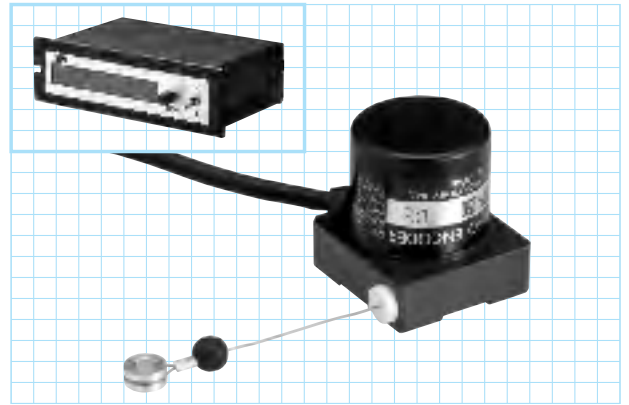


# MLS-12 series

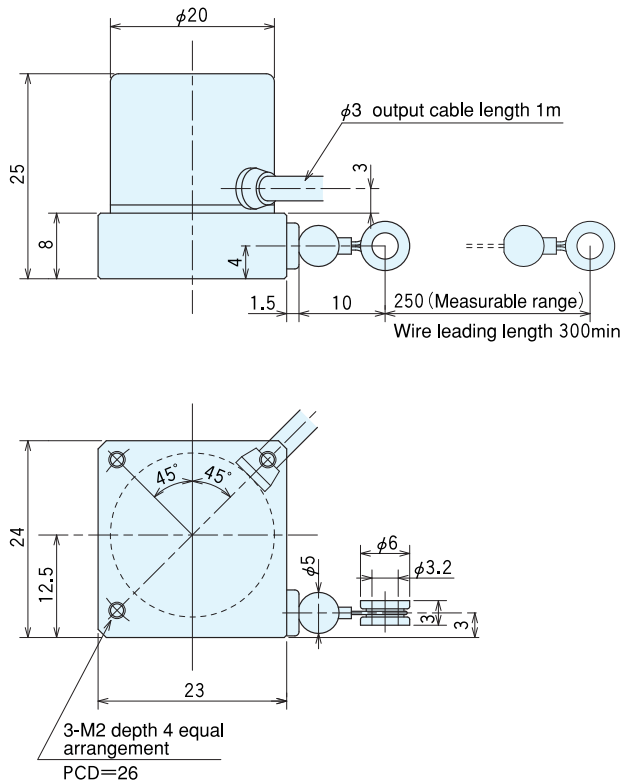
[Square Wave/Incremental]

- ▶ Smallest in the series: Outside dimensions 23×24×25 (H)
- ▶ Stroke: 250 mm
- ▶ Resolution: Selection from among 0.1mm, 0.04 mm
- ▶ Lightweight: 60 g



## Outside dimensions

MLS-12



## Specifications

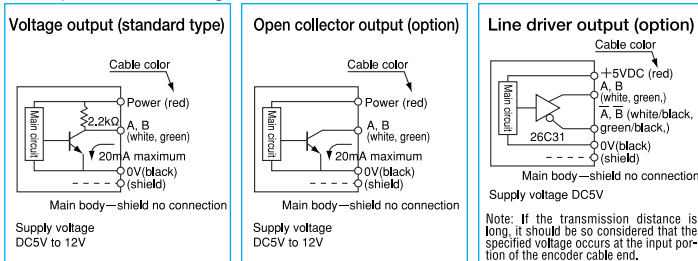
Type name		MLS-12- <input type="text"/> -250
Item	Pulse number	Output circuit
Measuring range	250mm	
Supply voltage	DC5V~12V ±10%	
Current consumption	40mA or less (under no load)	
Detection system	Incremental	
Stroke speed mm/sec	250	
Wire tensile force	0.39N~0.78N (40~80gf)	
Output	Output pulse number [Minimum resolution]	600 [0.1mm]      1,500 [0.04mm]
	Output phase	A, B phase
	Output form	Square wave
	Output capacity	Sink current: 20mA Residual voltage: 0.5V or less (at 10mA)
	Maximum response frequency (response pulse number)	50kHz
Working ambient temperature/humidity	0°C~50°C RH95% 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 φ3 4-core Insulated shield cable (length 1m)	
Mass	60g	

