

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

Signal conditioned precision pressure transducers

FEATURES

- 1 to 50 mbar, 1 to 30 "H₂O gage or differential pressure (custom calibrations available)
- 1...6 V or 4...20 mA output
- Internal supply regulation
- Precision temperature compensated and calibrated
- Special calibrations for small volumes on request



SERVICE

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

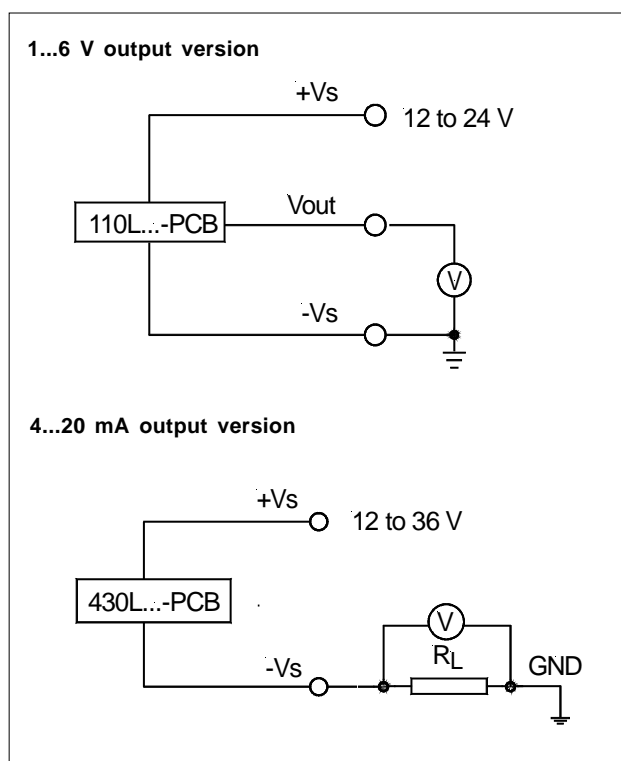
Scale: 1 cm
1 inch

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	-25 to 85°C
Operating	-10 to 70°C
Compensated	0 to 50°C
Lead temperature(4 sec soldering)	300°C
Humidity limits (pressure inlets only)	0 - 80 %RH

ELECTRICAL CONNECTION



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PERFORMANCE CHARACTERISTICS

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

Characteristics			Min.	Typ.	Max.	Proof pressure ²	Common mode pressure	Unit	
Operating pressure ³	differential devices	112LP02D-PCB	0		2	200	300	mbar	
		112LP05D-PCB	0		5	200	300		
		112LP10D-PCB	0		10	200	300		
		112LP25D-PCB	0		25	300	600		
		112LP50D-PCB	0		50	300	600		
	pressure/vacuum devices ³	113LP01D-PCB	-1		1	200	300		
		113LP02D-PCB	-2		2	200	300		
		113LP05D-PCB	-5		5	200	300		
		113LP10D-PCB	-10		10	200	300		
		113LP25D-PCB	-25		25	300	600		
		113LP50D-PCB	-50		50	300	600		
	differential devices	112LU01D-PCB	0		1	80	160		"H ₂ O
		112LU02D-PCB	0		2	120	240		
		112LU05D-PCB	0		5	120	240		
112LU10D-PCB		0		10	240	360			
112LU20D-PCB		0		20	240	360			
112LU30D-PCB		0		30	240	360			
pressure/vacuum devices ³		113LU01D-PCB	-1		1	80	160		
		113LU02D-PCB	-2		2	120	240		
		113LU05D-PCB	-5		5	120	240		
		113LU10D-PCB	-10		10	240	360		
	113LU20D-PCB	-20		20	240	360			
113LU30D-PCB	-30		30	240	360				
Zero pressure offset ⁴	112L...-PCB	0.95	1.0	1.05			V		
	113L...-PCB	3.4	3.5	3.6					
Full scale span ⁵	112L...-PCB	4.9	5.0	5.1					
	113L...-PCB	2.4	2.5	2.6					
Full scale output			6.0						
Output at lowest specified pressure	113L...-PCB		1.0						
Thermal effects (0 to 50°C) ⁶	Offset	113LP01D-PCB		±0.08	±0.20			%FSO/°C	
		11...LP02D-PCB		±0.04	±0.10				
		11...LU01D-PCB		±0.04	±0.10				
		all other devices		±0.02	±0.05				
	Span	113LP01D-PCB		±0.08	±0.20				
		11...LP02D-PCB		±0.04	±0.10				
		11...LU01D-PCB		±0.04	±0.10				
		all other devices		±0.02	±0.04				
Non-linearity and hysteresis (BSL) ⁷				±0.1	±0.25		%FSO		
Long term stability ⁸				±0.5					
Response time (10 to 90 %)				1			ms		
Position sensitivity	all 1 and 2 mbar devices			0.5			%FSO/g		
	all other devices			0.1					
Current consumption				4.2			mA		
Power supply rejection	Offset			0.05			%FSO/V		
	Span			0.05					

