

### Rugged, Temperature Compensated Single Axis Inclinometer provides Analog 0...5V & 0...10V Outputs simultaneously or Digital Serial (RS232) output, in angle ranges up to $\pm 90^\circ$ .



#### Description

The H5 Series of inclinometers provide single axis inclination sensing in a rugged environmentally protected metal housing.

These sensors are available with a choice of two output configurations, analog voltage or digital serial outputs. These outputs are linear with respect to the input angle directly. The sensing package incorporates a liquid capacitive sensing element with integrated temperature compensation over the industrial operating range of  $-40^\circ$  to  $+85^\circ\text{C}$ .

The Analog version provides both 0...5V and 0...10V outputs with 12...30VDC input voltage. An individual wire for each output is provided, allowing use of both at the same time.

The Serial output (RS232) transmits the degree of angle in a decimal format. This output provides a continuous stream of readings - one reading per line at approximately 250msec per reading. The H5 transmits the output to a PC's serial port, using HyperTerminal as the interface - HyperTerminal is a program included with Windows 95, 98, 2000.

#### Features

- Single Axis Angle Measurement
- 4 Ranges:  $\pm 30^\circ$ ,  $\pm 45^\circ$ ,  $\pm 60^\circ$ ,  $\pm 90^\circ$
- Temperature Compensation
- 2 Analog Outputs: 0-5V, 0-10V
- Digital Serial RS232 Output
- Vibration and Shock Resistant
- Environmentally Sealed to IP66
- Rugged Machined Aluminum Housing
- EMC Protected
- Mechanical Zero Adjustment
- Common footprint for easy field install

#### Applications

- Platform Leveling
- Vehicle Tilt Monitoring
- Antenna Positioning
- Boom Angle Indicating
- Process Machinery
- Potentiometer-like Replacement



# H5 Series

## General Information Brochure

INPUT PARAMETERS		
MEASURING RANGES	±30°, ±45°, ±60, ±90°	
MEASUREMENT AXES	Single	
	ANALOG	SERIAL
POWER SUPPLY	12-30VDC Non-reg (4-10VDC opt)	8-30VDC Non-regulated
CURRENT CONSUMPTION	10mA typical, 17mA max	15mA typical
TEMPERATURE RANGE		
OPERATING TEMPERATURE	-40°C to +85°C	
STORAGE TEMPERATURE	-45°C to +90°C	
ANALOG OUTPUT	Output 1 (0..5V)	Output 2 (0..10V)
ZERO OFFSET	2.5VDC TYP	5VDC TYP
ANALOG VOLTAGE OUTPUT	±2.25VDC	±4.5VDC
OUTPUT VOLTAGE SENSITIVITY		
±30°	75mV/°	150mV/°
±45°	50mV/°	100mV/°
±60°	37.5mV/°	75mV/°
±90°	25mV/°	50mV/°
TOTAL ERROR OVER TEMPERATURE		
±30° to ±90°	< ±0.5°	
RESOLUTION		
±30°	< 0.02°	
±45°	< 0.03°	
±60°	< 0.03°	
±90°	<0.05°	
OUTPUT POLARITY	Output increases with counter-clockwise rotation	
RESPONSE TIME	<0.3 seconds	
BANDWIDTH	3 Hz	
SERIAL OUTPUT (RS232)		
OUTPUT FORMAT	ASCII Decimal	
BAUD RATE	9600	
DATA BITS	8	
PARITY	None	
STOP BITS	1	
TRANSMISSION RATE	Continuously updated every 250mSEC	
TOTAL ERROR OVER TEMPERATURE		
±30° to ±90°	< ±0.5°	
RESOLUTION	0.1°	
MECHANICAL CHARACTERISTICS		
HOUSING	Anodized Aluminum (Black)	
MOUNTING HOLES	Four #4-40 X 0.3" Deep	
MOUNTING PLANE	Vertical Surface	
OUTLINE DIMENSIONS	Ø2.52" x 1.1" (Ø64mm x 28mm) See Drawing	
ELECTRICAL CONNECTION	1ft. FEP Insulated Cable with Four 22 Gauge Pigtail Leads	
WEIGHT	7.5 ounces	

