



**PART NUMBER:** MES40-PS

**DESCRIPTION:** sine wave encoder

**ELECTRICAL SPECIFICATIONS**

output waveform	A, B phase sine wave, Z phase square wave
output signals	A, B, Z phase
current consumption	≤40 mA
frequency response	0~50 KHz
output phase difference	A, B phase difference 90° ± 45° (T/4±T/8) Z phase T±T/2 (see output waveform)
supply voltage	5 V dc ± 5%
output resolution (ppr)	1000, 2000, 5000

**MECHANICAL SPECIFICATIONS**

max shaft load, radial:	49 N (5kgf)
axial:	29.4 N (3kgf)
starting torque	3 x 10 <sup>-3</sup> N·m (30 gf·cm) or less, 5 x 10 <sup>-3</sup> N·m (50 gf·cm) or less (drip-proof)
max rotational speed	6000 RPM
shock resistance	500 m/s <sup>2</sup> (50 G) 3 times each on XYZ
vibration proof	55 Hz, double amplitude 1.5mm, 2 hours each on XYZ
weight	200 g
cable	4.2 mm outside diameter 5-core vinyl wire, insulated shield cable (length 1m)

**ENVIRONMENTAL SPECIFICATIONS**

operating temp	0° ~ +50° C
storage temp	-20° ~ +80° C
humidity	RH 35%~90% non collecting

**ORDERING INSTRUCTIONS**

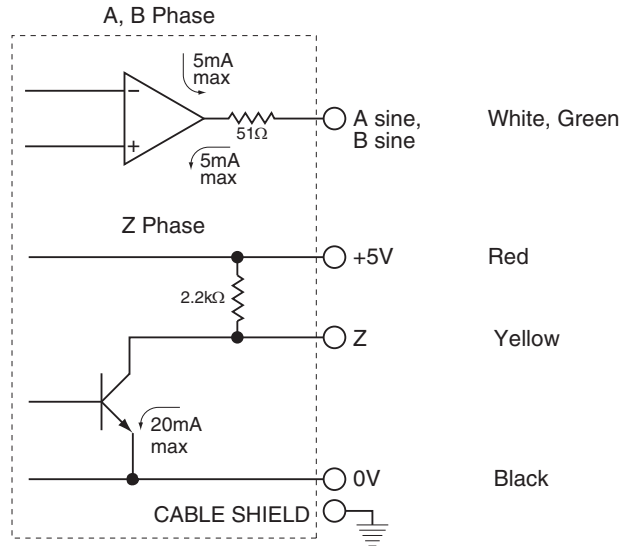
MES40 - XXXXXPS

Resolution (PPR):  
1000 = 1000 PPR  
2000 = 2000 PPR  
5000 = 5000 PPR

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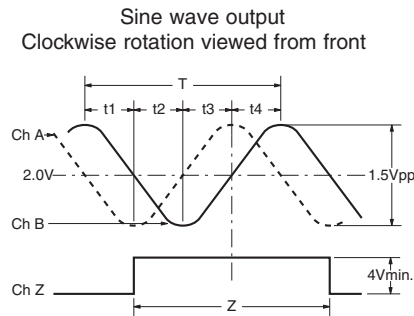
**DESCRIPTION:** sine wave encoder

**CIRCUIT CONNECTIONS**



A capacitor (0.1 μF) is connected between 0 V and FG (frame ground).

**OUTPUT WAVEFORM**



$$T = 360^\circ / \text{divisions} \quad t1, t2, t3, t4 = \frac{T}{4} \pm \frac{T}{8}$$

