

110L...-PCB / 430L...-PCB Series

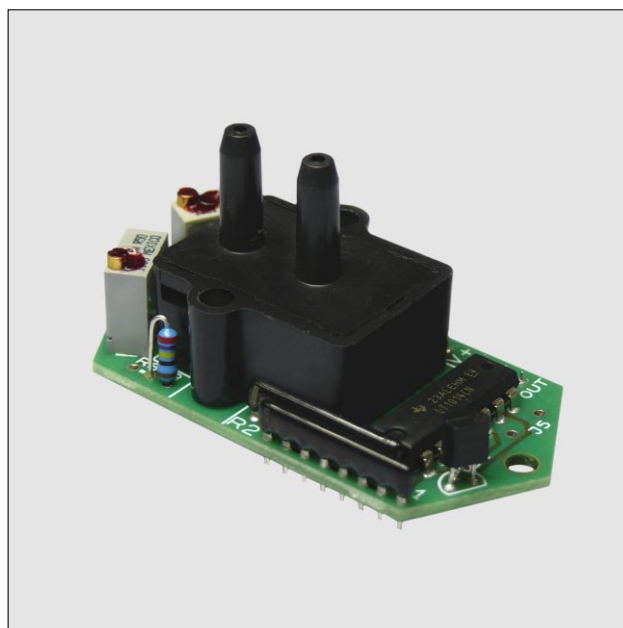
Signal conditioned precision pressure transducers

FEATURES

- 1 to 50 mbar, 1 to 30 inH₂O gage or differential pressure
- 1...6 V or 4...20 mA output
- Internal supply regulation
- Precision temperature compensated and calibrated

SERVICE

Non-corrosive, non-ionic working fluids such as dry air and dry gases.



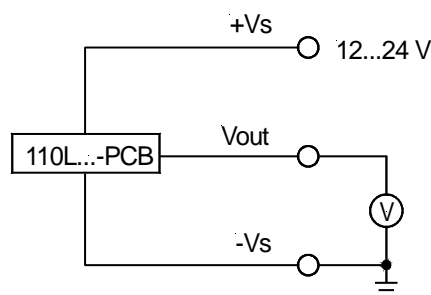
SPECIFICATIONS

Maximum ratings

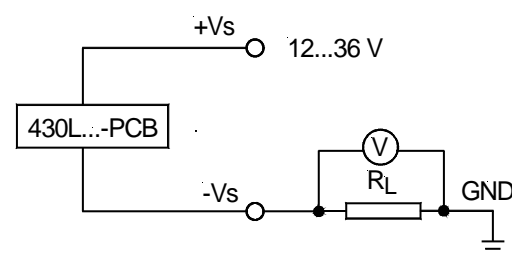
Supply voltage	
110L...-PCB	12...24 V
430L...-PCB ¹	12...36 V
Maximum load current (110L...-PCB only)	
Source	20 mA
Sink	10 mA
Temperature limits	
Storage	-40...100 °C
Operating	-25...85 °C
Compensated	0...50 °C
Humidity limits (non-condensing)	95 %RH
Common mode pressure	
110/430...LP...-PCB	700 mbar
110/430...LU...-PCB	280 inH ₂ O

ELECTRICAL CONNECTION

1...6 V output version



4...20 mA output version



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PERFORMANCE CHARACTERISTICS⁴

1...6 V output version ($V_S = 15\text{ V}$, $R_L > 100\text{ k}\Omega$, $t_{\text{amb}} = 25^\circ\text{C}$)

