

Linear Scale

SA57

Absolute type scale for feedback applications

- Full-absolute type. Does not require batteries or rotary encoder. Machine homing not required.
- Absolute signal output by TX serial transmission and incremental A/B phase output by differential line driver.
- Resolutions: 0.1, 0.5 and 1 μm
- Measuring lengths: 120 to 2270 mm / 4.7" to 48.8" (17 models)
- Perfect for positioning machine tools, various industrial equipment and hydraulic cylinders.

Specifications

Model	SA57-									
	C3A3	C3B3	D3B3	D3C3	D3B3	D3C5	E3C3	E3D3	F3C5	E3D5
Measuring length L mm (inch)	120/170/220/270/320/370/420/470/570/670/740/790/840/890/990/1090/1240 (4.7,6.6,8.6,10.6,12.5,14.5,16.5,18.5,22.4,26.3,29.1,31.1,33.35,38.9,42.9,48.8)									
Resolution	0.1 μm		0.5 μm				1 μm			
Engraving pitch	80 μm									
Minimum phase difference	0.12 μs	0.3 μs	0.3 μs	0.6 μs	0.3 μs	0.6 μs	0.6 μs	1.2 μs	0.6 μs	1.2 μs
Accuracy (at 20 °C 68 °F)	$\pm 3 \mu\text{m}$				$\pm 5 \mu\text{m}$		$\pm 3 \mu\text{m}$		$\pm 5 \mu\text{m}$	
Max. response speed	33.4 m/min	11 m/min	54.1 m/min	31.1 m/min	54.1 m/min	31.1 m/min	57.5 m/min	26 m/min	57.5 m/min	26 m/min
Zero point	One point at the center (standard)									
Light source	Infrared LED									
Photo detector	Photo diode									
Expansion coefficient	$(8.8 \pm 1) \times 10^{-6} / ^\circ\text{C}$									
Operating temperature	0 °C to 45 °C / 32 °F to 113 °F									
Storage temperature	-10 °C to 60 °C / 14 °F to 140 °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	49 m/s ² (according to our vibration test data, 50 to 1000 Hz for 30 min)									
Shock resistance	98 m/s ² (according to our vibration test, 11 ms, in each of the X, Y, Z directions)									
Sliding resistance of detector head	3.9N (average)									
Power supply	5V DC $\pm 5 \%$									
Power consumption	Approx. 250 mA									

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

Dimensions

