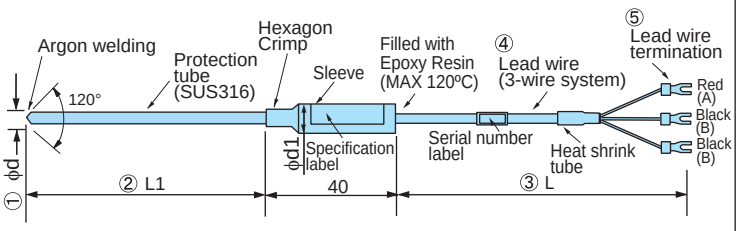
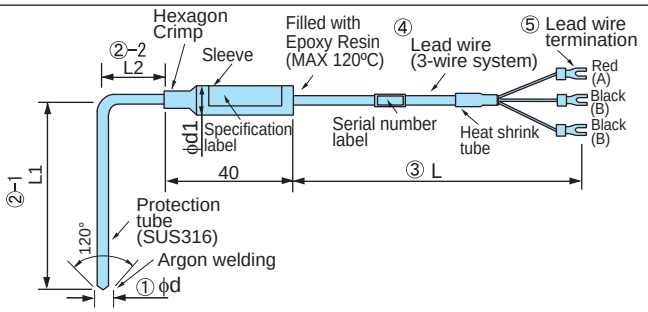
Sheathed Resistance Temperature Detectors : R-101S/R-111S



R - 101S - ϕd - L1 - L - □□□ - □ - □ - □ - □
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Diameter of protection tube
② Length of protection tube
③ Lead wire length
④ Lead protection
⑤ Lead wire termination
⑥ Resistance temperature detector type
⑦ Sensing junction
⑧ Mounting bracket

Example :R-101S-4.8-100-2000-EXA-Y-PDM-NG-N



R - 111S - ϕd - L1 - L2 - L - □□□ - □ - □ - □ - □
① ②–1 ②–2 ③ ④ ⑤ ⑥ ⑦ ⑧

① Diameter of protection tube
②–1, 2 Length of protection tube
③ Lead wire length
④ Lead protection
⑤ Lead wire termination
⑥ Resistance temperature detector type
⑦ Sensing junction
⑧ Mounting bracket

Example :R-111S-4.8-100-30-2000-EXA-Y-PDM-NG-N

① Diameter of protection tube

ϕ3.2, ϕ4.8, ϕ6.4, ϕ8.0

② Length of protection tube

Specify length by “mm” (100mm to 1,000mm)
• Please contact distributors regarding other length.

②-1: Specify length by “mm”
(100mm or more, L1+L2=1,000mm or less)
②-2: Specify length by “mm”
(25mm or more, L1+L2=1,000mm or less)
• Length is 25mm without specification.
• Please contact distributors regarding other length.

③ Lead wire length

Specify length by “mm” (100mm or more)

④ Lead protection

Code	Details	Operating temperature	Code	Details	Operating temperature
EXA	Fiberglass with stainless steel	0 to 150ºC	EXD	PVC (polyvinyl chloride)	-20 to +90ºC
EXB	Fiberglass	0 to 150ºC	EXE	Silicone rubber	-55 to +180ºC
EXC	PVC (polyvinyl chloride) with copper wire braided	-20 to +90ºC	EXF	Fluorocarbon polymers (FEP)	0 to 200ºC

⑤ Lead wire termination

Code	Details	Code	Details
Y	Spade lugs for JIS standard "M3" size screw	N	No terminal lugs * terminal soldered
R	Ring lugs for JIS standard "M4" size screw		
M	Metal connector (SCK-1603-P)		

•See Page7

⑥ Resistance temperature detector type

Code	Details	Operating temperature	Code	Details	Operating temperature
PDL	Pt100 Low Temperature Type	-200 to +100ºC	PAL	JPt100 Low Temperature Type	-200 to 100ºC
PDM	Pt100 Middle Temperature Type	0 to 350ºC	PAM	JPt100 Middle Temperature Type	0 to 350ºC
PDH	Pt100 High Temperature Type	0 to 500ºC	PAH	JPt100 High Temperature Type	0 to 500ºC

⑦ Measuring junction

Code	Details
NG	Ungrounded

⑧ Mounting bracket

Code	Details	Code	Details
A	Fixed nipple (nut)	E	Compression fitting
B	Rotary nipple (nut)	N	No bracket
C	Fixed flange		

Specify size of mounting bracket when code is "A", "B", or "E". (See Page 6)
Specify size of flange when code is "C". (See Page 6)

• Please contact distributors regarding other mounting bracket.

