

FIREGUARD™ Intrinsicly Safe Tension Indicator


The FireGuard™ 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™ works as a complete tension indication system.

The FireGuard™ 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™ greatly reduces the risk of fire or explosion in manufacturing areas defined as Class I Division 1 or 2 by Article 500¹ of the National Electrical Code (NEC). Each FireGuard™ contains a power supply

for the tension transducers and is easily adjusted with its zero and calibration circuitry. Indicator outputs include a 0 to +10V undamped, isolated output to a non-hazardous area, a 4-20mA undamped, non-isolated output, and a 0 to 1 mA damped, energy limiting output for use with an approved DFE tension meter located in the hazardous area. The FireGuard™'s dual calibration feature allows calibration of a single pair of tension transducers for operation over two different ranges. Line voltage is offered as either 115Vac or 230Vac.

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

The FireGuard™ 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.

OPTIONS

- **230 Volt (230)** Power Input. Switch selectable (inside unit)
- **Attached Power Cord (APC)** A heavy duty 3 conductor power cord wired to the device by DFE.
- **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. Switch selectable (inside unit).

ACCESSORIES

- **Analog Tension Meter.** 3.5", 1mA, mounted in a 4" x 5" x 3" steel enclosure. Customer to provide own cable or purchase separately (see below). DFE #723-1420

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.

FEATURES

- 115Vac or 230Vac power input
 - +5V/+10V power supply for transducers
 - 0 - 1 mA damped, energy-limited output to a tension meter in the hazardous area.
 - 0 - 10V isolated output to the non-hazardous area, not damped
 - 4-20mA to non-hazardous area, not damped
 - Dual Calibration for 2 calibration settings. Requires dual meter scale for meter.
 - NEMA1 protective steel enclosure with cover
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- **Low Tension Transducer Excitation (XRL).** Special extended range circuit for use with transducers using high resistance strain gages such as the Low Tension transducers which have 1000 ohm gages.

SPECIFICATIONS

Input Voltage:

115V 50/60Hz @ 125mA
230V 50/60Hz @ 63mA

Tension Output Signal:

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

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:

16:1 (30:1 with XRE)

Temperature Codes:

TI-13	T4A
Transducers (all)	T3C
Meter Enclosure	T3C

ACCESSORIES:

Meter:

3.5" Analog, 2%, 1 mA, in enclosure (DFE #723-1420)

Meter Scales:

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

ORDERING INFORMATION

Select FG for FireGuard™. Follow with hyphen, then options as desired, separated by commas.

FG - OPTIONS (Separated by commas)

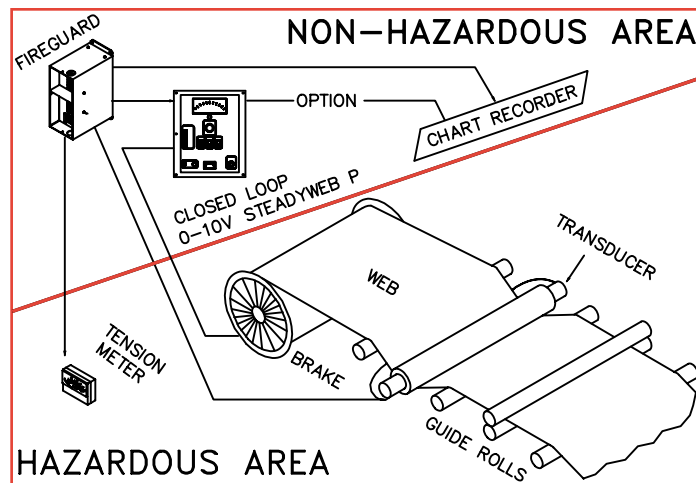
Example: FG - APC, XRE

OPTIONS
230 = 230 Volt power input
APC = Attached Power Cord
XRE = Extended Range ¹
XRL = Low tension transducer excitation ²
Z = Special (SPR)

- Notes: 1. Transducers must have XR option.
2. XRL option is required only when used with DFE LT (low tension) transducers. Don't use with other transducers.