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 FORM NUMBER: H50001\_07/05 UPDATED: 02/07

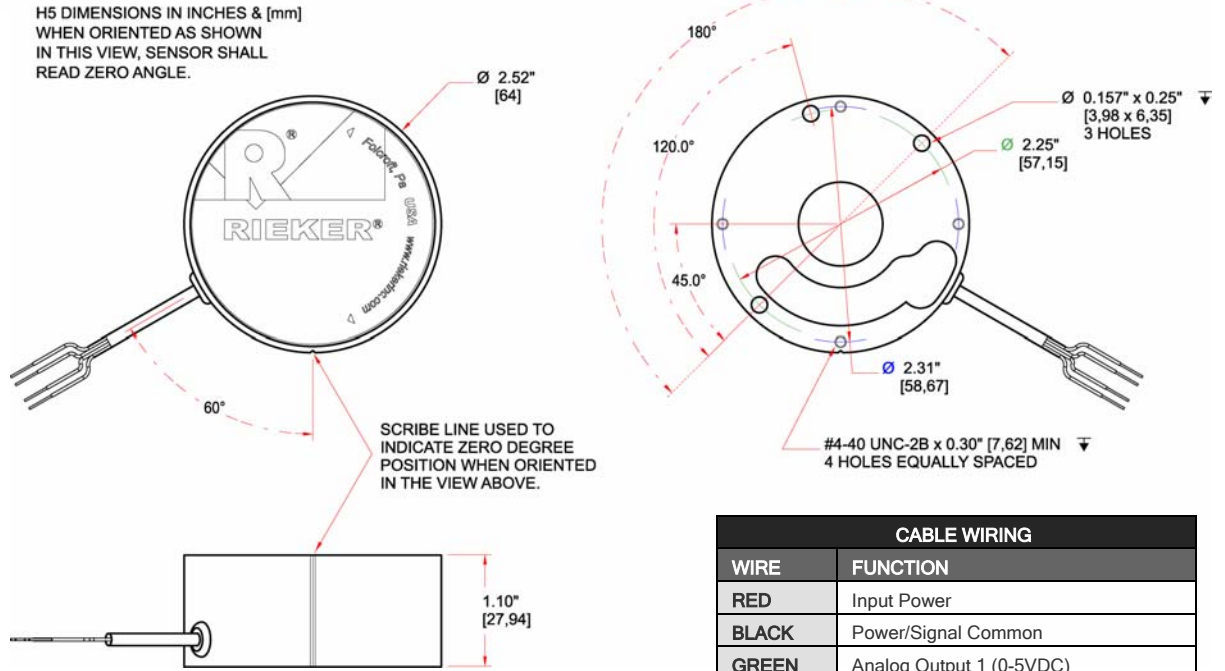


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**Figure 1: Dimensions and Wiring Connections**



CABLE WIRING	
WIRE	FUNCTION
RED	Input Power
BLACK	Power/Signal Common
GREEN	Analog Output 1 (0-5VDC)
WHITE	Analog Output 2 (0-10VDC)

PART NUMBER MATRIX CHART		H	5	A	1	-	60	-	
<b>HOUSING</b>		OPTION CODE							
MACHINED ALUMINUM (ANODIZED BLACK)	Default	5							
<b>OUTPUT</b>									
ANALOG		A							
DIGITAL SERIAL (RS232)		S							
<b>TEMPERATURE COMPENSATION</b>									
LEVEL 1		1							
<b>ANGLE RANGES</b>									
"XX" = ±30°, ±45°, ±60°, ±90°		"XX"							
<b>INPUT POWER</b>									
12- 30VDC (Analog) / 8-30VDC (Serial)	Default	BLANK							
4-10VDC		V							
<b>MODEL NUMBER</b>									
STANDARD CONFIGURATION	Default	BLANK							
CUSTOM SPECIAL: "-X"		"-X"							

As shown above the part number H5A1-60 represents the following configuration: single axis unit with a ±60° measuring range, Analog output (BOTH 0...5V AND 0...10V OUTPUTS), Level 1 Temperature Compensation, 12 to 30VDC supply power.

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