

**SERIES:** MES3 | **DESCRIPTION:** INCREMENTAL ENCODER

**FEATURES**

- 5 mm diameter
- 64, 100, or 1024 ppr resolution
- square wave output


**ELECTRICAL**

parameter	conditions/description	min	nom	max	units
power supply	3.2 Vdc ±5% (open collector) 5 Vdc - 5% ~ 12 Vdc + 10% (voltage output, open collector) <sup>1</sup> 5 Vdc ±5% (line driver) <sup>1</sup>				
current consumption	P models PST models			15 20	mA mA
output signals	A, B, Z (voltage output, open collector) A, $\bar{A}$ , B, $\bar{B}$ , Z, $\bar{Z}$ (line driver)				
output waveform	square wave				
output resolutions	P models PST models	64, 100 1024 (64 x 16)			PPR PPR
output voltage	$V_{OL}$ $V_{OH}$	$V_{CC}-0.3$		0.3	V V
output current				20	mA
output phase difference	A,B phase difference: T/4 ± T/8 Z phase width: T ± 0.5T				
frequency response				100	kHz
waveform rise/fall time	output cable 300 mm or less			2	µs

Notes: 1. Requires I/F interface module (page 4)

**MECHANICAL**

parameter	conditions/description	min	nom	max	units
max. shaft load	radial and axial			0.98 100	N gf
starting torque			$5 \times 10^{-4}$ 5		N·m gf·cm
max. rotational speed				6,000	RPM

**ENVIRONMENTAL**

parameter	conditions/description	min	nom	max	units
operating temperature		0		60	°C
storage temperature		-20		80	°C
humidity	non-condensing	30		95	%
vibration	1.5 mm, 55 Hz, 2 hours each on XYZ				
shock	3 times each on XYZ			50	G

## PART NUMBER KEY

### MES3 - XXX P XX XX

Base Number

Output Resolution:

64(P) = 64 ppr  
 100(P) = 100 ppr  
 64(P)ST = 1,024 ppr

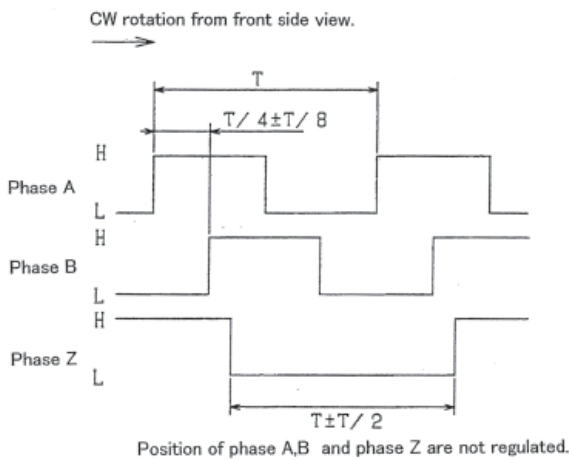
Output Options:

"blank" = 3.2 V Open Collector without I/F box  
 3 = Option 5 ~ 12 V Voltage Output with I/F box  
 C3 = Option 5 ~ 12 V Open Collector with I/F box  
 E = Option 5 V Line Driver with I/F box