## Specifications/micro linear scale (detecting portion + indicating portion)

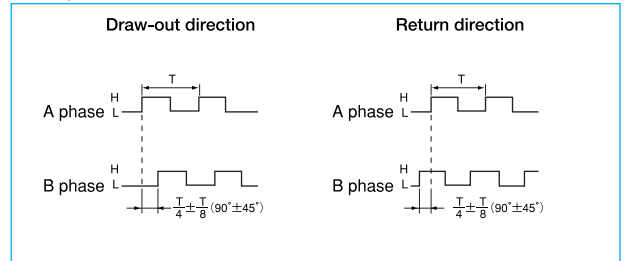
Type name	MLS-12-01-250	MLS-12-001-250
Measuring range mm	250	
Output pulse/1 mm	10	100
Counter accuracy pulse	±1	±1
Minimum reading	0.1	0.01
Power	AC100V 50/60Hz 180mA max	
Counter mode	10 Decimal	
Count indication	0~±999999.9	0~±99999.99
Reset	Reset switch provided *External signal resetting possible	
External output	*BCD parallel output	
Mass	700g	
Power cord	2m with plug	

Note: For counter specifications, see DC Series. \* indicates option.

## Output circuit diagram



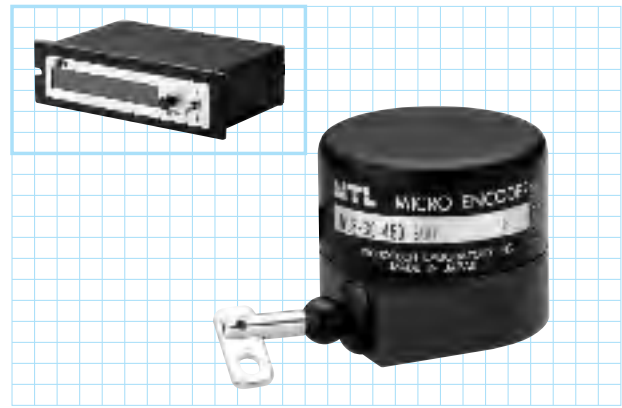
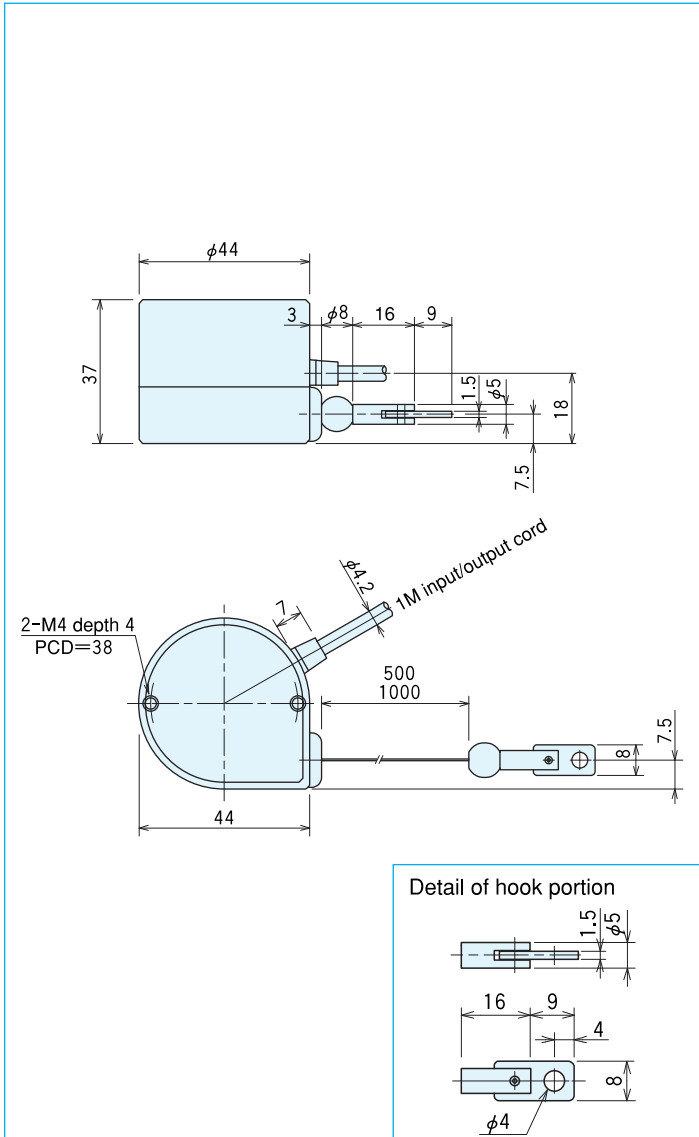
## Output waveform



