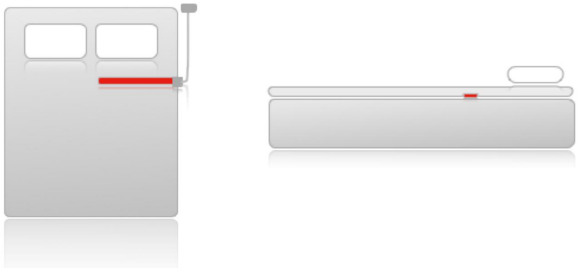
Beegor

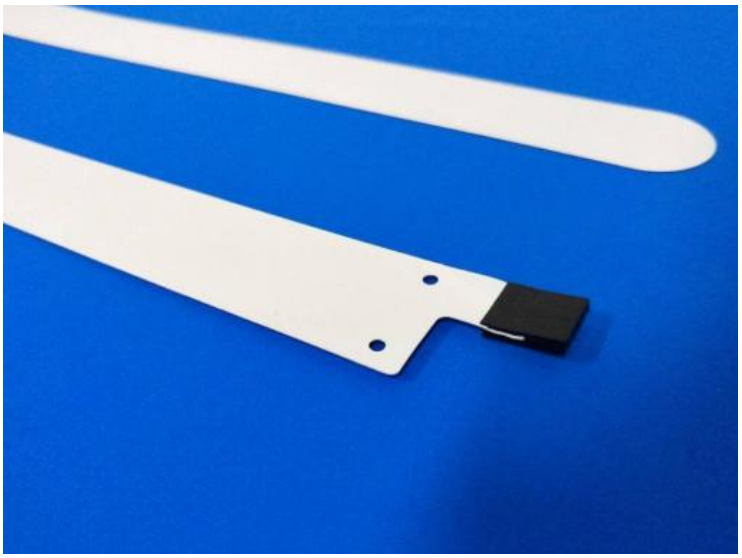
BIGGER THAN SENSE

睡眠体征传感器

产品手册

Beegor 睡眠体征传感器可用作心率呼吸鼾声监测、心律不齐、房颤、心衰、心率变异性、中枢性呼吸障碍、阻塞性呼吸障碍、睡眠障碍等包含人体睡眠、动作、心率、呼吸、鼾声等数据以及疾病诊断。 可用于睡眠监测、智能床垫、智能养老监测领域。





四大核心优势

一、无电源、无辐射、对人体无害

——采用被动振动-感知原理

二、含封装含屏蔽、无需二次封装

——可监测鼾声、防水耐弯

三、超薄、0.42mm 厚

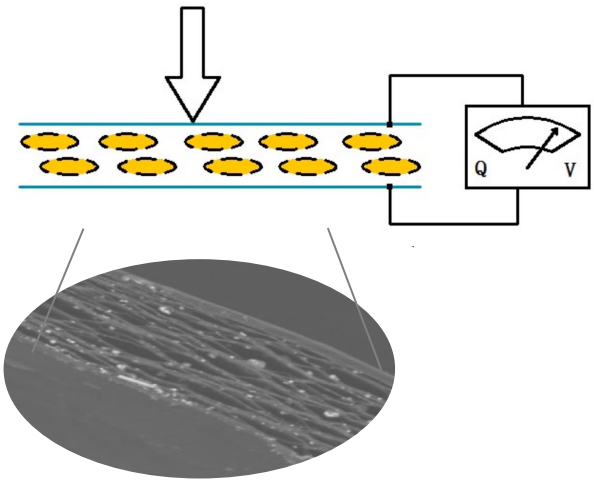
——置于床垫上无异物感、更舒适

四、高灵敏度、可隔离 20cm 床垫

——微弱信号可轻松感知

技术原理

Beegor 睡眠体征传感器核心是 PIEZOR 压电薄膜，其机理——利用有机材料“贝壳”孔洞型结构特点，形成空间电荷以呈现出压电效应。当压电薄膜受到正向压力的时，其厚度发生微小地变化，将诱导出相应表面电极层上的感应电荷的变化，从而在外电路中表现出短路电流或开路电压。



