

HP58 Hockey Puck™ 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



STANDARD OPERATING CHARACTERISTICS

ELECTRICAL	Outputs	A - [PPR] - SEPP	Incremental 13 bit Quadrature w/ Single Ended Output A B Z
		A - [PPR] - DIPP	
	A - 1939		J1939 13 bit @ 1000 positions (8192 positions max)
	A - MOD1		Modicon MODBUS @ 8192 positions
	B - PWM		PWM absolute position
	A - SSI1		SSI absolute position @ 8192 positions
	V1		Voltage Out / 5 VDC IN, 0-5 VDC OUT (<i>code V3 for 2x redundant output</i>)
	V2		Voltage Out / 6-36 VDC IN, 0-5 VDC OUT
	I1		Current Out / 0-24 VDC IN, 4-20 mA OUT (<i>code I1 for 2x redundant output</i>)
	Input Power		6 to 30 VDC at approx 60 mA max, <i>not including output loads</i>
	Electrical Protection		Over-voltage, reserve-voltage, output short-circuit protected
	LED Indicators		Power and output channels
	Connections		Terminal Plug, M8, M12, M12 Pigtail, Flying Lead Cable, Shielded Flying Lead, or Deutsch - 4 or 6 pin
	Resolution		0.3°
	Repeatability		0.30%
	Nonlinearity		<1%
MECHANICAL	Housing Diameter		58mm
	Housing Material		HP58 Black Delrin™ (<i>standard</i>) or White Delrin™; HP58SE Red Aluminum
	Housing Height		0.75" (19mm) body; 1.5" (38.1mm) w/ M12 connector
	Mounting		60.128 mounting holes
	Weight		2.6 oz
	Magnet / sensor gap*		Standard 0.5" (12mm) (<i>Max w/ custom mag assembly up to 1" [30mm]</i>)
	Rated planar tilt / axial gap*		Planar 30° (<i>Max 45°</i>) / Axial 0.1" (2.5mm) (<i>Max 0.16" [4mm]</i>)
	Speed		3000 RPM max
ENVIRONMENTAL	Operating Temperature		-30° to +80° C
	Storage Temperature		-40° to +90° C
	Humidity		100%
	Shock		400g/6ms (<i>MIL STD 202</i>)
	Vibration		5 to 3000 Hz, 20g (<i>MIL STD 202</i>)
	Protection Class		IP69K (<i>connection dependent</i>)

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

General ordering guide found on next page (S2 ; I5 / 2)



HP58 GENERAL ORDERING GUIDE

Build part number first by selecting **Housing Style** (code 1), **MagElec** (code 2), and **Connection** (code 3). Add **Special Codes** (code 4) to the end of the Joral part number. Refer to '**Special Part Number Information**' for explanation of modifiers.

- Examples:** **HP58-A-0080-SEPP-SC72-31** - Black Delrin™ (HP58), Side exit (31), 72" shielded cable (SC72), 13 bit incremental quadrature @ 80 PPR
HP58-A-1939-M12-90 - Black Delrin™ (HP58), Back exit (standard), M12 connector (M12), J1939 @ 8192 positions (modifier 90 for 8192)
HP58SE-V1-0-180-0.5-4.5-CW-C72-31 - Red Aluminum (HP58SE), Side exit (31), 0-5v Out (V1) @ 0-180°, 0.5-4.5v out, clockwise signal