Specifications

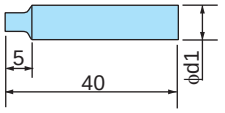
Class : class B * Class A is available (Please specify when you order)
Element : Single element * Double element is available.
(Diameter of protection tube : ϕ4.8 or more)
(Please specify when you order)

Maximum temperature for use

Diameter of protection tube	Operating temperature
ϕ3.0 to ϕ4.0 (Low temperature type : Code PDL/PAL)	-200 to +100ºC
ϕ4.8 or more (Middle temperature type : Code PDM/PAM)	0 to 350ºC
ϕ4.8 or more (High temperature type : Code PDH/PAH)	0 to 500ºC

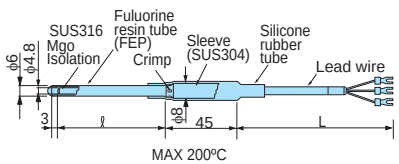
Sleeve Dimension (ϕd1)

Lead wire type \ Diameter of protection tube	ϕ3.2, ϕ4.8	ϕ6.4, ϕ8.0
EXA,EXB,EXC EXD,EXE,EXF	ϕ8×40	ϕ10×40



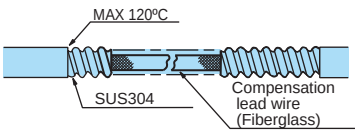
Reference

• Fluor resin coating is available
It is available to cover Fuluorine resin tube with φ4.8 protection tube (SUS316). Total Diameter becomes φ6.0. It is also available to do coating with R-101S whose tube is more than φ3.2.
These model codes are R-101SC in this case.



• Stainless flexible lead wire is available

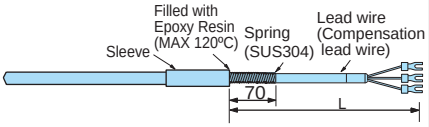
Model Code : R-101S/R-111S



For flexible lead wire, the dimension of the sleeve is ϕ10 x 45mm.

• No waterproof

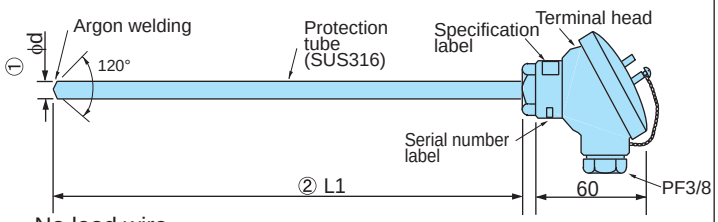
• Spring loaded type is available
(Please specify when you order)



Dimensions for the spring loaded sleeve is as follows.

• Protection tube ϕ3.2 with extension lead wire
EXE : ϕ8 x 40mm
• Protection tube ϕ4.8 to ϕ8.0 with extension lead wire : ϕ8 x 45mm
• Except from the above: : ϕ10 x 45mm

Sheathed Resistance Temperature Detectors : R-30S/R-35S

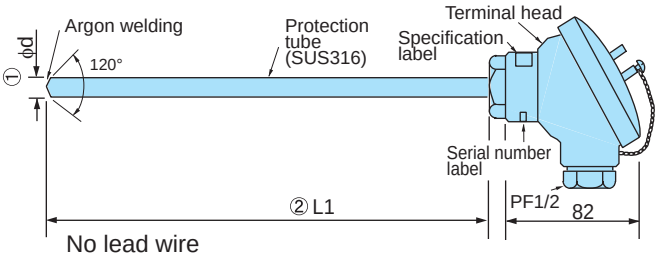


No lead wire
R - 30S - ϕd - L1 - □ - □ - □
① ② ⑥ ⑦ ⑧

With lead wire
R - 30S - ϕd - L1 - L - □□□ - □ - □ - □ - □
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Diameter of protection tube
② Length of protection tube
③ Lead wire length
④ Lead protection
⑤ Lead wire termination
⑥ Resistance temperature detector type
⑦ Sensing junction
⑧ Mounting bracket

