

TL14·34·54 Series Liquid Filled Type Thermometer



OUTLINE

An indicating thermometer can be roughly classified into the liquid filled type, in which a principle that charged liquid expands and contracts according to temperature changes is applied, and the gas filled type., in which a principle that charged inert gas pressure changes according to temperature change is applied. Additionally, in the liquid filled type, two types, the mercury filled type and liquid filled type, exist. This catalogue is formed by classifying these thermometers into a thermometer with mercury and that without mercury.

FEATURES

- These thermometers are classified into the liquid filled type and the mercury filled type according to a temperature sensing method, and into the remote type and the direct type according to the function.
- The wide variation complying with extensive environments and applications is provided.

* When selecting a thermometer, select a thermometer which is normally applied to a temperature range of 30% to 60% of full span. Check to confirm that the material of the wetted parts is appropriate measuring gas or liquid.

SPECIFICATION

* Manufacturing temperature range :
-50 ~ 600°C

* Dial size :
100 Dia.

* Case & Cover mat'l :
ADC12 with Black finish

* Mounting :
· Remote surface mounting



· Direct type



* Bulb · Connection material :
304SS, 316SS (Option)

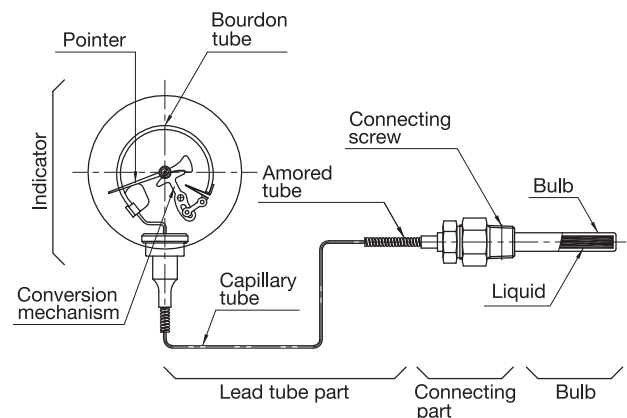
* Lead parts material :
Capillary 304SS or 316SS (Option)
Amored tube 304SS

Ambient temperature compensation :

The charged in the indicator portion and duct portion of the pressure type thermometer expands and contracts according the ambient temperature, causing an indication error. Two methods to compensation this error exist.

* Lead compensation

Principles and Construction



The pressure type thermometer is composed of a thermal sensing parts, an indicator and a lead tube part which connects these two portions.

Between these portions, a connecting portion, which connects the thermal sensor tube, exists. The liquid is charged in this system. When the liquid in the thermal sensor tube expands and contracts, this change is transmitted to the Bourdon tub, and the move of the Bourdon tube tip is transmitted to the indicator, indicating temperature.

Specification (TL14-34-54 Series liquid filled type thermometer)

- Model : TL14-34-54 Series
- Fluid : Gas or Liquid
- Case of construction : IP43
- Size : 100 Dia.
- Mounting : Direct mounting type
Remote surface wall mounting type
Free angle type
- Connection size : 3/8"PF, 3/8"PT, 3/8"NPT
1/2"PF, 1/2"PT, 1/2"NPT
3/4"PF, 3/4"PT, 3/4"NPT
* Flange connection is available. (Option)
- Material : Case & Cover ----- ADC12 with Black finish
Bulb(Stem) & Connector --- 304SS, 316SS (Option)
Capillary ----- 304SS, 316SS (Option)
Amored tube ----- 304SS, Other (Option)
- Connection type : Union type & Slide type
- Manufacturing range : -50 ~ 50°C → 0 ~ 600°C
- Accuracy : ±2.0% F.S.
- Case of Compensation : Bimetal compensation
- Window : Glass
- Dial scale specified : (Request option)
Dual scale, Printed word, Colored circle
- Bulb(Stem) dia. : ø8, ø10, ø12
- Thermowell : (Request option)
- Filled liquid : Ax, Lx Oil or Gas
- Weight : 100 Dia. - TL14 Approx. kg
TL34 Approx. kg
TL54 Approx. kg

