Data sheet



Temperature sensor

MBT 3270

Compact industrial temperature sensor

Description

The flexible temperature sensor MBT 3270 can be used in many industrial applications such as: Air Compressors, Mobile Hydraulics and Exhaust gas return systems. In other words applications where robustness, size and performance are essentials.

The sensor can be equipped with different sensing elements (RTD, NTC and PTC) and is available with different electrical connections (Cable, Delphi Metri Pack, AMP junior power Timer, Deutch DT04).

Features & benefits

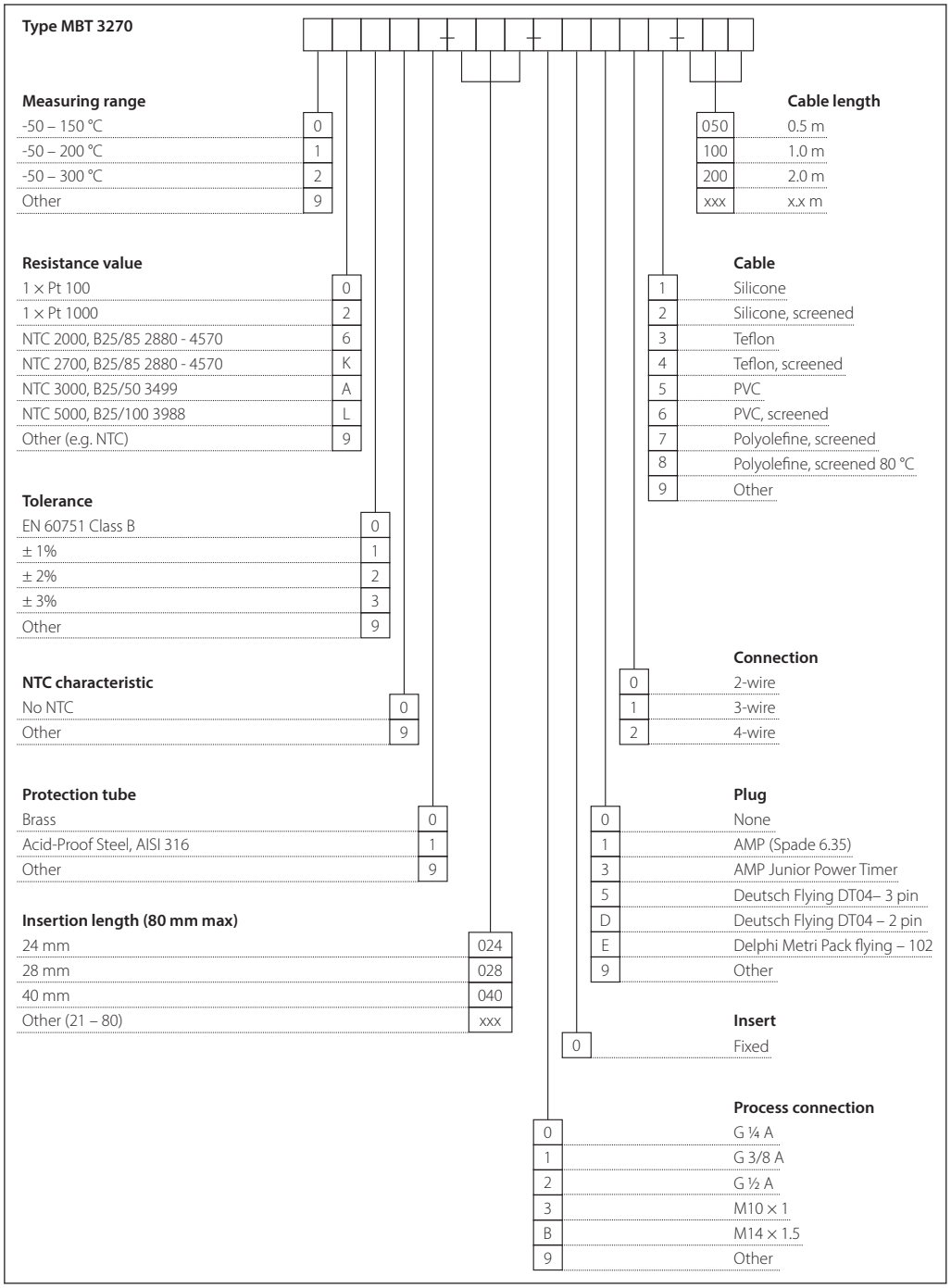
- OEM Temperature Sensor program
- Various sensor elements available (RTD, NTC, PTC)
- Robust, high protection against moisture
- Fixed measuring insert
- Brass or stainless steel
- Very low response times
- Temperature range up to 300 °C
- Available with cable or integrated plug(Delphi Metri Pack, AMP junior power Timer,Deutsch DT04)

