

Head Type Thermocouples

Standard Head

■ Select Basic Model Code

SH1	–	D1	A	0
①		②	③	④

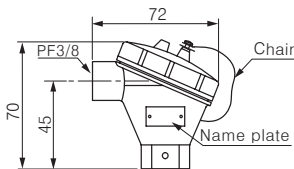
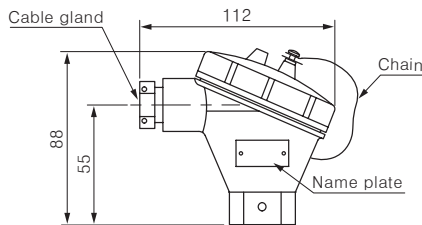
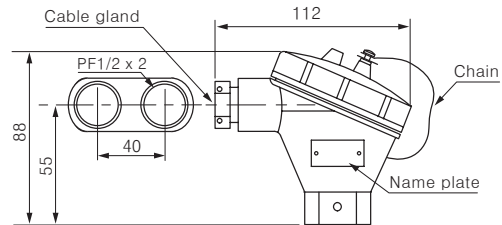
Item		Descriptions			
① Temperature sensor type		SH1	Head type Thermocouples		
② Head type (Head material wireway standard)	Small standard head	C8	Aluminum PF3/8		
	Middle standard head	D1	Aluminum PF1/2	E2	Cast iron PF3/4
		D2	Aluminum PF3/4	F1	Stainless steel PF1/2
		E1	Cast iron PF1/2	F2	Stainless steel PF3/4
	Middle 2-port standard head	G1	Aluminum PF1/2×2		
③ Tube type		A	Standard	K	Nipple Union
		B	Slide Screwed	L	Compression Fitting
		C	Upper Slide Screwed	M	Flanged
		E	Metal Support	N	Slide Flanged
		F	Nipple Screwed	P	Metal Support Flanged 1
		G	Screwed	Q	Metal Support Flanged 2
		H	Metal Support Screwed	S	Metal Support Slide Flanged
④ Tube material※1		O	Metal	D	Double ceramic
		C	Non-metal	S	Metal (spring load)

※ Do NOT combine the tube type and tube material arbitrarily. Refer to the "Select Tube" description.

※ 1. For detailed tube material, refer to the "Detailed specification" at "Ordering Code" description.

■ Select Head

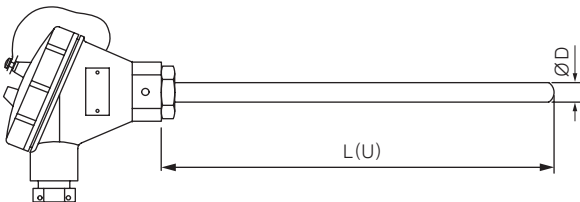
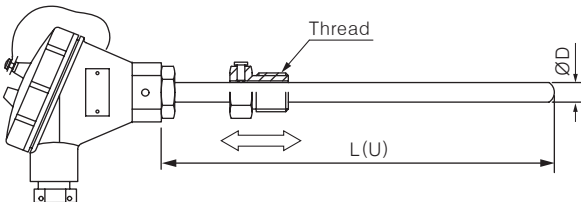
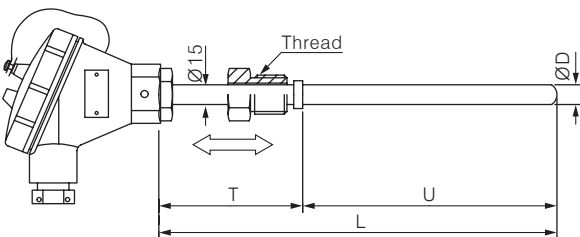
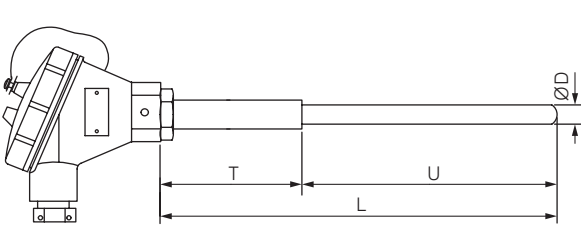
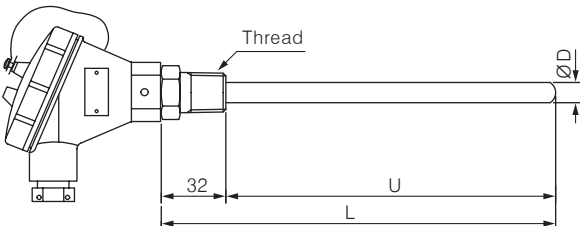
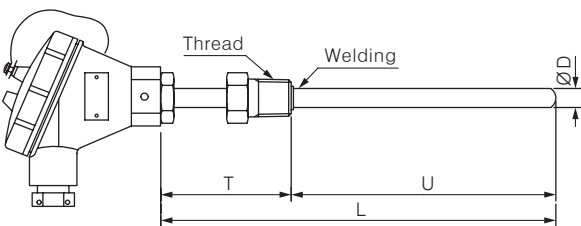
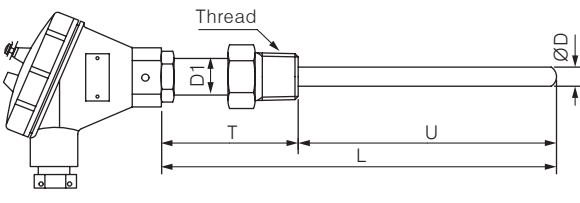
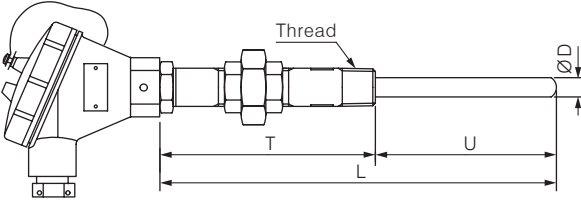
Select head material and wireway standard.

