

# FIREGUARD 2™ TENSION AMPLIFIER



5 YEAR WARRANTY

# FIREGUARD 2™ Intrinsically Safe Tension Amplifier

The FireGuard 2™ is an intrinsically safe (energy limiting) electronic interface between transducers and a Dover controller, a drive system or a computer. When connected to approved DFE transducers and an approved DFE tension meter, the FireGuard 2™ works as a complete tension indication system.

The FireGuard 2™ is typically used as part of a web tension control and display system when tension transducers or tension readouts are installed in areas made hazardous by flammable gases and/or vapors. These include vapors from acetylene mixtures, butadiene, ethylene oxide, propylene oxide, hydrogen mixtures, acetone, alcohol, ammonia, benzene, benzol, butane, gasoline, lacquer, solvent vapors, natural gas, propane or similar mixtures.

The FireGuard 2™ greatly reduces the risk of fire or explosion in manufacturing areas defined as Class I Division 1 or 2 by Article 500<sup>1</sup> of the National Electrical Code (NEC). Each FireGuard 2™ contains a power supply for the tension transducers and is easily adjusted with its Quik-Cal zero and calibration circuitry.

## FEATURES

- 24VDC power input.
- 0 to 10V isolated output to the non-hazardous area, not damped.
- 4 to 20mA to non-hazardous area, not damped.
- 0 to 1mA damped output for tension meter in non-hazardous area.
- 0 to 1 mA damped output to a tension meter, energy limited to hazardous area.
- +5V/+10V power supply for transducers.
- +5VDC current limited power supply for Optional Digital Meter.
- Quik-Cal push-button zero and calibration
- Dual Calibration for 2 calibration settings. May require optional dual meter scale for meter.
- NEMA1 protective steel enclosure with cover.
- Status LED. Steady indicates unit is on, blinks during calibration, and flashes in case of error.

## OPTIONS

- **Extended Range (XRE).** +10 Volt excitation for extended range transducers. Allows measurement of a much lower tension than usual. Transducers must have the XR option. Jumper selectable (pre-set at factory).

## ACCESSORIES


- **Analog Tension Meter.** 3.5", 1mA, mounted in a 4" x 5" x 3" steel enclosure. May be used in hazardous areas. Customer to provide own cable or purchase separately (See meter accessories). DFE #723-1420
- **4 Digit Digital Tension Meter,** 0-1mA, mounted in a 4" x 5" x 3" steel enclosure. Customer to provide own cable or purchase separately (See meter accessories). DFE #723-2660. *Note: Not for use in hazardous area.*

Indicator outputs to a non-hazardous area include a 0 to +10V undamped, isolated output, a 4-20mA undamped, isolated output, and a 0 to 1 mA damped output for use with a tension meter.

Outputs to the hazardous area are energy limited connections for approved DFE transducers, and a 0-1 mA damped output for an optional DFE supplied UL rated analog tension meter.

The FireGuard 2™'s dual calibration feature allows calibration of a single pair of tension transducers for operation over two different ranges. Input voltage is 24VDC @500mA.

A removable steel cover protects and provides easy access to the terminal blocks for all electrical connections. The FireGuard 2™ can be mounted to a machine structure or wall through flange mounting holes in the top and bottom edges of the enclosure.

The FireGuard 2™ is a  listed device.

## BENEFITS

- An intrinsically safe tension indicator/ interface.
- Reduces risk of fire and explosion in a hazardous manufacturing environment.
- Low cost.
- Compact size.
- Easy to install & use.
- Use as a tension signal input to drive systems, computers or DFE controllers and tension indicating meters.

- **25 CW.** Select this option if the standard 10% calibration weight is too low a value for the application.

## METER ACCESSORIES:

- **Non-Standard Meter Scale.** Specify a scale other than the standard scales listed in specifications.
- **Meter Cable.** 15 ft. cable for above meter. (DFE#721-0967)

1. Article 500 defines certain manufacturing environments as "hazardous" because of the presence of combustible or explosive materials either during normal operating conditions, or because of the potential for their presence due to a fault condition.

