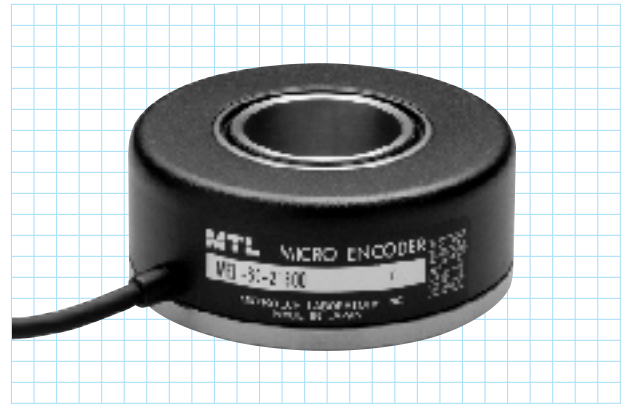
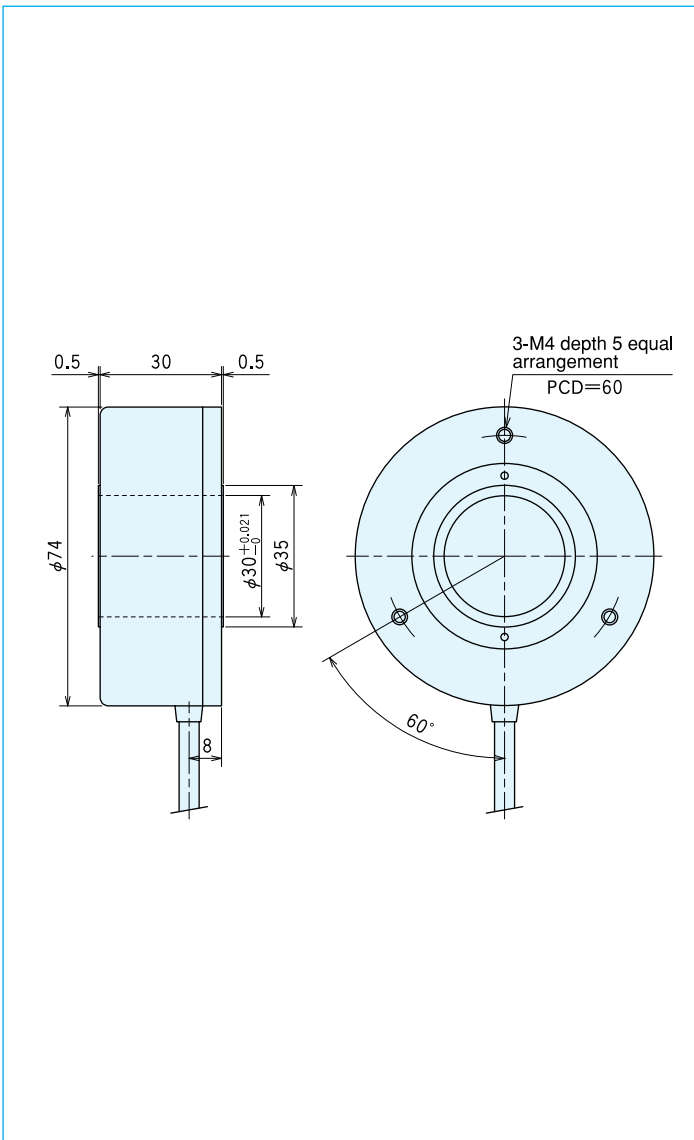


# MEH-60 series

[Square Wave/Incremental]



