



### IXARC Absolute Rotary Encoder

**OCD-S3A1B-1416-S100-PAL**



#### Interface

|                             |                                            |
|-----------------------------|--------------------------------------------|
| Interface                   | SSI with Preset and Incr.                  |
| Optional Incremental Pulses | 1024                                       |
| Manual Functions            | Preset + complement via cable or connector |
| Interface Cycle Time        | $\geq 25 \mu\text{s}$                      |

#### Outputs

|                         |                                     |
|-------------------------|-------------------------------------|
| Output Driver           | SSI (RS422) / Incr. (RS422)         |
| Output Incremental      | A, /A, B, /B                        |
| Quadrature Phasing      | $90^\circ \pm 4.5^\circ$ electrical |
| Max. Frequency Response | 2 MHz                               |

#### Electrical Data

|                             |                         |
|-----------------------------|-------------------------|
| Supply Voltage              | 4.5 - 30 VDC            |
| Power Consumption           | $\leq 1.5 \text{ W}$    |
| Start-Up Time               | $< 250 \text{ ms}$      |
| Clock Input                 | RS 422, via Optocoupler |
| Clock Frequency             | 100 kHz - 2 MHz         |
| Reverse Polarity Protection | Yes                     |
| Short Circuit Protection    | Yes                     |
| EMC: Emitted Interference   | DIN EN 61000-6-4        |
| EMC: Noise Immunity         | DIN EN 61000-6-2        |

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|      |                    |
|------|--------------------|
| MTTF | 16.2 years @ 40 °C |
|------|--------------------|

### Sensor

|                        |                                                |
|------------------------|------------------------------------------------|
| Technology             | Optical                                        |
| Resolution Singleturn  | 16 bit                                         |
| Resolution Multiturn   | 14 bit                                         |
| Multiturn Technology   | Mechanical Gearing (no Battery)                |
| Accuracy (INL)         | ±0.0220° (14 - 16 bit), ±0.0439° (≤13 bit)     |
| Sense Signal (Default) | Clockwise shaft movement (front view on shaft) |
| Code                   | Binary                                         |
| Incremental Pulses     | 1024                                           |

### Environmental Specifications

|                            |                                    |
|----------------------------|------------------------------------|
| Protection Class (Shaft)   | IP65                               |
| Protection Class (Housing) | IP65                               |
| Operating 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                                                          | Synchro, ø 58 mm (S)                                                                                  |
| Flange Material                                                      | Aluminum                                                                                              |
| Shaft Type                                                           | Solid, Length = 20 mm                                                                                 |
| Shaft Diameter                                                       | ø 10 mm (0.39")                                                                                       |
| Shaft Material                                                       | Stainless Steel V2A (1.4305, 303)                                                                     |
| Max. Shaft Load                                                      | Axial 40 N, Radial 110 N                                                                              |
| Minimum Mechanical Lifetime (10 <sup>8</sup> revolutions with Fa/Fr) | 420 (20 N / 40 N), 145 (40 N / 60 N), 100 (40 N / 80 N), 55 (40 N / 110 N)                            |
| Rotor Inertia                                                        | ≤ 30 gcm <sup>2</sup> [≤ 0.17 oz-in <sup>2</sup> ]                                                    |
| Friction Torque                                                      | ≤ 3 Ncm @ 20 °C (4.2 oz-in @ 68 °F)                                                                   |
| Max. Permissible Mechanical Speed                                    | ≤ 12000 1/min                                                                                         |
| Shock Resistance                                                     | ≤ 100 g (half sine 6 ms, EN 60068-2-27)                                                               |
| Permanent Shock Resistance                                           | ≤ 10 g (half sine 16 ms, EN 60068-2-29)                                                               |
| Vibration Resistance                                                 | ≤ 10 g (10 Hz - 1000 Hz, EN 60068-2-6)                                                                |
| Length                                                               | 56,7 mm (2.23")                                                                                       |

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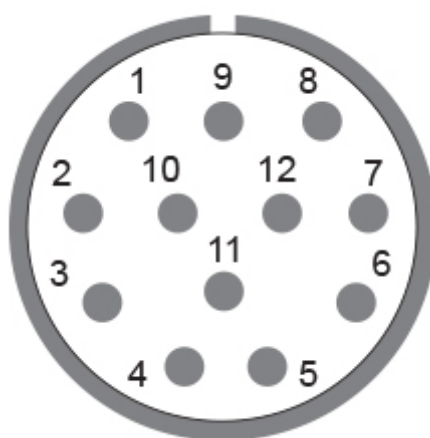
|        |                 |
|--------|-----------------|
| Weight | 285 g (0.63 lb) |
|--------|-----------------|

