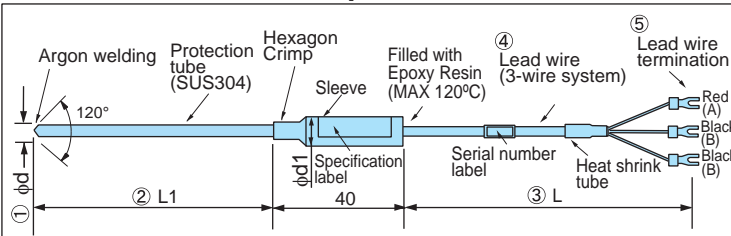


Resistance Temperature Detectors : R-101/R-111

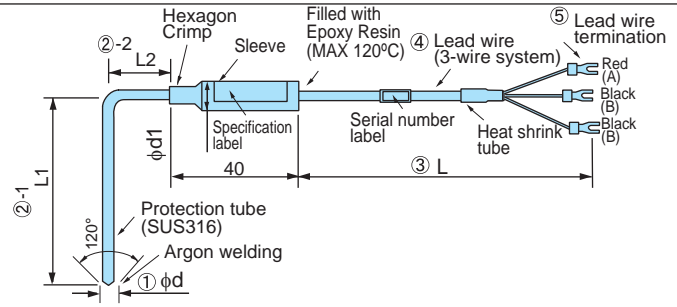


R - 101 - ϕd - L1 - L - □□□ - □ - □ - □ - □

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-101-5-100-2000-EXA-Y-PDM-NG-N



R - 111 - ϕd - L1 - L2 - L - □□□ - □ - □ - □ - □

① ②-1 ②-2 ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Diameter of protection tube
- ②-1, ②-2 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-111-5-100-30-2000-EXA-Y-PDM-NG-N

①	Diameter of protection tube	φ3.0, φ3.2, φ4.0, φ4.8, φ5.0, φ6.0, φ8.0																											
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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)	Sleeve Dimension (φd1)									
	Maximum temperature for use	<table border="1"> <thead> <tr> <th>Diameter of protection tube</th> <th>Operating temperature</th> </tr> </thead> <tbody> <tr> <td>φ3.0 to φ4.0 (Middle temperature type : Code PDP/PAP)</td> <td>0 to 220°C</td> </tr> <tr> <td>φ4.8 or more (Middle temperature type : Code PDM/PAM)</td> <td>0 to 350°C</td> </tr> <tr> <td>φ4.8 or more (High temperature type : Code PDH/PAH)</td> <td>0 to 500°C</td> </tr> </tbody> </table>	Diameter of protection tube	Operating temperature	φ3.0 to φ4.0 (Middle temperature type : Code PDP/PAP)	0 to 220°C	φ4.8 or more (Middle temperature type : Code PDM/PAM)	0 to 350°C	φ4.8 or more (High temperature type : Code PDH/PAH)	0 to 500°C	
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Lead wire type	φ3.0 to φ5.0	φ6.0 to φ8.0									
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EXD,EXE,EXF											

Reference	<ul style="list-style-type: none"> Stainless flexible lead wire is available <p>Model Code : R-101F/R-111F</p> <p>For flexible lead wire, the dimension of the sleeve is φ10 x 40mm.</p> <ul style="list-style-type: none"> No waterproof 	<ul style="list-style-type: none"> Spring loaded type is available (Please specify when you order) <p>Dimensions for the spring loaded sleeve is as follows.</p> <ul style="list-style-type: none"> Protection tube φ1.0 to φ4.8 with extension lead wire EXC, EXD : φ10 x 40mm Protection tube φ6.0 to φ8.0 : φ10 x 40mm Except from the above: : φ8 x 40mm 	<ul style="list-style-type: none"> Material of protection tube SUS316 is available. (Please specify when you order)
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Resistance Temperature Detectors : R-102

Diameter of protection tube (ϕd) : 3.0, 3.2

R - 102 - ϕd - L1 - L - □□□□ - □ - □ - □ - □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

