

**SERIES: MES3-XXXPXXX**
**DESCRIPTION: INCREMENTAL ENCODER**

## ELECTRONIC SPECIFICATIONS

|                         |   |
|-------------------------|---|
| output waveform         | square wave   |
| output signals          | A, B, Z phase (voltage output, open collector)<br>A, B, Z, $\bar{A}$ , $\bar{B}$ , $\bar{Z}$ phase (line driver)                        |
| output voltage          | $V_{OL} \leq 0.3 \text{ V}$<br>$V_{OH} \geq V_{CC} - 0.3 \text{ V}$   |
| current consumption     | $\leq 15 \text{ mA}$  |
| output phase difference | A,B phase difference: $T/4 \pm T/8$ , Z phase width: $T \pm 0.5T$   |
| supply voltage          | 3.2 V dc $\pm 5\%$ (open collector)<br>5 V dc - 5% ~ 12 V dc + 10% (voltage output, open collector)*<br>5 V dc $\pm 5\%$ (line driver)* |
| output capacity         | 20 mA max.  |
| output resolution (ppr) | 64, 100   |
| frequency response      | 100 kHz max.  |
| waveform rise/fall time | $\leq 2 \mu\text{s}$ (output cable 300 mm or less)  |

\* Requires I/F interface module (page 4)

## MECHANICAL SPECIFICATIONS

|                       |                   |   |
|-----------------------|-------------------|---|
| max. shaft load       | radial;<br>axial; | 0.98 N (100 gf)<br>0.98 N (100 gf)                      |
| starting torque       |                   | $5 \times 10^{-4} \text{ N} \cdot \text{m}$ (5 gf · cm) |
| max. rotational speed |                   | 6000 rpm  |
| shock resistance      |                   | $500 \text{ m/s}^2$ (50 G), 3 times each on XYZ         |
| vibration proof       |                   | 1.5 mm ,55 Hz, 2 hours each on XYZ                      |
| cable                 |                   | flexible, 130 mm  |
| weight                |                   | 5 g (with cable)  |

## ENVIRONMENTAL SPECIFICATIONS

|                |                                      |
|----------------|--------------------------------------|
| operating temp | $0^\circ$ to $+60^\circ \text{ C}$   |
| storage temp   | $-20^\circ$ to $+80^\circ \text{ C}$ |
| humidity       | 30~95% no condensation               |

## PART NUMBER KEY

**MES3 - XXX P XXX**

Output Resolution:  
64 = 64 ppr  
100 = 100 ppr

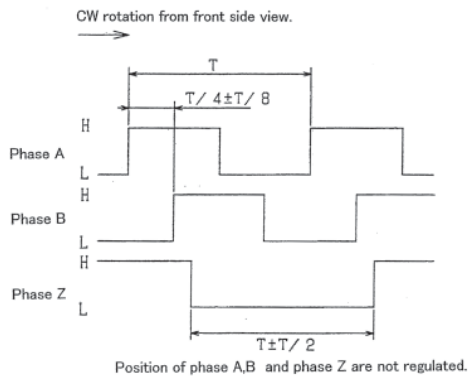
Output Options:  
P = 3.2 V Open Collector without I/F box  
P3 = Option 5 ~ 12 V Voltage Output with I/F box  
PC3 = Option 5 ~ 12 V Open Collector with I/F box  
PE = Option 5 V Line Driver with I/F box

