

Incremental linear encoder

Robust type

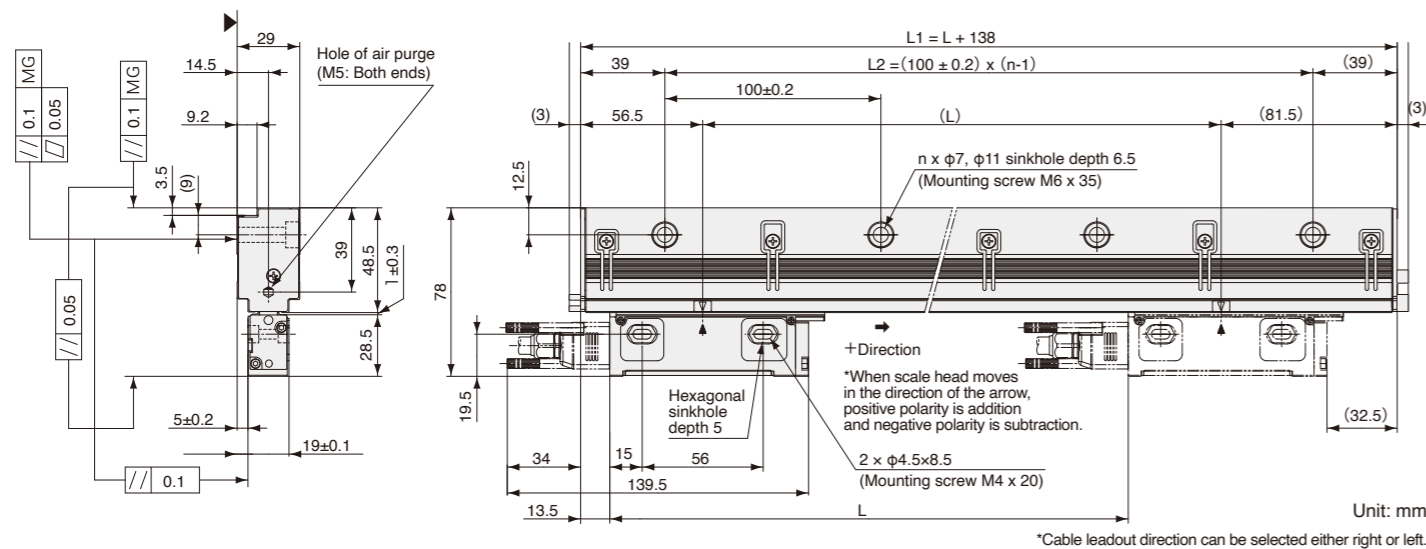
SR84

- 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



A/B/Reference point

Dimensions (cable left-lead out direction)



| Effective length L | Total length L1 | L2 | n |
|-----------------------|--------------------|-------|----|
| 140 | 278 | 200 | 3 |
| 240 | 378 | 300 | 4 |
| 340 | 478 | 400 | 5 |
| 440 | 578 | 500 | 6 |
| 540 | 678 | 600 | 7 |
| 640 | 778 | 700 | 8 |
| 740 | 878 | 800 | 9 |
| 840 | 978 | 900 | 10 |
| 940 | 1,078 | 1,000 | 11 |
| 1,040 | 1,178 | 1,100 | 12 |
| 1,140 | 1,278 | 1,200 | 13 |
| 1,240 | 1,378 | 1,300 | 14 |

| Effective length L | Total length L1 | L2 | n |
|-----------------------|--------------------|-------|----|
| 1,340 | 1,478 | 1,400 | 15 |
| 1,440 | 1,578 | 1,500 | 16 |
| 1,540 | 1,678 | 1,600 | 17 |
| 1,640 | 1,778 | 1,700 | 18 |
| 1,740 | 1,878 | 1,800 | 19 |
| 1,840 | 1,978 | 1,900 | 20 |
| 2,040 | 2,178 | 2,100 | 22 |
| 2,240 | 2,378 | 2,300 | 24 |
| 2,440 | 2,578 | 2,500 | 26 |
| 2,640 | 2,778 | 2,700 | 28 |
| 2,840 | 2,978 | 2,900 | 30 |
| 3,040 | 3,178 | 3,100 | 32 |

