

TEMPERATURE PROBE TYPE ST07



APPLICATION

These temperature probes are suitable to be used as room and external probes in room temperature adjustment systems or in hot water production appliances for heating and domestic use, such as:

- Floor standing boilers
- Wall hung boilers with hot water tank
- Water heaters
- Convector

FEATURES

Operating temperature	-	-40°C ÷ +105°C
	option H	-30°C ÷ +150°C +200°C for 60 seconds
Sensor	-	NTC thermistor
Resistance value	at 25°C	10kΩ ± 1%
	at 80°C (R ₈₀) option H	1650Ω ± 3%
β coefficient (25°C – 85°C) (*)		3435°K ± 1%
	option Z	3977°K ± 1%
	option H	3530°K ± 2%
Isolation voltage	-	1500 Vac for 1 second
	option H	500 Vac for 1 second

(*) Possible versions with different NTC upon request.

The sensor is placed in a copper cylindrical body, immersed in an epoxy resin with high thermal conductivity (ST07 probe option H has not epoxy resin) and connected to a bipolar cable enabling to achieve a resistance value which is inversely proportional to the measured temperature and can be calculated through the following formula:

$$R_T = R_{25} \exp\left[\beta\left(\frac{1}{T} - \frac{1}{T_{25}}\right)\right]$$

where R₂₅ is the resistance value at 25°C, T₂₅ corresponds to (273,15+25)°K and T is the measured temperature, always expressed in Kelvin degrees.

The formula for the probe with option H is as follow:

$$R_T = R_{80} \exp\left[\beta\left(\frac{1}{T} - \frac{1}{T_{80}}\right)\right]$$

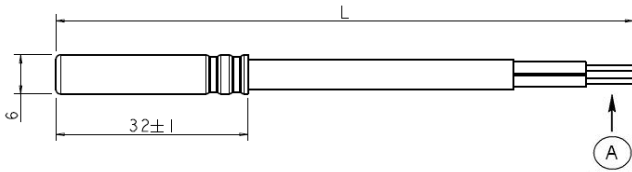
where R₈₀ is the resistance value at 80°C, T₈₀ corresponds to (273,15+80)°K e T and T is the measured temperature, always expressed in Kelvin degrees.

Example: calculation of the resistance value of a probe with NTC with β 3435 at a temperature of 60°C:

$$R_{60} = 10k \exp\left[3435\left(\frac{1}{(60+273.15)} - \frac{1}{(25+273.15)}\right)\right] = 2981\Omega$$

OVERALL DIMENSIONS

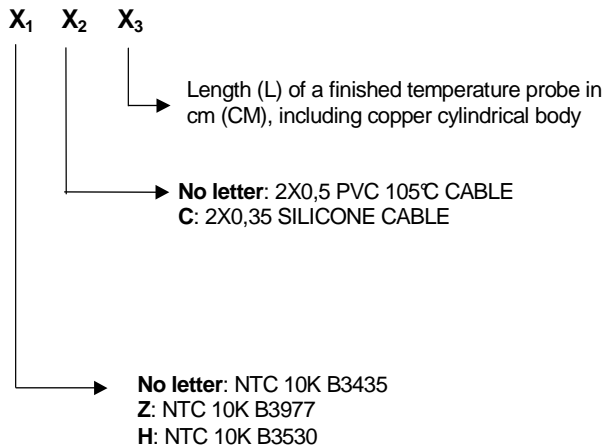
The following figure shows the probe overall dimensions in mm.



L = length on customer's request.
 A = cable finishing for cable connection on customer's request.

PART REFERENCES

SONDA TEMP. ST07



Example:

- **SONDA TEMP.ST07 Z CM112**

SONDA TEMP.ST07 Temperature probe type ST07
Z With 10K NTC having B3977
CM112 Cable length 112 cm including copper cylindrical body

ATTENTION -> Company Brahma S.p.A. declines any responsibility for any damage resulting from the Customer's interfering with the device

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