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

Example :R-102-3.2-100-2000-EXF-Y-PDM-NG-N

Diameter of protection tube (ϕd) : 4.0 or more

R - 102 - ϕd - L1 - L - □□□□ - □ - □ - □ - □

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

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

Example :R-102-5-100-2000-EXA-Y-PDM-NG-N

①	Diameter of protection tube	$\phi 3.0, \phi 3.2$	
②	Length of protection tube	Specify length by "mm" (50mm to 500mm)	• Please contact distributors regarding other length.
③	Lead wire length	Specify length by "mm" (100mm or more)	

④	Lead protection	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Code</th> <th style="width: 30%;">Details</th> <th style="width: 20%;">Operating temperature</th> </tr> </thead> <tbody> <tr> <td>EXF</td> <td>Fluorocarbon polymers (FEP)</td> <td>0 to 200°C</td> </tr> </tbody> </table>	Code	Details	Operating temperature	EXF	Fluorocarbon polymers (FEP)	0 to 200°C	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Code</th> <th style="width: 60%;">Details</th> <th style="width: 30%;">Operating temperature</th> </tr> </thead> <tbody> <tr> <td>EXA</td> <td>Fiberglass with stainless steel (Diameter of protection tube : $\phi 4.8$ or more)</td> <td>0 to 150°C</td> </tr> <tr> <td>EXB</td> <td>Fiberglass (Diameter of protection tube : $\phi 4.8$ or more)</td> <td>0 to 150°C</td> </tr> <tr> <td>EXC</td> <td>PVC (polyvinyl chloride) with copper wire braided (Diameter of protection tube : $\phi 5.0$ or more)</td> <td>-20 to +90°C</td> </tr> <tr> <td>EXD</td> <td>PVC (polyvinyl chloride) (Diameter of protection tube : $\phi 5.0$ or more)</td> <td>-20 to +90°C</td> </tr> <tr> <td>EXE</td> <td>Silicone rubber (Diameter of protection tube : $\phi 5.0$ or more)</td> <td>-55 to +180°C</td> </tr> <tr> <td>EXF</td> <td>Fluorocarbon polymers (FEP) (Diameter of protection tube : $\phi 4.0$ or more)</td> <td>0 to 200°C</td> </tr> </tbody> </table>	Code	Details	Operating temperature	EXA	Fiberglass with stainless steel (Diameter of protection tube : $\phi 4.8$ or more)	0 to 150°C	EXB	Fiberglass (Diameter of protection tube : $\phi 4.8$ or more)	0 to 150°C	EXC	PVC (polyvinyl chloride) with copper wire braided (Diameter of protection tube : $\phi 5.0$ or more)	-20 to +90°C	EXD	PVC (polyvinyl chloride) (Diameter of protection tube : $\phi 5.0$ or more)	-20 to +90°C	EXE	Silicone rubber (Diameter of protection tube : $\phi 5.0$ or more)	-55 to +180°C	EXF	Fluorocarbon polymers (FEP) (Diameter of protection tube : $\phi 4.0$ or more)	0 to 200°C
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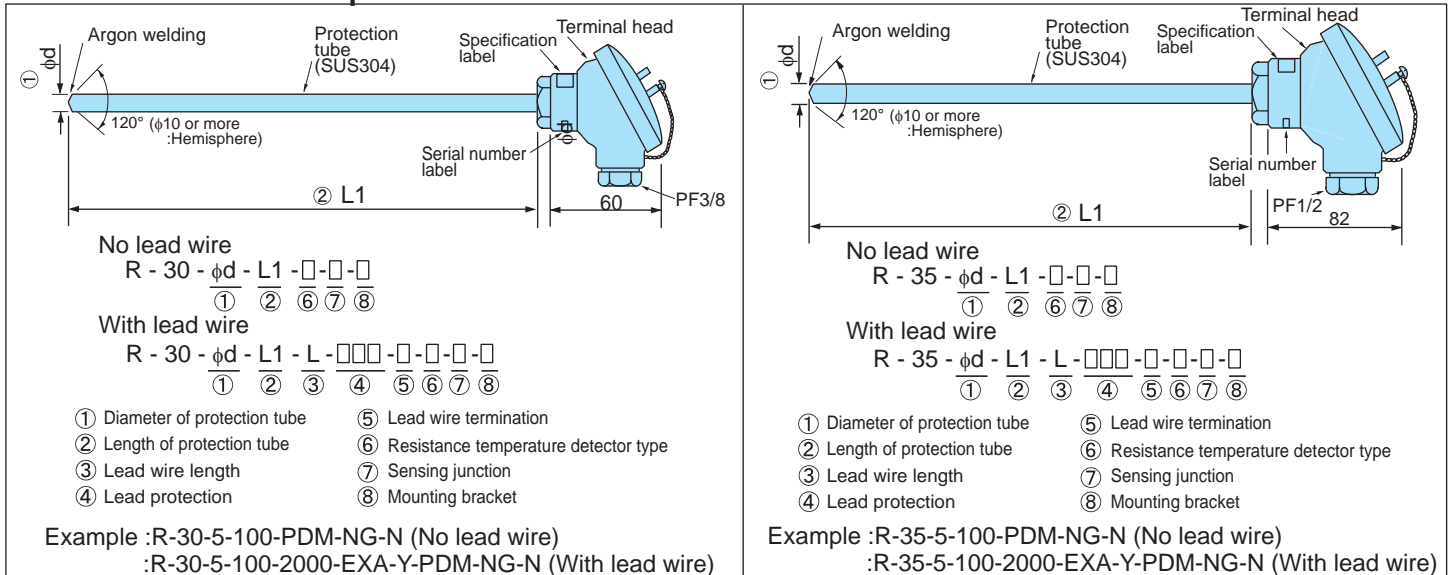
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		Code	Details						
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O	Exposed								