Example :R-30S-4.8-100-PDM-NG-N (No lead wire)
:R-30S-4.8-100-2000-EXA-Y-PDM-NG-N (With lead wire)



No lead wire
R - 35S - ϕd - L1 - □ - □ - □
① ② ⑥ ⑦ ⑧

With lead wire
R - 35S - ϕd - L1 - L - □□□ - □ - □ - □ - □
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Diameter of protection tube
② Length of protection tube
③ Lead wire length
④ Lead protection
⑤ Lead wire termination
⑥ Resistance temperature detector type
⑦ Sensing junction
⑧ Mounting bracket

Example :R-35S-5-100-PDM-NG-N (No lead wire)
:R-35S-5-100-2000-EXA-Y-PDM-NG-N (With lead wire)

①	Diameter of protection tube	ϕ3.2, ϕ4.8, ϕ6.4, ϕ8.0	ϕ4.8, ϕ6.4, ϕ8.0
②	Length of protection tube	Specify length by “mm” (100mm to 1,000mm) • Please contact distributors regarding other length.	Specify length by “mm” (100mm to 1,000mm) • Please contact distributors regarding other length.
③	Lead wire length	Specify length by “mm” (100mm or more)	

④ Lead protection (No need to specify in case of without lead wire)

Code	Details	Operating temperature	Code	Details	Operating temperature
EXA	Fiberglass with stainless steel	0 to 150ºC	EXD	PVC (polyvinyl chloride)	-20 to +90ºC
EXB	Fiberglass	0 to 150ºC	EXE	Silicone rubber	-55 to +180ºC
EXC	PVC (polyvinyl chloride) with copper wire braided	-20 to +90ºC			

⑤ Lead wire termination (No need to specify in case of without lead wire)

Code	Details	Code	Details
Y	Spade lugs for JIS standard "M3" size screw	N	No terminal lugs * terminal soldered
R	Ring lugs for JIS standard "M4" size screw		
M	Metal connector (SCK-1603-P)		•See Page7

⑥ Resistance temperature detector type

Code	Details	Operating temperature	Code	Details	Operating temperature
PDL	Pt100 Low Temperature Type	-200 to +100ºC	PAL	JPt100 Low Temperature Type	-200 to 100ºC
PDM	Pt100 Middle Temperature Type	0 to 350ºC	PAM	JPt100 Middle Temperature Type	0 to 350ºC
PDH	Pt100 High Temperature Type	0 to 500ºC	PAH	JPt100 High Temperature Type	0 to 500ºC

⑦ Measuring junction

Code	Details
NG	Ungrounded

⑧ Mounting bracket

Code	Details	Code	Details
A	Fixed nipple (nut)	E	Compression fitting
B	Rotary nipple (nut)	N	No bracket
C	Fixed flange		

Specify size of mounting bracket when code is "A", "B", or "E". (See Page 6)
Specify size of flange when code is "C". (See Page 6)

• Please contact distributors regarding other mounting bracket.

Specifications

Class : class B * Class A is available (Please specify when you order)
Element : Single element * Double element is available. (Only for R-35S)
(Please specify when you order)

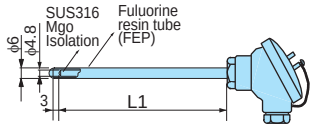
Maximum temperature for use

Diameter of protection tube	Operating temperature
Low temperature type : Code PDL/PAL	-200 to +100ºC
Middle temperature type : Code PDM/PAM	0 to 350ºC
High temperature type : Code PDH/PAH	0 to 500ºC

Reference

• Fluor resin coating is available

It is available to cover Fuluorine resin tube with φ4.8 protection tube (SUS316). Total Diameter becomes φ6.0. It is also available to do coating with R-101S whose tube is more than φ3.2. These model codes are R-30SC/R-35SC in this case.

