



Temperature sensor

ESMT, ESM, ESMB, ESMC,
ESMU (Pt 1000)

Description

Platinum-based sensors, 1000 Ω at 0 °C.

All the temperature sensors are two-wire devices, and all connections are inter-changeable.

The surface sensor type ESM-11 has a spring contact surface to ensure a good heat transfer on pipes of all sizes.

The basic sensor contains a platinum element with a characteristic that complies with EN 60751.

Features & benefits

- Spring contact surface ensuring a good heat transfer on pipes of all sizes
- Basic sensor including a platinum element complying with EN 60751
- The platinum element changes with temperature, allowing for precise temperature measurement

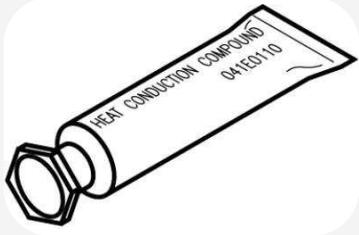
Applications

- Outdoor and room
- Surface and immersion

Product code numbers

Product Type	Description	Code number
ESMT	ESMT, Pt 1000 outdoor sensor	084N1012
ESM-10	ESM-10, Pt 1000 room temperature sensor	087B1164
ESM-11	ESM-11, Pt 1000 Surface sensor	087B1165
ESMU-100	ESMU-100, Pt 1000 immersion sensor, 100 mm, copper	087B1180
ESMU-250	ESMU-250, Pt 1000 immersion sensor, 250 mm, copper	087B1181
ESMU-100	ESMU-100, Pt 1000 immersion sensor, 100 mm, stainless steel	087B1182
ESMU-250	ESMU-250, Pt 1000 immersion sensor, 250 mm, stainless steel	087B1183
ESMB-12	ESMB-12, Pt 1000 Universal sensor	087B1184
ESMC	ESMC, Pt 1000 Surface sensor	087N0011
ESMC	ESMC SENSOR, I-p	087N0015

Accessories code numbers



041E0110

HEAT CONDUCT. COMPOUND 5 g. OEM

HEAT CONDUCT. COMPOUND 5 g. OEM

Related products

084N1012 087B1164 087B1165 087B1180
087B1181 087B1182 087B1183 087B1184
087N0011



087B1190

Pockets for ESMU

POCKET FOR ESMU-100, Cu

Related products

087B1180



087B1193

Pockets for ESMB 12, 250 mm

POCKET FOR ESMB-12, 250 mm

Related products

087B1184



087B1192

Pockets for ESMB 12

POCKET FOR ESMB-12, 100 mm

Related products

087B1184



087B1191

Pockets for ESMU

POCKET FOR ESMU-250, Cu

Related products

087B1181

Spare parts code numbers



087B1190

Pockets for ESMU

POCKET FOR ESMU-100, Cu

Related products

087B1180



087B1192

Pockets for ESMB 12

POCKET FOR ESMB-12, 100 mm

Related products

087B1184



087B1193

Pockets for ESMB 12, 250 mm

POCKET FOR ESMB-12, 250 mm

Related products

087B1184



087B1191

Pockets for ESMU

POCKET FOR ESMU-250, Cu

Related products

087B1181

Functions

Operation

ESM temperature sensors are designed to measure temperature accurately in various applications. The sensor measures temperature by detecting changes in the resistance of the platinum element.

Surface Sensors

Sensors like the ESM-11 are designed to be mounted on the surface of pipes. They have a spring contact surface to ensure good heat transfer on pipes of all sizes.

Room Sensors

Sensors like the ESM-10 are used for room temperature measurement and are typically mounted on walls.

Product details

General data

Type	Temperature range	Enclosure	Time constant	PN
ESMT	-50 to 50 °C	IP 54	≤ 15 min	-
ESM-10	-30 to 50 °C	IP 54	8 min	-
ESM-11	0 to 100 °C	IP 32	3 s	-
ESMB-12	0 to 100 °C	IP 54	20 s	-
ESMC	0 to 100 °C	IP 54	10 s	-
ESMU-100/-250	0 to 140 °C	IP 54	2 s (in water) 7 s (in air)	25
Pocket	0 to 180 °C	-	See "Data specific"	25

