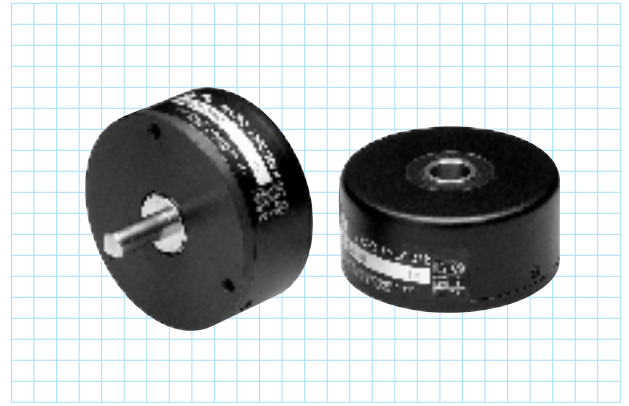
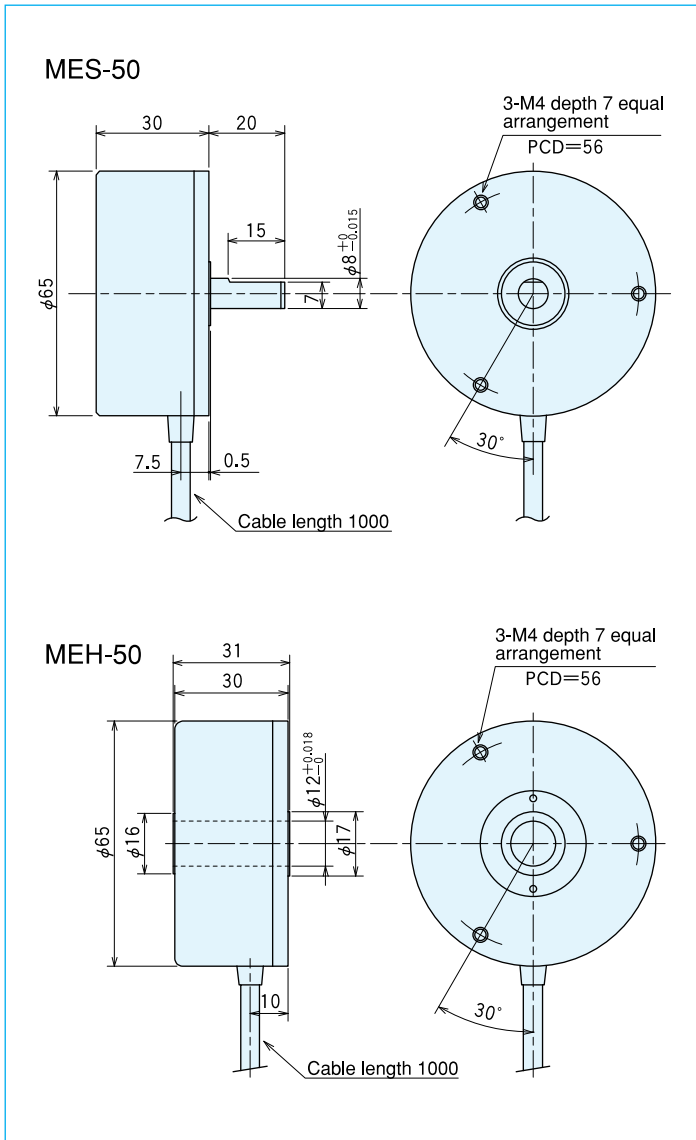


# ME-50 series

[Square Wave/Incremental]



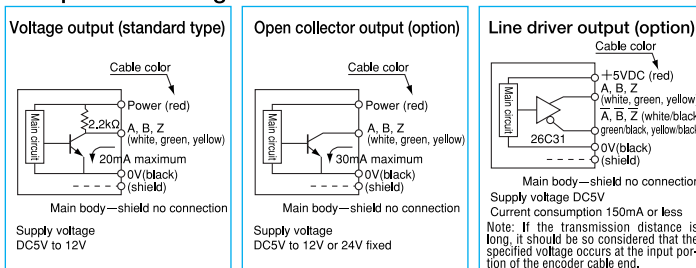
## Outside dimensions



## Specifications

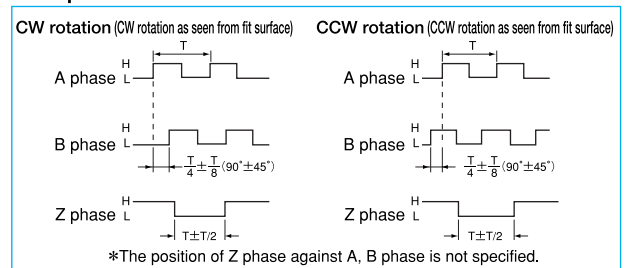
Type name		ME <input type="checkbox"/> -50- <input type="checkbox"/> <input type="checkbox"/>	
Item	Shaft shape	●S=single shaft	●H=hollow shaft
	Pulse number	<ul style="list-style-type: none"> <li>●No entry=voltage output</li> <li>●C=open collector output</li> <li>●C=open collector output DC24V</li> <li>●E=line driver output</li> <li>●S=sine wave output</li> <li>●ST=built-in multiplication circuit</li> <li>●P2=Two head detection</li> </ul>	
Supply voltage	DC5~12V ±10% DC24V±10% (option)		
Current consumption	60mA or less (under no load)		
Detection system	Incremental		
Output	Output pulse number (Standard)	500 1,000 1,024 2,000	3,000 3,600 4,096
	[Pulse number/rotation]	5,000 5,400 6,000 10,000 10,800	
Output phase	A, B, Z phase		
Output form	Square wave		
Output capacity	Sink current: 20mA Residual voltage: 0.5V or less (at 10mA)		
Maximum response frequency (response pulse number)	100kHz In case of voltage output, load resistance shall be 2.2kΩ. (Refer to the output circuit diagram.)		
Output phase difference	A, B phase difference 90°±45° (T/4±T/8) Z phase T±T/2 (see Output Waveform)		
Waveform rise/fall time	2μs or less (output cable 1m or less)		
Starting torque	10×10 <sup>-3</sup> N·m(100gf·cm) or less(no oil seal)		
Allowable load of shaft (electrical)	Radial	19.6N (2kgf)	9.8N (1kgf)
	Thrust	9.8N (1kgf)	4.7N (0.5kgf)
Maximum allowable revolutions (mechanical)	6,000r/min		
Working ambient temperature/humidity	0°C~60°C RH35%~90% no dewing		
Storing ambient 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 <sup>2</sup> (about 50G) 3 times each in X, Y, and Z directions		
Cable	Outside diameter φ4.2 5-core vinyl wire Insulated shield cable (length 1m)		
Mass	220g		

