



### IXARC Absolute Rotary Encoder

**OCD-S5B1G-0016-CA30-2AW**



#### Interface

|                      |                                            |
|----------------------|--------------------------------------------|
| Interface            | SSI with Preset + Incremental RS422        |
| 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, Z, /Z                 |
| 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        |
| MTTF                        | 16.2 years @ 40 °C      |

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### Sensor

|                        |                                                                       |
|------------------------|-----------------------------------------------------------------------|
| Technology             | Optical                                                               |
| Resolution Singleturn  | 16 bit                                                                |
| 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                                                                  |

### Environmental Specifications

|                            |                                                                   |
|----------------------------|-------------------------------------------------------------------|
| Protection Class (Shaft)   | IP65                                                              |
| Protection Class (Housing) | IP65                                                              |
| 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, $\varnothing$ 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                                                 | $\leq 3 \text{ Ncm}$ @ 20 °C (4.2 oz-in @ 68 °F)                           |
| Max. Permissible Mechanical Speed                               | $\leq 12000 \text{ 1/min}$                                                 |
| 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                                                          | 41,7 mm (1.64")                                                            |
| Weight                                                          | 285 g (0.63 lb)                                                            |

### Electrical Connection

|                        |           |
|------------------------|-----------|
| Connection Orientation | Axial     |
| Cable Length           | 2 m [79"] |

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|                     |                                  |
|---------------------|----------------------------------|
| 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

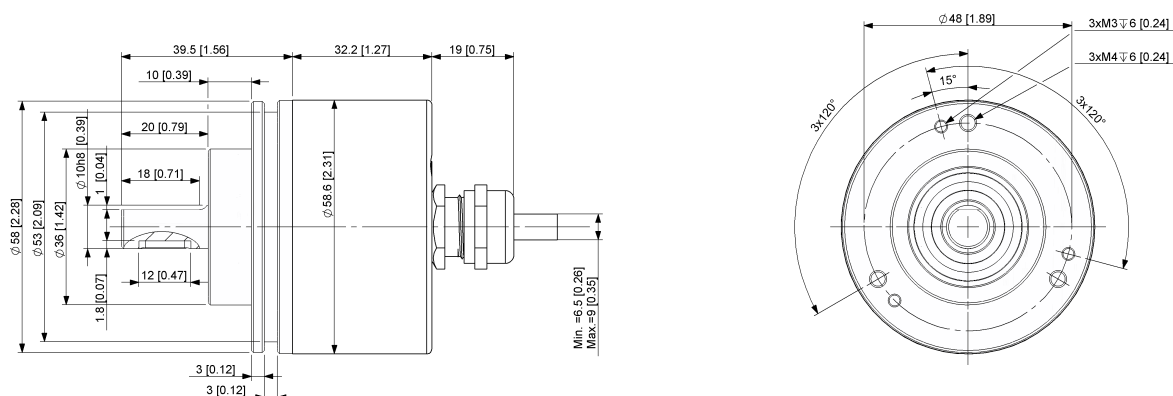
| SIGNAL       | CABLE COLOR |
|--------------|-------------|
| Power Supply | Brown       |
| GND          | White       |
| Data+        | Gray        |
| Data-        | Pink        |
| Clock+       | Green       |
| Clock-       | Yellow      |
| DIR          | Red         |
| Preset       | Blue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

Connector-View on Encoder

### Pulse Diagram



Rotation Clockwise (seen on shaft)



## 2D Drawing

### Accessories

Couplings

Coupling Disc Type-10-12

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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  
Adapter Flanges  
Mounting Bracket for Clamping Flange w/ fixtures  
L Mounting Bracket w/ screws  
Mounting Bracket Spring Loaded f. Clamping Flange  
Clamping Rings  
Clamp Disc w/ Eccentric Hole-4pcs  
Clamp Disc w/ Centred Hole-4pcs  
Displays  
AP21-00 SSI Display  
AP21-DA SSI Display (4 dig. + analog o/p)  
DiMod-P SSI Display  
Configuration/Programming Tools  
SSI2USB Adapter DB15 (VA01)

### 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.