

# POSITAL

## FRABA



### IXARC Absolute Rotary Encoder

OCD-S3A1G-1416-C10S-PRL



#### 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)         | $\pm 0.0220^\circ$ (14 - 16 bit), $\pm 0.0439^\circ$ ( $\leq 13$ bit) |
| Sense Signal (Default) | Clockwise shaft movement (front view on shaft)                        |
| Code                   | Gray  |
| Incremental Pulses     | 1024  |

### Environmental Specifications

|                            |                                    |
|----------------------------|------------------------------------|
| Protection Class (Shaft)   | IP66/IP67                          |
| Protection Class (Housing) | IP66/IP67                          |
| 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 spay resistance) |
| Flange Type   | Clamp, $\varnothing$ 58 mm (C)   |
| Flange Material   | Aluminum   |
| Shaft Type  | Solid, Single Flat, Length = 20 mm   |
| Shaft Diameter  | $\varnothing$ 10 mm (0.39")  |
| Shaft Material  | Stainless Steel V2A (1.4305, 303)  |
| Max. Shaft Load   | Axial 40 N, Radial 110 N   |
| Minimum Mechanical Lifetime<br>( $10^8$ 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   | $\leq 30 \text{ gcm}^2$ [ $\leq 0.17 \text{ oz-in}^2$ ]  |
| 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  | 52,7 mm (2.07")  |

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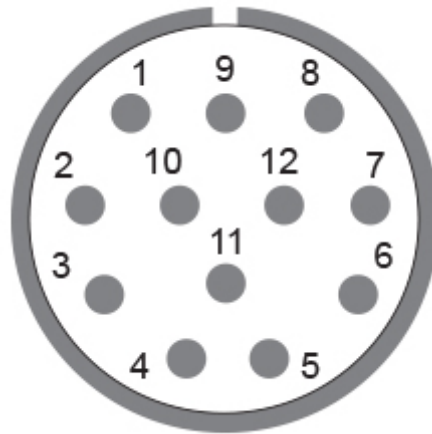
Weight 290 g (0.64 lb)

### Electrical Connection

Connection Orientation Radial  
Connector M23, Male, 12 pin, CCW / left

### Certification

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



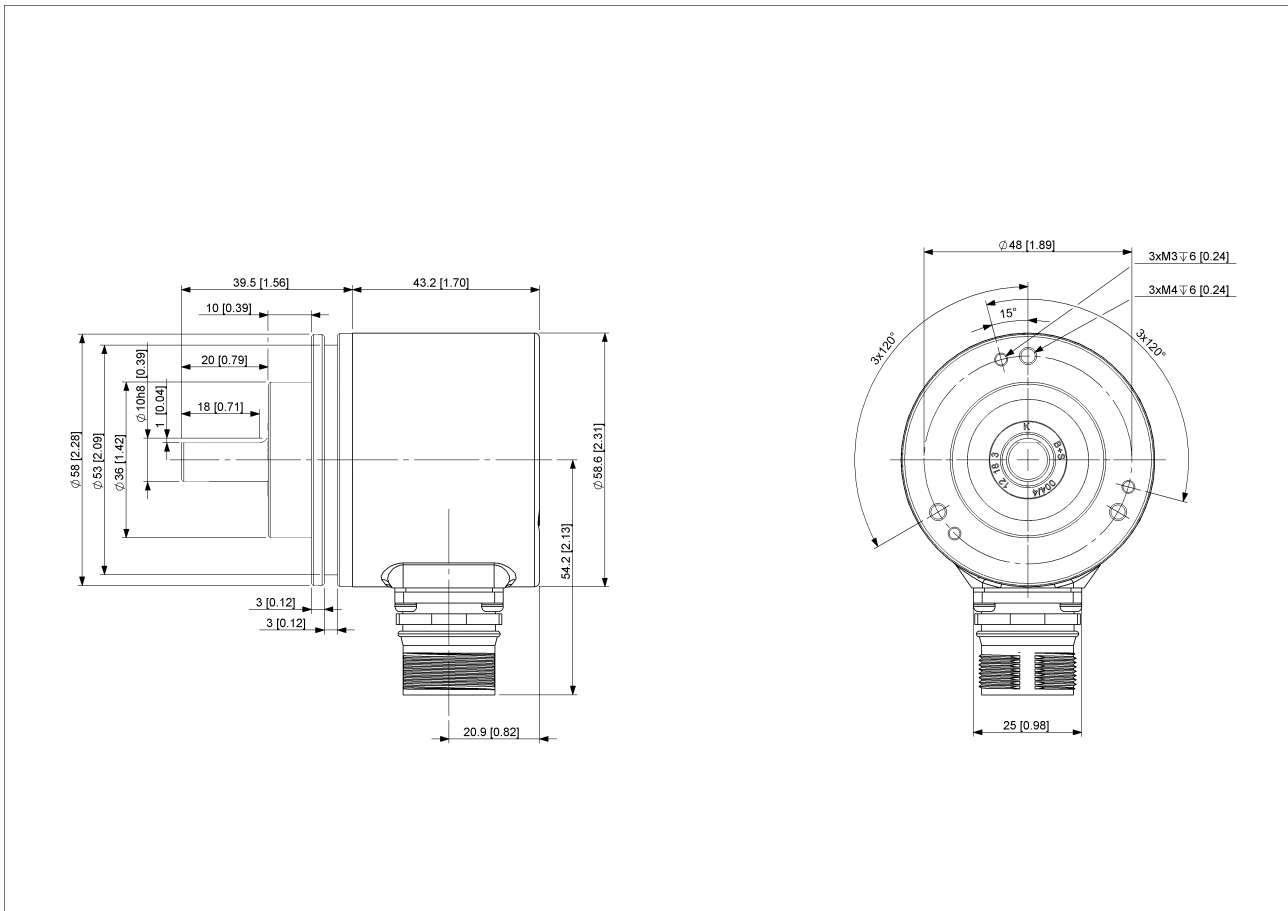
### Connection Plan

| 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 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.