## SPECIFICATIONS

### Input Voltage:

24VDC @ 500mA

### Tension Output Signal:

0 to 10V isolated, not damped (up to 2 mA load)  
4 to 20 mA non-isolated, not damped  
0 to 1mA damped for non-hazardous area  
0 to 1mA damped, energy limited

### Meter Output

5VDC for optional Digital Meter

### Transducer Excitation:

5 VDC energy limited  
(10 Vdc for XR and LT transducers)

### Transducer Input Signal Range:

30 to 500 mVDC at rated load  
(30mV to 1.0 V for XR and LT transducers)

### Zero Range:

Up to 95% of rated output

### Operating Temperature Range:

32° to 104° F (0° to 40° C)

### Weight:

6 lbs. (2.7 kg)

### Calibration Range:

50:1

### Temperature Codes:

FireGuard 2      T4A  
Transducers (all)    T3C  
Meter Enclosure    T3C

### ACCESSORIES:

#### Meter:

3.5" Analog, 2%, 1 mA, in enclosure (DFE #723-1420)  
4 digit Digital Meter, 1 mA, in enclosure (DFE #723-2660)

#### Meter Scales:

0 to 1, 5, 10, 25, 50, 100, 150, 250, 500, 1000  
See Digital Meter Option Insert for meter details

## ORDERING INFORMATION

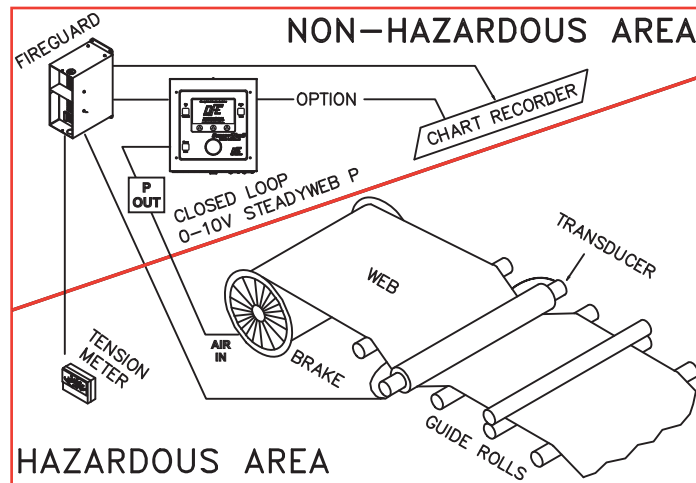
### Ti30 - OPTIONS *Example: Ti30 - XRE*

OPTIONS
25CW = 25% Calibration Weight
XRE = Extended Range <sup>1</sup>

Note 1: Transducers must have XR option.

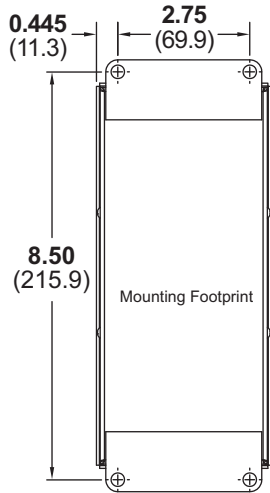
The FireGuard 2™ does not include a tension meter. If tension display in a hazardous area is desired, use meter in enclosure #723-1420 to retain U/L listing. List the meter separately on the order and specify the meter scale. Cable is also ordered separately (DFE#721-0967).

