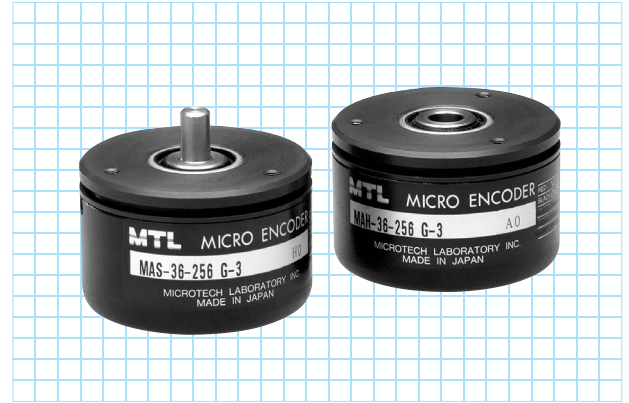


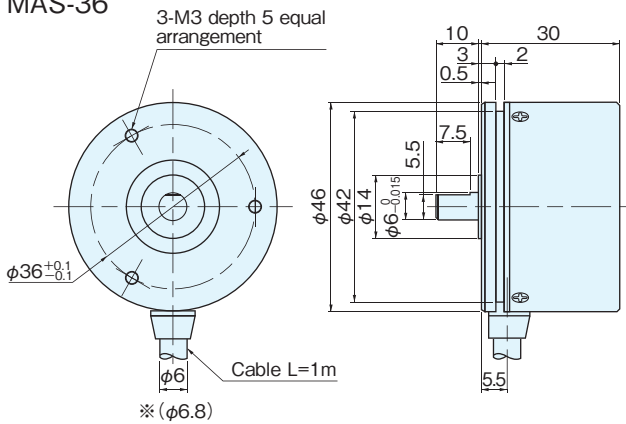
# MA-36 series

[Absolute]

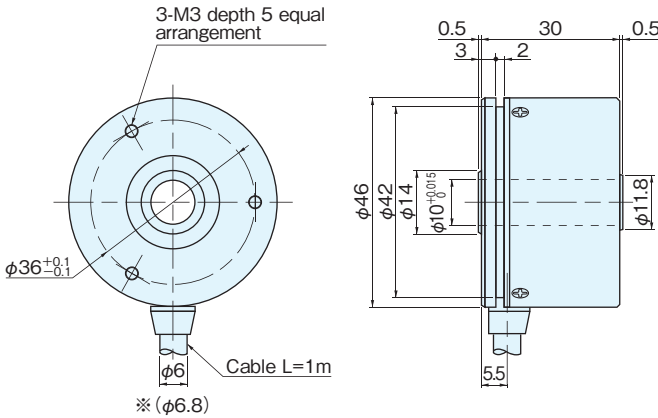


## Outside dimensions

MAS-36

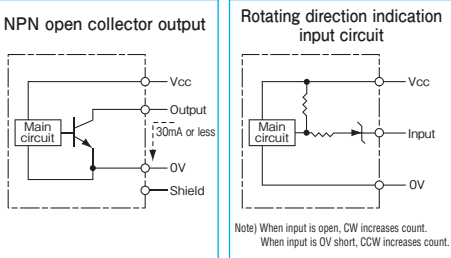


MAH-36



※ Specifications for 2,048 or more pulses

## Output circuit diagram



## Specifications

Type name		MA□-36-□□□□			
Item		Shaft shape ●S=single shaft ●H=hollow shaft	Pulse number □□□□	Output code □□□□ ●G=gray code ●N=pure binary code ●B=BCD code	Supply voltage ●1=DC5V ●5=DC12V~24V
Supply voltage	1:DC5V±5% 5:DC12V-10%~24V+15%				
Current consumption	150mA 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	256 720 4,096 360 1,024 8,192 512 2,048 16,384		1,000		
Output circuit	NPN open collector				
Output capacity	Sink current each bit 30mA max, Output residual voltage:0.5V or less (Cable length 1m, 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 (1,024 or less) 15kHz (2,048 pulse) 30kHz (4,096 pulse)		60kHz (8,192 pulse) 120kHz (16,384 pulse)		
Working temperature/humidity	-10°C~70°C/RH95% or less no dewing				
Storage temperature	-25°C~85°C * -20°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 <sup>2</sup> (about 50G) 3 times each in X, Y, and Z directions				
Cable	Outside diameter φ6.0 16-core vinyl wire Insulated shield cable (length 1m)				
Mass	300g or less (excluding cable)				

\*Specifications for 2,048 or more pulses

## Connection

Cable color	Type	Output signal		
		MA36-G	MA36-N	MA36-B
Brown		2 <sup>0</sup>	2 <sup>0</sup>	2 <sup>0</sup>
Brown / Black		2 <sup>1</sup>	2 <sup>1</sup>	2 <sup>1</sup>
Orange		2 <sup>2</sup>	2 <sup>2</sup>	2 <sup>2</sup>
Orange / Black		2 <sup>3</sup>	2 <sup>3</sup>	2 <sup>3</sup>
Yellow		2 <sup>4</sup>	2 <sup>4</sup>	2 <sup>0</sup> ×10
Yellow / Black		2 <sup>5</sup>	2 <sup>5</sup>	2 <sup>1</sup> ×10
Green		2 <sup>6</sup>	2 <sup>6</sup>	2 <sup>2</sup> ×10
Green / Black		2 <sup>7</sup>	2 <sup>7</sup>	2 <sup>3</sup> ×10
Blue		2 <sup>8</sup>	2 <sup>8</sup>	2 <sup>0</sup> ×100
Blue / Black		2 <sup>9</sup>	2 <sup>9</sup>	2 <sup>1</sup> ×100
Purple		NC	NC	2 <sup>2</sup> ×100
Purple / Black		NC	NC	2 <sup>3</sup> ×100
Red / Black		NC	NC	Rotating direction indication input
Red		Supply power		
Black		0V (COMMON)		
Black		0V (COMMON)		

## Connection (2,048 pulse or more)

Cable color	Type	Output signal	
		MA36-□G1	MA36-□N1
Brown		Output 2 <sup>0</sup>	
Brown / Black		Output 2 <sup>1</sup>	
Orange		Output 2 <sup>2</sup>	
Orange / Black		Output 2 <sup>3</sup>	
Yellow		Output 2 <sup>4</sup>	
Yellow / Black		Output 2 <sup>5</sup>	
Green		Output 2 <sup>6</sup>	
Green / Black		Output 2 <sup>7</sup>	
Blue		Output 2 <sup>8</sup>	
Blue / Black		Output 2 <sup>9</sup>	
Purple		Output 2 <sup>10</sup>	
Purple / Black		Output 2 <sup>11</sup>	
Gray		Output 2 <sup>12</sup>	
Gray / Black		Output 2 <sup>13</sup>	
Red		Vcc	
Red / Black		N.C.	N.C.
Black		(*) Latch input (LE)	OV

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.
256	0~255
360	76~435
512	0~511
720	152~871
1,000	0~999
1,024	0~1,023

Resolution	Code No.
2,048	0~2,047
4,096	0~4,095
8,192	0~8,191
16,384	0~16,383