



### IXARC Absolute Rotary Encoder

#### OCD-S5B1G-1416-CA30-2AW



#### Interface

Interface	SSI with Preset + Incremental RS422
Optional Incremental Pulses	2048
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

Data Sheet

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## FRABA



MTTF	16.2 years @ 40 °C
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### Sensor

Technology	Optical
Resolution Singleturn	16 bit
Resolution Multiturn	14 bit
Multiturn Technology	Mechanical Gearing (no Battery)
Accuracy (INL)	±0.0220° (14 - 16 bit), ±0.0439° (≤13 bit)
Sense Signal (Default)	Clockwise shaft movement (front view on shaft)
Code	Gray
Incremental Pulses	2048

### 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	Wet coating (RAL 9006 White Aluminium) + Cathodic corrosion protection (>720 h salt spay resistance)
Flange Type	Clamp, ø 58 mm (C)
Flange Material	Aluminum
Shaft Type	Solid, Single Flat, Length = 20 mm
Shaft Diameter	ø 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)	430 (20 N / 40 N), 150 (40 N / 60 N), 100 (40 N / 80 N), 55 (40 N / 110 N)
Rotor Inertia	≤ 30 gcm <sup>2</sup> [≤ 0.17 oz-in <sup>2</sup> ]
Friction Torque	≤ 3 Ncm @ 20 °C (4.2 oz-in @ 68 °F)
Max. Permissible Mechanical Speed	≤ 12000 1/min
Shock Resistance	≤ 100 g (half sine 6 ms, EN 60068-2-27)
Permanent Shock Resistance	≤ 10 g (half sine 16 ms, EN 60068-2-29)
Vibration Resistance	≤ 10 g (10 Hz - 1000 Hz, EN 60068-2-6)

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Length	52,7 mm (2.07")
Weight	285 g (0.63 lb)

### Electrical Connection

Connection Orientation	Axial
Cable Length	2 m [79"]
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





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.