### Electrical Connection

|                        |                               |
|------------------------|-------------------------------|
| Connection Orientation | Axial                         |
| Connector              | M23, Male, 12 pin, CCW / left |

### Certification

|                    |                                                 |
|--------------------|-------------------------------------------------|
| Approval           | CE + cULus listed, Industrial Control Equipment |
| Product Life Cycle | Established                                     |



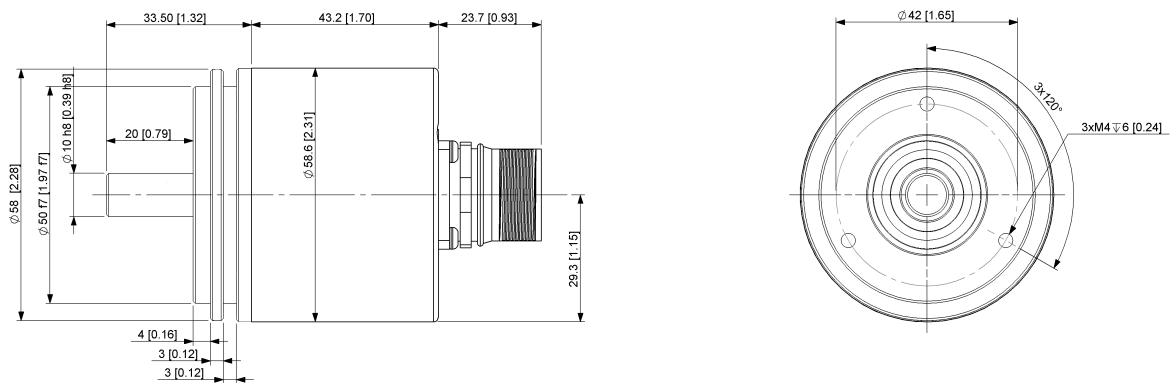
### Connection Plan

| SIGNAL       | PIN NUMBER |
|--------------|------------|
| Power Supply | 11         |
| GND          | 12         |
| Data+        | 3          |
| Data-        | 4          |
| Clock+       | 2          |
| Clock-       | 1          |
| DIR          | 8          |
| Preset       | 9          |
| A            | 5          |
| /A           | 6          |
| B            | 7          |
| /B           | 10         |
| Shielding    | Shell      |

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### Connector-View on Encoder



### [2D Drawing](#)

### Accessories

#### Connectors & Cables

10m PVC Cable, 12pin, Clockwise, f  
15m PVC Cable, 12pin, Clockwise, f  
1m PVC Cable, 12pin, Clockwise, f  
20m PVC Cable, 12pin, Clockwise, f  
5m PVC Cable, 12pin, Clockwise, f  
30m PVC Cable, 12pin, Clockwise, f  
2m PVC Cable, 12pin, Clockwise, f  
M23, 12pin Clockwise, Female  
More

Clamp Disc w/ Eccentric Hole-4pcs

Clamp Disc w/ Centred Hole-4pcs

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Coupling Disc Type-10-12  
Coupling Bellow Type-10-10  
Coupling Bellow Type-06-10  
Coupling Bellow Type-08-10  
Coupling Bellow Type-10-12  
Coupling Bellow Type-10-(1/4")  
Coupling Bellow Type-10-(3/8")  
Coupling Jaw Type-06-10  
Coupling Jaw Type-08-10  
Coupling Jaw Type-10-12  
Coupling Jaw Type-10-(1/4")  
Coupling Jaw Type-10-(3/8")  
Coupling Jaw Type-10-10  
Coupling Disc Type-06-10  
Coupling Disc Type-10-10  
More

Mounting Bracket for Synchro Flange w/ fixtures

### Contact



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The picture and drawing are for general presentation purposes only. Please refer to the "Download" section for detailed technical drawings.  
All dimension in [inch] mm. © FRABA B.V., All rights reserved. We do not assume responsibility for technical inaccuracies or omissions.  
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