



PART NUMBER: MES20

DESCRIPTION: incremental encoder

ELECTRICAL SPECIFICATIONS

output waveform	Square wave
output signals	A, B, Z phase
current consumption	≤50 mA
frequency response	0~100 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 ±10% (line driver output only), 5 V ~ 12 V dc ± 10%, 24 V dc ± 10% (open collector output only)
output resolution (ppr)	40, 50, 60, 100, 200, 250, 256, 300, 360, 400, 500, 512, 600, 800, 1000, 1024, 1200, 1800, 2000, 2048, 2500, 3600
waveform rise/fall time	2μ or less (outout cable 1m or less)

MECHANICAL SPECIFICATIONS

max shaft load, radial:	19.6N (2kgf)	14.7N (1.5kgf) (600-3600 ppr)
axial:	9.8N (1kgf)	4.9N (0.5kgf) (600-3600 ppr)
starting torque	2 x 10 ⁻³ N·m (20 gf·cm)	
max rotational speed	6000 RPM	
shock resistance	500 m/s ² (50G), 3 times each on XYZ	
vibration proof	55 Hz, double amplitude 1.5mm, 2 hours each on XYZ	
weight	70g (with 1m cable)	
cable	4.2mm outside diameter, 5 core vinyl wire insulated shield cable (1m)	

ENVIRONMENTAL SPECIFICATIONS

operating temp	-10° to +70° C
storage temp	-20° to +80° C
humidity	RH 35%~90% non collecting

ORDERING INSTRUCTIONS

MES20 - XXXXP-XX

Resolution (PPR):

- 40 = 40 PPR 512 = 512 PPR
- 50 = 50 PPR 600 = 600 PPR
- 60 = 60 PPR 800 = 800 PPR
- 100 = 100 PPR 1000 = 1000 PPR
- 200 = 200 PPR 1024 = 1024 PPR
- 250 = 250 PPR 1200 = 1200 PPR
- 256 = 256 PPR 1800 = 1800 PPR
- 300 = 300 PPR 2000 = 2000 PPR
- 360 = 360 PPR 2048 = 2048 PPR
- 400 = 400 PPR 2500 = 2500 PPR
- 500 = 500 PPR 3600 = 3600 PPR

Output Circuit:

- "no entry" = TTL voltage output
- C = Open collector output
- E = Line driver output

Input Voltage:

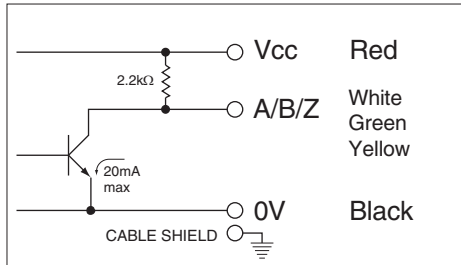
- 1 = 5V dc ±10%
(line driver output only)
- 3 = 5 ~ 12V dc ±10%
- 4 = 24V dc ±10%
(open collector output only)

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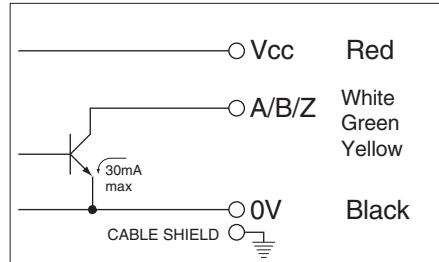
DESCRIPTION: incremental encoder