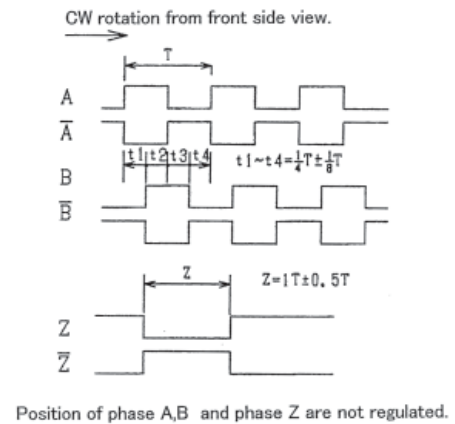
## OUTPUT WAVEFORM

### MES3-P

voltage output / open collector output

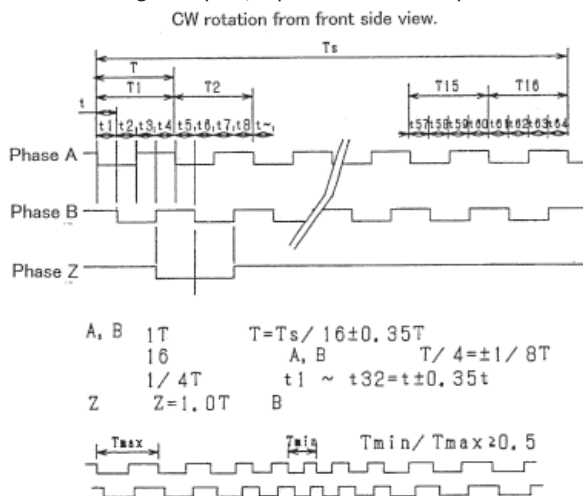


line driver output

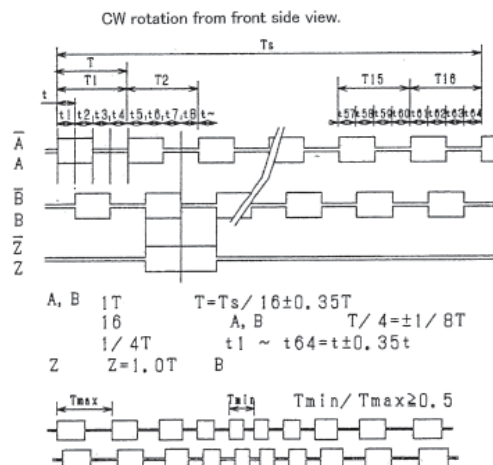


### MES3-PST

voltage output / open collector output

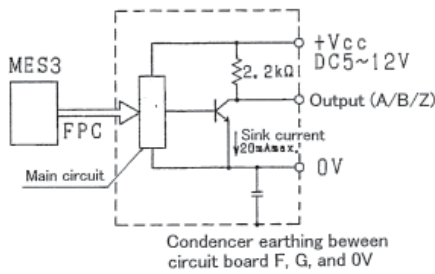


line driver output

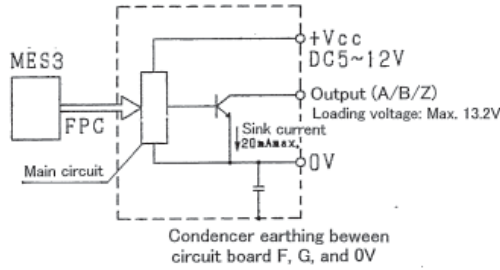


## CIRCUIT DIAGRAM

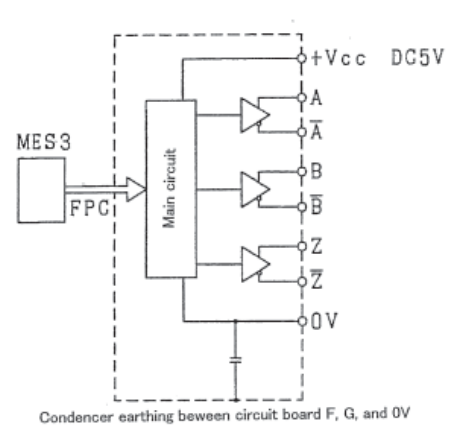
