J158 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 Can Bus

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 positon @ 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	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	**Housing Diameter**	58mm
	Housing Material	Aluminum
	Housing Height	1.55” body; 2.1” w/ M12
	Mounting	Mounting holes or servo groove
	Weight	8 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)*

ORDER TABLE

Code 1: Housing Style	Code 2: MagElec		Code 3: Connection		Code 4: Modifiers	
J158 J158 = 58mm shafted made out of red aluminum, Connector orientation BACK EXIT only	**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			**51**	Red aluminum
	V2	6-36 VDC IN, 0-5 VDC OUT	**SCXX**	Shielded Cable (enter XX as inches)	**53**	Black aluminum
	V3	0-24 VDC IN, 4-20 mA OUT x2 redundant output			**90**	13 bit @8192 counts per rotation
**More outputs available, contact Joral if desired output not shown*	**I1**	0-24 VDC IN, 4-20 mA OUT			**91**	13 bit @ 1000 counts per rotation
	I2	0-24 VDC IN, 4-20 mA OUT x2 redundant output	**CSP**	Cable with custom end		
			DE4	DT04 - 4 pin male Deutsch		
			DE6	DT06 - 6 pin male Deutsch		

SPECIAL PART NUMBER INFORMATION

Code 1: Housing Style

- **J158** - 58mm, Red aluminum / BACK EXIT connections only

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) ad code 90 to end of J158 P/N

A-Mod1

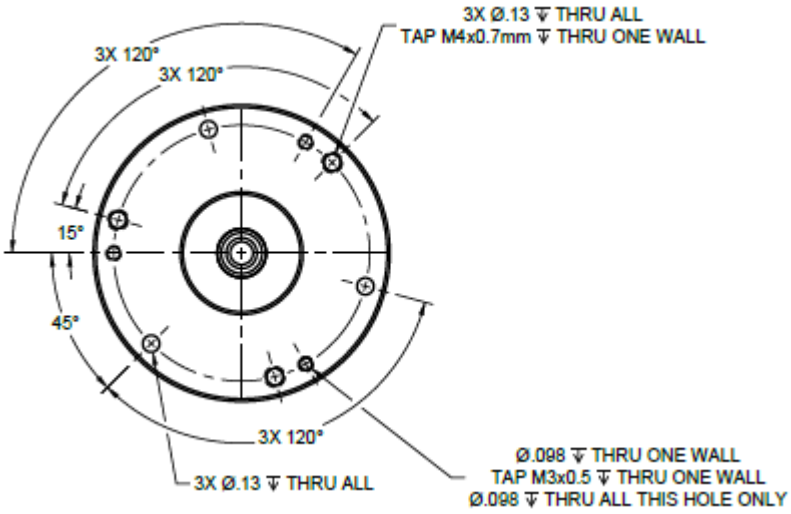
- Standard MOD1 output is 8192 positions
- A = 13 bit
- **MODIFIER 91** - for 1000 positions add code 91 to end of J158 P/N

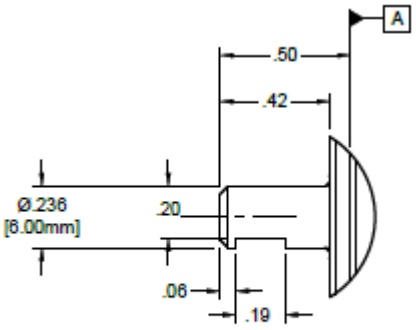
V1, V2, I1 (Analog MagElec P/N Guide)

- 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 Examples:**
  J158-**V1-0-360-.5-4.5-CW**-C72
  J158-**V2-180-270-0-5-CCW**-DE4
  J158-**I1-0-180-4-20-CW**-M12

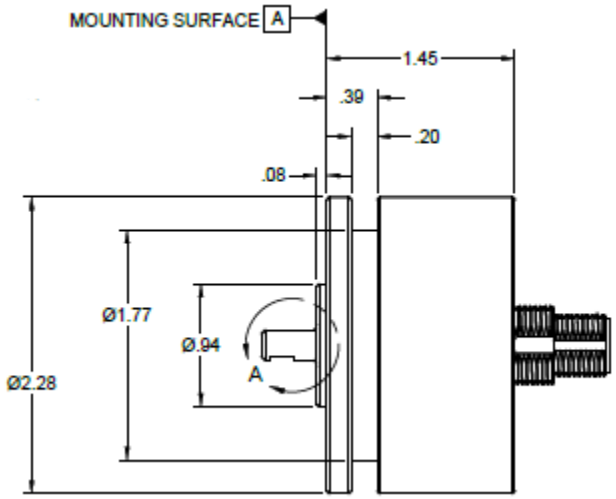
Code 3: Connections

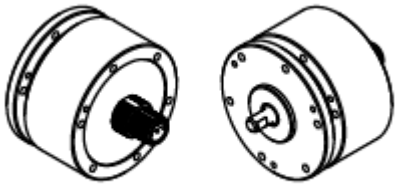
- **All Outputs, All Connections** - Connector exit standard is BACK EXIT only (sensor epoxy side) for housing style J158
- **J1939 Output** Addressing via varying value resistor in connection requires at least five conductors (M12, DE6, and Cables addressing compatible)
- **All Outputs - DE4** and **DE6** Deutsch connectors add **$20** to J158 list





DETAIL A
SCALE 2:1
OUTPUT SHAFT





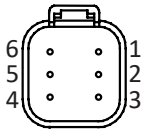
GENERAL PIN OUTS

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

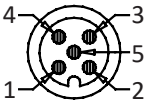
DT04-6P MALE
FACE VIEW



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