Scale range · Stem dia. · Stem length table

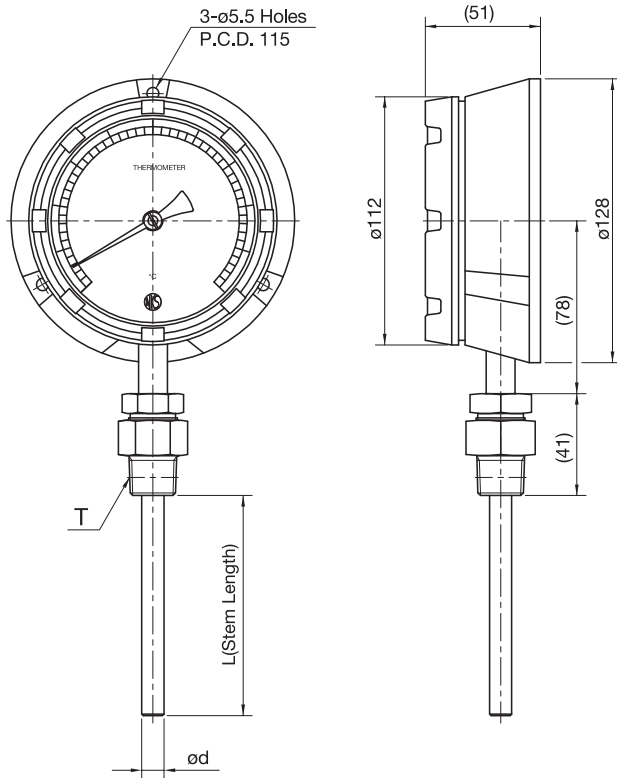
◎TL14 & TL34 Model is (Above range 200°C) not available.

Scale range (°C)	Minimum division	Order code	Standard accuracy	Stem length "L"					
				(Min.)			(Max.)		
				ø8	ø10	ø12	ø8	ø10	ø12
-50 ~ 50	2	A	±2.0% F.S.	55	45	40	300	300	300
-20 ~ 50	2	B		60	50	45	300	300	300
-10 ~ 50	1	C		65	60	50	300	300	300
-30 ~ 100	2	D		65	55	45	300	300	300
0 ~ 50	1	E		95	80	60	300	300	300
0 ~ 60	1	F		80	70	50	300	300	300
0 ~ 80	2	G		65	55	50	300	300	300
0 ~ 100	2	H		55	50	40	300	300	300
0 ~ 120	2	I		50	45	40	300	300	300
0 ~ 150	2	J		45	40	45	300	300	300
0 ~ 200	5	K		40	40	40	300	300	300
0 ~ 250	5	L		40	40	40	300	300	300
0 ~ 300	5	M		40	40	40	300	300	300
0 ~ 400	10	N		230	170	120	300	300	300
~ ~ 500	10	O		230	170	120	300	300	300
0 ~ 600	10	P		230	170	120	300	300	300

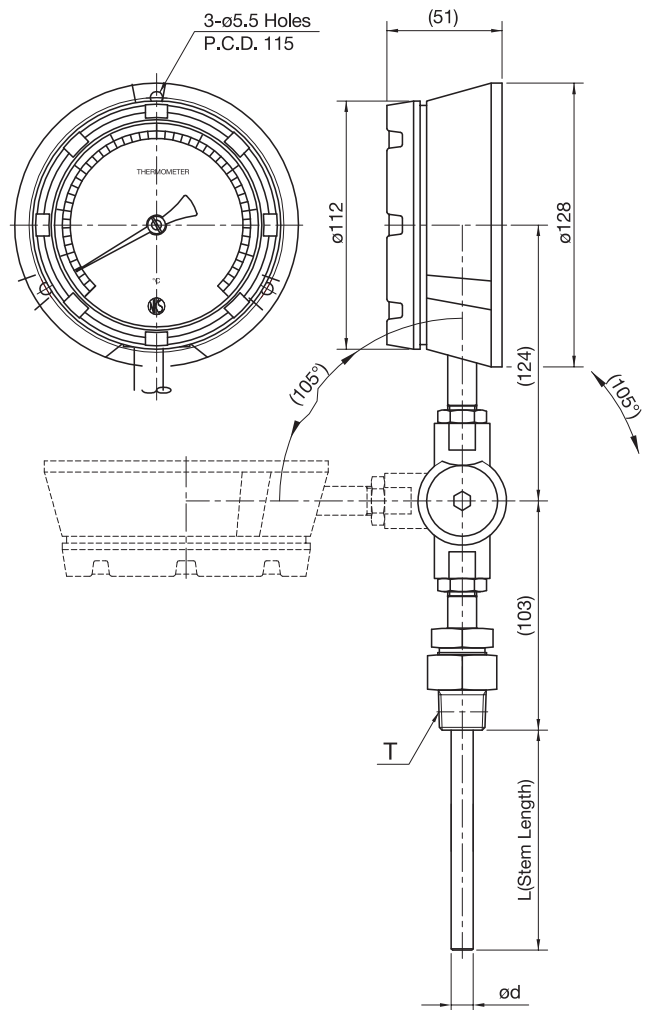
- * In case of plain type of bulb, minimum length to be added 40mm to the above length.
- * Above minimum insertion length is the one for without thermowell, in case of with thermowell 25mm to be increased to the above length.
- * Above length is the minimum necessary length of bulb to be inserted into the fluid to be measured.
- * Bulb length should be over the above length and specify 5mm steps.