Small standard head	Middle standard head	Middle 2-port standard head
 <p>Material : Aluminum</p> <p>■ SH1-C8 □□</p>	 <p>Material : Aluminum, Cast iron, Stainless steel</p> <p>■ SH1-D1 □□ ■ SH1-D2 □□ ■ SH1-E1 □□ ■ SH1-E2 □□ ■ SH1-F1 □□ ■ SH1-F2 □□</p>	 <p>Material : Aluminum</p> <p>■ SH1-G1 □□</p>

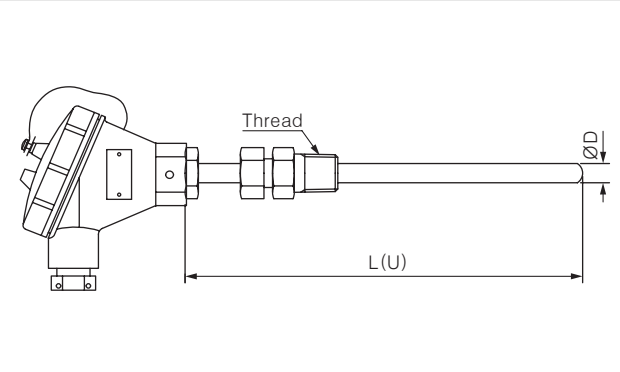
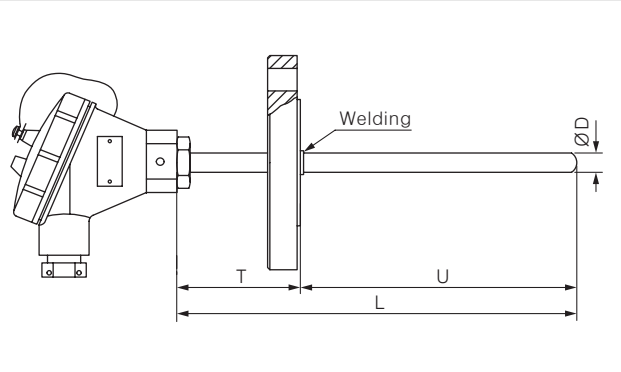
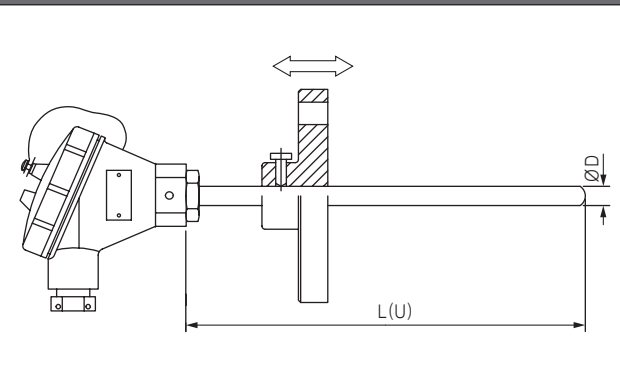
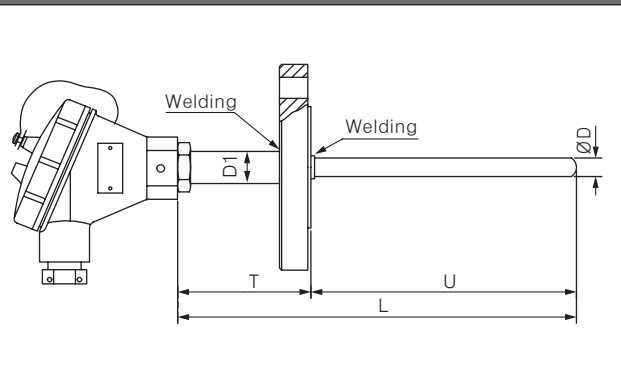
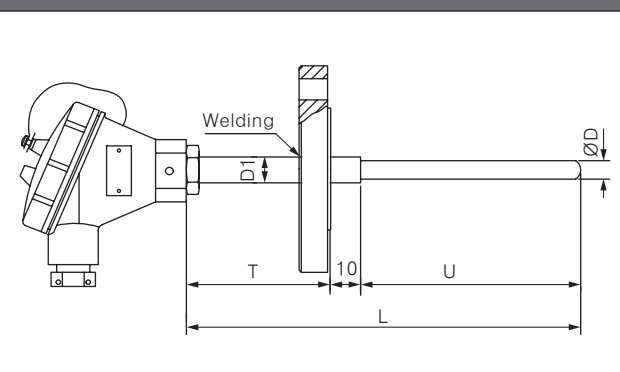
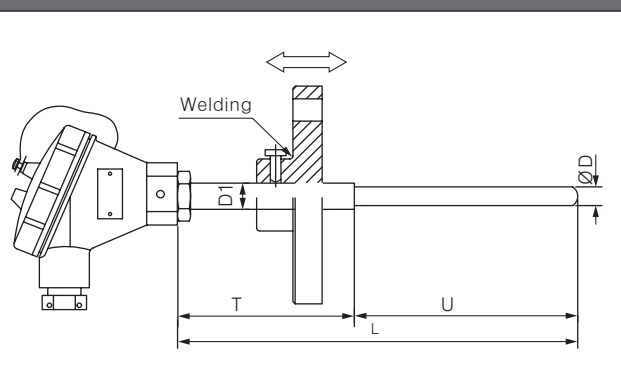
Head Type Thermocouples

■ Select Tube

Select tube type and material.