				Packing
Materials	ESMT	Cover: ABS Base: PC (polycarbonate)		xx
	ESM-10	Cover: ABS Base: ABS		xx
	ESM-11	Cover: ABS Base: PC (polycarbonate)		xx
	ESMB-12	Encapsulation: 18/8 stainless steel Cable: 2.5 m, PVC, 2 x 0.34 mm ²		x
	ESMC	Encapsulation: Top part: Nyrol, button part: Nickel coated Cu Cable: 2 m, PCV, 2 x 0.2 mm ²		x
	ESMU-100/-250	Tube and body: AISI 316 Head: PA (polyamide)		x
	ESMU-100/-250 Cu	Tube: Copper (Cu) Body: Brass Head: PA (polyamide)		x
	Pocket	Tube and body: AISI 316		x

Electrical connection	ESMT	Terminal block for 2 wires in base part
	ESM-10	Terminal block for 2 wires in base part
	ESM-11	Terminal block for 2 wires in base part
	ESMB-12	2-wire cable (2 x 0,34 mm ²) spliced
	ESMC	2-wire cable (2 x 0,2 mm ²)
	ESMU-100/-250	Terminal block for 2 wires in head, PG 9 cable entry supplied with the product
Mounting	ESMT/ESM-10	Wall mounting with screws (supplied with the product)
	ESM-11/ESMC	Clamp for tube DN 15-65 supplied
	ESMB-12	For pipe or flat surface or in pocket. Usage of heat conducting paste is recommended.
	ESMU-100/-250	G 1/2 A and gasket (is supplied with the product)
	Pocket	G 1/2 A

x = PE (polyethylene) bag

xx = Paperboard

Data, specific

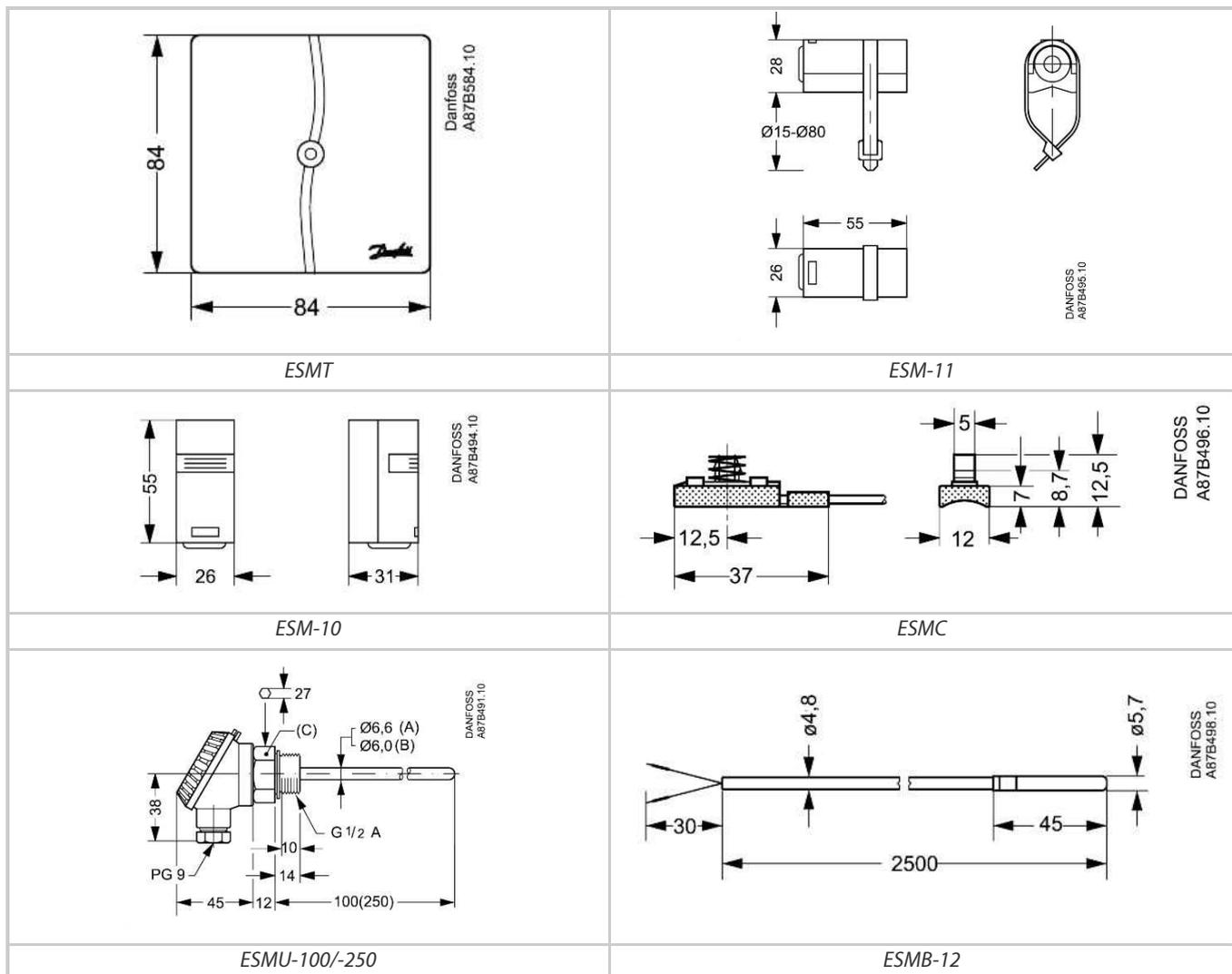
Sensor characteristics	Referring to EN, Class 2 B	Max. deviation 2 K
Time constants	ESMU (Cu) in pocket	32 s (in water) 160 s (in air)
	ESMB in pocket	20 s (in water) 140 s (in air)