# MLS-30 series

[Wire-Type Linear Scale]

## Outside dimensions



## Specifications/linear scale encoder (detection portion)

Type name	MLS-30-450-500	MLS-30-450-1000	MLS-30-4500-500	MLS-30-4500-1000
Measuring range mm	500	1,000	500	1,000
Output pulse/1mm	5	5	50	50
Stroke speed mm/sec	1,000	1,000	1,000	1,000
Absolute accuracy mm	±0.05/100mm			
Minimum resolution mm	0.2	0.2	0.02	0.02
Supply voltage	DC5~12V±10% DC24V±10%(option)		DC5~12V±10% DC24V±10%	
Current consumption	60mA or less (under no load)			
Output phase	A phase, B phase			
Output form	Square wave			
Output capacity	Sink current 20mA or less, residual voltage 0.5V or less (at 10mA)			
Response frequency	50kHz			
Output phase	A, B phase difference 90°±45°			
Waveform rise/fall time	2μsec or less			
Wire tensile force	1.4N~2.9N (150~300gf)			
Working ambient temperature/humidity	0°C~50°C/RH35%~90%			
Storage ambient temperature	-20~80°C			
Vibration resistance	Endurance 10 to 55Hz Double amplitude 2 hours each in X, Y, and Z directions			
Impact resistance	50G			
Cable	Insulated shield wire Outside diameter φ4.2 4-core vinyl wire			
Mass	185g			

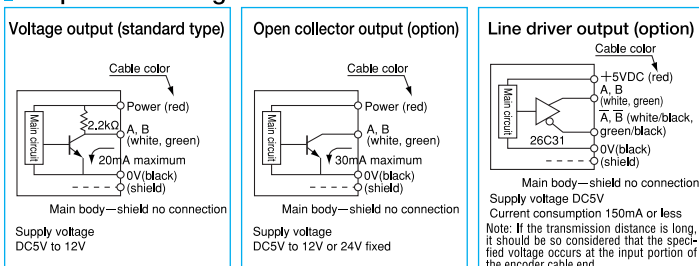
Note: The output pulse or resolution is possible to 4 multiple with the counter.

## Specifications/micro linear scale (detecting portion + indicating portion)

Type name	MLS-30-01-500	MLS-30-01-1000	MLS-30-001-500	MLS-30-001-1000
Measuring range mm	500	1,000	500	1,000
Output pulse/1mm	10	10	100	100
Counter accuracy pulse	±1	±1	±1	±1
Minimum reading	0.1	0.1	0.01	0.01
Power	AC100V 50/60Hz 180mA max			
Counter mode	10 Decimal			
Count indication	0~±999999.9		0~±99999.99	
Reset	Reset switch provided *External signal resetting possible			
External output	*BCD parallel output			
Mass	700g			
Power cord	2m with plug			

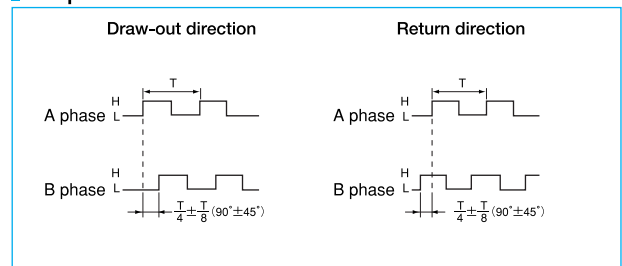
Note: For counter specifications, see DC Series. \* indicates option.

