

**PART NUMBER:** NHS**DESCRIPTION:** hollow 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, push-pull), ≤100 mA (PNP mode open collector), ≤150 mA (line driver)
frequency response		≤200 kHz (voltage output, open collector, push-pull, line driver), ≤50 kHz (PNP mode open collector)
supply voltage		4.5 V ~ 13.2 V dc (voltage output, open collector) 10.8 V ~ 26.4 V dc (open collector, PNP mode, push-pull) 4.75 V ~ 5.25 V dc (line driver), 4.5 V ~ 5.5 V dc (C-MOS)
output current		≤20 mA (voltage output, open collector, PNP mode, line driver), ≤40 mA (push-pull)
output voltage	"H"	V _{cc} - 1 V (voltage output, PNP mode ²), V _{cc} - 3 V (push-pull), 2.5 V or more (line driver)
	"L" ¹	0.5 V max. (voltage output, open collector, line driver), 3 V max. (push-pull)
output resolution (ppr)		20, 30, 32, 40, 50, 60, 100, 125, 200, 250, 256, 300, 360, 400, 500, 512, 600, 800, 900, 1000, 1024, 1200, 1500, 1800, 2000, 2048, 2500, 3600
waveform rise/fall time		1 μs or less (voltage output, open collector, PNP mode, push-pull) 200 ns or less (line driver output)

MECHANICAL SPECIFICATIONS

max shaft load,	radial:	29.4 N
	axial:	9.8 N
starting torque		9.8 x 10 ⁻⁴ N·m max
angular acceleration		1x10 ⁵ rad/s ²
moment of inertia		8x10 ⁻⁷ kg·m ²
max rotational speed		6000 RPM
shock resistance		294 m/s ² , 11 ms, 3 times each on XYZ
vibration proof		10 ~ 55 Hz, double amplitude 1.5 mm
weight		120 g max.

ENVIRONMENTAL SPECIFICATIONS

operating temp	-10° to +70° C
storage temp	-30° to +80° C
humidity	RH 85% max, non-collecting
degree of protection	IP50

NOTES:

1. at maximum output current
2. maximum source current

ELECTRICAL CONNECTIONS

	Color of Lead Wire	Description		Color of Lead Wire	Description	Color of Lead Wire	Description
2M	Red	Power Source	2MD	Red	Power Source	White	Signal B ₋
2MC	Black	0V Common		Black	0V Common	Gray	Signal B
2MHC	Green or Blue	Signal A	Green	Signal A ₋	Yellow	Signal Z ₋	
2MHCP	White	Signal B	Blue	Signal A ₋	Orange	Signal Z	
2MHT	Yellow	Signal Z	Shielding Braid	NC			
	Shielding Braid	NC					

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ORDERING INSTRUCTIONS

NHS-XXX-2MX-XXX-XXX-XXX

Resolution (PPR):

002 = 20 PPR	05 = 500 PPR
003 = 30 PPR	0512 = 512 PPR
032 = 32 PPR	06 = 600 PPR
004 = 40 PPR	08 = 800 PPR
005 = 50 PPR	09 = 900 PPR
006 = 60 PPR	10 = 1000 PPR
01 = 100 PPR	1024 = 1024 PPR
0125 = 125 PPR	12 = 1200 PPR
02 = 200 PPR	15 = 1500 PPR
0250 = 250 PPR	18 = 1800 PPR
0256 = 256 PPR	20 = 2000 PPR
03 = 300 PPR	2048 = 2048 PPR
036 = 360 PPR	25 = 2500 PPR
04 = 400 PPR	36 = 3600 PPR