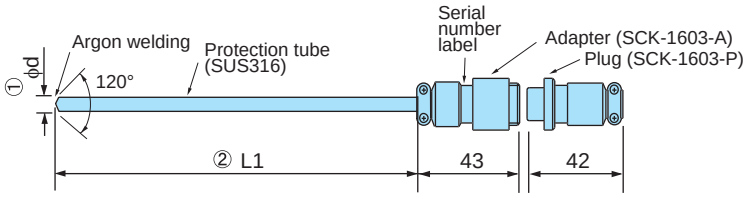


Operating temperature for regular use : 180ºC
Maximum temperature : 200ºC

Example :
R-30SC-6.0-100-PDM-NG-N (No lead wire)
① ② ⑥ ⑦ ⑧

• Please contact distributors regarding Fuluorine coating type.

Sheathed Resistance Temperature Detectors : R-90S



No lead wire

R - 90S - ϕd - L1 - □ - □ - □
① ② ⑥ ⑦ ⑧

With lead wire

R - 90S - ϕd - L1 - L - □□□ - □ - □ - □ - □
① ② ③ ④ ⑤ ⑥ ⑦ ⑧

① Diameter of protection tube
② Length of protection tube
③ Lead wire length
④ Lead protection
⑤ Lead wire termination
⑥ Resistance temperature detector type
⑦ Sensing junction
⑧ Mounting bracket

Example :R-90S-4.8-100-PDM-NG-N (No lead wire)
:R-90S-4.8-100-2000-EXA-Y-PDM-NG-N (With lead wire)

① Diameter of protection tube

ϕ3.2, ϕ4.8, ϕ6.4, ϕ8.0

② Length of protection tube

Specify length by “mm” (100mm to 1,000mm)
• Please contact distributors regarding other length.

③ Lead wire length

Specify length by “mm” (100mm or more)

④ Lead protection

No need to specify in case of without lead wire

Code	Details	Operating temperature	Code	Details	Operating temperature
EXA	Fiberglass with stainless steel	0 to 150ºC	EXD	PVC (polyvinyl chloride)	-20 to +90ºC
EXB	Fiberglass	0 to 150ºC	EXE	Silicone rubber	-55 to +180ºC
EXC	PVC (polyvinyl chloride) with copper wire braided	-20 to +90ºC			

⑤ Lead wire termination

No need to specify in case of without lead wire

Code	Details	Code	Details
Y	Spade lugs for JIS standard "M3" size screw	N	No terminal lugs * terminal soldered
R	Ring lugs for JIS standard "M4" size screw		
M	Metal connector (SCK-1603-P)		

•See Page7

⑥ Resistance temperature detector type

Code	Details	Operating temperature	Code	Details	Operating temperature
PDL	Pt100 Low Temperature Type	-200 to +100ºC	PAL	JPt100 Low Temperature Type	-200 to 100ºC
PDM	Pt100 Middle Temperature Type	0 to 350ºC	PAM	JPt100 Middle Temperature Type	0 to 350ºC
PDH	Pt100 High Temperature Type	0 to 500ºC	PAH	JPt100 High Temperature Type	0 to 500ºC

⑦ Measuring junction

Code	Details
NG	Ungrounded

⑧ Mounting bracket

Code	Details	Code	Details
A	Fixed nipple (nut)	E	Compression fitting
B	Rotary nipple (nut)	N	No bracket
C	Fixed flange		

Specify size of mounting bracket when code is "A", "B", or "E". (See Page 6)
Specify size of flange when code is "C". (See Page 6)

• Please contact distributors regarding other mounting bracket.

Specifications

Class : class B * Class A is available (Please specify when you order)
Element : Single element * Double element is available.
(Diameter of protection tube : ϕ4.8 or more)
(Please specify when you order)

Maximum temperature for use

Diameter of protection tube	Operating temperature
Low temperature type : Code PDL/PAL	-200 to +100ºC
Middle temperature type : Code PDM/PAM	0 to 350ºC
High temperature type : Code PDH/PAH	0 to 500ºC

Reference

Connector
Pin No.

Single Element

Pin No.	Details
1	A
2	B
3	b

SCK-1603-□

Double Element

Pin No.	Details	Pin No.	Details
1	A	1	A
2	B	2	B
3	b	3	b

SCK-1606-□

For connector for R-90S, Connector manufactured by Sanwa Connector Laboratory Co., Ltd. is used as standard.
Nanaboshi Electric Mfg brand is also available
(Please specify when you order).
Please specify in case of no need of the plug.