

## TI15 LEFT-RIGHT-TOTAL TENSION INDICATOR

The TI15 tension indicator displays web tension in any of three ways. A three position rotary switch on the front of the enclosure allows the machine operator to select total tension or display the tension at either edge of the web. This makes it possible to equalize the tension at the edges by means of appropriate manual or automatic adjustments to the machine. The TI15 works with a Tension Roll<sup>®</sup> transducer or a pair of standard DFE tension transducers to measure web tension. The shaft-end transducers are mounted one on each end of a dead or live shaft idler roll. The output signal from the transducers is amplified by the TI15 and displayed on a large meter which is calibrated to read actual tension. The voltage output, proportional to tension, can be used simultaneously from each channel, with a



recorder, computer or automatic control system. No risk. The TI15 is covered by DFE's 5 year warranty.

### BENEFITS

- Displays actual web tension at either side of web to permit equalization side to side. Also displays total tension. No guesswork.
- Can be interfaced with control systems for automatic control of tension.
- Enables the machine operator to determine proper tension for any web and consistently reproduce that tension any time that job is run.
- Reduces web breaks and web waste.

### FEATURES

- 115 Vac 60 Hz power input.
- NEMA 12, 13 wall mounted steel enclosure with all operator devices on front.
- Green Power-on LED.
- 3.5" analog tension meter with choice of scale.
- Independent 0-10Vdc outputs proportional to left, right, and total tension
- 0 to 1mA outputs for left, right, and total external tension meters. See accessories below.
- Rotary switch to allow alternate display of left side, right side, and total tension.

### ACCESSORIES

- **Remote Tension Meter.** A separate tension meter for remote installation. DFE P/N: 722-1385. Specify scale.
- **Remote Tension Meter in Enclosure.** Tension meter in steel enclosure for protection with 2-pin amphenol connector. DFE P/N: 723-1453. Specify scale.

### OPTIONS

- **230V (230)** 50Hz AC power input.
- **Attached Power Cord (APC)** A heavy duty 3 conductor power cord wired to the device by DFE.
- **Computer Interface (CI).** Data acquisition module, software (Win98/XP), and cable to allow notebook computer to view and store data for analysis.
- **Differential Output (DO).** Provides -10V to +10V output. Replaces the 0 to 10V total output. Uses center-zero meter.
- **Digital Meter (DM).** Digital tension meter in place of analog meter.
- **Dual Calibration (DC).** Includes dual meter scale (Hi/Lo) and switch.
- **Extended Range (XRE).** For extra sensitivity at low tension. Transducers must have XR option.
- **Isolated 10Volt (I10) OR 4-20mA (I420).** A 0 to 10 Volt or 4 to 20mA output not connected to circuit common or to earth ground.
- **Non-Standard Meter Scale (NMS).** Custom scale other than standard scales listed.
- **Tension Limit Switch (TLS).** Operates a relay when tension reaches an adjustable set point. Separate relays for left, right, and total tension. Used for web break detection or over-tension warning.

## SPECIFICATIONS:

**Power Input:** Voltage/Current  
 115 VAC, 50/60 Hz single phase @ 1/4 amp  
 230 VAC, 50/60 Hz single phase @ 1/8 amp

### Tension Outputs:

- 0 to +10 Vdc @ 10mA individual outputs for left, right, and total.
- 0 to 1 mA outputs for accessory external left, and switched left/right/total, and right tension meters.

### Transducer Input Signal:

500 mVdc at rated load per pair

### Transducer Excitation:

5 Vdc regulated (10 Vdc with XRE option)

### Zero Range:

95% of transducer rating (min.)

