



# POSITAL

## FRABA

### IXARC Incremental Encoder

UCD-IPH00-00512-NA10-PAQ



#### Interface

|                       |   |
|-----------------------|---|
| Interface             | Programmable Incremental                          |
| Programming Functions | PPR (1-16384), Output, Counting Direction         |
| Configuration Tool    | UBIFAST Configuration Tool (Version $\geq$ 1.6.3) |

#### Outputs

|   |  |
|---|--|
| Output Driver                             | Push-Pull (HTL)  |
| Quadrature Phasing                        | $90^\circ \pm 4.5^\circ$ electrical  |
| Output Voltage High Level Push-Pull (HTL) | $> 4 \text{ V}$ @ 4.75-9 V Supply Voltage<br>$> V-3 \text{ V}$ @ 9-30 V Supply Voltage |
| Output Voltage Low Level Push-Pull (HTL)  | $< 0.5 \text{ V}$  |
| Output Voltage High Level RS422 (TTL)     | $> 4 \text{ V}$  |
| Output Voltage Low Level RS422 (TTL)      | $< 0.5 \text{ V}$  |
| Maximum Frequency Response                | 1 MHz  |
| Maximum Switching Current                 | 50 mA per Channel  |

#### Electrical Data

|                      |   |
|----------------------|---|
| Supply Voltage       | 4.75 - 30 VDC   |
| Current Consumption  | $\leq 140 \text{ mA}$ @ 5V DC, $\leq 70 \text{ mA}$ @ 10V DC, $\leq 40 \text{ mA}$ @ 24V DC |
| Power Consumption    | $\leq 1.0 \text{ W}$  |
| Start-Up Time        | $< 250 \text{ ms}$  |
| Min. Load Resistance | 120 $\Omega$  |

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|                             |                   |
|-----------------------------|-------------------|
| 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                        | 280 years @ 40 °C |

### Sensor

|                |   |
|----------------|---|
| Technology     | Magnetic                                  |
| Accuracy (INL) | $\pm 0.0878^\circ$ ( $\leq 12$ bit)       |
| Duty Cycle     | $180^\circ \pm 27^\circ$ (Speed > 100RPM) |
| Phase Angle    | $90^\circ \pm 14^\circ$ (Speed > 100RPM)  |

### Environmental Specifications

|                            |                                    |
|----------------------------|------------------------------------|
| Protection Class (Shaft)   | IP65                               |
| Protection Class (Housing) | IP65                               |
| Operating Temperature      | -40 °C (-40 °F) - +85 °C (+185 °F) |
| Humidity                   | 98% RH, no condensation            |

### Mechanical Data

#### Mechanical Data

|                                   |  |
|-----------------------------------|--|
| Housing Material                  | Steel  |
| Housing Coating                   | Cathodic corrosion protection (>720 hrs salt spray resistance) |
| Flange Type                       | Synchro, $\varnothing$ 58 mm (N)                               |
| Flange Material                   | Aluminum   |
| Shaft Type                        | Solid, Length = 11.5 mm  |
| Shaft Diameter                    | $\varnothing$ 6 mm (0.24")                                     |
| Shaft Material                    | Stainless Steel V2A (1.4305, 303)                              |
| Max. Shaft Load                   | Axial 40 N, Radial 110 N                                       |
| Rotor Inertia                     | $\leq 30$ gcm <sup>2</sup> [ $\leq 0.17$ oz-in <sup>2</sup> ]  |
| Friction Torque                   | $\leq 3$ Ncm @ 20 °C (4.2 oz-in @ 68 °F)                       |
| Max. Permissible Mechanical Speed | $\leq 12000$ 1/min   |
| Shock Resistance                  | $\leq 100$ g (half sine 6 ms, EN 60068-2-27)                   |
| Permanent Shock Resistance        | $\leq 10$ g (half sine 16 ms, EN 60068-2-29)                   |
| Vibration Resistance              | $\leq 10$ g (10 Hz - 1000 Hz, EN 60068-2-6)                    |
| Length                            | 43 mm (1.69")  |