Code 1: Housing Style	Code 2: MagElec (Sensor Output)	Code 3: Connection	Code 4: Special Codes
HP58 HP58 material Black Delrin™, connector orientation BACK EXIT standard. To designate SIDE EXIT connection use special code 31. (Side exit for HP58 CABLE ONLY)	A - _____ - SEPP 13 bit single ended quadrature - A B Z	TRM Pluggable Terminal block	31 Side (housing wall)
	A - _____ - DIPP 13 bit differential quadrature - A B Z, A' B' Z'	INS Wire insertion terminal	32 Front (magnet side)
	A - 1939 13 bit J1939 @ 1000 positions	M8 M8 male	33 Back (epoxy side)
		M12 M12 male	50 White Delrin
	B - PWM Absolute position PWM	M12P M12 male on 18' pigtail	51 Red Aluminum
HP58SE HP58SE made out of Red Aluminum, connector orientation BACK EXIT standard. To designate SIDE EXIT connection use special code 31.	A - MOD1 13 bit Modicon MODBUS @8192 positions	CXX Flying lead cable (enter XX as inches)	71 Roller
	A - SS11 Absolute position SSI @ 8192 positions	SCXX Shielded cable (enter XX as inches)	72 Spindle
	V1 5 VDC IN, 0-5 VDC OUT	CSP Cable with custom end	90 13 bit @ 8192 counts per rotation (Typical J1939 option)
	V2 6-36 VDC IN, 0-5 VDC OUT	DE4 DT04 - 4 pin male Deutsch	
	V3 0-24 VDC IN, 4-20 mA OUT x2 (Redundant output)	DE6 DT04 - 6 pin male Deutsch	91 13 bit @ 1000 counts per rotation (Typical MODBUS option)
	I1 0-24 VDC IN, 4-20 mA OUT		
	I2 0-24 VDC IN, 4-20 mA OUT x2 (Redundant output)		
* More outputs and connection options available, contact Joral if desired configuration is not listed			

Special Part Number Information *Review below code sections for important P/N build information*

Code 1: Housing Style

- Modifier 31** - For side exit connector on HP58 and HP58SE add 31 to end of Joral P/N
- HP58** - Handles all back exit connections and CABLE ONLY side exit connections (*M12P, CXX, SCXX, DE4 & DE6*)
- HP58SE** - Handles ALL back and side exit connections (*including M12 leaded side exit*)

Code 2: MagElec

(A - _____ - SEPP) or (A - _____ - DIPP)

- Enter Quadrature PPR in place of _____
- A = 13 bit PPR
- Available 13 bit PPR:** 0008, 0010, 0016, 0020, 0025, 0032, 0040, 0050, 0064, 0080, 0100, 0125, 0128, 0200, 0250, 0256, 0400, 0500, 1024, 2048

A - 1939

- Standard J1939 output is 1000 positions
- A = 13 bit
- MODIFIER 90** - for 8192 positions (max resolution) add code 90 to end of HP58 P/N

A - MOD1

- Standard MOD1 output is 8192 positions
- A = 13 bit
- MODIFIER 91** - for 1000 positions add code 90 to end of HP58 P/N

V1, V2, and I1 (Analog MagElec P/N Guide)

- First select MagElec code (**V1, V2 or I1**) then Angle Range (**A1-A2**), Voltage Range (**VR1-VR2**) and Signal Direction (**Clockwise [CW] or Counter [CCW]**)
- PART NUMBER FORMULA** (MagElec)-(A1-A2)-(VR1-VR2)-(CW or CCW)
- EXACT V1, V2, and I1 EXAMPLES**
 HP58 - **V1 - 0-360 - 0.5-4.5 - CW - C72**
 HP58 - **V2 - 0-180 - 0.5 - CCW - DE4**
 HP58 - **I1 - 180-270 - 4-20 - CW - M12**

Code 3: Connections

- All Outputs, All Connections** - Connector exit standard is BACK EXIT (sensor epoxy side) for housing HP58 and HP58SE (*for SIDE EXIT use modifier 31*)
- J1939 Output** - Addressing via varying value resistor in connection requires at least five conductors (*M12, DE6 and Cables addressing compatible*)
- All Outputs w/ Deutsch** - DE4 and DE6 connection Deutsch connectors add \$20 to HP58 list



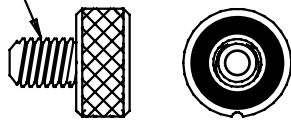
HP58 DIMENSIONS & GENERAL PIN OUTS DIMENSIONS 1 OF 2

MAGNET NOTE:

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

STANDARD MAGNET

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



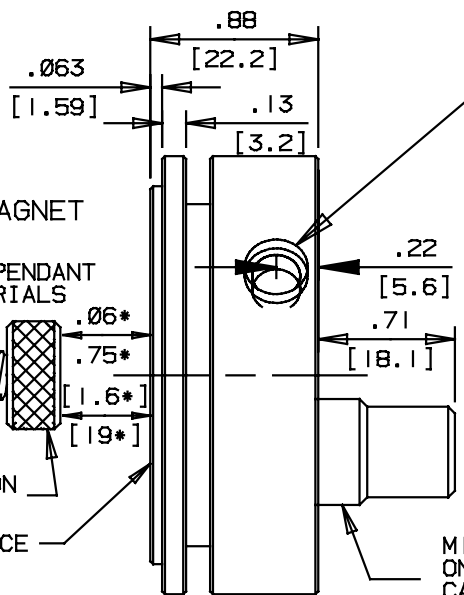
HOUSING/INSTALL NOTES:

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

NON-MAGNETIC MOUNT MATERIAL, MAY BE SOLID

MOUNT WITH 316 STAINLESS STEEL 4-40 SCREWS

OPTIONAL CABLE SIDE OUTLET
 CABLE WITH FLYING LEADS
 OR CABLE WITH M12-5



ALLOWED MAGNET DISTANCE

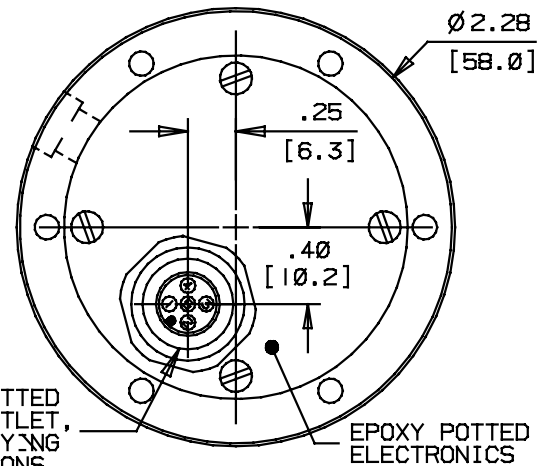
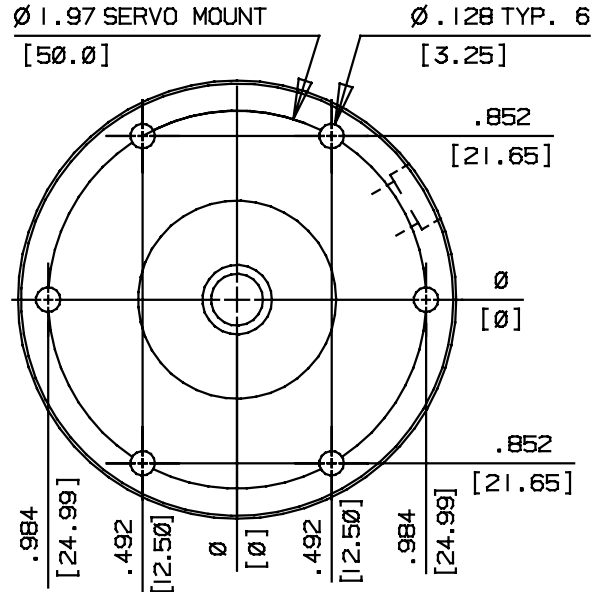
* DISTANCE DEPENDANT ON MOUNT MATERIALS

APPLICATION MAGNET

SENSOR FACE

M12-5P OMITTED ON SIDE OUTLET, CABLE & FLYING LEAD VERSIONS.

