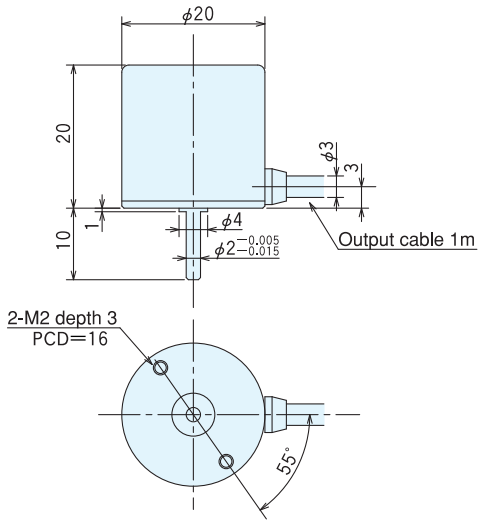
ME-12-P series

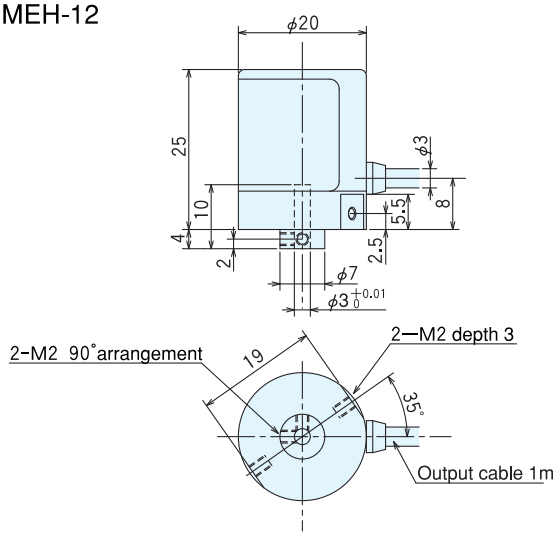
[Square Wave/Incremental]

Outside dimensions

MES-12



MEH-12

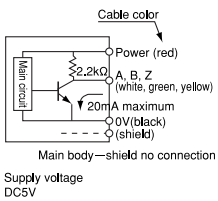


Specifications

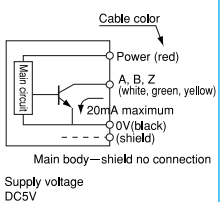
Item			
Type name	ME□-12-□P□ Shaft shape ●S=single shaft ●H=hollow shaft Pulse number Output circuit ●No entry=voltage output ●C=open collector output ●E=line driver output ●S=sine wave output ●ST=built-in multiplication circuit		
Supply voltage	DC5V ±10%		
Current consumption	40mA or less (under no load)		
Detection system	Incremental		
Output	Output pulse number (Standard) [Pulse number/rotation]	100 200 256 300 360 / 500 600 900 1,000 1,024	1,500 1,800 2,000 2,048
Output	Output phase	A, B, Z phase	
Output	Output form	Square wave	
Output	Output capacity	Sink current: 20mA Residual voltage: 0.5V or less (at 10mA)	
Output	Maximum response frequency (response pulse number)	100kHz	
Output	Output phase difference	A, B phase difference 90°±45° (T/4±T/8) Z phase T±T/2 (see Output Waveform)	
Output	Waveform rise/fall time	2μs or less (output cable 1m or less)	
Starting torque		1×10^{-3}N·m (10gf·cm) or less	
Allowable load of shaft (electrical)	Radial	1.9N (200gf)	0.98N (100gf)
Allowable load of shaft (electrical)	Thrust	1.9N (200gf)	0.98N (100gf)
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/s² (about 50G) 3 times each in X, Y, and Z directions	
Cable		Outside diameter φ3 5-core vinyl wire Insulated shield cable (length 1m)	
Mass		40g	

Output circuit diagram

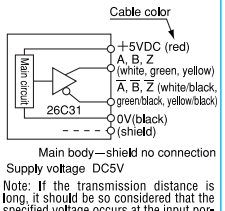
Voltage output (standard type)



Open collector output (option)



Line driver output (option)

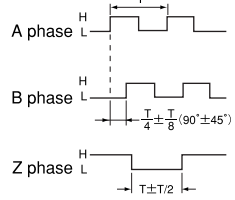


Note: If the transmission distance is long, it should be so considered that the specified voltage occurs at the input portion of the encoder cable end.

