THERMOMETRICS
A COMMITMENT TO EXCELLENCE

Pipe Clip Temperature Sensors

Thermometrics' range of Pipe Clip Temperature Sensors are designed for industrial HVACR applications. The sensors consist of a NTC thermistor on a ceramic/metal shoe assembly seated in a polymer housing with flexible twin cable connections. The housing is fitted with a spring metal clip for pipe attachment.

Typical applications include gas boiler control, domestic water systems, air conditioners, radiator inlet-outlet, electric showers, vending machines, chiller and refrigeration units.

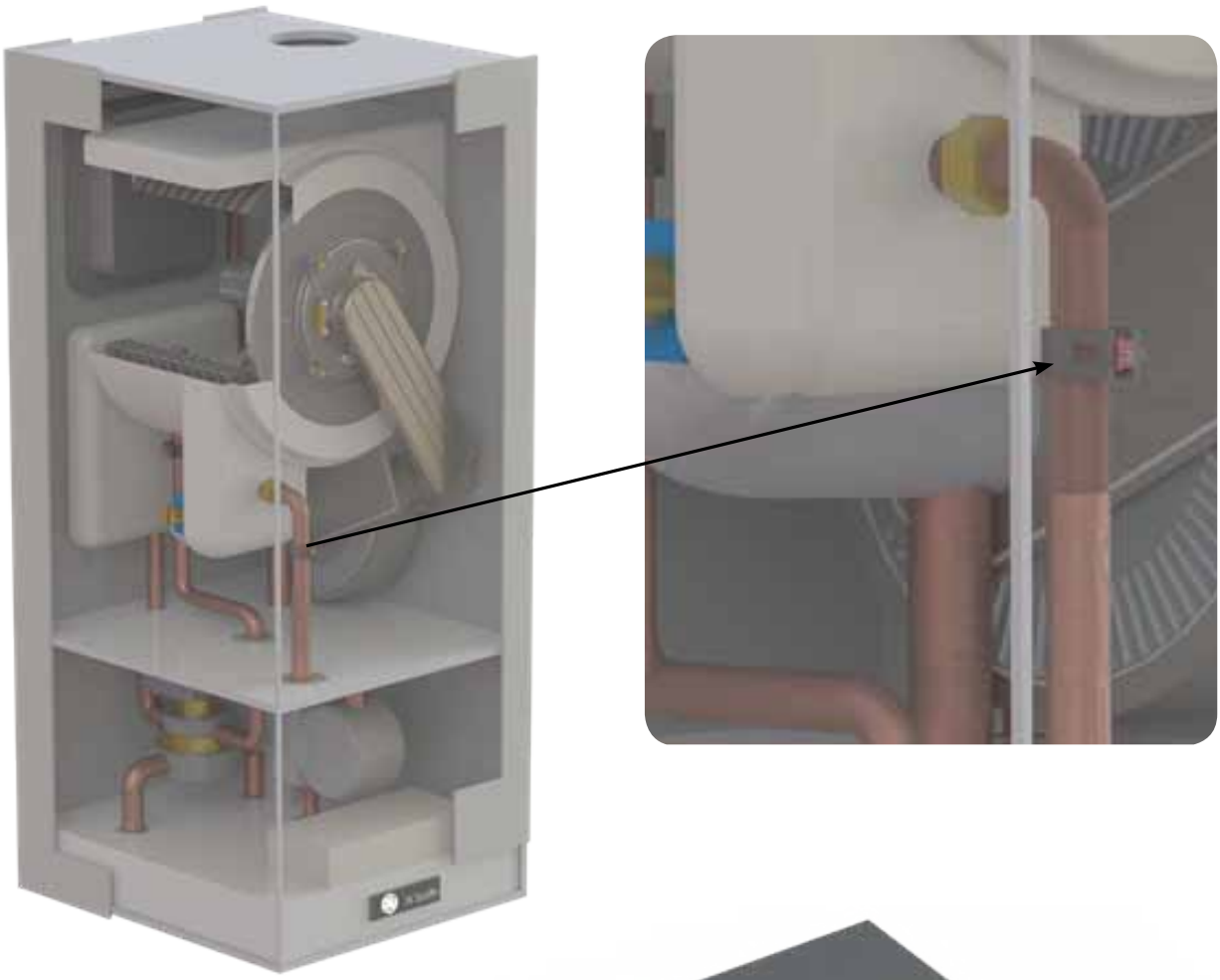
Features

- Ability to mount directly to a metallic pipe, no need to bore hole and seal while avoiding associated costs.
- Responds quickly to changes in temperature, time constant 0.8-2.0 seconds by design.
