

# Sensors

## Temperature Sensor

TS...

### 【Description】

TS...series temperature sensor is applied to sense the temperature of air or fluid, through two-wire or three-wire transmission with various forms of controller, can be digital or analog control of air conditioning equipment.

### 【Features】

The temperature sensor can measure the temperature of indoor, air ducts and water pipes. The sensor and the fixed base are separable and can be used with any manufacturer's temperature controller.

- IP65 waterproof housing for air duct type and water duct type
- Direct line out method



### 【Specification】

Model	Type	Element	$\Omega$ at Temp	Sense Range	Apply Range	Accuracy	Protect
TSR2000A	Room	NTC,10K ohms	10K $\Omega$ @25 °C	-20~100 °C	0~50 °C	$\pm 0.25$ °C @25 °C	IP30
TSD2025B	Duct	NTC,10K ohms	10K $\Omega$ @25 °C	-20~100 °C	0~80 °C	$\pm 0.25$ °C @25 °C	IP65
TSW2010B	Immersion	NTC,10K ohms	10K $\Omega$ @25 °C	-20~100 °C	0~80 °C	$\pm 0.25$ °C @25 °C	
TSW2015B	Immersion	NTC,10K ohms	10K $\Omega$ @25 °C	-20~100 °C	0~80 °C	$\pm 0.25$ °C @25 °C	

#### Room Type

Cover : Plastic, Beige  
 Base plate : Plastic, Beige  
 Env. temp. : -5°C~55°C  
 Env. Humidity : 10~95 % RH  
 Weight : 95g

#### Duct Type

Top : Aluminum alloy,silver, $\phi 35$ mm  
 Pole : SS304,250mm  
 Connector : PLUG-IN  
 Env. temp. : -20°C~100°C  
 Env. Humidity : 10~95 % RH  
 Weight : 200g

#### Immersion Type

Top : Aluminum alloy,silver, $\phi 35$ mm  
 Pole : SS304,100mm  
 Connector : PLUG-IN  
 Env. temp. : -20°C~100°C  
 Env. Humidity : 10~95 % RH  
 Weight : 190g

### 【Accessories】

Model	Description
ABK001	Mounting Brackets for duct work.
AWL1008C-NPT	1/2in Brass Well, NPT*8 $\phi$ (inner dia.)*111mm length. (for TSW2010B)
AWL1508C-NPT	1/2in Brass Well, NPT*8 $\phi$ (inner dia.)*161mm length. (for TSW2015B)
AWL1008S-NPT	1/2in Stainless Steel Well, NPT*8 $\phi$ (inner dia.)*111mm length. (for TSW2010B)
AWL1508S-NPT	1/2in Stainless Steel Well, NPT*8 $\phi$ (inner dia.)*161mm length. (for TSW2015B)

### 【Installation】

- Wall Mount-To be mounting on 1.2M above floor and good air current place, avoid heat radiation and vibration.
- Use metal pipe connector for duct and immersion type sensor to insure protect IP grade.
- Duct Mount-To be mounting at stable air current place or straight duct over 3-5 times diameter.
- Immersion-To be mounting at stable water current place, straight pipe over 3-5 times diameter or elbow.

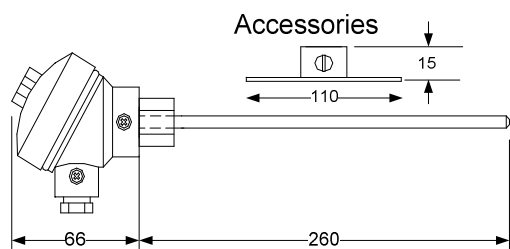
# Sensors

## Temperature Sensor

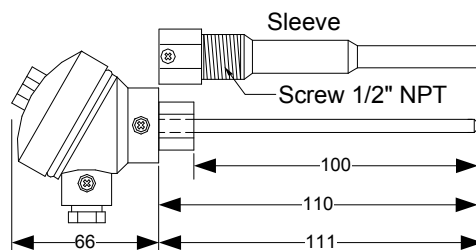
# TS...

NTC, 10k ohms									
°C	Ω	°C	Ω	°C	Ω	°C	Ω	°C	Ω
-20	98,691								
-19	93,075	6	24,269	31	7,717	56	2,876	81	1,220
-18	87,814	7	23,100	32	7,397	57	2,773	82	1,181
-17	82,883	8	21,995	33	7,093	58	2,674	83	1,144
-16	78,260	9	20,949	34	6,802	59	2,579	84	1,109
-15	73,923	10	19,959	35	6,525	60	2,488	85	1,074
-14	69,853	11	19,022	36	6,261	61	2,400	86	1,041
-13	66,033	12	18,134	37	6,009	62	2,316	87	1,009
-12	62,445	13	17,292	38	5,769	63	2,235	88	978
-11	59,074	14	16,495	39	5,540	64	2,158	89	949
-10	55,905	15	15,739	40	5,321	65	2,084	90	920
-9	52,926	16	15,022	41	5,111	66	1,012	91	892
-8	50,124	17	14,342	42	4,911	67	1,944	92	866
-7	47,487	18	13,696	43	4,721	68	1,878	93	840
-6	45,005	19	13,084	44	4,538	69	1,815	94	815
-5	42,668	20	12,502	45	4,364	70	1,754	95	791
-4	40,466	21	11,949	46	4,197	71	1,695	96	768
-3	38,391	22	11,424	47	4,037	72	1,639	97	745
-2	36,436	23	10,925	48	3,885	73	1,585	98	724
-1	34,591	24	10,451	49	3,739	74	1,533	99	703
0	32,851	<b>25</b>	<b>10,000</b>	50	3,599	75	1,483	100	683
1	31,209	26	9,571	51	3,465	76	1,435	101	663
2	29,658	27	9,163	52	3,337	77	1,388	102	644
3	28,194	28	8,774	53	3,214	78	1,344	103	626
4	26,811	29	8,404	54	3,097	79	1,301	104	608
5	25,504	30	8,052	55	2,984	80	1,260	105	591

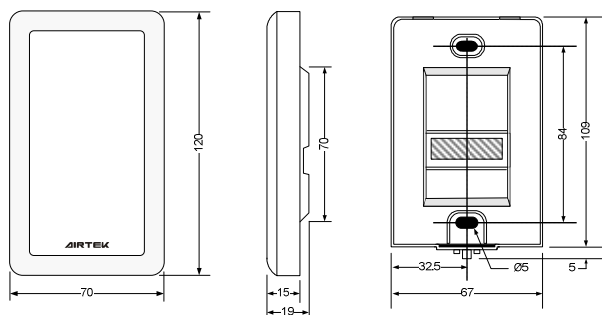
[ Dimension ] Unit : mm



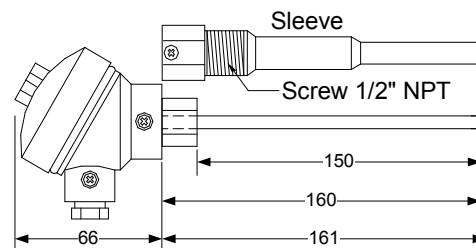
Duct Type



Immersion TSW2010B



Room Type



Immersion TSW2015B