

**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**

<b>ELECTRICAL</b>	<b>Outputs</b>	<b>A - [PPR] - SEPP</b> Incremental 13 bit Quadrature w/ Single Ended Output   A B Z
		<b>A - [PPR] - DIPP</b> Incremental 13 bit Quadrature w/ Differential Output   A B Z & A' B' Z'
	<b>A - 1939</b> J1939 13 bit @ 1000 positions (8192 positions max)	
	<b>B - PWM</b> PWM absolute position	
	<b>A - SSI1</b> SSI absolute position @ 8192 positions	
	<b>V1</b> Voltage Out / 5 VDC IN, 0-5 VDC OUT	
	<b>V2</b> Voltage Out / 6-36 VDC IN, 0-5 VDC OUT	
	<b>I1</b> Current Out / 0-24 VDC IN, 4-20 mA OUT	
	<b>Input Power</b> 6 to 30 VDC at approx 60 mA max, <i>not including output loads</i>	
	<b>Electrical Protection</b> Over-voltage, reserve-voltage, output short-circuit protected	
	<b>LED Indicators</b> Power and output channels	
	<b>Connections</b> Terminal Plug, M8, M12, M12 Pigtail, Flying Lead Cable, Shielded Flying Lead, or Deutsch - 4 or 6 pin	
	<b>Resolution</b> 0.3°	
	<b>Repeatability</b> 0.30%	
	<b>Nonlinearity</b> <1%	
<b>MECHANICAL</b>	<b>Housing Diameter</b>	30mm
	<b>Housing Material</b>	Aluminum or Stainless Steel ( <i>corrosion resistant</i> )
	<b>Housing Height</b>	1.2" (30.5mm) body; 1.86" (47.2mm) w/ M12 connector
	<b>Mounting</b>	30mm thread ( <i>standard proximity switch thread style</i> )
	<b>Weight</b>	1.0 oz w/o mounting nuts; 2.2 oz w/ recommended mounting nuts
	<b>Magnet / sensor gap*</b>	Standard 0.5" (12mm) ( <i>Max w/ custom mag assembly up to 1" [30mm]</i> )
	<b>Rated planer tilt / axial gap*</b>	Planar 30° ( <i>Max 45°</i> ) / Axial 0.1" (2.5mm) ( <i>Max 0.16" [4mm]</i> )
	<b>Speed</b>	3000 RPM max
<b>ENVIRONMENTAL</b>	<b>Operating Temperature</b>	-30° to +80° C
	<b>Storage Temperature</b>	-40° to +90° C
	<b>Humidity</b>	100%
	<b>Shock</b>	400g/6ms ( <i>MIL STD 202</i> )
	<b>Vibration</b>	5 to 3000 Hz, 20g ( <i>MIL STD 202</i> )
	<b>Protection Class</b>	IP69K ( <i>connection dependent</i> )

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

General ordering guide found on next page (S2 ; 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), Extended thread (modifier 61), 72" Shielded cable (SC72)

**PE30-V1-0-180-0-5-CW-C72** - Red aluminum (PE30), 72" Cable (C72), 0-5v out (V1) @ 0-180°, 0v to 5v out, clockwise direction (CW)

