

# TI-5 TENSION INDICATOR



The TI-5 tension indicator displays web tension in any of three ways. A three position switch on the front of the enclosure allows the machine operator to select total tension or display the tension at either side of the web. This makes it easy to equalize the tension at the edges by means of appropriate manual or automatic adjustments to the machine. The TI-5 works with a pair of any standard DFE tension transducers to measure web tension. The transducers are mounted on both ends of a standard idler roll. The output signal from the transducers is amplified and displayed on a large meter which is calibrated to read actual tension. Several standard and optional voltage and current outputs, proportional to tension, allow the TI-5 to be used with recorders, computers and automatic control systems. No risk - 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.

## STANDARD FEATURES

- 115 Vac 60 Hz power input.
- NEMA 12, 13 wall mounted steel enclosure with all operator devices on cover.
- Red indicating light for AC power.
- 6" analog tension meter with any standard scale
- 0-100mVdc output proportional to total tension
- Adjustable 0-3.5 to 0-13Vdc output proportional to total tension.
- Single circuit card with unpluggable terminal strip for all electrical connections except AC power.

- Three position selector switch to allow alternate display of left side, right side, and total tension.

## OPTIONS

- **230V (230)** 50Hz AC power input.
- **20mA (020, 420)** Outputs for both standard and non-standard ranges.
- **5 Volt (5V)** power supply.
- **Attached Power Cord (APC)** A heavy duty 3 conductor power cord wired to the device by DFE.
- **Auxiliary Tension Meter (ATM).** An additional meter to the standard one in the unit. Also available in its own enclosure (**ATME**).
- **Circuit Card Configuration (CC).** No enclosure or operator devices for custom mounting.
- **Dual Calibration (DC).** Includes dual meter scale (Hi/Lo) and switch.
- **Digital Meter (DM).** Digital tension meter in place of analog meter.
- **Isolated 10Volt (I10).** A 0 to 10 Volt output not connected to circuit common or to earth ground.
- **Large Enclosure (LE).** A larger enclosure than standard. Must be used with I10 and TLS options.
- **Negative 10Volt (N10).** Output goes from 0 to -10V instead of from 0 to +10V.
- **Non-Standard Meter Scale (NMS).** Custom scale other than standard scales listed.
- **Remote Meter in Enclosure (RME).** The std. meter in an enclosure for remote installation.
- **Remote Operator Panel (ROP).** Operator devices installed in a separate panel for remote installation attached to indicator with 6' standard cable.
- **Tension Limit Switch (TLS).** Operates a relay when tension reaches an adjustable set point. Used for web break detection. TLS card can also be installed in its own enclosure (**TLSE**).
- **Extended Range (XRE).** For extra sensitivity at low tension. Transducers must also have XR option.

## ORDERING INFORMATION

Order by model number and list the options you want.

**TI5 - XX** - **OPTIONS** (separated by commas)

METER SCALE	OPTIONS
1 = 0-1	020 = 20mA output (non-standard)
5 = 0-5	230 = 230 Volt Power Input
10 = 0-10	420 = 20mA output (standard)
25 = 0-25	5V = 5 Vdc Supply
50 = 0-50	APC = Attached Power Cord
100 = 0-100	ATM = Auxiliary Tension Meter
150 = 0-150	ATME = Auxiliary Tension Meter in Enclosure
250 = 0-250	CC = Circuit Card Configuration
500 = 0-500	DC = Dual Calibration
1000 = 0-1000	DM = Digital Meter
	I10 = Isolated 10V Output
	LE = Large Enclosure
	N10 = Negative 10 Volt Output
	NMS = Non-Standard Meter Scale
	RME = Remote Meter in Enclosure
	ROP = Remote Operator Panel
	TLS = Tension Limit Switch
	TLSE = Tension Limit Switch in Enclosure
	XRE = Extended Range
	Z = Special (SPR)

