

PE30 Prox Encoder™ 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



STANDARD OPERATING CHARACTERISTICS

| ELECTRICAL | Outputs | A - PPR - SEPP | Incremental 13 bit Quadrature w/ Single Ended Output A B Z |
|---------------|--------------------------------|---|---|
| | | A - PPF - DIPP | Incremental 13 bit Quadrature w/ Differential Output A B Z & A' B' Z' |
| | A - 1939 | J1939 13 bit @1000 positions (8192 positions max) | |
| | B - PWM | PWM absolute position | |
| | A - SSI1 | SSI absolute position @8192 positions | |
| | V1 | Voltage Out / 5 VDC IN, 0-5 VDC OUT | |
| | V2 | Voltage Out / 6-36 VDC IN, 0-5 VDC OUT | |
| | I1 | Current Out / 0-24 VDC IN, 4-20 mA OUT | |
| | 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 | 30mm | |
| | Housing Material | Aluminum or Stainless Steel (<i>corrosion resistant</i>) | |
| | Housing Height | 1.2" (30.5mm) body; 1.86" (47.2mm) w/ M12 connector | |
| | Mounting | 30mm thread (<i>standard proximity switch thread style</i>) | |
| | 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 planer tilt / axial gap* | Planar 30° (Max 45°) / Axial 0.1" (2.5mm) (Max 0.16" [4mm]) | |
| | Speed | 3000 RPM max | |
| 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 (<i>connection dependent</i>) | |

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

General ordering guide found on next page (S1 ; I3 / 2)



PE30 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: PE30-A-1024-SEPP-M12-54 - Stainless Steel (PE30, modifier 54), M12 Connector (M12), 13 bit incremental quadrature @ 1024 PPR

PE30-A-1939-SC72-61 - Red aluminum (PE30, no modifier), Extended thread (modifier 61), 72" Shielded cable (SC72)

PE30-V1-0-180-0-5-CW-C72-33 - Red aluminum (PE30, no modifier), 72" Cable (C72), 0-5v out (V1) @ 0-180°, 0.5v to 4.5v out, clockwise direction (CW)

| Code 1: Housing Style | Code 2: MagElec (Sensor Output) | Code 3: Connection | Code 4: Special Codes |
|---|--|---|--|
| PE30 PE30 red aluminum, For stainless steel housing add special code 54 to Joral P/N. | A - _____ - SEPP 13 bit single ended quadrature - A B Z | TRM Pluggable Terminal block | 51 Red Aluminum |
| | | INS Wire insertion terminal | 53 Black Aluminum |
| Modifier Extended Thread: Special Code - 61 Extended thread on PE30 housing increases available thread length by 0.5" (12.7mm). | A - _____ - DIPP 13 bit differential quadrature - A B Z, A' B' Z' | M8 M8 male | 54 Stainless Steel |
| | | M12 M12 male | 61 Extended Thread |
| | A - 1939 13 bit J1939 @1000 positions | M12P M12 male on 18' pigtail | 71 Roller |
| | | CXX Flying lead cable (enter XX as inches) | 72 Spindle |
| | B - PWM Absolute position PWM | SCXX Shielded cable (enter XX as inches) | 90 13 bit @8192 counts per rotation (Typical J1939 option) |
| | | | |
| | * More outputs and connection options available, contact Joral if desired configuration is not listed | V1 5 VDC IN, 0-5 VDC OUT | CSP Cable with custom end |
| V2 6-36 VDC IN, 0-5 VDC OUT | | DE4 DT04 - 4 pin male Deutsch | |
| I1 0-24 VDC IN, 4-20 mA OUT | | DE6 DT04 - 6 pin male Deutsch | |

Special Part Number Information *Review below code sections for important P/N build 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 bit PPR:**
0008, 0010, 0016, 0020,
0025, 0032, 0040, 0050,
0064, 0080, 0100, 0215,
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 PE30 P/N