Code 1: Housing Style	Code 2: MagElec (Sensor Output)	Code 3: Connection	Code 4: Special Codes
<b>PE30</b> PE30 red aluminum, For stainless steel housing add <b>special code 54</b> to Joral P/N.  <b>Modifier Extended Thread: Special Code - 61</b> Extended thread on PE30 housing increases available thread length by 0.5" (12.7mm).	<b>A - - - - - SEPP</b> 13 bit single ended quadrature - A B Z	<b>TRM</b> Pluggable Terminal block	<b>51</b> Red Aluminum
	<b>A - - - - - DIPP</b> 13 bit differential quadrature - A B Z, A' B' Z'	<b>INS</b> Wire insertion terminal	<b>53</b> Black Aluminum
	<b>A - 1939</b> 13 bit J1939 @ 1000 positions	<b>M8</b> M8 male	<b>54</b> Stainless Steel
	<b>B - PWM</b> Absolute position PWM	<b>M12</b> M12 male	<b>61</b> Extended Thread
	<b>A - SSI1</b> Absolute position SSI @ 8192 positions	<b>M12P</b> M12 male on 18' pigtail	<b>71</b> Roller
	<b>V1</b> 5 VDC IN, 0-5 VDC OUT	<b>CXX</b> Flying lead cable (enter XX as inches)	<b>72</b> Spindle
	<b>I1</b> 0-24 VDC IN, 4-20 mA OUT	<b>SCXX</b> Shielded cable (enter XX as inches)	<b>90</b> 13 bit @ 8192 counts per rotation (Typical J1939 option)
<i>* More outputs and connection options available, contact Joral if desired configuration is not listed</i>	<b>V2</b> 6-36 VDC IN, 0-5 VDC OUT	<b>CSP</b> Cable with custom end	
	<b>DE4</b> DT04 - 4 pin male Deutsch	<b>DE6</b> 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, 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 PE30 P/N

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

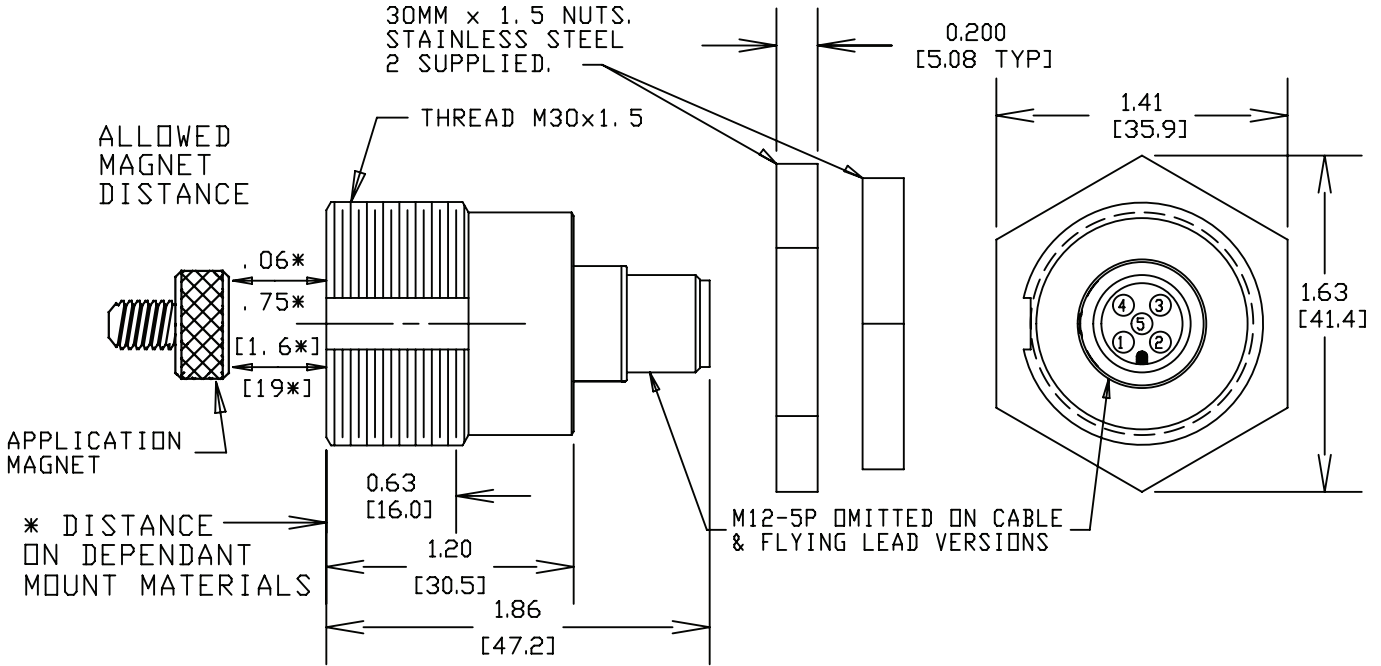
- First select MagElec code (**V1, V2 or I1**) then Angle Range (**A1-A2**), Voltage Range (**VR1-VR2**) and Signal Direction (**Clockwise [CW] or Counter [CCW]**)
- **PART NUMBER FORMULA** (MagElec)-(A1-A2)-(VR1-VR2)-(CW or CCW)
- **EXACT V1, V2, and I1 EXAMPLES**  
PE30 - **V1 - 0-360 - 0.5-4.5 - CW** - C72  
PE30 - **V2 - 0-180 - 0-5 - CCW** - DE4  
PE30 - **I1 - 180-270 - 4-20 - CW** - M12