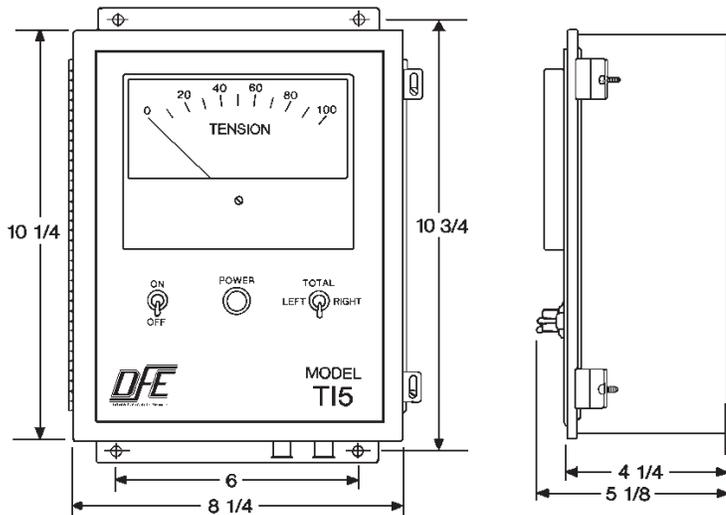
## SPECIFICATIONS

Power Input	.....	120 volts, 60Hz @ 1/4 amp
Outputs:	Low voltage	..... 0-100 mVdc @ 2 mA, proportional to total tension
	High Voltage	..... adjustable 0-3.5 V to 0-13 Vdc @ 2mA proportional to total tension
		..... 10K ohm minimum total resistance
Transducer Power Supply	.....	5Vdc @ 50 mA, regulated
Auxiliary Power Supply	.....	5Vdc @ 300 mA, regulated
Tension Signal Input	.....	nominal 500 mVdc per pair at rated load (1.00 Vdc for XR)
Meter	.....	6" analog taut band, 2%, 100µA dc with 1k ohm coil
Zero Range	.....	95% of transducer rating (min)
Calibration Range	.....	25:1
Temperature Range	.....	32°F to 104°F (0°C to 40°C)
Transducer Cable Mating Connector	.....	Amphenol MS3106A-10SL-3S
Weight	.....	10 lbs

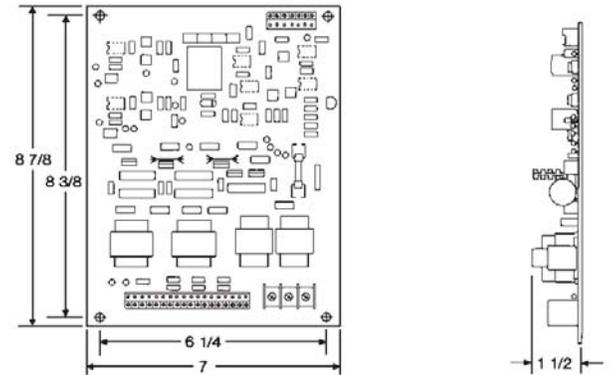
## DIMENSIONS

(inches)

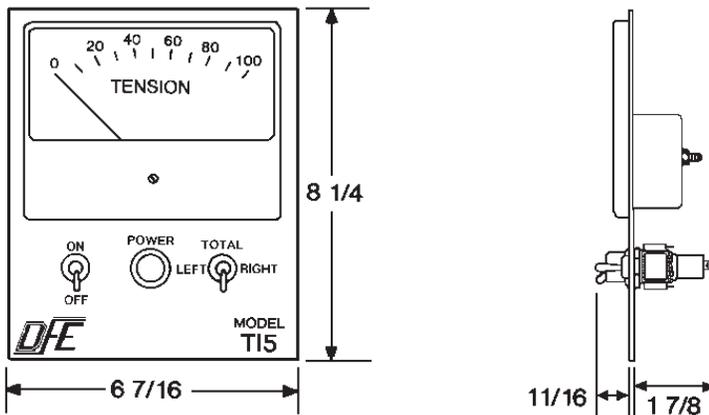
### ENCLOSURE



### CIRCUIT CARD



### REMOTE PANEL



### LARGE ENCLOSURE (OPTION)

