



■ HI2000

- Premium Pressure Transmitter in Silicon-on-Sapphire Technology
- Pressure range 0...1 bar to 0...1.000 bar gauge
- Excellent accuracy and outstanding long term stability
- Superb temperature compensation
- Output signal 0...100 mV, 0...5 V, 0...10 V
- Electrical connection screened cable or MIL-C-26482 connector

The HI2000 model of pressure transducers use Silicon-on-sapphire technology to offer levels of accuracy and performance previously unobtainable or prohibitively expensive.

Silicon strain gauge resistors are epitaxially grown onto the surface of the sapphire diaphragms, forming a radiation hardened structure. This structure provides virtually unmeasurable hysteresis and outstanding insulation properties which protect the strain gauge from the influences of pulse-electromagnetic fields.

The sensor construction is completed by mating the sapphire diaphragm with a BT9 titanium alloy pressure port and diaphragm. The titanium/sapphire assembly enables the transducer to be very stable at high or low temperatures (-50°C to +150°C).

Typical applications include testing of jet engines and other machinery operating at high temperatures, process monitoring, oil and gas exploration equipment, undersea exploration, military and other applications requiring accurate results at high or varying temperatures.

Available immediately in pressure ranges from 0...1 bar to 0...1.000 bar and with electrical outputs of 0...100 mV, 0...5 Vdc and 0...10 Vdc.

input

```

:: pressure range
..... xxx=001 ..... 0...1 bar
..... xxx=001.6 ..... 0...1.6 bar
..... xxx=002.5 ..... 0...2.5 bar
..... xxx=004 ..... 0...4 bar
..... xxx=006 ..... 0...6 bar
..... xxx=010 ..... 0...10 bar
..... xxx=016 ..... 0...16 bar
..... xxx=025 ..... 0...25 bar
..... xxx=040 ..... 0...40 bar
..... xxx=060 ..... 0...60 bar
..... xxx=100 ..... 0...100 bar
..... xxx=160 ..... 0...160 bar
..... xxx=250 ..... 0...250 bar
..... xxx=400 ..... 0...400 bar
..... xxx=600 ..... 0...600 bar
..... xxx=1000 ..... 0...1000 bar
:: pressure reference ..... gauge (relative)
:: over pressure ..... 1,5 x rated for pressure up to 700 bar :: 1,1 x for 1000 bar
    
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environmental

```

:: pressure media ..... media compatible with BT9 titanium
:: operating temperature range ..... -50...+150°C
:: storage temperature range ..... -65...+165°C
:: thermal effect zero ..... +/- 0.005 % FSO / K
:: thermal sensitivity ..... +/- 0.005 % FSO / K
:: vibration tolerance ..... < +/- 0.02 % / g
:: acceleration tolerance ..... < +/- 0.02 % / g
:: mechanical shock tolerance ..... 15 g @ s (11ms)
:: operating humidity ..... 0...95 % RH
    
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physical

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:: pressure connection ..... 1/4" BSP male [others on request]
:: electrical connection
..... HI200x-xxx ..... screened cable
..... HI201x-xxx ..... MIL-C-26482 connector
:: enclosure rating ..... IP65
:: natural frequency ..... 8 kHz (min)
:: weight ..... 85 gr.
:: materials ..... 300 series stainless steel, all wetted parts BT9 titanium alloy
    
```

HI20x0-xxx

output

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:: sensitivity ..... 10 mV/V
:: span ..... 0...100 mV (+/- 1 %)
:: type ..... 4 wire
    
```

:: common mode voltage 2...4 V DC
accuracy
 :: zero offset < +/- 10 mV
 :: span tolerance < +/- 30 % FSO
 :: non-linearity +/- 0.2 % FSO
 :: repeatability +/- 0.1 % FSO
 :: long term stability +/- 0.2 % FSO / 6 month
electrical
 :: supply voltage 5 V DC (15 V DC max)
 :: supply voltage effects ratiometrics
 :: reverse polarity no damage
 :: power requirements 5 mA
 :: input resistance 1500 Ohm +/- 30 %
 :: output resistance 1500 Ohm +/- 30 %
 :: insulation resistance 100 MOhm @ 100 V DC elec conn to case
 :: response time (63 %) 0,2 ms