Outline dimension & Mounting type (TL14-34-54 Series liquid filled type)

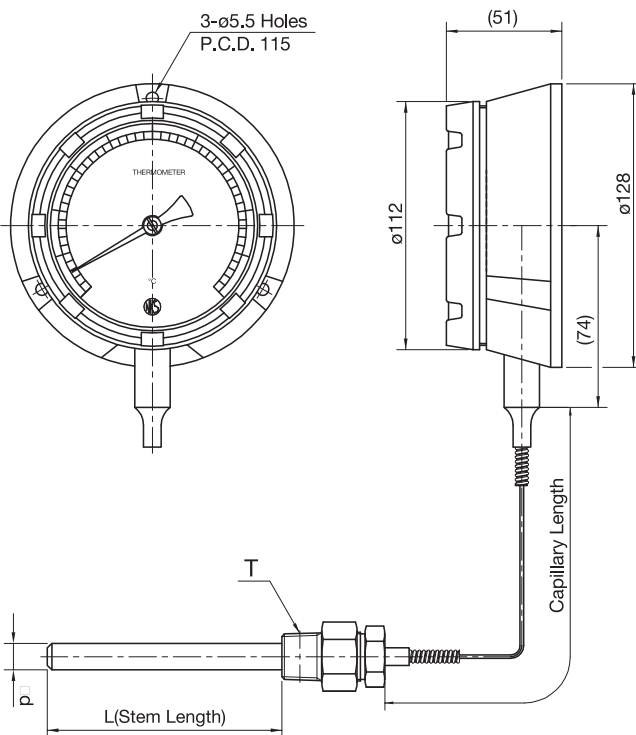
TL14 - □□□ (Direct type)



TL34 - □□□ (Free angle type)

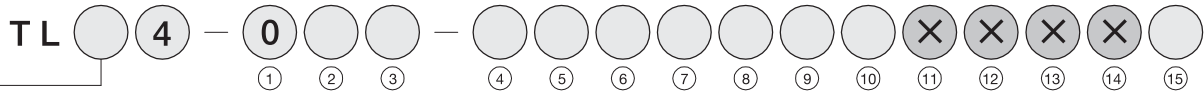


TL54 - □□□ (Remote type)



Model number configuration (TL14-34-54 Series)

* For ordering, Please specify the model number and each spec.



Model	Selective spec.	Option
Type	1	Direct type ("I" stem type)
	3	Direct type (Free angle type)
	5	Remote type (Surface mounting type)
① Thermowell	0	Without thermowell
② Union type	0	Fixed type
	1	Removable type
③ Type of connection	0	PT1/2
	1	PT3/4
	2	NPT1/2
	3	PF1/2
	4	PF3/4
	B	PT3/8
	D	NPT3/4
④ Range (°C)	A } P	Refer to range table
⑤ Bulb material	1	304SS
	2	316SS (Option)
	0	Other
⑥ Bulb dia.	1	ø8
	2	ø10
	3	ø12
⑦ Bulb length (L)	A	Min. length ~ 500mm
	B	501 ~ 600mm
	C	601 ~ 700mm
	D	701 ~ 800mm
	E	801 ~ 900mm
	F	901 ~ 1000mm
⑧ Compensation	1	Bimetal compensation
⑨ Lead type	0	Direct type
	2	Flexible tube type (304SS)
⑩ Lead length	0	Direct type
	A	~ 3m
	B	~ 4m
	C	~ 5m
	g	Other specifications. (/m)
⑮ Document	0	Nil
	1	Required