<p>Standard : SH1-□□ A0</p> 	<p>Slide Screwed : SH1- □□ B0</p> 
<p>Upper Slide Screwed : SH1-□□ C0</p> 	<p>Metal Support : SH1-□□ E0 - □□ EC (non-metal) - □□ ED (double ceramic)</p> 
<p>Nipple Screwed : SH1-□□ F0</p> 	<p>Screwed : SH1-□□ G0</p> 
<p>Metal Support Screwed : SH1-□□ H0 - □□ HC (non-metal)</p> 	<p>Nipple Union : SH1-□□ K0 - □□ KS (spring load)</p> 

SH1 Series

<p>Compression Fitting : SH1-□□ L0</p>  <p>The diagram shows a side view of a compression fitting. A horizontal pipe of diameter $\varnothing D$ is connected to a vertical pipe. The horizontal pipe has a threaded section of length $L(U)$ leading to a compression fitting. The vertical pipe is labeled 'Thread'.</p>	<p>Flanged : SH1-□□ M0</p>  <p>The diagram shows a side view of a flanged connection. A horizontal pipe of diameter $\varnothing D$ is connected to a vertical pipe. The horizontal pipe has a flange of thickness T and a length L from the flange to the end. The vertical pipe is labeled 'Welding'. The distance from the flange to the end of the horizontal pipe is U.</p>
<p>Slide Flanged : SH1-□□ N0</p>  <p>The diagram shows a side view of a slide flanged connection. A horizontal pipe of diameter $\varnothing D$ is connected to a vertical pipe. The horizontal pipe has a flange of thickness T and a length $L(U)$ from the flange to the end. The vertical pipe is labeled 'Welding'. The distance from the flange to the end of the horizontal pipe is U.</p>	<p>Metal Support Flanged1 : SH1-□□ P0 - □□ PC (non-metal)</p>  <p>The diagram shows a side view of a metal support flanged connection. A horizontal pipe of diameter $\varnothing D$ is connected to a vertical pipe. The horizontal pipe has a flange of thickness T and a length L from the flange to the end. The vertical pipe is labeled 'Welding'. The distance from the flange to the end of the horizontal pipe is U. The diameter of the vertical pipe is $D1$.</p>
<p>Metal Support Flanged2 : SH1-□□ Q0 - □□ QC (non-metal)</p>  <p>The diagram shows a side view of a metal support flanged connection. A horizontal pipe of diameter $\varnothing D$ is connected to a vertical pipe. The horizontal pipe has a flange of thickness T and a length L from the flange to the end. The vertical pipe is labeled 'Welding'. The distance from the flange to the end of the horizontal pipe is U. The diameter of the vertical pipe is $D1$. A dimension of 10 is shown between the flange and the end of the horizontal pipe.</p>	<p>Metal Support Slide Flanged : SH1-□□ SC</p>  <p>The diagram shows a side view of a metal support slide flanged connection. A horizontal pipe of diameter $\varnothing D$ is connected to a vertical pipe. The horizontal pipe has a flange of thickness T and a length L from the flange to the end. The vertical pipe is labeled 'Welding'. The distance from the flange to the end of the horizontal pipe is U. The diameter of the vertical pipe is $D1$.</p>

Head Type Thermocouples

■ Ordering Code

Order code is basic model code + detailed specification + special specification.

■ Detailed specification				Temp. sensor		Lower tube		Upper tube		Connection spec.	Special spec.	
SH1 - D1 A 0				B 30 S		100 - 304 - 1000/100		217 -		J1025R316	A B W	
				① ② ③		④ ⑤ ⑥ ⑦		⑧		⑨	⑩	

※ For basic ordering code, refer to appearance or

Refer to the below

Item		Descriptions							
① Temperature sensor			B, R, S, K, E, J, T, N						
② Wire thickness for temperature sensor B, R, S (Ø)※ ¹		30	Ø0.3			45	Ø0.45		
		40	Ø0.4			50	Ø0.5		
③ Sensor elements		S	Single			T	Triple		
		D	Double						
④ Tube thickness (ØD)	Metal	064	Ø6.4			150	Ø15		
		080	Ø8.0			173	Ø17.3		
		100	Ø10			217	Ø21.7		
		138	Ø13.8			270	Ø27		
	Non-metal	060	Ø6.0			200	Ø20		
		080	Ø8.0			220	Ø22		
		100	Ø10			250	Ø25		
		130	Ø13			300	Ø30		
		150	Ø15			350	Ø35		
		170	Ø17			400	Ø40		
⑤ Tube material	Metal	304	304SS			446	446SS		
		316	316SS			50C	50Co-30Cr		
		36L	316LSS			INC	Inconel 600		
		310	310SS						
	Non-metal	PT1	PT1			GK	GK-SIC		
		PT0	PT0			RED	RED-SIC		
KP		Al ₂ O ₃							
⑥ Tube lower length (U) (mm)			Write directly (below 9999mm)						
⑦ Tube upper length (T) (mm) ※ ²	Metal※ ³	080	80mm			150	150mm		
		100	100mm			300	300mm		
		120	120mm						
	Non-metal	100	100mm			150	150mm		
		120	120mm			300	300mm		
⑧ Tube upper thickness (ØD1)※ ⁴		217	Ø21.7			150	Ø15		
		272	Ø27.2						
⑨ Connection spec.	Screw spec.		Write the code referring F-88 to F-89 page of Reference.						
	Flange spec.		Write the ordering code + flange material referring F-90 to F-93 page of Reference.						
		※ Flange material							
		304	304SS	316	316SS	36L	316LSS	310	310SS
		446	446SS	50C	50Co-30Cr	INC	Inconel 600		
⑩ Set ordering		W	The last code should be adding "W" for ordering as a set with thermo well.						

※ 1. In case of NOT B, R, S temperature sensors, write the code as "XX".

※ 2. In case of non-upper length tube (A0, B0, F0, L0, N0), write the code as "XXX".

※ 3. Tube type is union: only 120mm, 150mm, 300mm available.

※ 4. The upper thickness Ø15 of tube is available only for tube type "C0".

■ Special specifications

Ⓐ : Hot junction type	U	Ungrounded (standard)	G	Grounded
	E	Exposed		
Ⓑ : Tube surface treatment	N	None	L	Teflon lining
	T	Teflon coating		

※ Special specifications is required infrequently in industrial site. Before ordering special specifications, please contact Autonics at first.