## Output circuit diagram



A capacitor (0.1 μF) is connected between 0V and FG (frame ground).

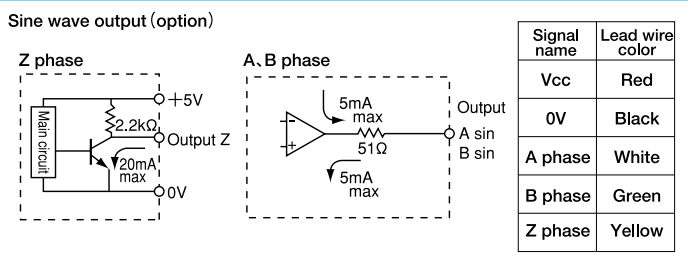
## Output waveform



## Specifications/Sine wave

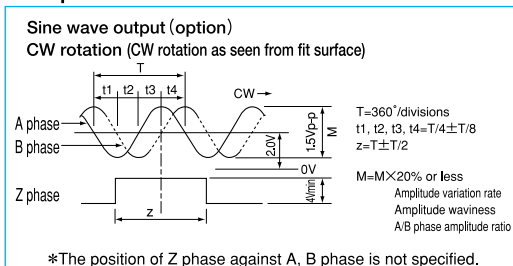
Supply voltage	DC5V ±5%	
Current consumption	40mA or less (under no load)	
Detection system	Sine wave・Incremental	
Output	Output pulse number (Standard)	5,000
	[Pulse number/rotation]	10,000 10,800
	Output phase	A, B, Z phase
	Output form	A, B phase SIN wave, Z phase square wave
	A, B, Z phase output	SIN wave 1.5 V <sub>p-p</sub> ±0.3 V offset 2.0V±0.2V
		Opamp output current 5mA Max. Harmonic distortion factor to be within 10% (Measuring condition to be within 20 kHz, effective value mean distortion factor measuring instrument)
Maximum response frequency	50kHz	
Output phase difference	A, B phase difference 90°±45° (T/4±T/8) Z phase T±T/2 (see Output Waveform)	
Starting torque	10×10 <sup>-3</sup> N·m (100gf·cm) or less	
Allowable load of shaft (electrical)	Radial	9.8N (1kgf)
	Thrust	4.9N (0.5kgf)
Maximum allowable revolutions (mechanical)	6,000r/min	
Working ambient temperature/humidity	0°C~50°C RH35%~90% no dewing	
Storing ambient 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 <sup>2</sup> (about 50G) 3 times each in X, Y, and Z directions	
Cable	Outside diameter φ4.2 5-core vinyl wire Insulated shield cable (length 1m)	
Mass	220g	

## Output circuit diagram



A capacitor (0.1 μF) is connected between 0V and FG (frame ground).

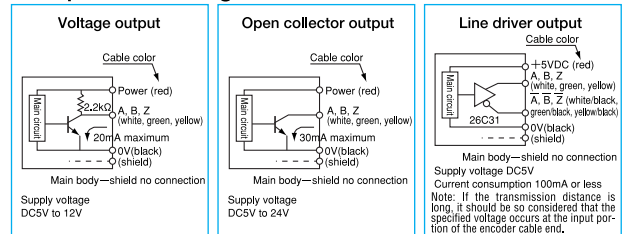
## Output waveform



## Specifications Built-in multiplication circuit (X2·X4·X8·X16)

Supply voltage	Voltage:DC5V-5%~12V+10% Open collector:DC5V-5%~24V+10% Line driver:DC5V±5%	
Current consumption	80mA or less (under no load)	
Detection system	Incremental	
Output	Output pulse number (Standard)	EX 10,000×2 (20,000) 10,000×4 (40,000) 10,000×8 (80,000) 10,000×16 (160,000)
	Output phase	A, B, Z phase
	Output form	Square wave
	Maximum response frequency	Line driver output:50kHz× (by multiplication) Voltage output・Open collector output:100kHz
Output phase difference	See the diagram below.	
Starting torque	10×10 <sup>-3</sup> N·m (100gf·cm) or less	
Allowable load of shaft (electrical)	Radial	9.8N (1kgf)
	Thrust	4.9N (0.5kgf)
Maximum allowable revolutions (mechanical)	6,000r/min	
Working ambient temperature/humidity	-10°C~70°C RH35%~90% no dewing	
Storing ambient 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 <sup>2</sup> (about 50G) 3 times each in X, Y, and Z directions	
Cable	Outside diameter φ4.2 5-core vinyl wire Insulated shield cable (length 1m)	
Mass	220g	

## Output circuit diagram



A capacitor (0.1 μF) is connected between 0V and FG (frame ground).

## Output waveform

