

# SONY

## MAGNESCALE®

Scale

# SR33 / 34

Interpolator

# CN33

Cable

# CH33

Sony's proven Magnescale is enhanced by several new technologies. The scale boasts superior speed and accuracy in addition to its conventional high level of reliability in a hostile environment and ease of use. Despite being a shield-type scale, it offers a high response speed of 150 m/min.



### SR33

Higher-accuracy recording enabled by newly developed high-density magnetic material.

Stable output of 40  $\mu\text{m}$  low-distortion sine waves and enhanced interpolation accuracy achieved by a magnetic head exclusively developed for the SR33.

Resolution: 0.05  $\mu\text{m}$  - 1  $\mu\text{m}$   
Accuracy:  $\pm 3 \mu\text{m}$

Offers high-speed response of 150 m/min and supports linear motor control.

Sine wave output

The diagram shows two blue rectangular blocks representing signal outputs. The top block is labeled 'SR33' and the bottom block is labeled 'CH33'. A dashed line with an arrow points from the SR33 block to the CH33 block, indicating a signal path or relationship between the two.

### SR34

Necessary circuits built into the head part. Model for AB quadrature output of 0.1  $\mu\text{m}$  resolution.

AB quadrature output

The diagram shows two blue rectangular blocks representing signal outputs. The top block is labeled 'SR34' and the bottom block is labeled 'CH33'. A dashed line with an arrow points from the SR34 block to the CH33 block, indicating a signal path or relationship between the two.

### CN33

Interpolator for SR33

The resolution of the AB quadrature signals can be switched between 0.05, 0.1, 0.5, and 1  $\mu\text{m}$ .

AB quadrature output

The diagram shows two blue rectangular blocks representing signal outputs. The top block is labeled 'SR33' and the bottom block is labeled 'CN33'. A dashed line with an arrow points from the SR33 block to the CN33 block, indicating a signal path or relationship between the two.



These products are manufactured at our Isehara Plant that is certified to ISO9001 Quality Management System and ISO14001 Environmental Management System.

\*Designs and appearances are subject to change without prior notice.

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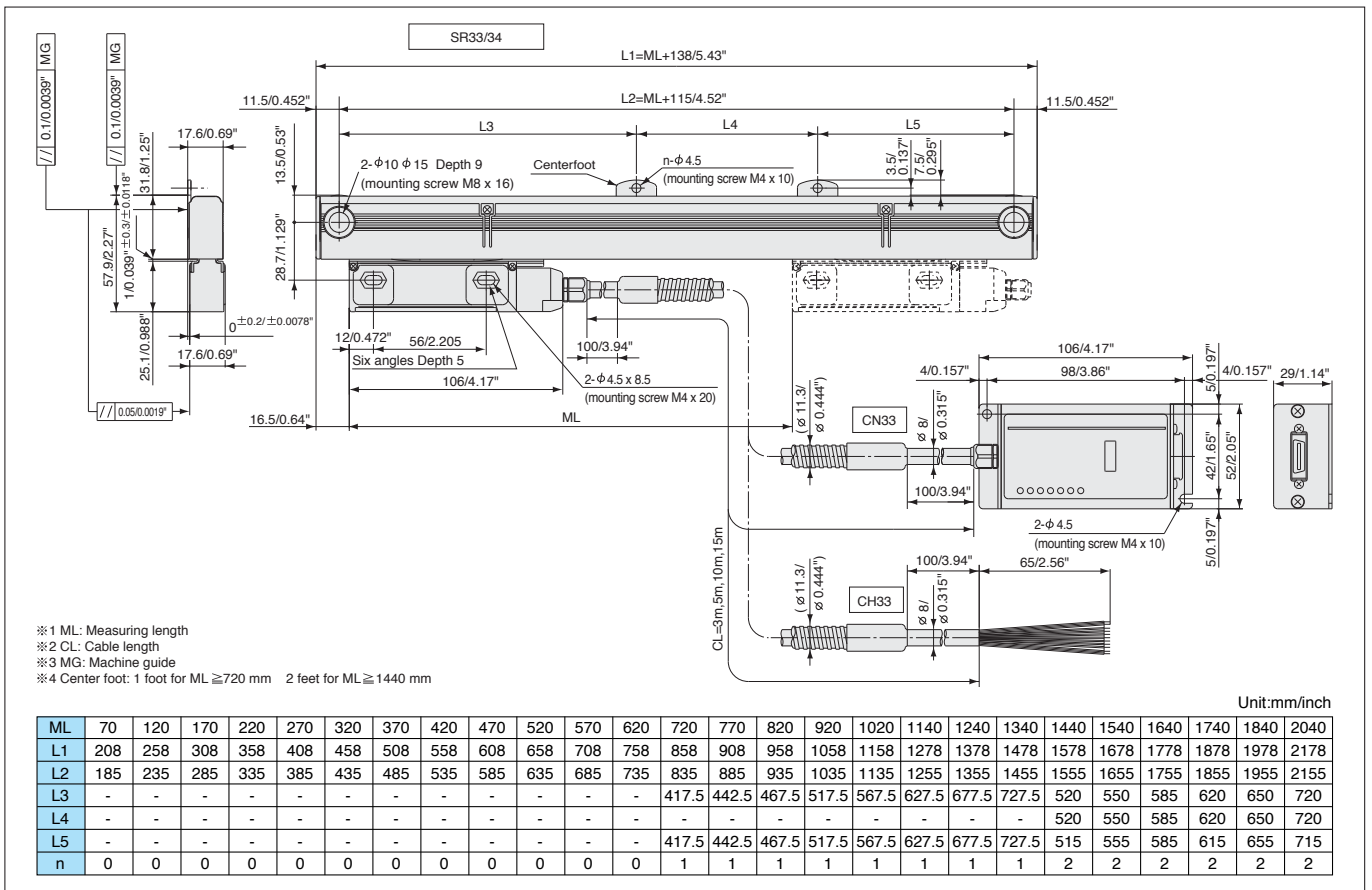
**Specifications**

