

evoARC–Dual Encoder Data Sheet



Features

- Dual axis encoding technology
- Absolute position feedback indication for 12,3,6,9 o'clock positions
- Quick release & replaceable cable
- Modular system, front wheel assembly can be swapped
- Works with existing acquisition units utilising the Lemo 1K.316 encoder socket.

Specifications

Size (L x W x H)	4.6"x 2.24"x1.38" (117mm x 57mm x 35mm)
Weight	5.92oz (168g) + Cable
Cable Length	5m (16') straight connection. 7.5m (24') & 10m (32') length, or angle connections available on request.
Power	5V
Encoder channel (LONGL)	1 (EN1)
Encoding Type (LONGL)	Quadrature A/B
Encoder channel (CIRC)	2 (EN2)
Encoding Type (CIRC)	Quadrature A/B
IP Rating	Tested to IPX6
Max. Angular Rate	180°/s
Max. Linear Rate	19,000mm/s (748"/s)
Operating Temperature	-5°F – 140°F (-15°C – 60°C)
Storage Temperature	-40°F – 185°F (-40°C – 85°C)
Shockproof Rating	Designed to MIL-STD-810G
Max. Pipe Angle from horizontal	70°– Unit will not give reliable data beyond this point.

Compatibility

- **Evident** SX, X3
- **Eddify** Mantis, **Eddify** Gekko
- Any unit using the Lemo 1K.316 standard encoder cable supporting dual quadrature encoders.

Circumferential Encoder Resolution Guideline:

Diameter (mm)	Resolution (Steps per mm) ¹	Resolution (mm) ²
60.3	76.01	0.013
88.9	51.56	0.019
114.3	40.10	0.025
168.3	27.24	0.037
323.9	14.15	0.071
610	7.51	0.13
762	6.02	0.17
900	5.03	0.20
1067	4.29	0.23

Diameter (inch)	Resolution (Steps per inch) ¹	Resolution (inch) ²
2	1931	0.00052
3	1309	0.00076
4	1019	0.00098
6	692	0.0014
12	359	0.0028
24	191	0.0052
30	153	0.0065
36	127	0.0077
42	109	0.0092

Formula:

$$\frac{\text{Steps}}{\text{mm/IN}} = \frac{4583}{\text{Diameter}_{\text{outer}}}$$

Longitudinal Encoder Resolution:

Resolution: 9.87Steps/mm

NOTE:

- 1) Circumferential encoding calibration required on pipe diameter prior to data capture.
- 2) Sensor offsets will need to be applied relative to indicated clock position.
- 3) Major Clock position indication accuracy is
 <0.28mm at 323.9mm Outer Diameter (12")
 <0.68mm at 762mm Outer Diameter (30")

Cable Specification:

PIN	Signal	Description	Level
1	NC		
2	+5VDC	Power Supply	+5VDC
3-8	NC		
9-10		Encoder 1 Quad	
11	PhB1	Encoder 2 /PhB1	TTL
12	PhB2	Encoder 2 PhB2	TTL
13-15	NC		
16	GND	Ground	0VDC

