

## 压阻式压力传感器

## Piezoresistive Pressure Sensor

## CY-001系列

## 1.基本原理

该压力传感器的敏感元件为压阻原理，采用半导体工艺制成。通过敏感元件将压力信号转换成电压信号，经放大电路放大输出。产品具有精度高、稳定性好、可靠性高、抗环境能力强的特点。产品可应用于航空、航天领域，对气瓶、贮箱、推进剂管路的压力信号进行测量，可用于腐蚀性介质的测量。

## 2.指标

2.1 压力测量范围：0 ~ 0.05 MPa(绝压)至0 ~ 35 MPa (绝压)

2.2 过载压力：2倍满量程

2.3 精度：≤1%(含线性、迟滞、重复性)。

2.4 温度性能：

传感器在低温 $-40 \pm 3^{\circ}\text{C}$ （或高温 $+50 \pm 3^{\circ}\text{C}$ ）条件下，进行特性校准，计算其低温（或高温）误差均小于或等于2.5%

2.5 输出电压：

零位输出： $0.2 \pm 0.1\text{VDC}$

满量程输出： $4.6 \pm 0.1\text{VDC}$

2.6 电源电压： $+5 \pm 0.1\text{VDC}$

2.7 绝缘电阻：在常态条件下，用50V兆欧表测量绝缘电阻应大于 $50\text{M}\Omega$ 。

2.8 产品质量：≤140g。

3.外形尺寸：见图1

## 1. Basic principle

The sensitive element of pressure sensor is made by semiconductor technology with piezoresistive principle. The sensor converts the pressure signal into voltage signal, amplified output by amplifying circuit. Products have characteristics of high accuracy, good stability, high reliability, strong ability to resist environment. Which can be used in aviation, spaceflight to measure pressure signal and corrosive medium of the cylinder pipe, tank and propellant.

## 2. Performance index

2.1 Pressure measurement range : 0 ~ 0.05 MPa(absolute pressure) 0 ~ 35 MPa (absolute pressure)

2.2 Pressure overload: Double full range

2.3 Accuracy: ≤1% ( Including linear, hysteresis and repeatability)。

2.4 Temperature performance :

Under the condition of the low temperature  $-40 \pm 3^{\circ}\text{C}$  (or high temperature  $+50 \pm 3^{\circ}\text{C}$ ), sensor should do characteristic calibration, calculating the low temperature (or temperature) error is less than or equal to 2.5%.

2.5 Voltage output:

Zero potential output:  $0.2 \pm 0.1\text{VDC}$

Full scale output:  $4.6 \pm 0.1\text{VDC}$

2.6 Power voltage:  $+5 \pm 0.1\text{VDC}$

2.7 Insulation resistance: Under normal conditions, insulation resistance should be greater than  $50\text{M}\Omega$  with 50 v megger。

2.8 Weight: ≤140g

3. Dimension: SEE figure 1