Voltage output



Open collector output



Line driver output

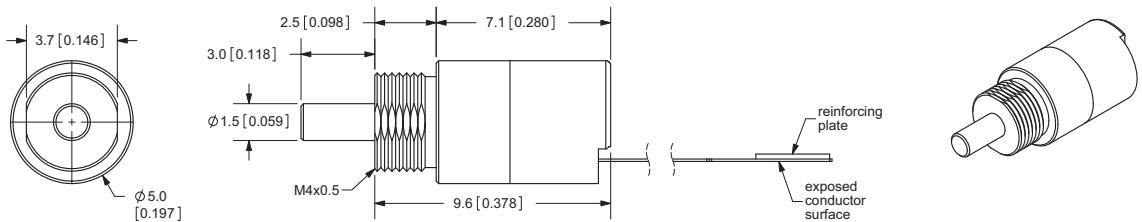


Output IC

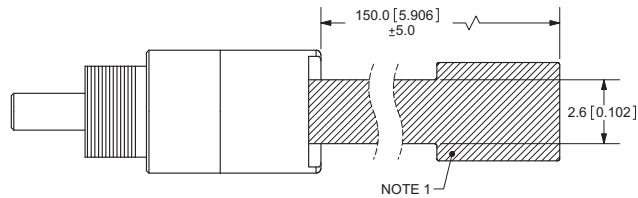
SN75ALS192(TI) or same kind

## MECHANICAL DRAWING

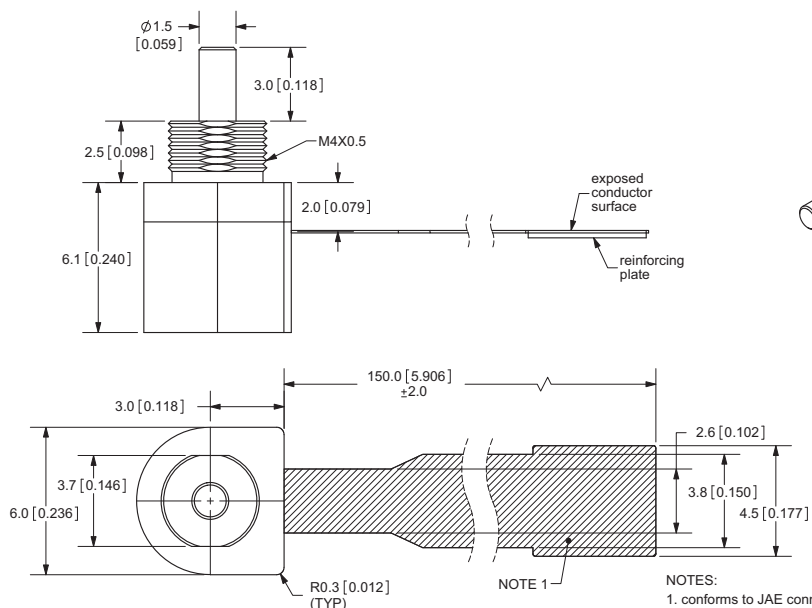
units: mm[inches]  
TOLERANCE:  $\pm 0.3\text{mm}$



### MES3-P

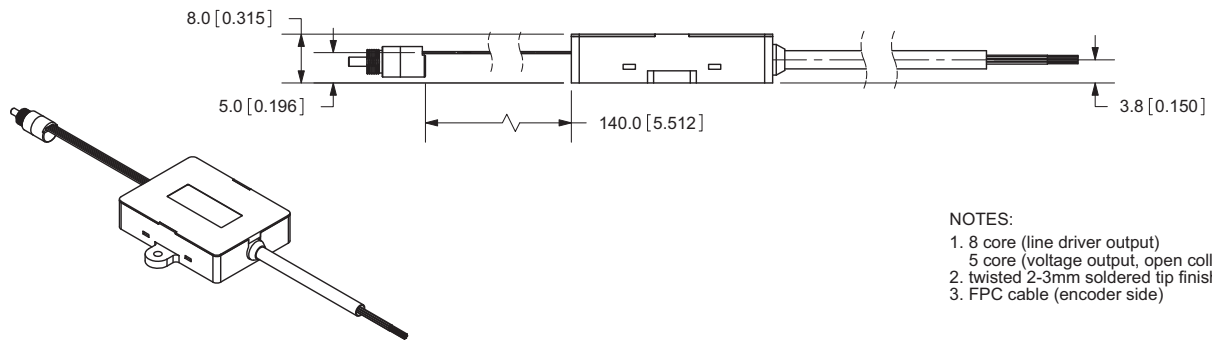
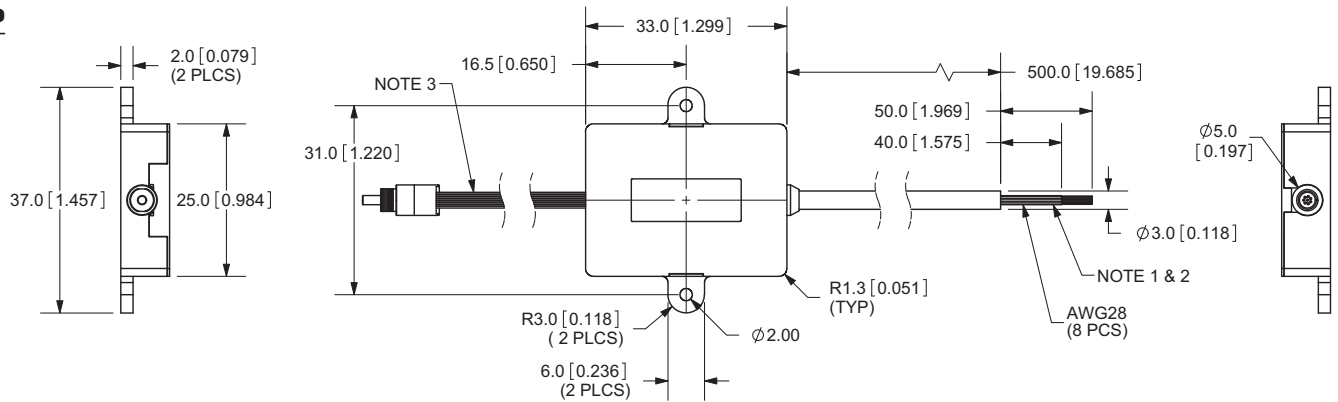