CIRCUIT CONNECTIONS

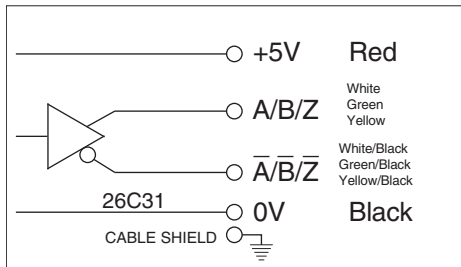
Voltage Output



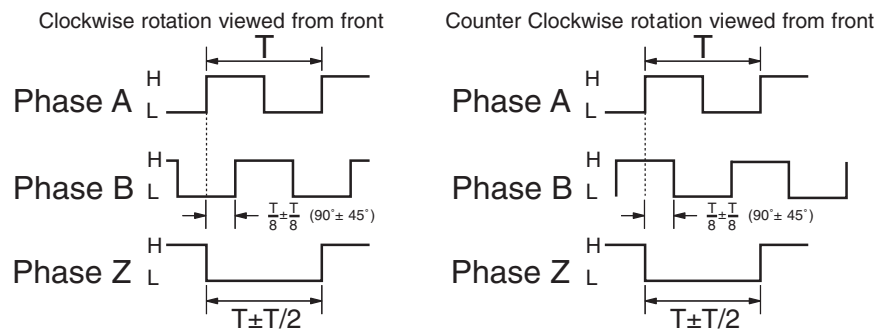
Open Collector Output (C)



Line Drive Output (E)

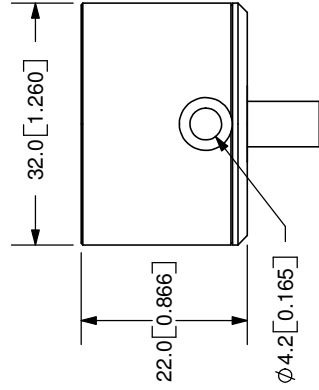
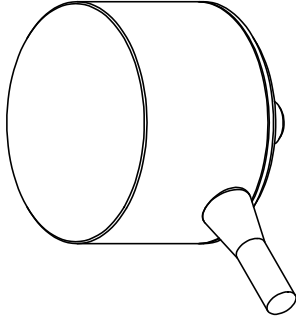
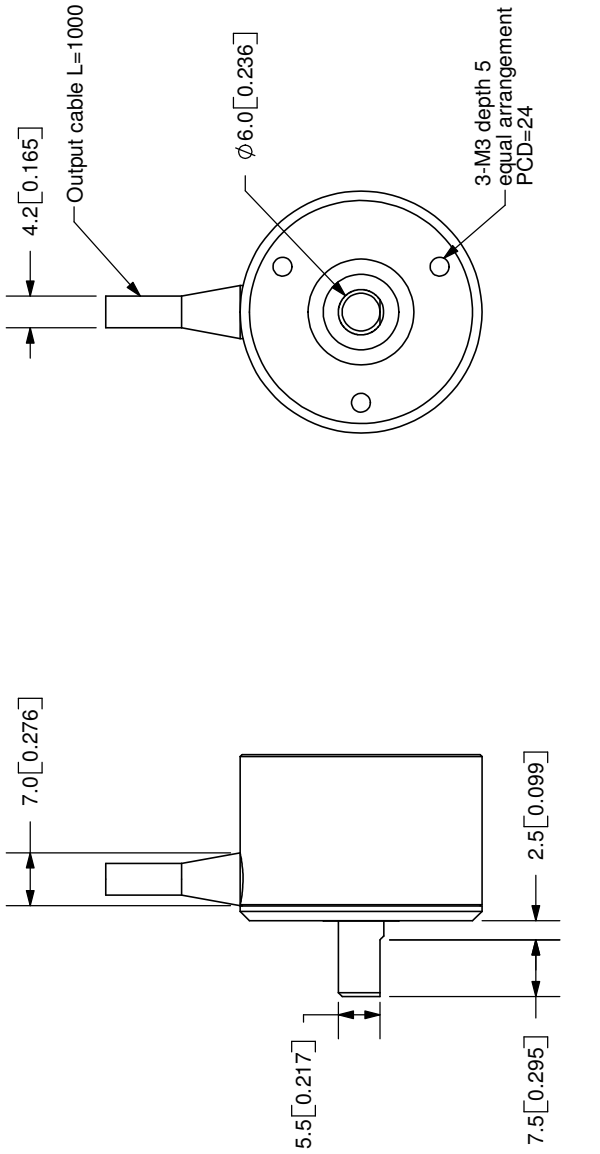


OUTPUT WAVEFORM



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

REV.	DESCRIPTION	DATE
A	NEW DRAWING	7/27/2007



TOLERANCE:
±0.3mm UNLESS OTHERWISE SPECIFIED



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TITLE: Incremental Encoder REV: A

PART NO: MES20 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: MES20
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