Series 291M

Non-Contacting Incremental Encoder

Features

- 2-bit quadrature output
- Metal bushing and shaft, long service life, high operating speed
- Square wave signal
- 64 pulses per revolution
- Continuous mechanical rotation
- IP40



Applications

- Digital panel control or position sensing where reliability, long service life, high resolution, and precise linearity are important.

Description

- Series 291M magnetic rotary encoder features a two-channel quadrature output with square wave signal, channel A 90° ahead of channel B during clockwise rotation. It has continuous mechanical rotational life cycle of 1,000,000.

Ordering Information

Series	Termination	Bushing Length	Shaft Length	Shaft Trim	Resolution	Operating Voltage
291M	V	3	28	S	1	A

Code	Termination
V	Axial, Multi-Purpose Pin

Code	Bushing Length
2	.250”
3	.375”

Code	Shaft Length
16	.500”
20	.625”
28	.875”

Code	Shaft Trim
S	Slotted
F	Flatted

Code	PPR
1	64

Code	Operating Voltage
A	5.0 VDC
B	3.3 VDC

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Electrical Specifications

Parameter	Conditions & Remarks	Min	Nominal	Max	Unit
Supply Voltage		4.75	5.0	5.25	V_{DC}
Output Code	2-Bit Quadrature Channel A leads Channel B by 90° during clockwise rotation				
Electrical Travel	Continuous				
Supply Current				20	mA
Insulation Resistance		1000			MΩ
Output Voltage		Vss+0.4		Vdd-0.5	V
Output Current	@4.5 V_{DC}			4	mA
Rise/Fall Time				500	ns
Shaft RPM				60	RPM
Resolution	64				Pulses per Revolution
Phase	Electrical Degrees, Channel A to Channel B	45	90	135	°

Mechanical and Environmental

Mechanical Angle	360° continuous
Rotational Torque	50 gf-cm max.
Mounting Torque	203 N-cm max.
Shaft End Play	0.3 mm max.
Shaft Radial Play	0.12 mm max.
RoHS	Lead-Free. Fully compliant to RoHS Directive
Mechanical Shock	Per MIL-STD-883F (50G's)
Vibration	Per MIL-STD-883F (15G's)

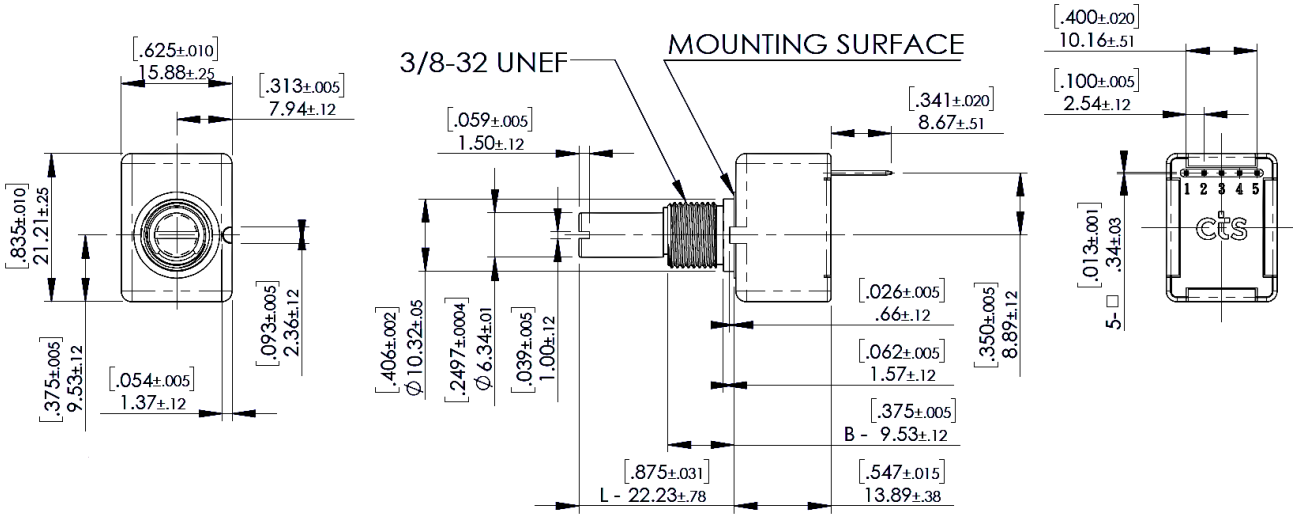
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IP Rating	IP 40
Operating Temperature	-40°C to +125°C
Storage Temperature	-55°C to +125°C
Humidity	90%-95% humidity @40 °C for 96 hours
Rotational Life	1 Million Cycles @60 RPM

Dimensional Drawings

Shaft Trim S

(Unit: mm)



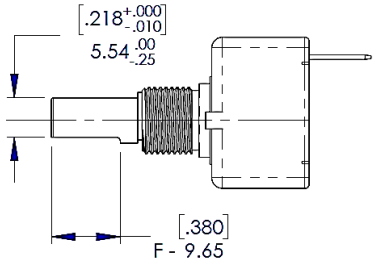
DIMENSION			
L	12.7 [.500"]	15.88 [.625"]	22.23 [.875"]

DIMENSION		
B	6.35 [.250"]	9.53 [.375"]

Shaft Trim F

(Unit: mm)

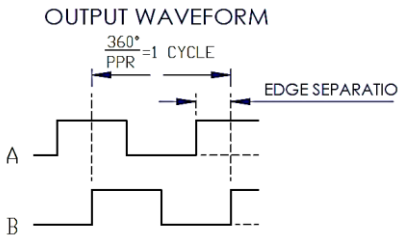
DIMENSION			
L	12.7 [.500"]	15.88 [.625"]	22.23 [.875"]
F	1.78 [.070"]	4.32 [.170"]	9.65 [.380"]



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Output Type Waveform

Quadrature Output



PIN NO.	FUNCTION
1	GND
2	N.C.
3	CHANNEL A
4	VCC
5	CHANNEL B

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