详情登录：www.beegor.com

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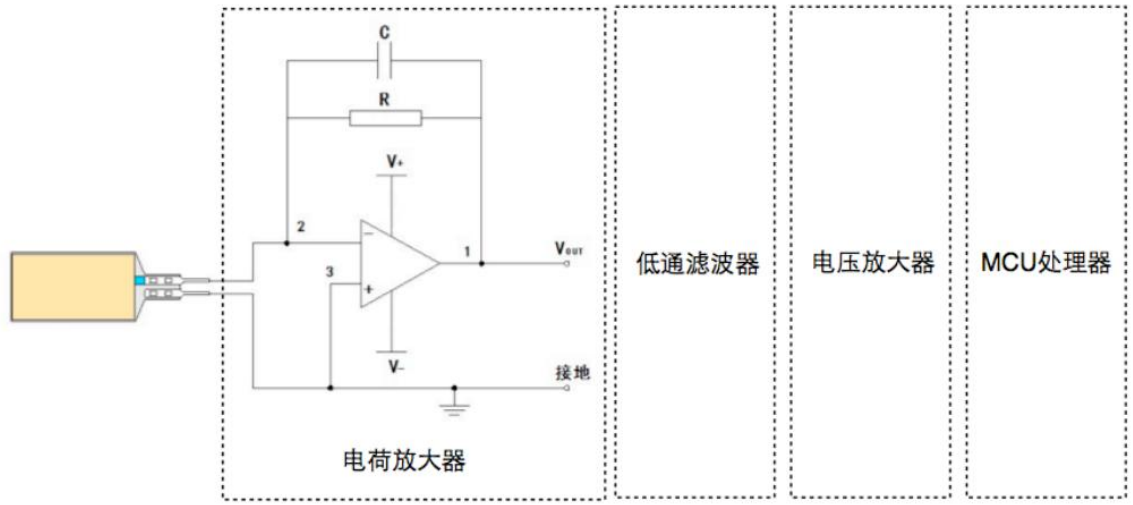
联系地址：苏州工业园区淞北路 45 号 4 栋 3 楼

技术参数

	单位 (Units)	数值 (Value)	误差(Error)
灵敏度d_{33} (Piezoelectric Charge Constant)	pC/N	**40-80**	±5%
压力频率范围F (Force Frequency Range)	Hz	0.1 to 20k	
电容 C(Capacitance, at 1 kHz)	nF	11.5	±5%
电极引出线 (Electrode Outlet)	2.54mm端子		定制
工作温度(Operating Temperature)	℃	-20 to 60	
湿度 (Humidity)		0 to 100%	
压强范围P (Pressure Range)	kPa	0.1 to 1000	
传感器规格			
长度L(Length)	mm	**600/700/800**	±0.5%
宽度W(Width)	mm	**30/46**	±0.5%
厚度D (Thickness)	mm	0.42	±1%
应用电路			
要得到有效的体征信号，需要对*Beegor*智能床垫传感器进行电路处理：需要依次接入电荷放大器、低通滤波器、电压放大器和MCU处理器，如下图所示。			



电荷放大器：建议电阻R＝200MΩ， 电容C＝1nF。
低通滤波器：根据后续体征识别的算法的不同，低通截止频率通常采用5Hz－20Hz范围。
电压放大器：根据传感器在床垫上的不同位置，通常放大30－300倍范围，建议采用自动增益放大。
MCU处理器：根据后续体征识别的算法的不同， 采样频率通常采用20Hz－200Hz范围。

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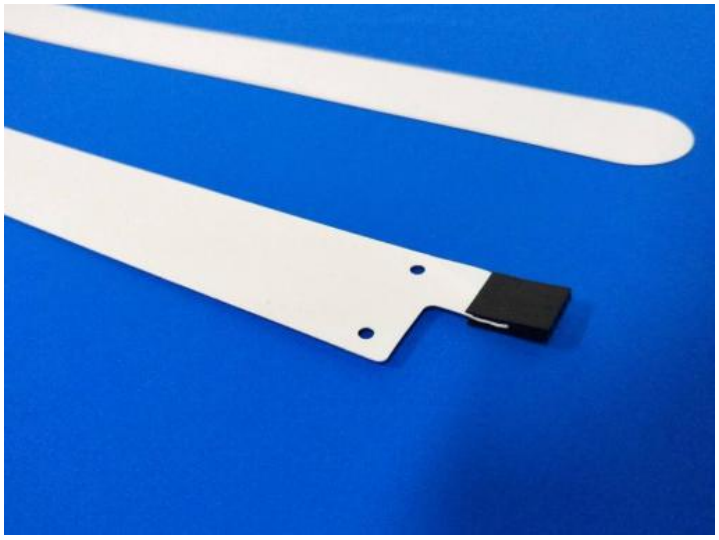
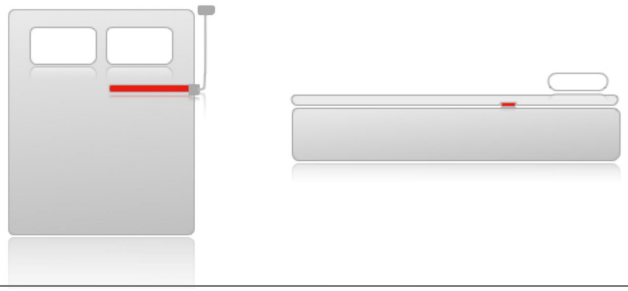
Sleep Sign Sensor

Product Manual

Beegor Sleep sign sensor is a sensor specially developed by Beegor Company for sleep-sign monitoring, what are used for monitoring human dynamic heartbeat, breathing, sleep and snoring in medical and pension fields. The core of the sensor is PIEZOR piezo film.
H80046 and H60046 sensors are used in medical and pension fields.





