THERMOMETRICS
A COMMITMENT TO EXCELLENCE

NTC Type JW, JC

Thermometrics Clip-On Pipe and Surface Sensors

Features

- Suitable for use in conditions of high condensation and occasional immersion in water
- 0 - 100°C operating range
- Low temperature gradient (<1.8°F at 140°F (<1°C at 60°C))
- Sensing element electrically isolated from shoe (isolation >20M Ω at 500V)
- Type JC meets IP44 standard
- Range of clips for pipe diameters 0.51 in to 1.18 in (13 mm to 30 mm). (Consult factory for additional size options.)
- Self-adjusts to irregular pipe surfaces
- Fast time response (1.5s typical) for JC and 3.0s for JW
- Water resistant version (Type JW) meets IP46 standard (with connector tabs encapsulated)
- Offers cost benefits over traditional immersion probes
- Typical applications include gas boiler control, domestic water systems, air conditioners, radiator inlet-outlet, electric showers, vending machines, chiller and refrigeration units

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Type JW Specifications

Description

NTC or PTC chip thermistor on a ceramic/metal shoe assembly sealed in a polymer housing and provided with flexible twin cable connections. The housing is fitted with a spring metal clip for pipe attachment.

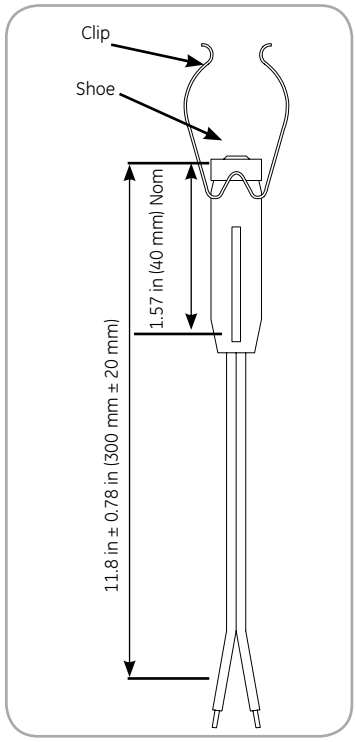
Options

- Other resistance - temperature characteristics
- Other wire lengths
- Special pipe sizes

General Data

- Minimum operating temperature: 32°F (0°C)
- Maximum temperature: 212°F (100°C) (sensor) 185°F (85°C) (housing)
- Dissipation factor: ≥2mW/K (mounted on copper pipe at 77°F (25°C))
- Isolation voltage: 500 VDC
- Clip force: <50N for mounting / de-mounting on pipe 5N will not cause rotation on pipe
- Shoe material: Plated brass
- Body material: Nylon
- Pack quantity & MOQ: 200 pcs

	Response Time (seconds)
NTC	≤4 (to 90% voltage change)
PTC	≤4 to TNF 41°F (5°C) (sensor applied to pipe at TNF 73.4°F (23°C)



NTC Type JW dimensions

Ordering Information

The code number to be ordered may be specified as follows:

Code	Type
JW	Resin-Coated Thermistor With PVC Wires

Code	Pipe Diameter Range in mm
13	13 - 15
17	17 - 18.5
20	20 - 22
28	28-30

JW - ____ Typical model number

Clip size is specified in the code above as shown in the table below, e.g., JW103C3R5/17

NTC Data

For codes, see below.

Code	Nominal Resistance			Tolerances						
	77°F	140°F	185°F	77°F		140°F		185°F		B 25/85
	(25°C)	(60°C)	(85°C)	(25°C)		(60°C)		(85°C)		
	Ω	Ω	Ω	±%	±°C	±%	±°C	±%	±°C	K
JW103C3R5/X	9983	2500	1079	6.46	1.48	5.00	1.40	5.90	1.87	3960±1%

PTC Data

- Maximum applied voltage: 30V
- Maximum applied voltage for temperature sensing: 2.5V

For codes see below.

T_{NF}	(-20 to T_{NF} -20°C)		25°C		T_{NF}- 5°C		T_{NF}+ 5°C		T_{NF}+ 23°C	
	Ω	VDC	Ω	VDC	Ω	VDC	Ω	VDC	Ω	VDC
JW 060/X 60°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5
JW 070/X 70°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5
JW 080/X 80°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5

Type JC Specifications

Description

A range of temperature sensing elements on a ceramic/metal shoe assembly, held in a polymer housing and provided with connector tabs. The housing is fitted with a spring metal clip for pipe attachment. The elements available are NTC, PTC, SLN (silicon linear PTC) and PRT (Pt).

Options

- Other resistance – temperature characteristics
- Special pipe sizes
- Waterproof version – JW (see page 2)

General Data

- Minimum operating temperature: 32°F (0°C)
- Maximum temperature: 212°F (100°C) (sensor) 185°F (85°C) (housing)
- Dissipation factor: =2mW/K (mounted on copper pipe at 77°F (25°C))
- Isolation voltage: 500 VDC
- Clip force: <50N for mounting/de-mounting on pipe 5N will not cause rotation on pipe
- Shoe material: Plated brass
- Body material: Nylon
- Pack quantity & MOQ: 200 pcs

NTC Data

For codes, see below.

