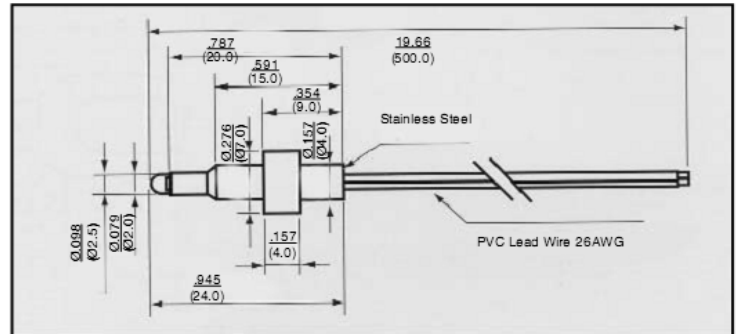
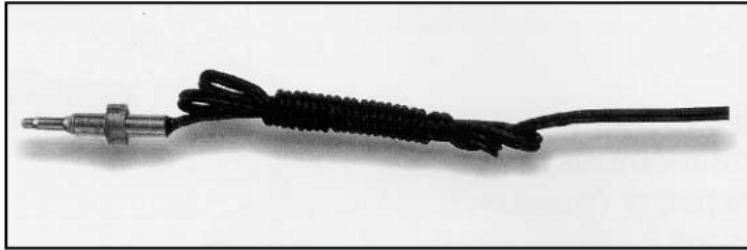
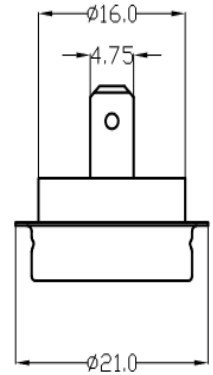
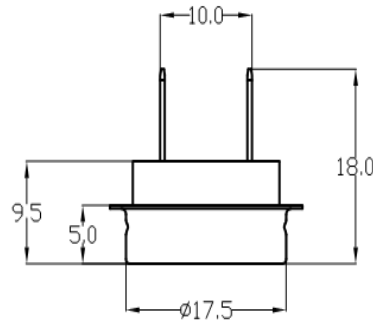
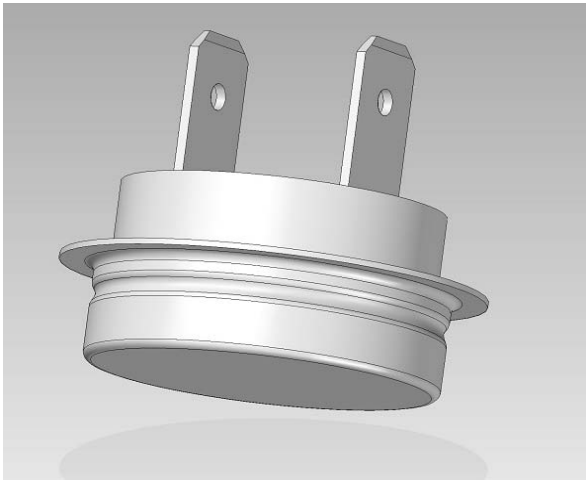
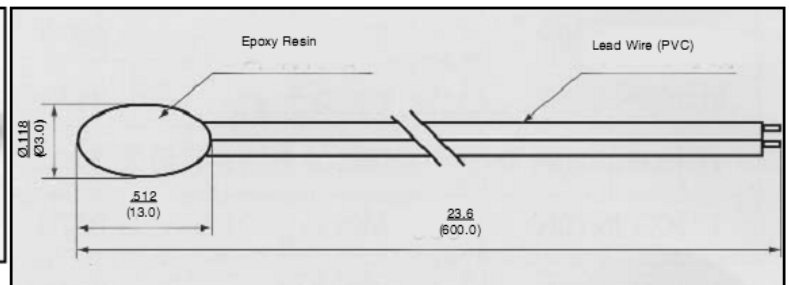
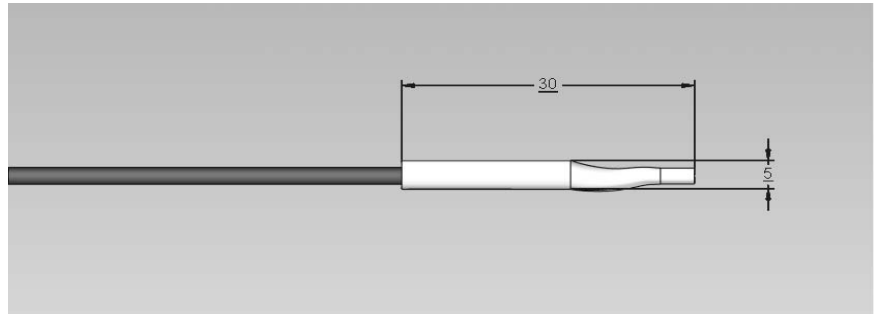
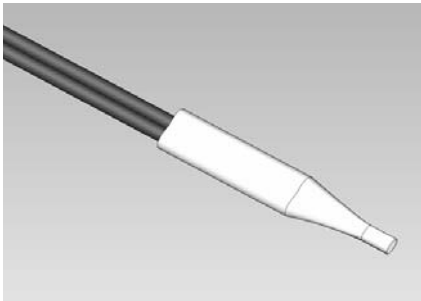


NTC Thermistors



Simple housing packaged temperature sensor, the NTC normally is packaged by Teflon or PVC heat shrink sleeve or sealed by epoxy. This kind of sensor has simple construction, is economical and has good thermal response. They normally can be used in a clean application environment without strict environment conditions.



