



Piezo Film Sensors

Technical Manual

Internet Version

Part 16 of 18

Appendix A – Applications of Piezo Film

EHAG

ELECTRONIC HARDWARE AG

APPLICATIONS OF PIEZO FILM

COMPUTER INPUT/OUTPUT

Keypad arrays

X-Y Coordinates

- Digitizer
- Mouse
- Joystick
- Pen

Printers

- Impact Flight Time
- Ink Drop Generation and Detection
- Toner and Ink Jet Level
- Toner Activation

Business Equipment

- ATM
- Antitamper for ATM Machine
- Coin Counters
- Copiers
 - Switches
 - Paper Path Switches
 - Toner Level and Activation

Disc Drives

- Shock Sensing Accelerometers

INDUSTRIAL

Switches

- Solid State
- Snap Action
- Cantilever Beam
- Keypad
- Vandal-Proof
- Intrinsically Safe
- CMOS Wake-up
- Low-Deflection
- Singing Switch
- Coin Counter
- Acoustic Switch
- Shaft Rotation

Robotics

- Tactile Sensor
- Micropositioner
- Safety Mats & Switches
- Bumper Impact

Physical Security & Energy Management

- Vidicon
- Glass Break Detectors
- Floor/Mat Sensor
- Penetration Detection
- Contact Microphone
- Piezo Cable Perimeter Protection
- Pyrometer/Flame Sensor

Flow/Level

- Vortex
- Fluidic Oscillator
- HVAC Air Flow
- Doppler Ultrasound
- Solid State Fluid Level
- Laminar/Turbulent Boundary Layer

INSTRUMENTATION

Machine Health Monitor

- Accelerometers
- Contact Microphones
- Hi-Strain Dynamic Strain Gages

Weather Sensors

- Rain Intensity
- Hail Detection
- Wind Velocity

Active Vibration Damping

- Strain Gages Sensor Arrays
- Actuator Arrays

Non Destructive Engineering

- Flexible Contact NDT Probes
- NDT Arrays
- Acoustic Emission Sensors

Air Ranging Ultrasound

- Safety
- Distance

Adaptive Optics

- Fiber Optic Shutters/Modulators
- Deformable Mirrors
- Laser Scanners

Oil Exploration

- Hydrophones
- Seismic Geophones

<p><u>MEDICAL</u></p> <p><i>Diagnostics</i></p> <ul style="list-style-type: none"> Apnea Monitor Ambulatory/Gait Monitors Blood Pressure Cuff Pulse Counter Stethoscope Sleep Disorder Monitors Respiratory Air Flow Isokinetics Patient Bed Monitor <p><i>Ultrasound</i></p> <ul style="list-style-type: none"> Near Field Imaging Prostate Transdermal Transluminal Coronary Arterial Breast Lithotripter Hydrophone Calibration Probes <p><i>Handicapped Aides</i></p> <ul style="list-style-type: none"> Switches Braille Reader Hearing Aid Speech Intensification <p><i>Implantables</i></p> <ul style="list-style-type: none"> Pacemaker Activity Monitor Implantable Switch Vascular Graft Monitor Micropower Source <p><i>Instrumentation</i></p> <ul style="list-style-type: none"> Intravenous Drop Counter IV Air Bubble Detection Laser Switch/Modulator <p><u>AUTOMOTIVE</u></p> <ul style="list-style-type: none"> Accelerometers Occupancy Seat Sensor <p><i>Switches</i></p> <ul style="list-style-type: none"> Passenger Compartment Switches Horn Switch Control Panel <p><i>Fuel Level, Tire Rotation, Security</i></p> <ul style="list-style-type: none"> Keyless Entry Motion (Theft) Sensor 	<p><u>CONSUMER</u></p> <p><i>Musical Instruments</i></p> <ul style="list-style-type: none"> Pick-up Drum Trigger <p><i>Sports Equipment</i></p> <ul style="list-style-type: none"> Target Location Reaction Time Foul Line Force (Karate, Impact) Sweet Spot <p><i>Toys/Games</i></p> <ul style="list-style-type: none"> Switches Proximity (Air Ranging Ultrasound, Pyro) Novelty Speakers Target Scoring <p><i>Audio</i></p> <ul style="list-style-type: none"> Tweeter Balloon Speakers Novelty Speakers (Visor, Poster) Microphone Speaker distortion Feedback Electronic Piano Keys <p><i>Appliance</i></p> <ul style="list-style-type: none"> Washer Imbalance Vacuum Soil Sensing Dishwasher Spray Arm Level Sensing Switches <p><u>MILITARY/GOVERNMENT</u></p> <p><i>Hydrophones</i></p> <ul style="list-style-type: none"> Towed Cable Array Hull Mounted Arrays Sonobuoys Active Noise Suppression <p><i>Ballistics</i></p> <ul style="list-style-type: none"> Safety and Arming Fuses Shock Wave Gages Seismic Accelerometers <p><i>Physical Security</i></p> <ul style="list-style-type: none"> Perimeter Seismic/Geophones Covert Microphones <p><i>Traffic Sensors</i></p> <ul style="list-style-type: none"> Vehicle Classification Weight-In-Motion Speed, Red Light Enforcement Lane Designation Toll Booth
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