

## Model S5 AC-AC

### Enhanced Precision Displacement Transducer



2,54 mm to 12,7 mm  
[0.10 in to 0.50 in]



0,25 mm to 1,02 mm  
[0.01 in to 0.04 in]

#### DESCRIPTION

Model S5 Ultra Precision displacement transducer is designed for single and multi-point industrial gaging applications and micro-displacement measurements in research and scientific studies. It incorporates non-rotating armatures to increase resistance to side loads and improve repeatability. Bodies and

probes are stainless steel constructed and windings are magnetically shielded. Ultra Precision displacement transducers utilize spring loaded captive guided armatures and low friction, non-rotating probes. Non-linearity is 0.25% full scale.

#### FEATURES

- Miniature design
- 0.25 % non-linearity
- Rugged, enhanced accuracy
- Enhanced immunity to electrical noise
- $\pm 0.01$  in to  $\pm 0.5$  in range
- -58 °F to 257 °F operating range (standard)
- Non-rotating probe
- Stainless steel construction
- Extended life cycle
- Infinite resolution
- Captive guided spring return armature
- Not RoHS compliant

# Model S5 AC-AC

## PERFORMANCE SPECIFICATIONS

Characteristic	Measure
Stroke range	±0,25 mm to 12,7 mm [±0.10 in to 0.50 in]
Non-linearity (max.)	±0.25 % full scale
Non-repeatability	<20 microinches
Output sensitivity	See table
Output load (min.)	100000 ohm
Resolution	Infinite
Phase shift	<10° @ 5 kHz

## ENVIRONMENTAL SPECIFICATIONS

Characteristic	Measure
Temperature, operating	-20 °C to 125 °C [-4 °F to 257 °F]
Temperature effect, zero (max.)	0.006 % full scale/°F
Temperature effect, span (max.)	0.006 % full scale/°F

## ELECTRICAL SPECIFICATIONS

Characteristic	Measure
Element type	ac-ac displacement transducer
Input supply (calibrated)	5 V RMS @ 5 kHz
Input supply (acceptable)	1 V to 7 V RMS @ 2 kHz to 10 kHz
Electrical termination	Multiconductor shielded cable

## MECHANICAL SPECIFICATIONS

Characteristic	Measure
Case material	Stainless steel
Probe material	Stainless steel
Armature type	Captive guided spring return
Weight	See table
Spring force (max.)	See table

## RANGE CODES

Range Code	Available ranges
HH	±0,25 mm [±0.01 in]
HI	±0,51 mm [±0.02 in]
HK	±1,02 mm [±0.04 in]
HM	±2,54 mm [±0.10 in]
HN	±5,08 mm [±0.20 in]
HF	±7,62 mm [±0.30 in]
HG	±10,16 mm [±0.40 in]
HP	±12,7 mm [±0.50 in]

## OPTION CODES

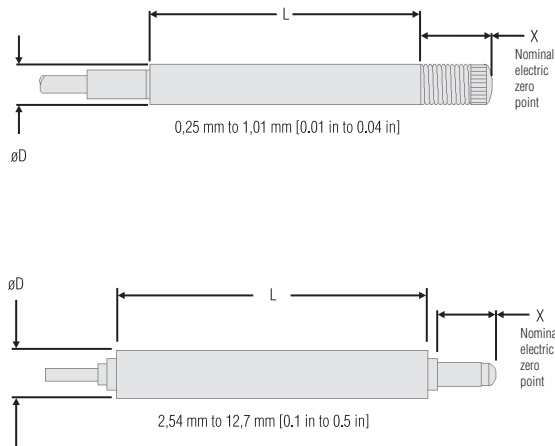
Range Code	Many range/option combinations are available in our quick-ship and fast-track manufacture programs. Please see <a href="http://sensing.honeywell.com/TMsensor-ship">http://sensing.honeywell.com/TMsensor-ship</a> for updated listings.
Stroke ranges	±0,25 mm to 12,7 mm [±0.01 in to ±0.5 in]
Electrical termination	Multiconductor shielded cable (1,83 m [6 ft])
Electrical cable orientation	Ra. Right angle cable exit
Mounting threads	TM392. 3/8-32 UNF threaded sleeve
Improved linearity	L10. 0.1 % max. linearity (only for ±0,01 mm to 0,51 mm [±0.040 in to ±0.02 in])
Higher temperature	TM315. 204 °C [400 °F] up to 101,6 mm [±4.0 in]

