Honeywell

Microstructure Pressure Sensors

Precision Compensated

0 in H_2O to 4 in H_2O and 0 in H_2O to 10 in H_2O

SCXL Series

FEATURES

- Very Low Pressure Resolution
- Precision Temperature Compensation
- Small Size
- Low Noise
- Calibrated Zero & Span
- High Impedance for Low Power Applications

TYPICAL APPLICATIONS

- Air Flow
- Respirators
- HVAC
- Medical Equipment
- Computer Peripherals
- Pneumatic Controls

The SCXL series sensors provide a very cost-effective solution for pressure applications that require high accuracy over very low operating pressure ranges. These internally calibrated and temperature compensated sensors were specifically designed to provide an accurate and stable output over a 0 °C to 50 °C [32 °F to 122 °F] temperature range. This series is intended for use with non-corrosive, non-ionic working fluids such as air, dry gases and the like.

The output of the bridge is ratiometric to the supply voltage. Operation from any dc supply voltage up to 18 Vdc [Model SCXL004DN] or 20 Vdc [SCXL010DN] is acceptable.

Contact your local honeywell representative or go to Honeywell's website at www.honeywell.com/sensing for additional details.

⚠ WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

⚠ WARNING

MISUSE OF DOCUMENTATION

- The information presented in this product sheet is for reference only. Do not use this document as a product installation guide.
- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

Failure to comply with these instructions could result in death or serious injury.

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GENERAL SPECIFICATIONS

Characteristic	Description (Maximum Ratings) SCXL004DN	Description (Maximum Ratings) SCXL010DN
Supply Voltage (V_S)	18 Vdc	20 Vdc
Common Mode Pressure	150 in H_2O	50 psig
Lead Soldering Temperature (2 seconds to 4 seconds)	250 °C [482 °F]	250 °C [482 °F]
Proof Pressure [12]	10 in H_2O	10 psi
Burst Pressure	5 psi	200 in H_2O

ENVIRONMENTAL SPECIFICATIONS

Characteristic	Description (Maximum Ratings) SCXL004DN	Description (Maximum Ratings) SCXL010DN
Compensated Operating Temperature	0 °C to 50 °C [32 °F to 122 °F]	0 °C to 50 °C [32 °F to 122 °F]
Operating Temperature	0 °C to 70 °C [32 °F to 158 °F]	-40 °C to 85 °C [-40 °F to 185 °F]
Storage Temperature	0 °C to 70 °C [32 °F to 158 °F]	-40 °C to 125 °C [-40 °F to 257 °F]
Humidity Limits	0 % to 100 % RH	0 % to 100 % RH

PRESSURE RANGE SPECIFICATIONS

			Full-Scale Span [1]		
Listing	Operating Pressure	Proof Pressure [2]	Min.	Typ.	Max.
SCXL004DN	0 in H_2O to 4 in H_2O	10 in H_2O	38.0 mV	40.0 mV	42.0 mV
SCXL010DN	0 in H_2O to10 in H_2O	10 psi	19.5 mV	20.0 mV	20.5 mV

SCXL004DN PERFORMANCE CHARACTERISTICS [3]

Characteristic	Min.	Typ.	Max.	Unit
Zero Pressure Offset [4]	-1.5	0	1.5	mV
Sensitivity	–	10	–	mV/in H_2O
Combined Pressure Non-Linearity and Pressure Hysteresis [5]	–	±0.5	±1.0	% FSS
Temperature Effect on Span 0 °C to 50 °C [32 °F to 122 °F] [6]	–	±0.2	±1.0	% FSS
Temperature Effect on Offset 0 °C to 50 °C [32 °F to 122 °F] [6]	–	±0.5	±2.0	mV
Repeatability [7]	–	±0.2	–	% FSS
Input Resistance [8]	–	4.0	–	kOhm
Output Resistance [9]	–	4.0	–	kOhm
Common Mode Voltage [10]	5.7	6.0	6.3	Vdc
Response Time [11]	–	500	–	Microsec.
Long Term Stability of Offset and Span [12]	–	±0.5	–	% FSS
Position Sensitivity	–	0.25	–	mV/g

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SCXL010DN PERFORMANCE CHARACTERISTICS [3]

Characteristic	Min.	Typ.	Max.	Unit
Zero Pressure Offset [4]	-0.3	0.0	0.3	mV
Sensitivity	–	2	–	mV/in H_2O
Combined Pressure Non-Linearity and Pressure Hysteresis [5]	–	±0.2	±0.5	% FSS
Temperature Effect on Span 0 °C to 50 °C [32 °F to 122 °F] [6]	–	±0.2	±1.0	% FSS
Temperature Effect on Offset 0 °C to 50 °C [32 °F to 122 °F] [6]	–	±300	±500	Microvolts
Repeatability [7]	–	±0.2	±0.5	% FSS
Input Resistance [8]	–	4.0	–	kOhm
Output Resistance [9]	–	4.0	–	kOhm
Common Mode Voltage [10]	5.8	6.0	6.2	Vdc
Response Time [11]	–	100	–	Microsec.
Long Term Stability of Offset and Span [12]	–	100	–	Microvolts

SPECIFICATION NOTES

Note 1: Full-Scale Span is the algebraic difference between the output voltage at full-scale pressure and the output at zero pressure. Full-Scale Span is ratiometric to the supply voltage.

Note 2: Proof pressure is the pressure above which devices will not return to guaranteed specifications.

