

UL Rotary Encoders



Interface

Interface	Analog Voltage, Current, SSI, CANopen, EtherNet IP, PROFINET
Manual Functions	Start and End point via Cable or Connector

Electrical Data

Supply Voltage	8 - 32 VDC
Current Consumption	Typical 15 mA @24V (no load)
Start-Up Time	<500 ms
Min. Load Resistance	5 k Ω
Analog Accuracy	@ 10 V = ± 10 mV (with an ideal power supply)
Linearity	0.15%

Settling Time	32 ms (from min value to max value jump)
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	300.9 years @ 40 °C

Sensor

Technology	Magnetic
Resolution Singleturn	13 bit default, up to 16 bit
Accuracy (INL)	$\pm 0.0878^\circ$ (≤ 12 bit)
Sense Signal (Default)	Counterclockwise shaft movement (front view on shaft)
Code	Analog Voltage 0 - 5 V
Cycle Time Base Sensor	$< 100 \mu\text{s}$
Minimum Measurement Range	0 - 11.25°
Resolution of Output	Max. 13 bits over entire measuring range (Fractional Turns - Resolution decreases less than 13 bits when measuring range is less than 90 degrees)
Multiturn Range	Singleturn , optional battery-free multiturn

Environmental Specifications

Protection Class (Shaft)	IP66/IP67
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Protection Class (Housing)	IP66/IP67
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Humidity	98% RH, no condensation
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Max Temperature	+85 °C (+185 °F)
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Min Temperature	-40 °C (-40 °F)
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Mechanical Data

Connection Cap Material	Aluminum , optional stainless steel
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Housing Material	Steel , optional stainless steel
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Housing Coating	Cathodic corrosion protection (>720 hrs salt spray resistance)
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Flange Type	Clamp, ø 58 mm (L)
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Flange Material	Aluminum (3.2315)
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Flange Coating	No Coating
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Shaft Type	Solid, Single Flat, Length = 20 mm
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Shaft Diameter	ø 10 mm (0.39")
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Shaft Material	Stainless Steel V2A (1.4305, 303)
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Max. Shaft Load	Axial 250 N, Radial 250 N
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Minimum Mechanical Lifetime(10 ⁸ revolutions with Fa/Fr)	10 (250N/250N)
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Rotor Inertia	≤ 20 gcm ² [≤ 0.11 oz-in ²]
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Max. Angular Acceleration	10 ⁵ rad/s ²
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Friction Torque	≤ 8 Ncm (11.32 oz-in) @ 500 rpm
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Max. Permissible Mechanical Speed	≤ 1000 1/min
Shock Resistance	≤ 50 g (11 ms, EN 60068-2-27)
Vibration Resistance	≤ 25 g (10 Hz – 2000 Hz, EN 60068-2-6)
Length	166 mm (6.54")
Weight	1635 g (3.60 lb)

Electrical Connection

Connection Orientation	Radial
Connection Cap Type	Removable for easy replacing encoder without new installation of cable, Rotary switches with visible node number, No active components, Terminal resistor switch cut the outgoing bus too, Big spring clips
Connection Type	2 x Blind Plug, Radial, HazLoc D2

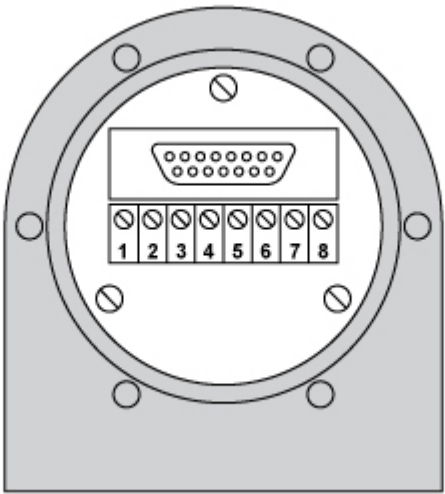
Certification

Approval	CE + cULus , UL Class 1 Div 2 for Hazardous Environments
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Product Life Cycle