## Output circuit diagram



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

## Output waveform



Description

SE series

ME series

MGH series

MA series

MXS series

MLS series

MLA series

REH series

MT series

DC series

Setting Option/  
Coupling

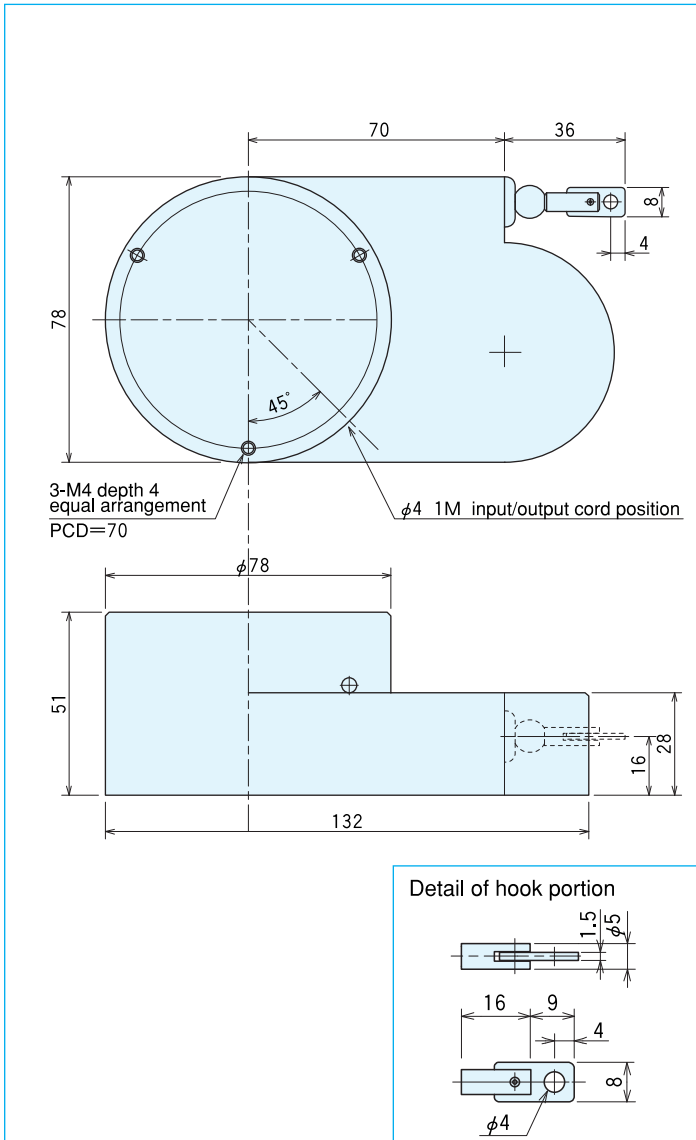
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# MLS-50 series

[Wire-Type Linear Scale]



## Outside dimensions



## Specifications/linear scale encoder (detection portion)

Type name	MLS-50-540-2000	MLS-50-540-4000
Measuring range mm	2,000	4,000
Output pulse/1mm	2.5	2.5
Stroke speed mm/sec	1,000	1,000
Absolute accuracy mm	2	4
Minimum resolution mm	0.4	0.4
Supply voltage	DC5~12V $\pm 10\%$ DC24V $\pm 10\%$ (option)	
Current consumption	60mA or less (under no load)	
Output phase	A phase, B phase	
Output form	Square wave	
Output capacity	Sink current 20mA or less, residual voltage 0.5V or less (at 10mA)	
Response frequency	100kHz	
Output phase	A, B phase difference $90^\circ \pm 45^\circ$	
Waveform rise/fall time	2 $\mu$ sec or less	
Wire tensile force	3.9N~6.8N (400~700gf)	
Working ambient temperature/humidity	0°C~50°C/RH35%~90%	
Storage ambient temperature	-20~80°C	
Vibration resistance	Endurance 10 to 55Hz Double amplitude 2 hours each in X, Y, and Z directions	
Impact resistance	50G	
Cable	Insulated shield wire Outside diameter $\phi 4.2$ 4-core vinyl wire	
Mass	850g	

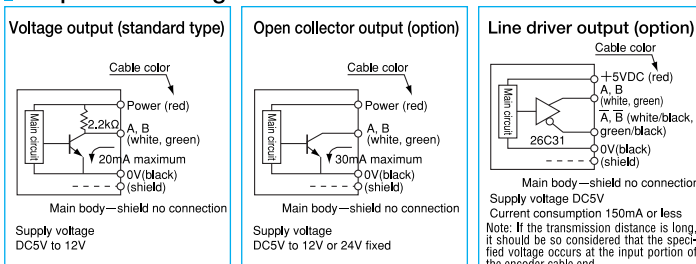
Note: The output pulse or resolution is possible to 4 multiple with the counter.

## Specifications/micro linear scale (detecting portion + indicating portion)

Type name	MLS-50-01-2000	MLS-50-01-4000
Measuring range mm	2,000	4,000
Output pulse/1mm	10	10
Counter accuracy pulse	$\pm 1$	$\pm 1$
Minimum reading	0.1	0.1
Power	AC100V 50/60Hz 180mA max	
Counter mode	10 Decimal	
Count indication	0~ $\pm 999999.9$	
Reset	Reset switch provided *External signal resetting possible	
External output	*BCD parallel output	
Mass	1,350g	
Power cord	2m with plug	

Note: For counter specifications, see DC Series. \* indicates option.

## Output circuit diagram



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

## Output waveform

