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page 1 of 5 **date** 01/2009

PART NUMBER: LME DESCRIPTION: modular incremental encoder

The LME Series are high performance, low cost, 3 channel optical incremental encoders. Each encoder contains a LED source, an integrated circuit with detectors and circuitry, and an optical disc which rotates between the emitter and detector IC. These encoders can be quickly and easily mounted to a motor.



ELECTRICAL SPECIFICATIONS

output waveform	Square wave
output signals	A, B, Z phase
current consumption	≤ 60 mA
output phase difference	90° ± 45°
supply voltage	5 V dc
output resolution (ppr)	1000, 1024, 2000, 2048
	(other resolutions available upon request)
frequency response	0~100 KHz
output current	0~5 mA

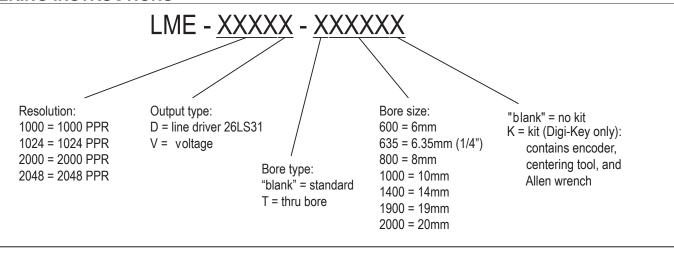
MECHANICAL SPECIFICATIONS

rotor inertia of code-wheel	6.0x10 ⁻⁸ kgm ²	
shock resistance	980 m/s ² ,6ms, 2 times each on XYZ	
vibration proof	50 m/s ² ,10~200 Hz, 2 hours each on XYZ	
working life	MTBF ≥ 5000h(+25°C, 2000rpm)	
weight	25g (with 0.5 meter cable)	

ENVIRONMENTAL SPECIFICATIONS

operating temp	-25° to +85° C	
storage temp	-40° to +85° C	
humidity	30~85% no condensation	
protection	IP50	

ORDERING INSTRUCTIONS





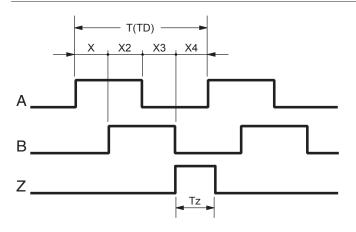
page 2 of 5

date 01/2009

DESCRIPTION: modular incremental encoder

OUTPUT WAVEFORM

PART NUMBER: LME



•Square-wave accuracy: $X_1 + X_2 = 1/2T \pm 1/12T$

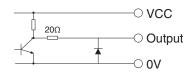
 $X_3 + X_4 = 1/2T \pm 1/12T$

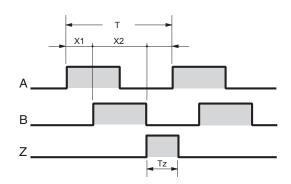
•Pitch error of period: $\pm 0.01T$ •Pitch error of phase position: $\leq 1/18T$

•Z phase: Tz=1/4T (1T, 1/2T, 1/4T...)•Period of pulses: $T=360^{\circ}$ /N (N: output pulses) •Signal accuracy: $Xn=1/4T \pm 1/12T (n=1, 2, 3, 4)$

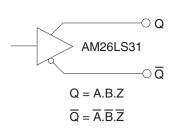
A leads B clockwise when viewing the encoder shaft end. The position of Z phase against A, B phase is not specified.

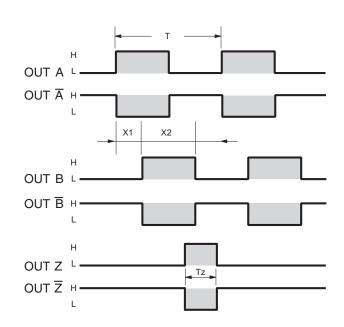
Voltage output





Line driver output







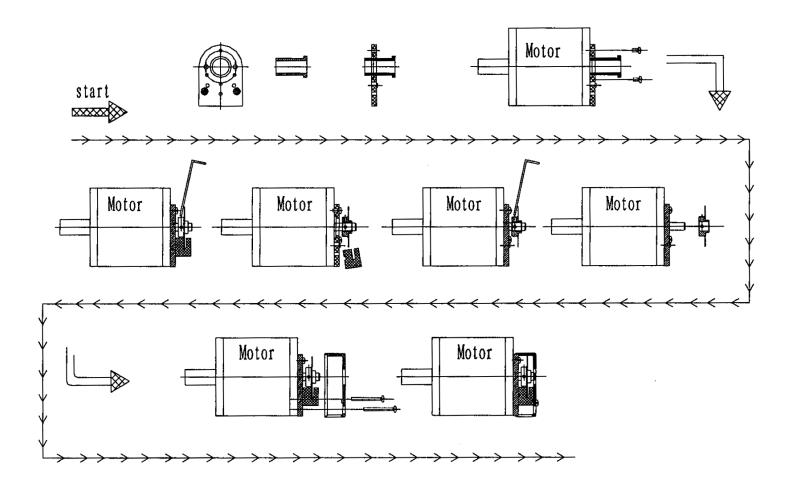
page 3 of 5

date 01/2009

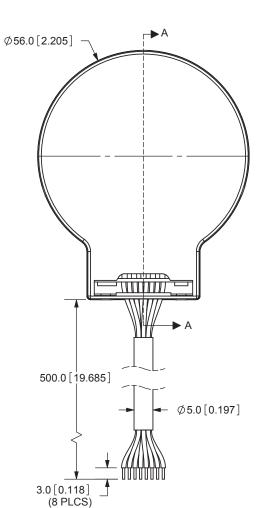
PART NUMBER: LME

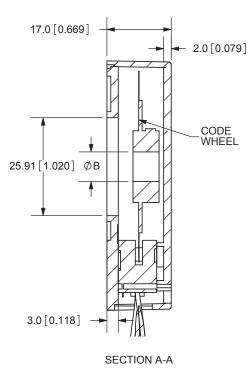
DESCRIPTION: modular incremental encoder