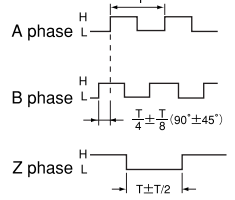
A capacitor (0.1μF) is connected between 0V and FG (frame ground).

Output waveform

CW rotation (CW rotation as seen from fit surface)



CCW rotation (CCW rotation as seen from fit surface)



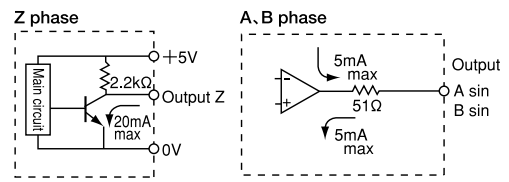
*The position of Z phase against A, B phase is not specified.

Specifications/Sine wave

Supply voltage		DC5V ±10%
Current consumption		40mA or less (under no load)
Detection system		Sine wave・Incremental
Output	Output pulse number (Standard) 〔Pulse number/rotation〕	1,000 2,000 1,500 2,048 1,800
Output	Output phase	A, B, Z phase
Output	Output form	A, B phase SIN wave, Z phase square wave
Output	A, B, Z phase output	SIN wave 1.5 Vp-p±0.3 V offset 2.0V±0.2V
Output	A, B, Z phase output	Opamp output current 5mA Max.
Output	A, B, Z phase output	Harmonic distortion factor to be within 10% (Measuring condition to be within 20 kHz, effective value mean distortion factor measuring instrument)
Output	Maximum response frequency	50kHz
Output	Output phase difference	A, B phase difference 90°±45° (T/4±T/8) Z phase T±T/2 (see Output Waveform)
Output	Waveform rise/fall time	2μs or less (output cable 1m or less)
Starting torque		1×10⁻³N・m or less
Allowable load of shaft (electrical)	Radial	0.98N (100gf)
Allowable load of shaft (electrical)	Thrust	0.98N (100gf)
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/s² (about 50G) 3 times each in X, Y, and Z directions
Cable		Outside diameter φ3 5-core vinyl wire Insulated shield cable (length 1m)
Mass		40g

Output circuit diagram

Sine wave output (option)

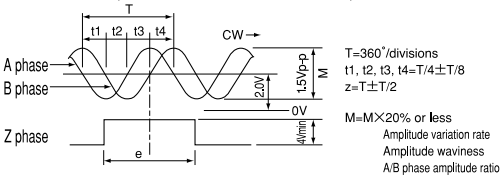


Signal name	Lead wire color
Vcc	Red
0V	Black
A phase	White
B phase	Green
Z phase	Yellow

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)

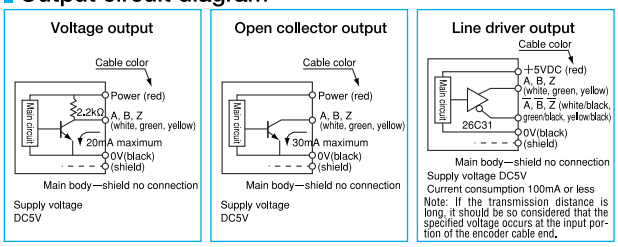


*The position of Z phase against A, B phase is not specified.

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

Supply voltage		DC5V ±5%
Current consumption		60mA or less (under no load)
Detection system		Incremental
Output	Output pulse number (Standard) 〔Pulse number/rotation〕	EX 2,000×2 (4,000) 2,000×4 (8,000) 2,000×8 (16,000) 2,000×16 (32,000)
Output	Output phase	A, B, Z phase
Output	Output form	Square wave
Output	Maximum response frequency	Line driver output:50kHz× (by multiplication) Voltage output・Open collector output:100kHz
Output	Output phase difference	See the diagram below.
Output	Waveform rise/fall time	2μs or less (output cable 1m or less)
Starting torque		1×10⁻³N・m or less
Allowable load of shaft (electrical)	Radial	0.98N (100gf)
Allowable load of shaft (electrical)	Thrust	0.98N (100gf)
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/s² (about 50G) 3 times each in X, Y, and Z directions
Cable		Outside diameter φ3 5-core vinyl wire Insulated shield cable (length 1m)
Mass		40g

Output circuit diagram



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

Output waveform

CW rotation (CW rotation as seen from fit surface)