# SM46C Pull Force Sensor

## 1. Description

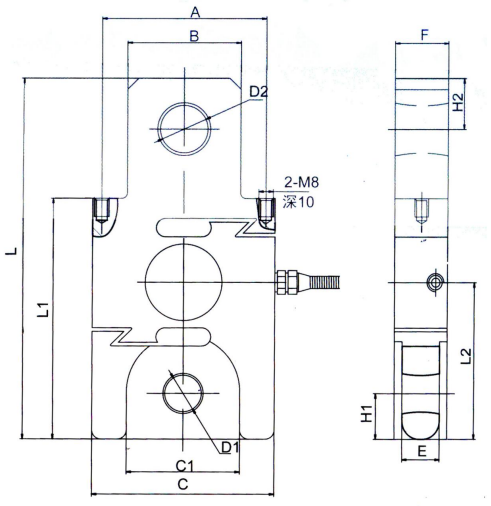
**The SM46C pull force sensors are specifically designed for measuring various large-range static or dynamic tensile forces.** Especially when the harsh on-site working environment has high requirements for durability and technical reliability, the SM46C pull force sensor is the best choice. It can be 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 SM46C 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 25t.
- 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)**




| CAP./SIZE | L | L1 | A | B | C | C1 | D1 | D2 | E | F | H1 | H2 | L2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kg/mm | | | | | | | | | | | | | |
| 2t | 197 | 130 | 90 | 62 | 100 | 62 | 20 | 25 | 22 | 34 | 25 | 27 | 86 |
| 3t~5t | 197 | 130 | 90 | 62 | 100 | 62 | 20 | 25 | 22 | 34 | 25 | 27 | 86 |
| 7.5t | 228 | 137 | 90 | 62 | 100 | 70 | 26 | 32 | 33 | 40 | 30 | 33 | 91 |
| 10t~15t | 260 | 169 | 104 | 80 | 124 | 64 | 26 | 36 | 33 | 50 | 30 | 43 | 108 |
| Ib/inches (conversion of above dimensions) | | | | | | | | | | | | | |
| 4409.25 | 77.56 | 51.18 | 35.43 | 24.41 | 39.37 | 24.41 | 7.87 | 9.84 | 8.66 | 13.39 | 9.84 | 10.63 | 33.858 |
| 6613.87~11023.11 | 77.56 | 51.18 | 35.43 | 24.41 | 39.37 | 24.41 | 7.87 | 9.84 | 8.66 | 13.39 | 9.84 | 10.63 | 33.858 |
| 16534.67 | 89.76 | 53.94 | 35.43 | 24.41 | 39.37 | 27.56 | 10.24 | 12.60 | 12.99 | 15.75 | 11.81 | 12.99 | 35.827 |
| 22046.23~33069.34 | 102.36 | 66.54 | 40.94 | 31.50 | 48.82 | 25.20 | 10.24 | 14.17 | 12.99 | 19.69 | 11.81 | 16.93 | 42.52 |

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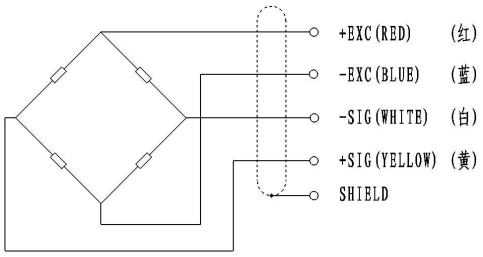
## Circuit Diagram:

Red: ＋input

Blue: －input

White: +output

Yellow: －output




## Specification:

| Type | Technical parameters |
|---|---|
| Nominal load range | 2～15t |
| 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 |