Advantage

No radiation - completely non-radiation to human body

No power -eliminating fire hazards

Ultra-thin - no foreign body feeling, more comfortable to use

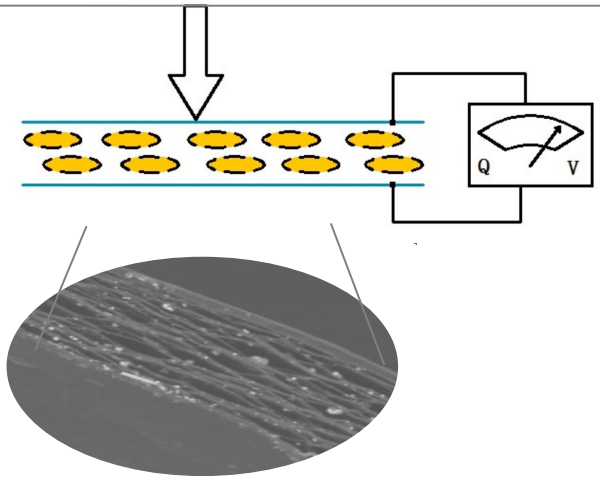
Super Penetration Force-Vibration Induced Penetration Force is Stronger

Strong Anti-Benefit from Full Shielding Design

Waterproof and Durable-Benefiting from Waterproof and Tough Packaging

Technical Principle

The core mechanism of Beegor Sleep Sign Senso is the formation of space charges to exhibit piezoelectric effect by utilizing the structural characteristics of organic shell holes. When the piezoelectric film is subjected to forward pressure, its thickness changes slightly which will induce the change of induced charge on the corresponding surface electrode layer, thus showing short-circuit current or open-circuit voltage in the external circuit.



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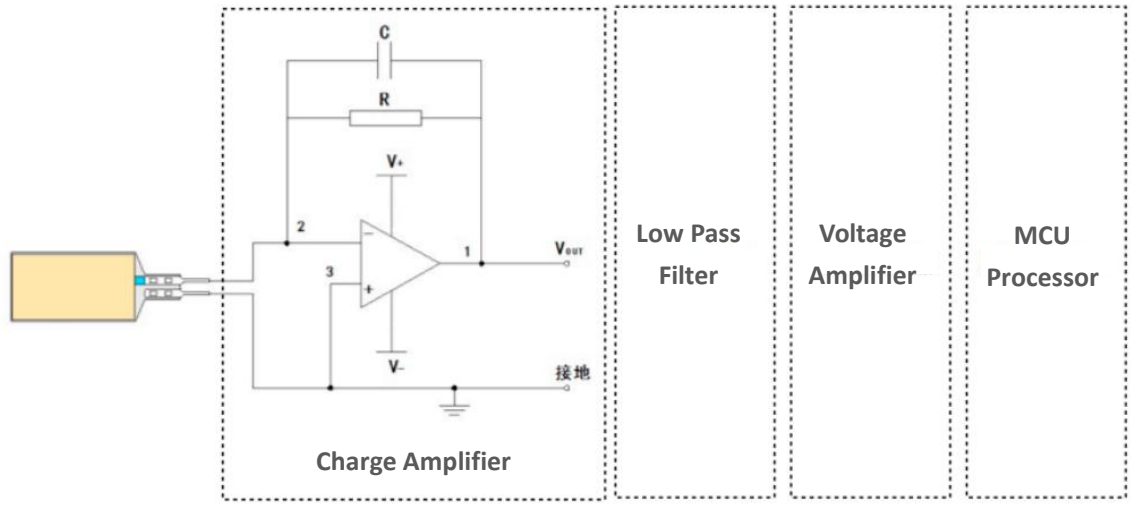
Technical Parameter

	单位 (Units)	数值 (Value)	误差(Error)
灵敏度d_{33} (Piezoelectric Charge Constant)	pC/N	40-80	±5%
压力频率范围F (Force Frequency Range)	Hz	0.1 to 20k	
电容 C(Capacitance, at 1 kHz)	nF	11.5	±5%
电极引出线 (Electrode Outlet)	2.54mm Terminal or FPC		Customized
工作温度(Operating Temperature)	℃	-20 to 60	
湿度 (Humidity)		0 to 100%	
压强范围P (Pressure Range)	kPa	0.1 to 1000	
传感器规格 (Sensor Specifications)			
长度L(Length)	mm	600/700/800	±0.5%
宽度W(Width)	mm	30/46	±0.5%
厚度D (Thickness)	mm	0.42	±1%

Application Circuit



Charge Amplifier: Resistance 200M, Capacitance 1nF

Low-pass filter: algorithm-related, 5-20Hz

Voltage amplifier: related to the thickness of mattress, 30-300 gain or gain automatically

MCU Processor: AD Sampling Frequency 20Hz-200Hz

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