



Temperature sensor

ETN

NTC temperature sensors for ERC controllers.
For commercial refrigeration applications.



Description

Danfoss has selected a programme of temperature sensors to be used with ERC range of controllers.

NTC (Negative Temperature Coefficient) temperature sensors change resistance with temperature in a manner compatible with the controller software. They are fully compliant with the tolerance requirements according to IEC 60060-1.

Features & Benefits

- High accuracy in temperature measurement and close tolerances ensure improved control
- Plastic/steel moulded sensor case
- Insulated connecting cable
- Various cable lengths available
- Supplied with rast 2.5 connectors
- Poka-yoke (mistake-proof) cable connection to the controller

Ordering

Product code numbers

Type	Function	Used for product	Cable length [m]	Cable length [in]	Number of terminals [pcs]	Code number
ETN	Cabinet sensor	ERC	3.500	137.80	3	077F8723
ETN	Cabinet sensor	ETC	0.470	18.50	3	077F8751
ETN	Defrost sensor	ERC	1.000	39.37	3	077F8756
ETN	Defrost sensor	ETC	1.500	59.06	3	077F8760
ETN	Cabinet sensor	ERC	1.500	59.06	3	077F8761
ETN	Defrost sensor	ETC	3.000	118.11	3	077F8768
ETN	Cabinet sensor	ETC	1.000	39.37	2	077F8786
ETN	Cabinet sensor	ETC	2.000	78.74	2	077F8794
ETN	Cabinet sensor	ERC	6.000	236.22	3	080G2019
ETN	Cabinet sensor	ERC	6.000	236.22	2	080G2029

Note:

Codes with 077F8786 and 077F8794 has Double Blue colour marking .

Codes with 077F8756, 077F8760 and 077F8768 has Single Blue colour marking .

Product details

General data

Table: PVC standard sensors

Double insulated	
Operating temperature range	-40 – 80 °C
Thermistor	Encapsulated in plastic housing
Connecting cable	PVC double insulated
Climatic category (IEC 60068-1)	40/80/56
Rated resistance at 0 °C	16330 Ω \pm 2% (\pm 0.4 °C)
Rated resistance at 25 °C	5000 Ω
Insulation resistance	>1000 M Ω
Voltage proof	3750 V
Thermal time constant	Approx. 35 sec.
Typical applications	Air sensing, evaporator sensing, condenser sensing

Table: TPE precision sensors

Double insulated	
Operating temperature range	-20 – 100 °C
Thermistor	Encapsulated in plastic housing
Connecting cable	Thermoplastic elastomer double insulated
Climatic category (IEC 60068-1)	40/80/56
Rated resistance at 0 °C	16330 Ω \pm 1% (\pm 0.2 °C)
Rated resistance at 25 °C	5000 Ω
Insulation resistance	>100 M Ω
Voltage proof	3750 V
Thermal time constant	Approx. 8 sec.
Typical applications	Ice bank

Table: NTC sensor for heating application

FEP insulation	
Operating temperature range	-40 – 200 °C
Thermistor	Encapsulated in stainless steel housing. AISI 305
Connecting cable	Silicone rubber cable
Degree of protection	IP67
Rated resistance at 0 °C	346,9 k Ω (tolerance at 0 °C \pm 2.2%)
Rated resistance at 25 °C	100,0 k Ω (tolerance at 25 °C \pm 1.0%)
Insulation resistance	>100 M Ω
Voltage proof	3750 V
Thermal time constant	Approx. 8 sec.
Typical applications	Heating application

Dimensions & weights

In SI units.