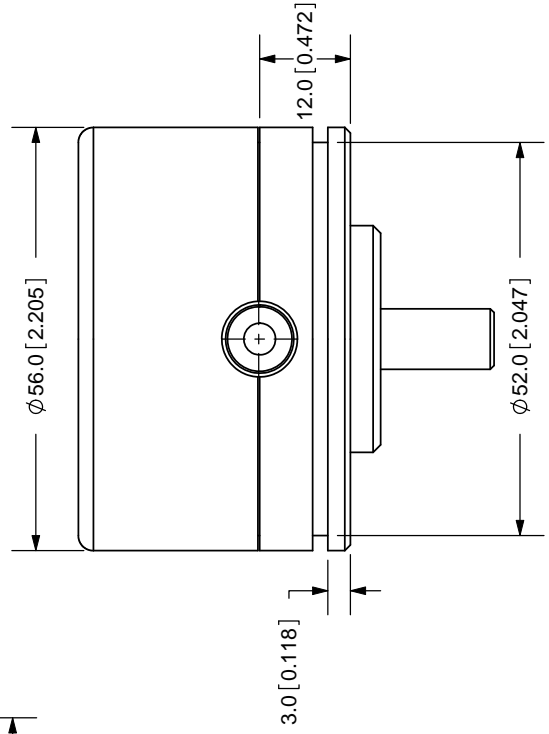
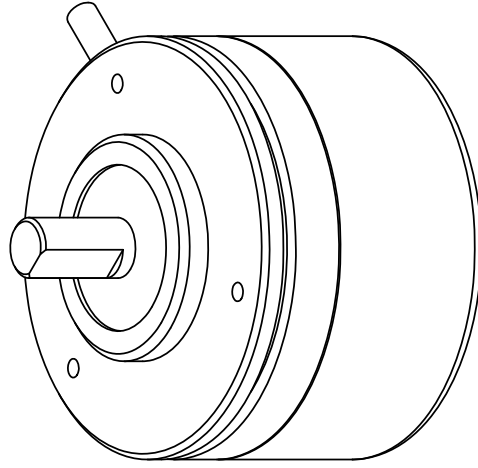
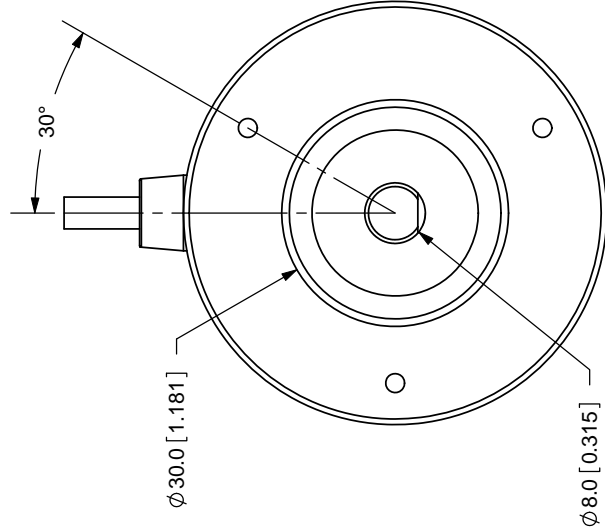
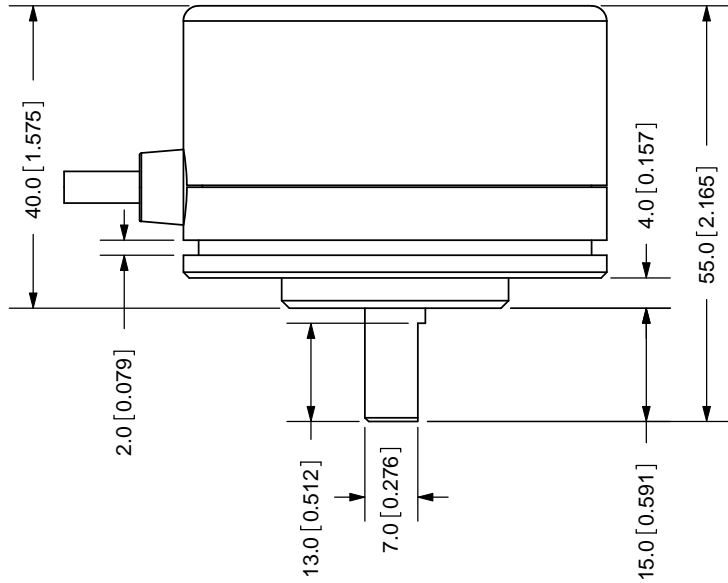
$$Z = T \pm 0.50T$$

M = M X 20% or less

- Amplitude variation rate
- Amplitude waviness
- A/B Phase amplitude ratio

The position of Z phase against A, B phase is not specified

REV.	DESCRIPTION	DATE
A	NEW DRAWING	7/30/2007



TOLERANCE:  
#0.3mm UNLESS OTHERWISE  
SPECIFIED



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TITLE: Incremental Encoder REV: A

PART NO: MES40-PS UNITS: MM [INCHES]

DRAWN BY: JMS APPROVED BY: SCALE: 1:1

Cable Color	Red	White	Green	Yellow	Black	-	-	-
Output Type	Power	A-Phase	B-Phase	Z-Phase	0V	-	-	-

PC FILE NAME: MES40-PS  
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