



### IXARC Absolute Rotary Encoder

**OCD-S3D1B-0016-C100-2AW**



#### Interface

|                             |                                            |
|-----------------------------|--------------------------------------------|
| Interface                   | SSI with Preset and Incr.                  |
| Optional Incremental Pulses | 8192                                       |
| 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                                         |
| 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     | 8192                                           |

### Environmental Specifications

|                            |                                                                   |
|----------------------------|-------------------------------------------------------------------|
| Protection Class (Shaft)   | IP65                                                              |
| Protection Class (Housing) | IP66/IP67                                                         |
| Operating Temperature      | -30 °C fixed (-22 °F), -5 °C flexible (+23 °F) - +70 °C (+158 °F) |
| Humidity                   | 98% RH, no condensation                                           |

### Mechanical Data

|                                                                      |                                                                            |
|----------------------------------------------------------------------|----------------------------------------------------------------------------|
| Housing Material                                                     | Steel                                                                      |
| Housing Coating                                                      | Cathodic corrosion protection (>720 hrs salt spray resistance)             |
| Flange Type                                                          | Clamp, ø 58 mm (C)                                                         |
| Flange Material                                                      | Aluminum                                                                   |
| Shaft Type                                                           | Solid, Single Flat, 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) | 430 (20 N / 40 N), 150 (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                                                               | 41,7 mm (1.64")                                                            |
| Weight                                                               | 285 g (0.63 lb)                                                            |

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### Electrical Connection

|                        |                                  |
|------------------------|----------------------------------|
| Connection Orientation | Axial                            |
| Cable Length           | 2 m [79"]                        |
| Wire Cross Section     | 0.14 mm <sup>2</sup> / AWG 26    |
| Material / Type        | PVC                              |
| Cable Diameter         | 8 mm (0.31 in)                   |
| Minimum Bend Radius    | 35 mm (1.38) fixed, 70 mm (2.76) |

### Certification

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

### Connection Plan

| SIGNAL       | CABLE COLOR |
|--------------|-------------|
| Power Supply | Brown       |
| GND          | White       |
| Data+        | Gray        |
| Data-        | Pink        |
| Clock+       | Green       |
| Clock-       | Yellow      |
| DIR          | Red         |
| Preset       | Blue        |
| A            | Black       |
| /A           | Violet      |
| B            | Gray-Pink   |
| /B           | Red-Blue    |
| Shielding    | Shield      |

Connector-View on Encoder



Clamp Disc w/ Eccentric Hole-4pcs  
Clamp Disc w/ Centred Hole-4pcs

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Coupling Jaw Type-10-10  
Coupling Disc Type-06-10  
Coupling Disc Type-10-10  
More

Mounting Bracket for Clamping Flange w/ fixtures  
L Mounting Bracket w/ screws  
Mounting Bracket Spring Loaded f. Clamping Flange

### 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.  
Specifications are subject to change without notice.