



J150 Shafted Rotary Position Sensor

- 100% moisture resistant electronic package (IP67)
- Multiple shaft and connector options available
- Shaft and captive bearing package resistant to shaft push out forces, withstands extreme mechanical vibration
- LED indicators for power and output feedback
- Incremental or Absolute position
- Outputs: Quadrature, Step and Direction, SSI, PWM, Analog, Modicon MODBUS, & J1939

ELECTRICAL

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 / 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
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

Housing Diameter	50mm
Housing Material	Aluminum
Housing Height	1.53" body; 2.1" w/ M12
Mounting	Mounting holes or servo groove
Weight	6 oz
Shaft Form Factor	6mm w/ flat, Extended 6mm w/ flat, 1/4" (0.250") w/ flat, 10mm round, 3/8" slotted, Extended 3/8" slotted
Shaft Material	Non-magnetic stainless steel
Bearing Material	Dual chrome ball-bearings
Shaft 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	IP67 (connection dependent)

Code 1: Housing Style	Code 2: MagElec		Code 3: Connection		Code 4: Modifiers	
<p>J150 J150 = 50mm shafted made out of red aluminum, Connector orientation BACK EXIT only</p> <p>Modifier Flange Mount Special Code - 63 Add special code 63 to the end of J150 P/N for flange mount</p>	A-____-SEPP	13 bit single ended quadrature	TRM	Pluggable terminal block	40	1/4" (0.250") w/ flat
	A-____-DIPP	13 bit differential quadrature	INS	Wire insertion terminal	41	10mm round
	A - 1939	13 bit J1939 @ 1000 positions	M8	M8 male	42	3/8" slotted
	B-PWM	Absolute Position PWM	M12	M12 male	43	Extended 3/8" slotted
	A-MOD1	13 bit Modicon MODBUS @8192 positions	M12P	M12 male on 18' pigtail	44	Extended 6mm w/ flat
	A-SSI1	13 bit SSI @8192 positions	CXX	Flying lead cable (enter XX as inches)	45	6mm w/ flat
	V1	5 VDC IN, 0-5 VDC OUT	SCXX	Shielded Cable (enter XX as inches)	51	Red aluminum
	V2	6-36 VDC IN, 0-5 VDC OUT	CSP	Cable with custom end	53	Black aluminum
	V3	0-24 VDC IN, 4-20 mA OUT x2 redundant output	DE4	DT04 - 4 pin male Deutsch	63	Flange Mount
	I1	0-24 VDC IN, 4-20 mA OUT	DE6	DT06 - 6 pin male Deutsch	90	13 bit @8192 counts per rotation
I2	0-24 VDC IN, 4-20 mA OUT x2 redundant output			91	13 bit @ 1000 counts per rotation	
<p><i>*More outputs available, contact Joral if desired output not shown</i></p>						

SPECIAL PART NUMBER INFORMATION

Code 1: Housing Style

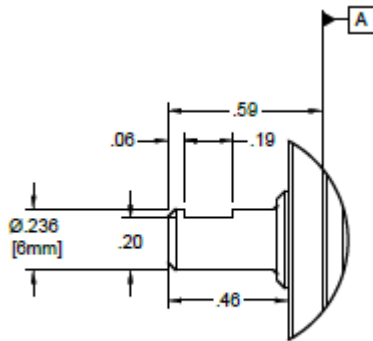
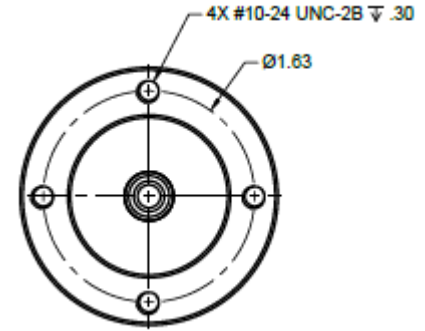
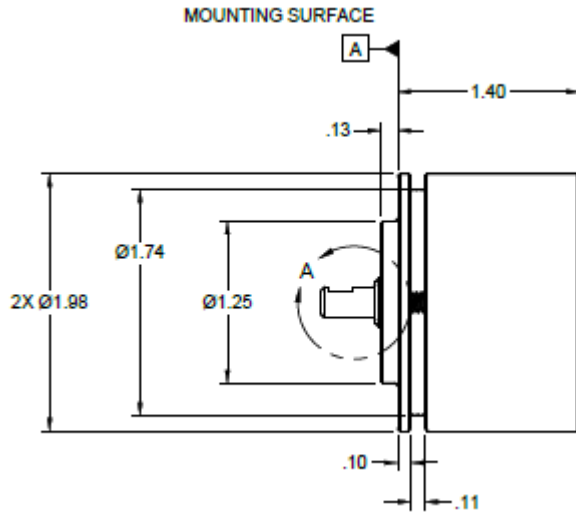
- **Modifier 63** - For flange mount add code 63 to end of Joral P/N
- **J150** - 50mm, Red aluminum / BACK EXIT connections only

Code 2: MagElec

<p>(A-____-SEPP) or (A-____-DIPP)</p> <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 	<p>A-1939</p> <ul style="list-style-type: none"> • Standard J1939 output is 1000 positions • A = 13 bit • MODIFIER 90 - for 8192 positions (max resolution) ad code 90 to end of J150 P/N 	<p>A-Mod1</p> <ul style="list-style-type: none"> • Standard MOD1 output is 8192 positions • A = 13 bit • MODIFIER 91 - for 1000 positions add code 91 to end of J150 P/N 	<p>V1, V2, I1 (Analog MagElec P/N Guide)</p> <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 Examples: J150-V1-0-360-.5-4.5-CW-C72 J150-V2-180-270-0-5-CCW-DE4 J150-I1-0-180-4-20-CW-M12
---	--	---	---

Code 3: Connections

- **All Outputs, All Connections** - Connector exit standard is BACK EXIT only (sensor epoxy side) for housing style J150
- **J1939 Output** Addressing via varying value resistor in connection requires at least five conductors (M12, DE6, and Cables addressing compatible)
- **All Outputs - DE4 and DE6** Deutsch connectors add \$20 to J150 list

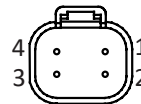


DETAIL A
SCALE 2:1



GENERAL PIN OUTS

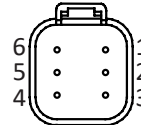
DT04-4P MALE FACE VIEW



DT04-4P J1939 OUTPUT

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

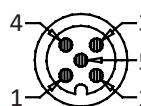
DT04-6P MALE FACE VIEW



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