Note 3: Reference Conditions: (Unless otherwise noted)
T_A = 25 °C, Supply V_S = 12 Vdc, Common Mode Line pressure = 0 psig, Pressure applied to Port B. For absolute devices only, pressure is applied to Port A, and the output polarity is reversed.

Note 4: Zero pressure effect is measured with pins pointed towards the ground. Offset can be position sensitive.

Note 5: Pressure Hysteresis – the maximum output difference at any point within the operating pressure range for increasing and decreasing pressure.

Note 6: Maximum error band of the offset voltage and the error band of the span, relative to the 25 °C [77 °F] reading.

Note 7: Maximum difference in output at any pressure within the operating pressure range and the temperature within 0 °C to 50 °C [32 °F to 122 °F] after:
004DN: a) 100 temperature cycles, 0 °C to 50 °C [32 °F to 122 °F]
b) 1 million pressure cycles, 0 psi to Full-Scale Span.
010DN: a) 1,000 temperature cycles, 0 °C to 50 °C [32 °F to 122 °F]
b) 1.5 million pressure cycles, 0 psi to Full-Scale Span.

Note 8: Input resistance is the resistance between pins 2 and 4.

Note 9: Output resistance is the resistance between pins 3 and 5.

Note 10: Common Mode voltage of the output arms (Pins 3 and 5) for V_S=12 Vdc.

Note 11: Response time for a 0 psi to Full-Scale Span pressure step change, 10 % to 90 % rise time.

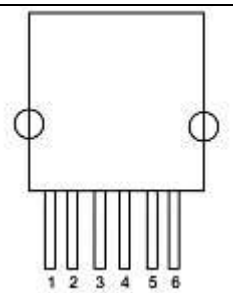
Note 12: Long term stability over a one-year period.

ORDERING INFORMATION

Description	Part Number
0 in H_2O to 4 in H_2O	SCXL 004DN
0 in H_2O to 10 in H_2O	SCXL 010DN

Special Options: Pins with N-90 = 90° Lead Bend

ELECTRICAL CONNECTION

Pinout	SCXL004DN [0 in H_2O to 4 in H_2O]	SCXL004DN [0 in H_2O to 10 in H_2O]
	PIN 1) Temperature output (+) PIN 2) V_S PIN 3) + Output PIN 4) Ground PIN 5) - Output PIN 6) Temperature output (-)	PIN 1) No Connection PIN 2) V_S PIN 3) + Output PIN 4) Ground PIN 5) - Output PIN 6) No Connection

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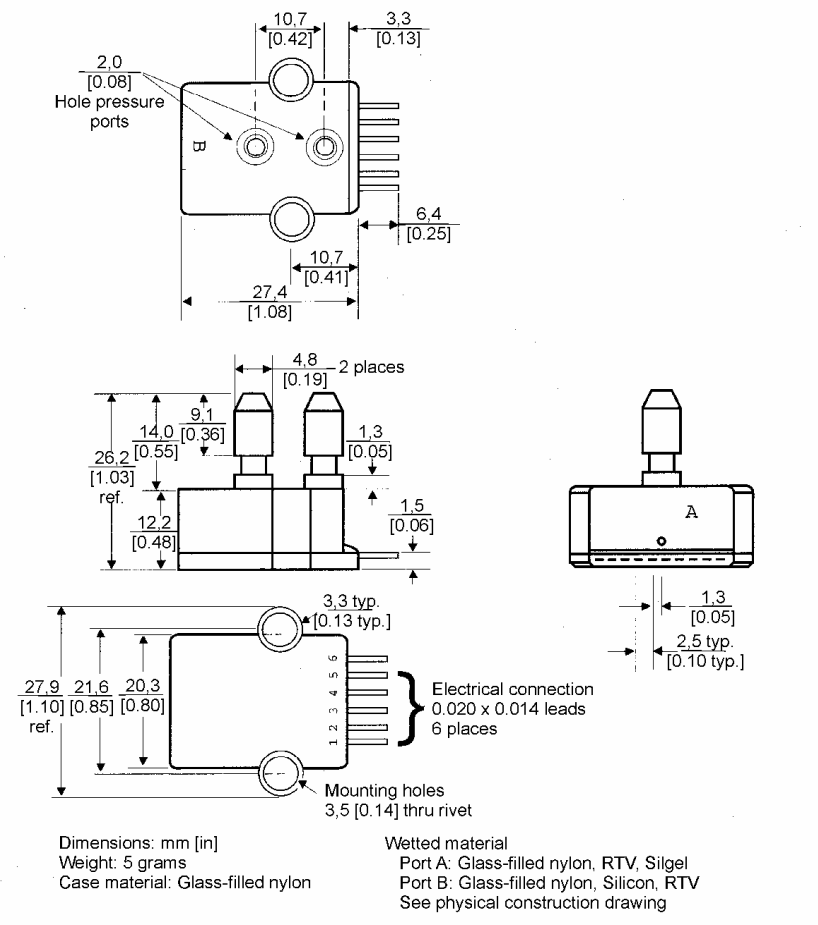
PHYSICAL DIMENSIONS for Reference Only-(mm/in)



Dimensions: mm [in]
Weight: 5 grams
Case material: Glass-filled nylon

Wetted material
Port A: Glass-filled nylon, RTV, Silgel
Port B: Glass-filled nylon, Silicon, RTV
See physical construction drawing

WARRANTY/REMEDY

Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Contact your local sales office for warranty information. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace without charge those items it finds defective. **The foregoing is Buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose.**

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While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

For application assistance, current specifications, or name of the nearest Authorized Distributor, contact a nearby sales office. Or call:

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1-815-235-6847 International

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