



APPLICATION DATA

NO. 8708E7

E7 AUTOMATIC TENSION CONTROLLER

DESCRIPTION

The E7 is a very accurate and responsive automatic tension controller which is used to regulate unwind, rewind or intermediate web tension. It has a DC voltage output suitable for almost all standard electric brakes and clutches. A large meter on the front of the enclosure displays actual web tension which is measured by DFE tension transducers. The enclosure is industrial-duty steel with a hinged cover. All operator devices are mounted in an aluminum legend plate on the cover. If desired, the enclosure can be omitted and the E7 supplied with electronics panel connected to the legend plate with a wire harness. Construction of the E7 is modular. All electrical connections on the circuit cards are unpluggable terminal strips (except AC power). Identified test points on the cards make trouble-shooting easy.

The E7 is very easy to operate. Simply turn the tension setting knob until the meter indicates the tension desired. The controller will automatically maintain it regardless of changes in web speed or roll diameter. A soft start circuit prevents brake lock-up when starting with a slack web. Sample/Hold and multiply/divide circuits provide smooth operation during flying splices. Manual control is also provided in addition to automatic control. A tracking circuit provides bumpless switching between Auto and Manual.

BENEFITS

- Automatic control of tension. No manual adjustments needed.
- Actual web tension is displayed on meter. No guesswork.
- Easy to operate. No skill or training needed.
- Simple to install and fast to start up.
- Tension transducers require very little space in the machine.
- Wide tension control range without recalibration.
- Permits higher running speed without losing control of web.
- Reduces web breakage, registration and stretching problems.
- Fast payback.
- Tension transducers have negligible movement so the web is not affected.
- Enables the machine operator to easily determine the proper tension for any web and consistently reproduce it at any time.
- Eliminates troublesome dancer rolls.
- Compatible with automated factory systems.



DOVER FLEXO ELECTRONICS, INC.

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APPLICATIONS

The E7 is used on any machine having a continuous web process such as printing presses, coaters, laminators, slitters, sheeters, label presses, extruders, metallizers and inspection machines.

Typical web materials include paper, plastic films, foils, rubber, laminates, wallpaper, linoleum, textiles, non-wovens, tapes, filaments, ribbons and wire.

The E7 will automatically control unwind, rewind or intermediate web tension by operating electric friction brakes and clutches or magnetic particle brakes and clutches or other types of electric brakes and clutches.

The E7 will reduce or eliminate tension related problems such as web breakage, stretching or looseness; misregistration; repeat length variation; wrinkling and curling and coating thickness variation. It will also help reduce waste during starts, stops and splicing and help produce more consistent product quality.

STANDARD FEATURES

- NEMA 12, 13 steel enclosure, 12x14x6, with all operator devices in cover. Wall mounted.
- MS connectors for transducer cables.
- 7/8" hole for AC power wiring.
- Removable circuit cards with unpluggable terminal strips for all electrical connections except AC power.
- Operator devices include: 6" analog tension indicating meter, AUTO mode tension setting knob, toggle switch and indicating light for AC power, output voltmeter, toggle switch and indicating light for tension off/on, toggle switch for AUTO/MANUAL mode selection, output adjustment knob for MANUAL mode.
- 120 volt 60Hz AC power input.
- 0-100 millivolt DC output proportional to tension.
- Choice of standard meter scales: 0-1, 5, 10, 25, 50, 100, 150, 250, 500, 1000.
- Automatic and Manual modes of operation.
- Sample and hold output circuit with ratio adjustments for flying splice operation and roll coasting prevention.
- Max/min output adjustments.
- Taper tension circuit (requires rider roll pot. E374B and switch, at extra cost).
- Emergency stop circuit.
- Soft start circuit with disable switch.
- Bumpless switching between MANUAL and AUTO.
- Output voltmeter.
- Output voltage is full-wave rectified.
- Transient voltage protection.
- Used with any DFE tension transducers.

SPECIFICATIONS

- Power input 120 volts 60Hz @ 4 amp
- Power connection 7/8" hole for conduit connector
- Output voltage range 0-90 volts DC @ 3 amp
(optional) 0-45 volts DC @ 5 amp
(optional) 0-24 volts DC @ 7 amp
- Transducer power supply 5 volts DC, regulated
- Transducer signal 500 millivolts DC per pair at rated load
- Transducer cable connectors Amphenol MS3102A-10SL-3P
- Zero range 95% of transducer rating, minimum
- Calibration range 25:1
- Temperature range 0 to 40° C
- Max. output adjustment range 0 to 100%
- Taper tension range 0 to 50%
- Tension meter Heavy duty, 2%, taut band, with solvent proof front
- System accuracy 1% to 3% typical
- Manual output range 0 to 100% of rated output voltage
- Weight 32 lbs.
- Min. output adjustment range 0-20%
- Output multiplier range 10:1
- Output divider range 1:10

OPTIONS

No.	Description
CC	E7 less enclosure and operator devices
H6	E7 less enclosure but with 6' long wire harness to legend plate with all operator devices installed and wired
ATM	Auxiliary tension meter for remote mounting
RME	Auxiliary or remote tension meter in 6x8x4 inch enclosure
DM	Digital meter: 3½ digit, red LED ½" high (includes 5V power supply)
420M	4-20 milliamp DC output proportional to tension
020M	0-20 milliamp DC output proportional to tension
10V	0-10 volt DC adjustable output proportional to tension. Range = 0-3.5 to 0-13
DC	Dual calibration (includes dual meter scale and switch)
NMS	Non standard meter scale (single or dual range, specify scale)
220	220 volt 50Hz AC power input
ST	Single transducer operation (except NW)
5V	Extra 5 volt DC power supply (used with digital meter)
APC	Attached power cord, Type SJ, 3 conductor, 5' long
TLS-L	Low tension detector with SPDT relay output
TLS-H	High tension detector with SPDT relay output
TLS-LH1	Low and high tension detectors with one SPDT relay output and switch
TLS-LH2	Low and high tension detectors with two separate SPDT relay outputs
RO	Reverse output
RS	Remote tension off/on switching
TT	Taper tension, by diameter computer, using two 50 volt DC tachometers
TTS	Taper tension off/on switch (included in option TT)
45V	45 volt DC output @ 5 amp
24V	24 volt DC output @ 7 amp
RTA	Remote Tension Amplifier (no tension amplifier in E7)

