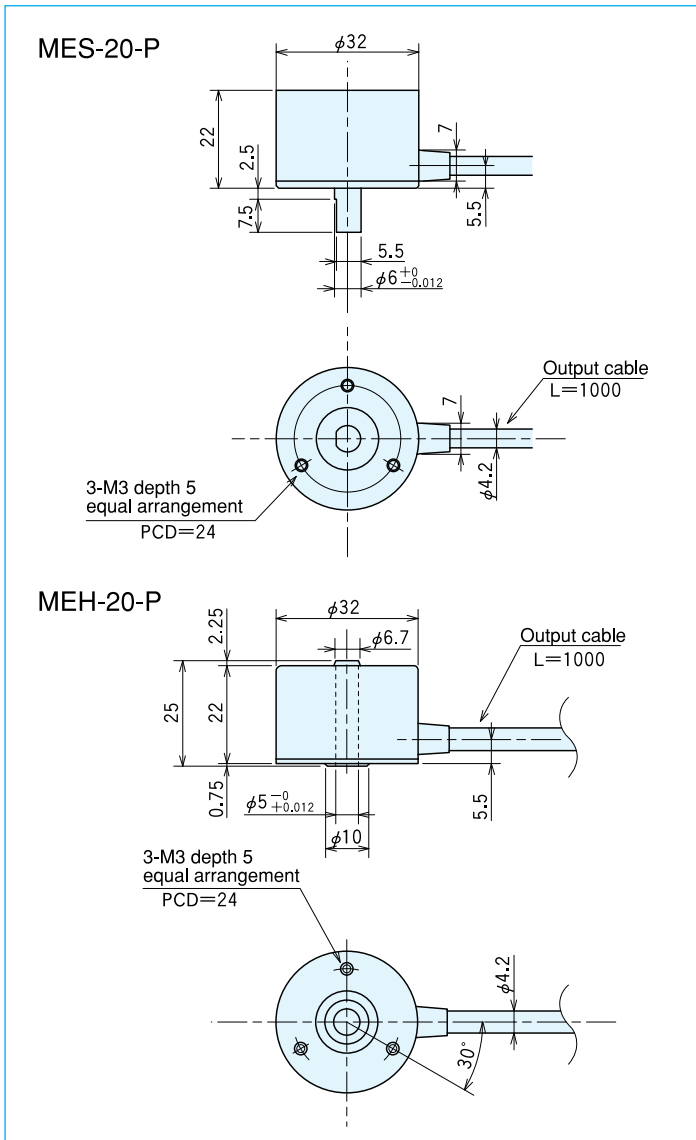


ME-20-P series

[Square Wave/Incremental]



