

## HP58 Non-Contact Rotary Position Sensor



- Patented true non-contact position sensing
  - 0.5" (12mm) gap between sensor and application
  - 0.10" (2.5mm) center alignment
  - 30° planar tilt
- Totally sealed IP69K (connector dependent)
- LED indicators for power and output feedback
- Incremental or Absolute position
- Outputs: Quadrature, Step and Direction, SSI, PWM, Analog, Modicon MODBUS, & J1939 Can Bus
- Detects rotation through non-ferrous barriers; Special applications include use in explosion proof housings, high PSI zone separation, and enclosed rotational measurement

<b>ELECTRICAL</b>	<b>Outputs</b>	<b>A-PPR-SEPP</b> Incremental 13 bit Quadrature w/ Single Ended Output
		<b>A-PPR-DIPP</b> Incremental 13 bit Quadrature w/ Differential Output
		<b>A - 1939</b> J1939 13 bit @ 1000 positions
		<b>A-MOD1</b> Modicon MODBUS @ 8192 positions
		<b>B-PWM</b> PWM absolute position
		<b>A-SSI1</b> SSI absolute position @ 8192 positions
		<b>V1</b> Voltage Out / 5 VDC IN, 0-5 VDC OUT (code V3 for 2x redundant output)
		<b>V2</b> Voltage Out / 6-36 VDC IN, 0-5 VDC OUT
		<b>I1</b> Current Out / 0-24 VDC IN, 4-20 mA OUT (code I2 for 2x redundant output)
		<b>Input Power</b> 6 to 30 VDC at approx 660 mA max, not including output loads
		<b>Electrical Protection</b> Over-voltage, reserve-voltage, output short-circuit protected
		<b>LED Indicators</b> Power and output channels
		<b>Connections</b> Terminal Plug, M8, M12, M12 Pigtail, Flying Lead Cable, Shielded Cable, Deutsch (4 or 6 pin)
	<b>Resolution</b> 0.3°	
	<b>Repeatability</b> 0.30%	
	<b>Nonlinearity</b> < 1%	
<b>MECHANICAL</b>	<b>Housing Diameter</b>	58mm
	<b>Housing Material</b>	Black Delrin (standard) or White Delrin (HP58SE Red Aluminum)
	<b>Housing Height</b>	0.75" body; 1.5" w/ M12 connector
	<b>Mounting</b>	60.128 mounting holes
	<b>Weight</b>	2.6 oz
	<b>Magnet / sensor gap*</b>	Standard 12MM; Custom Mag Assembly > 30mm
	<b>Rated plana tilt / axial gap*</b>	Planar 30°(Max 45°) / Axial 0.1" (2.5mm)(Max 0.16" [4mm])
<b>ENVIRONMENTAL</b>	<b>Operating Temperature</b>	-30° to +80° C
	<b>Storage Temperature</b>	-40° to +90° C
	<b>Humidity</b>	100%
	<b>Shock</b>	400g/6ms (MIL STD 202)
	<b>Vibration</b>	5 to 3000 Hz, 20g (MIL STD 202)
	<b>Protection Class</b>	IP69K (connection dependent)

\* Non-contact tolerances rated using MAG-RING 1/4x20 magnet accessory.

	Code 1: Housing Style	Code 2: MagElec	Code 3: Connection	Code 4: Modifiers
ORDER TABLE	<b>HP58</b> Standard Functionality	A-____-SEPP	13 bit single ended quadrature	TRM Pluggable terminal block <b>31</b> Side (housing wall)
				INS Wire insertion terminal <b>32</b> Front (magnet side)
	<b>HZ58</b> 'Zero Power' Functionality	A-____-DIPP	13 bit differential quadrature	M8 M8 male <b>33</b> Back (epoxy side)
				M12 M12 male <b>50</b> White Delrin
				M12P M12 male on 18' pigtail <b>51</b> Red aluminium
	<b>HP58SE</b> Standard Functionality, Side Exit Connector	X - 1939	13 bit J1939 @ 1000 counts	CXX Flying lead cable (enter XX as inches) <b>52</b> Black Delrin
				SCXX Shielded Cable (enter XX as inches) <b>71</b> No spindle
				CSP Cable with custom end <b>72</b> Spindle
				DE4 DT04 - 4 pin male Deutsch <b>90</b> 13 bit @ 8192 counts per rotation
	<i>*More outputs available, contact Joral if desired output not shown</i>	B-PWM	Absolute Position PWM	DE6 DT06 - 6 pin male Deutsch <b>91</b> 13 bit @ 1000 counts per rotation
V1 5 VDC IN, 0-5 VDC OUT				
V2 6-36 VDC IN, 0-5 VDC OUT				
	I1 0-24 VDC IN, 4-20 mA OUT			

