

ITT Cleveland Kidder® Web Tension Control for Today's Demanding Applications



ITT

ENGINEERED FOR LIFE

Web Tension Control for Today's Demanding Applications

Reliable performance is an absolute necessity in today's motion control world. High speed and precise accuracy are simply basic requirements in a demanding market, ITT not only offers leading edge technology products; but also has the motion application expertise and commitment to innovation that allows us to truly supply world class capabilities.

ITT can offer the following motion control solutions:

Industrial Products & Systems - AC & DC Drives, Servo Amplifiers, PC-Based Automation Control, Web Tension Controls, Engineered Drive Systems

Electro-Mechanical - Brush Servomotors, Brushless Servomotors, Encoders, Linear Actuators, Linear Positioners

WHY USE CLEVELAND-KIDDER® FOR YOUR WEB TENSION SOLUTIONS?

- ITT has been providing web tension solutions under the Cleveland-Kidder brand for nearly 50 years.
- We offer products that cover a full range of web tension applications.
- The Ultra line is the latest Cleveland-Kidder® innovation, which offers **40:1 tension range** and noise immunity.



Tension Transducers
(Load Cells)



Tension Indicators



Tension Controllers



Tension Amplifiers



Magnetic Particle Brakes
and Clutches

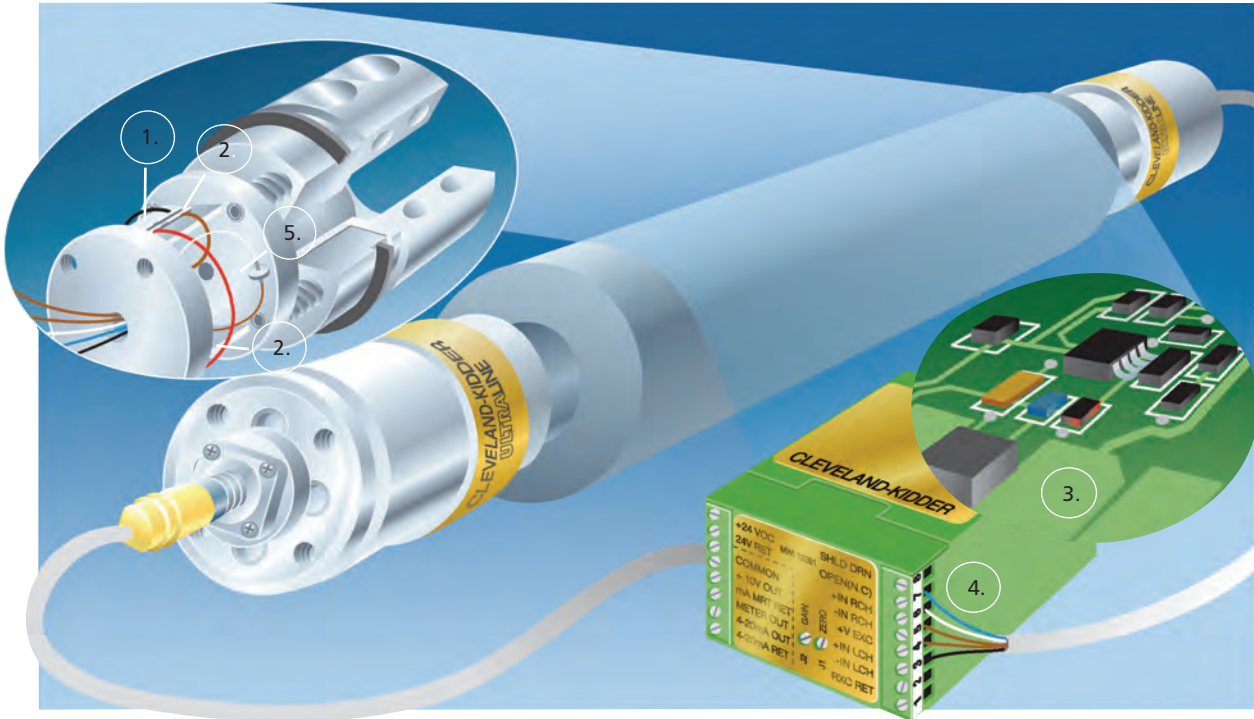


Accessories
(cables, intrinsically safe
barrier blocks, meters)



