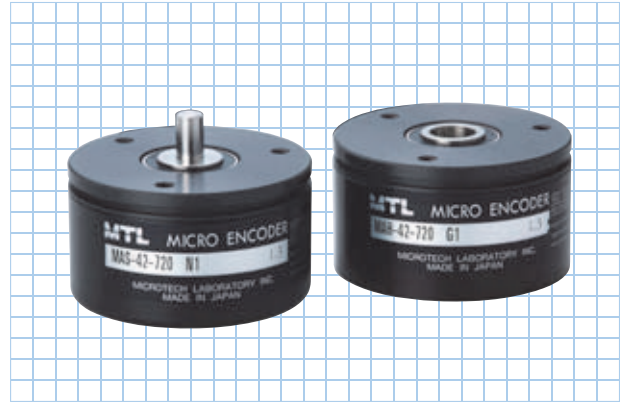


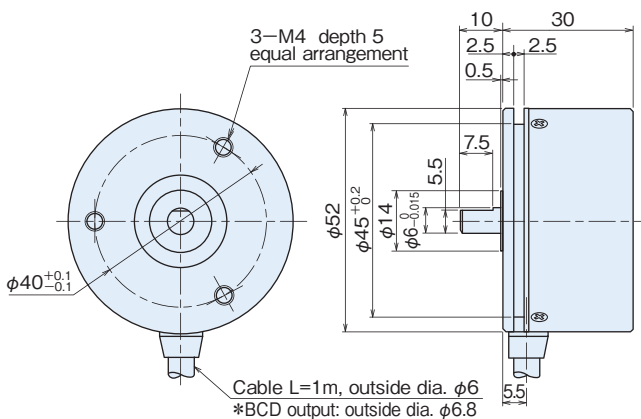
MA-42 series

[Absolute]

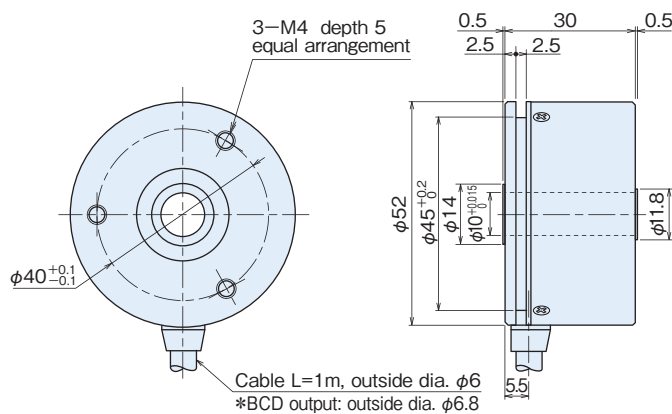


Outside dimensions

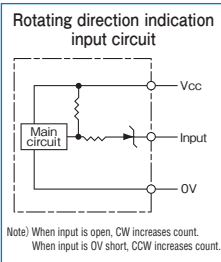
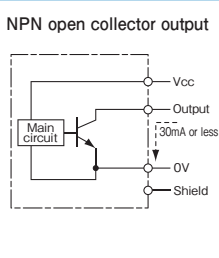
MAS-42



MAH-42



I/O circuit diagram



Specifications

Type name		MA□-42-□□□□			
Item		Shaft shape ●S=single shaft ●H=hollow shaft	Pulse number ●G=gray code ●N=pure binary code ●B=BCD code	Output code ●1=DC5V ●5=DC12V~24V	Supply voltage
Supply voltage	1:DC5V±5% 5:DC12V-10%~24V+15%				
Current consumption	100mA or less (under no load)				
Output code	G: gray code N: pure binary code		B: BCD code		
Logic	Negative logic (H=0, L=1)				
Resolution	256 512 1,024 4,096 360 720 2,048		1,000 3,600		
Output circuit	NPN open collector				
Output capacity	Sink current each bit 30mA, Residual voltage:0.4V or less (Sink current: at 30mA)				
Allowable load of shaft (electrical)	Radial	19.6N (2kgf)			
	Thrust	9.8N (1kgf)			
Maximum revolutions (mechanical)	6,000r/min				
Maximum response frequency	10kHz				
Working temperature/humidity	-10°C~70°C / RH95% or less no dewing				
Storage temperature	-25°C~85°C				
Vibration resistance	Durability 55Hz, double amplitude 1.5mm 2 hours each in X, Y, and Z directions				
Impact resistance	Durability 500m/s ² (about 50G) 3 times each in X, Y, and Z directions				
Cable	Outside diameter (G, N: $\phi 6$, 16 cores/B: $\phi 6.8$, 19 cores) vinyl wire AWG28 Insulated shield cable (length 1m)				
Mass	300g or less (excluding cable)				

Connection

Cable color	Type	Output signal		
		MA42-G	MA42-N	MA42-B
Brown	2 ⁰	2 ⁰	2 ⁰	2 ⁰
Brown/black	2 ¹	2 ¹	2 ¹	2 ¹
Orange	2 ²	2 ²	2 ²	2 ²
Orange/black	2 ³	2 ³	2 ³	2 ³
Yellow	2 ⁴	2 ⁴	2 ⁴	2 ⁰ ×10
Yellow/black	2 ⁵	2 ⁵	2 ⁵	2 ¹ ×10
Green	2 ⁶	2 ⁶	2 ⁶	2 ² ×10
Green/black	2 ⁷	2 ⁷	2 ⁷	2 ³ ×10
Blue	2 ⁸	2 ⁸	2 ⁸	2 ⁰ ×100
Blue/black	2 ⁹	2 ⁹	2 ⁹	2 ¹ ×100
Purple	2 ¹⁰	2 ¹⁰	2 ¹⁰	2 ² ×100
Purple/black	2 ¹¹	2 ¹¹	2 ¹¹	2 ³ ×100
Gray	—	—	—	2 ⁰ ×1000
Gray/black	—	—	—	2 ¹ ×1000
White	—	—	—	Not connected
White/black	—	—	—	Not connected
Red/black	Not connected	Rotating direction indication input		
Red	Supply power			
Black	0V (COMMON)			
Black	0V (COMMON)			

Note: The shield is in the encoder and not connected. A capacitor (0.1mF) is connected between 0V and FG.

Resolution and code No.

Resolution	Code No.	Resolution	Code No.
256	0~255	1,024	0~1,023
360	76~435	2,048	0~2,047
512	0~511	3,600	0~3,599
720	152~871	4,096	0~4,095
1,000	0~999		