CUI INC

date 08/2008

PART NUMBER: NSC-S **DESCRIPTION:** incremental shaft type encoder

ELECTRICAL SPECIFICATIONS

output waveform	square wave
output signals	A, B, Z phase, inverse A, B, Z phase
current consumption	≤80 mA (voltage output), ≤60 mA (open collector output, open collector HV output), ≤150 mA (line driver output)
frequency response	150 kHz
supply voltage	5 V dc ± 10%, 12 V dc ± 10% (voltage output, open collector output), 12 V dc ± 10% (open collector HV output), 5 V dc ± 10% (line driver output)
output current	≤80 mA (voltage output), ≤60 mA (open collector output, open collector HV output), ≤150 mA (line driver output)
sink current	20 mA max.
output voltage "H"	Vcc - 1 V (voltage output), ≥2.5 V (line driver output)
output voltage "L"	≤0.5 V
output resolution (ppr)	36, 50, 60, 100, 150, 200, 250, 300, 360, 400, 500, 512, 600, 800, 1000, 1024, 1500*
waveform rise/fall time	≤1 μs, ≤200 ns (line driver output only)

*24 V dc not available

MECHANICAL SPECIFICATIONS

max shaft load, radial:	1.0 kgf
axial:	0.5 kgf
starting torque	10 gf·cm max.
angular acceleration	$1x10^5$ rad/s^2
moment of inertia	2.0 g·cm^2
max rotational speed	6000 RPM
shock resistance	50 G, 11 ms, 3 times each on XYZ
vibration proof	10 ~ 50 Hz, double amplitude 1.5 mm, 2 hours
rotational life	$1x10^8$ rpm·hrs

ENVIRONMENTAL SPECIFICATIONS

operating temp	-10° to +70° C
storage temp	-30° to +80° C
humidity	RH 85% max., non-collecting

ELECTRICAL CONNECTIONS

2M
2MC
2MHC

Color of Lead Wire	Description
Red	Power Source
Black	0V Common
Green or Blue	Signal A
White	Signal B
Yellow	Signal Z
Shielding Braid	NC

2MD

Color of Lead Wire	Description	Color of Lead Wire	Description
Red	Power Source	White	Signal $\underline{B}$
Black	0V Common	Gray	Signal $\overline{B}$
Green	Signal $\underline{A}$	Yellow	Signal $\underline{Z}$
Blue	Signal $\overline{A}$	Orange	Signal $\overline{Z}$
Shielding Braid	NC		

PART NUMBER: NSC-S **DESCRIPTION:** incremental shaft type encoder

ORDERING INSTRUCTIONS

NSC-XXXX-2MX-XX-XXX-S

Resolution (PPR)

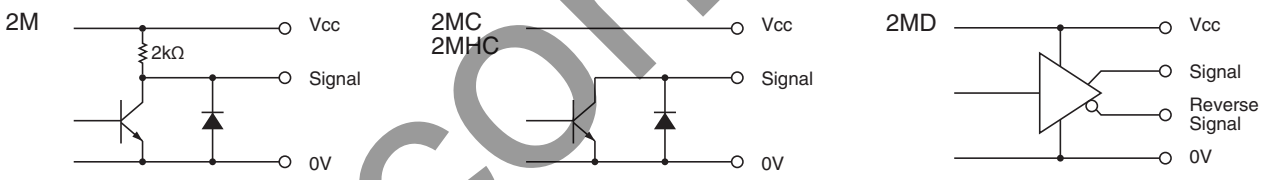
0036 = 36 PPR	04 = 400 PPR
005 = 50 PPR	05 = 500 PPR
006 = 60 PPR	0512 = 512 PPR
01 = 100 PPR	06 = 600 PPR
015 = 150 PPR	08 = 800 PPR
02 = 200 PPR	10 = 1000 PPR
025 = 250 PPR	1024 = 1024 PPR
03 = 300 PPR	15 = 1500 PPR
036 = 360 PPR	

Output type:
"no entry" = Voltage output
C = Open collector output
HC = Open collector HV output
D = Line driver output