AMERICAN ZETTLER, INC.

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NTC Thermistors

Widely used temperature sensing technologies performance comparison

SENSOR TYPE	NTC THERMISTOR	PLATINUM RESISTOR	THERMOCOUPLE	I.C. SENSOR
PARAMETER	Resistance vs. Temperature	Resistance vs. Temperature	Voltage vs. Temperature	Voltage or Current vs. Temperature
ADVANTAGES	Large Change in Resistance vs. Temperature	Linear	Wide Operating Temperature Range	Linear High Output vs. Temperature
	Fast Time Response	High Stability	Simple	Inexpensive
	High Resistance Eliminates the Need for Four Wire Measurement	Wide Operating Temperature Range	Inexpensive	
	Small Size	Interchangeable Over Wide Temperature Range	Rugged	
	Inexpensive		No External Power Supply Required	
	High Stability			
	Interchangeable to Tight Tolerance			
DISADVANTAGES	Non-Linear	Small Change in Resistance vs. Temperature	Non-Linear	Limited Operating Temperature Range
	Operating Temperature Limited to Approximately -60 to +300 Degrees Celsius	Relatively Slow Time response	Relatively Low Stability	Current Source Required
	Interchangeable Over Relatively Narrow Temperature Ranges	Low Resistance Requires Three or Four Wire Measurement	Low Sensitivity	Subject to Self-Heating
	Current Source Required	Sensitive to Shock and Vibration	Low Voltage Output Can Be Affected By RFI and EMI	Limited Configurations
		Current Source Required	Reference Junction Compensation Required	
		Expensive		

NTC Thermistors

Widely used temperature sensing technologies performance comparison

MODEL	Standard Resistance (R25) ohm	B (25/50°C)	Operating Temperature Range	US MODEL	Standard Resistance (R25) ohm	B (25/50°C)	Operating Temperature Range
NTS110001	50K	3934	-40 ^o to 125 ^o C	NTS023001	5K	3470	-40 ^o to 105 ^o C
NTS111001	50K	3934	-40 ^o to 125 ^o C	NTS123001	10K	3435	-40 ^o to 105 ^o C
NTS111002	10K	3934	-40 ^o to 125 ^o C	NTS223004	10K	3470	-40 ^o to 105 ^o C
NTS221002	50K	3950	-40 ^o to 200 ^o C	NTS223005	5K	3270	-40 ^o to 105 ^o C
NTS221003	50K	3950	-40 ^o to 200 ^o C	NTS221007	10K	3380	-40 ^o to 105 ^o C
NTS221001	40K	3950	-40 ^o to 200 ^o C	NTS221008	10K	3700	-40 ^o to 105 ^o C
NTS221007	10K	3950	-40 ^o to 200 ^o C	NTS221009	10K	3700	-40 ^o to 250 ^o C
NTS221008	10K	3950	-40 ^o to 200 ^o C	NTS123002	2K	3920	-40 ^o to 60 ^o C
NTS221006	10K	3950	-40 ^o to 200 ^o C	NTS223006	10K	3950	-40 ^o to 100 ^o C
NTS221004	10K	3934	-40 ^o to 105 ^o C	NTS221010	20K	3950	-40 ^o to 105 ^o C
NTS223001	10K	4050	-40 ^o to 105 ^o C	NTS220001	50K	3950	-40 ^o to 200 ^o C
NTS221005	10K	3380	-40 ^o to 105 ^o C	NTS220002	50K	4050	-40 ^o to 105 ^o C
NTS023002	10K	3934	-40 ^o to 105 ^o C	NTS220003	23K	4200	-40 ^o to 105 ^o C
NTS301001	50K	3934	-40 ^o to 200 ^o C	NTS123003	55K	4050	-40 ^o to 80 ^o C
NTS223003	100K	4000	-40 ^o to 105 ^o C	NTS220004	23K	4200	-40 ^o to 125 ^o C

Notes:

1. Custom orders are welcome!
2. If the model required is not listed, please submit the following information so our engineers can determine the correct product for you:
 - a. Operating temperature range, working criteria and dielectric requirements for the sensor (i.e.: air, water, oil, etc.)
 - b. Required temperature reaction time (thermal time constant)
 - c. Outline size (include drawing)
3. For your convenience, we have our own processing equipment for the terminations. Interface terminals can be processed and the guard sleeve can be assembled to your requirements.
4. We can develop temperature sensors with different types of specifications and outlines to meet your needs.

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