Signal conditioned precision pressure transducers

FEATURES

- 1 to 150 psi absolute, 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



Scale:	1 cm 1 inch
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SERVICE

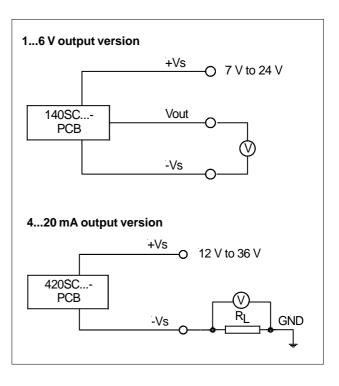
Non-corrosive, non-ionic working fluids, such as dry air and dry gases

SPECIFICATIONS

Maximum ratings

3	
Supply voltage	
140SCPCB	724 V
420SCPCB ¹	1236 V
Maximum load current	
140SCPCB only	
Source	20 mA
Sink	10 mA
Temperature limits	
Storage	-55 to 100°C
Operating	-40 to 85°C
Compensated	0 to 70°C
Lead temperature	
(10 sec. soldering)	300°C
Humidity limits	
Pressure inlets only	0 - 100 %RH
Proof pressure ²	
All 1 psi, 3 psi, 5 psi devices	20 psi
All 15 psi devices	30 psi
All 30 psi devices	60 psi
All 100 psi devices	150 psi

ELECTRICAL CONNECTION



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200 psi



All 150 psi devices

Signal conditioned precision pressure transducers

PERFORMANCE CHARACTERISTICS

1 - 6 V output version (unless otherwise noted V_s = 8 V, R_L > 100 k Ω , t_{amb} = 25°C)

Characteristics		Min.	Тур.	Max.	Unit
Operating pressure					
vacuum gage devices ³	141SC01G-PCB 141SC05G-PCB 141SC15G-PCB 141SC30G-PCB 141SC100G-PCB	-1 -5 -15 -30 -100		0 0 0 0	psig
differential devices ⁴	142SC01D-PCB 142SC05D-PCB 142SC15D-PCB 142SC30D-PCB 142SC100D-PCB 142SC150D-PCB	0 0 0 0 0		1 5 15 30 100 150	psid(g)
absolute devices⁵	142SC15A-PCB 142SC30A-PCB 142SC100A-PCB	0 0 0		15 30 100	psia
pressure/vacuum devices ⁴	143SC01D-PCB 143SC03D-PCB 143SC05D-PCB 143SC15D-PCB	-1 -2.5 -5 -15		1 2.5 5 15	psid(g)
Zero pressure offset	141SC/142SCPCB 143SCPCB	0.95 3.45	1.00 3.50	1.05 3.55	
Full scale span ⁶	141SC/142SCPCB 143SCPCB	4.95 2.45	5.00 2.50	5.05 2.55	V
Full scale output		5.90	6.00	6.10	
Output at lowest specified pressure	143SCPCB		1.00		
Non-linearity and hysteresis (BSL) ⁷			0.1	0.5	
Thermal effects ⁸ Combined offset and span (0 to 70°C)	all 1 psi devices all others		±1.5 ±0.5	±3.0 ±1.0	%FSO
Long term stability ⁹			±0.1		
Response time (10 to 90%)			0.1		ms
Power supply rejection rate	Offset Span		0.05 0.03		%FSO/V

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140SC...-PCB / 420SC...-PCB Series Signal conditioned precision pressure transducers

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.	Тур.	Max.	Unit
Operating pressure					
differential devices4	420SC01D-PCB	0		1	
	420SC05D-PCB	0		5	
	420SC15D-PCB	0		15	psid(g)
	420SC30D-PCB	0		30	
	420SC100D-PCB	0		100	
	420SC150D-PCB	0		150	
absolute devices⁵	420SC15A-PCB	0		15	
	420SC30A-PCB	0		30	psia
	420SC100A-PCB	0		100	
pressure/vacuum devices4	423SC01D-PCB	-1		1	
	423SC03D-PCB 423SC05D-PCB	-2.5 -5		2.5 5	psid
	423SC05D-PCB 423SC15D-PCB	-5 -15		15	
Zero pressure offset	420SCPCB	3.9	4.0	4.1	
Zelo pressure oliset	423SCPCB	11.9	12.0	12.1	
Full scale span ⁶	420SCPCB	15.8	16.0	16.2	-
Tall Socie Spair	423SCPCB	7.9	8.0	8.1	mA
Full scale output			20.0		
Output at lowest specified pressure	423SCPCB		4.0		
Non-linearity and hysteresis (BSL) ⁷			±0.1	±0.5	
Thermal effects ⁸					
Combined offset and span					
(0 to 70°C)	all 1 psi devices		±1.5	±3.0	
(40 to 0°C 70 to 100°C)	all others		±0.5	±1.5	%FSO
(-40 to 0°C, 70 to 100°C)			±2.0		
Repeatability			±0.1		_
Long term stability ⁹			±0.1		
Output noise			±0.04		
Response time (10 to 90%)			0.1		ms
Power supply rejection rate	Offset		0.05		%FSO/V
	Span		0.03		/01 GG/ V

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 of all 141SC...-PCB devices is proportional to the vacuum applied to port B, relative to port A, e. g. the output signal increases when pressure is applied to port A relative to port B.
- 4. The output signal of all 142SC...D-PCB and 143SC...D-PCB devices 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. The output signal of all 142SC...A-PCB is proportional to the pressure applied to port A.
- 6. Full scale span is the algebraic difference between the positive full scale output and the zero pressure offset.
- 7. Non-linearity refers to the Best Straight Line fit measured for offset pressure, full scale pressure and 1/2 full scale pressure.
- 8. Thermal effects tested and guaranteed from 0 70°C relative to 25°C. All specifications shown are relative to 25°C.
- 9. Change in output after one year or 1 million pressure cycles.

