



HP5

OEM Pressure Sensor

Product Description

The HP5 pressure sensor can meet the requirements of different industrial applications, equipped with various process connectors and electrical interfaces, and supports all commonly used pressure ranges and output signals, making the HP5 pressure sensor unique.

If this type of sensor is used in applications where water is the medium, we recommend using a safe anti condensation housing that can withstand up to 5 times overpressure.

This pressure sensor has excellent specifications, diverse functions, and reasonable prices, making it very suitable for OEM applications where the annual demand for each component exceeds 1000 units. In view of this, the minimum order quantity for this model of sensor per batch is 50 units.

Scope of application

- Hydraulic and Pneumatic Technology
- Pumps and compressors
- Mechanical Manufacturing
- Building equipment

Features

- Measurement range: 0... 0.6 MPa to 0... 60 MPa
- Non linearity: 0.5%
- Industrial standard signal
- Electrical interfaces: DIN175301-803A to C Hirschman interface, M12x1 circular interface, Metri Pack 150 series, and 2m shielded and unshielded cable outlet
- Multiple internationally recognized process connectors



Measurement range

Gauge pressure							
MPa	0 ... 0.6 ^{1) 2)}	0 ... 1 ^{1) 2)}	0 ... 1.6	0 ... 2.5	0 ... 4	0 ... 6	0 ... 10
	0 ... 16	0 ... 25	0 ... 40	0 ... 60			
Psi	0 ... 100 ^{1) 2)}	0 ... 160	0 ... 200	0 ... 250	0 ... 300	0 ... 400	0 ... 500
	0 ... 600	0 ... 750	0 ... 800	0 ... 1,000	0 ... 1,500	0 ... 2,000	0 ... 3,000
	0 ... 4,000	0 ... 5,000	0 ... 6,000	0 ... 7,500	0 ... 8,000		

1) Measurement deviation of zero point signal: $\leq \pm 0.7\%$ FS

2) Non linearity: $\leq \pm 0.6\%$ FS BFSL

Overload safety

2 times (3 times can be provided upon request)

Negative pressure protection

Is

Output signal

Signal Type	Signal
Current (2-wire system)	4 ... 20 mA
Voltage (3-wire system)	DC 0.5 ... 4.5 V
	DC 0 ... 5 V
	DC 1 ... 5 V
	DC 0 ... 10 V
Proportional voltage (3-wire system)	DC 0.5 ... 4.5 V

Other output signals can be provided according to customer requirements.

Load (1)

Current output (2-wire system): $\leq (\text{power supply} - 8V)/0.02A$

Voltage output (3-wire system): $> \text{Maximum output signal}/1mA$

Proportional voltage output signal (3-wire system): $> 4.5k\ \Omega$

Power supply voltage

Power supply

The required power supply depends on the selected output signal

4... 20 mA: DC8... 30V

DC0.5... 4.5V: DC8... 30V

DC0... 5V: DC8... 30V

DC1... 5V: DC8... 30V

DC0... 10V: DC14... 30V

DC0.5... 4.5V (proportional voltage): DC4.5... 5V

The pressure sensor must be powered by a limiting circuit that meets the requirements of ULNIEC 61010-1 Section 9.4, LPS that meets ULN/EC 60950-1 standard, or a Class 2 power supply that meets UL1310 UL1585 (NEC or CEC). The power supply must be able to operate at an altitude of 2000m to meet the requirements of pressure sensor applications.

Total current consumption

Current type output signal: Corresponding to the current output signal value (4... 20mA), the maximum value is 25mA

Voltage type output signal: 5mA



400-860-9760

For more product information, please visit www.ludwig-schneider.com.cn



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Reference conditions (compliant with IEC61298-1 standard)

Temperature

15...25 °C (59 ... 77°F)

Atmospheric pressure

86 ... 106 kPa (12.5... 15.4psi)

Humidity

45 ... 75 % RH

Power supply

Current output: DC14V

Voltage output: DC24V

Proportional voltage output signal: DC5V

nominal position

Vertical position calibration, pressure connection facing downwards

Response time

Stabilization time

<2ms

Accuracy specifications

Non linearity (compliant with IEC61298-2 standard)

$\leq \pm 0.5\% \text{FS BFS}$

The nonlinearity of some measurement ranges may vary, please refer to "Measurement Range of O-10 (T) Type" for details

Zero signal measurement deviation

$\leq \pm 0.5\% \text{FS}$

The measurement deviation of some measurement ranges may vary, please refer to "Measurement Range of O-10 (T) Type" for details.