ITT Cleveland Kidder® - Ultra Line

HOW THE CLEVELAND-KIDDER® ULTRA LINE LOAD CELL SYSTEM MAXIMIZES QUALITY AND PRODUCTIVITY



40:1 TENSION RANGE & NOISE REJECTION

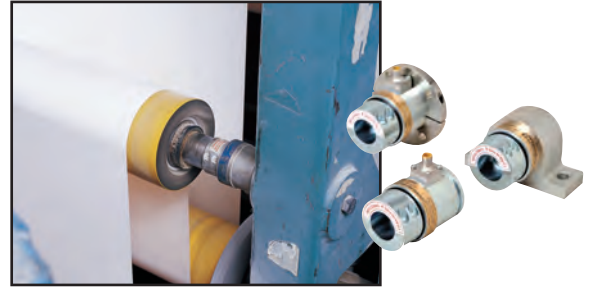
Advantages Over Conventional Web Tension Designs	How Cleveland-Kidder® Does It
Operates over a wider tension range—40:1. Competitive products provide tension ranges of only 8:1 or 16:1 at the very best.	<p>①. 4 Semi-Conductor Strain Gages in a full Wheatstone Bridge Transducer Design provides a higher and more stable signal.</p> <p>②. “Twin Beam Design” provides high mechanical gain with negligible displacement.</p>
Ability to measure lower and lighter tensions.	<p>③. Latest Amplifier Technology incorporating surface mount components and thin film resistors—eliminates drift which distorts low tension measurements.</p>
Does not react to electrical noise from AC motors, servos, relay coils, or other electrical disturbances.	<p>④. Four-Wire Differential-Ended Technology provides common mode rejection of electrical disturbances.</p>
Better at maintaining accurate tension measurement regardless of ambient temperature changes.	<p>⑤. Precise Temperature Compensation Network cancels out temperature influences.</p>

ITT Cleveland Kidder® - Ultra Line

TENSION TRANSDUCERS FOR WIDE WEBS

CARTRIDGE STYLE TRANSDUCER

- For Wide Webs, Stationary Shafts
- Very Versatile Due to a Variety of Mounting Styles
- Most Popular -Industry Standard- Great Value
- Ultra Line Features a 40:1 Tension Range and Noise Immunity
- Ratings : 25-1000 LB. MWF
- Typical Overload Rating: 150-300%



"The Ultra gives us the expanded range that our customers require. I hadn't known that a load cell with the Ultra's 40:1 tension range existed. It is incredible. The Ultra passed all our tests with flying colors, and we are now incorporating it as a standard on our flexographic printing presses."

TENSION TRANSDUCERS FOR WIDE WEBS

SLIM CELL TRANSDUCER

- For Stationary (dead) Shafts or Rotating (live) Shafts
- Slim Profile, Advanced Design for Use Where Mounting Space is Tight
- Especially Good for Light Tensions, Extended Tension Ranges and Retrofits
- Wash Down Duty, Corrosive and Chemical Resisting
- Ultra Line features a 40:1 Tension Range and Noise Immunity
- Ratings: 10-1000 LB. MWF
- Typical Overload Rating: 500-1000%

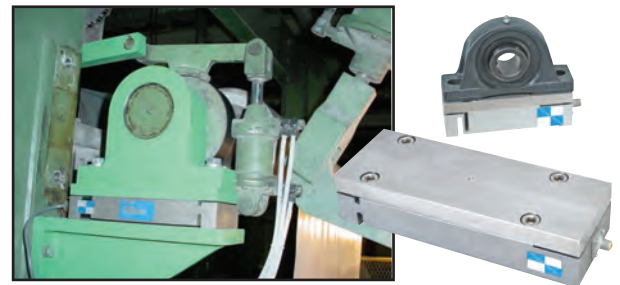


"The Ultra Slim Cells are so much more responsive. We are able to accelerate to the limit and the tension is dead on. Plus we have experienced absolutely no noise and no drift."