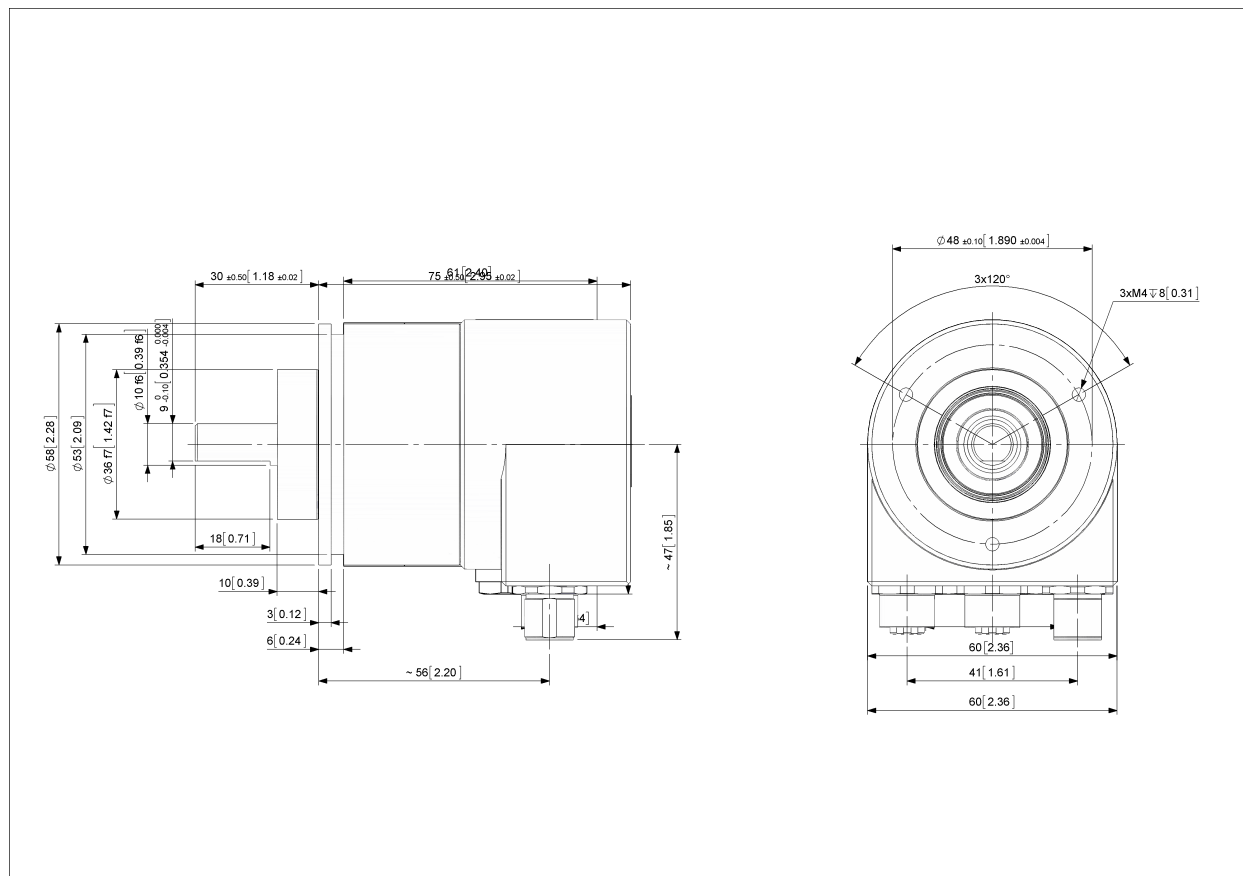
Product Life Cycle	New
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Connection Plan



Signal	Pin Number
Power Supply	Terminal 2
GND	Terminal 1
Analog Output	Terminal 8
Set1/Zero Set	Terminal 7
Set2/DIR	Terminal 4

Dimensional Drawing



Dimensions may change with options

Online Datasheet