## EXAMPLE OF TYPICAL TENSION CONTROL SYSTEM

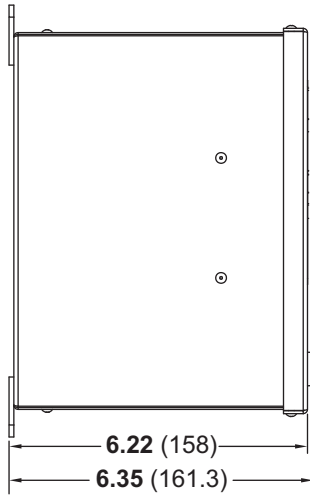


# DIMENSIONS OF FIREGUARD 2™ TENSION AMPLIFIER

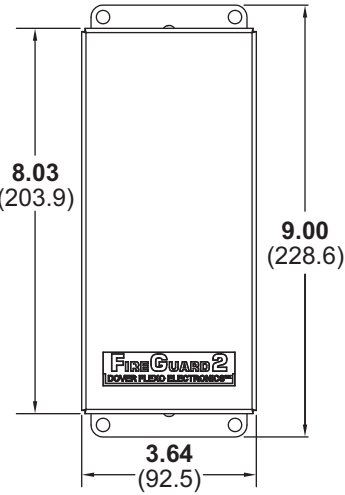
inches (mm)



BACK

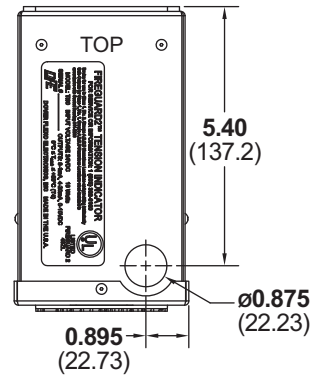


SIDE



FRONT

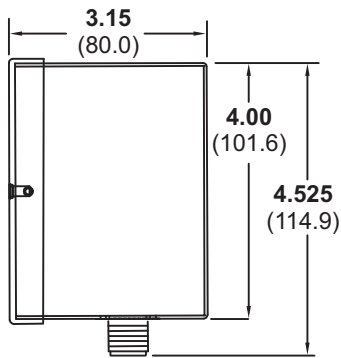
Same Both Ends



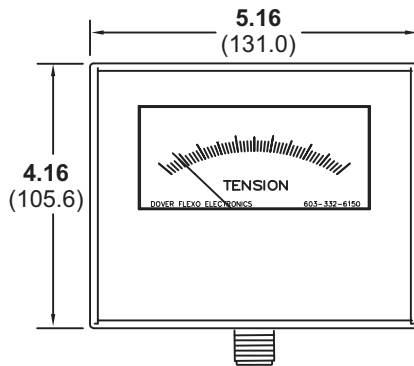
# DIMENSIONS OF OPTIONAL REMOTE TENSION METER

inches (mm)

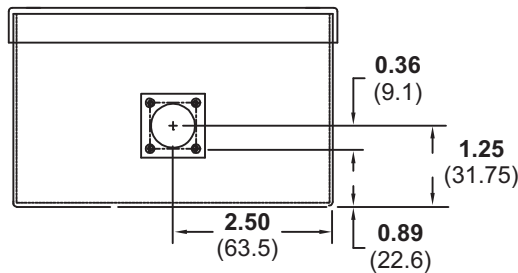
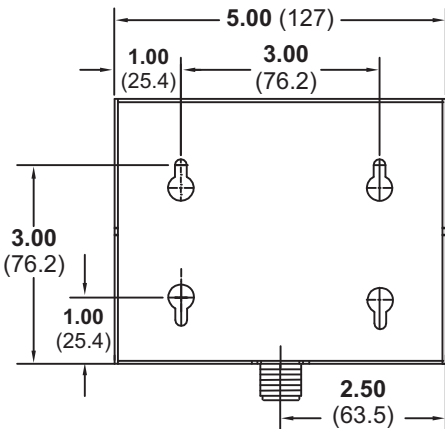
SIDE



FRONT



REAR



BOTTOM

Rad 0.09 (2.3)  
0.34 (8.7)  
Rad 0.19 (4.8)  
Use 8-32 or M4 screws for mounting.