Accuracy under reference conditions

$\leq \pm 1.2\% \text{FS}$

Temperature error (0... 80 ° C) (32... 176 ° F)

$\leq \pm 1.5\% \text{FS}$

long-term stability

$\leq \pm 0.3\% \text{FS/year}$



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Working conditions

Protection level (compliant with IEC60529 standard)

For the protection level, please refer to the article "Electrical Connections of HP5 Type". The protection level only applies when equipped with matching connectors with similar protection levels.

Vibration resistance performance (compliant with IEC60068-2-6 standard)

20g (20... 2000Hz, 120 minutes)

Impact resistance performance (compliant with IEC60068-2-27 standard)

40g(6ms), mechanical shock

service life

10 million load cycles

Free fall test

Can withstand the impact of falling from a height of 1m onto a concrete floor

Allowable temperature

Medium: -30...+100 ° C (-22... 212 ° F)

Environment: -30...+100 ° C (-22... 212 ° F)

Storage: -30...+100 ° C (-22... 212 ° F)

Other temperature ranges can be provided according to customer requirements

Process connection

Standard	Thread specification
EN 837	G 1/8 B ²⁾
	G 1/4 B
	G 1/4 Internal thread
	G 3/8 B
DIN EN ISO 1179-2 (Original DIN 3852-E)	G 1/4 A ^{1) 3) 4)}
	M14 x 1.5 ³⁾
ANSI/ASME B1.20.1	1/8 NPT ²⁾
	1/4 NPT ¹⁾
	1/4 NPT Internal thread
SAE J514 E	7/16-20 UNF-2AO-ringBOSS ^{1) 3)}
	9/16-18 UNF-2AO-ringBOSS ³⁾

1) Optional: Pressure ports with diameters of 6mm, 0.6mm, and 0.3mm can be provided according to customer requirements.

2) Maximum measurement range: 0... 40MPa

3) Minimum allowable medium temperature: -30 ° C, also applicable to HP5 type

4) Maximum overvoltage limit: 60MPa

Various process connections can be provided, with a standard pressure port diameter of 3.5mm.



Seal

Process connections that meet the following standards	Standard configuration	Optional
DIN ENISO1179-2(original DIN 3852-E)	NBR ¹⁾	FPM/FKM ²⁾
SAE J514E	FPM/FKM ²⁾	-

1) Minimum allowable medium and ambient temperature: -30 ° C (-22 ° F)

2) Minimum allowable medium and ambient temperature: -15 ° C (5 ° F)

The sealing under the "standard configuration" item is included in the scope of supply.

Material

Non liquid components

316L stainless steel

PBT GF 30

Cable material (cable straight out) PVC

Liquid contact parts

316L stainless steel

13-8 PH

Regarding sealing materials, please refer to "Process Connections"

We can provide oil and grease free models according to customer requirements.

Electrical connection

Electrical connection	Protection rating	Cable cross-sectional area	Cable diameter	Cable length
Hessman connector DIN175301-803A	IP65	-		
Hessman connector DIN175301-803C	IP65	-		
Circular aviation connector M12x1(4-pin)	IP67	-		
Delphi connector Metri Pack 150 series (3-pin) ¹⁾	IP67	-		
Cable straight out, unshielded ²⁾	IP67	0.14mm ²	3.4mm	2m 5m
Cable straight out, shielded	IP67	0.14mm ²	3.4mm	2m 5m

1) For HP5 type, the measurement range is only 0... 6.0MPa

2) Maximum allowable temperature up to 80 ° C

The protection level described in the article (in accordance with IEC60529 standard) is only applicable when equipped with matching connectors with similar protection levels.