Part number	Operating pressure	Proof pressure ²	Burst pressure ³
112LP02D-PCB	0...2 mbar	250 mbar	500 mbar
112LP05D-PCB	0...5 mbar	250 mbar	500 mbar
112LP10D-PCB	0...10 mbar	500 mbar	750 mbar
112LP25D-PCB	0...25 mbar	500 mbar	750 mbar
112LP50D-PCB	0...50 mbar	500 mbar	1250 mbar
113LP01D-PCB	0...±1 mbar	250 mbar	500 mbar
113LP02D-PCB	0...±2 mbar	250 mbar	500 mbar
113LP05D-PCB	0...±5 mbar	250 mbar	500 mbar
113LP10D-PCB	0...±10 mbar	500 mbar	750 mbar
113LP25D-PCB	0...±25 mbar	500 mbar	750 mbar
113LP50D-PCB	0...±50 mbar	500 mbar	1250 mbar
112LU01D-PCB	0...1 inH ₂ O	100 inH ₂ O	200 inH ₂ O
112LU02D-PCB	0...2 inH ₂ O	100 inH ₂ O	200 inH ₂ O
112LU05D-PCB	0...5 inH ₂ O	200 inH ₂ O	300 inH ₂ O
112LU10D-PCB	0...10 inH ₂ O	200 inH ₂ O	300 inH ₂ O
112LU20D-PCB	0...20 inH ₂ O	200 inH ₂ O	500 inH ₂ O
112LU30D-PCB	0...30 inH ₂ O	200 inH ₂ O	800 inH ₂ O
113LU01D-PCB	0...± 1 inH ₂ O	100 inH ₂ O	200 inH ₂ O
113LU02D-PCB	0...± 2 inH ₂ O	100 inH ₂ O	200 inH ₂ O
113LU05D-PCB	0...± 5 inH ₂ O	200 inH ₂ O	300 inH ₂ O
113LU10D-PCB	0...± 10 inH ₂ O	200 inH ₂ O	300 inH ₂ O
113LU20D-PCB	0...± 20 inH ₂ O	200 inH ₂ O	500 inH ₂ O
113LU30D-PCB	0...± 30 inH ₂ O	200 inH ₂ O	800 inH ₂ O

Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset ⁵	112L...-PCB	0.95	1.0	1.05	V
	113L...-PCB	3.45	3.5	3.55	
Full scale span ⁶	112L...-PCB	4.95	5.0	5.05	
	113L...-PCB	2.45	2.5	2.55	
Full scale output			6.0		
Output at lowest specified pressure			1.0		
Thermal effects (0...50°C) ⁷	Offset	devices up to 5 mbar/2 inH ₂ O all other devices	±0.04 ±0.02	±0.13 ±0.05	%FSO/°C
	Span	devices up to 5 mbar/2 inH ₂ O all other devices	±0.04 ±0.02	±0.10 ±0.04	
Non-linearity and hysteresis (BSL) ⁸			±0.1	±0.25	%FSO
Long term stability ⁹			±0.5		
Response time (10 to 90 %)			1		ms
Position sensitivity	all 1 and 2 mbar devices		0.5		%FSO/g
	all 1 inH ₂ O devices		0.5		
	all other devices		0.1		
Current consumption			4.2		mA
Power supply rejection	Offset		0.05		%FSOV
	Span		0.05		

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PERFORMANCE CHARACTERISTICS⁴

4...20 mA output version ($V_S = 15\text{ V}$, $R_L = 100\ \Omega$, $t_{amb} = 25^\circ\text{C}$)

Part number	Operating pressure	Proof pressure ²	Burst pressure ³
432LP01D-PCB	0...1 mbar	250 mbar	500 mbar
432LP02D-PCB	0...2 mbar	250 mbar	500 mbar
432LP05D-PCB	0...5 mbar	250 mbar	500 mbar
432LP10D-PCB	0...10 mbar	500 mbar	750 mbar
432LP25D-PCB	0...25 mbar	500 mbar	750 mbar
432LP50D-PCB	0...50 mbar	500 mbar	1250 mbar
433LP01D-PCB	0...±1 mbar	250 mbar	500 mbar
433LP02D-PCB	0...±2 mbar	250 mbar	500 mbar
433LP05D-PCB	0...±5 mbar	250 mbar	500 mbar
433LP10D-PCB	0...±10 mbar	500 mbar	750 mbar
433LP25D-PCB	0...±25 mbar	500 mbar	750 mbar
433LP50D-PCB	0...±50 mbar	500 mbar	1250 mbar
432LU01D-PCB	0...1 inH ₂ O	100 inH ₂ O	200 inH ₂ O
432LU02D-PCB	0...2 inH ₂ O	100 inH ₂ O	200 inH ₂ O
432LU05D-PCB	0...5 inH ₂ O	200 inH ₂ O	300 inH ₂ O
432LU10D-PCB	0...10 inH ₂ O	200 inH ₂ O	300 inH ₂ O
432LU20D-PCB	0...20 inH ₂ O	200 inH ₂ O	500 inH ₂ O
432LU30D-PCB	0...30 inH ₂ O	200 inH ₂ O	800 inH ₂ O
433LU01D-PCB	0...± 1 inH ₂ O	100 inH ₂ O	200 inH ₂ O
433LU02D-PCB	0...± 2 inH ₂ O	100 inH ₂ O	200 inH ₂ O
433LU05D-PCB	0...± 5 inH ₂ O	200 inH ₂ O	300 inH ₂ O
433LU10D-PCB	0...± 10 inH ₂ O	200 inH ₂ O	300 inH ₂ O
433LU20D-PCB	0...± 20 inH ₂ O	200 inH ₂ O	500 inH ₂ O
433LU30D-PCB	0...± 30 inH ₂ O	200 inH ₂ O	800 inH ₂ O