Ordering

Product code numbers

Cable version

Ordering for MBT 3270

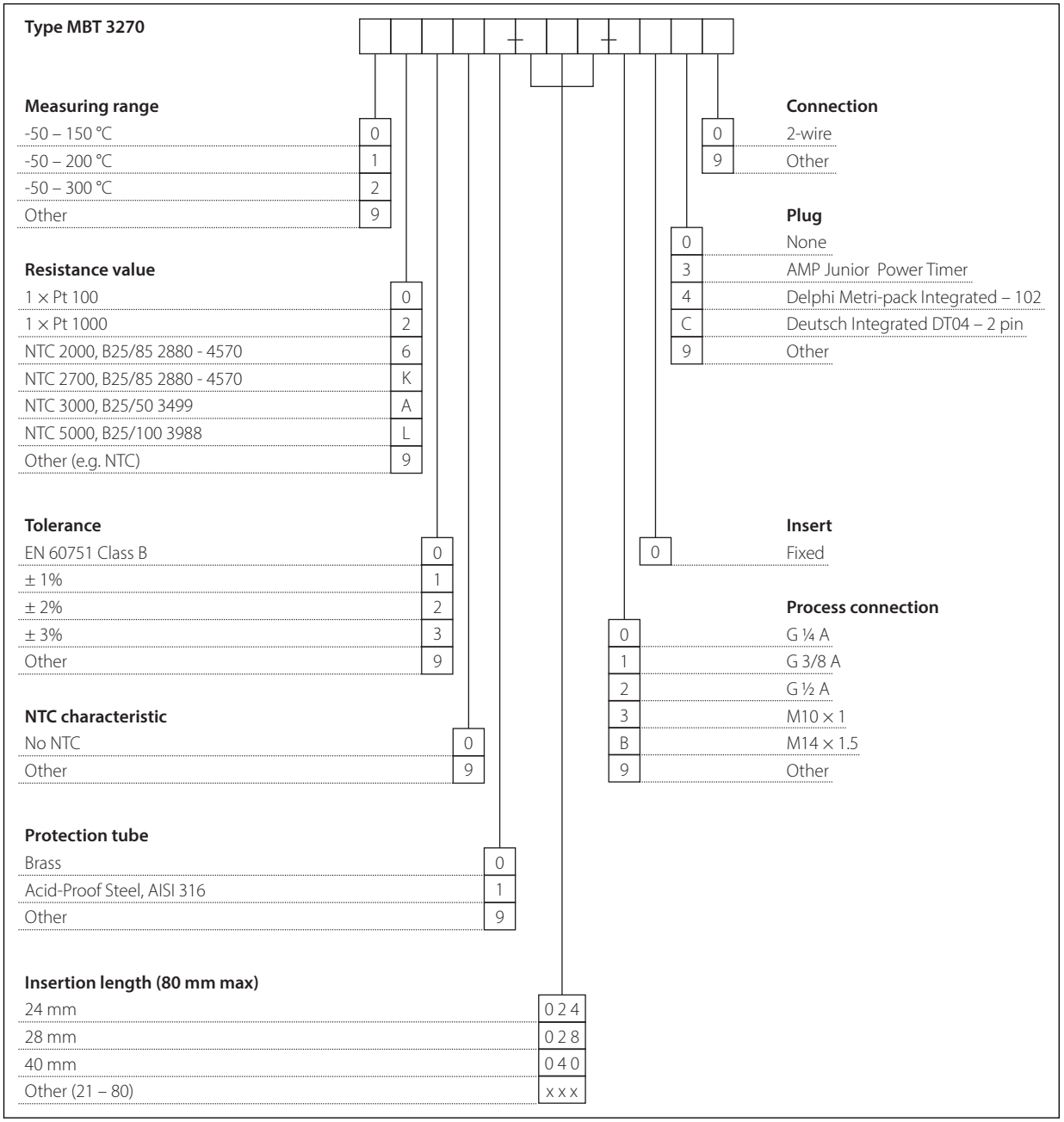


Note: Non-standard build-up combinations may be selected. However, minimum order quantities may apply. Please contact your local Danfoss office for further information or request on other versions.

Note: For a detailed overview of our existing code numbers, please visit the Danfoss Product Store at store.danfoss.com. You can use the filtering options to find the right sensor for your specific needs.

Integrated plug version

Ordering for MBT 3270



Note: Non-standard build-up combinations may be selected. However, minimum order quantities may apply. Please contact your local Danfoss office for further information or request on other versions.

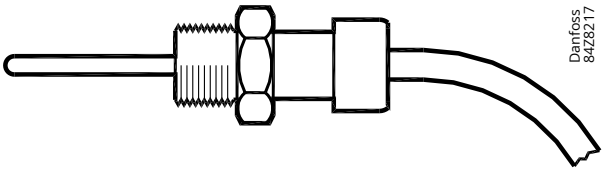
Note: For a detailed overview of our existing code numbers, please visit the Danfoss Product Store at store.danfoss.com. You can use the filtering options to find the right sensor for your specific needs.

Product details

General data

Technical data

a) Cable version



General data

Features		Description	
Ambient temperature	Cable	PVC	-40 – 100 °C
		Silicon	-40 – 200 °C
		Teflon	-40 – 200 °C
		Polyolefin (oil resistant)	-40 – 150 °C