Special Part Number Information			
<b>Code 1: Housing Style</b> <ul style="list-style-type: none"> <li><b>HP58 = Black Delrin</b> / Handles <b>ALL back exit</b> connections and <b>CABLE ONLY side exit</b> connections. For side exit cable on HP58 append part number with special code 31 (available cable connection codes M12P, CXX, SCXX, DE4, &amp; DE6).</li> <li><b>HP58SE = Red Aluminium</b> / Handles <b>ALL back exit</b> and <b>ALL side exit connections</b> (including M12 leaded side exit). To designate back exit connection (epoxy side) on HP58SE add special code '33' to end of Joral P/N.</li> </ul>			
<b>Code 2: MagElec</b>			
<b>(A-____-SEPP) or (A-____-DIPP)</b> <ul style="list-style-type: none"> <li>Enter quadrature PPR in place of ____</li> <li>A = 13 bit PPR</li> <li>Available 13 PPR: 0008,0010,0016, 0020, 0025, 0032, 0040, 0050, 0064, 0080, 0100, 0125, 0128, 0200, 0250, 0256, 0400, 0500, 0512, 1024, 2048</li> </ul>	<b>A-1939</b> <ul style="list-style-type: none"> <li>Standard J1939 output is 1000 positions</li> <li>For 8192 positions (max resolution) add <b>special code 90</b> to the end of PE30 P/N</li> </ul>	<b>A-Mod1</b> <ul style="list-style-type: none"> <li>Standard MOD1 output is 8192 positions</li> <li>For 1000 positions (max resolution) add <b>special code 91</b> to the end of HP58 P/N</li> </ul>	<b>V1, V2, I1 (Analog MagElec P/N Guide)</b> <ul style="list-style-type: none"> <li>First select MagElec code (<b>V1, V2, or I1</b>) then Angle Range (<b>A1-A2</b>), Voltage Range (<b>V1-V2</b>) and Signal Direction (Clockwise [<b>CW</b>] or Counterclockwise [<b>CCW</b>])</li> <li><b>Formula Example:</b> (MagElec)-(A1-A2)-(V1-V2)-(CW or CCW)</li> <li><b>Exact Part Number Examples:</b> HP58-V1-0-360-.5-4.5-CW-C72 HP58-V2-180-270-0-5-CCW-DE4 HP58-I1-0-180-4-20-CW-M12</li> </ul>
<b>Code 3: Connections</b> <ul style="list-style-type: none"> <li><b>All Outputs, All Connections</b> - Connector exit standard is BACK EXIT (sensor epoxy side) for housing HP58 and HP58SE (for SIDE EXIT use modifier 31)</li> <li><b>J1939 Output</b> Addressing via varying value resistor in connection requires at least five conductors (M12, DE6, and Cable connections are resistor addressing compatible)</li> <li><b>All Outputs - DE4 and DE6</b> Deutsch connectors add \$20 to HP58 list</li> </ul>			