### Code 3: Connections

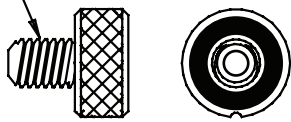
- **All Outputs, All Connections** - Connector exit back exit only (sensor epoxy side) for housing style PE30
- **J1939 Output** - Addressing via varying value resistor in connection requires at least five conductors (*M12, DE6 and Cables addressing compatible*)
- **All Outputs w/ Deutsch** - DE4 and DE6 connection Deutsch connectors add \$20 to PE30 list



**PE30 DIMENSIONS & GENERAL PIN OUTS**

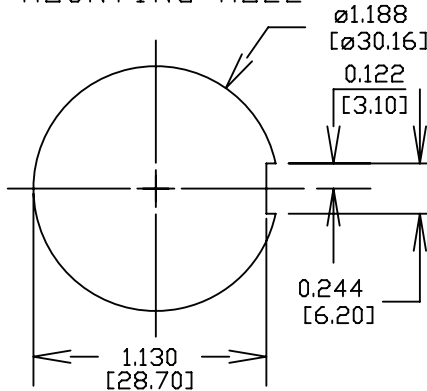


**STANDARD MAGNET**  
MAG-H-RING-ASSM.  
1/4-20 X .47

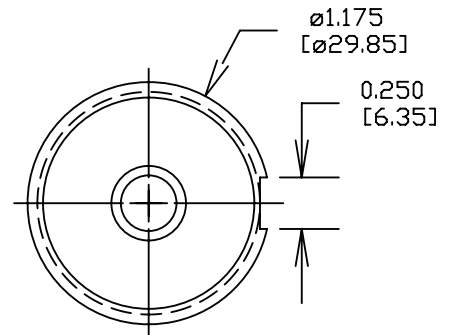


**MAGNET NOTE:**  
STANDARD MAGNET INCLUDED AS  
ACCESSORY WITH PURCHASE OF  
NON-CONTACT SENSOR

**RECOMMENDED  
MOUNTING HOLE**



**SENSOR FACE**



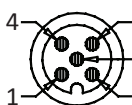
**DT04-4P MALE  
FACE VIEW**



**DT04-4P J1939 OUTPUT**

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

**M12-5P MALE  
FACE VIEW**



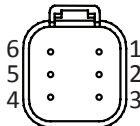
**M12-5P/CABLE/FLYING LEAD  
QUADRATURE OUTPUT**