	Plug	AMP spade	-40 – 200 °C
		AMP Junior Power Timer	-40 – 125 °C
		Delphi Metri Pack 102	-40 – 125 °C
		Deutsch DT04-3P	-40 – 125 °C
Media temperature		Pt 100	-50 – 300 °C
		NTC	-50 – 150 °C, Special versions up to 300 °C
		PTC	-50 – 150 °C
Max. external pressure		Operating pressure	500 bar
		Burst pressure	> 900 bar
Max. tightening torque		M10 M14	17 Nm 24 Nm

Performance

Features		Description
Sensor Element		Pt 100, Pt 1000, NTC, PTC
Process Connection		Refer to ordering standard, see Ordering chapter, Cable version
Sensor insertion length	Brass	80 mm @ d ≥ 8 mm
		60 mm @ 8 > d > 5 mm
		40 mm @ d ≤ 5 mm
	Stainless steel	70 mm @ d ≥ 8 mm
		50 mm @ 8 > d > 5 mm
		35 mm @ d ≤ 5 mm
Electrical Connection		Stripped wire ends Cable with AMP spade (6.35) Cable with AMP Junior Power Timer Cable with Delphi Metri Pack 102 Cable with Deutsch DT04-3P-2P Other on request
Connection		2, 3 or 4 wire (depending on electrical connection)

Indicative response times

Material protection tube	Protection tube	Indicative response times	
		Water 0.2 m/s	
		$t_{0.5}$	$t_{0.9}$
Stainless steel	ø6 mm	6 s	18 s
	ø4 mm	2 s	6 s
	ø3 mm	1.5 s	3 s

Note: Response times can vary very much depending on the design of the sensor and the temperature element chosen.