- Accurate temperature measurement, ±1.0°C (3% on resistance) at a specified reference temperature.
- Application robust: 250,000 thermal cycles between 25 & 85 °C equating to 15 years life expectancy for a typical boiler.
- Surface-mount configurations available.
- Maximum continuous working temperature to +90°C
- Withstand Voltage, 750 Vac for a broadly sinusoidal wave form at 50Hz applied between the connector tabs & contact shoe, where the max allowable current is 1 mA.

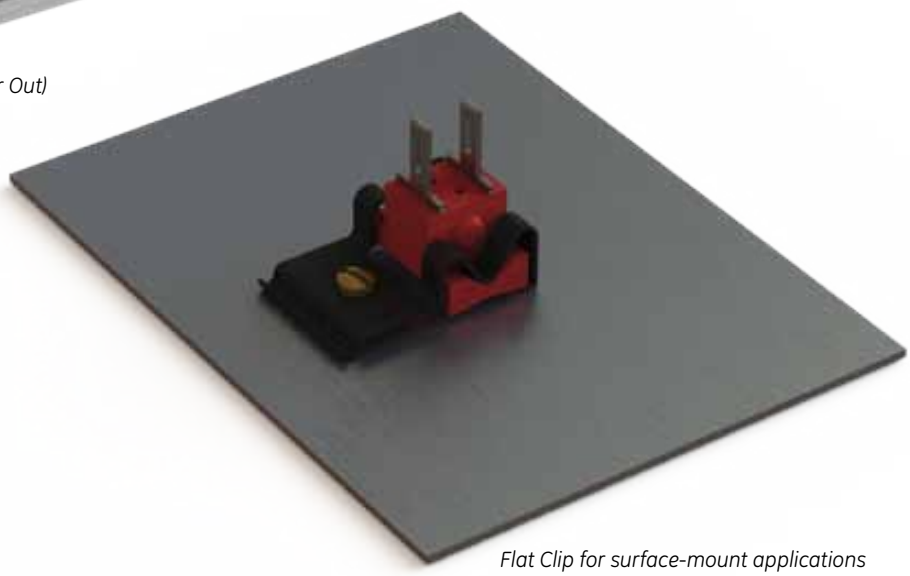
Amphenol
Advanced Sensors

Product Applications

- Boilers
- Water heaters
- Air conditioners
- Chiller and refrigeration units
- Surface mount industrial applications



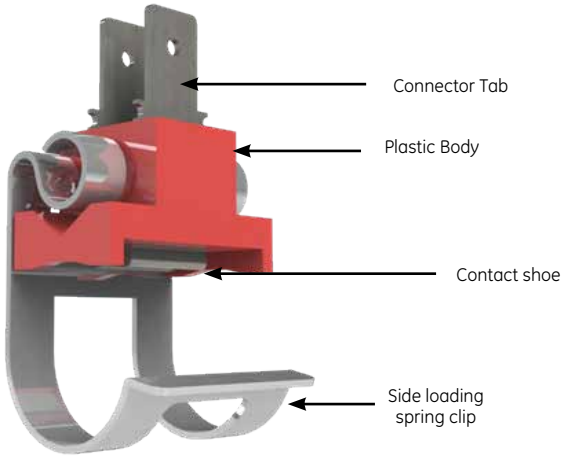
On Boiler (Water In, Water Out)



