

**NEW**

# FT24 Tension Load Cells

## LOW COST

Tension Ranges: 2, 5, 10, 25, 50, 100 Lbf.

High Level or Millivolt Outputs

Interchangeable

Compact Easy to Fixture Design

## DESCRIPTION

**The FT24 Series** Low Cost Tension Force Sensors create new markets previously unrealizable due to cost and performance constraints. This series raises the bar in price and performance. MSI Sensors' proprietary Microfused™ technology, derived from demanding aerospace applications, employs micro-machined silicon piezoresistive strain gages fused with high temperature glass to a high performance stainless steel substrate. Microfused™ process eliminates age-sensitive organic epoxies used in classical load cell designs providing excellent long term span and zero stability.

### FEATURES

- ◆ Low cost
- ◆ Small size
- ◆ Low noise
- ◆ Robust: high over range capability
- ◆ High reliability
- ◆ Low deflection
- ◆ Low off center errors
- ◆ Fast response time
- ◆ Essentially unlimited cycle life
- ◆ From 2 to 100 lb ranges

### APPLICATIONS

- ◆ Appliance payload weight
- ◆ Variable force control
- ◆ Pulley tension loads
- ◆ Light hoist and winch loads
- ◆ Weighing

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 RevB 5/3/05



Operating at very low strains, Microfused™ technology provides gage factors greater than 100, an essentially unlimited cycle life expectancy, superior resolution, exceedingly high over-range margins without the need for stops and a ratiometric span of up to 4V. Microfused™ sensors are used in a variety of applications including bathroom scales, paint sprayers and safety-critical automotive brake sensors.

MSI's model FT24 is appropriate for use in all types of OEM appliance applications where high reliability and durability are critical. The FT24 is the OEM designer's dream-come-true: cost-optimized to bring your OEM products to life whether you need thousands or millions of load cells annually. Although the standard model is ideal for a wide range of applications, our dedicated design team at our Load Cell Engineering Center is ready to provide you with custom designs for your OEM applications. The FT24 is fully thermally compensated for changes in zero and span with respect to temperature and offers normalized zero and span for interchangeability. Consult MSI for uncompensated super low cost variants of the FT24 load cell.

### CE compliant per the following specifications:

IEC61000-4-2

[4 KV/4 KV (Air/Contact)]

IEC61000-4-3

(3 V/m)

**msisensors**  
 innovation • performance • reliability

# FT24 Tension Load Cells

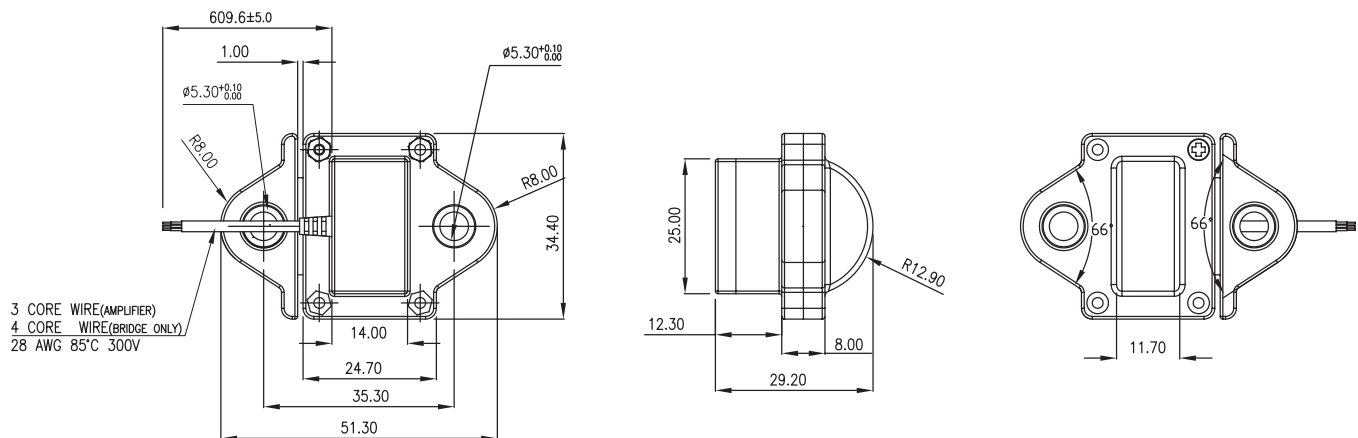
## performance specifications

Standard ranges: FT24	2, 5, 10, 25, 50, 100 Lbf Tension
Maximum over load	250% of range
Recommended Excitation Voltage (Amplified)	3.3 VDC to 5 VDC (1)
Recommended Excitation Voltage (Bridge Only)	5 VDC
Full Scale Output Span (FSO) (Amplified/Ratiometric)	0.5 to 4.5 V at 5 VDC excitation
Full Scale Output Span (Bridge Only)	10 mV/V +/-5%
Output at No Load (Zero output)	+/-5% FSO (2)
Combined Non-linearity, Hysteresis and Nonrepeatability	<+/- 1% FSO
Long Term Stability (1 year)	+/- 1% Span (Typical)
Temperature Compensation	0 - 50° C
Thermal Zero Shift	<+/-0.05%FSO/°C
Thermal Sensivity Shift	<+/-0.05%/°C
Operating and Storage Temperature Range	- 40° C to 85° C
Input Resistance (Bridge Only)	8K Ohms (nominal)
Output Resistance (Bridge Only)	5K Ohms (nominal)
Deflection at Rated Load	< 0.05 mm
Isolation Resistance	> 50 Mohms@250 VDC

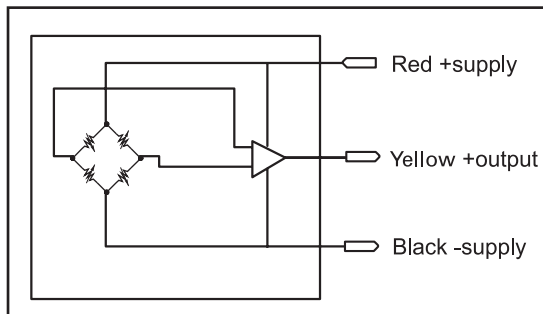
1) Higher excitation voltages available on request.

2) Lower trim values available on request

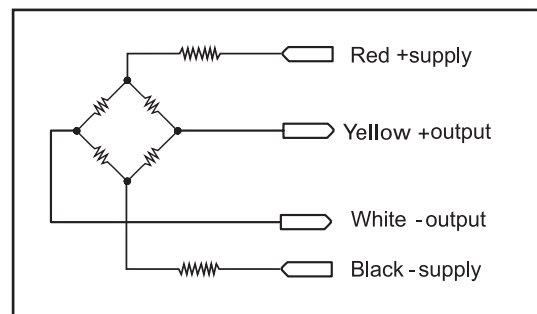
## dimensions



### High Level Amplified Output



### Millivolt Bridge Version



## ordering information

Family	Body	Output	Connection	Specials	Range	Multiplier	Units
Sample PN: FT	24	3	1	0000	0005	-	L
FT24: Tension		1= 10 mV/V FSO 3= 0.5 - 4.5 V FSO @ 5 VDC input	1= Cable output	Reserved for custom designs	FC24: 2, 5, 10, 25, 50, 100 Lbf	none	L = Lbf N = Newtons