Explosion-proof Head

■ Select Basic Model Code

SH1	—	J1	A	0
①		②	③	④

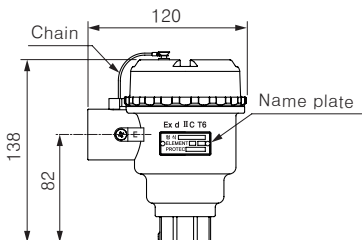
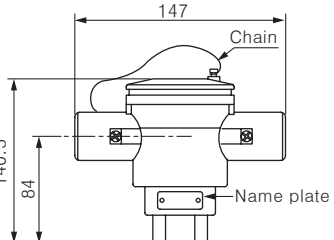
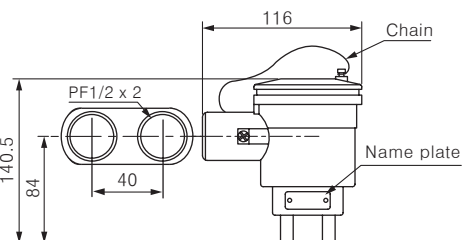
Item		Descriptions			
① Temperature sensor type		SH1	Head type Thermocouples		
② Head type (Head material wireway standard)	Middle explosion-proof head	H1	Aluminum PF1/2	I1	Stainless steel PF1/2
		H2	Aluminum PF3/4	I2	Stainless steel PF3/4
	Bidirectional explosion-proof head	J1	Aluminum PF1/2×2	J3	Aluminum PF1/2, PF3/4
		J2	Aluminum PF3/4×2		
	Middle 2-port explosion-proof head	K1	Aluminum PF1/2×2		
③ Tube type		A	Standard	K	Nipple Union
		B	Slide Screwed	L	Compression Fitting
		C	Upper Slide Screwed	M	Flanged
		E	Metal Support	N	Slide Flanged
		F	Nipple Screwed	P	Metal Support Flanged 1
		G	Screwed	Q	Metal Support Flanged 2
		H	Metal Support Screwed	S	Metal Support Slide Flanged (ceramic)
④ Tube material※1		O	Metal	D	Double ceramic
		C	Non-metal		

※ Do NOT combine the tube type and tube material arbitrarily. Refer to the "Select Tube" description.

※ 1. For detailed tube material, refer to the "Detailed specification" at "Ordering Code" description.

■ Select Head

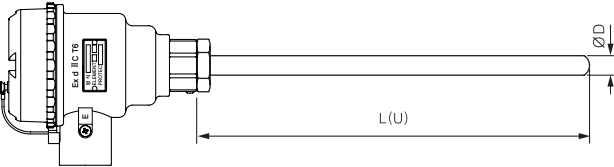
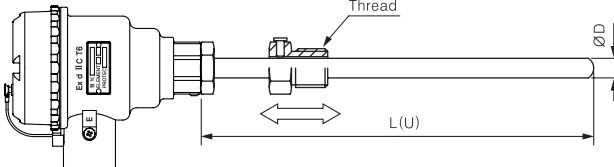
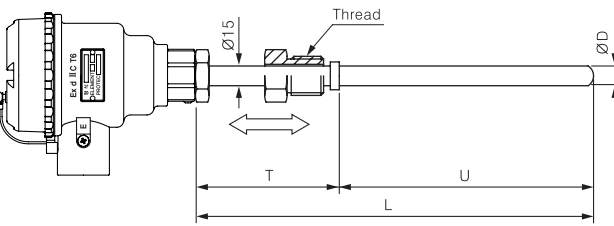
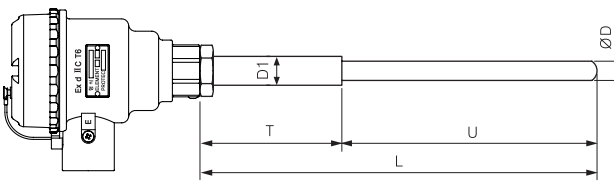
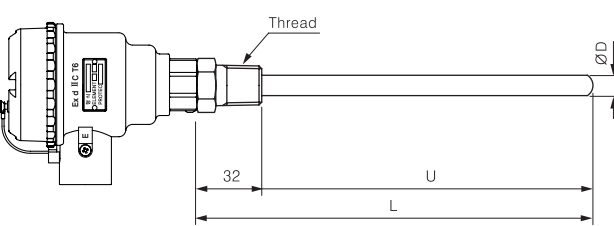
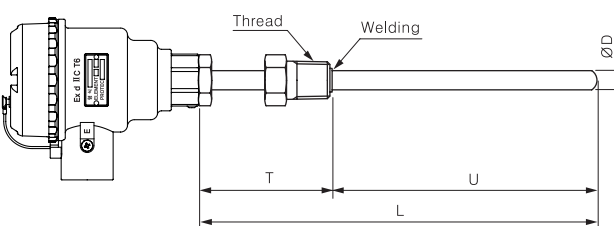
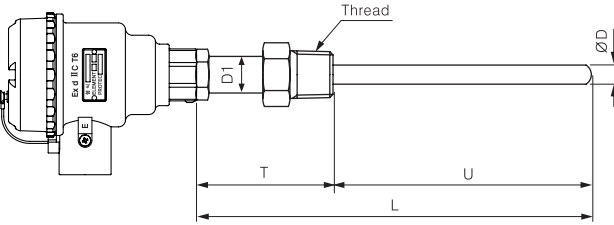
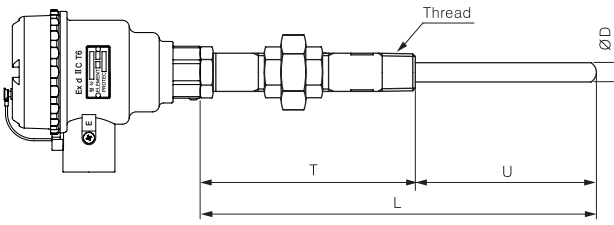
Select head material and wireway standard.

