

# PCA-375 Series – AC Operated Gage Heads



- Slim 0.375 inch [9.5mm] diameter
- 60 µ-inch [1.5 µm] repeatability
- Economical
- Long Life Cycle
- IEC IP-66 Rated Cable Exit
- 4-48 AGD interchangeable Contact Tips
- Strokes from ± 0.1 To ± 1 inch

## DESCRIPTION

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.

Measurement Specialties, Inc. (NASDAQ MEAS) offers many other types of sensors and signal conditioners. Data sheets can be downloaded from our web site at: <http://www.meas-spec.com/datasheets.aspx>

MEAS acquired Schaevitz Sensors and the **Schaevitz™** trademark in 2000.

## 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

# PCA-375 Series – AC Operated Gage Heads

## PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS				
Parameter	PCA-375 100	PCA-375 250	PCA-375 500	PCA-375 1000
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			

ENVIRONMENTAL SPECIFICATIONS	
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

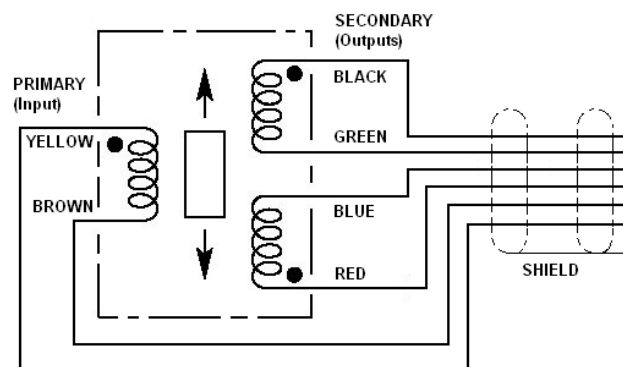
Dimensions are in inch [mm] unless otherwise noted

(\*): 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

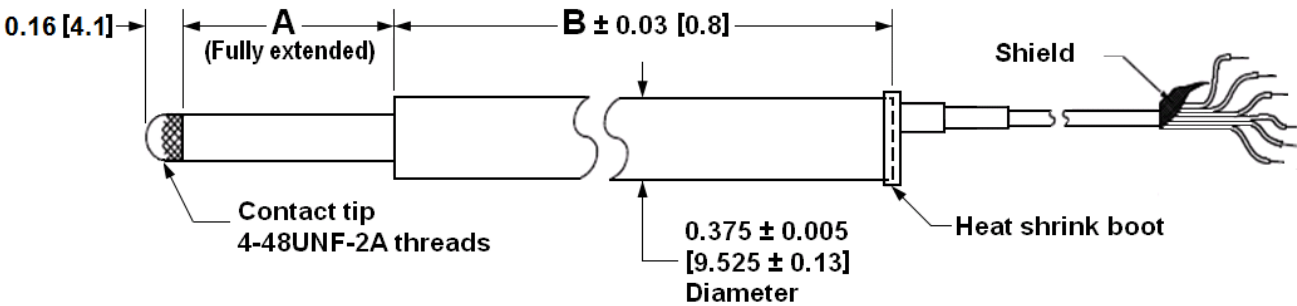


Connect Blue and Green wires together for differential output

# PCA-375 Series – AC Operated Gage Heads

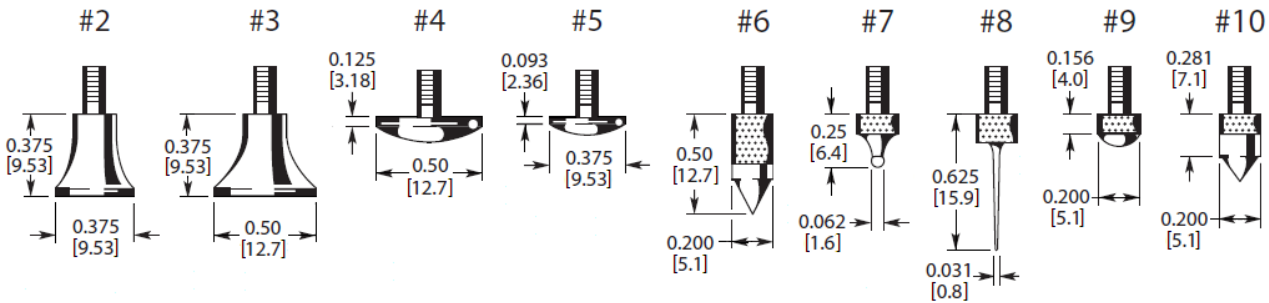
## MECHANICAL SPECIFICATIONS

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]

# PCA-375 Series – AC Operated Gage Heads

## ORDERING INFORMATION

Description	Model	Part Number
±0.10 inch gage head	PCA-375 100	72350004-000
±0.25 inch gage head	PCA-375 250	72350005-000
±0.5 inch gage head	PCA-375 500	72350006-000
±1 inch gage head	PCA-375 1000	72350007-000
ACCESSORIES		
Replacement contact tips	Contact Tip 2	67010005-000
	Contact Tip 3	67010006-000
	Contact Tip 4	67010002-000
	Contact Tip 5	67010007-000
	Contact Tip 6	67010008-000
	Contact Tip 7	67010009-000
	Contact Tip 8	67010010-000
	Contact Tip 9	67010001-000
	Contact Tip 10	67010011-000

Refer to our [“Options and Accessories for Gage Head”](#) data sheet.

## TECHNICAL CONTACT INFORMATION

NORTH AMERICA	EUROPE	ASIA
Measurement Specialties, Inc. 1000 Lucas Way Hampton, VA 23666 United States Phone: +1-800-745-8008 Fax: +1-757-766-4297 Email: <a href="mailto:sales@meas-spec.com">sales@meas-spec.com</a> Web: <a href="http://www.meas-spec.com">www.meas-spec.com</a>	MEAS Deutschland GmbH Hauert 13 D-44227 Dortmund Germany Phone: +49-(0)231-9740-0 Fax: +49-(0)231-9740-20 Email: <a href="mailto:info.de@meas-spec.com">info.de@meas-spec.com</a> Web: <a href="http://www.meas-spec.com">www.meas-spec.com</a>	Measurement Specialties China Ltd. No. 26, Langshan Road High-tech Park (North) Nanshan District, Shenzhen 518057 China Phone: +86-755-33305088 Fax: +86-755-33305099 Email: <a href="mailto:info.cn@meas-spec.com">info.cn@meas-spec.com</a> Web: <a href="http://www.meas-spec.com">www.meas-spec.com</a>

The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. Measurement Specialties, Inc. reserves the right to make changes without further notice to any product herein. Measurement Specialties, Inc. makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does Measurement Specialties, Inc. assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. Measurement Specialties, Inc. does not convey any license under its patent rights nor the rights of others.