

Absolute magnescale

Linear slim type

SR27A

- Slim type allows installation in narrow spaces
- Magnetic system enables use even in environments with condensation, oil, and other adverse conditions
- Supports the communication protocol of each supporting manufacturer
- Same thermal expansion as iron

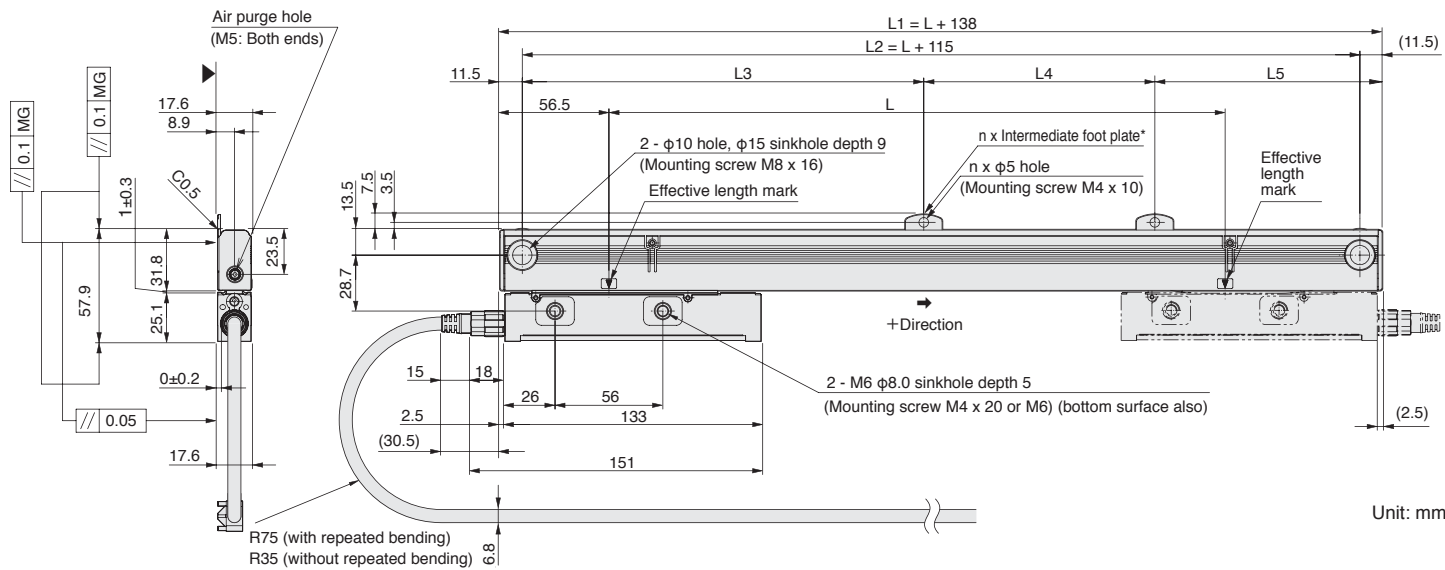


FANUC

Mitsubishi Electric

SIEMENS

Dimensions



Effective length	Total length	Mounting pitch					Number of intermediate foot plates
		L2	L3	L4	L5		
70	208	185	-	-	-	0	
120	258	235	-	-	-	0	
170	308	285	-	-	-	0	
220	358	335	-	-	-	0	
270	408	385	-	-	-	0	
320	458	435	-	-	-	0	
370	508	485	-	-	-	0	
420	558	535	-	-	-	0	
470	608	585	-	-	-	0	
520	658	635	-	-	-	0	
570	708	685	-	-	-	0	
620	758	735	-	-	-	0	
670	808	785	392.5	-	392.5	1	
720	858	835	417.5	-	417.5	1	

Effective length	Total length	Mounting pitch					Number of intermediate foot plates
		L2	L3	L4	L5		
770	908	885	442.5	-	442.5	1	
820	958	935	467.5	-	467.5	1	
920	1,058	1,035	517.5	-	517.5	1	
1,020	1,158	1,135	567.5	-	567.5	1	
1,140	1,278	1,255	627.5	-	627.5	1	
1,240	1,378	1,355	677.5	-	677.5	1	
1,340	1,478	1,455	727.5	-	727.5	1	
1,440	1,578	1,555	520	520	515	2	
1,540	1,678	1,655	550	550	555	2	
1,640	1,778	1,755	585	585	585	2	
1,740	1,878	1,855	620	620	615	2	
1,840	1,978	1,955	650	650	655	2	
2,040	2,178	2,155	720	720	715	2	

MG: Machine guide * Intermediate foot plate: One location when L ≥ 670 mm, two locations when L ≥ 1440 mm

- Notes**
- The surface indicated by the ▲ marks is the installation surface.
 - Screws indicated in the diagram are standard accessories.
 - Movement outside the effective length (L) will damage the scale head. It is recommended that the mechanical movable length (stroke) be set to 10 mm or more to the inside of both ends of the effective length (L).