SENSOR FACE



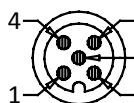
DT04-4P MALE FACE VIEW



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



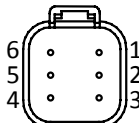
M12-5P/CABLE/FLYING LEAD QUADRATURE OUTPUT

- 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

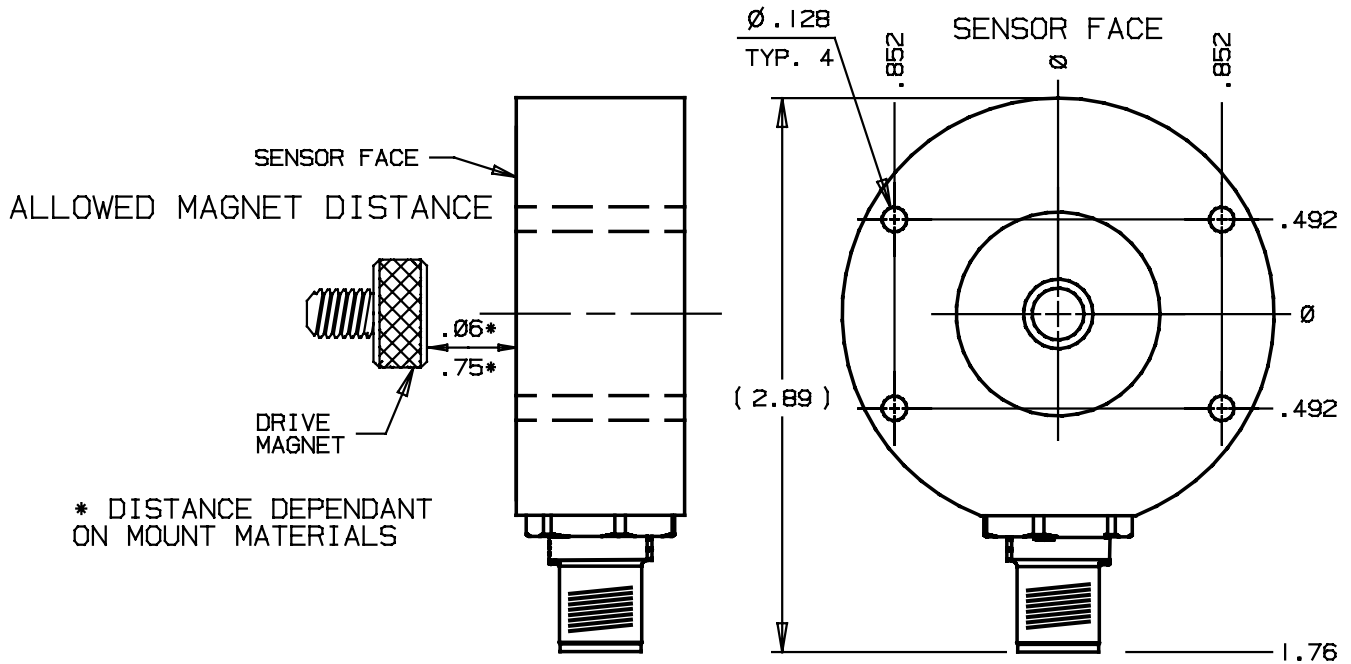
M12-5P AND 5 CONDUCTOR CABLE J1939 OUTPUT

- 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



HP58SE DIMENSIONS & GENERAL PIN OUTS DIMENSIONS 2 OF 2



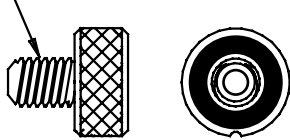
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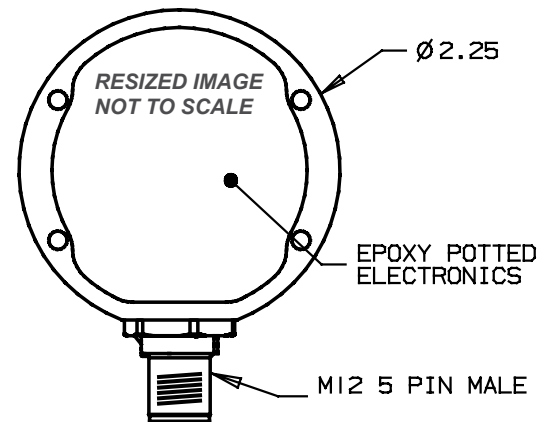


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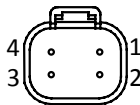
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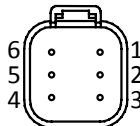
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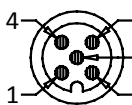
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M12-5P MALE FACE VIEW



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