**SERIES:** MES3-XXXPXXX

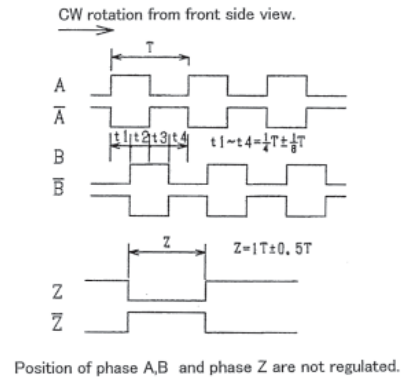
**DESCRIPTION:** INCREMENTAL ENCODER

## OUTPUT WAVEFORM

### Voltage Output / Open Collector Output

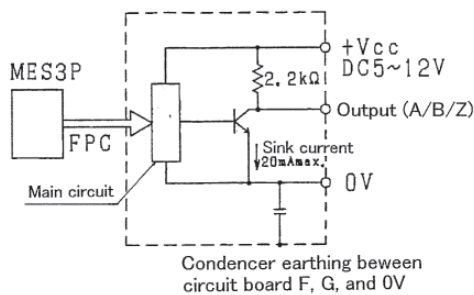


### Line Driver Output

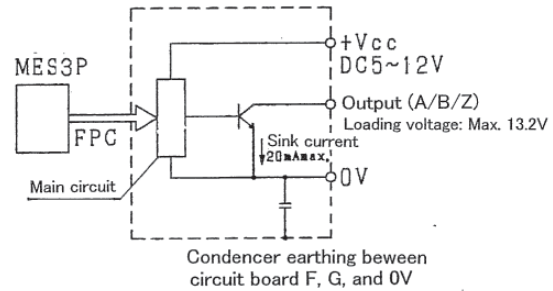


## OUTPUT CIRCUIT

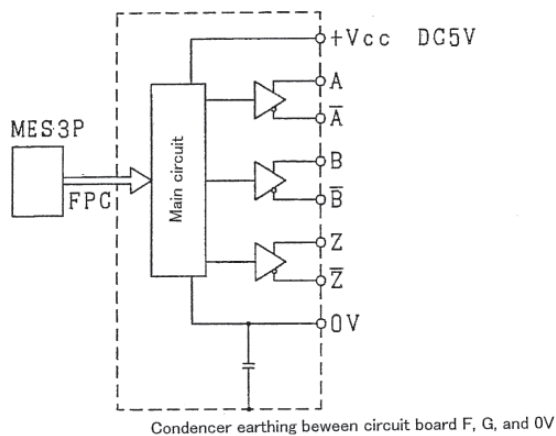
### Voltage output



### Open collector output

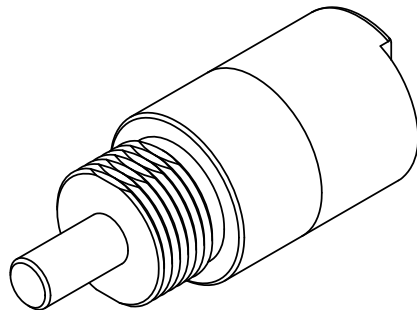
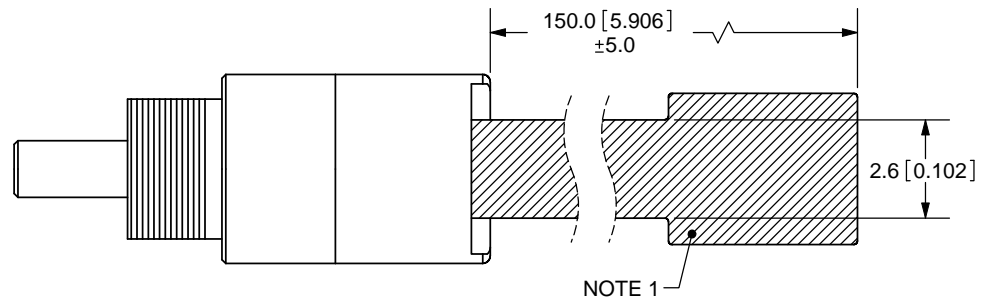
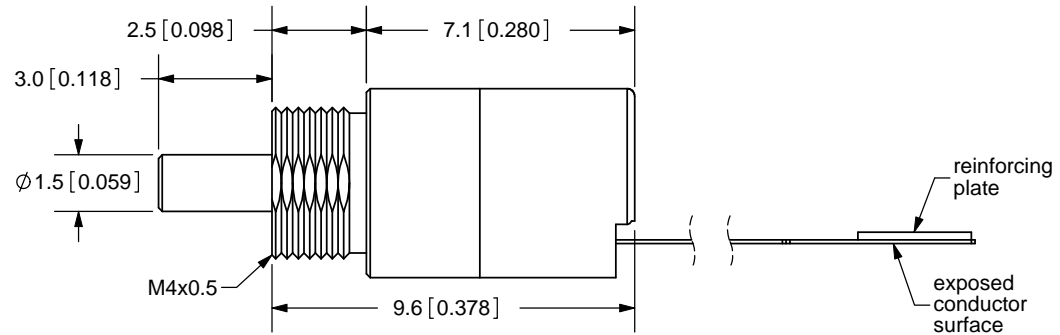
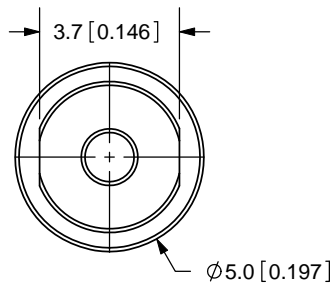


