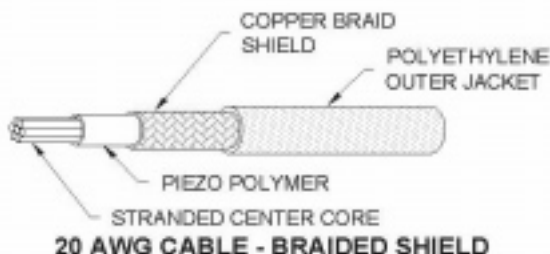


## DESCRIPTION

MSI's Piezo Cable utilizes a piezoelectric polymer sensor construction. The Piezo Cable has the appearance of standard coaxial cable, but is constructed with a piezoelectric polymer insulation layer between the copper braided inner conductor and the outer shield. Protected by a rugged polyethylene jacket, the cable has provided excellent service in buried and fence-mounted sensors for airports and other installation perimeter security applications.



## APPLICATIONS

- Perimeter Intrusion Detection
- Safety and Security Fencing
- Door Edge/Vehicle Bumper Switch
- Cable Tampering Detector
- Traffic Classification/Counting
- Remote Impact/Detonation Vibration Sensing
- Large Area Switch Mats
- Patient Mattress Monitor
- Sports Scoring/Foul Line
- Weather Sensing/Rain/Hail
- Underwater Acoustics
- Geophones
- Structural NDT/Strain/Vibration

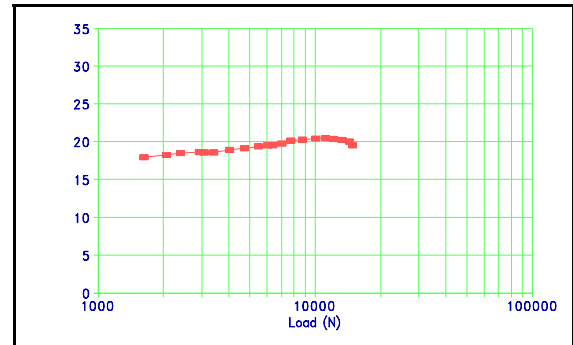
## FEATURES

- Passive, Long Length Sensor
- Very Tough, Water Resistant and Flexible
- Temperature Stability to 85°C
- Self-Shielded Coaxial Construction
- High Voltage Response
- Low Impedance Per Unit Length
- Simplified Interconnections
- Field Repairable

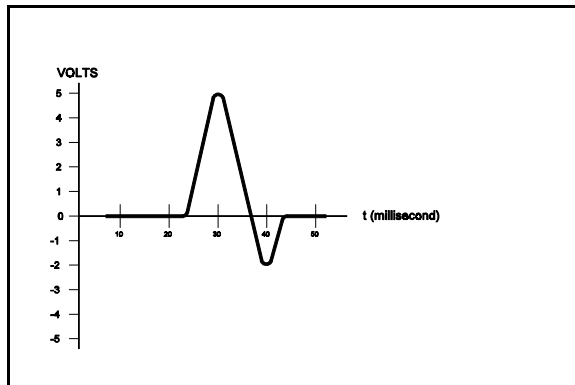
**NOTE:**  
 MEASUREMENT SPECIALTIES, INC.  
 IS RESTRICTED BY LEGAL CONTRACT  
 FROM SUPPLYING PIEZO CABLE  
 FOR USE IN  
 ACOUSTIC GUITAR PICKUP APPLICATIONS.

KYNAR is a registered trademark of Elf Atochem NA

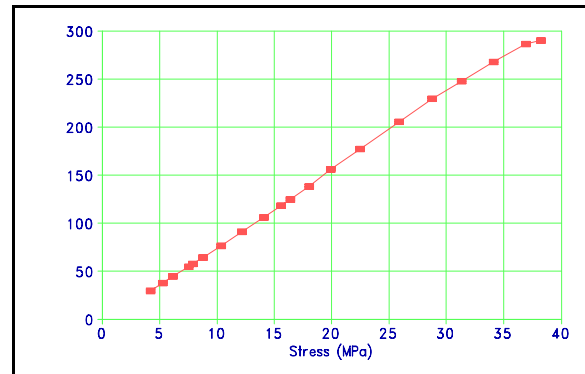
Typical Properties	Units	Value
Outside Diameter	mm	2.72
Capacitance @ 1 kHz	pF/m	655
Weight	kg/km	15.5
Relative Permittivity	@ 1 kHz	9
Tangent Delta	@ 1 kHz	0.017
Hydrostatic Piezo Coefficient	pC/N	15
Hydrostatic Piezo Coefficient	Vm/N	$150 \times 10^{-3}$
Resistance (Center)	DCR/km	31
Resistance (Shield)	DCR/km	47



