

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

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|-----------------------|--|---|
| 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 / 0-5 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.

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|---------------------------------------|---|
| 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

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|------------------------------|----------------------------------|
| 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) |
| Rating | IP69K (connection dependent), CE |

| | Code 1: Housing Style | Code 2: MagElec | Code 3: Connection | Code 4: Modifiers | |
|-------------|--|-----------------|--------------------------------|---|--|
| ORDER TABLE | 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 aluminum | |
| | HP58SE Standard Functionality, Side Exit Connector | B-PWM | Absolute Position PWM | 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

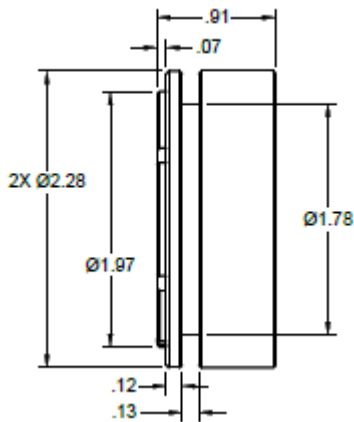
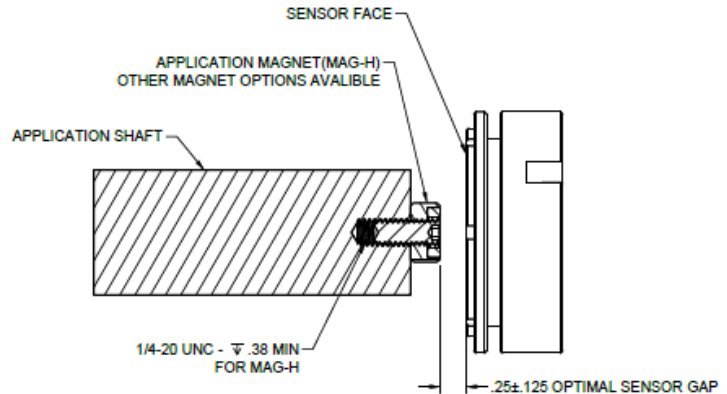
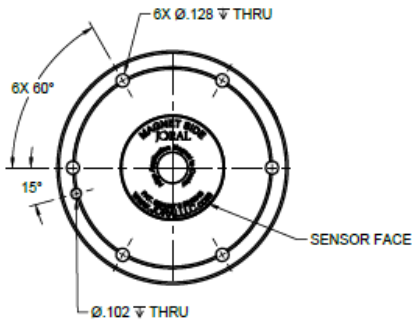
- **HP58 = Black Delrin** / Handles **ALL back exit** connections and **CABLE ONLY side exit** connections. For side exit cable on HP58 append part number with special code 31 (available cable connection codes M12P, CXX, SCXX, DE4, & DE6).
- **HP58SE = Red Aluminum** / Handles **ALL back exit** and **ALL 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) <ul style="list-style-type: none"> • 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 | A-1939 <ul style="list-style-type: none"> • Standard J1939 output is 1000 positions • For 8192 positions (max resolution) add special code 90 to the end of PE30 P/N | A-Mod1 <ul style="list-style-type: none"> • Standard MOD1 output is 8192 positions • For 1000 positions (max resolution) add special code 91 to the end of HP58 P/N | V1, V2, I1 (Analog MagElec P/N Guide) <ul style="list-style-type: none"> • 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 Example HP58-V1-0-360-.5-4.5-CW-C72 HP58-V2-0-180-270-0-5-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



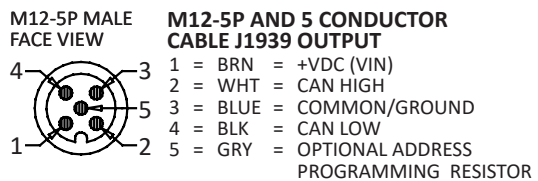
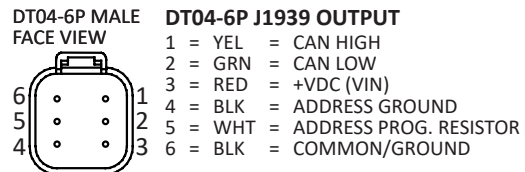
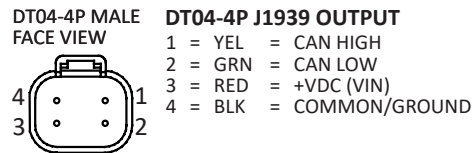
INTERFACE DETAILS AND NOTES:

1. APPLICATION SHAFT Ø.375" MINIMUM WHEN USING MAG-H APPLICATION MAGNET. TAP 1/4-20 A MINIMUM DEPTH OF .375".
2. 0.25" SENSOR GAP DISTANCE IS OPTIMAL FOR NORMAL INSTALLATION. THIS IS DEPENDENT ON MOUNT AND MATERIALS.

GENERAL PIN OUTS



FRONT DETAIL VIEW



*Dimensions informative only
For most recent dimensions please consult factory*