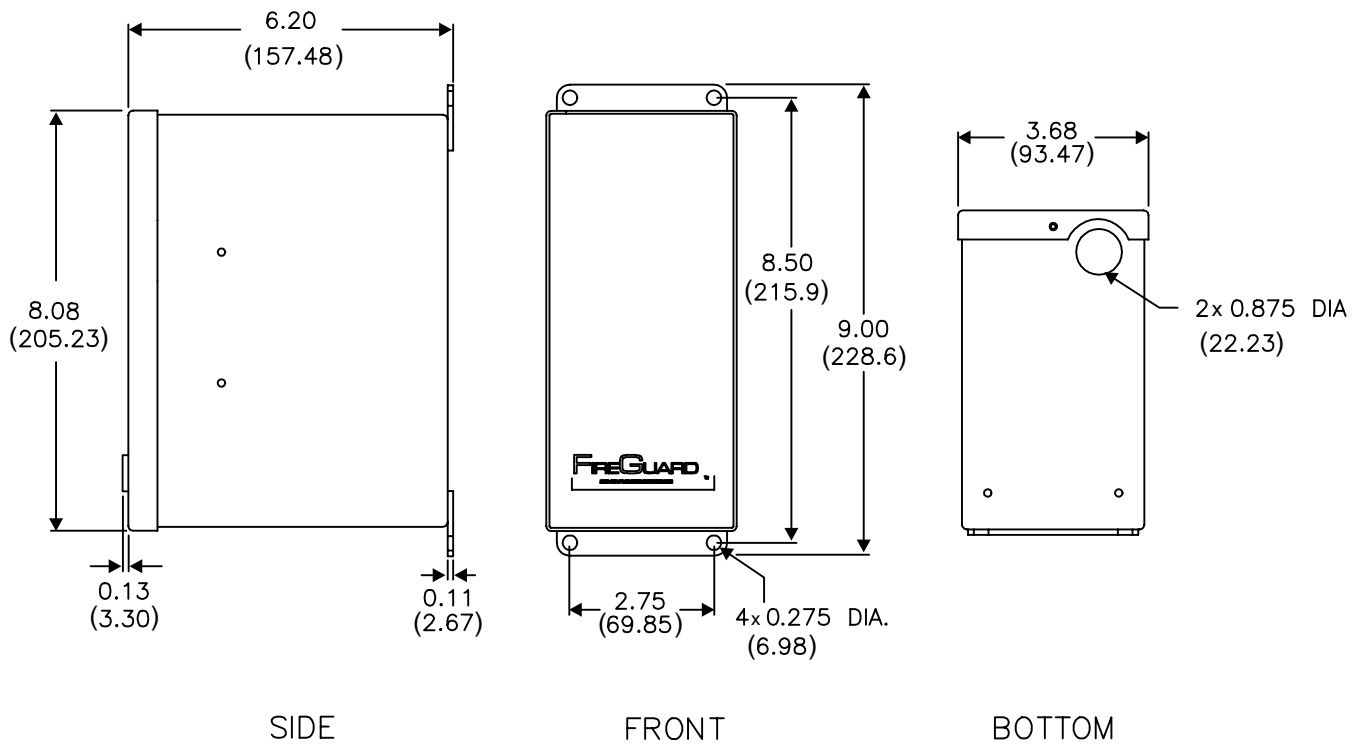
The FireGuard™ does not include a tension meter. If tension display in a hazardous area is desired, use meter #723-1420 to retain U/L listing. List the meter separately on the order and specify the meter scale. Cable is also ordered separately (DFE#721-0967).

EXAMPLE OF TYPICAL TENSION CONTROL SYSTEM



DIMENSIONS

inches (mm)



DIMENSIONS OF OPTIONAL REMOTE TENSION METER

inches (mm)