Middle explosion-proof head	Bidirectional explosion-proof head	Middle 2-port explosion-proof head
 <p>Material : Aluminum, Stainless steel</p> <ul style="list-style-type: none"> ■ SH1-H1 □□ ■ SH1-H2 □□ ■ SH1-I1 □□ ■ SH1-I2 □□ 	 <p>Material : Aluminum</p> <ul style="list-style-type: none"> ■ SH1-J1 □□ ■ SH1-J2 □□ ■ SH1-J3 □□ 	 <p>Material : Aluminum</p> <ul style="list-style-type: none"> ■ SH1-K1 □□

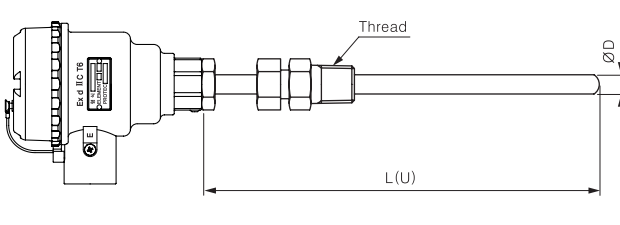
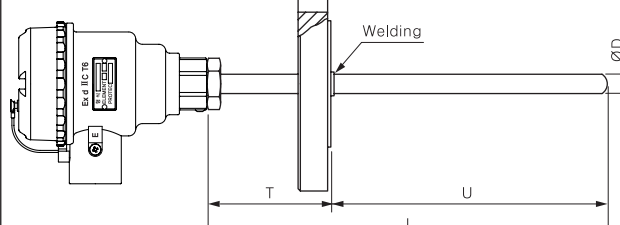
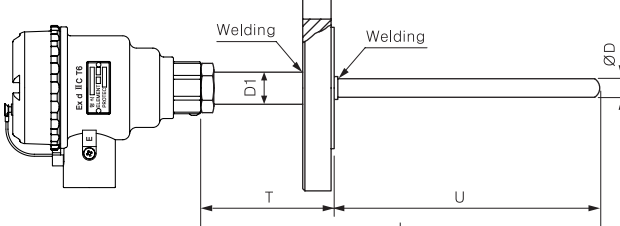
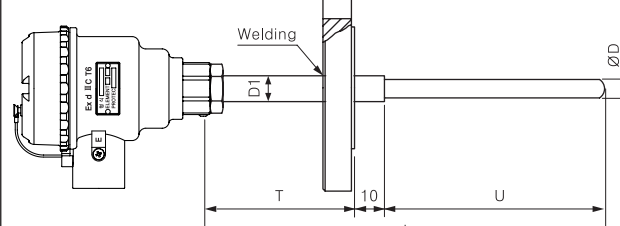
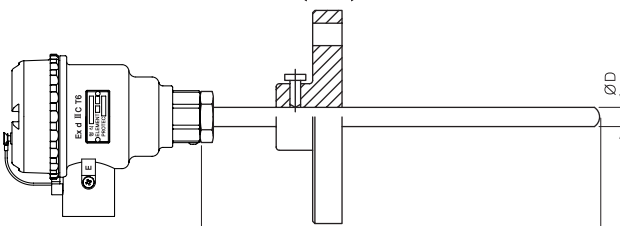
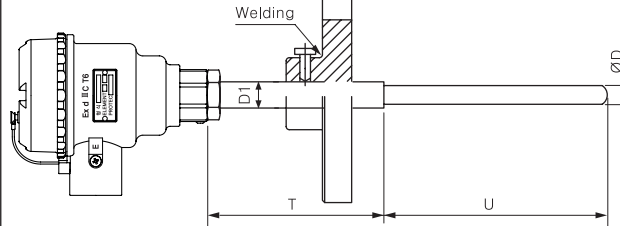
Head Type Thermocouples

■ Select Tube

Select tube type and material.

<p>Standard : SH1-□□ A0</p> 	<p>Slide Screwed : SH1- □□ B0</p> 
<p>Upper Slide Screwed : SH1-□□ C0</p> 	<p>Metal Support : SH1-□□ E0 - □□ EC (non-metal) - □□ ED (double ceramic)</p> 
<p>Nipple Screwed : SH1-□□ F0</p> 	<p>Screwed : SH1-□□ G0</p> 
<p>Metal Support Screwed : SH1-□□ H0 - □□ HC (non-metal)</p> 	<p>Nipple Union : SH1-□□ K0</p> 

SH1 Series

<div>Compression Fitting : SH1-□□ L0</div> <div><p>Diagram of the SH1-□□ L0 Compression Fitting. It shows a sensor head connected to a tube with a threaded end. The dimension L(U) indicates the length from the sensor head to the end of the tube. The tube diameter is labeled as ØD.</p></div>	<div>Flanged : SH1-□□ M0</div> <div><p>Diagram of the SH1-□□ M0 Flanged fitting. It shows a sensor head connected to a tube that is flanged. The dimension T represents the flange thickness, and U represents the distance from the sensor head to the flange. The tube diameter is labeled as ØD.</p></div>
<div>Metal Support Flanged 1 : SH1-□□ P0 - □□ PC (non-metal)</div> <div><p>Diagram of the SH1-□□ P0 Metal Support Flanged 1 fitting. It shows a sensor head connected to a tube that is flanged. The dimension D1 indicates the distance from the sensor head to the flange. The dimension T represents the flange thickness, and U represents the distance from the sensor head to the flange. The tube diameter is labeled as ØD.</p></div>	<div>Metal Support Flanged 2 : SH1-□□ Q0 - □□ QC (non-metal)</div> <div><p>Diagram of the SH1-□□ Q0 Metal Support Flanged 2 fitting. It shows a sensor head connected to a tube that is flanged. The dimension D1 indicates the distance from the sensor head to the flange. The dimension T represents the flange thickness, and U represents the distance from the sensor head to the flange. The tube diameter is labeled as ØD.</p></div>
<div>Slide Flanged : SH1-□□ N0</div> <div><p>Diagram of the SH1-□□ N0 Slide Flanged fitting. It shows a sensor head connected to a tube that is flanged. The dimension L(U) indicates the length from the sensor head to the end of the tube. The tube diameter is labeled as ØD.</p></div>	<div>Metal Support Slide Flanged : SH1-□□ SC</div> <div><p>Diagram of the SH1-□□ SC Metal Support Slide Flanged fitting. It shows a sensor head connected to a tube that is flanged. The dimension D1 indicates the distance from the sensor head to the flange. The dimension T represents the flange thickness, and U represents the distance from the sensor head to the flange. The tube diameter is labeled as ØD.</p></div>

Head Type Thermocouples

Ordering Code

Order code is basic model code + detailed specification + special specification.