Flat Clip for surface-mount applications

Product Design

Front-loading spring clip



Specifications

Part Number	Contact tab width / mm	Pipe dimension /mm	Clip Type	Resistance at (Tref)	B (25/85) / K
JS3227A	4.8	13	Front	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS3227B	4.8	20	Front	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS3227F	4.8	Flat	Flat	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS3227/13SC	4.8	13	Side	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS3227/17	4.8	17	Side	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS3227/18SC	4.8	18	Side	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS3227/12SC	4.8	12	Side	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS4903/13	2.8	13	Front	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS4903/17	2.8	17	Front	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS4903/20	2.8	20	Front	10,000 (25) 2495 (60) ±3%	3977 ± 0.75%
JS6011/13	2.8	13	Front	2,700 (25) 286 (85) ±3%	3977 ± 0.75%
JS7840/12SC	2.8	12	Side	10,000 (25) 3,000 (60) ±3%	3435±0.75%
JS7840/18SC	2.8	18	Side	10,000 (25) 3,000 (60) ±3%	3435±0.75%

Thermal Equilibrium Temperature vs. Resistance Tables

JS3977							
Temp	R nom	R min	R max	R Tol	R Tol	T Tol	T Tol
°C	Ohm	Ohm	Ohm	- %	+ %	+ °C	- °C
0	32751	30961	34613	-5.47	5.69	1.07	-1.11
5	25477	24145	26858	-5.23	5.42	1.06	-1.10
10	19969	18971	21001	-5.00	5.16	1.04	-1.08
15	15767	15014	16542	-4.77	4.92	1.03	-1.06
20	12536	11965	13122	-4.55	4.68	1.01	-1.03
25	10034	9598.4	10480	-4.34	4.44	0.99	-1.01
30	8083.2	7749.1	8424.2	-4.13	4.22	0.97	-0.99
35	6552.1	6294.5	6814.2	-3.93	4.00	-0.97	-0.97
40	5342.7	5143.1	5545.0	-3.74	3.79	0.93	-0.94
45	4381.4	4226.0	4538.3	-3.54	3.58	0.91	-0.92
50	3612.7	3491.4	3734.9	-3.36	3.38	0.88	-0.89
55	2994.7	2899.6	3090.2	-3.18	3.19	0.86	-0.86
60	2495.0	2420.2	2569.9	-3.00	3.00	0.83	-0.83
65	2088.8	2022.6	2155.3	-3.17	3.18	0.90	-0.91
70	1757.0	1698.3	1816.1	-3.34	3.36	0.98	-0.98
75	1484.6	1432.6	1537.1	-3.50	3.54	1.05	-1.06
80	1259.9	1213.7	1306.6	-3.66	3.71	1.13	-1.14
85	1073.6	1032.7	1115.2	-3.81	3.87	1.21	-1.23
90	918.65	882.23	955.71	-3.96	4.03	1.29	-1.31

JS7840							
Temp	R nom	R min	R max	R Tol	R Tol	T Tol	T Tol
°C	Ohm	Ohm	Ohm	- %	+ %	+ °C	- °C
0	27059	25676	28490	-5.11	5.29	1.19	-1.23
5	21894	20819	23003	-4.91	5.07	1.18	-1.21
10	17818	16978	18683	-4.71	4.85	1.16	-1.19
15	14583	13923	15260	-4.52	4.64	1.14	-1.17
20	12000	11479	12532	-4.34	4.44	1.13	-1.15
25	9925.7	9513.4	10347	-4.15	4.24	1.11	-1.13
30	8251.8	7923.6	8585.7	-3.98	4.05	1.09	-1.11
35	6893.6	6631.4	7159.7	-3.80	3.86	1.07	-1.09
40	5786.0	5575.7	5998.9	-3.64	3.68	1.05	-1.06
45	4878.5	4709.2	5049.3	-3.47	3.50	1.03	-1.04
50	4131.3	3994.6	4268.9	-3.31	3.33	1.01	-1.01
55	3513.3	3402.6	3624.5	-3.15	3.16	0.99	-0.99
60	3000.0	2910.0	3090.0	-3.00	3.00	0.96	-0.96
65	2571.8	2490.8	2653.0	-3.15	3.16	1.04	-1.04
70	2213.0	2140.1	2286.4	-3.29	3.31	1.11	-1.12
75	1911.3	1845.7	1977.6	-3.44	3.47	1.19	-1.20
80	1656.6	1597.4	1716.5	-3.57	3.61	1.26	-1.28
85	1440.8	1387.4	1495.0	-3.71	3.76	1.34	-1.36
90	1257.2	1209.0	1306.3	-3.84	3.90	1.43	-1.45

