## 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<br>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) |
| Functional safety | — |
| Legal compliance | FCC Part15 Subpart B Class A<br>ICES-003 Class A Digital Device<br>EN55011 Gp1 Class A, EN61000-6-2 Safety standards not applicable (60 V DC or less) |
| Operating temperature range | 0 to +50°C |
| Storage temperature range | -20 to +55°C |
| Vibration resistance | 250 $m/s^2$ (50 Hz to 2 kHz) |
| 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 power consumption | 1.0W or less (4.75V or 5.25V) |
| Power consumption | 190 mA (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 |

## Details of model designation

Scale

SR84 - ××× ★ ○ □ ◆ ### 

Reference point position (Distance from left end of effective length)

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

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 | | |

Resolution and direction (µm)

| Type | Direction | Resolution | Type | Direction | Resolution |
|---|---|---|---|---|---|
| B | + (plus) | 0.05 | G | - (minus) | 0.05 |
| C | | 0.1 | H | | 0.1 |
| D | | 0.5 | J | | 0.5 |
| E | | 1.0 | K | | 1 |

Accuracy grade

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

L: Effective length(mm)

Cable lead-out direction

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

Effective length (L): cm units

Cable

CH33 - ＊＊ ○ ▽ ※ #

Scale side connector

| Type | |
|---|---|
| A | Circular connector |

Controller side connector

Cable sheath (covering)

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

Conduit

| Type | Conduit |
|---|---|
| C | With conduit (standard) |
| N | Without conduit |

Cable length

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

Note: CH33 for Yaskawa Electric is up to a cable length of 20 m.