



# NTC THERMISTORS: TYPE JW

## WATERPROOF CLIP-ON PIPE SENSOR

### 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.

### FEATURES:

- Suitable for use in conditions of high condensation and occasional immersion in water
- Fast time response (3s typical)
- Low temperature gradient (<1°C at 60°C)
- Sensing element electrically isolated from shoe (isolation >20MΩ at 500V)
- Meets IP48 standard
- Range of clips for pipe diameters 13 to 30mm
- Self-adjusts to irregular pipes
- 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

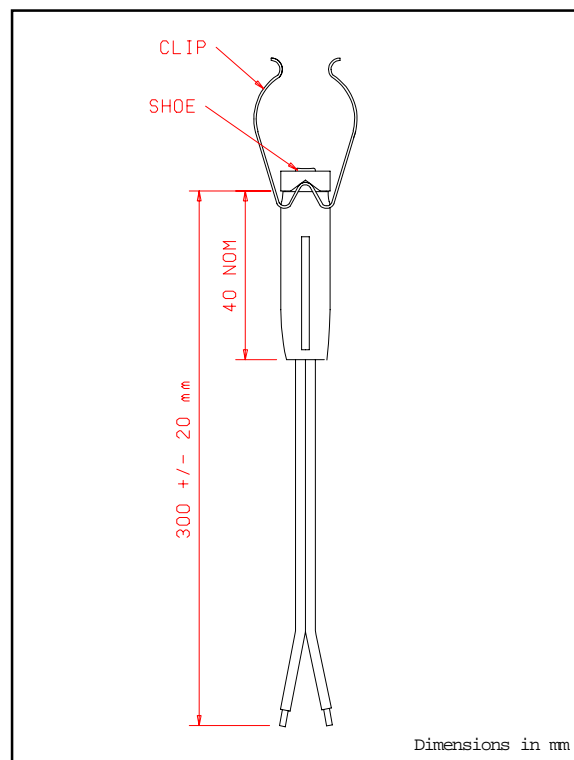
### GENERAL DATA:

**Minimum operating temperature** ..... 0°C  
**Maximum temperature** ..... 100°C (sensor)  
 ..... 85°C (housing)  
**Dissipation factor** ..... ≥2mW/K  
 ..... (mounted on copper pipe at 25°C)  
**Isolation voltage** ..... 500V d.c.  
**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

	<b>Response time (seconds)</b>
<b>NTC</b>	≤4 (to 90% voltage change)
<b>PTC</b>	≤4 to $T_{NF} + 5^{\circ}\text{C}$ (sensor applied to pipe at $T_{NF} + 23^{\circ}\text{C}$ )



### DIMENSIONS:



### OPTIONS:

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

Data sheet D-JW-3



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### NTC DATA:

For codes see below.

Code	Nominal resistance			Tolerances						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 <sub>NF</sub>	-20 to T <sub>NF</sub> - 20°C		25°C		T <sub>NF</sub> - 5°C		T <sub>NF</sub> + 5°C		T <sub>NF</sub> + 23°C	
		Ω	V d.c.	Ω	V d.c.	Ω	V d.c.	Ω	V d.c.	Ω	V d.c.
JW 060 <del>X</del>	60°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5
JW 070 <del>X</del>	70°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5
JW 080 <del>X</del>	80°C	<=250	2.5	<=100	0.2	<=570	2.5	>=570	2.5	>=10000	2.5

### CODING FOR PIPE SIZE:

Clip size is specified by replacing X in the code above as shown in the table on the right.  
e.g. JW103C3R5/17

X	Pipe diameter range mm
13	13 - 15
17	17 - 18.5
20	20 - 22
28	28-30