### MES3-PST



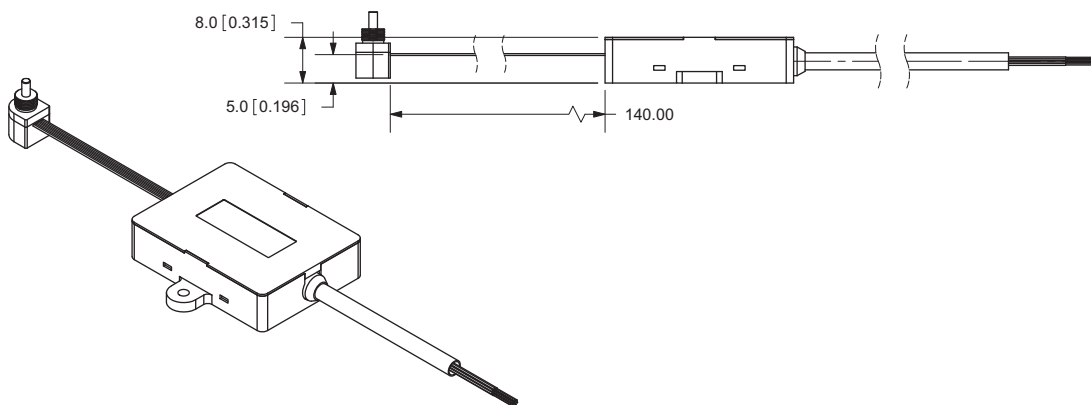
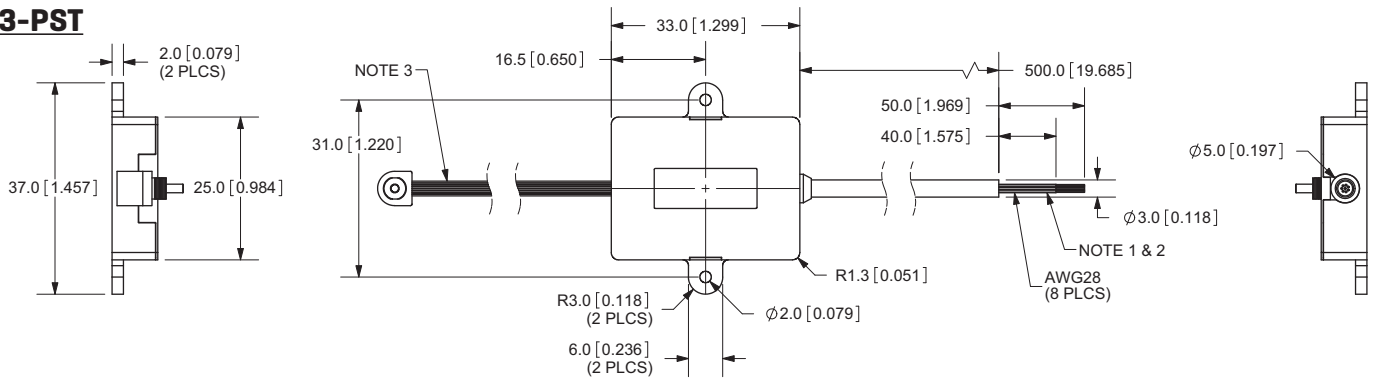
## I/F BOARD

### MES3-P



- NOTES:
1. 8 core (line driver output)
  2. 5 core (voltage output, open collector output)
  3. twisted 2-3mm soldered tip finish
  4. FPC cable (encoder side)

### MES3-PST



## REVISION HISTORY

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rev.	description	date
1.0	initial release	10/08/2009
1.01	applied new template	05/14/2012

The revision history provided is for informational purposes only and is believed to be accurate.



**Headquarters**  
20050 SW 112th Ave.  
Tualatin, OR 97062  
**800.275.4899**

Fax 503.612.2383  
**cui.com**  
techsupport@cui.com

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