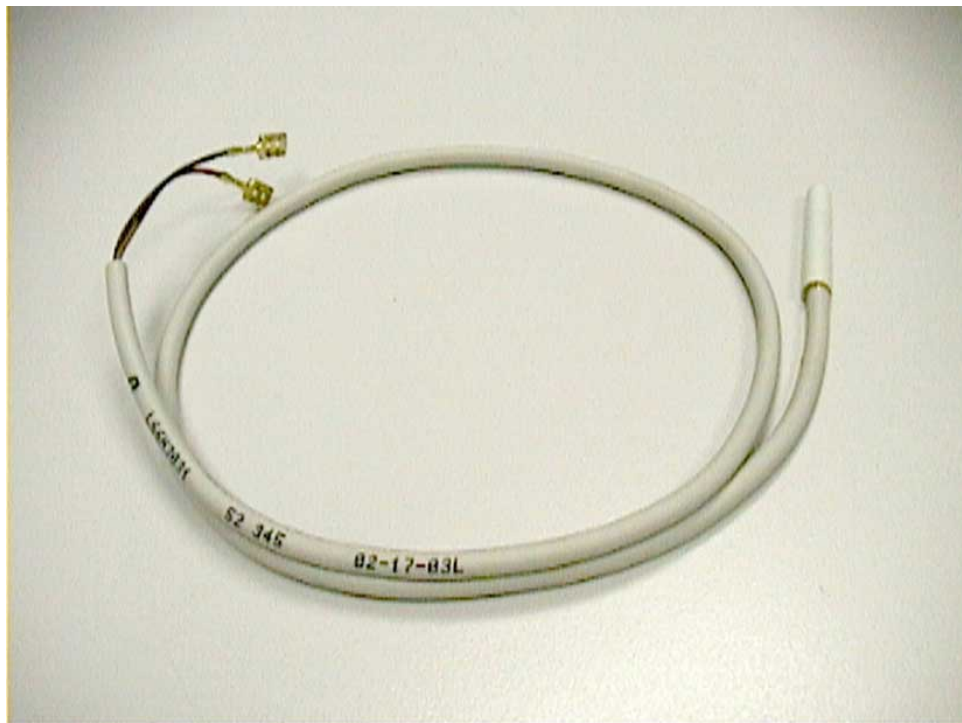
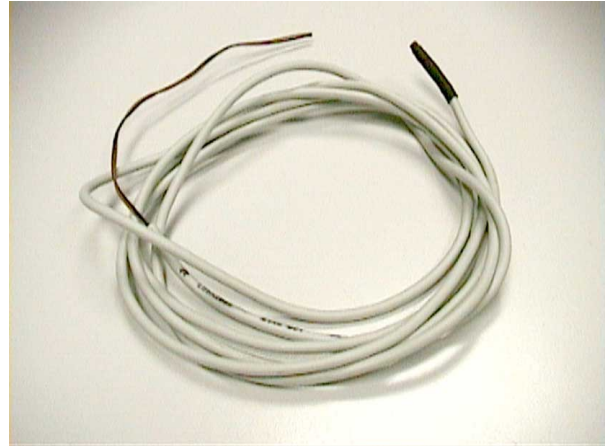
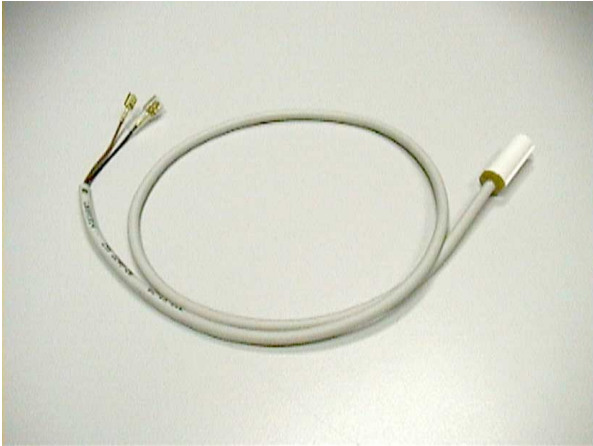


L66 - NTC Temperature Sensors



NTC TEMPERATURE SENSOR FAMILY



1. GENERAL

The L66 family of temperature sensors is specifically designed for use in domestic refrigeration appliances. The sensing element is an NTC resistor selected for maximum accuracy at 0 °C and fully sealed against the ingress of moisture. This makes the L66 an ideal temperature sensor for refrigerator and freezer electronic temperature controls whether used as an evaporator sensor or as an air sensor. The wide variety of options for insulation class, response time, cable length and electrical connections allows the L66 to be considered for the most demanding of applications.

2. TECHNICAL DATA

All values specified are when measured in accordance with Invensys Test Specification.