TENSION TRANSDUCERS FOR WIDE WEBS

UPB WASHDOWN DUTY LOAD CELL

- For Rotating (live) Shafts
- For Use with Under Pillow Block Bearings - Low Height Profile
- Especially Good for Use in High Tension Applications
- Wash Down Duty, Corrosive and Chemical Resisting
- Ultra Line Features- 40:1 Tension Range and Noise Immunity
- Ratings: 25-30,000 LB. MWF
- Typical Overload Rating: 500%



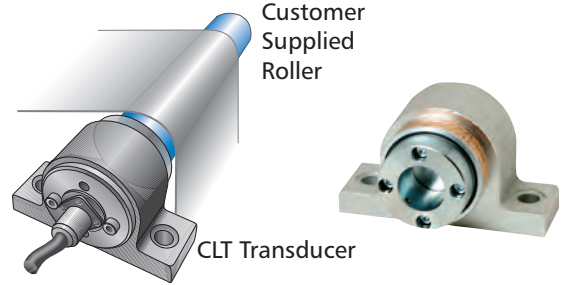
"We are saving a tremendous amount of energy in our steam generation since we can now maintain the proper web contact with the dryer drums. This of course leads to cost savings and more profit. In addition, we have significantly decreased downtime by avoiding web breaks; further adding to our bottom line."

ITT Cleveland Kidder® - Ultra Line

TENSION TRANSDUCERS FOR NARROW WEBS

CANTILEVERED TRANSDUCER (CLT)

- For Stationary Shafts, Typically 20 Inches or Less
- For Use With Customer Supplied Cantilevered Roller - No
- Need for Specially Designed Transducer with Integral Roller
- Unique Design Eliminates Effects of Shifting Cantilevered Loads.
- The Force Remains the Same No Matter Where the Material is Placed along the Roller.
- Also for Use with Pulleys (sheaves)
- Ultra Line Features a 40:1 Tension Range and Noise Immunity
- Ratings: 0.1-500 LB. MWF
- Typical Overload Rating: 150-300%



"Before we switched to Cleveland-Kidder® transducers, it was a real pain trying to get custom integrated roller transducers made, as well as expensive. Many times the result was not quite what we wanted and we needed to get the transducer rollers modified or we improvised. The CLT has solved this problem. The force remains the same no matter where the material is placed along the roller."

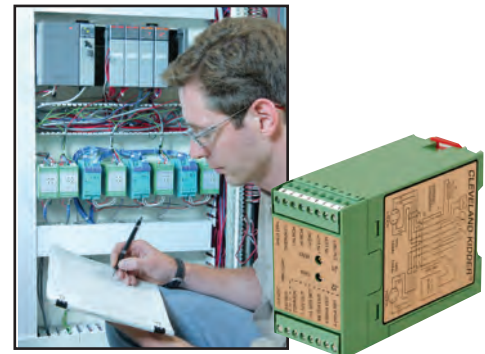
INTEGRATED ULTRA AMPLIFIER (ULTRA ISC)

- Includes Integrated Signal Conditioner (ISC)
- No additional amplifier required
- Direct +/- 10 VDC output
- Local signal conditioning minimizes electrical noise
- Factory preset zero and gain 0V= no load, 10V = load cell rating
- Available in all Ultra Line models –Cartridge, Slim Cell, UPB, and CLT
- Eliminates hardware costs of a separate amplifier
- Frees up panel space
- Reduces the amount of documentation drawings
- Reduces wiring costs
- Eliminates amplifier setup and calibration



ULTRA DIN RAIL AMPLIFIER

- Enclosed DIN Rail Mountable
- Wiring Schematic Located on the Side
- Sums and Conditions Signals from a Transducer Pair or a Single Transducer
- Interfaces to a Wide Variety of Remote Devices
- Provides either 0-10VDC or 4-20 ma Tension Signal Output
- Electrically Isolated Output Available
- Incorporates State-of-the-Art Surface Mount Components for High Stability and Precision
- Maintains Extremely Stable Signal over Time. No Drift and No Need to Recalibrate.



"Applying closed-loop control was quite a learning curve for us. Selecting the right vendor as a partner who can help you is critical. ITT has responded with excellent product and application support. With the addition of Cleveland-Kidder® Ultra amplifiers, transducers and AC variable frequency drives we have increased our performance in ways not thought possible."

ITT Cleveland Kidder® - Ultra Line

TENSION INDICATORS

- Indicates the Precise Tension Value
- Easy-to-Read Analog or LED Digital Displays
- State-of-the-Art Technology Incorporates Latest Ultra DIN Rail
- Amplifier for Signal Conditioning
- Switch Selectable Damping for Meters
- Directly Accepts 50/60 HZ 86-264 VAC; Single Phase Input
- Extra Large Character (1.5 inch high) Digital Display Available
- Accessory 0-10VDC or 4-20ma Tension Output Provided for Remote Devices
- Customized Analog Scales Available
- For Use with All Cleveland-Kidder® Transducers



"The Cleveland-Kidder® transducers and indicators have a much better tension range than their competition since they are much more sensitive to lower tensions. We have standardized on ITT transducers for all our machines. They are a good value, they provide superior performance and are reliable and cost effective."

