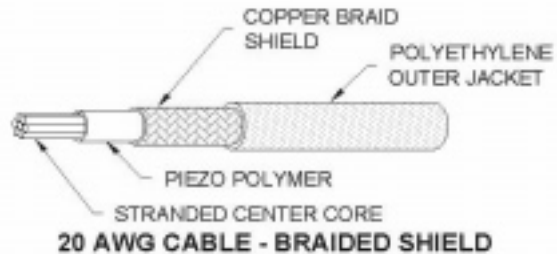


DESCRIPTION

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

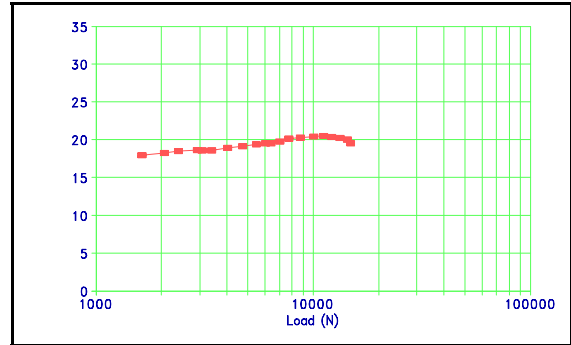
FEATURES

- 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

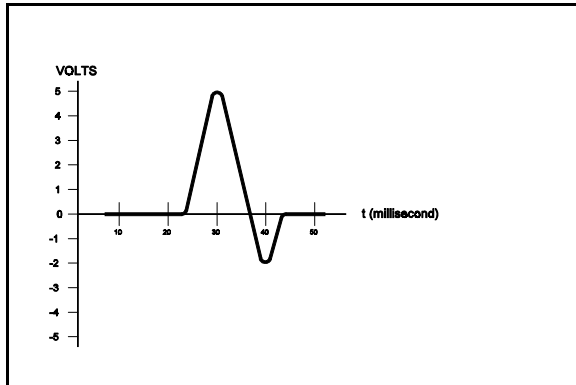
NOTE:
MEASUREMENT SPECIALTIES, INC.
IS RESTRICTED BY LEGAL CONTRACT
FROM SUPPLYING PIEZO CABLE
FOR USE IN
ACOUSTIC GUITAR PICKUP APPLICATIONS.

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	150×10^{-3}
Resistance (Center)	DCR/km	31
Resistance (Shield)	DCR/km	47



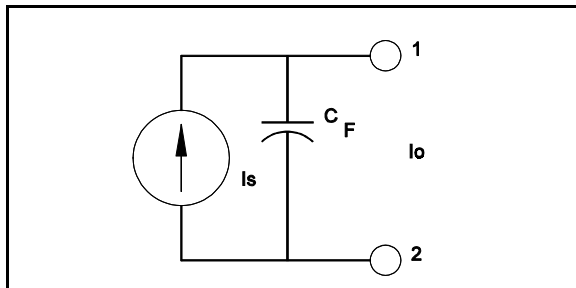
Typical Sensitivity vs. Load



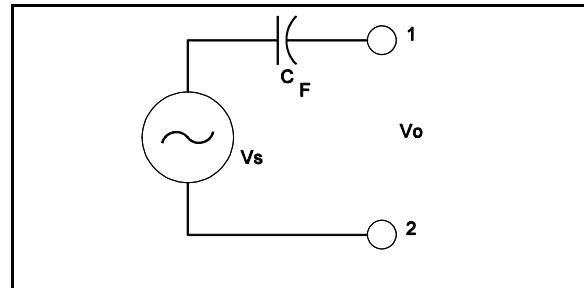
Typical Analog Output from an Impact



Typical Peak Charge vs. Stress



Current Source



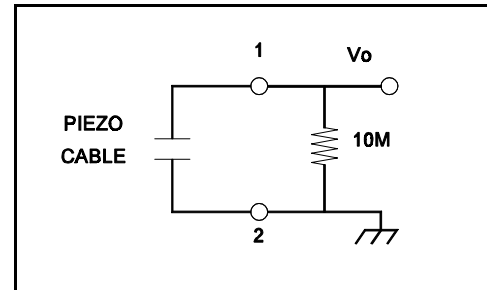
Voltage Source

Equivalent Circuit

TYPICAL INTERFACE CIRCUITS:

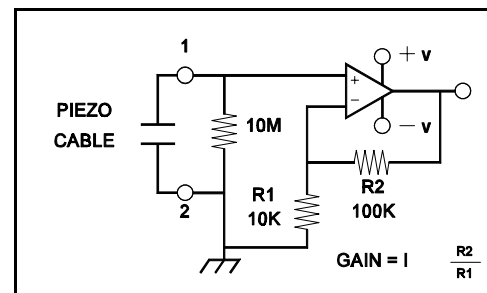
Example 1:

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



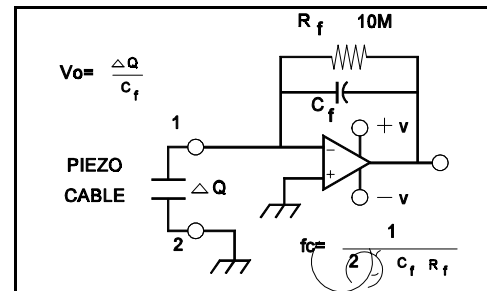
Example 2:

- 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