MG: Machine guide

- Notes**
- The surface indicated by the ▲ marks is the installation surface.
 - Screws indicated in the diagram are supplied as 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 | SR84 |
| Effective length (L: mm) | 140-3,040 |
| Thermal expansion coefficient | 12±1 × 10 ⁻⁶ /°C |
| Accuracy(at 20°C) | (3+3L/1,000) μmp-p or (5+5L/1,000) μmp-p L: Effective length (mm) |
| Reference point | None, Center point, Multi point, Signed-type, User-selected point (1 mm pitch) |
| Output signal | A/B/Reference point line driver signal, compliant with EIA-422 |
| Resolution | Selectable from 0.05, 0.1, 0.5, and 1 μm (Set at factory shipping) |
| Maximum response speed | 50m/ min (Resolution: 0.1 μm, Minimum phase difference: at 50 ns) |
| 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 range | 0 to +50°C |
| Storage temperature range | -20 to +55°C |
| Vibration resistance | 250 m/s ² (50 Hz to 2,000Hz) |
| Impact resistance | 450 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 |
| Maximum consumption current | 1.0W or less (4.75V or 5.25V) |
| Consumption current | 200mA (5V) (when the controller is connected) |
| Mass | Approx. 1.24kg+ 4kg/m or less |
| Standard compatible cable | CH33-***CP/CE |
| Maximum cable length | 15 m |

*Magnescale reserves the right to change product specifications without prior notice.

Details of model designation

Scale

SR84 - xxx★□◇# # #

[xxx]Effective length (L): cm units

[□]Resolution and direction (μm)

[★]Cable lead-out direction

| Type | Lead-out direction |
|------|--------------------|
| R | Right |
| L | Left |

[◇]Accuracy grade

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

L: Effective length(mm)

[◇]Minimum phase difference

| Type | Phase difference (ns) | Type | Phase difference (ns) | Type | Phase difference (ns) |
|------|-----------------------|------|-----------------------|------|-----------------------|
| A | 50 | F | 300 | L | 1,250 |
| B | 100 | G | 400 | M | 2,500 |
| C | 150 | H | 500 | N | 3,000 |
| D | 200 | J | 650 | | |
| E | 250 | K | 1,000 | | |

[# # #]Reference point position

(Distance from left end of effective length:Unit mm)

| Reference point position | Indication method |
|--------------------------|----------------------------------|
| Less than 1,000 | Number (850 mm → 850) |
| 1,000-1,099 mm | A + lower 2 digits(1,050 mm→A50) |
| 1,100-1,199 mm | B + lower 2 digits |
| 1,200-1,299 mm | C + lower 2 digits |
| 1,300-1,399 mm | D + lower 2 digits |
| 1,400-1,499 mm | E + lower 2 digits |
| 1,500-1,599 mm | F + lower 2 digits |
| 1,600-1,699 mm | G + lower 2 digits |
| 1,700-1,799 mm | H + lower 2 digits |
| 1,800-1,899 mm | J + lower 2 digits |
| 1,900-1,999 mm | K + lower 2 digits |
| 2,000-2,099 mm | L + lower 2 digits |
| 2,100-2,199 mm | M + lower 2 digits |
| 2,200-2,299 mm | N + lower 2 digits |
| 2,300-2,399 mm | P + lower 2 digits |
| 2,400-2,499 mm | Q + lower 2 digits |
| 2,500-2,599 mm | R + lower 2 digits |
| 2,600-2,699 mm | S + lower 2 digits |
| 2,700-2,799 mm | T + lower 2 digits |
| 2,800-2,899 mm | U + lower 2 digits |
| 2,900-2,999 mm | V + lower 2 digits |
| 3,000-3,040 mm | W + lower 2 digits |
| Center | X |
| Multi | Y |
| Signed-type | Z |

Cable

CH33 - □□□▽※ #

[□□]Cable length

Written by flush right, indication in "m" units, up to 30 m, 1 m pitch

(Example)

| Type | Cable length | Type | Conduit |
|------|--------------|------|-------------------------|
| 07 | 7m | C | With conduit (standard) |
| 26 | 26m | N | Without conduit |

[○]Conduit

[▽]Cable sheath (covering)

| Type | Specification |
|------|--------------------------|
| P | PVC (Polyvinyl chloride) |
| E | PU (Polyurethane) |

[※]Controller side connector

| Type | Specification | Remarks |
|---------|--|-------------------------------|
| Without | Earth wire | |
| None | - Open-end | Standard |
| A | - D-sub 15P | |
| D | - D-sub 9P | |
| L | - 10P made by Sumitomo 3M | Mitsubishi NC, J3 (A/B Phase) |
| E | - 20P straight case made by Honda Tsushin Kogyo | FANUC (A/B Phase) |
| H | - Horizontal drawing case made by HROSE Electric | FANUC (A/B Phase) |

[#]Scale side connector

| Type | Specification | Remarks |
|------|------------------------|----------|
| None | Original of Magnescale | Standard |

*Relay type cannot be used for A/B Phase type of SR74 and SR84

