

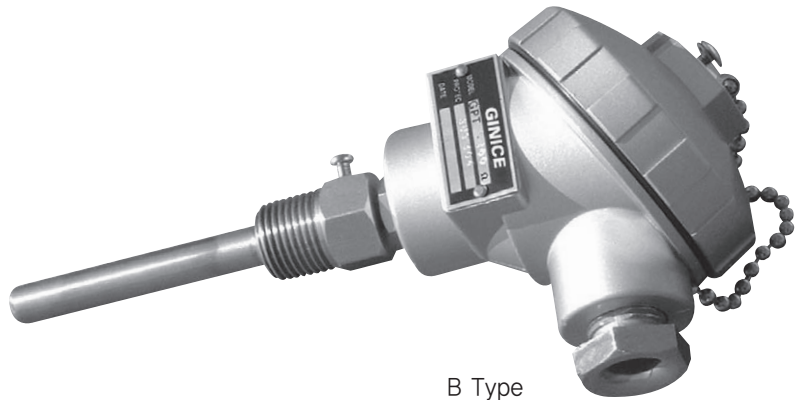
## 1-1

# 배관 온도 감지기

## GPT Series



A Type



B Type

### ◀ 적용 | Application |

"GPT" Pipe Temperature sensor is intended for immersion mounting in pipes, and tanks. Units contain either a high quality platinum or thermistor (NTC) sensing element suitable for use in the range  $-50 \sim +150^{\circ}\text{C}$ . The immersion Probe is made of stainless steel.

- 사용유체 온도 감지
- 환수 온도 감지
- 탱크내 온도 감지

### ◀ 기술 사양 | Technical Data |

모델	검출 소자	온도 범위	정밀도	결선	적용
(RTD.. 소자)					
GPT-100	Pt100Ω	$-30 \sim 150^{\circ}\text{C}$	$\pm 0.3^{\circ}\text{C}$ (at $0^{\circ}\text{C}$ )	3wire / 1.0mm <sup>2</sup>	
GPT-1000	Pt1000Ω	$-30 \sim 150^{\circ}\text{C}$	$\pm 0.3^{\circ}\text{C}$ (at $0^{\circ}\text{C}$ )	3wire / 1.0mm <sup>2</sup>	
(Thermistor.. NTC 소자)					
GPT-N10K-AN	NTC10000Ω	$-40 \sim 150^{\circ}\text{C}$	$\pm 0.2^{\circ}\text{C}$ (at $25^{\circ}\text{C}$ )	2wire / 1.0mm <sup>2</sup>	ACI/AN, ANDOVER, BA/10K-3 PRECON-3 (Model.3)
GPT-N10K-CP	NTC10000Ω	$-40 \sim 150^{\circ}\text{C}$	$\pm 0.2^{\circ}\text{C}$ (at $25^{\circ}\text{C}$ )	2wire / 1.0mm <sup>2</sup>	ACI/CP, BA/10K-2 PRECON-2 (Model.24)
GPT-N5K	NTC5000Ω	$-50 \sim 110^{\circ}\text{C}$	$\pm 0.3^{\circ}\text{C}$ (at $25^{\circ}\text{C}$ )	2wire / 1.0mm <sup>2</sup>	
GPT-N3K	NTC3000Ω	$-30 \sim 150^{\circ}\text{C}$	$\pm 0.25^{\circ}\text{C}$ (at $25^{\circ}\text{C}$ )	2wire / 1.0mm <sup>2</sup>	ACI/3K PRECON-2 (Model.22)