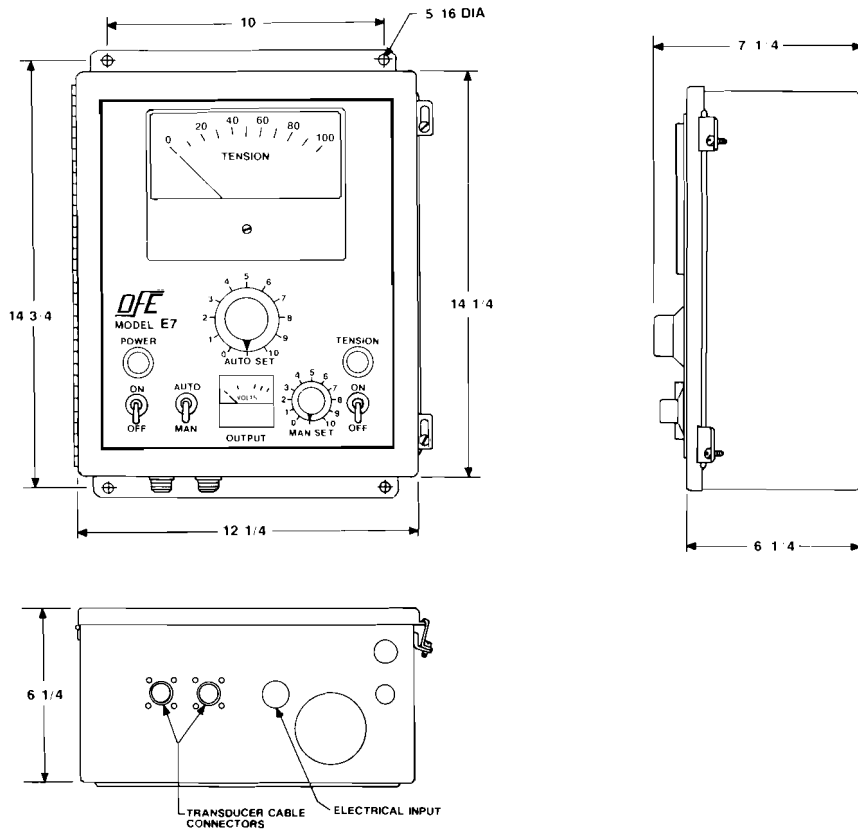
Consult factory for special requirements

TO ORDER: Specify model, option numbers and meter scale; example: E7-H6, TLS-L, 0-50.

DIMENSIONS

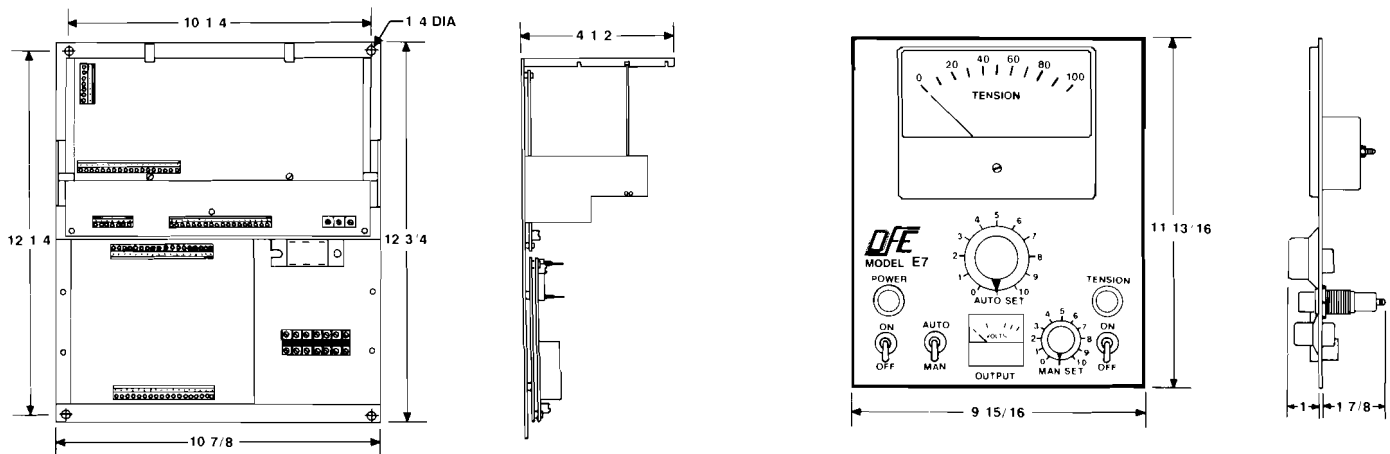
(Expressed in inches)

ENCLOSURE



PANEL

LEGEND PLATE



DOVER FLECO ELECTRONICS MANUFACTURERS: Tension transducers, Tension Indicators, Rewind Tension Controllers, Unwind Tension Controllers, D.C. Motor Tension Controllers, Pneumatic Tension Controllers, and Electric Tension Controllers.