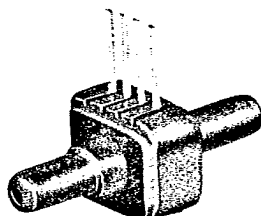
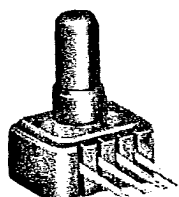


Solid State Miniature Pressure Sensors

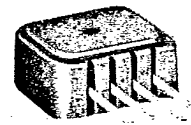
14PC/16PC Series



14PCD/16PCD
Differential



14PCG/16PCG
Gage



14PCM/16PCM
Differential or Gage

GENERAL FEATURES

- Gage & differential pressure measurement
- Miniature package
- Wet/Wet differential pressure
- 0-5, 0-15, 0-30 pressure sensing range
- Low level output, mV range
- Linear output proportional to pressure
- High sensitivity
- DC operation, ripple-free output
- Silicon sensor chip—integral diaphragm with ion-implanted resistors
- Low current required
- O-ring seals enhance media compatibility
- Printed circuit board mountable—wavesolder compatible

Miniature 14PC/16PC Series sensors feature three pressure measurement options: differential, gage, and a differential or gage unit. All are available in 0-5, 0-15, and 0-30 psi pressure ranges.

Differential units feature an exclusive MICRO SWITCH wet/wet capability which allows most media types to be introduced on the active (PI) side of the device.

Gage and differential packages are mounted through a small hole in the panel and secured with a lock ring.

14PC FEATURES

- Lowest priced pressure sensor from MICRO SWITCH

16PC FEATURES

- Thin film laser trimmed resistors—preset null and F.S.O.
- Temperature compensated—sensitivity shift with temperature

The differential or gage package has a .050 inch diameter pressure orifice on the front and back sides. It provides added flexibility; i.e., it can be designed into an application circuit by using "O-ring to housing sealing."

These piezoresistive devices are ideal for applications requiring exact pressure measurement where the benefits of repeatability, low hysteresis, and long-term stability are important. They offer the traditional benefits of solid state, including small size, ruggedness, and reliability.

APPLICATIONS

- Medical instruments
- Barometric sensing
- Computer peripherals
- Oxygen concentrators
- Pressure switches
- Blood pressure cuffs
- Engine controls
- Home appliances
- Petrochemical measurement

Each sensor is developed around a .100 inch square silicon chip with integral sensing diaphragm and four piezoresistors. Pressure applied to the diaphragm causes it to flex, changing the resistance, which results in a low level output voltage proportional to pressure. The sensing resistors are connected as a four-active-element bridge for the best linearity and sensitivity.

MICRO SWITCH
a Honeywell Division

Solid State Pressure Sensors

T-65-13

14PC/16PC ORDER GUIDE

Pressure Range	Type	16PC	14PC
		Temperature Compensated	Sensor Only
0-5 psi	Differential	16PC05DF	14PC05DF
	Gage	16PC05GF	14PC05GF
	Differential/Gage	16PC05MF	14PC05MF
0-15 psi	Differential	16PC15DF	14PC15DF
	Gage	16PC15GF	14PC15GF
	Differential/Gage	16PC15MF	14PC15MF
0-30 psi	Differential	16PC30DF	14PC30DF
	Gage	16PC30GF	14PC30GF
	Differential/Gage	16PC30MF	14PC30MF

ENVIRONMENTAL CONDITIONS

Shock	Qualification tested to 150g
Vibration	Qualification tested to 0 to 2Khz, 20g sine
Temperature	
Operating	-40° to 85° C (-40° to 185° F)
Storage	-55° to 100° C (-67° to 212° F)
Compensated	0° to 50° C (32° to 122° F) 16PC only
Media compatibility	Limited only to those media which will not attack polyester, silicon, or fluoro silicone

GENERAL SPECIFICATIONS

Parameter	16PC			14PC			
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Recommended excitation	—	10	16	—	10	12	Volts
Input resistance	—	—	10K	—	5K	—	Ohms
Output resistance	—	—	2.2K	—	5K	—	Ohms
Common mode pressure (Differential only)	—	—	60	—	—	60	psi

7-65-13

SPECIFICATIONS @ 10.0 ±0.01 VDC Excitation, 25° C (unless otherwise noted)