- 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



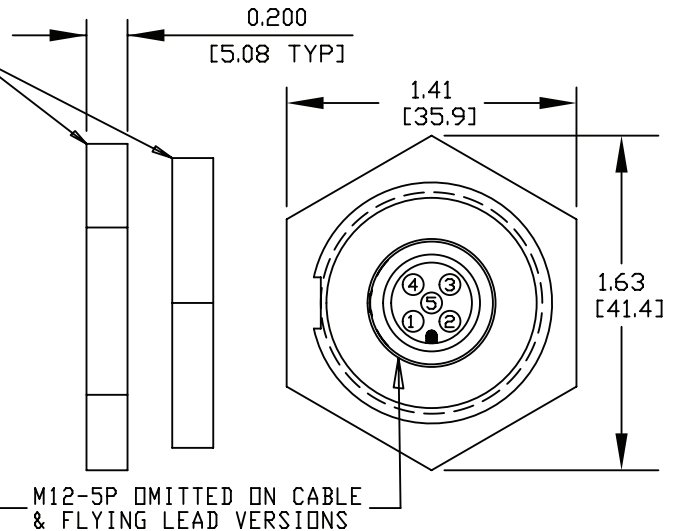
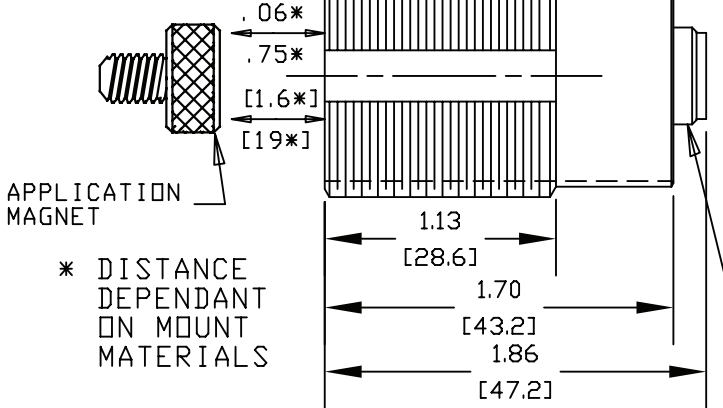
**PE30 EXTENDED THREAD DIMENSIONS & GENERAL PIN OUTS**

**NOTE:**

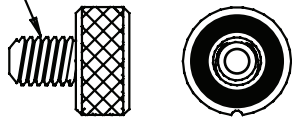
ADD 61 TO END OF PE30 P/N FOR EXTENDED THREAD

30MM x 1.5 NUTS.  
STAINLESS STEEL  
2 SUPPLIED.

ALLOWED MAGNET  
DISTANCE



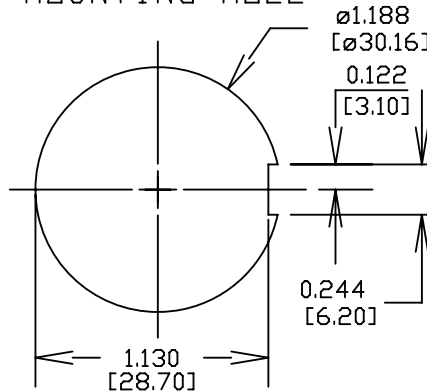
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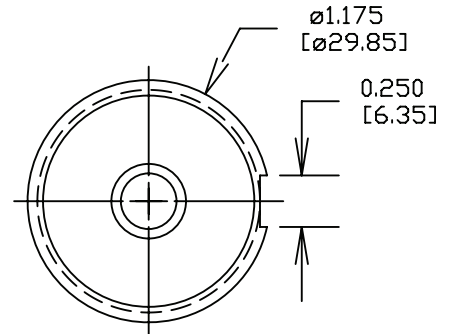
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STANDARD MAGNET INCLUDED AS ACCESSORY WITH PURCHASE OF NON-CONTACT SENSOR

RECOMMENDED  
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SENSOR FACE



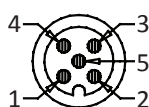
DT04-4P MALE  
FACE VIEW



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M12-5P MALE  
FACE VIEW



**M12-5P/CABLE/FLYING LEAD  
QUADRATURE OUTPUT**

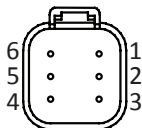
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DT04-6P MALE  
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