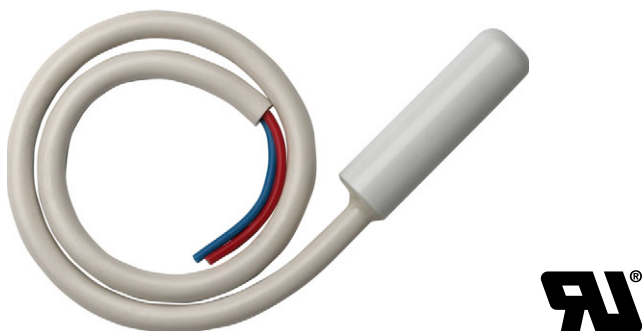


NTC Thermistors, Refrigerator Sensors



LINKS TO ADDITIONAL RESOURCES



3D Models



Design Tools



Capabilities and Custom Options

- NTC curve computation:

www.vishay.com/thermistors/ntc-curve-list/

QUICK REFERENCE DATA		
PARAMETER	VALUE	UNIT
Resistance value at 25 °C ⁽¹⁾	2.7K to 10K	Ω
Tolerance on R ₂₅ -value ⁽¹⁾	± 1 to ± 2	%
B _{25/85} -value ⁽¹⁾	3984	K
Tolerance on B _{25/85} -value	± 0.5	%
Operating temperature range at zero power	-55 to +60	°C
Min. dielectric withstanding voltage (immersed in water)	3750	V _{AC}
Maximum power dissipation at 25 °C	150	mW
Weight	16	g

Note

⁽¹⁾ Other resistance, tolerance and B-values available on request

FEATURES

- Key component for temperature sensing and electronic control
- Accurate Vishay NTC chips, enabling class A to class A+++ refrigerator grades
- Sensor design following class II insulation (principal + supplementary insulation for the sensor head)
- High adhesive strength between PVC wire and encapsulating lacquer
- Specifically developed design allows for a very good water, moisture and ice resistance: 6000 h in water immersion under voltage
- Suitable for evaporator temperature measurement. Very high number of thermal cycles resistant: 100 000 cycles
- The cables jackets are suitable for back-panel polyurethane foaming process (max. 100 °C, 5 min)
- The plastic is not FDA grade
- UL recognized types (file E148885)
- The sensors are also available with single insulated cables, and with PVC-free cable
- Mounting: assembly
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



Pb-free Available



RoHS COMPLIANT

APPLICATIONS

Temperature measurement, sensing and control:

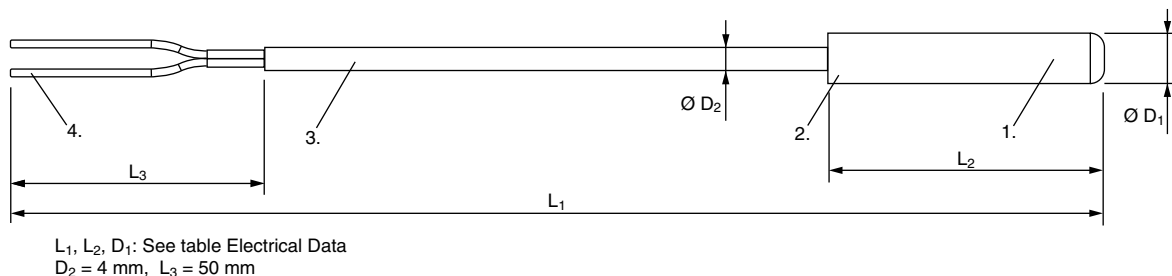
- White goods
- Refrigerators
- Freezers, deep-freezers
- Ice cube makers
- Counter drinks coolers
- Backbar and catering coolers
- Display fridges
- Wine coolers

ELECTRICAL DATA AND ORDERING INFORMATION											
R ₂₅ (Ω)	R ₂₅ TOL. (%)	B _{25/85} (K)	B _{25/85} TOL. (%)	CAP. DIA. Ø D ₁ (mm)	CAP. LENGTH L ₂ (mm)	CABLE INSULATION	CABLE LENGTH L ₁ (mm)	UL	CONNECTOR	SAP MATERIAL AND ORDERING NUMBER	
										WITH RoHS EXEMPTION ⁽¹⁾	WITHOUT RoHS EXEMPTION ⁽¹⁾
10 000	± 2	3984	± 0.5	7	25	Single, 2x AWG24	300	-	-	NTCACAPE3C90193	NTCACAPE3C90193A
10 000	± 2	3984	± 0.5	7	25	Double, 2x AWG22	500	-	-	NTCACAPE3C90144	NTCACAPE3C90144A
2700	± 2	3984	± 0.5	7	25	Double, 2x AWG22	500	UL	-	NTCACAPE3C90066	NTCACAPE3C90066A
5000	± 1	3984	± 0.5	8	30	Double, 2x AWG22	900	-	-	NTCACAPE3C90191	NTCACAPE3C90191A
10 000	± 2	3984	± 0.5	9	49	Double, 2x AWG22	3000	-	-	NTCACAPE3C90065	NTCACAPE3C90065A

Note

⁽¹⁾ RoHS exemption 7(c)-I: electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezo-electronic devices, or in a glass or ceramic matrix compound

DIMENSIONS in millimeters



Notes

- (1) Vishay NTC Thermistor chip with epoxy coatings and special potting resins
- (2) ABS plastic cap of refrigerator white color
- (3) Double insulated cable, cylindrical, PVC/PVC, 2 x 0.35 mm² (AWG#22) or single insulated cable, twin cable PVC, 2 x 0.22 mm² (AWG#24)
- (4) Conductors' end insulation non stripped

MOUNTING

The plastic housing can be inserted in a pocket inside the refrigerator cabinet.

The plastic housing can be assembled with the refrigerator cabinet backside, with the help of adhesive tape, then foamed.

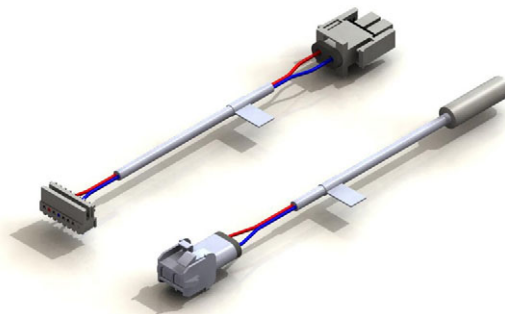
The plastic housing can be inserted on a pipe welded on the evaporator tube.

The plastic housing can be clamped on the evaporator tube with the help of a clip.

Suitable for PCB Edge connection, or plugged in a wire-to-wire connector, or assembled in a terminal block.

DESIGN-IN SUPPORT

- Other Resistance-Temperature curves are available, based on Vishay NTCC100E4 series, or specific customer's curve.
- Other lead length and other standard plastic caps, like Ø 6 mm x 25 mm, Ø 7 mm x 25 mm, Ø 8 mm x 30 mm, Ø 9 mm x 30 mm, Ø 9 mm x 49 mm, 7 mm x 7.5 mm x 25 mm or customer specific sensor shapes, are available on request.
- Single insulated cables and Class I sensors can also be supplied.
- The sensors can be supplied without connector, with end-wire stripped, with crimped connectors, sealed connectors, or insulation displacement connectors (e.g. rast 2.5 mm). Consult Vishay for the list of available connectors.
- Several sensors can be grouped on the same connector, with the same or different shape.
- Additional features, like connection to the door switch, can also be included on the grouping connector.
- Visual aids, like cable jacket colors or position markers can be added to optimize customer's assembling process.
- The cable harness associated with the sensor can be provided as a total solution.





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