**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°<br>(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%,<br>24 V dc ± 10% (open collector output only) |
| output resolution (ppr) | 40, 50, 60, 100, 200, 250, 256, 300, 360, 400, 500, 512,<br>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 |

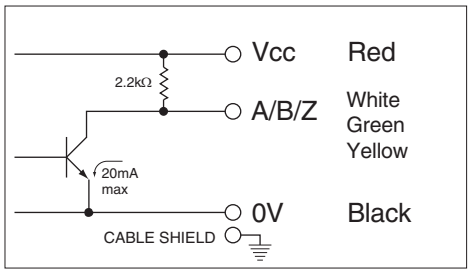
Output Circuit:
"no entry" = TTL voltage output
C = Open collector output
E = Line driver output

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

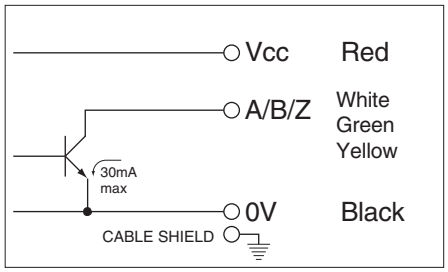
**PART NUMBER:** MES20 **DESCRIPTION:** incremental encoder

## CIRCUIT CONNECTIONS

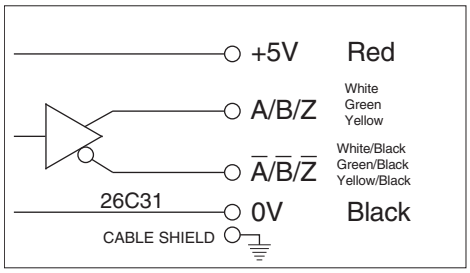
Voltage Output




Open Collector Output (C)

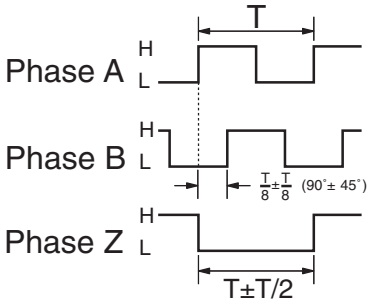



Line Drive Output (E)

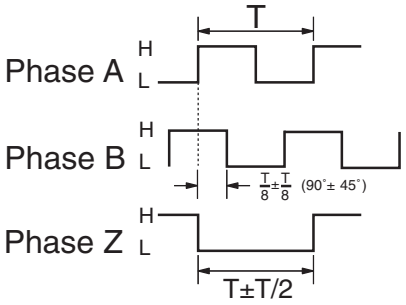



## OUTPUT WAVEFORM

Clockwise rotation viewed from front

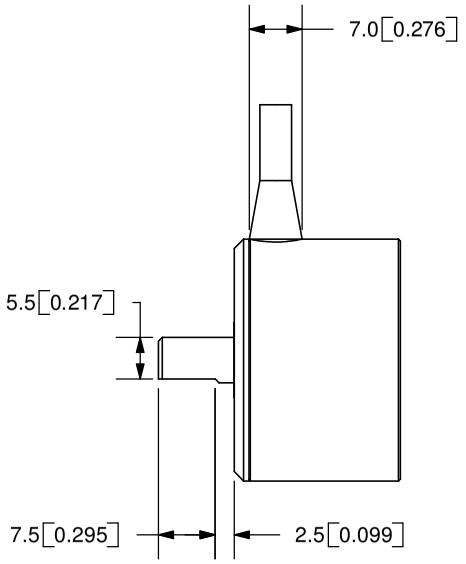


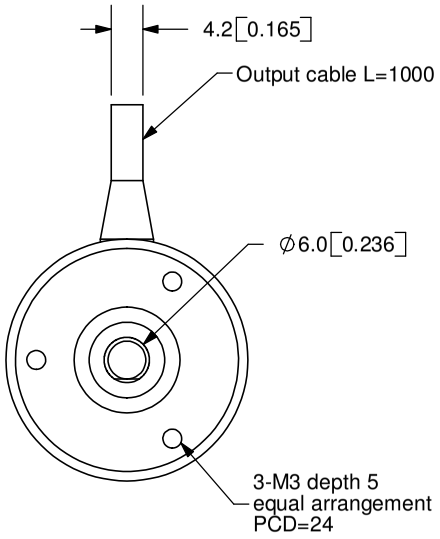

Counter Clockwise rotation viewed from front

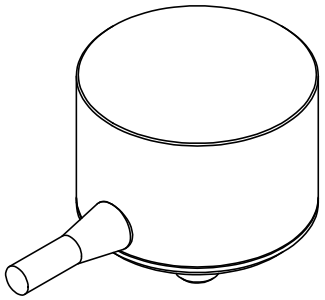


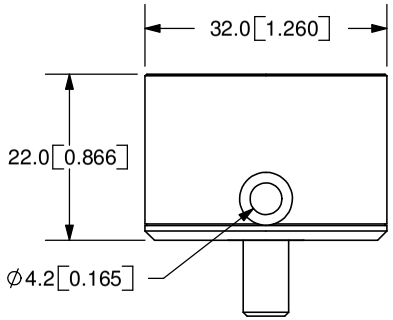

The position of Z phase against A, B phase is not specified

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






TOLERANCE:
±0.3mm UNLESS OTHERWISE SPECIFIED

RoHS

CUI INC

20050 SW 112th Ave.
Tualatin, OR 97062
Phone: 503-612-2300
800-275-4899
Fax: 503-612-2383
Website: www.cui.com

| 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



For more information, please visit the product page.