HPP51
超高压应用压力传感器

The HPP51 series adopts advanced metal strain and MEMS silicon strain technology. The core pressure-sensing element is made of imported 17-4PH or 316L material, and the integrated pressure cavity is weld-free, ensuring safe and stable operation under pressures up to 1000 MPa.

It achieves an accuracy of up to ±0.1% FS (<250 MPa), with total error controlled within ±1% FS, and long-term stability better than ±0.25% FS/year, meeting the stringent data accuracy requirements of ultra-high dynamic measurement applications.



FEATURES

- Pressure range up to 0···1000 MPa
- Variety of Pressure Ports
- Non linearity upto ±0.5%
- Up to ±1.0% Total Error Band
- -10℃...+70℃ Compensated Temperature
- -40℃...+120℃ Operating Temperature

GREAT FOR

- High pressure water jet cutting
- High Pressure Water Jet Cleaning
- High-pressure cell disruptor and homogenizer
- Ultra-high pressure booster pump
- High-pressure pasteurization
- Burst Pressure Test Stand
- HPP(High Pressure Processing)



Configurable Design

The HPP51 supports various output signals, such as 4-20 mA, 0-5 V, 0-10 V, and ratiometric voltage, and offers electrical connections including cable, M12, and Hirschmann, as well as process connections like M16×1.5, M20×1.5, and 9/16-18 UNF, allowing users flexible configuration and quick integration.

Whether for replacing imported ultra-high pressure applications or upgrading existing measurement systems, the HP5100 series is your ideal choice with excellent cost-performance and reliability.

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SPECIFICATIONS

Performance

Accuracy*	**<250MPa**	≤±0.1% typical, ±0.25% Max
	<500MPa	≤±0.25% typical, ±0.5% Max
	<750MPa	≤±0.5% typical, ±1% Max
	>750MPa	≤±0.75% typical, ±1.5% Max
Stability (1 year)		≤0.25%FS
Pressure Cycles		1×10^7
Proof Pressure		2X (Max 1500 MPa)
Burst Pressure		3X (Max 1500 MPa)

** Accuracy includes non-linearity, hysteresis and non-repeatability*

Thermal

Operating Temperature	-20···125℃
Media Temperature	-20···125℃
Storage Temperature	-40···125℃
Compensated Temperature	0···70℃
TC Zero	≤±1.0% typical
TC Span	≤±1.0% typical

Enviromantal

Isolation (Body to any Lead)	100 MΩ@250VDC
EMI/RFI Protection	Yes
IP Rating:	> IP65
Vibration:	±20g,1Hz...200Hz
Shock	50g,11msec,1/2sine

** IP Rating is dependent on electrical termination selected. Contact factory for more information.*

** IP Rating applies when electrical connector is attached with the appropriate ingress protection.*

Material

Wetted material	17-4PH+316L / or 316L only
Housing material	316L

Electrical (Current)

Outputs:	4···20mA
Excitation:	9-36V
Current Consumption:	< 10 mA
Output Load:	0···1350Ω
Frequency Response (min):	<3ms Without Snubber
Zero Offset (of FS):	≤ ±0.5% typical
Span Tolerance (of FS):	≤ ±0.5% typical

Electrical (Voltage)

Outputs:	0-5V, 1-5V, 1-6V, 0-10V
Excitation:	13-36V
Current Consumption:	< 10 mA
Output Load:	> 100kΩ
Frequency Response (min):	<2ms Without Snubber
Zero Offset (of FS):	≤ ±0.5% typical
Span Tolerance (of FS):	≤ ±0.5% typical

Outputs:	0.5-4.5V ratiometric
Excitation:	5V
Current Consumption:	< 10 mA
Output Load:	> 100kΩ
Frequency Response (min):	<2ms Without Snubber
Zero Offset (of FS):	≤ ±0.5% typical
Span Tolerance (of FS):	≤ ±0.5% typical

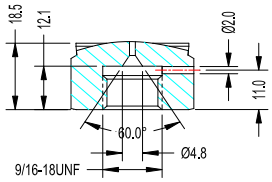
Outputs:	0.5-2.5V ratiometric
Excitation:	3-5VDC
Current Consumption:	< 3 mA
Output Load:	> 100kΩ
Frequency Response (min):	<2ms Without Snubber
Zero Offset (of FS):	≤ ±0.5% typical
Span Tolerance (of FS):	≤ ±0.5% typical

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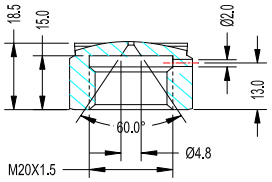
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Pressure Connection

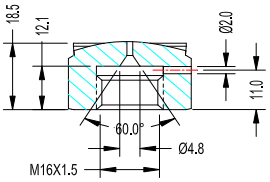
9/16-18UNF
Max 0...700MPa



M20×1.5
Max 0...1500MPa

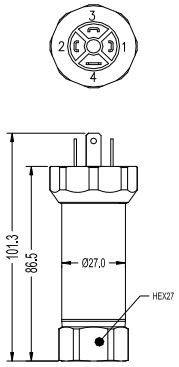


M16×1.5
Max 0...700MPa

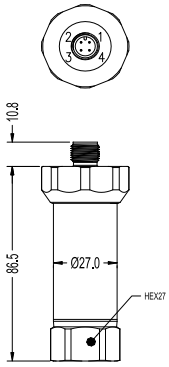


Electrical Connection

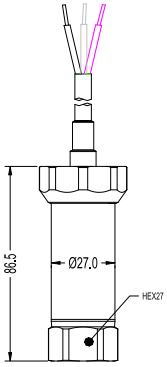
Form A
IP65



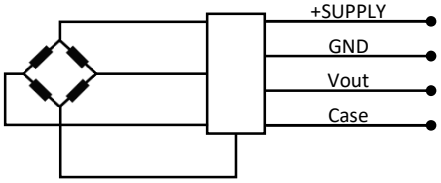
M12
IP67



Cable
IP65

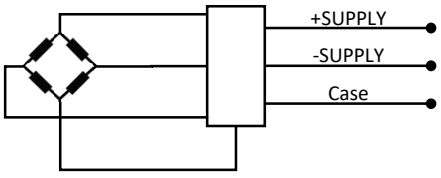


VOLTAGE AMPLIFIED OUTPUT



Cable	M12	Form A
RE	1	3
BK	2	2
WH	3	1
Shield	4	4

CURRENT AMPLIFIED OUTPUT



Cable	M12	Form A
RE	1	1
BK	2	2
Shield	4	4

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Ordering Information

HPP51	-	3	4	1	1	1	U9F	-	010B	G	-	000

Output

1	0.5-4.5V RATIOMETRIC
2	1-5V
3	4-20mA
4	0-5V
5	0-10V
6	1-6V
7	0.5-4.5V
X	Customer Special

Connection

1	Cable
4	M12
5	FORM A
X	Customized

Material (Diaphragm+Screw)

3	316L
4	17-4PH+316L

Snubber

1	With Snubber

Label

0	No
1	Adhesive
2	Lazer

Options

000	No Special Option

Pressure Type

G	Gauge

Pressure Range+Unit

Code	Range+Unit
160M	0...160 MPa
250M	0...250 MPa
400M	0...400 MPa
500M	0...500 MPa
700M	0...700 MPa
01KM	0...1000 MPa

Pressure Port

M16F	M16×1.5 mm Female
M20F	M20×1.5 mm Female
U9F	9/16-18 UNF Female
X	Customized

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