Shaft diameter:
800 = ø8 mm
635 = ø6.35 mm
600 = ø6 mm
500 = ø5 mm

Bracket:
L46 = 46 PCD
(1.81 mm center)
00 = standard bracket

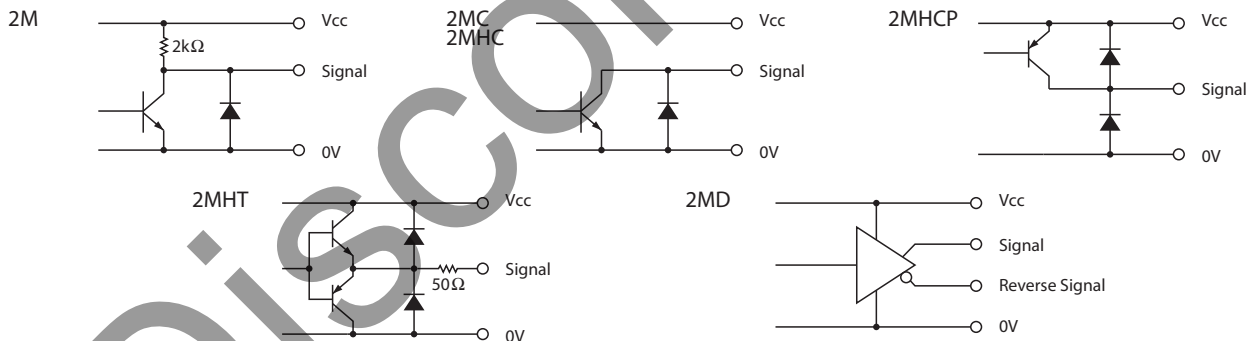
Output type:

"no entry" = Voltage output
C = Open collector output
HC = HV open collector output
HCP = PNP push-pull
HT = Push-pull / high voltage
D = Line driver output

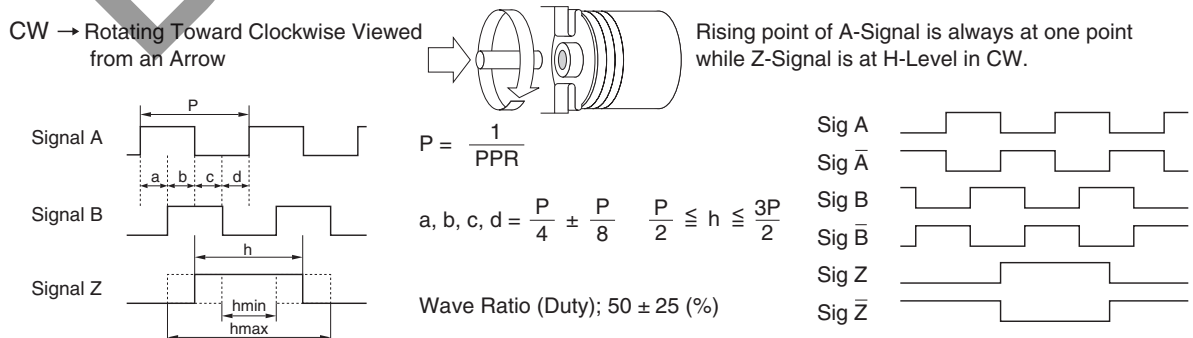
Cable length:

050 = 0.5 m*
100 = 1.0 m
300 = 3.0 m
*standard

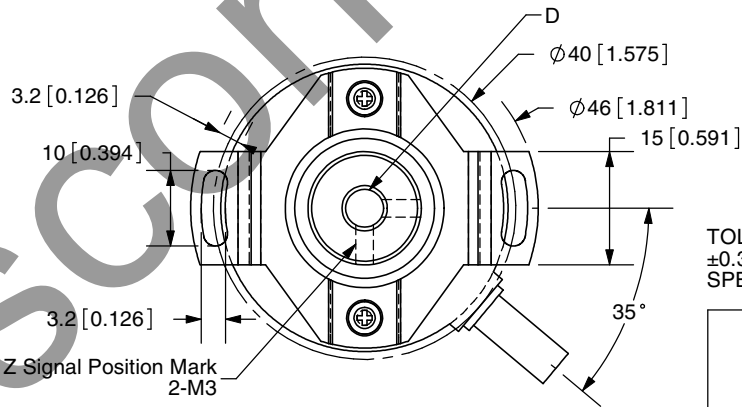
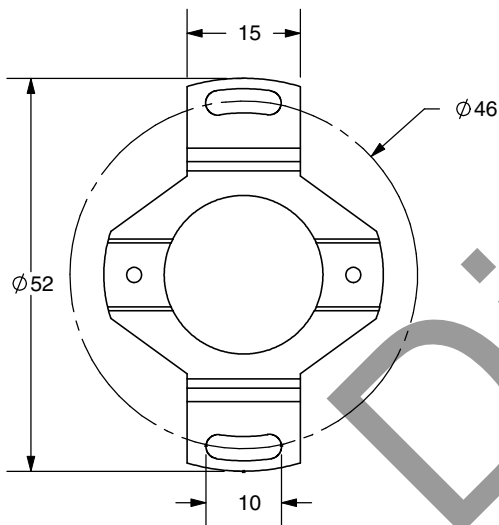
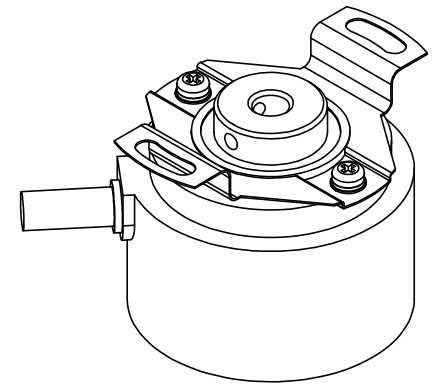
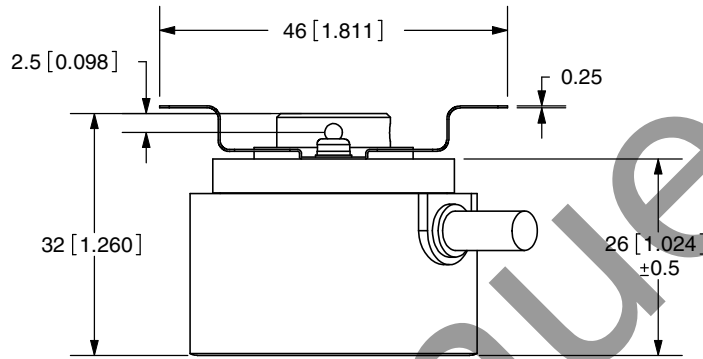
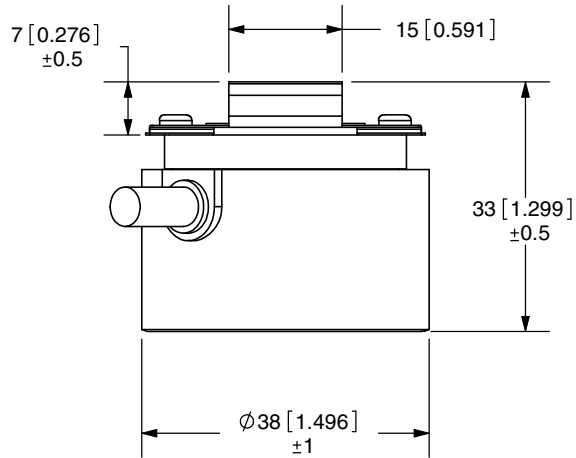
CIRCUIT CONNECTIONS



OUTPUT WAVEFORM



REV.	DESCRIPTION	DATE
A	NEW DRAWING	9/10/2007



TOLERANCE:
±0.3mm UNLESS OTHERWISE
SPECIFIED



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

Cable Color	Red	Black	Green	Blue	Shielding Braid	White	Gray	Yellow
Output Type	Power	0V common	Signal A	Signal \bar{A}	NC	Signal B	Signal \bar{B}	Signal Z
Cable Color	Orange	-	-	-	-	-	-	-
Output Type	Signal Z	-	-	-	-	-	-	-

NHS

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