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PERFORMANCE CHARACTERISTICS

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

Characteristics			Min.	Typ.	Max.	Proof pressure ²	Common mode pressure	Unit		
Operating pressure ³	differential devices	432LP01D-PCB	0		1	200	300	mbar		
		432LP02D-PCB	0		2	200	300			
		432LP05D-PCB	0		5	200	300			
		432LP10D-PCB	0		10	200	300			
		432LP25D-PCB	0		25	300	600			
		432LP50D-PCB	0		50	300	600			
	pressure/vacuum devices ³	433LP01D-PCB	-1		1	200	300			
		433LP02D-PCB	-2		2	200	300			
		433LP05D-PCB	-5		5	200	300			
		433LP10D-PCB	-10		10	200	300			
		433LP25D-PCB	-25		25	300	600			
		433LP50D-PCB	-50		50	300	600			
	differential devices	differential devices	432LU01D-PCB	0		1	80		160	"H ₂ O
			432LU02D-PCB	0		2	120		240	
432LU05D-PCB			0		5	120	240			
432LU10D-PCB			0		10	240	360			
432LU20D-PCB			0		20	240	360			
432LU30D-PCB			0		30	240	360			
pressure/vacuum devices ³		433LU01D-PCB	-1		1	80	160			
		433LU02D-PCB	-2		2	120	240			
		433LU05D-PCB	-5		5	120	240			
		433LU10D-PCB	-10		10	240	360			
		433LU20D-PCB	-20		20	240	360			
		433LU30D-PCB	-30		30	240	360			
Zero pressure offset ⁴		432L...-PCB	3.9	4.0	4.1			mA		
		433L...-PCB	11.9	12.0	12.1					
Full scale span ⁵	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	433L...-PCB		4.0							
Thermal effects (0 to 50°C) ⁶	Offset	43...LP01D-PCB		±0.08	±0.20			%FSO/°C		
		43...LP02D-PCB		±0.04	±0.10					
		43...LU01D-PCB		±0.04	±0.10					
		all other devices		±0.02	±0.05					
	Span	43...LP01D-PCB		±0.08	±0.20					
		43...LP02D-PCB		±0.04	±0.10					
		43...LU01D-PCB		±0.04	±0.10					
		all other devices		±0.02	±0.04					
Non-linearity and hysteresis (BSL) ⁷			0.1	0.25			%FSO			
Long term stability ⁸			±0.2				%FSO			
Response time (10 to 90 %)			1				ms			
Position sensitivity	all 1 and 2 mbar devices			0.5				%FSO/g		
	all 1 "H ₂ O devices			0.5						
	all other devices			0.1						
Current consumption (I _i = 20 mA)			4.2				mA			
Power supply rejection	Offset			0.05				%FSO/V		
	Span			0.05						

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Specification notes:

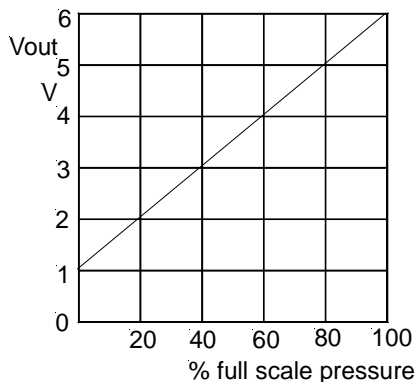
1. The minimum supply voltage is directly proportional to the load resistance seen by the transmitter. For more details see the [load limitation](#) diagram.
2. Proof pressure is the maximum pressure which may be applied without causing damage to the sensing element.
3. The output signal is proportional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

