

## Analog output scale for feedback applications

- Compact high accuracy feedback scale.
- Produces sinusoidal wave incremental signal of approx. 1Vp-p.
- Recommended measuring pitch: 0.1 to 1 μm
- Measuring length: 70 to 1240 mm (2.7" to 48.8") (20 models)
- Perfect for positioning high accuracy NC machine tools or measuring equipment in a restricted installation space.

### Specifications

Model	SH12-	
	A3	A5
Measuring length L mm (inch)	70/120/170/220/270/320/370/420/470/520/570/620/670/720/770/820/920/1020/1140/1240 (2.7,4.7,6.6,8.6,10.6,12.6,14.5,16.5,18.5,20.4,22.4,24.4,26.3,28.3,30.3,32.3,36.2,40.1,44.8,48.8)	
Accuracy (at 20 °C / 60 °F)	± 3 μm	± 5 μm
Recommended measuring pitch	0.1 to 1 μm	
Engraving pitch	20 μm	
Max. response speed	120 m/ min	
Zero point	1 point in with the measuring length. (standard: at the center)	
Output signal	1V p-p	
Light source	Infrared LED	
Photo detector	Photo diode	
Expansion coefficient	(8.8 ± 1) × 10 <sup>-6</sup> / °C	
Operating temperature	0 °C to 45 °C / 14 °F to 140 °F	
Storage temperature	-10 °C to 60 °C / 32 °F to 113 °F	
Humidity range	Relative humidity 30 to 90 % (no condensation)	
Protective design grade	(1) Equivalent to IP53* (2) Improvement of the protective design grade (see the instruction manual)	
Atmosphere	Corrosive gas should not be contained in the atmosphere.	
Vibration resistance	98 m/s <sup>2</sup> (according to our vibration test data, 30 to 1000 Hz for 30 min)	
Shock resistance	294 m/s <sup>2</sup> (according to our vibration test, 11ms, 3 times in each of the X, Y, Z directions)	
Power supply	5V DC ± 5 %	
Power consumption	Approx. 150 mA	

\*Air purge may be used to increase resistance to dust, humidity and condensation.

### Dimensions

