



PART NUMBER: MAH42

DESCRIPTION: absolute encoder

ELECTRICAL SPECIFICATIONS

output signals	G: gray code, N: pure binary code, B: BCD code
output circuit	NPN open collector
logic	negative logic (H=0, L=1)
current consumption	100mA or less (under no load)
frequency response	10 KHz
supply voltage	1: 5 V dc ± 10%; 5: 12Vdc ±10% ~ 24Vdc ±15%
output resolution (ppr)	256, 360, 512, 720, 1000*, 1024, 2048, 3600*, 4096
max ouput current	sink current each bit 30mA

*BCD code only

MECHANICAL SPECIFICATIONS

max shaft loading, radial:	19.6N (2kgf)
thrust:	9.8N (1kgf)
starting torque	20 X 10 ⁻² N·m max (200gf·cm) or less (no oil seal)
max rotational speed	6000 RPM
shock resistance	500m/s ² (50g) X, Y, Z each 3 times
vibration proof	55 Hz / 1.5mm 2h each X, Y, Z
weight	300 g or less (excluding cable)
cable	outside diameter (G, N: f 6, 16 cores/ B: f 6.8, 19 cores) vinyl wire insulated shield cable (length 1m)

ENVIRONMENTAL SPECIFICATIONS

operating temp	-10° to +70° C
storage temp	-25° to +85° C
humidity	RH 96% or less, non-collecting

ORDERING INSTRUCTIONS

MAH42 - XXXX - XX

Resolution (PPR):
 256 = 256 PPR
 360 = 360 PPR
 512 = 512 PPR
 720 = 720 PPR
 1000 = 1000 PPR*
 1024 = 1024 PPR
 2048 = 2048 PPR
 3600 = 3600 PPR*
 4096 = 4096 PPR

*BCD code only

Input Voltage:
 1: 5VDC ± 10%
 5: 12VDC ±10% ~ 24VDC ± 15%

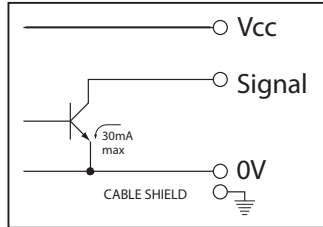
Output Type:
 G = Gray Code
 N = Natural Binary
 B = BCD Code