JS3592

Temp	R nom	R min	R max	R Tol	R Tol	T Tol	T Tol
°C	Ohm	Ohm	Ohm	- %	+ %	+ °C	- °C
0	33036	30968	35210	-6.26	6.58	1.23	-1.29
5	25699	24151	27321	-6.02	6.31	1.22	-1.28
10	20143	18976	21363	-5.79	6.06	1.21	-1.26
15	15904	15018	16827	-5.57	5.80	1.20	-1.25
20	12645	11968	13348	-5.35	5.56	1.19	-1.23
25	10121	9600.7	10661	-5.14	5.33	1.17	-1.21
30	8153.7	7751.0	8569.6	-4.94	5.10	1.16	-1.20
35	6609.2	6296.1	6931.8	-4.74	4.88	1.14	-1.18
40	5389.2	5144.3	5640.7	-4.54	4.67	1.13	-1.16
45	4419.5	4227.1	4616.6	-4.35	4.46	1.11	-1.14
50	3644.2	3492.3	3799.4	-4.17	4.26	1.10	-1.12
55	3020.8	2900.3	3143.5	-3.99	4.06	1.08	-1.10
60	2516.7	2420.7	2614.2	-3.81	3.87	1.06	-1.08
65	2107.0	2030.3	2184.7	-3.64	3.69	1.04	-1.05
70	1772.3	1710.7	1834.5	-3.48	3.51	1.02	-1.03
75	1497.5	1447.9	1547.4	-3.31	3.33	1.00	-1.00
80	1270.8	1230.7	1311.1	-3.16	3.16	0.97	-0.98
85	1083.0	1050.5	1115.5	-3.00	3.00	0.95	-0.95
90	926.66	897.46	955.95	-3.15	3.16	1.02	-1.03

JS3593

Temp	R nom	R min	R max	R Tol	R Tol	T Tol	T Tol
°C	Ohm	Ohm	Ohm	- %	+ %	+ °C	- °C
0	36418	34935	37929	-4.07	4.15	0.85	-0.87
5	28769	27663	29892	-3.84	3.90	0.83	-0.84
10	22890	22061	23730	-3.62	3.67	0.81	-0.81
15	18338	17713	18969	-3.41	3.44	0.78	-0.79
20	14788	14314	15263	-3.20	3.22	0.76	-0.76
25	12000	11640	12360	-3.00	3.00	0.73	-0.73
30	9796.4	9483.2	10111	-3.20	3.21	0.80	-0.80
35	8043.6	7771.2	8318.1	-3.39	3.41	0.87	-0.88
40	6641.0	6403.8	6880.8	-3.57	3.61	0.95	-0.96
45	5512.1	5305.3	5721.8	-3.75	3.80	1.02	-1.04
50	4598.3	4417.8	4781.9	-3.93	3.99	1.10	-1.12
55	3854.8	3697.0	4015.8	-4.10	4.18	1.18	-1.20
60	3246.7	3108.4	3388.1	-4.26	4.36	1.26	-1.29
65	2746.9	2625.5	2871.3	-4.42	4.53	1.34	-1.37
70	2334.1	2227.3	2443.8	-4.58	4.70	1.42	-1.46
75	1991.6	1897.4	2088.5	-4.73	4.87	1.51	-1.55
80	1706.2	1623.0	1792.0	-4.87	5.03	1.60	-1.65
85	1467.3	1393.7	1543.4	-5.02	5.19	1.68	-1.74
90	1266.6	1201.3	1334.3	-5.16	5.34	1.77	-1.84