Parameter	16PC			14PC			Units
	Min.	Typ.	Max.	Min.	Typ.	Max.	
Null Offset	-2.0	0	+2.0	-60.0	-20.0	+20.0	mV
F.S.O. (Full Scale Output)							
0 to 5 psi	47.0	50.0	53.0	80.0	115.0	150.0	mV
0 to 15 psi	97.0	100.0	103.0	175.0	250.0	325.0	mV
0 to 30 psi	77.0	80.0	103.0	110.0	195.0	280.0	mV
Sensitivity per psi (P1>P2)							
0 to 5 psi	—	10.0	—	—	23.0	—	mV
0 to 15 psi	—	6.67	—	—	16.67	—	mV
0 to 30 psi	—	2.67	—	—	6.50	—	mV
Linearity (B.F.S.L.)							
P1>P2 (0-5 psi)	—	±.75	±1.5	—	±.75	±1.5	% F.S.O.
P2>P1 (0-5 psi)	—	±1.5	±3.0	—	±1.5	±3.0	% F.S.O.
P1>P2 (0-15 psi)	—	±.5	±1.25	—	±.5	±1.25	% F.S.O.
P2>P1 (0-15 psi)	—	±1.0	±2.5	—	±1.0	±2.5	% F.S.O.
P1>P2 (0-30 psi)	—	±.3	±1.0	—	±.3	±1.0	% F.S.O.
P2>P1 (0-30 psi)	—	±.5	±1.5	—	±.5	±1.5	% F.S.O.
Null Shift (0° C to 25° C, 25° C to 50° C @ 10VDC)							
All	—	±1.0	±2.0	-	±2.0	±4.0	mV
Sensitivity Shift (0° C to 25° C, 25° C to 50° C @ 10VDC)							
All	-	±1.5	±3.0	-	±6.5	±4.0	% F.S.O.
Repeatability & Hysteresis Stability over 1 Year							
	—	±.75	—	—	±.5	—	mV

Solid State Pressure Sensors

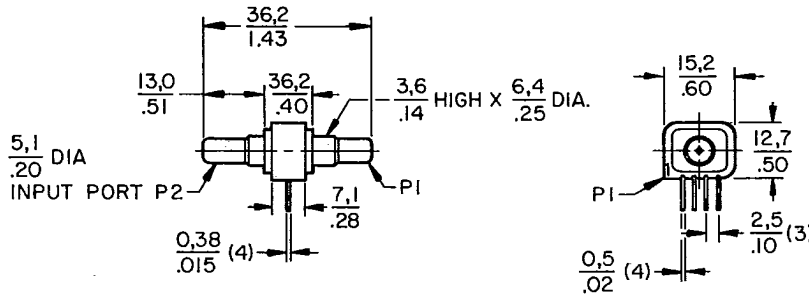
14/16PC Series

T-65-13

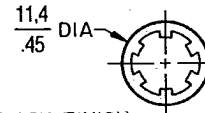
MOUNTING DIMENSIONS (For reference only)

Differential Types

- Terminals**
 1 - Vs (+)
 2 - Output A
 3 - Ground (-)
 4 - Output B



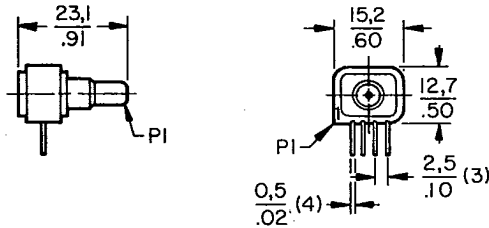
Mounting Hardware



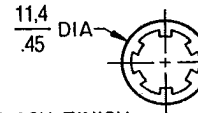
BLACK FINISH
 STEEL LOCKRING

Gage Types

- Terminals**
 1 - Vs (+)
 2 - Output A
 3 - Ground (-)
 4 - Output B



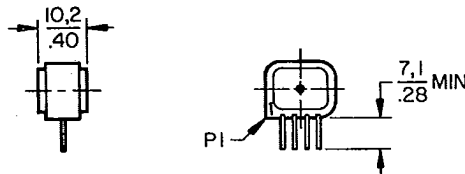
Mounting Hardware



BLACK FINISH
 STEEL LOCKRING

Differential or Gage Types

- Terminals**
 1 - Vs (+)
 2 - Output A
 3 - Ground (-)
 4 - Output B



SALES AND SERVICE

MICRO SWITCH serves its customers through a worldwide network of sales offices and distributors. For application assistance, pricing or name of nearest Authorized Distributor, contact a nearby MICRO SWITCH sales office. Or, contact:

MICRO SWITCH
 11 W. Spring St.
 Freeport, Illinois 61032
 Tel. 815/235-6600

While we provide application assistance on MICRO SWITCH products, personally and through our literature, it is up to the customer to determine the suitability of the product in the application.

Together, we can find the answers.

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