



### IXARC Absolute Rotary Encoder

### OCD-EC00B-1416-B12S-PRM



#### Interface

|                       |  |
|-----------------------|--|
| Interface             | Ethercat                                   |
| Profile               | CoE (CANopen over EtherCAT, DS-301+DS-406) |
| Diagnostics           | OptoAsic, Memory, LED                      |
| Features              | Boot-Loader, Round Axis                    |
| Transmission Rate     | 10 / 100 Mbit                              |
| Interface Cycle Time  | $\geq 62.5 \mu\text{s}$                    |
| Programming Functions | Resolution, preset, counting direction     |

#### Outputs

|               |          |
|---------------|----------|
| Output Driver | Ethernet |
|---------------|----------|

#### Electrical Data

|                             |  |
|-----------------------------|--|
| Supply Voltage              | 10 - 30 VDC  |
| Current Consumption         | $\leq 230 \text{ mA @ } 10 \text{ V DC}, \leq 100 \text{ mA @ } 24 \text{ V DC}$ |
| Power Consumption           | $\leq 2.5 \text{ W}$   |
| Start-Up Time               | $< 1 \text{ s}$  |
| Reverse Polarity Protection | Yes  |
| Short Circuit Protection    | Yes  |
| EMC: Emitted Interference   | DIN EN 61000-6-4   |
| EMC: Noise Immunity         | DIN EN 61000-6-2   |
| Electrical Lifetime         | $> 10^5 \text{ h}$   |

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### Sensor

|                       |   |
|-----------------------|---|
| Technology            | Optical   |
| Resolution Singleturn | 16 bit  |
| Resolution Multiturn  | 14 bit  |
| Multiturn Technology  | Mechanical Gearing (no Battery)                                       |
| Accuracy (INL)        | $\pm 0.0220^\circ$ (14 - 16 bit), $\pm 0.0439^\circ$ ( $\leq 13$ bit) |
| Code                  | Binary  |

### Environmental Specifications

|                            |                                    |
|----------------------------|------------------------------------|
| Protection Class (Shaft)   | IP66/IP67                          |
| Protection Class (Housing) | IP66/IP67                          |
| Operating Temperature      | -40 °C (-40 °F) - +85 °C (+185 °F) |
| Storage Temperature        | -40 °C (-40 °F) - +85 °C (+185 °F) |
| Humidity                   | 98% RH, no condensation            |

### Mechanical Data

|                                     |  |
|-------------------------------------|--|
| Housing Material                    | Steel  |
| Housing Coating                     | Wet coating (RAL 9006 White Aluminium) + Cathodic corrosion protection (>720 h salt spray resistance)    |
| Flange Type                         | Blind Hollow, $\varnothing$ 58 mm (B)  |
| Flange Material                     | Aluminum   |
| Shaft Type                          | Blind Hollow, Depth = 30 mm  |
| Shaft Diameter                      | $\varnothing$ 12 mm (0.47")  |
| Shaft Material                      | Stainless Steel V2A (1.4305, 303)  |
| Rotor Inertia                       | $\leq 30 \text{ gcm}^2$ [ $\leq 0.17 \text{ oz-in}^2$ ]  |
| Friction Torque                     | $\leq 5 \text{ Ncm}$ @ 20 °C, (7.1 oz-in @ 68 °F)  |
| Max. Permissible Mechanical Speed   | $\leq 3000 \text{ 1/min}$  |
| Shock Resistance                    | $\leq 100 \text{ g}$ (half sine 6 ms, EN 60068-2-27)   |
| Permanent Shock Resistance          | $\leq 10 \text{ g}$ (half sine 16 ms, EN 60068-2-29)   |
| Vibration Resistance                | $\leq 10 \text{ g}$ (10 Hz - 1000 Hz, EN 60068-2-6)  |
| Length                              | 98,5 mm (3.88")  |
| Weight                              | 380 g (0.84 lb)  |
| Maximum Axial / Radial Misalignment | Static $\pm 0.3 \text{ mm}$ / $\pm 0.5 \text{ mm}$ ; Dynamic $\pm 0.1 \text{ mm}$ / $\pm 0.2 \text{ mm}$ |

### Electrical Connection

|                        |        |
|------------------------|--------|
| Connection Orientation | Radial |
|------------------------|--------|

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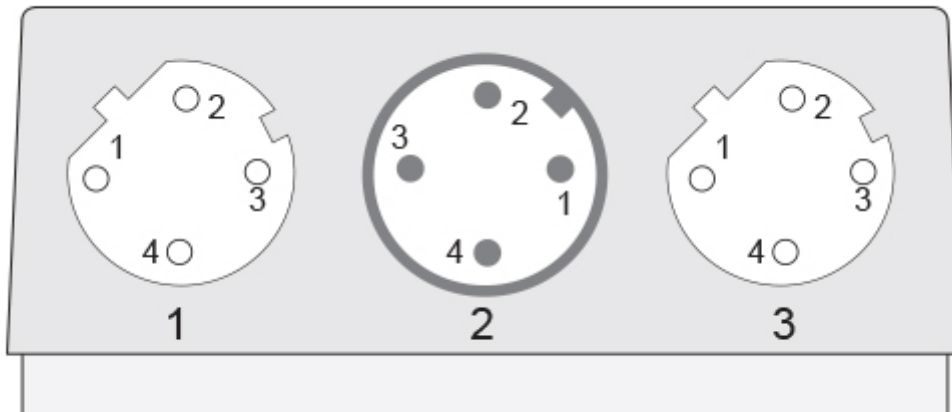
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|             |                             |
|-------------|-----------------------------|
| Connector 1 | M12, Female, 4 pin, d coded |
| Connector 2 | M12, Male, 4 pin, a coded   |
| Connector 3 | M12, Female, 4 pin, d coded |

### Product Life Cycle

|                    |             |
|--------------------|-------------|
| Product Life Cycle | Established |
| Approval           | CE          |



### Connection Plan

| SIGNAL        | CONNECTOR   | PIN NUMBER |
|---------------|-------------|------------|
| Tx+           | Connector 1 | 1          |
| Rx+           | Connector 1 | 2          |
| Tx-           | Connector 1 | 3          |
| Rx-           | Connector 1 | 4          |
| Power Supply  | Connector 2 | 1          |
| Not Connected | Connector 2 | 2          |
| GND           | Connector 2 | 3          |
| Not Connected | Connector 2 | 4          |
| Tx+           | Connector 3 | 1          |
| Rx+           | Connector 3 | 2          |
| Tx-           | Connector 3 | 3          |
| Rx-           | Connector 3 | 4          |

### Connector-View on Encoder

### Dimensional Drawing

[2D Drawing](#)

### Accessories

#### Connectors & Cables

2m PUR Cable, 4pin, D-Coded, m

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M12, 4pin A-Coded, Female  
10m PUR Cable, 4pin, D-Coded, m  
10m PVC Cable, 4pin, D-Coded, m  
2m PVC Cable, 4pin, D-Coded, m  
5m PVC Cable, 4pin, D-Coded, m  
POS M12 5pin-A Female+5m PUR Cable  
POS M12 5pin-A Female+2m PUR Cable  
POS M12 5pin-A Female+10m PUR Cable  
M12, 4pin D-Coded, Male  
M12, 5pin A-Coded, Female  
5m PUR Cable, 4pin, D-Coded, m  
More  
Clamping Rings  
Clamping Ring B15

### Contact

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