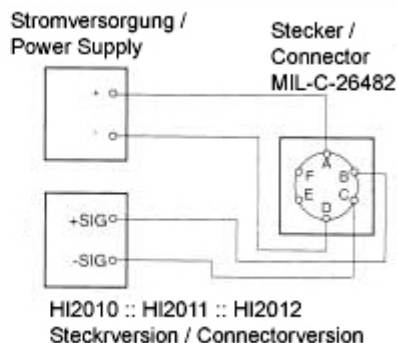
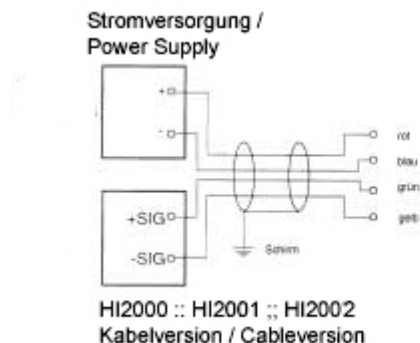
HI20x1-xxx

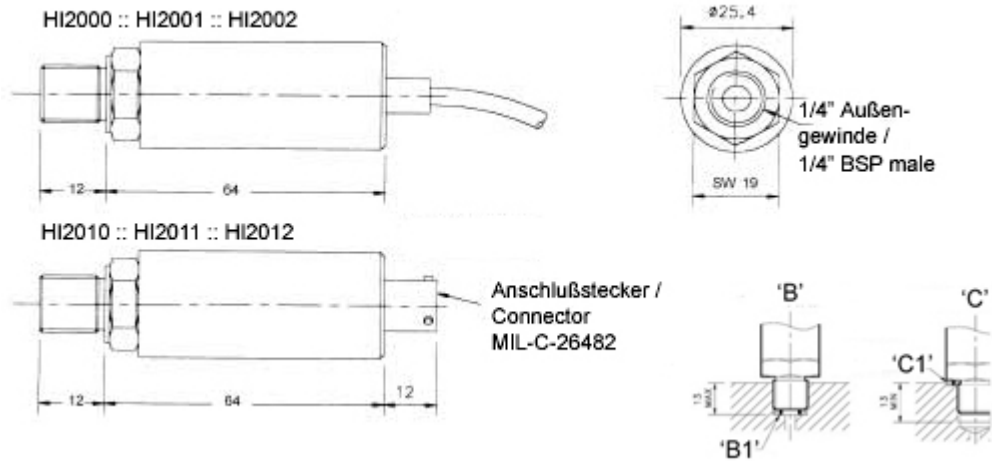
output
 :: span 0...5 V DC
 :: type 4 wire
 :: common mode voltage 1 V DC +/- 1 %
accuracy
 :: zero offset < +/- 0.2 % FSO
 :: span tolerance < +/- 0.2 % FSO
 :: combined non-linearity +/- 0.2 % FSO
 :: repeatability +/- 0.05 % FSO
 :: long term stability +/- 0.2 % FSO / 6 month
electrical
 :: supply voltage 13...30 V DC (15 V DC max)
 :: supply voltage effects 0,011 mV/V
 :: reverse polarity no damage
 :: power requirements 10 mA (max)
 :: load driving capacity 2500 Ohm (min)
 :: insulation resistance 100 MOhm @ 100 V DC elec conn to case
 :: response time (63 %) 1 ms

HI20x2-xxx

output
 :: span 0...10 V DC
 :: type 4 wire
 :: common mode voltage 1 V DC +/- 1 %
accuracy
 :: zero offset < +/- 0.2 % FSO
 :: span tolerance < +/- 0.2 % FSO
 :: combined non-linearity +/- 0.2 % FSO
 :: repeatability +/- 0.05 % FSO
 :: long term stability +/- 0.2 % FSO / 6 month
electrical
 :: supply voltage 13...30 V DC (15 V DC max)
 :: supply voltage effects 0,011 mV/V
 :: reverse polarity no damage
 :: power requirements 10 mA (max)
 :: load driving capacity 5000 Ohm (min)
 :: insulation resistance 100 MOhm @ 100 V DC elec conn to case
 :: response time (63 %) 1 ms

Electrical connection:





Dimensions and Mounting Details

all dimensions in [mm] except BSP connection

'B' :: Sealing for pressures up to 50 bar

'B1' :: Bonded seal part no. Z-0032

'C' :: Sealing for pressures over 50 bar

'C1' :: Bonded seal part no. Z-0006

1/4" BSP male thread note:

- 1) Sealing to ISO 1179-1973.
- 2) Tightening Torque for sealing 15.8 Nm.
- 3) Sealing face to be flat, free from marks, and 90° to the thread.

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