

Linear Scales ABS AT1100 Assembly Type Scale Unit for Absolute Systems

- Features a new coolant-proof design incorporating a high-performance rubber seal to provide higher reliability in the harsh factory environment.
- The 0.4 mm air gap between the sensors is approximately four times wider than the conventional optical or magnetic sensors. Therefore, the chance of foreign objects lodging in this gap is lower. This air gap is the world's largest in this class of scale used on machine tools.
- The de facto standard multi-point fixing method for the frame is adopted, resulting in high vibration/shock-resistance.
- Due to an improvement in the signal processing technique for the electromagnetic induction ABSOLUTE linear encoder, the repeatability is six times better than our conventional model.
- Being compatible with the high-speed serial interface of each company, a direct connection to the NC controller is possible.



ABS AT1100

SPECIFICATIONS

Model	ABS AT11□3(A)
Detection method	Electromagnetic induction
Mounting method	Frame multipoint
Effective range	140 to 3040 mm
Resolution	0.05 μm
Maximum response speed	3 m/s
Accuracy (20 °C)	Effective range L ₀ =140 to 2040 mm: 3 + 5L ₀ /1000 (μm) Effective range L ₀ =2240 to 3040 mm: 5 + 5L ₀ /1000 (μm)
Expansion coefficient	≈8×10 ⁻⁶ /K
Vibration resistance	≤196 m/s ² (20 G) (55 to 2000 Hz)
Shock resistance	Effective range L ₀ =140 to 2040 mm: ≤ 343 m/s ² (35 G) Effective range L ₀ =2240 to 3040 mm: ≤ 294 m/s ² (30 G) (1/2 sin 11 ms)
Power supply voltage	ABS AT1153/1143/1103A: 5 VDC ± 10% ABS AT1123: DC24 V (Conforming to DRIVE-CLiQ)
Maximum current consumption	AT1153: 300 mA (Max.) AT1143: 290 mA (Max.) AT1123: 140 mA (Max.) AT1103A: 300 mA (Max.)
Operational temperature (humidity) ranges	0 to 50 °C (RH 20 to 80%, non-condensing)
Storage temperature (humidity) ranges	-20 to 70 °C (RH 20 to 80%, non-condensing)

Meaning of Model No.

ABS AT11□3 - □□□□
Effective range

Interface specifications

Model	Applicable system
ABS AT1153	FANUC CORPORATION Serial ai Interface
ABS AT1143	Mitsubishi Electric Corporation MDS-D/MDS-DH Series
ABS AT1123	Siemens AG DRIVE-CLiQ
ABS AT1103A	Mitutoyo ENSIS

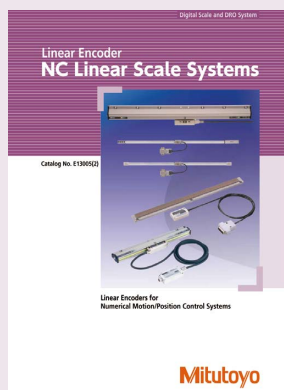
Note 1: Please contact each manufacturer for details of the applicable systems.

Note 2: ABS AT11□3□

- Transmission method
- Nothing: Full duplex communication
- A: Half-duplex communication

Signal cable specifications (optional)

Items	Specifications
Cable length	1 m, 3 m, 6 m, 9 m, 12 m
Cable material	PVC sheath ø6.5 Without conduit, High-flex specification with conduit PUR sheath ø6.5 Without conduit
I/O output connector	Flying lead specifications FANUC specifications Mitsubishi specifications Mitutoyo standard specifications Siemens specifications M12 connector specifications



Refer to the NC Linear Scale Systems Brochure (E13005) for more details.