## Outside dimensions

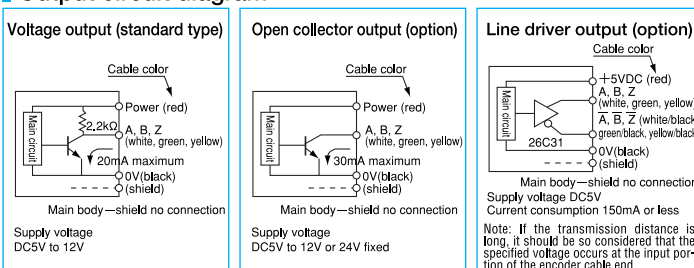


## Specifications

Type name	MEH-60- <input type="text"/> <input type="text"/>	
Item	Pulse number	Output circuit ●No entry=voltage output ●C=open collector output ●C4=open collector output DC24V ●E=line driver output ●S=sine wave output ●ST= built-in multiplication circuit ●P2=Two head detection
Supply voltage	DC5~12V $\pm 10\%$ (* 5V fixed) DC24V $\pm 10\%$ (option)	
Current consumption	60mA or less *120mA or less(under no load)	
Detection system	Incremental	
Output	Output pulse number (Standard)	180 600 1,800 10,000 200 1,000 2,000 10,800 360 4,000 *20,250 400 5,000 *21,600 500 5,400 9,000
	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 2.2k $\Omega$ . (Refer to the output circuit diagram.)
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 $\mu$ s or less (output cable 1m or less)	
Starting torque	20 $\times 10^{-3}$ N $\cdot$ m(200gf $\cdot$ 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)	3,000r/min	
Working ambient temperature/humidity	0 $^\circ$ C~60 $^\circ$ C RH35%~90% no dewing	
Storing ambient temperature	-20 $^\circ$ C~80 $^\circ$ 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 $\phi 4.2$ 5-core vinyl wire Insulated shield cable (length 1m)	
Mass	320g *430g	

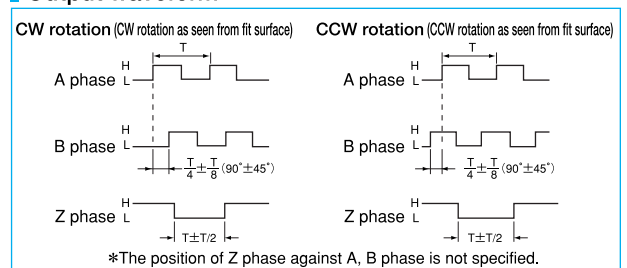
Note) Electrically divided

## Output circuit diagram



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

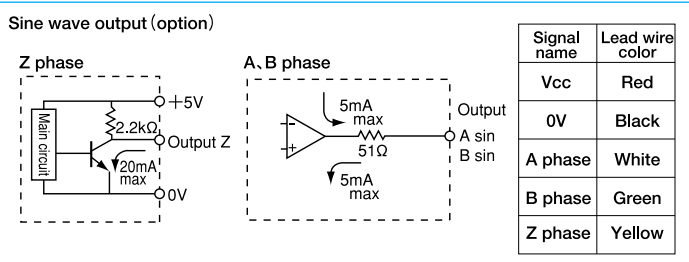
## Output waveform



## Specifications/Sine wave

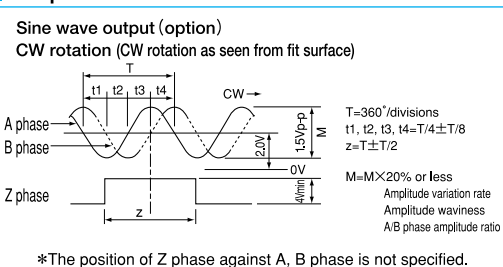
Supply voltage	DC5V ±5%	
Current consumption	40mA or less (under no load)	
Detection system	Sine wave·Incremental	
Output	Output pulse number (Standard)	5,000 10,000 9,000 ※20,250 ※21,600
	[Pulse number/rotation]	
	Output phase	A, B, Z phase
	Output form	A, B phase SIN wave, Z phase square wave
	A, B, 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	20×10 <sup>-3</sup> N·m (200gf·cm) or less	
Allowable load of shaft (electrical)	Radial	9.8N (1kgf)
	Thrust	4.9N (0.5kgf)
Maximum allowable revolutions (mechanical)	3,000r/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	320g ※430g	

## Output circuit diagram



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

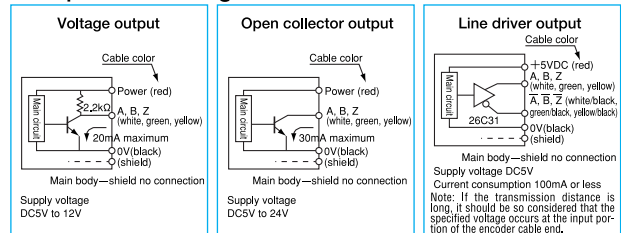
## Output waveform



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

Supply voltage	Voltage:DC5V-5%~12V+10% Open collector:DC5V-5%~24V+10% Open collector output:20,250, 21,600:DC5V-5% Line driver:DC5V±5%	
Current consumption	80mA or less (under no load)	
Detection system	Incremental	
Output	Output pulse number (Standard)	EX 21,600×2 (43,200) 21,600×4 (86,400) 21,600×8 (172,800) 21,600×16 (345,600)
	[Pulse number/rotation]	
	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	20×10 <sup>-3</sup> N·m (200gf·cm) or less	
Allowable load of shaft (electrical)	Radial	9.8N (1kgf)
	Thrust	4.9N (0.5kgf)
Maximum allowable revolutions (mechanical)	3,000r/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	430g	

## Output circuit diagram



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

## Output waveform