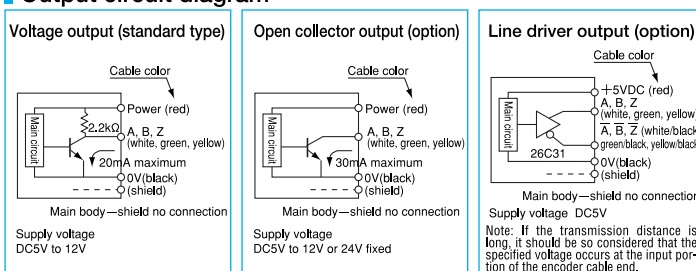
Outside dimensions



Specifications

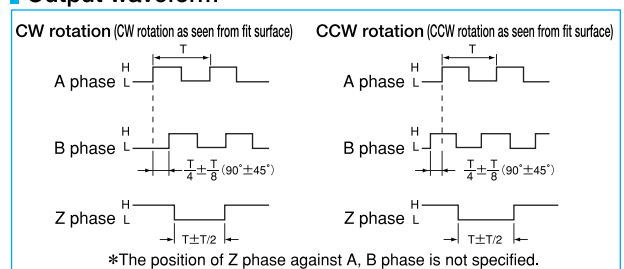
Type name		ME□-20-□P□	
Item	Supply voltage	DC5~12V $\pm 10\%$ DC24V $\pm 10\%$ (open collector output only)	
	Current consumption	50mA or less (under no load)	
Output	Detection system	Incremental	
	Output pulse number (Standard)	40 50 60 100 200 250	256 300 360 400 500 512
Output	Output phase	A, B, Z phase	
	Output form	Square wave	
Output	Output capacity	Sink current: 20mA Residual voltage: 0.5V or less (at 10mA)	
	Maximum response frequency (response pulse number)	100kHz	
Output	Output phase difference	A, B phase difference $90^\circ \pm 45^\circ$ (T/4 \pm T/8) Z phase T \pm T/2 (see Output Waveform)	
	Waveform rise/fall time	2 μ s or less (output cable 1m or less)	
Output	Starting torque	$2 \times 10^{-3} \text{N} \cdot \text{m}$ (20gf·cm) or less	
	Allowable load of shaft (electrical)	Radial	19.6N (2kgf) 14.7N (1.5kgf)
Output	Maximum allowable revolutions (mechanical)	Thrust	9.8N (1kgf) 4.9N (0.5kgf)
		6,000r/min	
Output	Working ambient temperature/humidity	$-10^\circ\text{C} \sim 70^\circ\text{C}$ RH35%~90% no dewing	
	Storing ambient temperature	$-20^\circ\text{C} \sim 80^\circ\text{C}$	
Output	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	
Output	Cable	Outside diameter $\phi 4.2$ 5-core vinyl wire Insulated shield cable (length 1m)	
	Mass	70g	

Output circuit diagram



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

Output waveform

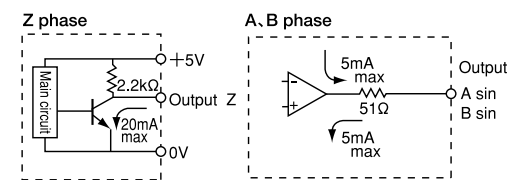


Specifications/Sine wave

Supply voltage	DC5V ±5%	
Current consumption	40mA or less (under no load)	
Detection system	Sine wave·Incremental	
Output	Output pulse number (Standard)	1,000
	[Pulse number/rotation]	2,000
		2,500
	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 Vp-p±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	2×10 ⁻³ N·m (20gf·cm) or less	
Allowable load of shaft (electrical)	Radial	14.7N (1.5kgf)
	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 ² (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	70g	

Output circuit diagram

Sine wave output (option)



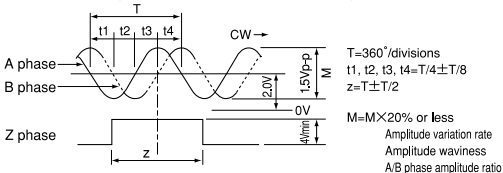
Signal name	Lead wire color
Vcc	Red
0V	Black
A phase	White
B phase	Green
Z phase	Yellow

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

Output waveform

Sine wave output (option)

CW rotation (CW rotation as seen from fit surface)

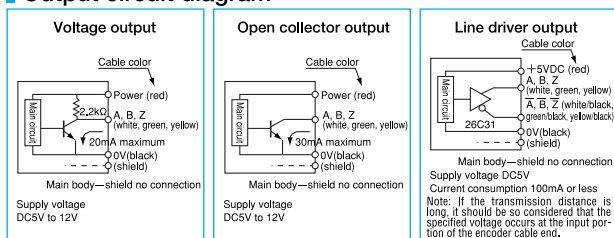


*The position of Z phase against A, B phase is not specified.

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

Supply voltage	Voltage./Open collector:DC5V-5%~12V+10% Line driver:DC5V±5%	
Current consumption	60mA or less (under no load)	
Detection system	Incremental	
Output	Output pulse number (Standard)	EX 2,500×2 (5,000)
	[Pulse number/rotation]	2,500×4 (10,000)
		2,500×8 (20,000)
		2,500×16 (40,000)
	Output phase	A, B, Z phase
Output form	Square wave	
Output capacity	Open collector out put:load voltage DC13.2V max	
Maximum response frequency	Line driver output:50kHz× (by multiplication) Voltage output·Open collector output:100kHz	
Output phase difference	See the diagram below.	
Starting torque	2×10 ⁻³ N·m (20gf·cm) or less	
Allowable load of shaft (electrical)	Radial	14.7N (1.5kgf)
	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 ² (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	70g	

Output circuit diagram



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

Output waveform

