



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

ELECTRICAL

Outputs	A-PPR-SEPP	Incremental 13 bit Quadrature w/ Single Ended Output
	A-PPR-DIPP	Incremental 13 bit Quadrature w/ Differential Output
	A - 1939	J1939 13 bit @ 1000 positions
	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 (code V3 for 2x redundant output)
	V2	Voltage Out / 6-36 VDC IN, 0-5 VDC OUT
	I1	Current Out / 0-24 VDC IN, 4-20 mA OUT (code I2 for 2x redundant output)
	Input Power	6 to 30 VDC at approx 60 mA max, not including output loads
Electrical Protection		
Over-voltage, reverse-voltage, output short-circuit protected		
LED Indicators		
Power and output channels		
Connections		
Terminal Plug, M8, M12, M12 Pigtail, Flying Lead Cable, Shielded Cable, Deutsch (4 or 6 pin)		
Resolution		
0.3°		
Repeatability		
0.30%		
Nonlinearity		
< 1%		

MECHANICAL

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

Housing Diameter	58mm
Housing Material	Black Delrin (standard) or White Delrin (HP58SE Red Aluminum)
Housing Height	0.75" body; 1.5" w/ M12 connector
Mounting	60.128 mounting holes
Weight	2.6 oz
Magnet / sensor gap*	Standard 12MM; Custom Mag Assembly > 30mm
Rated planar tilt / axial gap*	Planar 30°(Max 45°) / Axial 0.1" (2.5mm)(Max 0.16" [4mm])

ENVIRONMENTAL

Operating Temperature	-30° to +80° C
Storage Temperature	-40° to +90° C
Humidity	100%
Shock	400g/6ms (MIL STD 202)
Vibration	5 to 3000 Hz, 20g (MIL STD 202)
Protection Class	IP69K (connection dependent)

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

Special Part Number Information

Code 1: Housing Style

- **HP58 = Black Delrin** / Handles **ALL back exit** connections and **CABLE ONLY side exit** connections. For side exit cable on HP58 append part number with special code 31 (available cable connection codes M12P, CXX, SCXX, DE4, & DE6).
- **HP58SE = Red Aluminum** / Handles **ALL back exit** and **ALL side exit connections** (including M12 leaded side exit). To designate back exit connection (epoxy side) on HP58SE add special code '33' to end of Joral P/N.

Code 2: MagElec

(A-____-SEPP) or (A-____-DIPP)	A-1939	A-Mod1	V1, V2, I1 (Analog MagElec P/N Guide)
• Enter quadrature PPR in place of ____ • A = 13 bit PPR • Available 13 PPR: 0008, 0010, 0016, 0020, 0025, 0032, 0040, 0050, 0064, 0080, 0100, 0125, 0128, 0200, 0250, 0256, 0400, 0500, 0512, 1024, 2048	• Standard J1939 output is 1000 positions • For 8192 positions (max resolution) add special code 90 to the end of PE30 P/N	• Standard MOD1 output is 8192 positions • For 1000 positions (max resolution) add special code 91 to the end of HP58 P/N	• First select MagElec code (V1, V2, or I1) then Angle Range (A1-A2), Voltage Range (V1-V2) and Signal Direction (Clockwise [CW] or Counterclockwise [CCW]) • Formula Example: (MagElec)-(A1-A2)-(V1-V2)-(CW or CCW) • Exact Part Number Examples: 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

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 Cable connections are resistor addressing compatible)
- **All Outputs - DE4 and DE6** Deutsch connectors add \$20 to HP58 list

MAGNET NOTE:

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

STANDARD MAGNET

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

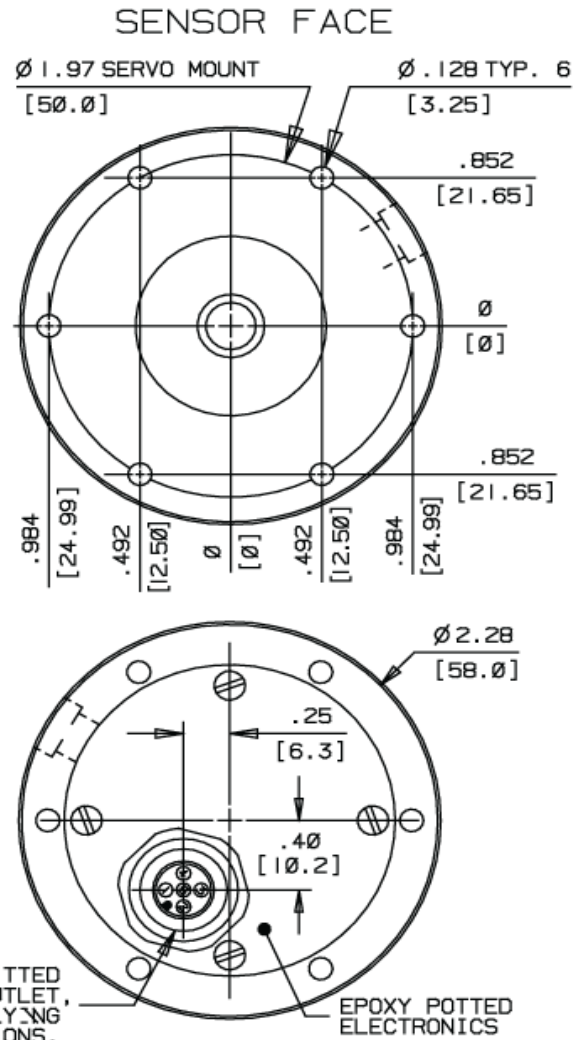
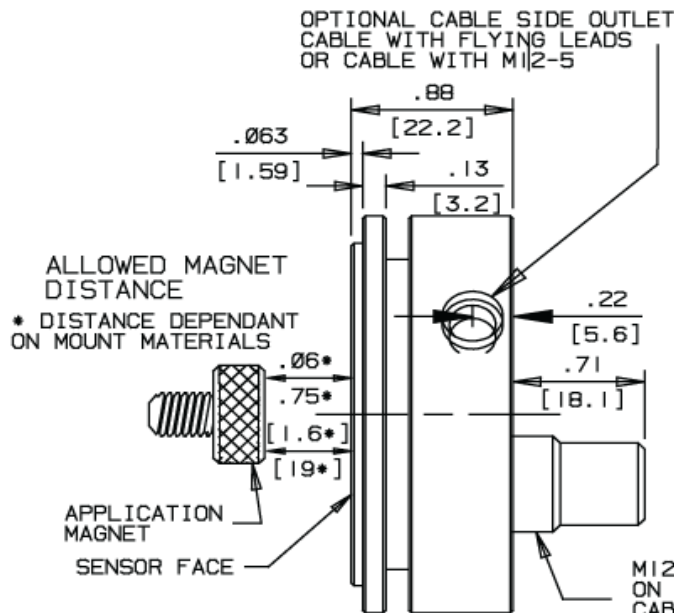


HOUSING/INSTALL NOTES:

MAGNET MOUNT MATERIALS MUST HAVE Ø1.0 [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

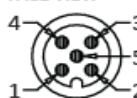
DT04-6P MALE FACE VIEW



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 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 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

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

Dimensions informative only
For most recent dimensions please consult factory