Matching connectors are not included in the scope of supply, but can be provided as accessories.

Other connections can be provided according to customer requirements.

short circuit protection

S+ vs.OV

Polarity reversal protection

UBVs. OV



overvoltage protection
DC36V

insulation voltage
DC750V

Wiring diagram

Hessman connector DIN 175301-803 A ^{1) 3)}			
		2-wire system	3-wire system
	UB	1	1
	0V	2	2
	S+	-	3

Hessman connector DIN175301-803C ^{1) 3)}			
		2-wire system	3-wire system
	UB	1	1
	0V	2	2
	S+	-	3

Circular aviation connector M12x1 (4-pin) ^{1) 2) 3)}			
		2-wire system	3-wire system
	UB	1	1
	0V	3	3
	S+	-	4

Delphi connector Metri Pack 150 series (3-pin) ^{1) 2) 3)}			
		2-wire system	3-wire system
	UB	B	B
	0V	A	A
	S+	-	C

Cable straight out, unshielded ^{1) 2) 3)}			
		2-wire system	3-wire system
	UB	Brown	Brown
	0V	green	green
	S+	-	White

Cable straight out, shielded ^{1) 3)}			
		2-wire system	3-wire system
	UB	Brown	Brown
	0V	blue	blue
	S+	-	black

1) Used for HP5 type

2) Applicable to other types

3) We can provide models of shielded connections according to customer requirements

Image Explanation

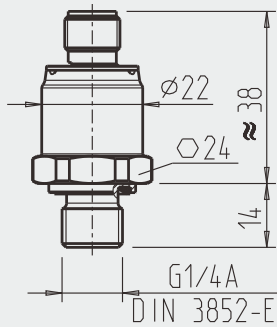
UB positive power terminal

0V negative power terminal

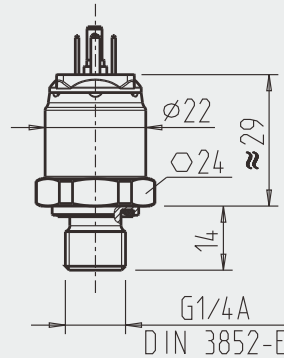
S+ positive output terminal

Size (mm)

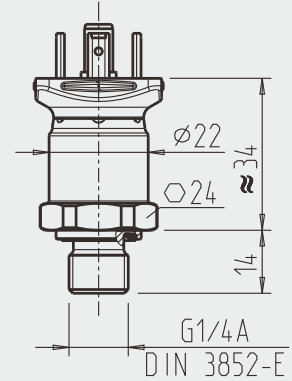
M12x1 circular aviation joint



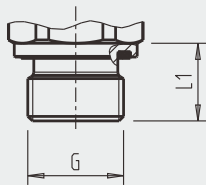
Weight: Approximately 80g

Hessman connector
DIN 175301-803 C

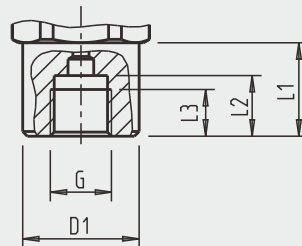
Weight: Approximately 80g

Hessman connector
DIN 175301-803 A

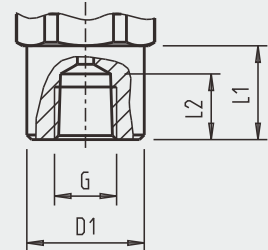
Weight: Approximately 80g



G	L1
G 1/4 A DIN EN ISO 1179-2 (Originally DIN 3852-E)	14
M14 x 1.5 DIN EN ISO 1179-2 (Originally DIN 3852-E)	14



G	L1	L2	L3	D1
G 1/4	17	13	10	Ø 19



G	L1	L2	D1
1/4 NPT	17	14	Ø 19