	SR33	SR33 with CN33	SR34
Measuring length (ML)(mm/inch)	70,120,170,220,270,320,370,420,470,520,570,620,720,770,820,920,1020,1140,1240,1340,1440,1540,1640,1740,1840,2040 (2.76",4.72",6.69",8.66",10.63",12.6",14.57",16.54",18.5",20.4",22.4",24.4",28.3",30.3",32.2",36.2",40.1",44.88",48.81",52.7",56.69",60.62",64.5",68.5",72.44",80.3")		
Output signal	Sine wave (1Vp-p)	AB quadrature	
Signal pitch	40 μm	-	
Resolution	-	0.05/0.1/0.5/1μm(selectable using a switch)	0.1μm
Accuracy**2	±3μm, ±5μm		±5μm
Reference point <sup>2</sup>	One point (1 mm unit), Multi point (40 mm pitch), Reference mark (absolute position value is established with a maximum traverse of 20 mm)		
Maximum response speed	150m/min	150m/min Resolution 1μm Minimum phase difference: 250 ns	47m/min Resolution 0.1μm Minimum phase difference: 100 ns
Vibration resistance (50-3000 Hz)	150m/s <sup>2</sup>		
Impact resistance (11 ms)	350m/s <sup>2</sup>		
Thermal expansion coefficient	(12±1) x10 <sup>-6</sup> /°C		
Protective design grade	Equivalent to IP54 (when air is not supplied) /Equivalent to IP65 (when air is supplied) CN33: no grade		
Operating temperature range	0 to 50°C / 32 to 122°F		
Power supply voltage	DC +5V±5%		
Power consumption	150mA ( at 120 Ω termination )	400mA ( at 120 Ω termination )	
Output cable length (to the connected electronic part)	150m max. (when using CH33)	30m max. (selected based on the length of CN33)	30m max. (when using CH33)

\*1 at 20°C / 68°F  
\*2 Specified upon ordering.

Model	CH33-CP	CH33-CE	CN33-CP	CN33-CE
Description	Cable with open end	Cable with open end	Cable with interpolator	Cable with interpolator
Cable length	3.5,10,15m/9.8',16.4',32.8',49.2'			
Material	PVC	PU	PVC	PU
Armor	YES	YES	YES	YES

\*Please consult with our sales for the cable length other than above.



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