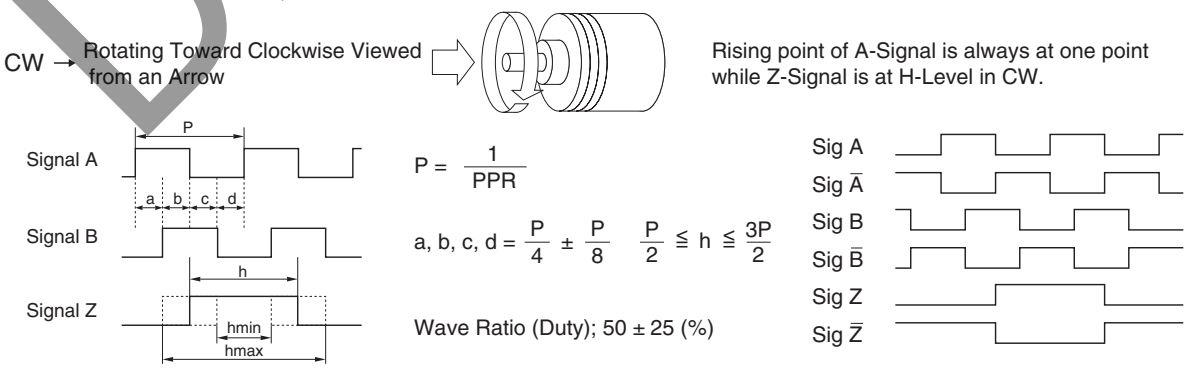
Input voltage:
05 = 5 V dc
12 = 12 V dc
24 = 24 V dc*
*HC type only

Shaft diameter:
05 = ø5 mm
125= ø0.125 “

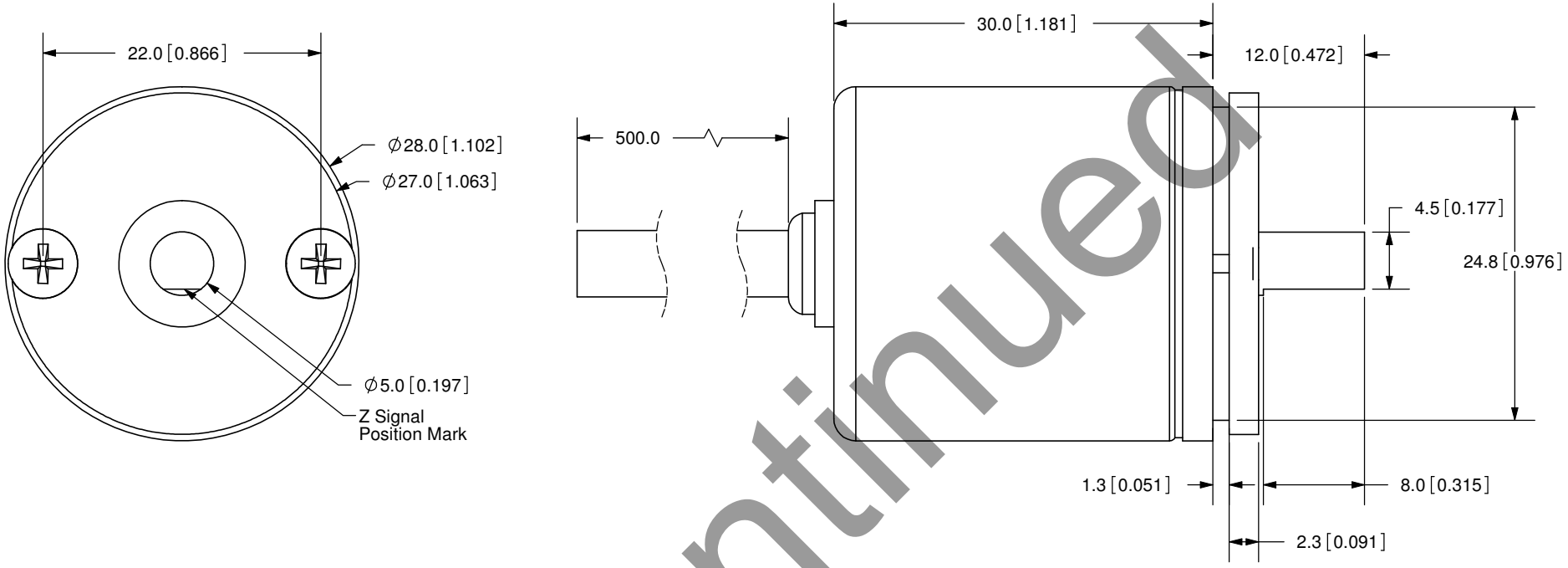
CIRCUIT CONNECTIONS

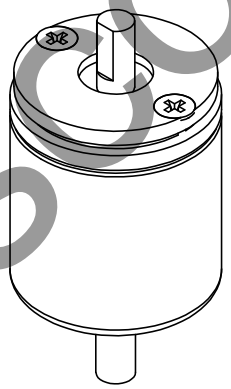


OUTPUT WAVEFORM



REV.	DESCRIPTION	DATE
A	NEW DRAWING	8/20/2008





scale 1:1

TOLERANCE:
±0.3mm UNLESS OTHERWISE SPECIFIED

RoHS

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TITLE: Incremental Encoder		REV: A
PART NO. NSC-S	UNITS: MM [INCHES]	
DRAWN BY: JMS	APPROVED BY:	SCALE: 2:1

PC FILE NAME: NSC-S