JS4062							
Temp	R nom	R min	R max	R Tol	R Tol	T Tol	T Tol
°C	Ohm	Ohm	Ohm	- %	+ %	+ °C	- °C
0	27043	25474	28684	-5.80	6.07	1.35	-1.41
5	21882	20655	23160	-5.60	5.84	1.34	-1.40
10	17808	16845	18809	-5.41	5.62	1.33	-1.38
15	14574	13814	15363	-5.22	5.41	1.32	-1.37
20	11993	11389	12617	-5.03	5.21	1.31	-1.35
25	9920.1	9438.6	10417	-4.85	5.01	1.30	-1.34
30	8247.1	7861.3	8644.1	-4.68	4.81	1.28	-1.32
35	6889.7	6579.2	7208.4	-4.51	4.63	1.27	-1.30
40	5782.8	5531.9	6039.7	-4.34	4.44	1.26	-1.28
45	4875.7	4672.1	5083.6	-4.18	4.26	1.24	-1.27
50	4129.0	3963.1	4297.9	-4.02	4.09	1.22	-1.25
55	3511.4	3375.8	3649.1	-3.86	3.92	1.21	-1.23
60	2998.3	2887.1	3111.0	-3.71	3.76	1.19	-1.20
65	2570.3	2478.8	2662.8	-3.56	3.60	1.17	-1.18
70	2211.8	2136.3	2287.9	-3.42	3.44	1.15	-1.16
75	1910.3	1847.7	1973.2	-3.27	3.29	1.13	-1.14
80	1655.7	1603.8	1707.8	-3.14	3.14	1.11	-1.11
85	1440.0	1396.8	1483.2	-3.00	3.00	1.09	-1.09
90	1256.5	1217.2	1296.0	-3.13	3.14	1.16	-1.17

JS5195							
Temp	R nom	R min	R max	R Tol	R Tol	T Tol	T Tol
°C	Ohm	Ohm	Ohm	- %	+ %	+ °C	- °C
0	16259	15241	17329	-6.26	6.58	1.23	-1.29
5	12648	11886	13446	-6.02	6.31	1.22	-1.28
10	9913.5	9339.1	10514	-5.79	6.06	1.21	-1.26
15	7827.2	7391.1	8281.5	-5.57	5.80	1.20	-1.25
20	6223.2	5890.0	6569.4	-5.35	5.56	1.19	-1.23
25	4981.2	4725.0	5246.6	-5.14	5.33	1.17	-1.21
30	4012.9	3814.7	4217.5	-4.94	5.10	1.16	-1.20
35	3252.8	3098.6	3411.5	-4.74	4.88	1.14	-1.18
40	2652.3	2531.8	2776.1	-4.54	4.67	1.13	-1.16
45	2175.1	2080.4	2272.1	-4.35	4.46	1.11	-1.14
50	1793.5	1718.7	1869.9	-4.17	4.26	1.10	-1.12
55	1486.7	1427.4	1547.1	-3.99	4.06	1.08	-1.10
60	1238.6	1191.4	1286.6	-3.81	3.87	1.06	-1.08
65	1037.0	999.20	1075.2	-3.64	3.69	1.04	-1.05
70	872.25	841.92	902.85	-3.48	3.51	1.02	-1.03
75	737.01	712.58	761.58	-3.31	3.33	1.00	-1.00
80	625.45	605.71	645.24	-3.16	3.16	0.97	-0.98
85	533.00	517.01	548.99	-3.00	3.00	0.95	-0.95
90	456.06	441.69	470.47	-3.15	3.16	1.02	-1.03

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