Code	Nominal Resistance			Tolerances						B 25/85	Identification color dot
	77°F 25°C	140°F 60°C	185°F 85°C	77°F 25°C		140°F 60°C		185°F 85°C		K	
	Ω	Ω	Ω	±%	±°C	±%	±°C	±%	±°C		
JC502C3R5/X	4990	1250	540	6.46	1.48	5.00	1.40	5.90	1.87	3960 ± 1%	Orange
JC103C3R5/X	9983	2500	1079	6.46	1.48	5.00	1.40	5.90	1.87	3960 ± 1%	None
JC103C4R5/X	9925	3000	1441	6.26	1.67	5.00	1.60	5.77	2.09	3435 ± 1%	Yellow

PTC Data

- Maximum applied voltage: 30V
- Maximum applied voltage for temperature sensing: 2.5V

For codes, see below.

	T_{NF}	-20°C to T_{NF} -20°C		77°F (25°C)		T_{NF} -5°C		T_{NF} + 5°C		T_{NF} + 23°C		Identification dots
		Ω	VDC	Ω	VDC	Ω	VDC	Ω	VDC	Ω	VDC	
JC060/X	60°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5	White/Gray
JC070/X	70°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5	White/Brown
JC080/X	80°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5	White/White

Type JC Specifications

Silistor Data

Code: JC202SLN1/X

Measurements made at 1 mA

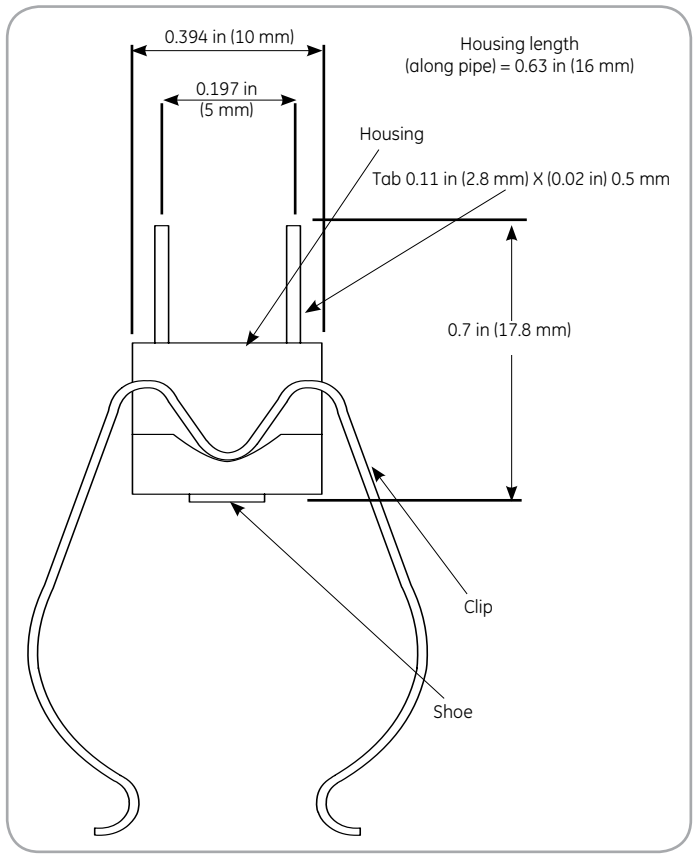
	77°F (25°C)	140°F (60°C)	185°F (85°C)
Resistance Ω	1980 – 2020	2577.1 – 2641.3	3024.2 – 3146.5
Temperature Deviation	±2.29°F (±1.27°C)	±4.10°F (±2.28°C)	±5.4°F (±3.0°C)

PRT Data

- Tolerance: Class A
- Code: JC102PRTA/X

Refer to separate tables for RvT

	32°F (0°C)	77°F (25°C)	140°F (60°C)	185°F (85°C)
Resistance Ω	1000	1097	1232	1328
Temperature Deviation	±0.27°F (±0.15°C)	±0.36°F (±0.2°C)	±0.49°F (±0.27°C)	±0.58°F (±0.32°C)



Ordering Information

The code number to be ordered may be specified as follows:

Code	Type
JC	Clip-On Pipe Sensor

Code	Type
X	NTC (See NTC Data Table on page 3)
	PTC (See PTC Data Table on page 3)
	SLN (See Silistor Data Table)
	PRT (See PRT Data Table)

Code	Pipe Diameter Range in mm
13	13 - 15
17	17 - 18.5
20	20 - 22
26	26 - 27.5
28	28 - 30
F	Flat Surface

JC - ____ - ____ **Typical model number**

Clip Size is specified in the codes above as shown in the table on the top.

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