OUTPUT CHARACTERISTICS

1...6 V output versions

Differential devices

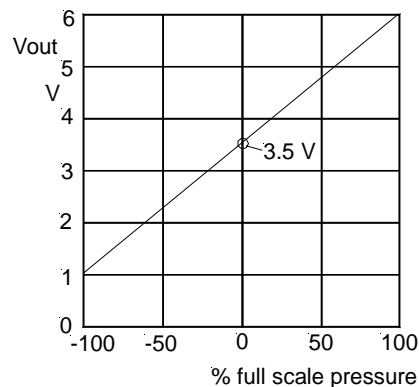
112L...-PCB



1...6 V output versions

Pressure/vacuum devices

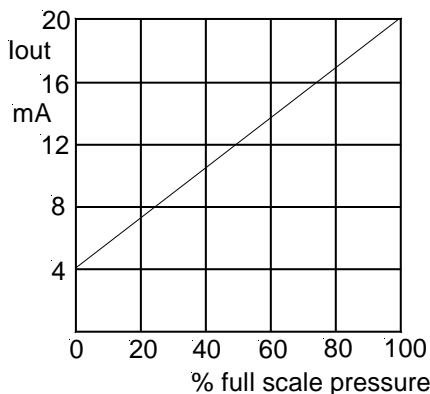
113L...-PCB



4...20 mA output versions

Differential devices

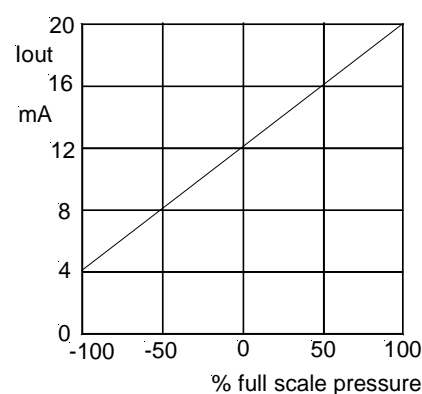
432L...-PCB



4...20 mA output versions

Pressure/vacuum devices

433L...-PCB

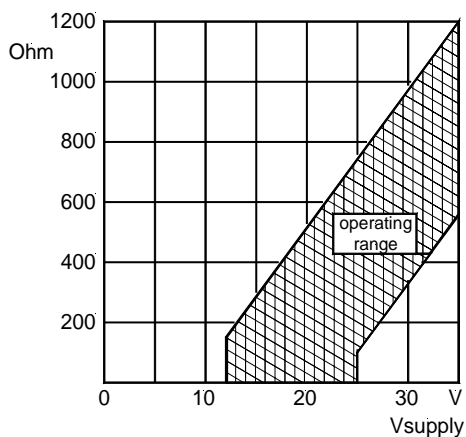


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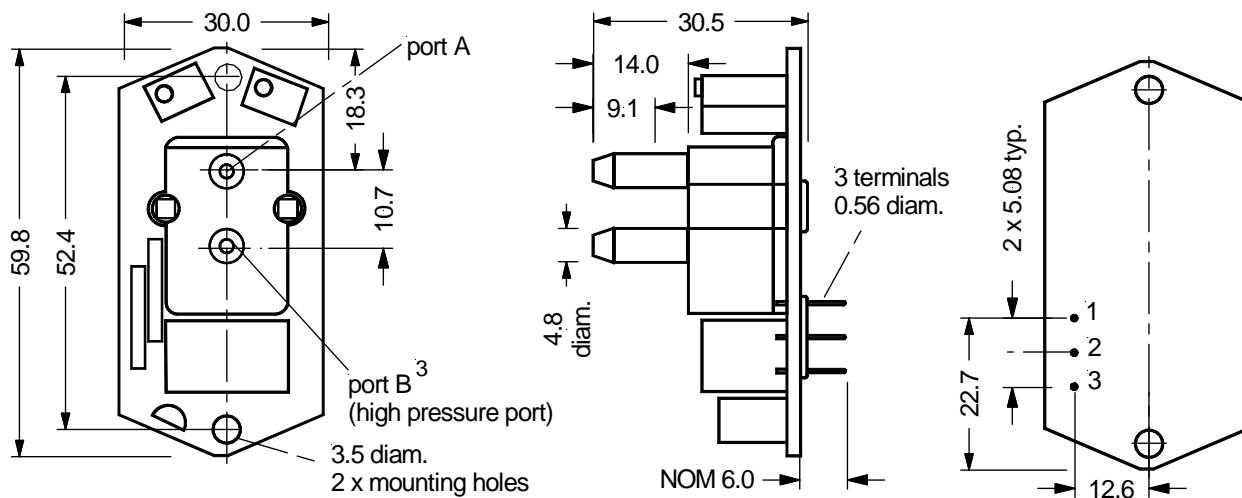
Signal conditioned precision pressure transducers

LOAD LIMITATION

4...20 mA output versions



OUTLINE DRAWING



mass: 20 g

dimensions in mm

PIN CONNECTION:

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

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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"H ₂ O	112LU01D-PCB	432LU01D-PCB
	0 - 2"H ₂ O	112LU02D-PCB	432LU02D-PCB
	0 - 5"H ₂ O	112LU05D-PCB	432LU05D-PCB
	0 - 10"H ₂ O	112LU10D-PCB	432LU10D-PCB
	0 - 20"H ₂ O	112LU20D-PCB	432LU20D-PCB
	0 - 30"H ₂ O	112LU30D-PCB	432LU30D-PCB
Pressure/vacuum devices	0 ± 1"H ₂ O	113LU01D-PCB	433LU01D-PCB
	0 ± 2"H ₂ O	113LU02D-PCB	433LU02D-PCB
	0 ± 5"H ₂ O	113LU05D-PCB	433LU05D-PCB
	0 ± 10"H ₂ O	113LU10D-PCB	433LU10D-PCB
	0 ± 20"H ₂ O	113LU20D-PCB	433LU20D-PCB
	0 ± 30"H ₂ O	113LU30D-PCB	433LU30D-PCB

Custom calibrations available

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