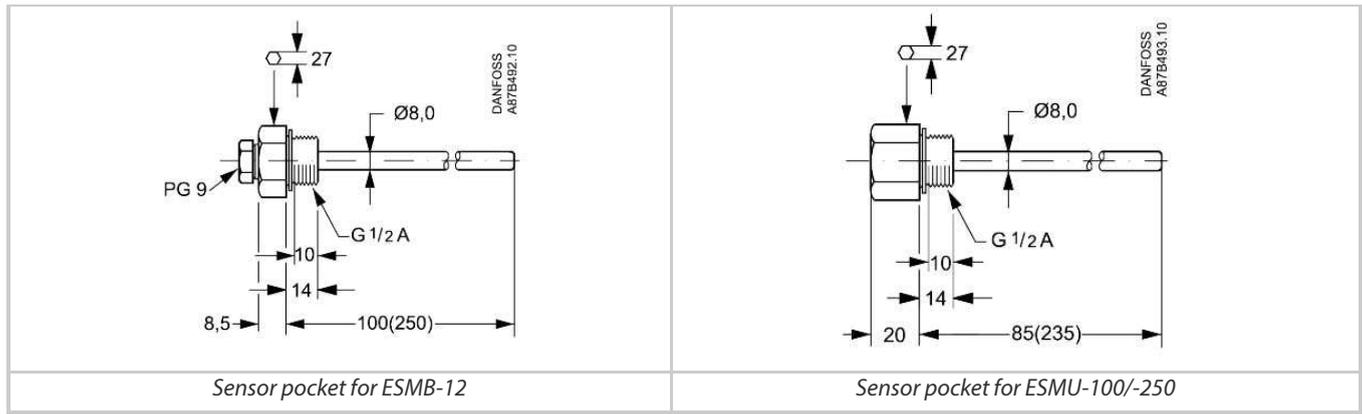
Specific info

ESM-10 ESM-11	Type name is found at cable inlet
ESMB-12 ESMC	Code no. is printed on cable
ESMT	Code no. is found on black base part's back
ESMU	Code no. is found on cap's top

Dimensions

	Gross weight	Net weight	Volume
ESMT	0.09 kg	0.071 kg	0.285 Liter
ESM-10	0.036 kg	0.023 kg	0.132 Liter
ESM-11	0.04 kg	0.026 kg	0.13 Liter
ESMB-12	0.086 kg	0.08 kg	0.226 Liter
ESMC	0.051 kg	0.042 kg	0.12 Liter
ESMU-100	0.142 kg	0.142 kg	0.262 Liter
ESMU-250	0.167 kg	0.166 kg	0.371 Liter
ESMU-100 stainless steel	0.132 kg	0.132 kg	0.304 Liter
ESMU-250	0.144 kg	0.146 kg	0.401 Liter

