



### IXARC Absolute Rotary Encoder

**OCD-S5A1B-0016-C100-PAP**



#### Interface

|                             |                                            |
|-----------------------------|--------------------------------------------|
| Interface                   | SSI with Preset + Incremental RS422        |
| 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, 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                   | Binary                                                                |
| Incremental Pulses     | 1024                                                                  |

### Environmental Specifications

|                            |                                    |
|----------------------------|------------------------------------|
| Protection Class (Shaft)   | IP65                               |
| 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                                                 | 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 |
|------------------------|-------|

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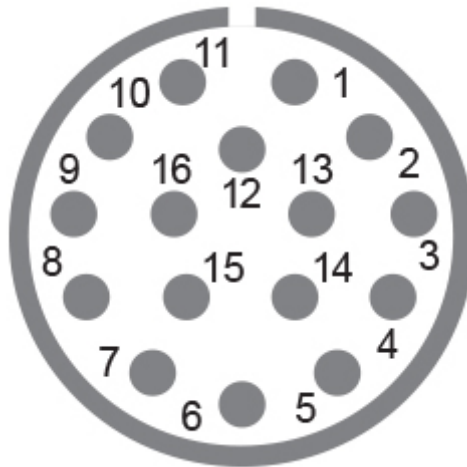
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|           |                   |
|-----------|-------------------|
| Connector | M23, Male, 16 pin |
|-----------|-------------------|

### Certification

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



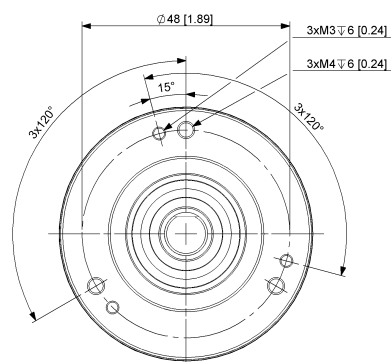
### Connection Plan

| 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         |
| Z            | 13         |
| /Z           | 14         |
| Shielding    | Housing    |

Connector-View on Encoder

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Timing diagram for the 74148 3-to-8 decoder. The diagram shows the waveforms for inputs A, B, and Z, and their complements  $\overline{A}$ ,  $\overline{B}$ , and  $\overline{Z}$ . The inputs are active-low, meaning a low level represents a '1'. The output Z is active-low, meaning a low level represents a '1'. The diagram shows the decoder's operation for the first four inputs (0-3) and the first two inputs (0-1).



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5m PVC Cable, 16pin, f  
1m PVC Cable, 16pin, f  
2m PVC Cable, 16pin, f  
10m PVC Cable, 16pin, f  
M23, 16pin, Female  
More

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

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.