

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)	117 x 294 x 35mm
Weight	168g + Cable
Cable Length	5m straight connection. 7.5m & 10m 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	19000mm/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 quadrature.

Circumferential Encoder Resolution Guideline:

Diameter (mm)	Resolution (Pulses per mm)	Resolution (mm)	Diameter (inch)	Resolution (Pulses per 1/8 inch)	Resolution (inch)
60.3	76.01	0.0132	2	286.48	0.0035
88.9	51.56	0.0194	3	190.99	0.0052
114.3	40.10	0.0249	4	143.24	0.0070
168.3	27.24	0.0367	6	95.49	0.0105
323.9	14.15	0.0707	12	47.75	0.0209
610	7.51	0.1331	24	23.87	0.0419
762	6.02	0.1662	30	19.10	0.0524

Formula:

$$\frac{\text{Steps}}{\text{mm}} = \frac{14400 (\text{Steps per revolution})}{\pi * \text{Diameter}_{\text{outer}}}$$

Longitudinal Encoder Resolution:

Encoder steps per revolution: 1024

Wheel Diameter: 38mm

Resolution: 9.87ticks/mm

Formula:

$$\frac{\text{Steps}}{\text{mm}} = \frac{1024 (\text{Steps per revolution})}{\pi * \text{Diameter}_{\text{Wheel}}}$$

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