2.1 Resistance and accuracy

$R_{t_{25}}$	10 k Ω nominal
R_{t_0}	32.51 k Ω \pm 1%
β_{25-85}	3977 \pm 0.75%

2.2 Response time

Due to the differing insulation thickness of the various family members each has a different thermal response time as follows:

t_{0-20}	L66-H1000 < 40 seconds
	L66-H3000 < 30 seconds
	L66-H3030 < 20 seconds

2.3 Environmental performance

Storage temperature:	-40°C to +70°C
Operating temperature:	-40°C to +40°C
Temperature cycles:	50 000 ice/water (-15°C/+10°C) 5Vdc 0.1mA supply
Resistance to chemicals:	Alcohol, Mineral oil, Organic Acids, Hydro Carbons

2.4 Electrical safety

The L66 is designed to be in accordance with the electrical safety requirements. Specifically the L66-H1000 family is designed as a Class II sensor (double insulation).

The L66-H3000 family uses the same cable but the sensing head is designed for Class I insulation properties. This allows the L66-H1000 series to be used as a compartment air sensor without the need for additional electrical insulation in the appliance. The L66-H3000 series require no additional insulation for the cable but the sensor head must be mounted either on an earthed metal plate or with additional insulation to guarantee Class II (double insulation) conditions.

Operating Voltage:	300 Vac 50 Hz max.
Insulation Strength:	L66-H1*** > 3750 Vac 50Hz/ >7 M Ω cable and head
	L66-H3*** > 1250 Vac 50Hz/> 2 M Ω head
	> 3750 Vac 50Hz/ >7 M Ω cable

2.5 Cable

Insulating material:	PVC
Outer cover:	minimum thickness 0,6 mm
Inner sleeves:	minimum diameter 1.2 mm
Conductors:	7 x Ø 0.25 mm tinned copper wire
Flexing:	allowed from -20 °C to +70 °C
Length:	minimum 250 mm with cable marking (as in figure). Maximum 3000 mm.

2.6 Identification

The sensor is identified by the Invensys part number, manufacturing batch code and customer specific part number (where applicable). This information is printed indelibly on the cable at the connector end (see figure).

2.7 Electrical connections

All L66 sensors can be supplied with or without connectors. Any suitable connection system for the specified cable can be supplied.

2.8 Installation in the appliance

The head and the cable of the sensor are designed for fixed installation into the appliance.

Dimensions of the available sensor heads and cable diameters are shown in figure. Cable lengths and connectors are customer specific, please refer to the appropriate ODD. When mounting in the appliance the insulation class of the sensor should be considered and any additional insulation or earthing provided as appropriate for the standards relevant to the application. Sharp bends or kinks in the cable should be avoided particularly around sharp or metallic objects. Any clips or fixings should not distort or chafe the insulation.

The sensor head should be clipped or clamped in such a way that no undue pressure is exerted on the plastic casing to avoid cracking or chipping of the plastic and/or the potting material. It should be noted that the type of clamping used may influence the time constant of the sensor. The sensing position is at the tip of the sensor head. The sensed temperature can be influenced by external temperatures if a minimum cable immersion of at least 150 mm to areas of differing temperatures is not provided. Figure 4 shows the error characteristics under various conditions of immersion and temperature differences. If possible the sensor should be mounted with the tip pointing upwards to avoid water collecting at the cable entry point of the sensor head.

For evaporators with defrost heaters, care should be taken that the maximum cable temperatures are not exceeded when the heater is active.

2.9 Applicable standards

EN 60335-1: 1988

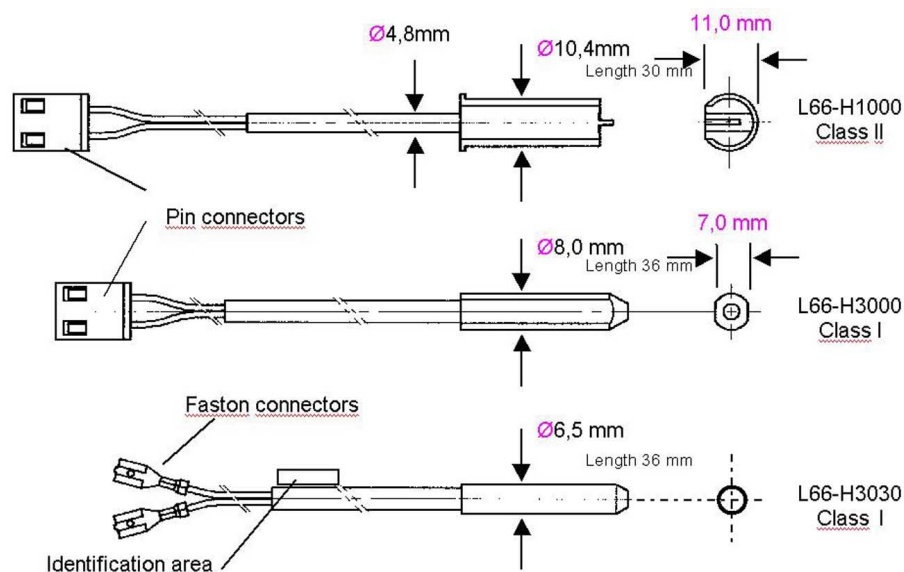
Safety of household and similar electrical appliances.

EN60335-2-24: 09.95

Particular requirements for fridge/freezers.

EN60730-1: 01.1996

Automatic electrical controls for household and similar use.



Note: connector styles shown are examples only.

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