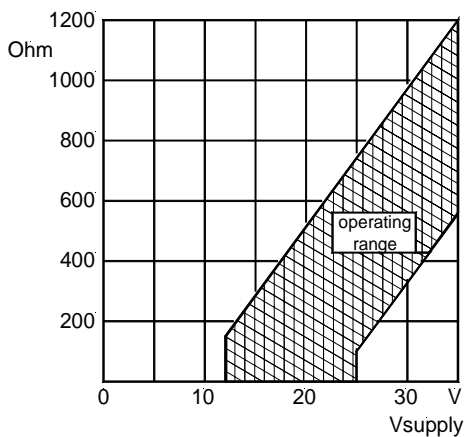
Characteristics		Min.	Typ.	Max.	Unit
Zero pressure offset ⁵	432L...-PCB	3.9	4.0	4.1	mA
	433L...-PCB	11.9	12.0	12.1	
Full scale span ⁶	432L...-PCB	15.8	16.0	16.2	
	433L...-PCB	7.9	8.0	8.1	
Full scale output			20.0		
Output at lowest specified pressure			4.0		
Thermal effects (0...50°C) ⁷	Offset	devices up to 5 mbar/2 inH ₂ O	±0.04	±0.13	%FSO/°C
		all other devices	±0.02	±0.05	
Span	devices up to 5 mbar/2 inH ₂ O	±0.04	±0.10		
	all other devices	±0.02	±0.04		
Non-linearity and hysteresis (BSL) ⁸			±0.1	±0.25	%FSO
Long term stability ⁹			±0.5		
Response time (10 to 90 %)			1		ms
Position sensitivity	all 1 and 2 mbar devices			0.5	%FSO/g
	all 1 inH ₂ O devices			0.5	
	all other devices			0.1	
Power supply rejection	Offset		0.05		%FSOV
	Span		0.05		

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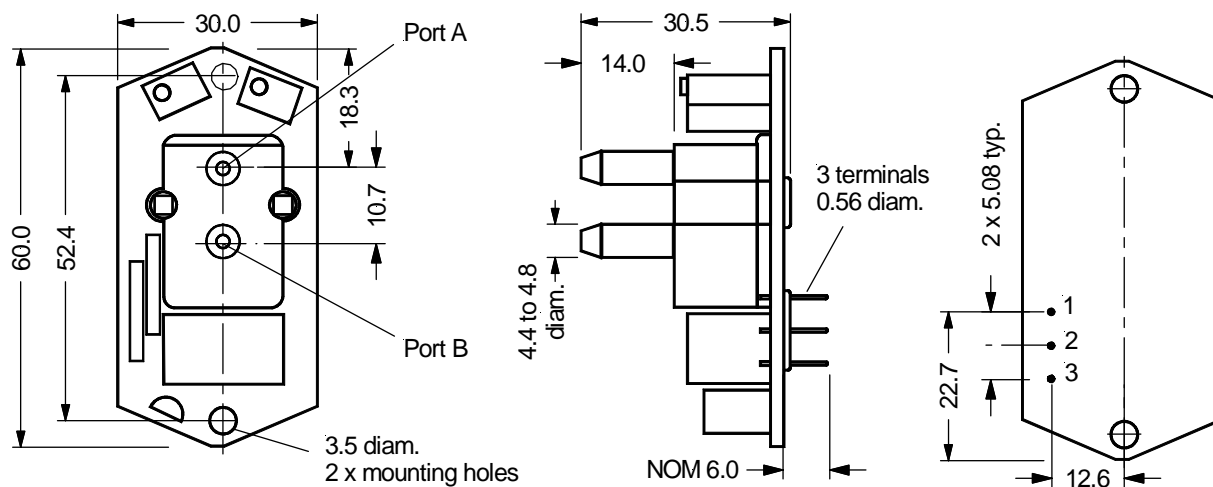
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LOAD LIMITATION