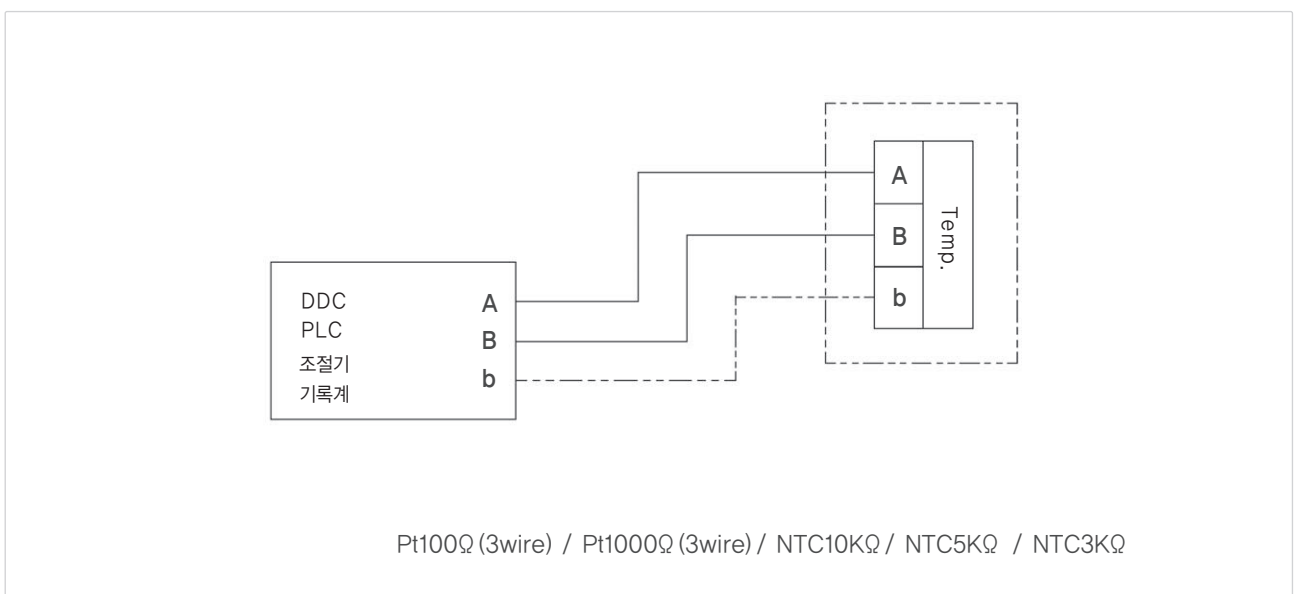
◀◀ 기술 사양 | Technical Data |

- 검출 소요 시간 : About 30sec (Without WELL 10sec)
- 주위 온도 : -35 ~ 90℃ (A Type), -35 ~ +150℃ (B Type)
- 주위 습도 : 5 ~ 95%RH
- 적용 : DDC System and controller
- 온도 변화 : Table of Reference Values
- 케이블 인입 그랜드 : PF 1/2"
- 보호관 : Material / SS304  
Dimensions / 130mm x 9.6mm dia.
- 보호등급 : IP65 (A Type), IP54 (B Type)
- 하우징 : ABS (flame retardation) - (A Type)  
Aluminum die-Cast - (B Type)
- 무게 : 0.430Kg (W/WELL)

◀◀ 주의 사항 | Notes |

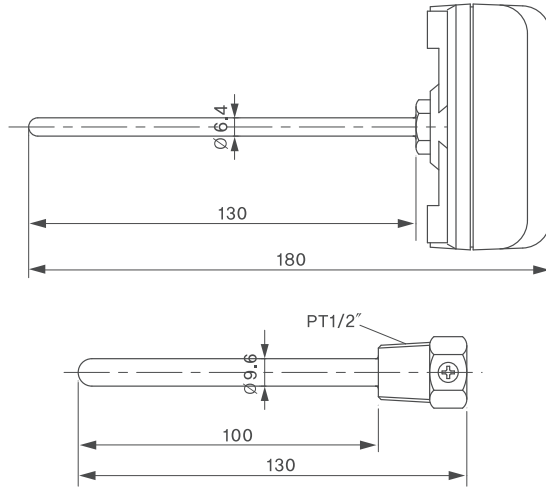
- Use Drill Bar for WELL in case of over 6Kg/cm<sup>2</sup> of Nominal Pressure
- Install the Sensor to the following location depend on each usage :
  - 1) In case of controlling temperature for Fluids objects (Warm & Cold water)
    - In case of installing the pump inside of Fluids : Install at the behind of Pump
    - In case of installing the pump on the line of circulating water : Install 1.5 ~ 2m away from Mixed Valve
  - 2) In case of controlling temperature for circulating water
    - For accurate control of temperature, Sensor should be installed at inside of circulating pipe, and installed at the place where water can be mixed well..
- ※ WELL should be installed at the Elbow for the reverse direction from Fluids