**System Accuracy:** 1 - 3% typical

**Calibration Range:** 25:1

**Temperature Range:** 32°F to 104°F (0°C to 40°C)

**Tension Meter:** 3.5" x 1" Analog, 2%, 1mA, 48 ohm

### Standard Tension Meter Scales:

0-1, 5, 10, 25, 50, 100, 150, 250, 500, 1000

### Mating Transducer Cable Connectors:

Amphenol MS3106A-10SL-3S

### Tension Limit Switch Relay Contacts: (Option)

SPDT rated @ 10A/30Vdc, 10A/250 Vac

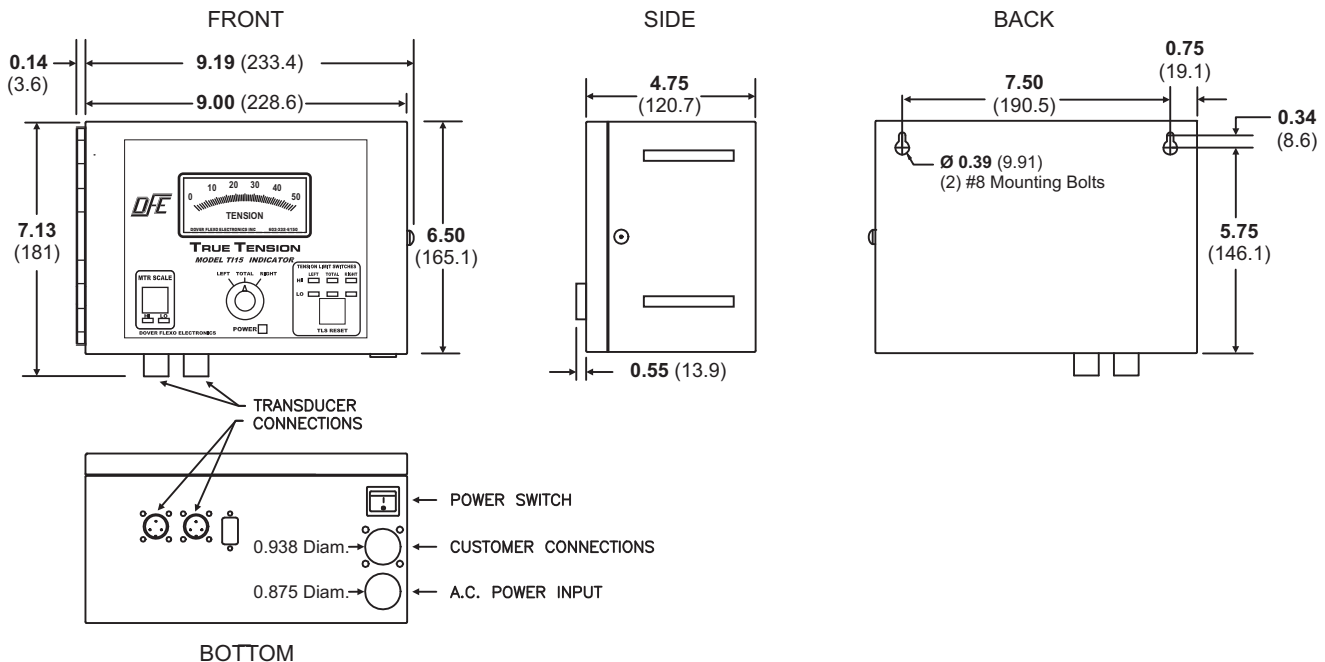
### Isolated Tension Outputs (Option):

0 to 10V or 4 to 20mA, for each left, right, and/or total tension output. NOTE: These replace the standard 0 to 10Vdc outputs. Choose 1, 2, or 3 isolated outputs.

### Differential Output (Option):

Jumper selected. Replaces Total 0 to +10V with -10V to +10V output. Zero volts out when Left and Right tension is equal.

## DIMENSIONS:



## ORDERING INFORMATION:

You may order by description or by specifying the code shown on the right by matching each labeled position with one of the choices given.

Example: TI15-50-DM, TI15-25/50-DC

### NOTES:

1. When selecting the DC ( dual calibration ) option, specify both meter scales separated by a slash (/).
2. XRE option requires transducers to have XR option.
3. DC and DM options can not be used together.
4. All three outputs will be isolated.

## TI15 - XX - OPTIONS

METER SCALE <sup>1</sup>	OPTIONS
1 = 0 - 1	230 = 230V Power Input
5 = 0 - 5	I420 = Isolated 4-20mA Output <sup>4</sup>
10 = 0 - 10	APC = Attached Power Cord
25 = 0 - 25	CI = Computer Interface
50 = 0 - 50	DC = Dual Calibration <sup>1,3</sup>
100 = 0 - 100	DM = Digital Meter <sup>3</sup>
150 = 0 - 150	DO = Differential Output
250 = 0 - 250	I10 = Isolated 10 V Output <sup>4</sup>
500 = 0 - 500	NMS = Non-standard Meter Scale
1000 = 0 - 1000	TLS = Tension Limit Switch
	XRE = Extended Range <sup>2</sup>
	Z = Special (SPR)

**DFE** THE TENSION CONTROL SPECIALISTS  
**DOVER FLEXO ELECTRONICS, INC.**  
 217 PICKERING ROAD, ROCHESTER, NH 03867 USA • 603-332-6150 • FAX 603-332-3758  
 E-Mail: info@dfe.com • Internet: www.dfe.com • ISO 9001 Certified