

## PCA-375 SERIES

### AC Operated Gage Heads

#### SPECIFICATIONS

- ◆ Slim 0.375 inch [9.5mm] diameter
- ◆ 60  $\mu$ -inch [1.5  $\mu$ m] repeatability
- ◆ Economical
- ◆ Long Life Cycle
- ◆ IEC IP-66 Rated Cable Exit
- ◆ 4-48 AGD interchangeable Contact Tips
- ◆ Strokes from  $\pm 0.1$  To  $\pm 1$  inch

The **PCA-375 Series** gage heads combine simplicity with the time proven reliability of LVDT (Linear Variable Differential Transformer) technology resulting in a cost effective, long stroke industrial gaging solution. The rugged PCA-375 was specifically designed for operation in harsher industrial environments with minimal available installation space. Measuring just 0.375 inch [9.5mm] in diameter the PCA-375 affords non-intrusive, slim profile measurements, making it the perfect choice for high density fixtures as well as numerous other industrial applications.

Externally, the PCA-375 is constructed entirely of 300 and 400 Series stainless steel, with a field replaceable chrome plated hardened tool steel contact tip. Electrical termination is via a 2 meter long, shielded, 6 conductor polyurethane jacketed cable. Internally, the simplified one-piece plunger and the precision brass bushing construction increases long term reliability, while the heavy duty return spring insures adequate force to repeatedly extend the plunger.

Like in most of our LVDTs, the PCA-375 windings are vacuum impregnated with a specially formulated, high temperature, flexible resin, and the coil assembly is potted inside its housing with a two-component epoxy. This provides excellent protection against hostile environments such as high humidity, vibration and shock.

Designed to service long life cycle applications in the industrial market place, the PCA-375 is ideal for foundries, metal joining operations, process control, or wherever environmentally challenging high reliability gaging is required.

The PCA-375 series can be installed in your application with standard AGD dial indicator mounting hardware.

#### FEATURES

- ◆ Slim Profile
- ◆ IEC IP-66 Rated Cable Exit
- ◆ Stainless Steel Construction
- ◆ Long Life Cycle
- ◆ Heavy Duty Return Spring
- ◆ Connector Options Available  
*(Consult Factory)*
- ◆ Calibration certificate supplied with each unit

#### APPLICATIONS

- ◆ High Density Gaging Fixtures
- ◆ Factory Floor SPC Applications
- ◆ Process Control
- ◆ Metal Joining Equipment
- ◆ Pressing Applications
- ◆ Steel Rolling Mills / Foundries
- ◆ X-Y stage position feedback



**PERFORMANCE SPECIFICATIONS**

<b>ELECTRICAL SPECIFICATIONS</b>				
<b>Parameter</b>	<b>PCA-375 100</b>	<b>PCA-375 250</b>	<b>PCA-375 500</b>	<b>PCA-375 1000</b>
Stroke/gaging range	±0.10 [2.54]	±0.25 [6.35]	±0.5 [12.7]	±1 [25.4]
Sensitivity, V/V/inch [mV/V/mm]	2.8 [110]	2.07 [81.5]	1.84 [72.4]	0.77 [30.3]
Output at stroke ends (*)	280 mV/V	517.5 mV/V	920 mV/V	770 mV/V
Phase shift (nominal)	+5°	+7°	+7°	-1°
Input impedance (Primary)	400 Ω	345 Ω	264 Ω	155 Ω
Output impedance (Secondary)	200 Ω	420 Ω	810 Ω	450 Ω
Input voltage	3 VRMS sine wave (nominal)			
Input frequency range	2.5kHz to 10kHz			
Test input frequency	10kHz			
Non-linearity, maximum	±0.50% of FR			
Repeatability	60 micro-inches [1.5 microns]			
Null voltage, maximum	0.5% of FRO			

<b>ENVIRONMENTAL SPECIFICATIONS</b>	
Operating temperature	-40°F to 160°F [-40°C to 70°C]
Shock survival	1,000 g (11ms half sine)
Vibration tolerance	20 g up to 2kHz
Housing material	ANSI 400 Stainless Steel
Electrical connection	Six AWG 32 conductor, shielded polyurethane jacket cable, 6.5 foot [2 meter] long
IEC 60529 rating	IP-66 (at cable exit), IP-60 (at the plunger)