◀◀ 결선 방법 | Wiring Diagram |

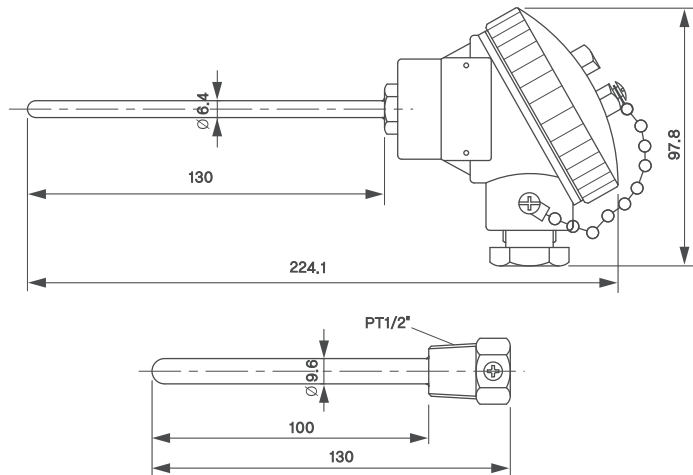


◀◀ 외형치수 | Shape Dimension |

Ⓐ타입

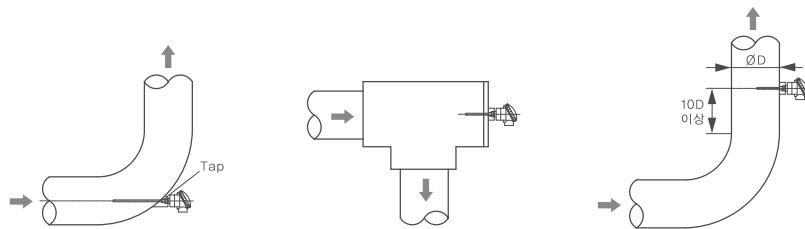


Ⓑ타입



◀◀ 설치 방법 | Installing Methods |

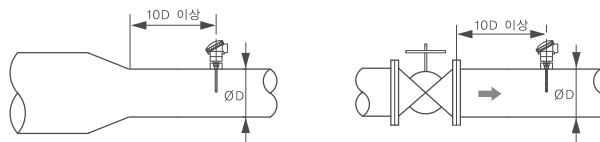
A. Installing on bent pipe



B. Installing on straight pipe



C. Installing on narrower pipe



저항 변화표 | Thermistor NTC Curve Table |

온 도		NTC/10K-AN	NTC/10K-CP	NTC/5K	NTC/3K
Temp	Temp	Resistance	Resistance	Resistance	Resistance
℃	℉	ohms	ohms	ohms	ohms
-40	-40	239,831	335,671	88,910	100,701
-35	-31	179,280	242,195	68,190	72,658
-30	-22	135,233	176,683	52,870	53,005
-25	-13	102,890	130,243	41,210	39,073
-20	-4	78,930	96,974	32,440	29,092
-15	5	61,030	72,895	25,660	21,868
-10	14	47,549	55,298	20,480	16,589
-5	23	37,316	42,314.6	16,430	12,694.4
0	32	29,490	32,650.8	13,290	9,795.2
5	41	23,462	25,395.5	10,800	7,618.7
10	50	18,787	19,903.5	8,840	5,971.1
15	59	15,136	15,714.0	7,267	4,714.2
20	68	12,268	12,493.7	6,013	3,748.1
25	77	10,000	10,000	5,000	3,000
30	86	8,197	8,056.0	4,179	2,416.8
35	95	6,754	6,530.1	3,508	1,959.0
40	104	5,594	5,324.9	2,961	1,597.5
45	113	4,656	4,366.9	2,509	1,310.1
50	122	3,893	3,601.0	2,137	1,080.3
55	131	3,271	2,985.1	1,826	895.52
60	140	2,760	2,487.1	1,567	746.12
65	149	2,339	2,082.3	1,350	624.69
70	158	1,990	1,751.6	1,169	525.49
75	167	1,700	1,480.1	1,014	444.04
80	176	1,458	1,256.2	883.5	376.85
85	185	1,255	1,070.6	772.2	321.17
90	194	1,084	916.11	677.1	274.83
95	203	939.6	786.99	596.1	236.10
100	212	817.2	678.63	526.5	203.59
105	221	713.0	587.31	465.4	176.19
110	230	624.1	510.06	412.8	153.02
115	239	547.9	444.48	-	133.34
120	248	482.5	388.59	-	116.578
125	257	426.0	340.82	-	102.246
130	266	377.2	299.82	-	89.946
135	275	334.9	264.54	-	79.363
140	284	298.1	234.08	-	70.225
145	293	266.0	207.70	-	62.309
150	302	238.0	184.79	-	55.436