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SM46D Pull Force Sensor

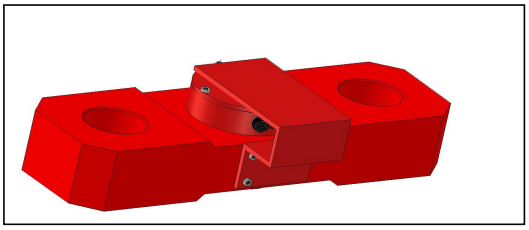
1. Description

The SM46D pull force sensors are specifically designed for measuring various large-range static or dynamic tensile forces. Especially when the harsh on-site working environment has high requirements for durability and technical reliability, the SM46D pull force sensor is the best choice. It can be designed according to general standards and non-standard customized designs to meet the needs of various application scenarios. For example: hook scales, lifting overload protection equipment, etc.

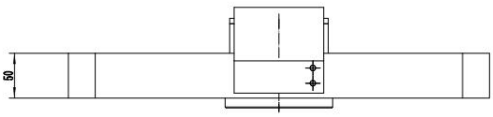
If the machinery has special shape or interface requirements for the tensile force sensor, our company can specially design and customize it according to the requirements. The SM46D pull force sensors are all equipped with standard current interfaces, CAN bus interfaces or wireless sensor network interfaces.

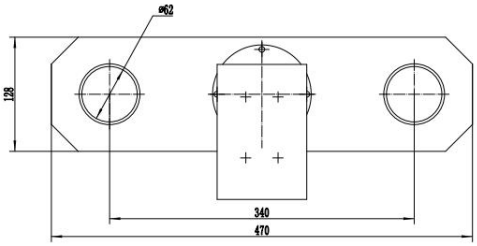
2. Characteristics

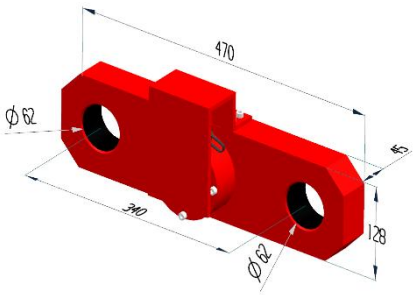
- The tensile force measurement range is selectable from 1t to 1600t.
- High reliability.
- Multiple measurement signal output schemes: analog standard signal, digital bus, wireless sensor network.
- **Accuracy grade 0.3.**
- The material of the measurement body adopts high-performance alloy steel or stainless steel.
- Measure the safe overload range of the body at 200% F・S.
- Industrial-grade design, protection class IP67.
- The operating temperature range: -40℃ to 85℃.
- ESD electrostatic protection, EFT transient suppression SPD surge impact protection.
- Reverse polarity protection for power supply and signals, external steel connector protective cover.



Dimensions (In mm. 1mm=0.03937 inches)







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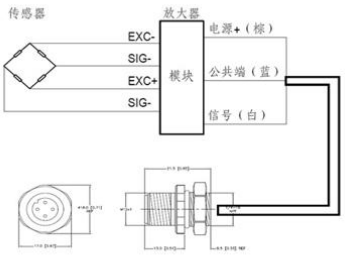
Circuit Diagram：

Red: ＋input

Blue: －input

White: +output

Yellow: －output

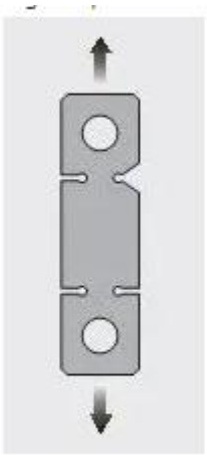


Specification：

Type	Technical parameters
Nominal load range	5～1600t
Power supply	10~12 VDC
Drawing current	<100 mA
Zero balance	1.0±% of rated output
Analog output	2.0±0.015mV/V
Input resistance（Rlc)	380±10Ω（ohms）
Output resistance（Ro)	350±5Ω（ohms）
Insulation resistance	≥5000 MΩ（Mege-Ohms）
Class precision	0.3%FS
Effect of temperature	0.3%FS/10℃
Operating temperature	-40～+85℃
Safe Load Limit	200% FS
Safety margin against yielding	300% FS
Safety margin against breakage	500% FS
Material material	High performance alloy steel or (chromium ratio>15% stainless steel)
Protection type	IP67/IP68

测量原理

The plate-ring tension sensor utilizes the elastic deformation of an elastic body under the action of an external force, causing the resistance value of the resistance strain gauge adhered to its surface to change (increase or decrease). Then, through the corresponding measurement circuit, this resistance change is converted into an electrical signal (voltage or current), thereby completing the force measurement process.



Detailed introduction

激光打标 识别度高 可追溯性强

It is equipped with two independent force measurement circuit systems, serving as backups for each other. You can choose to use them by selecting interfaces. You can use one of them alone or both simultaneously.

The materials are made of high-performance alloy steel or stainless steel

Wireless digital application

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