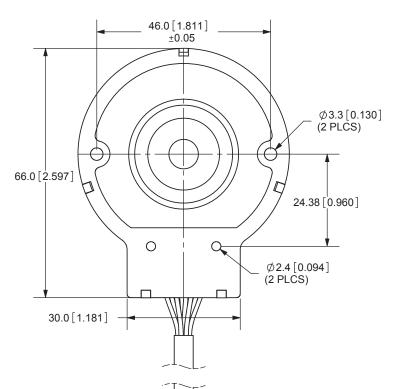
INSTALLATION DRAWING

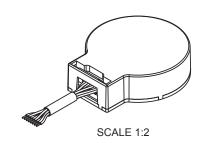


REV.	DESCRIPTION	DATE
Α	NEW DRAWING	4/15/2008











TOLERANCE: ±0.3mm 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

,	
6mm	
6.35mm	
8mm	-0.00
10mm	+0.033
14mm	
19mm	
20mm	

ØB

(bore size)

PCFILE NAME:
LME - STANDARD BORE COPYRIGHT 2008
BY CUI INC.

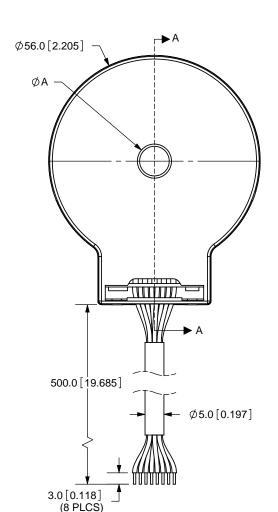
tolerance

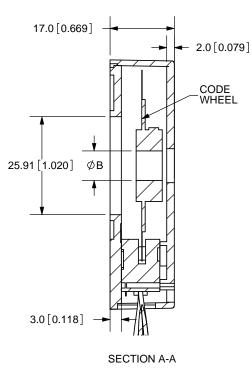
										1
	Cable Code	1	2	3	4	5	6	7	8	
1		•								TITLE:
	Cable Color	Black	Red	Green	Brown	White	Grey	Yellow	Orange	LME -
ĺ	Line Driver Output	0V	Vcc	Α	Ā	В	B	Z	Z	PART NO.
ĺ	Cable Code	1	2	3	4	5	-	-	-	LME
	Cable Color	Black	Yellow	Green	Red	White	-	-	-	DRAWN BY:
	Voltage Output	0V	Z	Α	Vcc	В	-		-	ZRJ

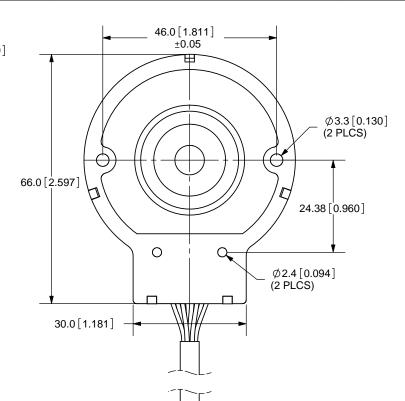
range	LME - MODULAR C	A		
Z	PART NO.			
-	LME - STANDARD	MM [INC	HES]	
-	DRAWN BY:	APPROVED BY:		SCALE:
-	ZRJ			1:1

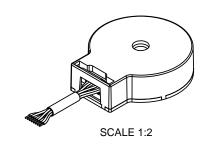
THRU HOLE VERSION

REV.	DESCRIPTION	DATE
Α	NEW DRAWING	4/15/2008







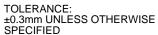




ØA (case opening)	ØB (bore size)	tolerance
	6mm	
10mm	6.35mm	
	8mm	-0.00
11mm	10mm	+0.033
15mm	14mm	
20mm	19mm	
21mm	20mm	

C FILE NAME:

LME-THROUGH BORE COPYRIGHT 2009
BY CUI INC.



Cable Code	1	2	3	4	5	6	7	8	<u></u>
Cable Color	Black	Red	Green	Brown	White	Grey	Yellow	Orange	TIT
Line Driver Output	0V	Vcc	Α	Ā	В	B	Z	Z	PA
Cable Code	1	2	3	4	5	-	-	-]
Cable Color	Black	Yellow	Green	Red	White	-	-	-	DR
Voltage Output	0V	Z	Α	Vcc	В	-	-	-	



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

LME - MODULAR OPTICAL ENCODER

REV: A

PART NO.

LME-THROUGH BORE

DRAWN BY:

ZRJ

APPROVED BY:

SCALE:

1:1