Specifications

Model name	SR27A - xxx□□A #	SR27A - xxx□□B # SR27A - xxx□□D #	SR27A - xxx□AZY
Effective length (L: mm)	70 - 2,040		
Thermal expansion coefficient	12±1 × 10 ⁻⁶ /°C		
Accuracy(at 20°C)	3+3L/1,000 μm-p or 5+5L/1,000 μm-p, L: Effective length (mm)		
Reference point	Center, or user-selected position (Set at factory shipping)	Fixed to center	Fixed to 10 mm from left end of effective length
Output signal	Absolute serial bidirectional signal, compliant with EIA-485		Compliant with DRIVE-CLiQ
Compatible controllers	FANUC ai interface compatible	Mitsubishi Electric	SIEMENS AG
Resolution	Selectable from 0.01, 0.05, 0.1, 0.5 and 1 μm (Set at factory shipping)	Selectable from 0.01, 0.05 and 0.1 μm (Set at factory shipping)	0.01 μm
Maximum response speed	200 m/min		
Functional safety	Please consult with each controller manufacturer regarding support for functional safety.		EN ISO13849-1:2008 Cat.3 EN 62061:2005 / IEC 61508:2010 EN61800-5-2:2007
Legal compliance	FCC Part15 Subpart B Class A ICES-003 Class A Digital Device EN55011 Gp1 Class A, EN61000-6-2		
Operating temperature range	0 to +50°C		
Storage temperature range	-20 to +55°C		
Vibration resistance	150 m/s ² (50 Hz to 3,000 Hz)		
Impact resistance	350 m/s ² (11 ms)		
Protective design grade	IP54 (Air purge not included), IP65 (Air purge included)		
Power supply voltage range	DC+4.75 to +5.25 V		DC+17 to +30.8 V
Maximum power consumption	1.3W or less (4.75V or 5.25V)		1.75W or less (17V) 1.9W or less (30.8V)
Power consumption	250mA (5V) (when the controller is connected)		75mA (24V) (when the controller is connected)
Mass	Approx. 0.39kg+ 1.53kg/m or less		
Compatible cables (types without relay connectors) Maximum cable length	CH23-***NVF 13 m	CH23-***NVM 13 m	CH22-***NSMY 30 m
Compatible cables (types with relay connectors) Maximum cable length	CH23-***NVK + CH23-***NPFA 30 m	CH23-***NVK + CH23-***NPMA 30 m	CH22-***NSMF + CH22-***NSFY 30 m

Details of model designation

Scale

SR27A - xxx□□A #

Type	Reference point position
X	Center
Y	Zero position

SIEMENS AG: Y only
Mitsubishi Electric, FANUC: X only
* Please consult our representative separately for arbitrary positions.

Type	NC manufacturer	Remarks
A	FANUC	ai series
B	Mitsubishi Electric	2-wire
D	Mitsubishi Electric	4-wire
Z	SIEMENS AG	DRIVE-CLiQ

Type	Direction	Resolution	Type	Direction	Resolution
A		0.01	F		0.01
B		0.05	G		0.05
C	(plus)	0.1	H	(minus)	0.1
D		0.5	J		0.5
E		1	K		1

SIEMENS AG: A only
Mitsubishi Electric: A, B, C
FANUC: A, B, C, D, E, F, G, H, J, K

Type	Accuracy grade
A	5+5L/1,000 μm-p
S	3+3L/1,000 μm-p

L: Effective length(mm)
Effective length (cm)

Cables

CH22 - xxx□□A #

Type	Control side connector
Y	RJ45 connector made by Yamaichi Electric
Z	RJ45 connector (water-proof) made by Yamaichi Electric
F	M12 connector (male) made by Phoenix Contact

Type	Scale side connector
M	Scale head connector
F	M12 connector (male) made by Phoenix Contact
E	M12 connector (female) with panel mount relay made by Phoenix Contact

Type	Cable specification
S	SIEMENS Motion Connect 800Plus (green)

Type	Conduit specification
C	With conduit
N	Without conduit

Cable length (Example)

Type	Cable length
010	1.0 m
105	10.5 m

CH23 - xxx□□A #

Type	Scale side connector
None	Unterminated end
K	10P JN1 (male) made by Japan Aviation Electronics Industry
M	10P made by Sumitomo 3M
N	12P R04 (male) made by Tajimi Electronics

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None	Unterminated end
K	10P JN1 (male) made by Japan Aviation Electronics Industry
M	10P made by Sumitomo 3M
N	12P R04 (male) made by Tajimi Electronics

Type	Cable specification
E	Polyurethane φ8 made by Yoshinogawa Electric Wire & Cable
P	PVC φ8 made by Hirakawa Hewtech
Z	PVC φ6.8 made by Hirakawa Hewtech

Type	Conduit specification
C	With conduit
N	Without conduit
R	With plastic tube

Type	Cable length
010	1.0 m
105	10.5 m