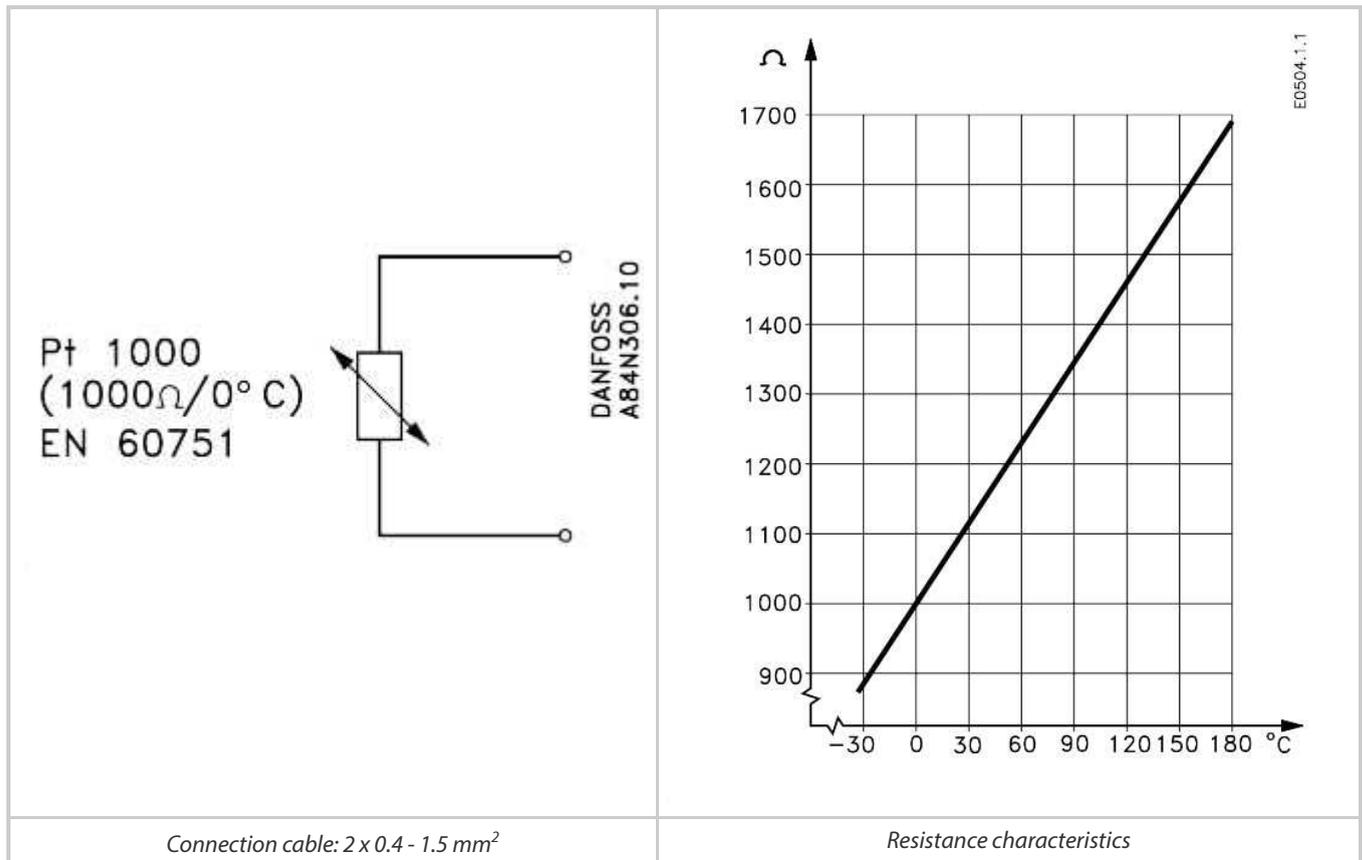




		087B1182 and 087B1183	087B1180 and 087B1181
ESMU	(A)		Copper (Cu)
	(B)	Stainless steel (AISI 316)	
	(C)	Stainless steel (AISI 316)	Brass

Installation

Wiring



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
EU Declaration	Danfoss EU VJKTL602.01	Danfoss	EU RoHS
UA Declaration	UA Controllers 2024-07-25	Danfoss	EMC
EU-UK Declaration	Danfoss EU-UK 084R1019.04	Danfoss	UK RoHS
EU Declaration	Danfoss EU VJAOA502.01	Danfoss	EU RoHS
Export Control Declaration	Pressure & Temperature Sensors	Danfoss	
Manufacturer's Declaration	Danfoss MD 084R1022.01	Danfoss	China RoHS
Export Control Declaration	Safety Thermostats and sensors	Danfoss	

Contact details

Online support

Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.



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