### Line driver output



Output IC  
 SN75ALS192(TI) or same kind

| REV. | DESCRIPTION | DATE      |
|------|-------------|-----------|
| A    | NEW DRAWING | 8/24/2009 |



TOLERANCE:  
 $\pm 0.3\text{mm}$  UNLESS OTHERWISE  
 SPECIFIED



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

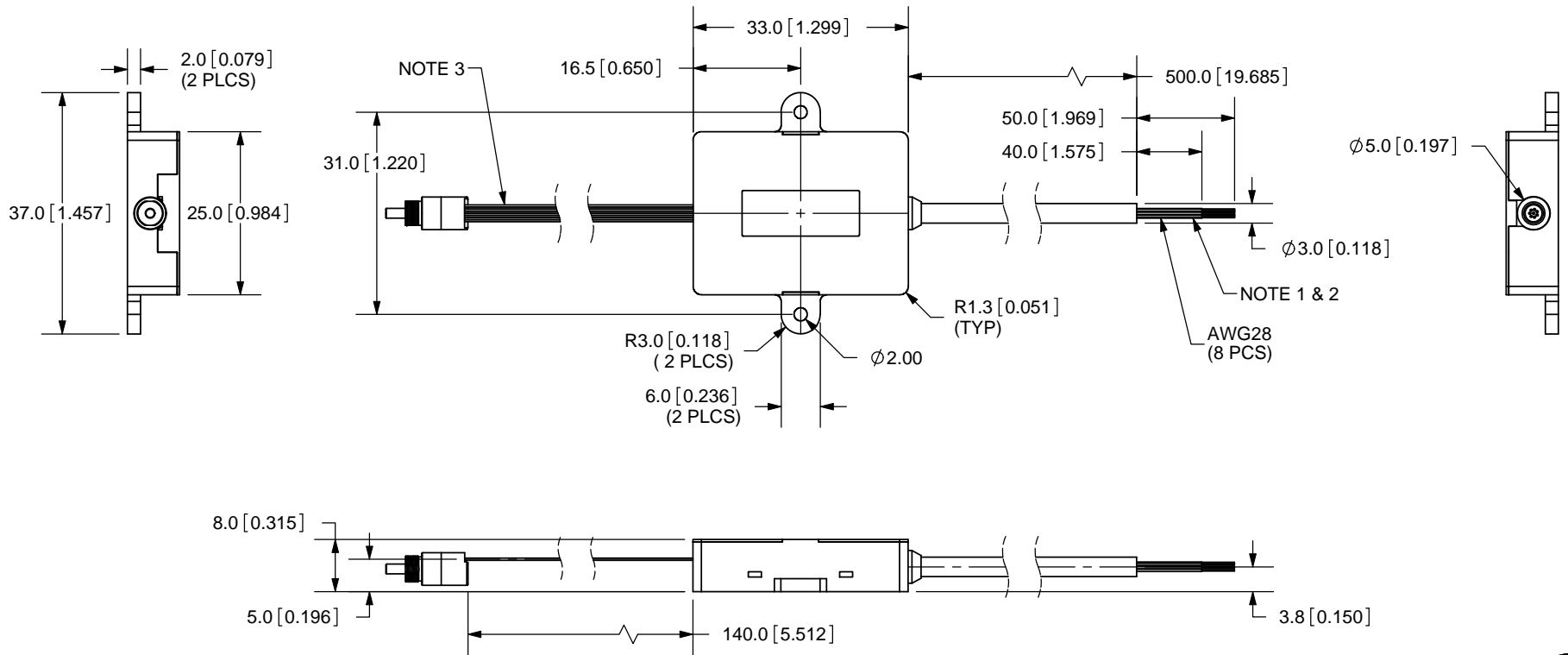
NOTES:  
 1. conforms to JAE connector  
 IL-FPR-6S-HF-N1

|               |              |                    |
|---------------|--------------|--------------------|
| TITLE: MES3   |              | REV: A             |
| PART NO. MES3 |              | UNITS: MM [INCHES] |
| DRAWN BY: ZRJ | APPROVED BY: | SCALE: 5:1         |

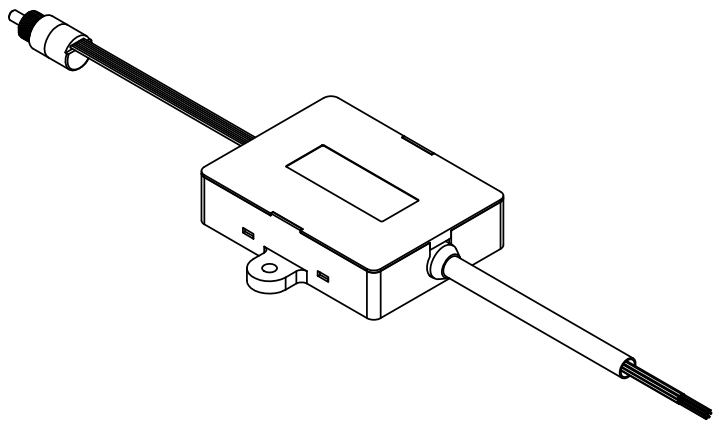
PC FILE NAME:  
 MES3

COPYRIGHT 2009 BY CUI INC.


| REV. | DESCRIPTION | DATE      |
|------|-------------|-----------|
| A    | NEW DRAWING | 8/24/2009 |



TOLERANCE:  
 $\pm 0.3\text{mm}$  UNLESS OTHERWISE  
 SPECIFIED



- NOTES:
- 8 core (line driver output)  
5 core (voltage output, open collector output)
  - twisted 2-3mm soldered tip finish
  - FPC cable (encoder side)

|   |                    |
|---|--------------------|
|    |                    |
| 20050 SW 112th Ave.<br>Tualatin, OR 97062<br>Phone: 503-612-2300<br>800-275-4899<br>Fax: 503-612-2383<br>Website: www.cui.com |                    |
| TITLE: I/F BOARD  |                    |
| REV: A  |                    |
| PART NO. IF-board   | UNITS: MM [INCHES] |
| DRAWN BY: ZRJ   | APPROVED BY:       |
|   | SCALE: 1:1         |

PC FILE NAME:  
IF-board

COPYRIGHT 2009 BY CUI INC.