Multi-Zone Web Tension Transmitter

FEATURES

- Individually digitized transducer forces for up to 4 web tension zones
- View left, right, and total tension values
- 100% digital calibration - no dead weight loading, no strapping
- Internal diagnostics significantly reduce downtime
- Dynamic Digital Filtering for each tension zone
- Measure resultant force (F_r) and angle of inclination for any or all wrap angles (HTU version only)

OPTIONAL FEATURES

- Total, individual, and difference output control signals – four 4–20 mA outputs
- 4 input/output dry contact relays
- Viewing window for internal vacuum fluorescent display
- Allen-Bradley Remote I/O or Modbus RTU interface

APPLICATIONS

- Pulp and paper machinery
- Roofing machines
- Converting equipment
- Mining conveyors
- Winders, rewinders, laminators, coaters, dryers, felts

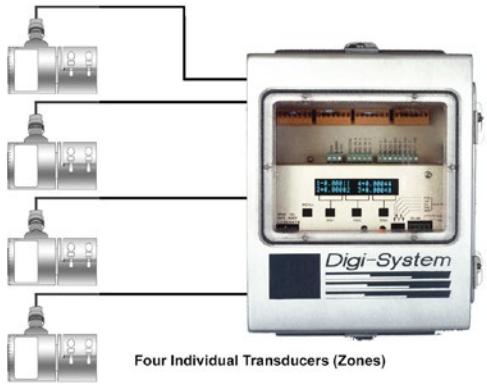
DESCRIPTION

DXt-40 Tension Transmitters measure up to four independent web points, or zones, to ensure maximum operating speeds without belt, felt, or product breakage. Each zone is precisely measured with 750,000 count resolution and produces a corresponding, high resolution, 4–20 mA output. Total, individual, and differential outputs from two transducers (load cells) permit a comparison of tension signals on either side of a sheet, strip, or web.

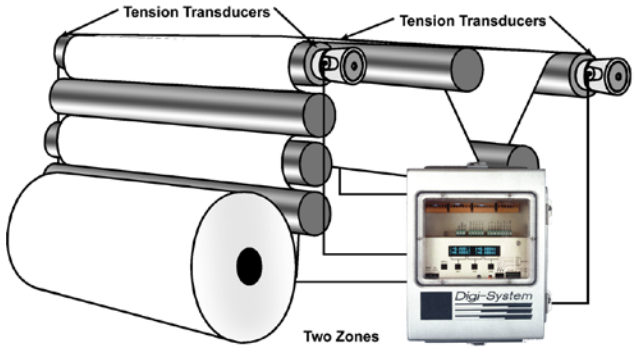
Digital calibration eliminates time consuming dead weight loading and machine “strapping”. With four integral operating modes, DXt-40 transmitters offer wide operating flexibility and easy installation. Simply select the mode that matches your application, enter the transducer zero and span values, and begin system operation.

When combined with unique HTU transducers, units measure both horizontal and vertical tension vectors. Based upon both measurements, software algorithms calculate the precise, resultant force vector and exact linear tension component.

CONFIGURATION



Four Individual Transducers (Zones)



Two Zones

BLH NOBEL
A VPG Brand

Multi-Zone Web Tension Transmitter

SPECIFICATIONS

PARAMETER	VALUE
PERFORMANCE	
Internal Resolution	4,194,304 total counts
Max. Display Resolution	3,000,000 total counts
Max. Res. Per Channel	750,000 counts
Conversion Speed	100 ms (10 updates/s)
Full Scale Range	±35 mV/channel
Bipolar Dead Load Range	±100% (positive/negative signal)
Linearity	±0.0015% of full scale
Load Cell Excitation	10 V (65 mA/channel max.)
Software Filter (std)	50 to 10,000 ms
Optional Auto-Tune Filter	multivariable up to 10,000 ms
Remote Sense	user configurable, each channel
Span/Zero	±2 ppm/°C
Calibration Repeatability	0.6 µV per count
Step Response	one conversion cycle
Units	LB, KG, N, PLI, (all) and N/M or Web Width (HTU only)
ENVIRONMENT	
Operating Temperature	–10 to 55°C (12 to 131°F)
Storage Temperature	–20 to 85°C (–4 to 185°F)
Humidity	5 to 90% RH, non-condensing
INTERNAL DISPLAY / OPERATOR INTERFACE	
Standard VFD Display	high visibility, vacuum fluorescent 2 columns of 20 characters each
Interface	4 “soft buttons”
ELECTRICAL	
Voltage	117/230 VAC +15% 50/60 Hz
Power	12 W max.
Input Impedance	10 MΩ, min. per channel
Noise	0.002% full scale (max. ±16 counts w/o filter)
Common Mode Rej.	100 dB @ 60 Hz
Normal Mode Rej.	100 dB above 35 Hz
Parameter Storage	EEPROM
ISOLATED ANALOG OUTPUT(S) – FOUR AVAILABLE	
Type	16 bit digital to analog convertor
Current	4–20 mA (600 Ω max. load)
Voltage	0–10 VDC (25 kΩ min. load)

PARAMETER	VALUE
RELAY OUTPUTS (OPTIONAL)	
Solid State	110/220 VAC at 1.0 A
Closed Contact	28 VAC/DC @ 0.4 A (max.)
DIGITAL INPUTS	
Logic”0” (Low)	short circuit or less than 0.5 VDC, sink 3 mA (min.)
Logic”1” (High)	open circuit or 10 to 28 VDC (TTL open collector)
SIMPLEX DATA OUTPUT (STANDARD)	
Type	RS-485 (Simplex)
Baud	1200 or 9600
Data Format (Selectable) ASCII	7 data bits, even parity, stop bit
TERMINAL / COMPUTER INTERFACE (OPTIONAL)	
Interface Type	RS-485 half duplex (standard)
Baud	1200 or 9600
Protocol	duplex command / response format
ASCII	7 data bits, even parity, stop bit
SPECIAL PROTOCOLS (OPTIONAL)	
Modbus	RTU Protocol
SPECIAL INTERFACE (OPTIONAL)	
Allen Bradley	Remote I/O – ¼ logical rack
ENCLOSURE	
Dimensions	11.5×8.0×4.3 in H×W×D NEMA 4/4X (292×203×109 mm H×W×D)
Weight	12.0 lb (5.4 kg)
Optional	EX 12.9×10.9×8.2 in H×W×D (328×277×208 mm H×W×D) (Explosion Proof)
APPROVALS	
FM (Factory Mutual)	3611 (Class I, II, III; Div.1, 2; Groups A-G)
CSA	C22.2 (Class I, II,III; Div.1, 2; Groups A-G)

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