

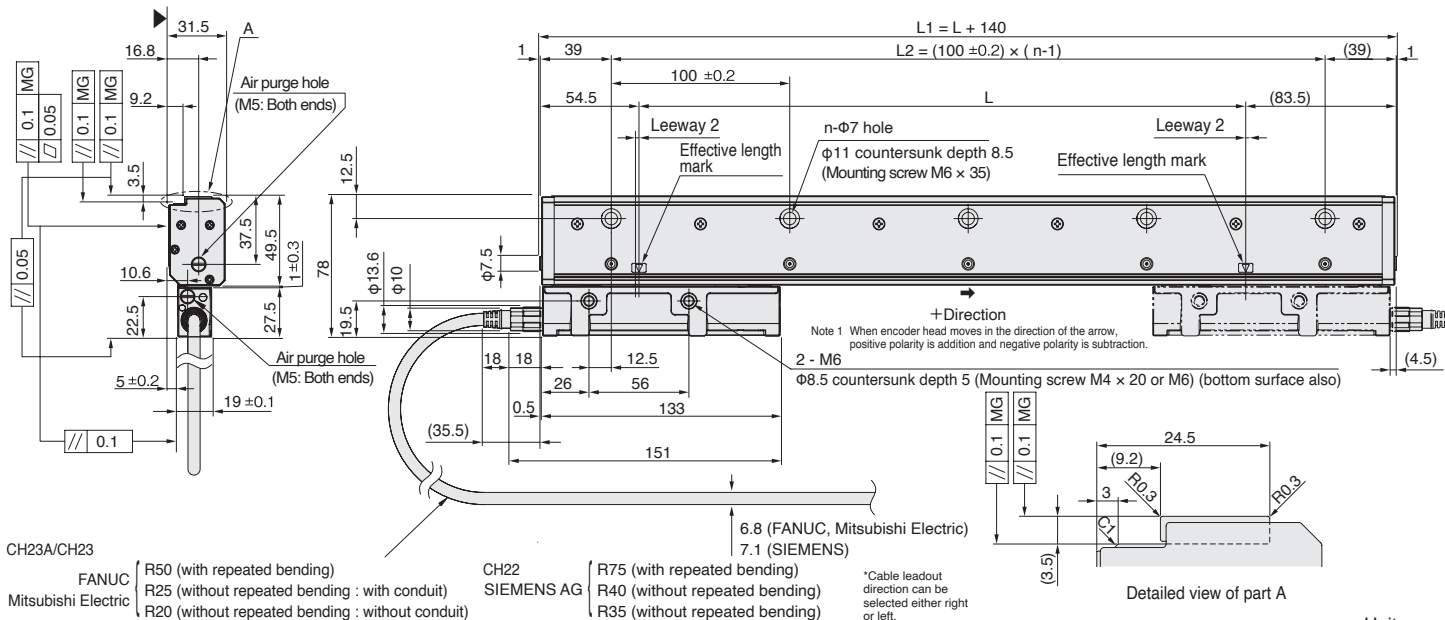
Absolute linear encoder  
Enclosed type  
SR67A

- High rigidity provides resistance to shock and vibration
- Magnetic system allows use even in environments with condensation, oil, and other adverse conditions
- Same thermal expansion as iron



- FANUC
- Mitsubishi Electric
- SIEMENS

Dimensions



Effective length	Overall length	Mounting pitch	Number of bolts
L	L1	L2	n
140	280	200	3
240	380	300	4
340	480	400	5
440	580	500	6
540	680	600	7
640	780	700	8
740	880	800	9
840	980	900	10
940	1,080	1,000	11
1,040	1,180	1,100	12
1,140	1,280	1,200	13
1,240	1,380	1,300	14
1,340	1,480	1,400	15
1,440	1,580	1,500	16

MG: Machine guide

**Notes**

- The surface indicated by the ▲ marks is the installation surface.
- Movement outside the effective length (L) will damage the encoder 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).

Effective length	Overall length	Mounting pitch	Number of bolts
L	L1	L2	n
1,540	1,680	1,600	17
1,640	1,780	1,700	18
1,740	1,880	1,800	19
1,840	1,980	1,900	20
2,040	2,180	2,100	22
2,240	2,380	2,300	24
2,440	2,580	2,500	26
2,640	2,780	2,700	28
2,840	2,980	2,900	30
3,040	3,180	3,100	32
3,240	3,380	3,300	34
3,440	3,580	3,500	36
3,640	3,780	3,700	38

Type	Cable length	Type	Conduit specification
010	1.5 m	C	With conduit
005	0.5 m	N	Without conduit
065	6.5 m		
100	10 m		