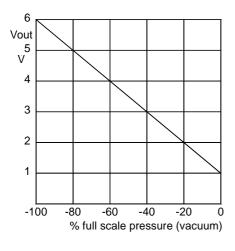
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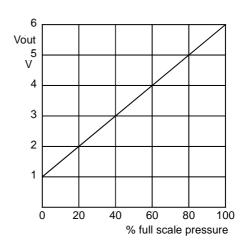
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OUTPUT CHARACTERISTICS

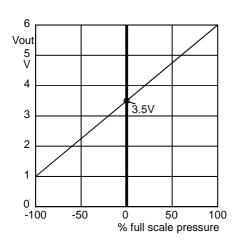
1 - 6 V output versions Vacuum gage devices 141SC...-PCB



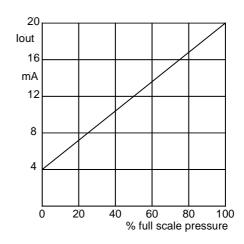
1 - 6 V output versions Differential devices 142SC...-PCB



1 - 6 V output versions Pressure/vacuum devices 143SC...-PCB



4 - 20 mA output versions Differential devices 420SC...-PCB



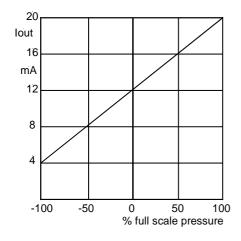
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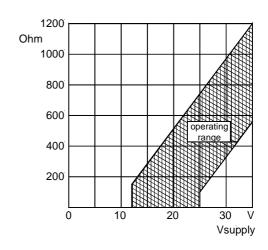
OUTPUT CHARACTERISTICS

4 - 20 mA output versions Pressure/vacuum devices 423SC...-PCB

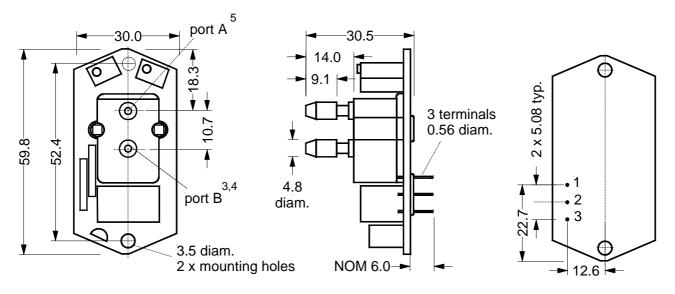


LOAD LIMITATION

4 - 20 mA output versions



OUTLINE DRAWING



mass: 20 g

Fill Collifection					
	Connection				
	1 - 6 V 4 - 20 m/				
Pin	version	version			
1	+Vs	NC			
2	-Vs	-Vs			
3	Vout	+Vs			

Pin connection

dimensions in mm

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Signal conditioned precision pressure transducers

ORDERING INFORMATION

On anatin m		Part number		
Operating pressure		16 V output	420 mA output	
	0 to -1 psig	141SC01G-PCB		
	0 to -5 psig	141SC05G-PCB		
Vacuum gage devices	0 to -15 psig	141SC15G-PCB		
	0 to -30 psig	141SC30G-PCB		
	0 to -100 psig	141SC100G-PCB		
	0 to 1 psid(g)	142SC01D-PCB	420SC01D-PCB	
	0 to 5 psid(g)	142SC05D-PCB	420SC05D-PCB	
Differential/mana desires	0 to 15 psid(g)	142SC15D-PCB	420SC15D-PCB	
Differential/gage devices	0 to 30 psid(g)	142SC30D-PCB	420SC30D-PCB	
	0 to 100 psid(g)	142SC100D-PCB	420SC100D-PCB	
	0 to 150 psid(g)	142SC150D-PCB	420SC150D-PCB	
	0 to 15 psia	142SC15A-PCB	420SC15A-PCB	
Absolute devices	0 to 30 psia	142SC30A-PCB	420SC30A-PCB	
	0 to 100 psia	142SC100A-PCB	420SC100A-PCB	
	0 to ±1 psid(g)	143SC01D-PCB	423SC01D-PCB	
Dan a suma fun suma da sia	0 to ±2.5 psid(g)	143SC03D-PCB	423SC03D-PCB	
Pressure/vacuum devices	0 to ±5 psid(g)	143SC05D-PCB	423SC05D-PCB	
	0 to ±15 psid(g)	143SC15D-PCB	423SC15D-PCB	

Custom calibrations available

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