Detailed specification

Detailed specification				Temp. sensor		Lower tube		Upper tube		Connection spec.	Special spec.		
SH1 - J1 A 0				K	XX	S	100	304	1000/100	217	PT1/4		
				①	②	③	④	⑤	⑥	⑦	⑧	⑨	
※ For basic ordering code, refer to appearance or				Refer to the below									
				W									
				⑩									

Item		Descriptions								
① Temperature sensor			B, R, S, K, E, J, T, N							
② Wire thickness for temperature sensor B, R, S (Ø)※ ¹		30	Ø0.3				45	Ø0.45		
		40	Ø0.4				50	Ø0.5		
③ Sensor elements		S	Single				T	Triple		
		D	Double							
④ Tube thickness (ØD)	Metal	064	Ø6.4				150	Ø15		
		080	Ø8.0				173	Ø17.3		
		100	Ø10				217	Ø21.7		
		138	Ø13.8				270	Ø27		
	Non-metal	060	Ø6.0				200	Ø20		
		080	Ø8.0				220	Ø22		
		100	Ø10				250	Ø25		
		130	Ø13				300	Ø30		
		150	Ø15				350	Ø35		
		170	Ø17				400	Ø40		
⑤ Tube material	Metal	304	304SS				446	446SS		
		316	316SS				50C	50Co-30Cr		
		36L	316LSS				INC	Inconel 600		
		310	310SS							
	Non-metal	PT1	PT1				GK	GK-SIC		
		PT0	PT0				RED	RED-SIC		
KP		Al ₂ O ₃								
⑥ Tube lower length (U) (mm)			Write directly (below 9999mm)							
⑦ Tube upper length (T) (mm) ※ ²	Metal※ ³	080	80mm				150	150mm		
		100	100mm				300	300mm		
		120	120mm							
	Non-metal	100	100mm				150	150mm		
		120	120mm				300	300mm		
⑧ Tube upper thickness (ØD1)※ ⁴		217	Ø21.7				150	Ø15		
		272	Ø27.2							
⑨ Connection spec.	Screw spec.		Write the code referring F-88 to F-89 page of Reference.							
	Flange spec.		Write the ordering code + flange material referring F-90 to F-93 page of Reference.							
		※ Flange material								
		304	304SS	316	316SS	36L	316LSS	310	310SS	
	446	446SS	50C	50Co-30Cr	INC	Inconel 600				
⑩ Set ordering		W	The last code should be adding "W" for ordering as a set with thermo well.							

※ 1. In case of NOT B, R, S temperature sensors, write the code as "XX".

※ 2. In case of non-upper length tube (A0, B0, F0, L0, N0), write the code as "XXX".

※ 3. Tube type is union: only 120mm, 150mm, 300mm available

※ 4. The upper thickness Ø15 of tube is available only for tube type "C0".

Special specifications

Ⓐ : Hot junction type	U	Ungrounded (standard)	G	Grounded
	E	Exposed		
Ⓑ : Tube surface treatment	N	None	L	Teflon lining
	T	Teflon coating		

※ Special specifications is required infrequently in industrial site. Before ordering special specifications, please contact Autonics at first.

Exposed Head

Select Basic Model Code

SH1	—	M1	A	0
①		②	③	④

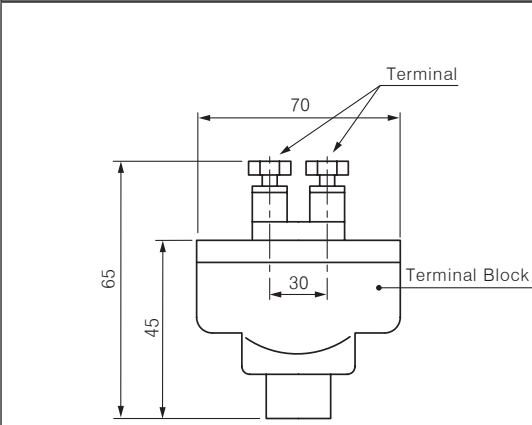
Item	Descriptions			
① Temperature sensor type	SH1	Head type Thermocouples		
② Head material and wireway standard	M1	Aluminum		
③ Tube type	A	Standard	K	Nipple Union
	B	Slide Screwed	L	Compression Fitting
	C	Upper Slide Screwed	M	Flanged
	E	Metal Support	N	Slide Flanged
	F	Nipple Screwed	P	Metal Support Flanged 1
	G	Screwed	Q	Metal Support Flanged 2
	H	Metal Support Screwed	S	Metal Support Slide Flanged (ceramic)
④ Tube material※1	0	Metal	D	Double ceramic
	C	Non-metal	S	Metal (spring load)

※ Do NOT combine the tube type and tube material arbitrarily. Refer to the "Select Tube" description.
※ 1. For detailed tube material, refer to the "Detailed specification" at "Ordering Code" description.

Select Head

Select head material and wireway standard.

