How The Cleveland-Kidder® Ultra Line Load Cell System Maximizes Quality & Productivity

CMS has raised the bar on transducer performance. More important, our new Cleveland-Kidder® Ultra Line Load Cell System raises the bar on your ability to increase quality and maximize productivity.

The result—you now have the most accurate web tension control system yet for processing the widest variety of materials.

**WEB TENSION DIVISION**

![Diagram of the Cleveland-Kidder Ultra Line Load Cell System](image)

### 40:1 Tension Range & Noise Rejection

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<th>Advantages Over Conventional Web Tension Designs</th>
<th>Why It Can Be Done</th>
<th>How CMC Does It</th>
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<td>Operates over a wider tension range—40:1. Competitive products provide tension ranges of only 8:1 or 16:1 at the very best.</td>
<td>Provides a higher signal output that results in better signal resolution.</td>
<td>1. 4 Semi-Conductor Strain Gages in a full Wheatstone Bridge Transducer Design provides a higher and more stable signal.</td>
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<td>Ability to measure lower and lighter tensions.</td>
<td>Substantial and stable signal even at low tensions.</td>
<td>2. “Twin Beam Design” provides high mechanical gain with negligible displacement.</td>
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<td>Does not react to electrical noise from AC motors, servos, relay coils, or other electrical disturbances.</td>
<td>Rejects electrical noise resulting in a clean and accurate output signal devoid of distortion.</td>
<td>3. Latest Amplifier Technology incorporating surface mount components and thin film resistors—eliminates drift which distorts low tension measurements.</td>
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<td>Better at maintaining accurate tension measurement regardless of ambient temperature changes.</td>
<td>Minimum deviation of signal output due to temperature changes.</td>
<td>4. Four-Wire Differential-Ended Technology provides common mode rejection of electrical disturbances.</td>
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<td>5. Precise Temperature Compensation Network cancels out temperature influences.</td>
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Cleveland-Kidder Ultra Line Load Cell Systems, consisting of load cell, amplifier and cable, provide better performance than competitive load cells by increasing the operating tension range from 8:1 to 40:1. (This means that a 50 lb. (222 N) Ultra Line Load Cell accurately measures from 1.25 lbs. (5.5 N) to 50 lbs. (222 N) of tension when used with an Ultra Line Amplifier.) Industry standard transducers currently measure tension ranges of only 8:1 to 16:1.

Ultra Line Load Cell System Solutions also provide a more accurate measurement by eliminating electrical disturbances from AC drives, servos and other high frequency devices.

In addition, they maintain accurate measurement regardless of ambient temperature changes and eliminate drift, which can distort low-tension measurements. They are also CE compliant.

Slim Cell Transducers

With a unique low-profile design, Ultra Line Slim Cells set the standard for either new machinery or for retrofits where space is tight. With a dust sealed, corrosion resistant, water resistant design, they are ideal for use in demanding industrial environments.

Ultra Line Slim Cells can be used with either rotating shafts or dead shaft rollers. They have a flat cylindrical shape, designed to reduce the required side-frame-to-side-frame width of the machine.

Ultra Line Cartridge-Style Load Cells

Ultra Line Cartridge-Style Load Cells are modular in design, providing the greatest degree of installation and application flexibility. With heavy duty construction and a low maintenance design, they reduce the necessity of machine modifications while minimizing downtime. They are ideally suited for lightweight material and thin webs where tight control of tension is required to prevent stretching or wrinkling of the material.

CLT Transducers

With the CLT Cantilevered Transducer, users can specify the fixed shaft roller of their choice—any length, diameter and material. It will accommodate almost any roller type, while eliminating the expense of an integrated cantilevered roller. Because only the idler roller needs to be replaced, users will be able to save on maintenance costs. In addition, the Cantilevered Transducer CLT eliminates the need to custom-design transducers for non-standard applications.

Special Ultra Line Cabling

Ultra Line Load Cell Solutions provide a common mode of rejection to electrical influences, including AC motors, servo controls, relay coils, and other electrical disturbances. At CMC, we accomplish this by utilizing special four-wire differential-ended cabling and our specially designed Ultra Line Amplifier. In addition, Ultra Line Cabling includes M12 Quick-Connect Sealed 4-Pin Connectors.