

MA-20 series

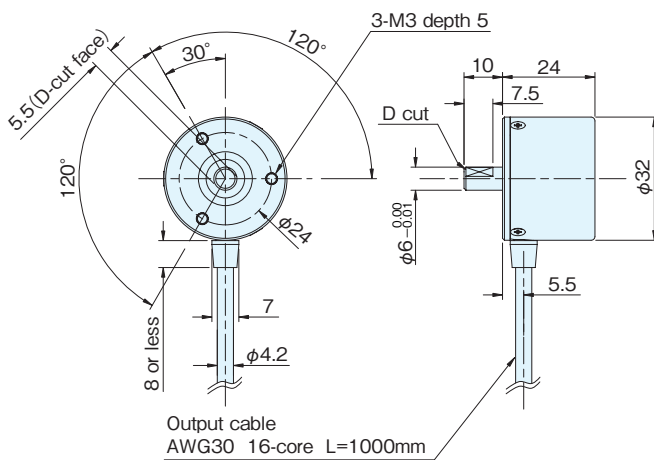
[Absolute]

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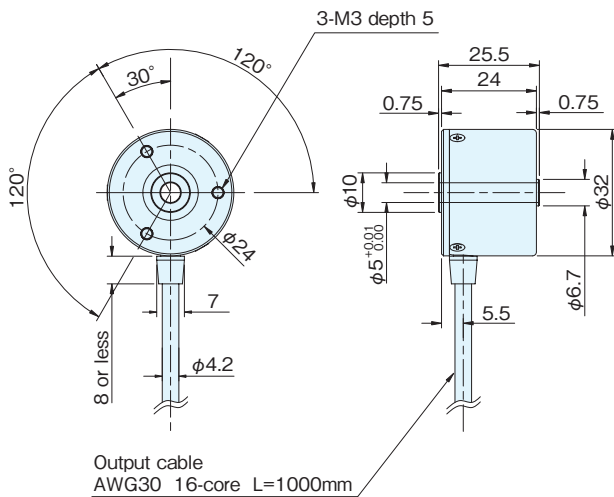


Outside dimensions

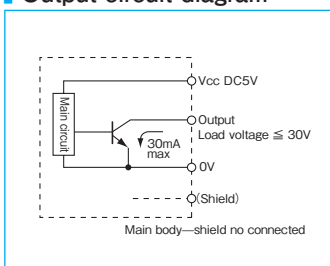
MAS-20



MAH-20



Output circuit diagram



※A capacitor (0.33μF) is connected between 0V and FG (frame ground).

Specifications

Type name		MA□-20-□□1	
		Shaft shape	Pulse number
		●S=single shaft	●G=gray code
		●H=hollow shaft	●N=pure binary code
			●B=BCD code
Supply voltage	DC5V±5%		
Current consumption	100mA or less (under no load)		
Output code	G: gray code	B: BCD code	
	N: pure binary code		
Logic	Negative logic (H=0, L=1)		
Resolution	256	1,024	4,096
	512	2,048	3,600
Output circuit	NPN open collector		
Output capacity	Sink current:30mAmax, load voltage:30Vmax, Output residual voltage:0.5V or less (Cable length 1m, Sink current: at 30mA)		
Allowable load of shaft (electrical)	Radial	14.7N (1.5kgf)	
	Thrust	4.9N (0.5kgf)	
Maximum revolutions (mechanical)	6,000r/min		
Maximum response frequency	10kbit/s		
Starting torque	2×10 ⁻³ N·m (20gf·cm) or less		
Working temperature/humidity	-10°C~70°C / 35%~90%RH no dewing		
Storage temperature	-20°C~80°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 φ4.2 16-core vinyl wire Insulated shield cable (length 1m)		
Mass	150g (excluding cable)		

(※) Output code "B" is selectable only in Shaft shape "S"

Connection

cable color	Type	Output signal		
		MA-20-□G1	MA-20-□N1	MA-20-□B1
Brown		2 ⁰		2 ⁰
Brown/black		2 ¹		2 ¹
Orange		2 ²		2 ²
Orange/black		2 ³		2 ³
Yellow		2 ⁴		2 ⁰ ×10 ¹
Yellow/black		2 ⁵		2 ¹ ×10 ¹
Green		2 ⁶		2 ² ×10 ¹
Green/black		2 ⁷		2 ³ ×10 ¹
Blue		2 ⁸		2 ⁰ ×10 ²
Blue/black		2 ⁹		2 ¹ ×10 ²
Purple		2 ¹⁰		2 ² ×10 ²
Purple/black		2 ¹¹		2 ³ ×10 ²
Gray		N.C.		2 ⁰ ×10 ³
White		N.C.		2 ¹ ×10 ³
Red		Vcc (DC5V)		
Black		0V		

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