# Enhanced Precision Displacement Transducer

## MOUNTING DIMENSIONS

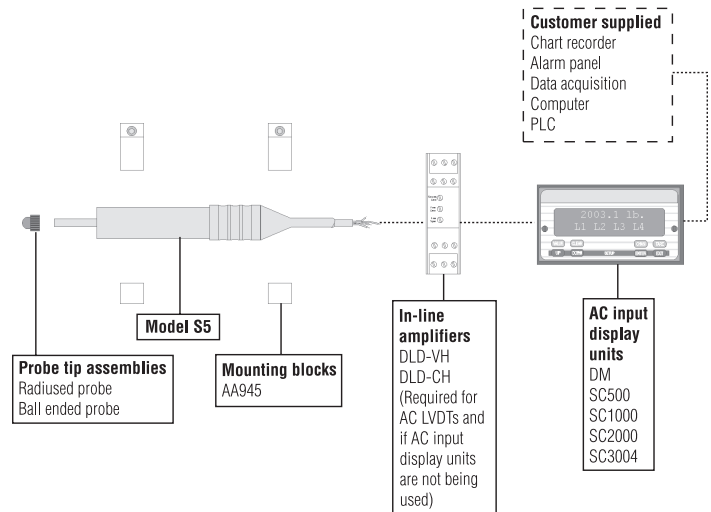
Range code	Available stroke range mm [in]	L mm [in]	D mm [in]	X mm [in]	Approx. unit weight g [oz]	Max. spring force g [oz]	Output sensitivity mV/V/ 0.001 in
HH	±0,25 [±0.01]	48,01 [1.89]	7,88 [0.31]	10,92 [0.43]	396,89 [14]	212,62 [7.5]	4
HI	±0,51 [±0.02]	48,01 [1.89]	7,88 [0.31]	10,92 [0.43]	396,89 [14]	212,62 [7.5]	4
HK	±1,02 [±0.04]	51,05 [2.01]	7,88 [0.31]	12,95 [0.51]	510,29 [18]	212,62 [7.5]	4
HM	±2,54 [±0.1]	61 [2.40]	9,4 [0.37]	11,43 [0.45]	623,69 [22]	119,92 [4.23]	4
HN	±5,08 [±0.2]	78 [3.07]*	9,4 [0.37]	11,43 [0.45]	737,09 [26]	129,84 [4.58]	4*
HF	±7,62 [±0.3]	87,89 [3.46]	9,4 [0.37]	15,24 [0.60]	250,49 [30]	244,94 [8.64]	2
HG	±10,16 [±0.4]	99,06 [3.90]	9,4 [0.37]	19,05 [0.75]	963,88 [34]	209,79 [7.40]	2
HP	±12,7 [±0.5]	120,90 [4.76]	9,4 [0.37]	21,59 [0.85]	1190,68 [42]	214,89 [7.58]	2

\* New L dimension and output sensitivity for 5,08 mm [±0.2 in] range. For old L dimension and output sensitivity, consult factory.



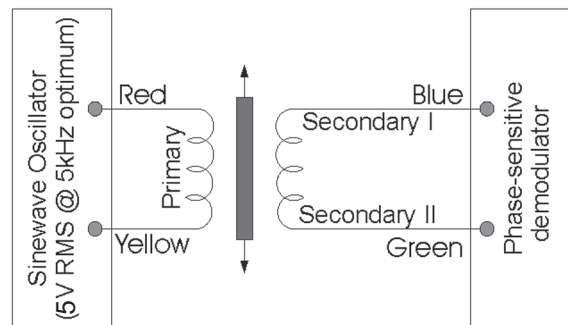
For reference only

## TYPICAL SYSTEM DIAGRAM



## WIRING CODES

Wire color	Supply
Red	(+) supply (calibrated @ 5 V RMS, 5 kHz)
Yellow	Supply return
Blue	Output
Green	Output return
Black	Secondary center tap (normally not connected)



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**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 catalogue is for reference only. DO NOT USE this document as product installation information.
- 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.**