**MAGNET NOTE:**

STANDARD MAGNET INCLUDED AS ACCESSORY WITH PURCHASE OF NON-CONTACT SENSOR

**STANDARD MAGNET**

MAG-H-RING-ASSM.  
1/4-20 X .47

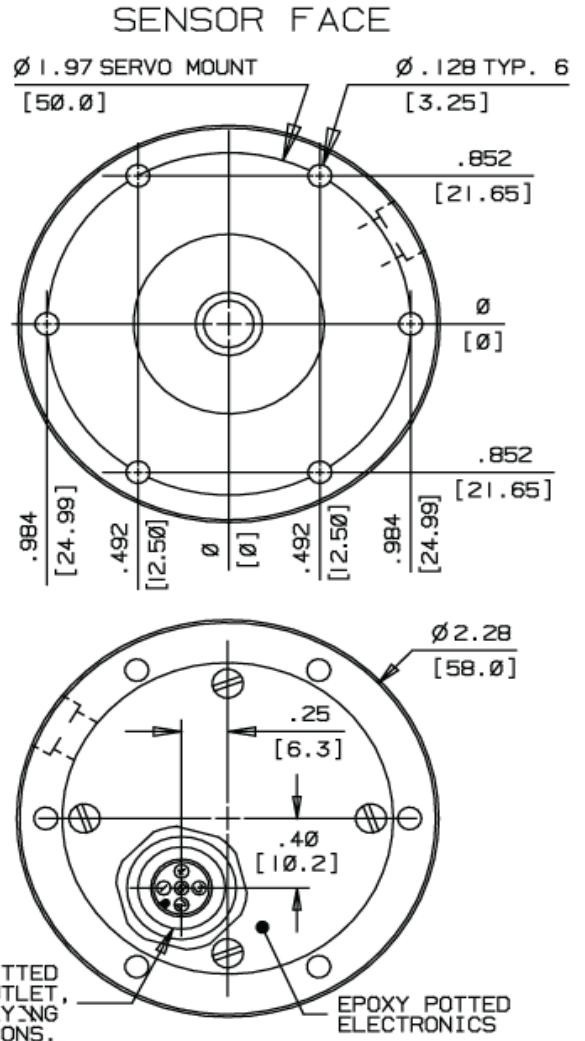
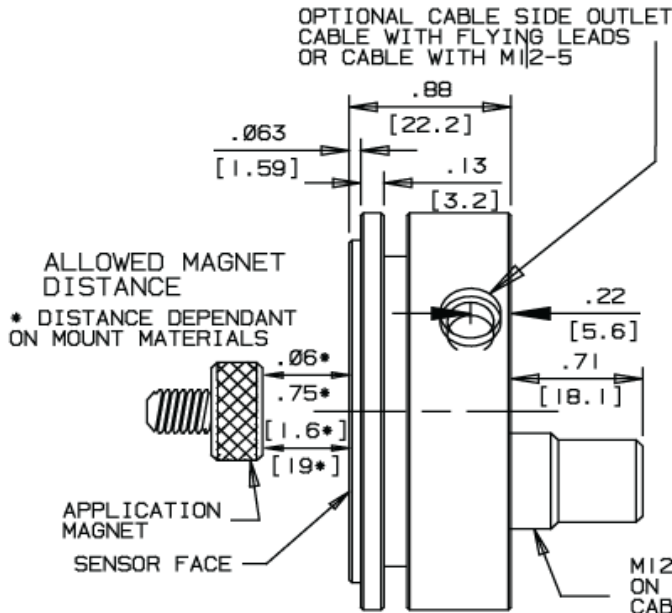


**HOUSING/INSTALL NOTES:**

MAGNET MOUNT MATERIALS MUST HAVE  $\phi 1.0$  [25.4] HOLE CENTERED ON SENSOR CENTERLINE

NON-MAGNETIC MOUNT MATERIAL, MAY BE SOLID

MOUNT WITH 316 STAINLESS STEEL 4-40 SCREWS



**DT04-4P MALE FACE VIEW**



**DT04-4P J1939 OUTPUT**

- 1 = YEL = CAN HIGH
- 2 = GRN = CAN LOW
- 3 = RED = +VDC (VIN)
- 4 = BLK = COMMON/GROUND

**M12-5P MALE FACE VIEW**



**M12-5P/CABLE/FLYING LEAD QUADRATURE OUTPUT**

- 1 = BRN = +VDC (VIN)
- 2 = WHT = CHANNEL B
- 3 = BLUE = COMMON/GROUND
- 4 = BLK = CHANNEL A
- 5 = GRY = CHANNEL Z

**M12-5P/CABLE/FLYING LEAD PROPORTIONAL (ANALOG) OUTPUT**

- 1 = BRN = +VDC (VIN)
  - 2 = WHT = DIG. LIMIT OUT\*
  - 3 = BLUE = COMMON/GROUND
  - 4 = BLK = PROP. VDC OUTPUT
  - 5 = GRY = NOT USED
- \*OPTION CONSULT FACTORY

**DT04-6P MALE FACE VIEW**



**DT04-6P J1939 OUTPUT**

- 1 = YEL = CAN HIGH
- 2 = GRN = CAN LOW
- 3 = RED = +VDC (VIN)
- 4 = BLK = ADDRESS GROUND
- 5 = WHT = ADDRESS PROG. RESISTOR
- 6 = BLK = COMMON/GROUND

**M12-5P AND 5 CONDUCTOR CABLE J1939 OUTPUT**

- 1 = BRN = +VDC (VIN)
- 2 = WHT = CAN HIGH
- 3 = BLUE = COMMON/GROUND
- 4 = BLK = CAN LOW
- 5 = GRY = OPTIONAL ADDRESS PROGRAMMING RESISTOR

Dimensions informative only  
For most recent dimensions please consult factory