⑧	Mounting bracket	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Code</th> <th style="width: 35%;">Details</th> <th style="width: 10%;">Code</th> <th style="width: 45%;">Details</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Fixed nipple (nut)</td> <td>E</td> <td>Compression fitting</td> </tr> <tr> <td>B</td> <td>Rotary nipple (nut)</td> <td>N</td> <td>No bracket</td> </tr> <tr> <td>C</td> <td>Fixed flange</td> <td></td> <td></td> </tr> </tbody> </table>	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)
		Code	Details	Code	Details														
A	Fixed nipple (nut)	E	Compression fitting																
B	Rotary nipple (nut)	N	No bracket																
C	Fixed flange																		
• Please contact distributors regarding other mounting bracket.																			

Specifications	Class : class B * Class A is available (Please specify when you order) Element : Single element Maximum temperature for use : 0 to 220°C	Class : class B * Class A is available (Please specify when you order) Element : Single element * Double element is available. (Diameter of protection tube : $\phi 8.0$ or more) (Please specify when you order) Maximum temperature for use					
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Diameter of protection tube	Operating temperature						
$\phi 4.0$ (Middle temperature type : Code PDP/PAP)	0 to 220°C						
$\phi 4.8$ or more (Middle temperature type : Code PDM/PAM)	0 to 300°C						

• Spring loaded type is available (Please specify when you order)	• Material of protection tube SUS316 of protection tube is available. (Please specify when you order)

Resistance Temperature Detectors : R-30/R-35



① Diameter of protection tube	φ3.0, φ3.2, φ4.8, φ5.0, φ6.0 φ6.4, φ8.0, φ10.0, φ12.0	φ4.8, φ5.0, φ6.0, φ6.4, φ8.0, φ10.0, φ12.0, φ15.0 • Please contact distributors regarding φ21.7.
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	Code	Details	Operating temperature	Code	Details	Operating temperature
	EXA	Fiberglass with stainless steel	0 to 150°C	EXD	PVC (polyvinyl chloride)	-20 to +90°C
	EXB	Fiberglass	0 to 150°C	EXE	Silicone rubber	-55 to +180°C
	EXC	PVC (polyvinyl chloride) with copper wire braided	-20 to +90°C			

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 Page 7

⑥ Resistance temperature detector type	Code	Details	Operating temperature	Code	Details	Operating temperature
	PDP	Pt100 Middle Temperature Type (φ3.0 to φ4.0)	0 to 220°C	PAP	JPt100 Middle Temperature Type (φ3.0 to φ4.0)	0 to 220°C
	PDM	Pt100 Middle Temperature Type (φ4.8 or more)	0 to 300°C	PAM	JPt100 Middle Temperature Type (φ4.8 or more)	0 to 300°C
	PDH	Pt100 High Temperature Type (φ4.8 or more)	0 to 500°C	PAH	JPt100 High Temperature Type (φ4.8 or more)	0 to 500°C

⑦ Measuring junction	Code	Details
	NG	Ungrounded
	O	Exposed

* Exposed-junction type is available depending on specification such as shapes, environment of usage, etc. Please contact with our distributors.