**Notes:**

All values are nominal unless otherwise noted

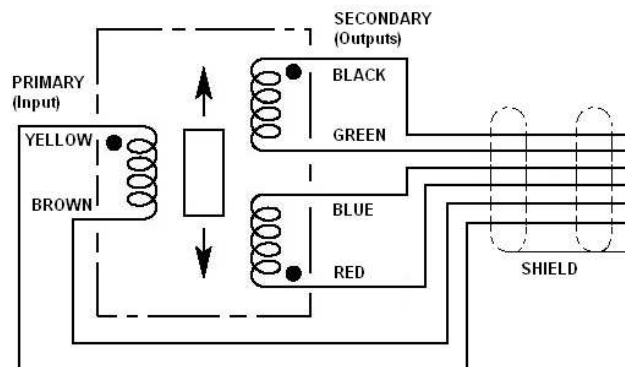
Dimensions are in inch [mm] unless otherwise noted

(\*): Unit for output at stroke ends is millivolt per volt of excitation (Input voltage)

FR: Full Range is the stroke range, end to end; FR=2xS for ±S stroke range

FRO (Full Range Output): Algebraic difference in outputs measured at the ends of the range

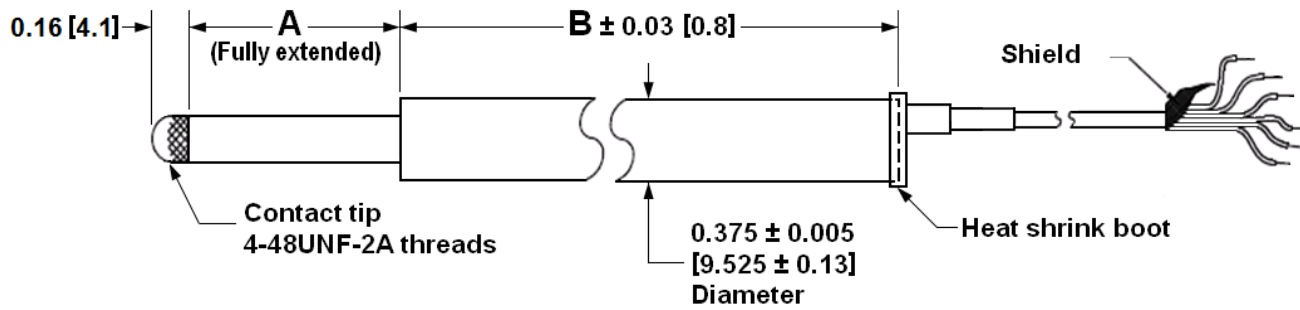
**WIRING INFORMATION**



Connect Blue and Green wires together for differential output

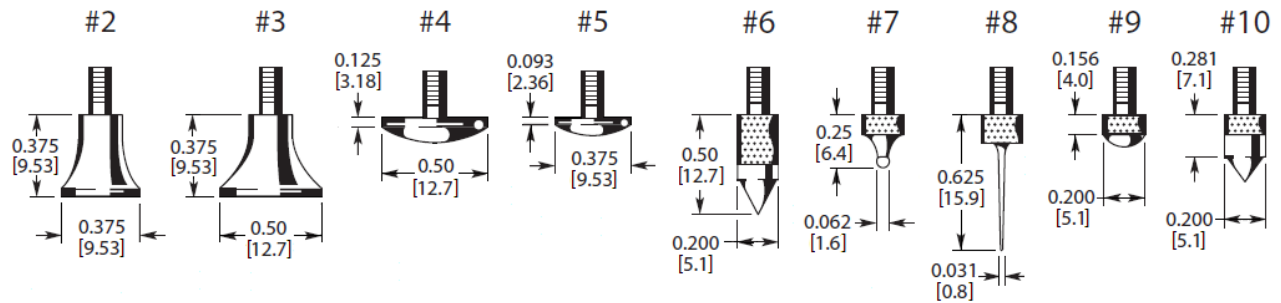
### MECHANICAL SPECIFICATIONS

Parameter	PCA-375 100	PCA-375 250	PCA-375 500	PCA-375 1000
Pre-travel	0.050 [1.27]	0.070 [1.78]	0.040 [1.02]	0.050 [1.27]
Over-travel	0.050 [1.27]	0.070 [1.78]	0.040 [1.02]	0.050 [1.27]
Plunger length "A" (fully extended)	0.39 [19.9]	0.75 [19.0]	1.15 [29.2]	2.29 [58.2]
Main body length "B"	1.99 [50.6]	3.26 [82.8]	5.25 [133.4]	8.95 [227.3]
Weight, Ounce [Gram]	1.8 [50]	2.0 [56]	2.5 [72]	3.2 [92]



*Dimensions are in inch [mm]*

### REPLACEMENT/OPTIONAL CONTACT TIPS



*Dimensions are in inch [mm]*