



# POSITAL

## FRABA

### IXARC Absolute Rotary Encoder

#### UCD-S101G-2012-Y100-PAQ



#### Interface

|                         |                                                     |
|-------------------------|-----------------------------------------------------|
| Interface               | SSI with Preset                                     |
| Programming Functions   | Absolute: Resolution, Revolution, Code, Preset      |
| Manual Functions        | Preset + complement via cable or connector          |
| Interface Cycle Time    | $\geq 25 \mu\text{s}$                               |
| Number of Preset Cycles | 5,100,000                                           |
| SSI Format              | MMMMMMMMMMMMMMMMMMMMMMMMSSSSSSSSSSSS                |
| Video Manual            | <a href="#">▶ Watch a simple installation video</a> |

#### Outputs

|               |       |
|---------------|-------|
| Output Driver | RS422 |
|---------------|-------|

#### Electrical Data

|                             |                         |
|-----------------------------|-------------------------|
| Supply Voltage              | 4.5 - 30 VDC            |
| Current Consumption         | Typical 50 mA           |
| Power Consumption           | $\leq 1.0 \text{ W}$    |
| 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        |

Data Sheet

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|                     |                   |
|---------------------|-------------------|
| EMC: Noise Immunity | DIN EN 61000-6-2  |
| MTTF                | 350 years @ 40 °C |

### Sensor

|                        |                                                           |
|------------------------|-----------------------------------------------------------|
| Technology             | Magnetic                                                  |
| Resolution Singleturn  | 12 bit                                                    |
| Resolution Multiturn   | 20 bit                                                    |
| Multiturn Technology   | Self powered magnetic pulse counter (no battery, no gear) |
| Accuracy (INL)         | $\pm 0.0878^\circ (\leq 12 \text{ bit})$                  |
| Sense Signal (Default) | Clockwise shaft movement (front view on shaft)            |
| Code                   | Gray                                                      |

### 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                                                          | Synchro, $\varnothing$ 58 mm (Y)                                           |
| Flange Material                                                      | Aluminum                                                                   |
| Shaft Type                                                           | Solid, 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 (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                                                        | $\leq 30 \text{ gcm}^2 [\leq 0.17 \text{ oz-in}^2]$                        |
| Friction Torque                                                      | $\leq 3 \text{ Ncm @ } 20^\circ\text{C}$ (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                                                               | 56,7 mm (2.23")                                                            |

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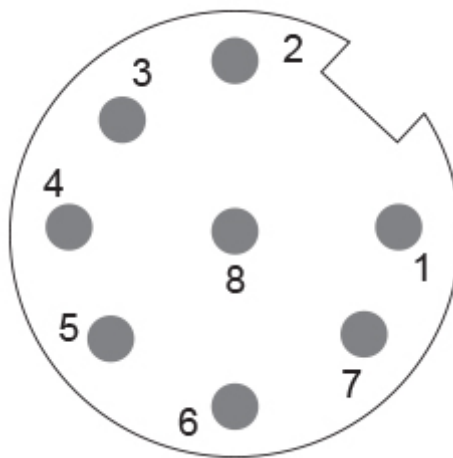
|        |                 |
|--------|-----------------|
| Weight | 285 g (0.63 lb) |
|--------|-----------------|

### Electrical Connection

|                        |                           |
|------------------------|---------------------------|
| Connection Orientation | Axial                     |
| Connector              | M12, Male, 8 pin, a coded |

### Certification

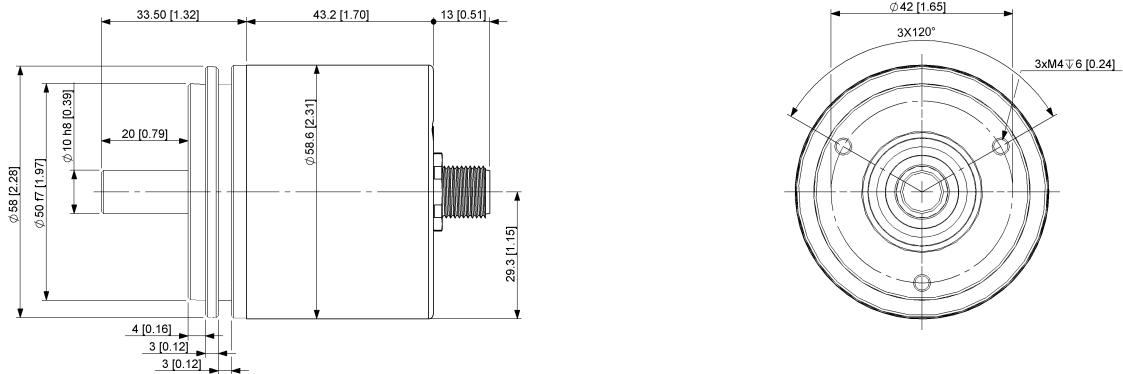
|                    |                                                 |
|--------------------|-------------------------------------------------|
| Approval           | CE + cULus listed, Industrial Control Equipment |
| Product Life Cycle | Established                                     |



### Connection Plan

| SIGNAL       | PIN NUMBER        |
|--------------|-------------------|
| Power Supply | 2                 |
| GND          | 1                 |
| Data+        | 5                 |
| Data-        | 6                 |
| Clock+       | 3                 |
| Clock-       | 4                 |
| Preset       | 7                 |
| DIR          | 8                 |
| Shielding    | Connector Housing |

Connector-View on Encoder  
Rotation Clockwise (seen on shaft)



### [2D Drawing](#)

### Accessories

#### Connectors & Cables

5m PUR Cable, 8pin, A-Coded, f  
 10m PUR Cable, 8pin, A-Coded, f  
 2m PUR Cable, 8pin, A-Coded, f  
 10m PUR Cable, 8pin, A-Coded, f  
 M12, 8pin A-Coded, 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

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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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Contact Us

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.