Figure: PVC standard sensor

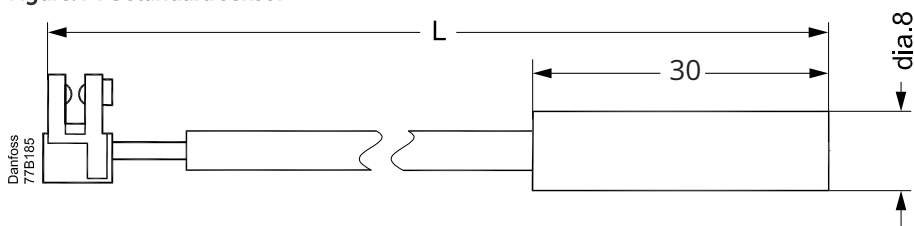


Figure: TPE precision

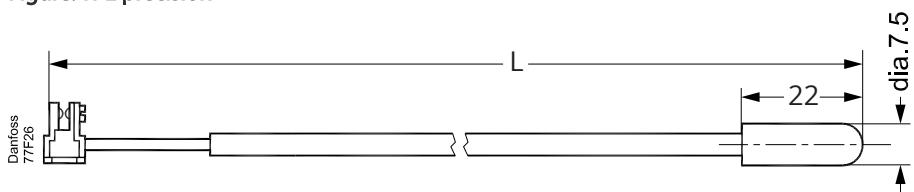
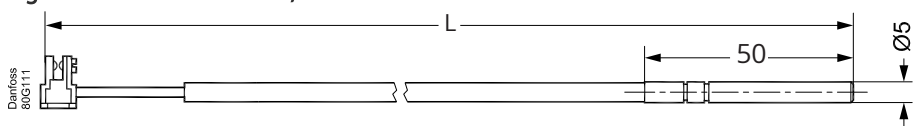


Figure: Silicone rubber cable, NTC 100 K ohm



Connections

Danfoss NTC temperature sensors are clearly marked for easy identification during the assembly process.

Colour coding on the cable close to the sensor element is used to differentiate between cabinet, evaporator (defrost) and condenser sensors even if the plug part of the cable is not visible.

For example, a sensor marked with two blue stripes as shown in *Figure: Sensor with blue stripes* is the evaporator or defrost sensor.

There are also different connector types or codes at the plug end of the cable. Using a combination of rib cuts on the connectors ensures correct connection position to the controller as shown in *Figure: Connection position*. This is known as Poka-Yoke design.

Figure: Connection position

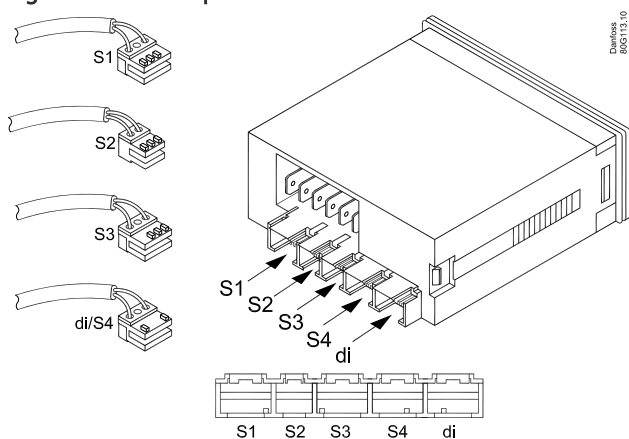
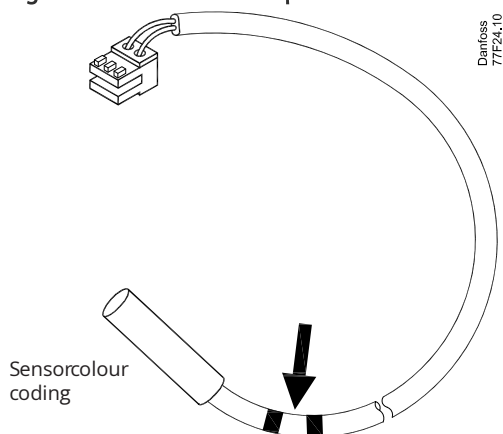


Figure: Sensor with blue stripes





Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the ‘Declaration of Conformity’. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
UA Declaration	Danfoss UA 2024-07-25 cooling sensors	Danfoss	LVD
Export Control Declaration	ETC Electronic Thermostats, NTC temperature sensors and accessories	Danfoss	

Contact details

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