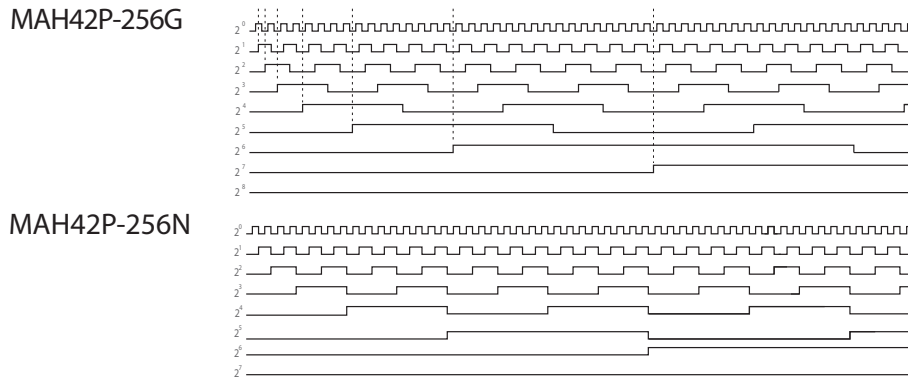
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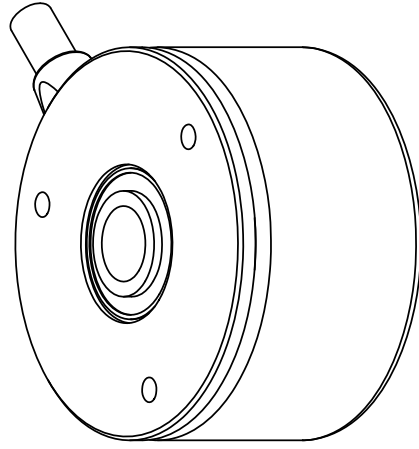
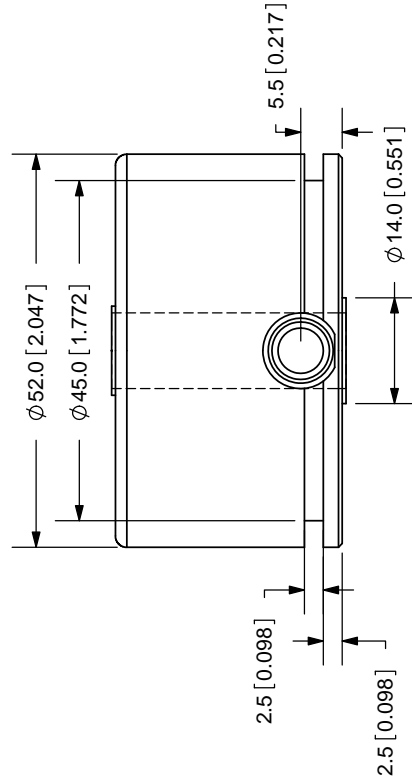
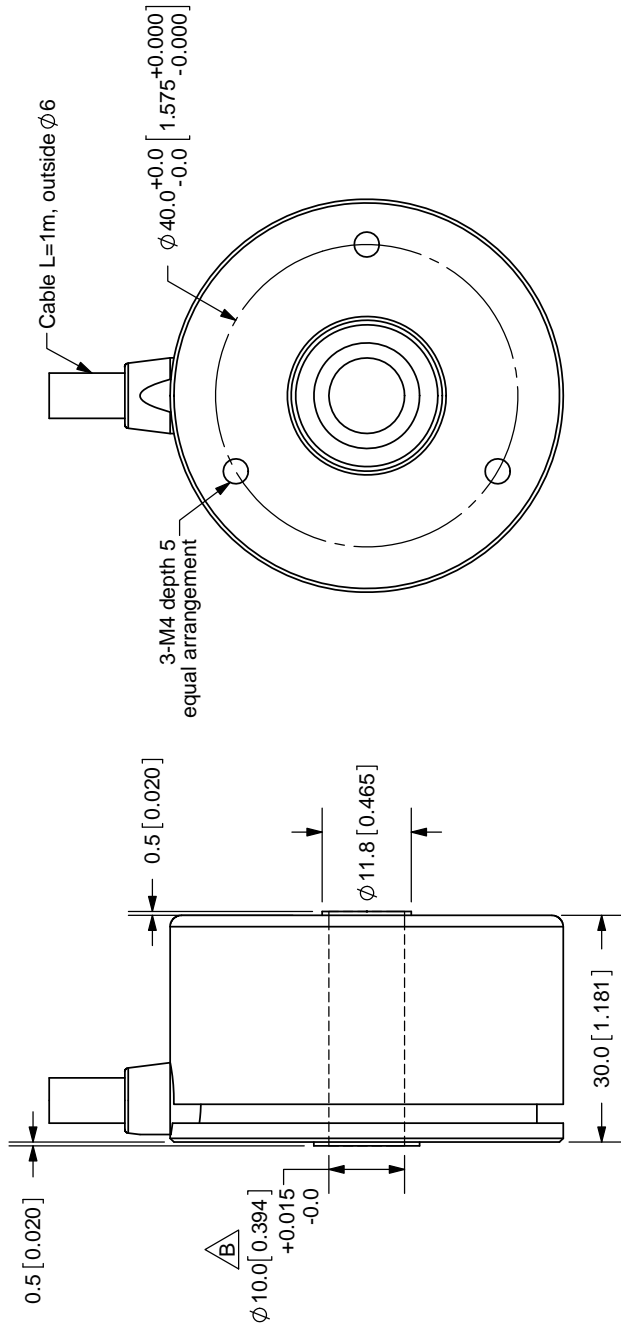
CIRCUIT CONNECTIONS



OUTPUT WAVEFORM



REV.	DESCRIPTION	DATE
A	NEW DRAWING	8/3/2007
B	added center hole dimension	12/10/2010



TOLERANCE:
±0.3mm UNLESS OTHERWISE
SPECIFIED



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REV: **B**

TITLE: Incremental Encoder

PART NO: MAH42 UNITS: MM [INCHES]

DRAWN BY: JMS APPROVED BY: SCALE: 1:1

Cable Color	Brown	Brown/Black	Orange	Orange/Black	Yellow	Yellow/Black	Green	Green/Black
Output Type	2 ⁰	2 ¹	2 ²	2 ³	2 ⁴	2 ⁵	2 ⁶	2 ⁷
Cable Color	Blue	Blue/Black	Purple	Purple/Black	Red/Black	Red	Black	Black
Output Type	2 ⁸	2 ⁹	NC	NC	NC	Power	0V	0V

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PC FILE NAME: MAH42