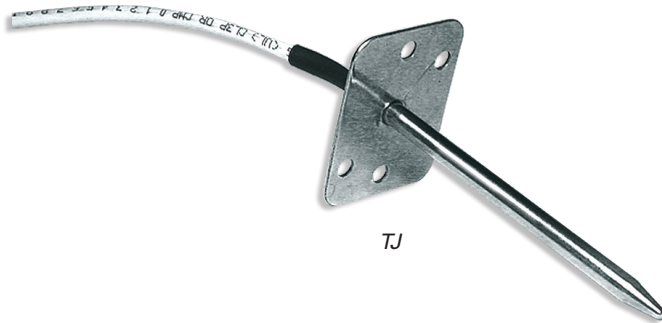


# VAV Discharge Temperature Sensors

## TJ Series



### SPECIFICATIONS



<b>Wiring</b>	22 AWG; 2-wire: RTD/Thermistor
<b>Probe</b>	Stainless Steel
<b>LINITEMP OPTION</b>	
<b>Input Power</b>	5 to 30VDC
<b>Output</b>	10mV/°C
<b>Operating Temp</b>	-25° to 105°C (-13° to 221°F)*
<b>Calibration Error</b>	1.5°C (2.7°F) typical; 2.5°C (4.5°F) max. at 25°C (77°F)**
<b>Error over Temp</b>	1.8°C (3.24°F) typical; 3.0°C (5.4°F) max. over 0° to 70°C (32° to 158°F) range; 2.0°C (3.6°F) typical; 3.5°C (6.3°F) max. over -25° to 105°C (-13° to 221°F) range

Increased cable length affects the readings of lower resistance RTDs (100R platinum, RTD).

\* For RTD and thermistor accuracies and ranges, see the table at right.

\*\*Room temperature error documented on each unit.

## VAV Discharge Air Sensor For Reheat Applications

### FEATURES

- Stainless steel duct probe with mounting flange...quick, easy installation
- Plenum rated cable standard
- 4" or 8" (102 mm or 204 mm) duct probes for application flexibility
- 2-wire installation (optional quick disconnect)...installs in just a few short minutes
- Installation ready for VAV systems and plenum areas...saves money on job commissioning and warranty service

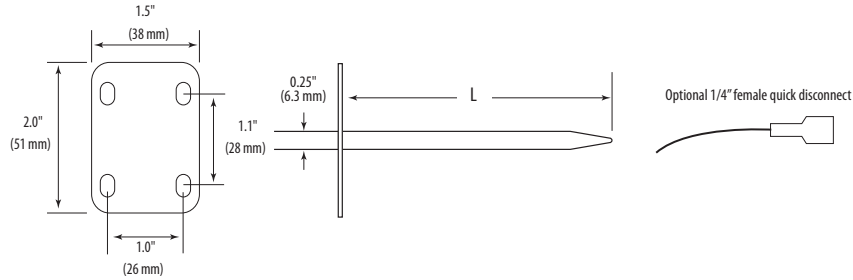
### DESCRIPTION

The **TJ Series** temperature sensors are highly accurate and cost effective, with trouble-free installation. The sensor is encased in a sturdy corrosion-resistant stainless steel probe. A variety of RTD/thermistor sensor and probe length options are available for maximum versatility in applications.

### APPLICATIONS

- VAV reheat boxes
- Dual duct boxes
- Fan coils
- Prove that the hot water valve or electric heat is functioning properly
- Check individual reheating stages
- Check for hot water valve leaks
- Determine if damper actuators are functioning on dual duct boxes

**DIMENSIONAL DRAWING**



**To compute Linitemp Temperature**

$mV \text{ reading} / 10 - 273.15 = \text{Temperature in } ^\circ\text{C}$

Class	Pt RTD		Balco RTD	THERMISTOR										10k Type 2	10k Type 3
Type	100 Ohm	1000 Ohm	1000 Ohm	2.2k	3k	10k Type 2	10k Type 3	10k Dale	10k 3A221	10k "G" US	20k	20k "D"	100k	10k Type 2	10k Type 3
Accuracy	±0.3°C	±0.3°C	±1% @70°C	±0.2°C	±0.2°C	±1.0°C	±0.2°C	±0.2°C	±1.1°C	±0.2°C	Consult	Consult	Consult	±0.1°C 20/70°C	±0.1°C
Temp. Response*	PTC	PTC	PTC	NTC	NTC	NTC	NTC	NTC	NTC	NTC	NTC	NTC	NTC	±0.2°C 0/20°C	0/70°C
														High Accuracy	

\*PTC: Positive Temperature Coefficient  
\*NTC: Negative Temperature Coefficient