4...20 mA output versions



OUTLINE DRAWING⁴



Pin	Connection	
	1...6 V	4...20 mA
1	+Vs	NC
2	-Vs	-Vs
3	Vout	+Vs

mass: 20 g

dimensions in mm

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Specification notes:

1. The minimum supply voltage is directly proportional to the load resistance seen by the transmitter (see load limitation diagram).
2. Proof pressure is the maximum pressure which may be applied without causing durable shifts of the electrical parameters of the sensing element.
3. Burst pressure is the maximum pressure which may be applied without causing damage to the sensing element or leaks to the housing.
4. The output signal is proportional to the pressure applied to port B, relative to port A, e.g. the output signal increases when vacuum is applied to port A relative to port B.
5. Calibrated after minimum 3 minutes warm-up time.
6. Full scale span is the algebraic difference between the positive full scale output and the zero pressure offset.
7. Thermal effects tested and guaranteed from 0...50 °C relative to 25 °C. All specifications shown are relative to 25 °C.
8. Non-linearity refers to the **Best Straight Line** fit measured for offset pressure, full scale pressure and 1/2 full-scale pressure.
9. Change in output after one year or 1 million pressure cycles.

ORDERING INFORMATION

Operating pressure		Part number	
		1...6 V output	4...20 mA output
Differential/gage devices	0...1 mbar	---	432LP01D-PCB
	0...2 mbar	112LP02D-PCB	432LP02D-PCB
	0...5 mbar	112LP05D-PCB	432LP05D-PCB
	0...10 mbar	112LP10D-PCB	432LP10D-PCB
	0...25 mbar	112LP25D-PCB	432LP25D-PCB
	0...50 mbar	112LP50D-PCB	432LP50D-PCB
Pressure/vacuum devices	0...±1 mbar	113LP01D-PCB	433LP01D-PCB
	0...±2 mbar	113LP02D-PCB	433LP02D-PCB
	0...±5 mbar	113LP05D-PCB	433LP05D-PCB
	0...±10 mbar	113LP10D-PCB	433LP10D-PCB
	0...±25 mbar	113LP25D-PCB	433LP25D-PCB
	0...±50 mbar	113LP50D-PCB	433LP50D-PCB
Differential/gage devices	0...1 inH ₂ O	112LU01D-PCB	432LU01D-PCB
	0...2 inH ₂ O	112LU02D-PCB	432LU02D-PCB
	0...5 inH ₂ O	112LU05D-PCB	432LU05D-PCB
	0...10 inH ₂ O	112LU10D-PCB	432LU10D-PCB
	0...20 inH ₂ O	112LU20D-PCB	432LU20D-PCB
	0...30 inH ₂ O	112LU30D-PCB	432LU30D-PCB
Pressure/vacuum devices	0...± 1 inH ₂ O	113LU01D-PCB	433LU01D-PCB
	0...± 2 inH ₂ O	113LU02D-PCB	433LU02D-PCB
	0...± 5 inH ₂ O	113LU05D-PCB	433LU05D-PCB
	0...± 10 inH ₂ O	113LU10D-PCB	433LU10D-PCB
	0...± 20 inH ₂ O	113LU20D-PCB	433LU20D-PCB
	0...± 30 inH ₂ O	113LU30D-PCB	433LU30D-PCB
Devices highlighted in grey are preferred items.		For all other devices MOQ may apply.	
Other pressure ranges and calibrations are available on request. Please contact First Sensor.			

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