

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 - [PPR] - 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) (<i>Max w/ custom mag assembly up to 1" [30mm]</i>)
	Rated planer tilt / axial gap*	Planar 30° (<i>Max 45°</i>) / Axial 0.1" (2.5mm) (<i>Max 0.16" [4mm]</i>)
	Speed	3000 RPM max
ENVIRONMENTAL	Operating Temperature	-30° to +80° C
	Storage Temperature	-40° to +90° C
	Humidity	100%
	Shock	400g/6ms (<i>MIL STD 202</i>)
	Vibration	5 to 3000 Hz, 20g (<i>MIL STD 202</i>)
	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 (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	
PE30 PE30 red aluminum, For stainless steel housing add special code 54 to Joral P/N. Modifier Extended Thread: Special Code - 61 Extended thread on PE30 housing increases available thread length by 0.5" (12.7mm).	A - _____ - SEPP	13 bit single ended quadrature - A B Z	TRM Pluggable Terminal block INS Wire insertion terminal	
	A - _____ - DIPP	13 bit differential quadrature - A B Z, A' B' Z'	M8 M8 male M12 M12 male	
	A - 1939	13 bit J1939 @ 1000 positions	M12P M12 male on 18' pigtail CXX Flying lead cable (enter XX as inches)	
	B - PWM	Absolute position PWM	SCXX Shielded cable (enter XX as inches)	
	A - SSI1	Absolute position SSI @ 8192 positions		
	<i>* More outputs and connection options available, contact Joral if desired configuration is not listed</i>	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	
			51 Red Aluminum 53 Black Aluminum 54 Stainless Steel 61 Extended Thread 71 Roller 72 Spindle 90 13 bit @ 8192 counts per rotation (Typical J1939 option)	

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)

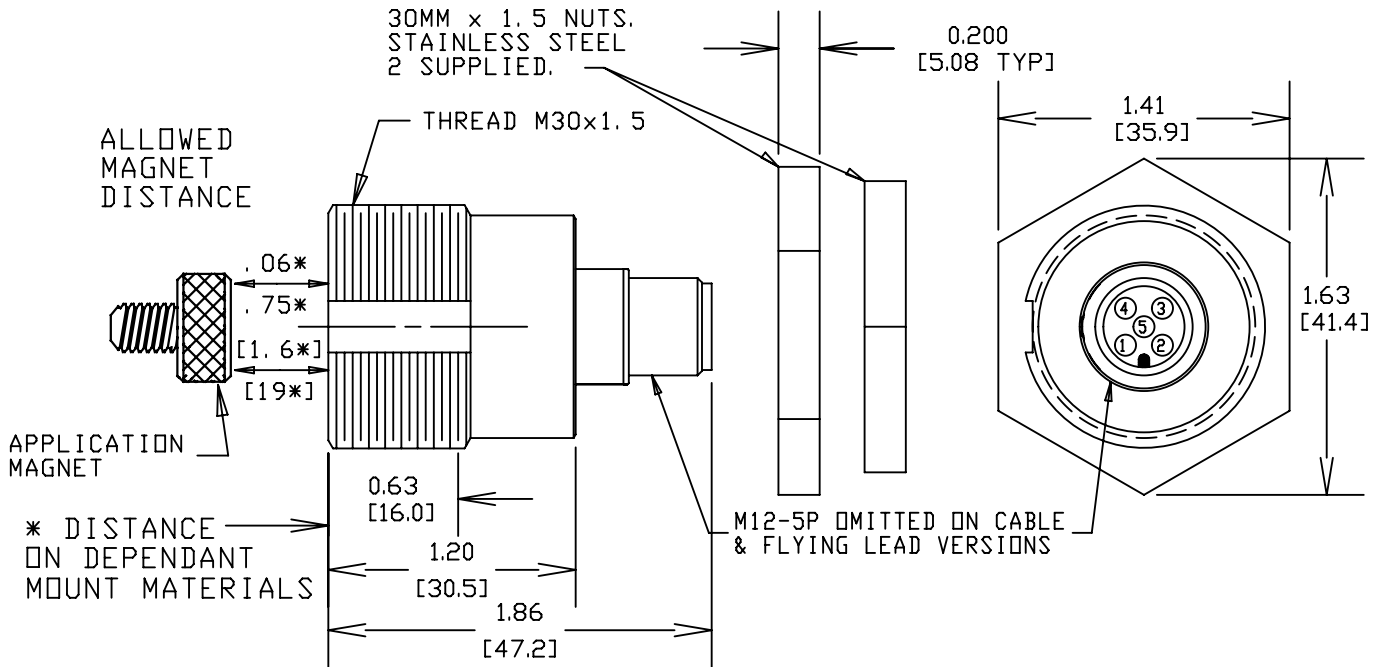
- First select MagElec code (**V1, V2 or I1**) then Angle Range (**A1-A2**), Voltage Range (**VR1-VR2**) and Signal Direction (**Clockwise [CW] or Counter [CCW]**)
- **PART NUMBER FORMULA** (MagElec)-(A1-A2)-(VR1-VR2)-(CW or CCW)
- **EXACT V1, V2, and I1 EXAMPLES**
PE30 - **V1 - 0-360 - 0.5-4.5 - CW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