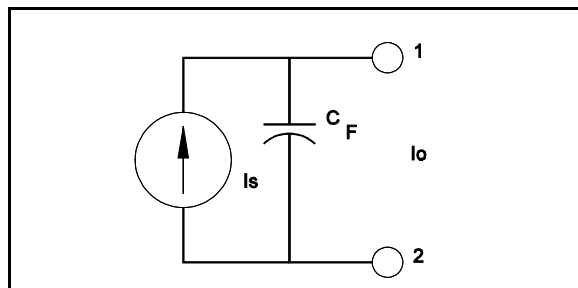
**Typical Sensitivity vs. Load**



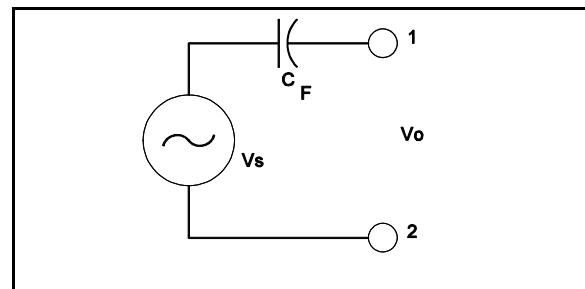
**Typical Analog Output from an Impact**



**Typical Peak Charge vs. Stress**



**Current Source**



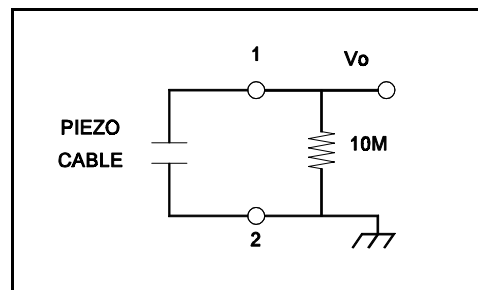
**Voltage Source**

### Equivalent Circuit

## TYPICAL INTERFACE CIRCUITS:

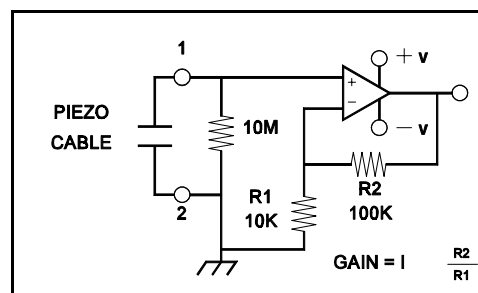
### Example 1:

- Taxiway Sensor (100 m cable)
- Large Impact Force (Aircraft or Truck)
- Low Frequency Event (0.1 Hz...10 Hz)



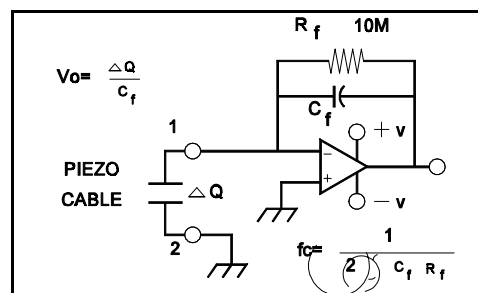
### Example 2:

- Fence Sensor (1 km cable)
- Small Vibration Signals (intruder)
- Higher Frequency (10 Hz...10 kHz)



### Example 3:

- Step Switch Mat (1 m cable)
- Foot Pressure
- Low Frequency (0.1 Hz...100 Hz)



## ADDITIONAL INFORMATION

For additional information or assistance, please contact:

Measurement Specialties, Inc.  
Sensor Products Division  
P.O. Box 799  
Valley Forge, PA 19482

Tel: 610.650.1500  
Fax: 610.650.1509