**STANDARD RTD AND THERMISTOR VALUES (Ohms Ω)**

°C	°F	100 Ohm	1000 Ohm	1000 Ohm	2.2k	3k	10k Type 2	10k Type 3	10k Dale	10k 3A221	10k "G" US	20k NTC	20k "D"	100k	10k Type 2	10k Type 3
-50	-58	80.306	803.06	740.46	154,464	205,800	692,700	454,910	672,300	-	441,200	1,267,600	-	-	692,700	454,910
-40	-40	84.271	842.71	773.99	77,081	102,690	344,700	245,089	337,200	333,562	239,700	643,800	803,200	3,366,000	344,700	245,089
-30	-22	88.222	882.22	806.02	40,330	53,730	180,100	137,307	177,200	176,081	135,300	342,000	412,800	1,770,000	180,100	137,307
-20	-4	92.160	921.60	841.00	22,032	29,346	98,320	79,729	97,130	96,807	78,910	189,080	220,600	971,200	98,320	79,729
-10	14	96.086	960.86	877.46	12,519	16,674	55,790	47,843	55,340	55,252	47,540	108,380	122,400	553,400	55,790	47,843
0	32	100.000	1,000.00	913.66	7,373	9,822	32,770	29,588	32,660	32,639	29,490	64,160	70,200	326,600	32,770	29,588
10	32	103.903	1,039.03	952.25	4,487	5,976	19,930	18,813	19,900	19,901	18,780	39,440	41,600	199,000	19,930	18,813
20	68	107.794	1,077.94	991.82	2,814	3,750	12,500	12,272	12,490	12,493	12,260	24,920	25,340	124,900	12,500	12,272
25	77	109.735	1,097.35	1,013.50	2,252	3,000	10,000	10,000	10,000	10,000	10,000	20,000	20,000	100,000	10,000	10,000
30	86	111.673	1,116.73	1,035.18	1,814	2,417	8,055	8,195	8,056	8,055	8,194	16,144	15,884	80,580	8,055	8,195
40	104	115.541	1,155.41	1,077.68	1,199	1,598	5,323	5,593	5,326	5,324	5,592	10,696	10,210	53,260	5,323	5,593
50	122	119.397	1,193.97	1,120.52	811.5	1,081	3,599	3,894	3,602	3,600	3,893	7,234	6,718	36,020	3,599	3,894
60	140	123.242	1,232.42	1,166.13	561.0	747	2,486	2,763	2,489	2,486	2,760	4,992	4,518	24,880	2,486	2,763
70	158	127.075	1,270.75	1,210.75	395.5	527	1,753	1,994	1,753	1,751	1,990	3,512	3,100	17,510	1,753	1,994
80	176	130.897	1,308.97	1,254.55	284.0	378	1,258	1,462	1,258	1,255	1,458	2,516	2,168	12,560	1,258	1,462
90	194	134.707	1,347.07	1,301.17	207.4	-	919	1,088	917	915	1,084	1,833	1,542	9,164	919	1,088
100	212	138.506	1,385.06	1,348.38	153.8	-	682	821	679	678	816.8	1,356	1,134	6,792	682	821
110	230	142.293	1,422.93	1,397.13	115.8	-	513	628	511	509	623.6	1,016	816	5,108	513	628
120	248	146.068	1,460.68	1,447.44	88.3	-	392	486	389	388	481.8	770	606	3,894	392	486
130	266	149.832	1,498.32	1,496.28	68.3	-	303	380	301	299	376.4	591	456	3,006	303	380
Sensor Codes		<b>B</b>	<b>C</b>	<b>I</b>	<b>E</b>	<b>F</b>	<b>D</b>	<b>H</b>	<b>J</b>	<b>S</b>	<b>R</b>	<b>M</b>	<b>U</b>	<b>T</b>	<b>W</b>	<b>Y</b>

**ORDERING INFORMATION**

Probe Length "L"  TJ

Sensor Type

Output  R = Resistive

Cal Certificate

Option

**B** = 4" (102mm)  
**D** = 8" (204mm)

**B** = 100R platinum, RTD  
**C** = 1k platinum, RTD  
**D** = 10k T2, Thermistor  
**E** = 2.2k, Thermistor  
**F** = 3k, Thermistor  
**G** = 10k CPC, Thermistor  
**H** = 10k T3, Thermistor  
**I** = 1k Balco (Nickel-iron) RTD  
**J** = 10k Dale, Thermistor  
**K** = 10k w/11k shunt, Thermistor  
**M** = 20k NTC, Thermistor  
**N** = 1800 ohm, Thermistor  
**P** = 10mV/°C, Linitemp  
**R** = 10k US, Thermistor  
**S** = 10k 3A221, Thermistor  
**T** = 100k, Thermistor  
**U** = 20k "D", Thermistor  
**W** = 10k T2 high accuracy, Thermistor  
**Y** = 10k T3 high accuracy, Thermistor  
**Z** = 10k E1, Thermistor  
**CC** = 15k, Thermistor

**0** = None  
**1** = 1 Point Cal Cert  
**2** = 2 Point Cal Cert

**0** = Standard 5 ft. cable, No QDs  
**1** = 1/4" Female Quick Disconnects (QD)  
**2** = 1/4" QDs with 8 ft. leadwires  
**3** = 10 ft. cable, no QDs

**Example:**  
TJ **B** **D** **R** **2** **1**

**ACCESSORIES**

Temperature range converter (AA10xxxx)



AA10xxxx