Exposed head



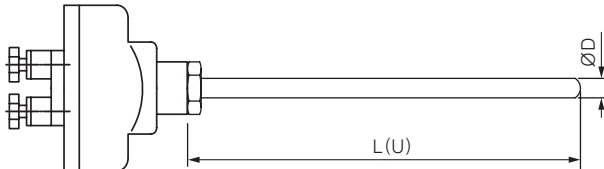
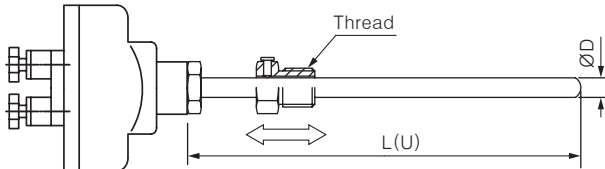
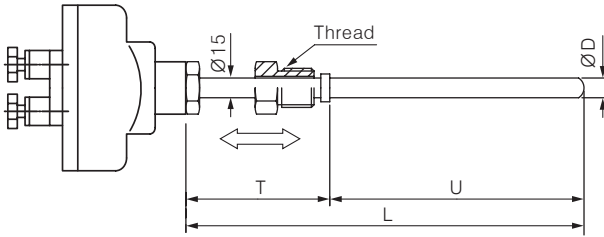
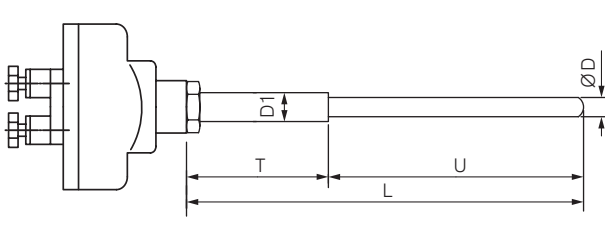
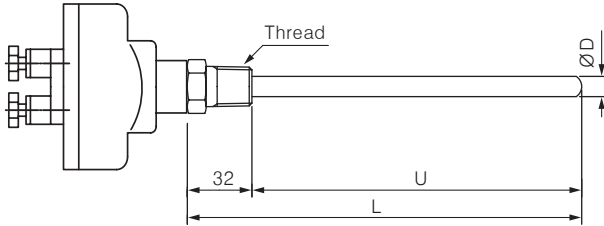
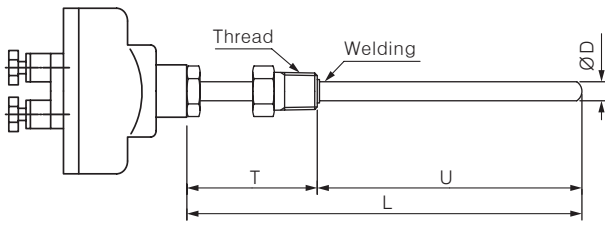
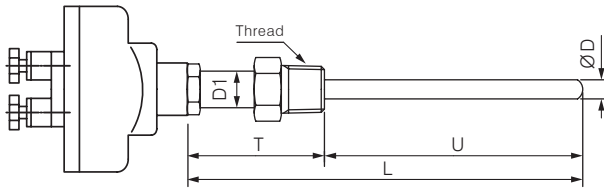
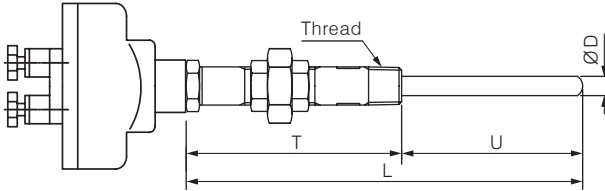
Material : Aluminum

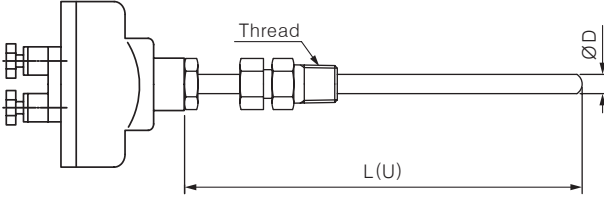
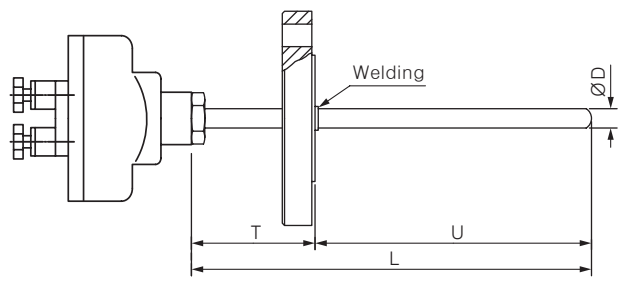
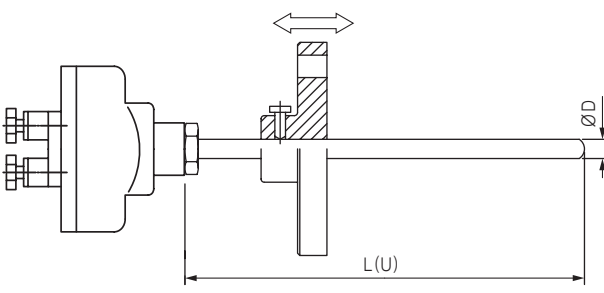
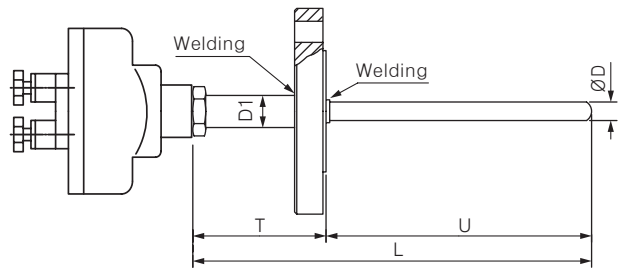
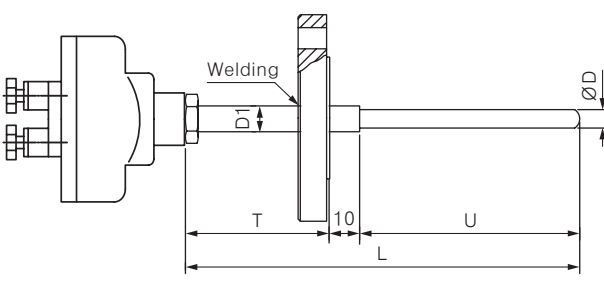
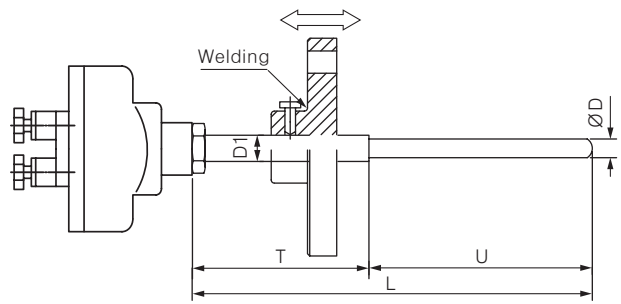
■ SH1-M1 □□

Head Type Thermocouples

■ Select Tube

Select tube type and material.

