PE30 Non-Contact Rotary Position Sensor

- Extremely compact, J1939 capable
  - Shell body 1.2” (30.5mm) tall w/o connector
- 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

ELECTRICAL

Outputs	**A-PPR-SEPP :** Incremental 13 bit Quadrature w/ Single Ended Output | ABZ
	A-PPR-DIPP : Incremental 13 bit Quadrature w/ Differential Output | ABZ & A’B’Z’
	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.*

Housing Diameter	30mm
Housing Material	Aluminum or Stainless Steel (corrosion resistant)
Housing Height	1.2” (30.5mm) body; 1.86” (47.2mm) w/ M12 connector
Mounting	*30mm thread (standard proximity switch thread style)*
Weight	1.0 oz w/o mounting nuts; 2.2 oz w/ recommended mounting nuts
Magnet / sensor gap	Standard 0.5” (12mm)(Max w/ custom mag assembly up to 1” [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	
PE30 PE30 red aluminum, For stainless steel housing add **special code 54** to Joral P/N.	**A-____-SEPP**	13 bit single ended quadrature	**TRM**	Pluggable terminal block	**51**	Red Aluminum
	A-____-DIPP	13 bit differential quadrature	**INS**	Wire insertion terminal	**53**	Black Aluminum
	A - 1939	13 bit J1939 @ 1000 counts	**M8**	M8 male	**54**	Stainless Steel
			M12	M12 male	**61**	Extended Thread
			M12P	M12 male on 18' pigtail	**71**	Roller
			CXX	Flying lead cable (enter XX as inches)	**72**	Spindle
Modifier Extended Thread: Special Code - 61 Extended thread on PE30 housing increases available thread length by 0.5" (12.7mm).	**B-PWM**	Absolute Position PWM	**SCXX**	Shielded Cable (enter XX as inches)	**90**	13 bit @ 8192 counts per rotation
	A-SSI1	Absolute position SSI @8192 positions	**CSP**	Cable with custom end		
	V1	5 VDC IN, 0-5 VDC OUT	**DE4**	DT04 - 4 pin male Deutsch		
**More outputs and connection options available, contact Joral if desired configuration is not listed*	**V2**	6-36 VDC IN, 0-5 VDC OUT	**DE6**	DT06 - 6 pin male Deutsch		
	I1	0-24 VDC IN, 4-20 mA OUT				

SPECIAL PART NUMBER INFORMATION

Code 1: Housing Style

- **Modifier 54** - PE30 Stainless steel housing for corrosive applications.
- **Modifier 61** - Add 61 to P/N for extended thread. Standard shell length w/o M12 1.2" (30mm), Extended length w/o M12 1.7" (43mm). Code 61 adds 0.5" (12.7mm) length to thread for more access in threaded mounting.

Code 2: MagElec

(A-____-SEPP) or
(A-____-DIPP)

- 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

- Standard J1939 output is 1000 positions
- A = 13 bit
- **MODIFIER 90** - for 8192 positions (max resolution) add code 90 to end of PE30 P/N

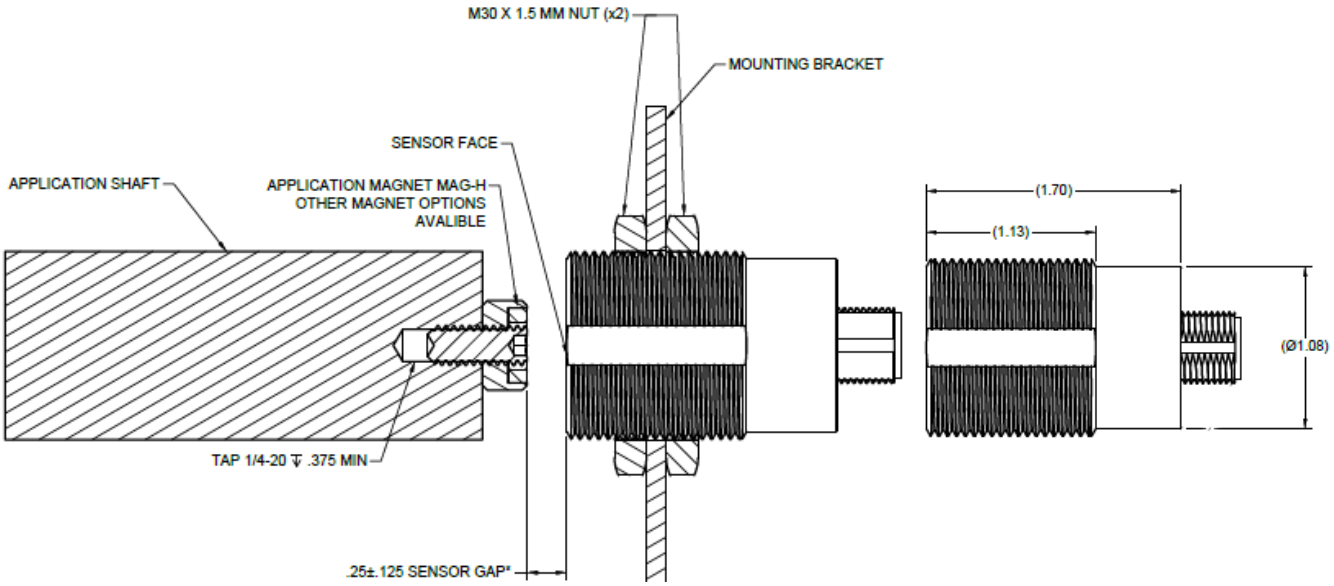
V1, V2, I1 (Analog MagElec P/N Guide)

- 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

PE30-V1-0-360-.5-4.5-CW-C72
PE30-V2-0-180-270-0-5-CCW-DE4
PE30-I1-0-180-4-20-CW-M12

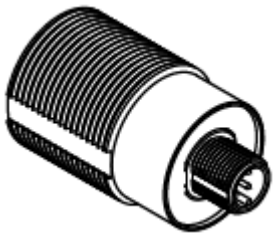
Code 3: Connections

- **All Outputs, All Connections** - Connector exit back exit only (sensor epoxy side) for housing style PE30
- **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 PE30 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 DEPENDNT ON MOUNT AND MATERIALS.



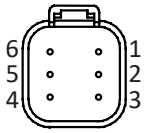
GENERAL PIN OUTS

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

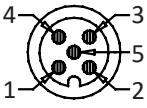
DT04-6P MALE
FACE VIEW



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 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