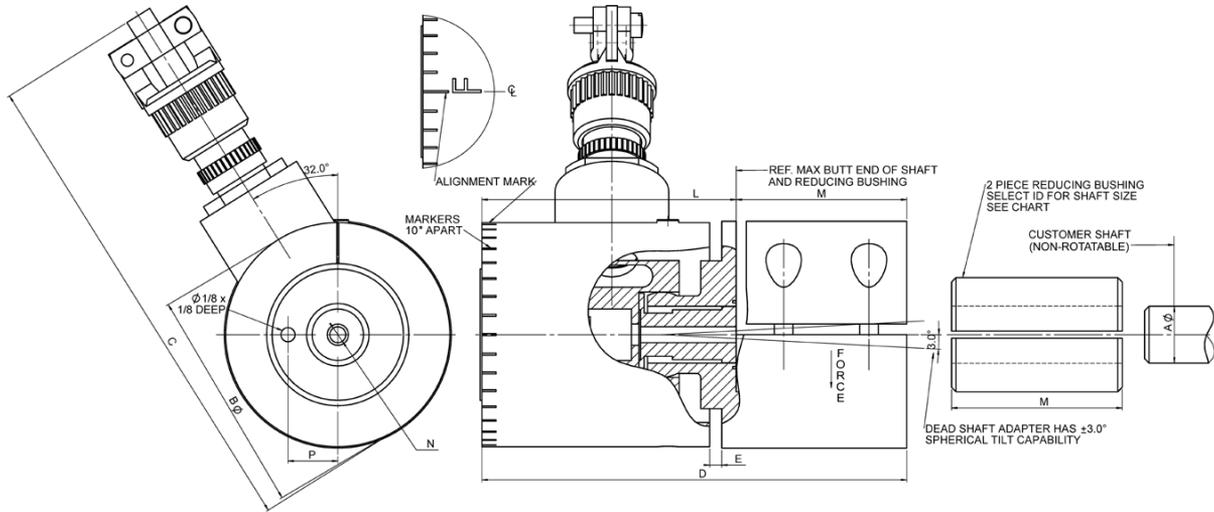
Factory calibration, with closely matched output signals, eliminates field calibration and costly recalibration after the initial setup. Zero and span settings remain stable for tension forces at the low end of wide rangeability applications. The full bridge design (as opposed to half bridge) provides moderate accuracy when using a single transducer on one end of the roll.

### CONFIGURATION



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**OUTLINE DIMENSIONS – LTT WITH DEAD SHAFT ADAPTER**



PART NAME	CAP (lbs)	A SHAFT (NOM)	BØ	C	D (MAX)	E	L (REF)	M	N	P
LTT 20	20	1/2	1.97	4 3/8	3.75	0.11	2.25	1.50	1/2-20UNF-2B x 9/16 DEEP	0.438
LTT 50	50	3/4								
LTT 100	100	7/8								
		1	3.47	5 29/32	5.68	0.16	3.68	2.00	5/8-18UNF-2B x 11/16 DEEP	0.750
		1								
		1 1/4								
LTT 200	200	1 1/2								
LTT 500	500	1 3/4								
		2								

NOTE:  
1. ALL DIMENSIONS IN TABLE - IN INCHES.

**CONNECTOR COLOR CODE**

EXCITATION — GREEN (+) C  
                  — BLACK (-) B

OUTPUT — WHITE (+) D  
                  — RED (-) A

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SPECIFICATIONS		PARAMETER	VALUE
<b>PERFORMANCE (% RATED OUTPUT)</b>		<b>OVERLOAD RATING</b>	
<b>Rated capacities</b>	20, 50, 100, 200, 500 lb (9.1, 22.7, 45.4, 90.7, and 227 kg)	<b>Safe load</b>	200% rated capacity
<b>Rated output (RO)</b>	2.000 mV/V $\pm$ 0.25%	<b>Safe side load</b>	100% rated capacity
<b>Nominal repeatability</b>	0.02% RO	<b>Ultimate load</b>	300% (or better) rated capacity
<b>Maximum combined error</b>	0.05% RO	<b>MATERIAL</b>	
<b>Zero balance</b>	5.0% RO	<b>All load cell parts</b>	stainless steel
<b>Creep (20 minutes)</b>	0.03% RO	<b>Bendix connector</b>	cadmium plated aluminum
<b>Temperature effects on zero balance</b>	0.002% RO/ $^{\circ}$ F (0.0036% RO/ $^{\circ}$ C)	<b>SEALING</b>	
<b>Temperature effects on rated output</b>	0.002% of reading/ $^{\circ}$ F (0.0036% of reading/ $^{\circ}$ C)	<b>Environmental class</b>	IP67
<b>ELECTRICAL</b>		<b>DEFLECTION AT RATED CAPACITY</b>	
<b>Input resistance</b>	350 $\Omega$ $\pm$ 3 $\Omega$	<b>20 lb</b>	0.0055 in
<b>Input output resistance</b>	350 $\Omega$ $\pm$ 3 $\Omega$	<b>50 lb</b>	0.0045 in
<b>Recommended excitation</b>	10 VAC/VDC	<b>100 lb</b>	0.0035 in
<b>Maximum excitation</b>	15 VAC/VDC	<b>200 lb</b>	0.0210 in
<b>TEMPERATURE</b>		<b>500 lb</b>	0.0148 in
<b>Operating range</b>	-40 to 220 $^{\circ}$ F (-40 to -105 $^{\circ}$ C)		
<b>Compensated range</b>	+15 to 130 $^{\circ}$ F (-10 to 65 $^{\circ}$ C)		

Note: Transducer axis misalignment  $\pm$ 3 $^{\circ}$  max.

Note: Environmental sealing optionally available; may affect measured accuracy by 1 ounce or less

Note: Install Intrinsically safe systems with Drawing # 468872-1

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



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