Standard : SH1-M1A0 	Slide Screwed : SH1-M1B0 
Upper Slide Screwed : SH1-M1C0 	Metal Support : SH1-M1E0 -M1EC (non-metal) -M1ED (double ceramic) 
Nipple Screwed : SH1-M1F0 	Screwed : SH1-M1G0 
Metal Support Screwed : SH1-M1H0 -M1HC (non-metal) 	Nipple Union : SH1-M1K0 -M1KS (spring load) 

<p>Compression Fitting : SH1-M1L0</p>  <p>The diagram shows a side view of a compression fitting. A horizontal pipe with diameter $\varnothing D$ is connected to a vertical flange. The distance from the center of the flange to the end of the pipe is labeled $L(U)$. The connection is made using a threaded fitting, with the word "Thread" pointing to the connection point.</p>	<p>Flanged : SH1-M1M0</p>  <p>The diagram shows a side view of a flanged connection. A horizontal pipe with diameter $\varnothing D$ is connected to a vertical flange. The distance from the center of the flange to the end of the pipe is labeled U. The flange has a thickness T. The connection is made using welding, with the word "Welding" pointing to the joint.</p>
<p>Slide Flanged : SH1-M1N0</p>  <p>The diagram shows a side view of a slide flanged connection. A horizontal pipe with diameter $\varnothing D$ is connected to a vertical flange. The distance from the center of the flange to the end of the pipe is labeled $L(U)$. The flange has a thickness T. The connection is made using a sliding joint, indicated by a double-headed arrow above the flange.</p>	<p>Metal Support Flanged 1 : SH1-M1P0 -M1PC (non-metal)</p>  <p>The diagram shows a side view of a metal support flanged connection. A horizontal pipe with diameter $\varnothing D$ is connected to a vertical flange. The distance from the center of the flange to the end of the pipe is labeled U. The flange has a thickness T. The connection is made using welding, with the word "Welding" pointing to the joint. The diameter of the pipe is labeled $D1$.</p>
<p>Metal Support Flanged 2 : SH1-M1Q0 -M1QC (non-metal)</p>  <p>The diagram shows a side view of a metal support flanged connection. A horizontal pipe with diameter $\varnothing D$ is connected to a vertical flange. The distance from the center of the flange to the end of the pipe is labeled U. The flange has a thickness T. The connection is made using welding, with the word "Welding" pointing to the joint. The diameter of the pipe is labeled $D1$. A dimension of 10 is shown between the flange and the pipe.</p>	<p>Metal Support Slide Flanged : SH1-M1SC</p>  <p>The diagram shows a side view of a metal support slide flanged connection. A horizontal pipe with diameter $\varnothing D$ is connected to a vertical flange. The distance from the center of the flange to the end of the pipe is labeled U. The flange has a thickness T. The connection is made using a sliding joint, indicated by a double-headed arrow above the flange. The diameter of the pipe is labeled $D1$.</p>

Head Type Thermocouples

■ Ordering Code

Order code is basic model code + detailed specification + special specification.

■ Detailed specification

	Temp. sensor	Lower tube	Upper tube	Connection spec.	Special spec.
SH1 - M1 A 0	K XX S 100	304	1000/100	217	PT1/4
	① ② ③ ④	⑤	⑥ ⑦	⑧ ⑨	⑩

※ For basic ordering code, refer to appearance or
☐ Select Basic Code.

Item		Descriptions							
① Temperature sensor			B, R, S, K, E, J, T, N						
② Wire thickness for temperature sensor B, R, S (Ø)※ ¹		30	Ø0.3			45	Ø0.45		
		40	Ø0.4			50	Ø0.5		
③ Sensor elements		S	Single						
④ Tube thickness (ØD)	Metal	064	Ø6.4			150	Ø15		
		080	Ø8.0			173	Ø17.3		
		100	Ø10			217	Ø21.7		
		138	Ø13.8			270	Ø27		
	Non-metal	060	Ø6.0			200	Ø20		
		080	Ø8.0			220	Ø22		
		100	Ø10			250	Ø25		
		130	Ø13			300	Ø30		
		150	Ø15			350	Ø35		
		170	Ø17			400	Ø40		
⑤ Tube material	Metal	304	304SS			446	446SS		
		316	316SS			50C	50Co-30Cr		
		36L	316LSS			INC	Inconel 600		
		310	310SS						
	Non-metal	PT1	PT1			GK	GK-SIC		
		PT0	PT0			RED	RED-SIC		
		KP	Al ₂ O ₃						
⑥ Tube lower length (U) (mm)			Write directly (below 9999mm)						
⑦ Tube upper length (T) (mm)※ ²	Metal※ ³	080	80mm			150	150mm		
		100	100mm			300	300mm		
		120	120mm						
	Non-metal	100	100mm			150	150mm		
		120	120mm			300	300mm		
⑧ Tube upper thickness (ØD1)※ ⁴		217	Ø21.7			150	Ø15		
		272	Ø27.2						
⑨ Connection spec.	Screw spec.		Write the code referring F-88 to F-89 page of Reference.						
			Write the ordering code + flange material referring F-90 to F-93 page of Reference.						
	Flange spec.	※ Flange material							
		304	304SS	316	316SS	36L	316LSS	310	310SS
		446	446SS	50C	50Co-30Cr	INC	Inconel 600		
⑩ Set ordering		W	The last code should be adding "W" for ordering as a set with thermo well.						

※ 1. In case of NOT B, R, S temperature sensors, write the code as "XX".

※ 2. In case of non-upper length tube (A0, B0, F0, L0, N0), write the code as "XXX".

※ 3. Tube type is union: only 120mm, 150mm, 300mm available

※ 4. The upper thickness Ø15 of tube is available only for tube type "C0".

■ Special specifications

(A) : Hot junction type	U	Ungrounded (standard)	G	Grounded
	E	Exposed		
(B) : Tube surface treatment	N	None	T	Teflon coating

※ Special specifications is required infrequently in industrial site. Before ordering special specifications, please contact Autonics at first.