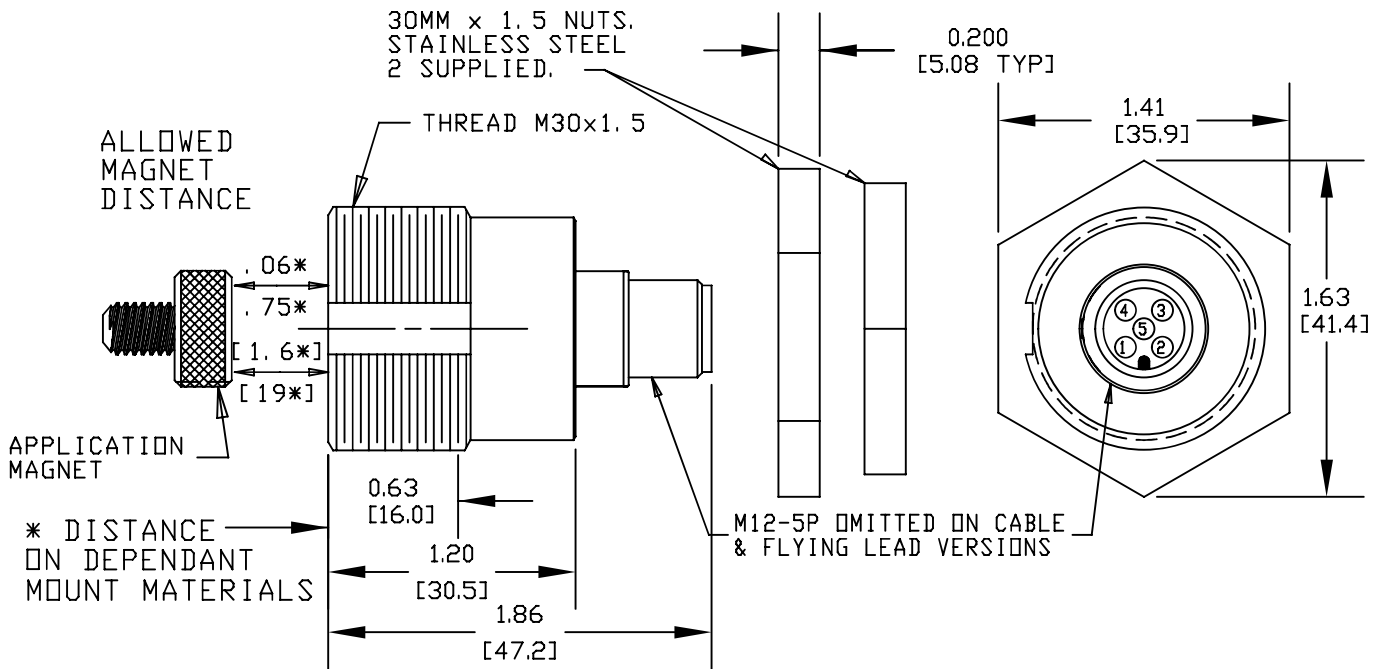
V1, V2, and I1 (Analog MagElec P/N Guide)

- First select MagElec code (**V1, V2 or I1**) then Angle Range (**A1-A2**), Voltage Range (**V1-V2**) and Signal Direction (**Clockwise [CW] or Counter [CCW]**)
- **PART NUMBER FORMULA**
(MagElec)-(A1-A2)-(V1-V2)-(CW or CCW)
- **EXACT V1, V2, and I1 EXAMPLES**
PE30 - **V1 - 0-360 - 0.5-4.5 - CW - C72**
PE30 - **V2 - 0-180 - 0-5 - CCW - DE4**
PE30 - **I1 - 180-270 - 4-20 - CW - M12**

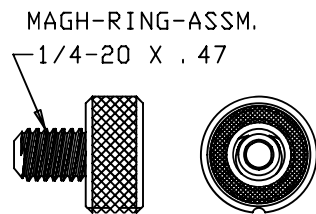
Code 3: Connections

- **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 Cables addressing compatible*)
- **All Outputs w/ Deutsch** - DE4 and DE6 connection Deutsch connectors add \$20 to PE30 list

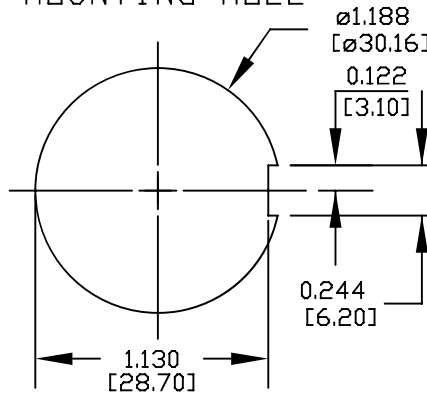
PE30 DIMENSIONS & GENERAL PIN OUTS



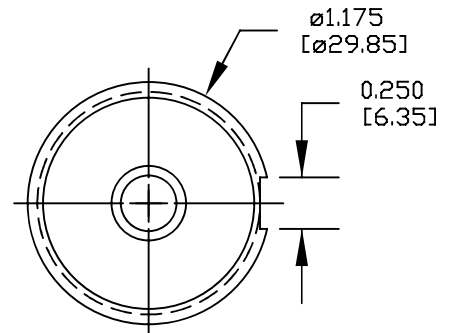
APPLICATION MAGNET



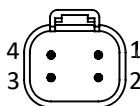
RECOMMENDED MOUNTING HOLE



SENSOR FACE



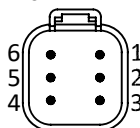
DT04-4P MALE FACE VIEW



DT04-4P J1939 OUTPUT

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

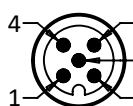
DT04-6P MALE FACE VIEW



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 = GRN = 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 = GRN = 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 = GRN = NOT USED
- *OPTION CONSULT FACTORY

Dimensions informative only
For most recent dimensions please consult factory