Code 3: Connections

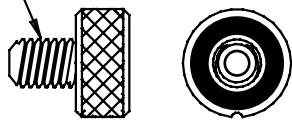
- **All Outputs, All Connections** - Connector exit back exit only (sensor epoxy side) for housing style PE30
- **J1939 Output** - Addressing via varying value resistor in connection requires at least five conductors (*M12, DE6 and Cables addressing compatible*)
- **All Outputs w/ Deutsch** - DE4 and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



PE30 DIMENSIONS & GENERAL PIN OUTS

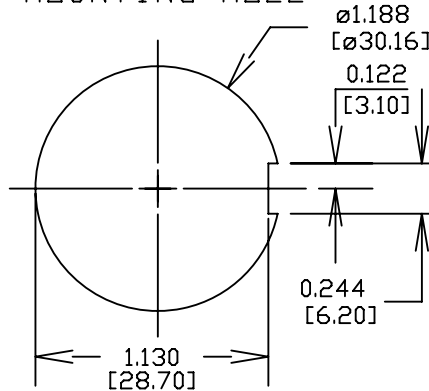


STANDARD MAGNET
MAG-H-RING-ASSM.
1/4-20 X .47

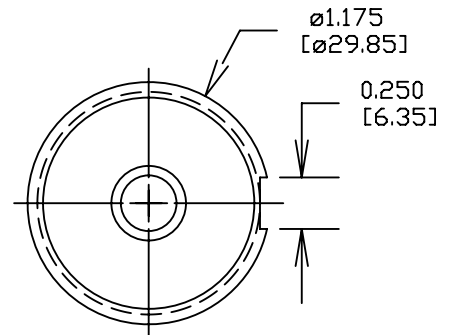


MAGNET NOTE:
STANDARD MAGNET INCLUDED AS ACCESSORY WITH PURCHASE OF NON-CONTACT SENSOR

RECOMMENDED MOUNTING HOLE



SENSOR FACE



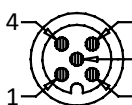
DT04-4P MALE FACE VIEW



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

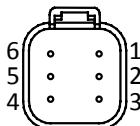
- 1 = BRN = +VDC (VIN)
- 2 = WHT = CHANNEL B
- 3 = BLUE = COMMON/GROUND
- 4 = BLK = CHANNEL A
- 5 = GRY = CHANNEL Z

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



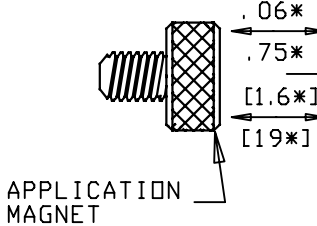
PE30 EXTENDED THREAD DIMENSIONS & GENERAL PIN OUTS

NOTE:

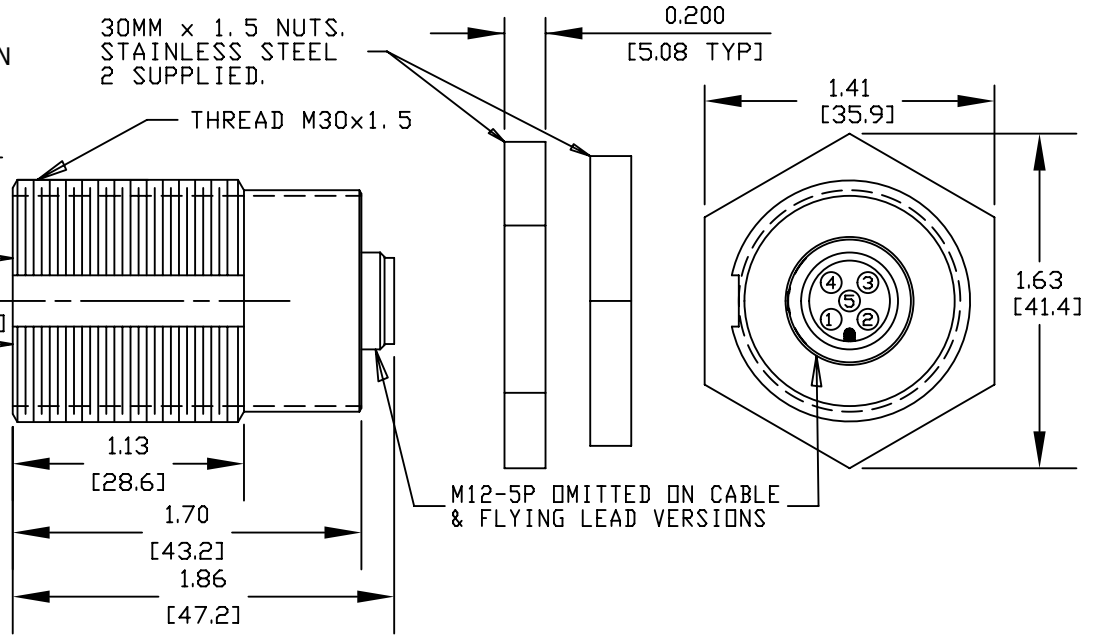
ADD 61 TO END OF PE30 P/N
FOR EXTENDED THREAD

30MM x 1.5 NUTS.
STAINLESS STEEL
2 SUPPLIED.

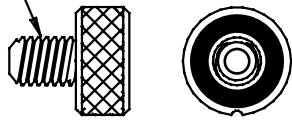
ALLOWED MAGNET
DISTANCE



* DISTANCE
DEPENDANT
ON MOUNT
MATERIALS



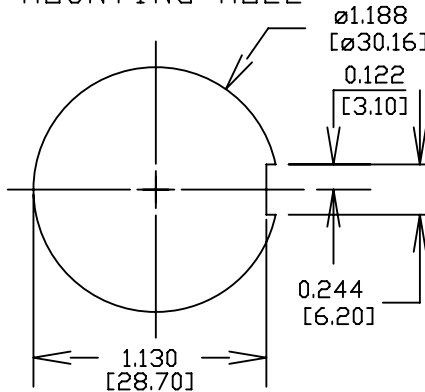
STANDARD MAGNET
MAG-H-RING-ASSM.
1/4-20 X .47



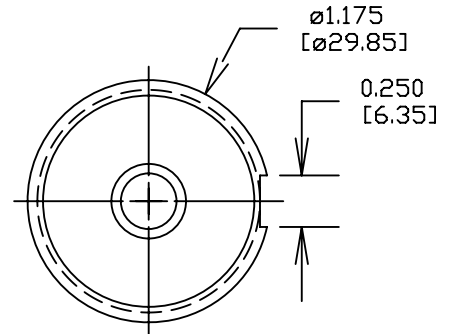
MAGNET NOTE:

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

RECOMMENDED
MOUNTING HOLE



SENSOR FACE



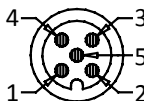
DT04-4P MALE
FACE VIEW



DT04-4P J1939 OUTPUT

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

M12-5P MALE
FACE VIEW



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

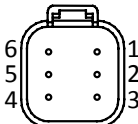
- 1 = BRN = +VDC (VIN)
- 2 = WHT = CHANNEL B
- 3 = BLUE = COMMON/GROUND
- 4 = BLK = CHANNEL A
- 5 = GRY = CHANNEL Z

**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