SINGLE ZONE TENSION CONTROLLERS

WEBPRO - Full Keypad and Large Display

- Closed-Loop Tension Controller Configurable for either Brakes, Clutches, or Drives
- Easily Configurable for Unwind, Intermediate and Winder Applications
- Large, Bright, Easy-to-Read Graphical Display; Displays Digital and Analog Tension Values; Total, Left and Right, Tensions Displayed Together
- Tension Can Be Displayed in Pounds, Newtons, Kilograms, or Percentages



QUANTUM - Extremely Small Package - Laptop Programmable

- Size of a Postcard 6.5 in.W x 4.3 in.H x 1.6 in D
- Low Cost Solution for Closed Loop Control of Dancers and Unwinds
- Configurable for Brakes, Clutches, or Drives
- For use with Dancer Pots, Ultrasonic Sensors, or all Cleveland-Kidder® Tension Transducers

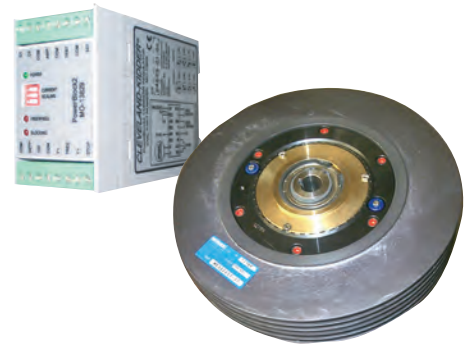


"Our paper finishing line required closed loop control for improved performance. We added Cleveland-Kidder® Load Cells and Controllers on our unwind and rewind. We increased our line speed from 300 to 1000 fpm while improving the quality of our end product. ITT's support has been outstanding."

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MAGNETIC PARTICLE BRAKES AND CLUTCHES

- Wide Range of Torque Ratings – 1.5 to over 260 LB. FT.
- Shaft Mounted
- 100 to 1 Torque Range
- Dustless - Excellent for Use in Medical and Clean Environments
- Provided with Optional Heat Sink or Air-Over Blower for Exceptional Heat Dissipation
- DIN Rail Mountable Current Regulated Power Supply Available



“Closed-loop tension control is the only way to go. This is truly an innovation in our industry. It took a while for our customers to realize the benefits. We are now leaders in this industry and selling more machines due to this feature. We're elated with the controller, brakes and Cleveland-Kidder® transducers.”

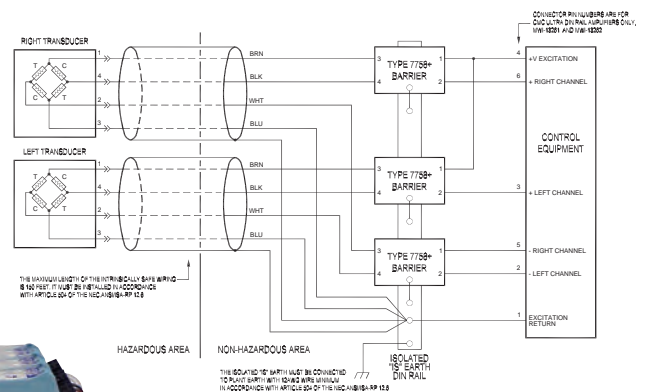
ULTRA LINE CABLES

- M12 Quick – Connect Sealed 4-Pin Connector
- Four-Wire Differential-Ended Cable
- Flying Leads Provided on Amplifier/Controller End
- Provides Common Mode Rejection to Electrical Influences, Including AC Motors, Servos, Relay Coils and Other Electrical Disturbances
- Cable Lengths Available in 8 Meter Increments up to 40 Meters



INTRINSICALLY SAFE BARRIER BLOCKS

- DIN Rail Mountable IS Barrier Blocks
- For Use with All Cleveland-Kidder® Transducers, Indicators, Amplifiers and Controllers
- Multiple Certification Including UL, Factory Mutual, CSA and ATEX
- Provided as an Assembly with DIN Rail Bar and Isolation Blocks
- Wiring Diagrams and Instructions Provided





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