Specifications

Model name	SR67A - xxx○□AX###	SR67A - xxx○□BX SR67A - xxx○□DX	SR67A - xxx○AZY
Effective length (L : mm)	140 to 3,640		
Thermal expansion coefficient	12±1 × 10 <sup>-6</sup> /°C		
Accuracy (at 20 °C)	(3+3L/1,000) μmp-p (effective length 140 to 3,040 mm) or (5+5L/1,000) μmp-p (effective length 140 to 3,640 mm), L: Effective length (mm)		
Reference point	Center, or user-selected position (Factory set)	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 α/ai interface compatible	Mitsubishi Electric	SIEMENS AG
Resolution	Selectable from 0.005*1, 0.01, 0.05, 0.1, 0.5 and 1 μm (Factory set)	Selectable from 0.005*1, 0.01, 0.05 and 0.1 μm (Factory set)	0.01 μm (Factory set)
Maximum response speed	200 m/min		
Functional safety	—		IEC 61508, EN/BS 62061 SIL 2 EN/BS/ISO 13849-1 Cat. 3 / PL d EN/BS 61800-5-2
Product Safety	FCC Part15 Subpart B Class A ICES-003 Class A Digital Device EN/BS 61000-6-2, EN/BS 61000-6-4		
Product Environment	EN/BS 63000		
Operating temperature	0 to +50°C		
Storage temperature	-20 to +55°C		
Vibration resistance	250 m/s <sup>2</sup> (50 Hz to 2,000 Hz)		
Impact resistance	450 m/s <sup>2</sup> (11 ms)		
Protective design grade	IP54 (Air purge not included), IP65 (Air purge included)		
Power supply voltage	DC +4.75 to +5.25 V		DC +17 to +30.8 V
Maximum consumption current	1.3 W or less (4.75 V or 5.25 V)		1.75 W or less (17 V) 1.9 W or less (30.8 V)
Consumption current	250 mA (with 5 V controller connection)		75 mA (with 24 V controller connection)
Mass	Approx. 0.9kg+ 5.2kg/m or less		
Compatible cables (types without relay connectors) Maximum cable length	CH23A-***NVF 13 m	CH23-***NVM 13 m	CH22-***NSMY 30 m
Compatible cables (types with relay connectors) Maximum cable length	CH23A-***NVK + CH23A-***NPFA 30 m	CH23-***NVK + CH23-***NPMA 30 m	CH22-***NSMF + CH22-***NSFY 30 m

\*1 For resolution of 0.005 μm, please contact our sales department.  
Magnescale reserves the right to change product specifications without prior notice.

Details of model designation

Encoder

SR67A - xxx○□△#

[xxx] Effective length (cm)  
Refer to the table in "Dimensions".

[○] Accuracy grade

Type	Accuracy grade
A	(5 + 5 L/1,000) μmp-p
S	(3 + 3 L/1,000) μmp-p

L: Effective length(mm)

[□] Resolution and direction (μm)

Type	Direction	Resolution	Type	Direction	Resolution
A		0.01	F		0.01
B		0.05	G		0.05
C	+	0.1	H	-	0.1
D		0.5	J		0.5
E		1	K		1

Mitsubishi Electric : A, B, C only  
SIEMENS AG : A only

[△] Communication protocol

Type	NC manufacture	Remarks
A	FANUC	α / ai interface
B	Mitsubishi Electric	Half duplex
D	Mitsubishi Electric	Full duplex
Z	SIEMENS AG	DRIVE-CLiQ

[#] Reference point position

Type	Reference point position
X	Effective length center
Y	Fixed to 10mm from left end of effective length

SIEMENS AG: Y only  
Mitsubishi Electric: X only  
Please contact our representative for custom positions.

Cables

CH22 - □□□○▽\*#

[□□□] Cable length  
Written by flush right, indication in "m" units, up to 30 m, 0.5 m pitch (Example)

Type	Cable length	Type	Conduit specification
015	1.5 m	C	With conduit
070	7 m	N	Without conduit (standard)
260	26 m		

CH23 - □□□○▽\*#

CH23A - □□□○▽\*#  
(CH23A : FANUC model only)

Type	Cable length	Type	Conduit specification
010	1 m	C	With conduit
005	0.5 m	N	Without conduit
065	6.5 m		
100	10 m		

[▽] Cable sheath

Type	Cable specification
V	PVC (φ6.8) [Encoder side]
C	PU (φ6.8) [Encoder side]
P	PVC (φ8) [Controller side]
E	PU (φ8) [Controller side]

[▽] Cable sheath (covering)

Type	Cable specification
S	PU

[※] Encoder side connector : a

Type	Specification	Remarks
M	Encoder head connector	Standard
F	M12 connector (Female) made by Phoenix Contact	Relay/ Waterproofing

[#] Controller side connector : b

Type	Specification	Remarks
None	Open-end	Encoder side connector should be 10P JN2 (Female) made by Japan Aviation Electronics Industry or 12P made by TAJIMI ELECTRONICS
M*	10P made by 3M	Mitsubishi Electric NC, J3
F	20P straight case made by Honda Tsushin Kogyo	FANUC
J	Horizontal drawing case made by HIROSE Electric	FANUC
K	10P JN1 (Male) made by Japan Aviation Electronics Industry	Relay
N	12P R04 (Male) made by TAJIMI ELECTRONICS	Relay (fixed)

\* CH23 only

[※] Controller side connector : b

Type	Specification	Remarks
None	Original of Magnescale	Standard
A	10P JN2 (Female) made by Japan Aviation Electronics Industry	Relay
C	12P R04-9125JF8.5 made by TAJIMI ELECTRONICS	Relay (fixed)

[#] Encoder side connector : a

Type	Specification	Remarks
None	Original of Magnescale	Standard
A	10P JN2 (Female) made by Japan Aviation Electronics Industry	Relay
C	12P R04-9125JF8.5 made by TAJIMI ELECTRONICS	Relay (fixed)