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|   |  |
|---|--|
| Weight  | 180 g (0.40 lb)  |
| Minimum Mechanical Lifetime<br>(10 <sup>8</sup> revolutions with Fa/Fr) | 550 (20 N / 40 N), 195 (40 N / 60 N), 135 (40 N / 80 N), 85 (40 N / 110 N) |

### Electrical Connection

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

### Certification

|          |   |
|----------|---|
| Approval | CE + cULus listed, Industrial Control Equipment |
|----------|---|

### Product Life Cycle

|                    |             |
|--------------------|-------------|
| Product Life Cycle | Established |
|--------------------|-------------|



### Connection Plan

| SIGNAL       | PIN NUMBER        |
|--------------|-------------------|
| A            | 3                 |
| /A           | 4                 |
| B            | 5                 |
| /B           | 6                 |
| Z            | 7                 |
| /Z           | 8                 |
| Power Supply | 2                 |
| GND          | 1                 |
| Shielding    | Connector housing |

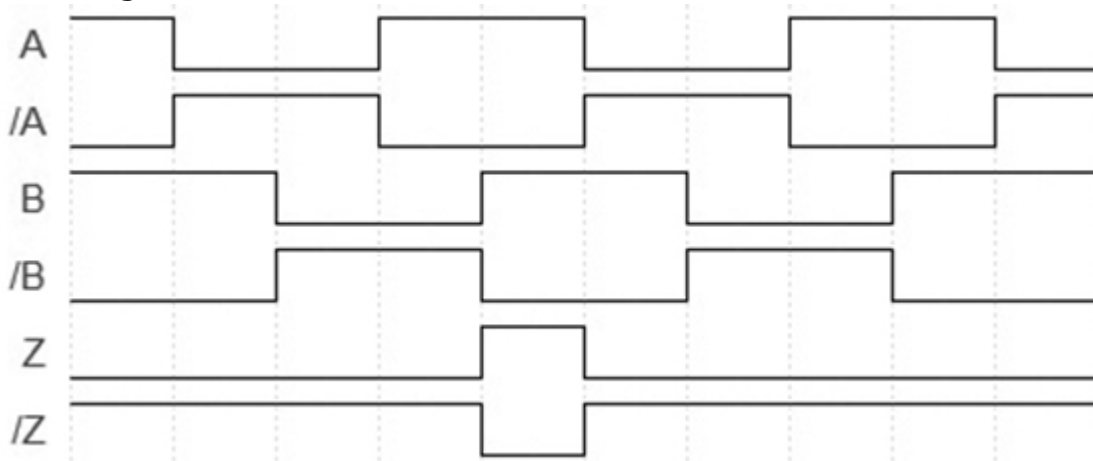


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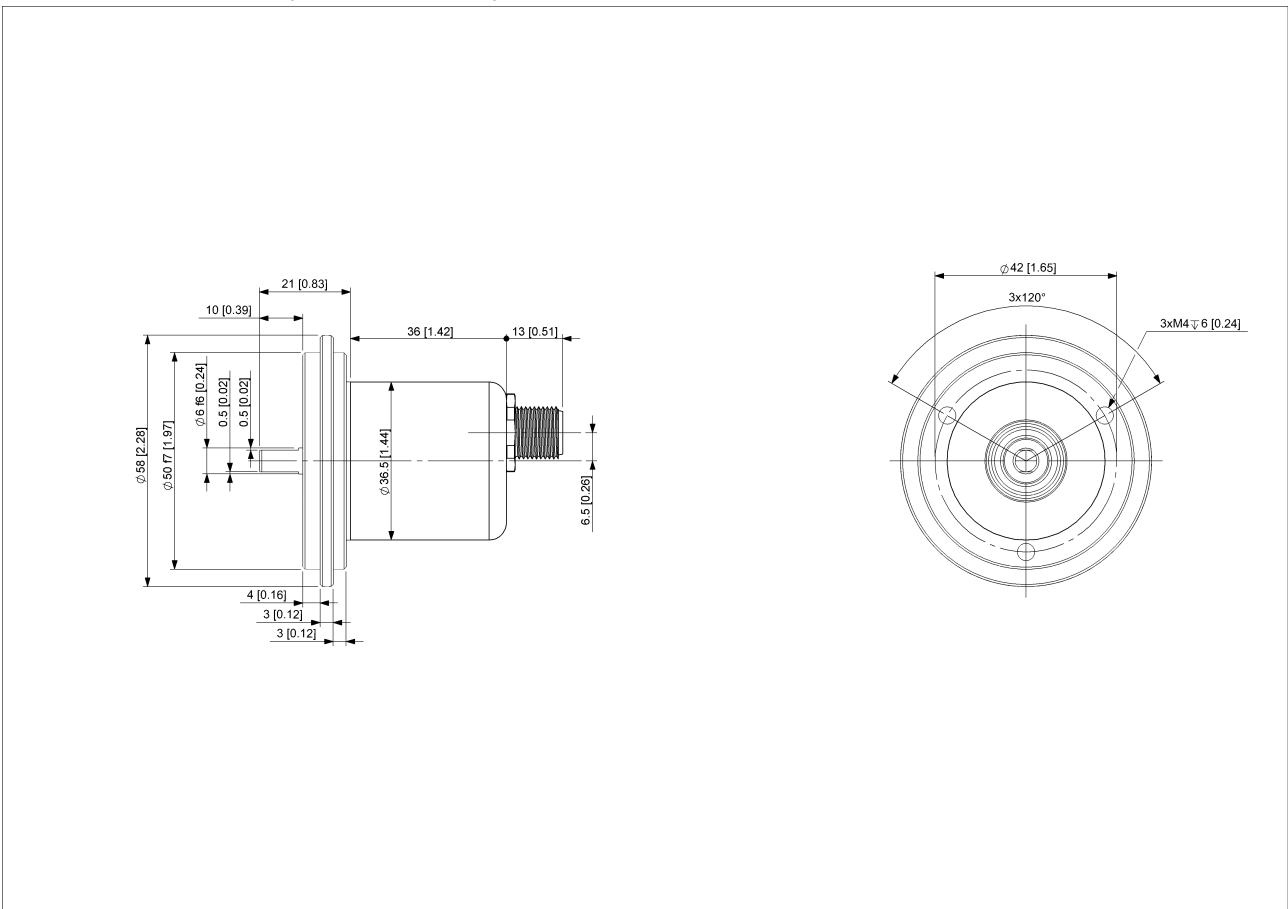
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Connector-View on Encoder

### Pulse Diagram



Rotation Clockwise (seen on shaft)



[2D Drawing](#)

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### Accessories

Configuration/Programming Tools

UBIFAST Configuration Tool

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

Couplings

Coupling Bellow Type-06-06

Coupling Bellow Type-06-10

Coupling Bellow Type-06-08

Coupling Bellow Type-06-(3/8")

Coupling Bellow Type-06-(1/4")

Coupling Jaw Type-06-06

Coupling Jaw Type-06-10

Coupling Jaw Type-06-08

Coupling Jaw Type-06-12

Coupling Jaw Type-06-(1/4")

Coupling Jaw Type-06-(3/8")

Coupling Disc Type-06-06

Coupling Disc Type-06-10

More

Adapter Flanges

Mounting Bracket for Synchro Flange w/ fixtures

Displays

AP20-00 Counter

AP20-D0 Counter (4 dig. o/p)

AP20-0A Counter (analog o/p)

AP20-DA Counter (4 dig. + analog o/p)

DiMod Counter (Relay o/p)

More

Clamping Rings

Clamp Disc w/ Eccentric Hole-4pcs

Clamp Disc w/ Centred Hole-4pcs

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### Contact



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