⑧ Mounting bracket	Code	Details	Code	Details
	A	Fixed nipple (nut)	E	Compression fitting
	B	Rotary nipple (nut)	N	No bracket
	C	Fixed flange		

• Please contact distributors regarding other mounting bracket.

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)

Specifications

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

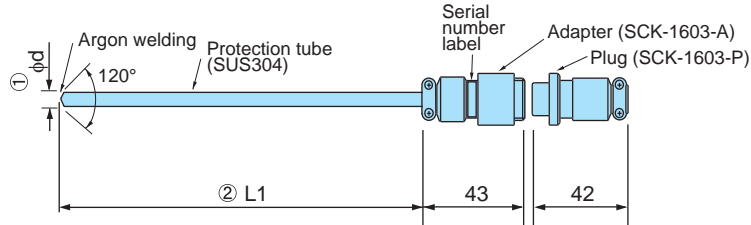
Maximum temperature for use

Diameter of protection tube	Operating temperature
φ3.0 to φ4.0 (Middle temperature type : Code PDP/PAP)	0 to 220°C
φ4.8 or more (Middle temperature type : Code PDM/PAM)	0 to 300°C
φ4.8 or more (High temperature type : Code PDH/PAH)	0 to 500°C

Reference

- Material of protection tube
SUS316 is available.
(Please specify when you order)

Resistance Temperature Detectors : R-90



No lead wire

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

With lead wire

R - 90 - 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-90-5-100-PDM-NG-N (No lead wire)

:R-90-5-100-2000-EXA-Y-PDM-NG-N (With lead wire)

①	Diameter of protection tube	φ3.0, φ3.2, φ4.8, φ5.0, φ6.0, 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 150°C	EXD	PVC (polyvinyl chloride)	-20 to +90°C																								
			EXB	Fiberglass	0 to 150°C	EXE	Silicone rubber	-55 to +180°C																								
			EXC	PVC (polyvinyl chloride) with copper wire braided	-20 to +90°C																											
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																									
		PDP	Pt100 Middle Temperature Type (φ3.0 to φ4.0)	0 to 220°C	PAP	JPt100 Middle Temperature Type (φ3.0 to φ4.0)	0 to 220°C																									
		PDM	Pt100 Middle Temperature Type (φ4.8 or more)	0 to 350°C	PAM	JPt100 Middle Temperature Type (φ4.8 or more)	0 to 350°C																									
⑦	Measuring junction	Code	Details																													
		NG	Ungrounded																													
		O	Exposed	* Exposed-junction type is available depending on specification such as shapes, environment of usage, etc. Please contact with our distributors.																												
⑧	Mounting bracket	Code	Details	Code	Details																											
		A	Fixed nipple (nut)	E	Compression fitting	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)																										
		B	Rotary nipple (nut)	N	No bracket																											
		C	Fixed flange																													
• 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 (Middle temperature type : Code PDP/PAP)		0 to 220°C																												
		φ4.8 or more (Middle temperature type : Code PDM/PAM)		0 to 350°C																												
Reference	• Material of protection tube SUS316 is available. (Please specify when you order)		Connector Pin No.																													
			Single Element			Double Element																										
			<table border="1"> <tr><td>Pin No.</td><td>Details</td></tr> <tr><td>1</td><td>A</td></tr> <tr><td>2</td><td>B</td></tr> <tr><td>3</td><td>b</td></tr> </table>		Pin No.	Details	1	A	2	B	3	b	<table border="1"> <tr><td>Pin No.</td><td>Details</td></tr> <tr><td>1</td><td>A</td></tr> <tr><td>2</td><td>B</td></tr> <tr><td>3</td><td>b</td></tr> </table>		Pin No.	Details	1	A	2	B	3	b	<table border="1"> <tr><td>Pin No.</td><td>Details</td></tr> <tr><td>1</td><td>A</td></tr> <tr><td>2</td><td>B</td></tr> <tr><td>3</td><td>b</td></tr> </table>		Pin No.	Details	1	A	2	B	3	b
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3	b																															
		SCK-1603-□		SCK-1606-□																												
		For connector for R-90, 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.																														