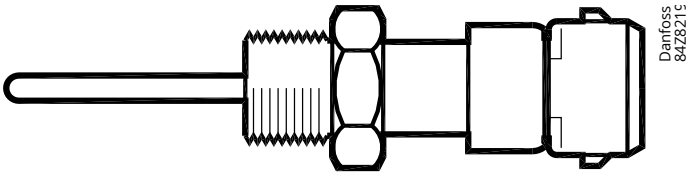
Mechanical and environmental specifications

Features	Description	
Sensor tolerances	Pt 1000 / Pt 100 NTC PTC 2000 (KTY 81 – 210)	EN 60751 Class B: ± (0.3 + 0.005 × t) On request ± 1% at 25 °C
Vibration stability	Shock	50 g / 6 ms
	Vibrations, x-y-z directions	15.3 g sine, 20 – 2000 Hz, 8 hours
Enclosure	Sensor only	IP67 according to IEC 60529
	Cable with AMP spade	IP00 according to IEC 60529
	Cable with AMP Junior Timer	IP65 according to IEC 60529
	Cable with Delphi Metri Pack 102	IP65 according to IEC 60529
	Cable with Deutsch DT04	IP65 according to IEC 60529

Materials

Features	Description
Protection tube in contact with media	AISI 316 Brass
Process connection	AISI 316 Brass
Cable	PVC, Silicon, Teflon (other on request)
Gasket	Viton, NBR (other on request)
Plug	PPS (Ryton 4)

b) Integrated plug version



General data

Features		Description
Ambient temperature	Plug	-40 – 125 °C
Media temperature	Pt 1000, Pt 100	-50 – 300 °C
	NTC	-50 – 150 °C, Special versions up to 300 °C
	PTC	-50 – 150 °C
Max. external pressure	Operating pressure	500 bar
	Burst pressure	> 900 bar
Max. tightening torque	M10 M14	17 Nm 24 Nm

Performance

Features		Description
Sensor Element		Pt 100, Pt 1000, NTC, PTC
Process Connection		Refer to ordering standard, seeOrdering chapter, Integrated plug version
Sensor insertion length	Brass	80 mm @ d ≥ 8 mm
		60 mm @ 8 > d > 5 mm
		40 mm @ d ≤ 5 mm
	Stainless steel	70 mm @ d ≥ 8 mm
		50 mm @ 8 > d > 5 mm
		35 mm @ d ≤ 5 mm
Electrical Connection		AMP Junior Power Timer Delphi Metri Pack Deutsch DT04 Other on request
Connection		2 wire

Indicative response times

Material protection tube	Protection tube	Indicative response times	
		Water 0.2 m/s	
		$t_{0.5}$	$t_{0.9}$
Stainless Steel	ø6 mm	6 s	18 s
	ø4 mm	2 s	6 s
	ø3 mm	0.5 s	1.5 s

Note: Response times can vary very much depending on the design of the sensor and the temperature element chosen.

Mechanical and environmental specifications

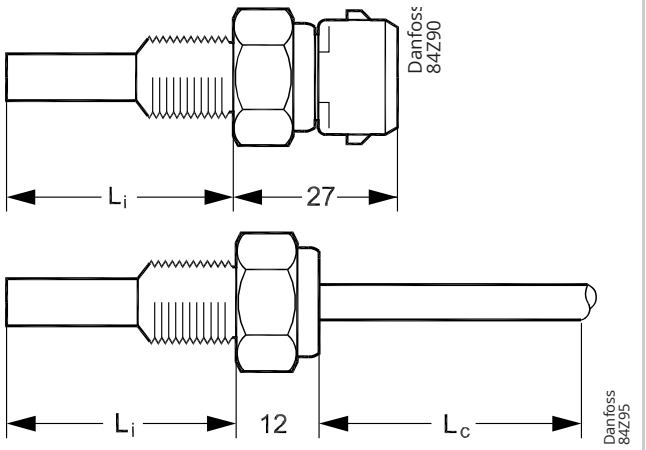
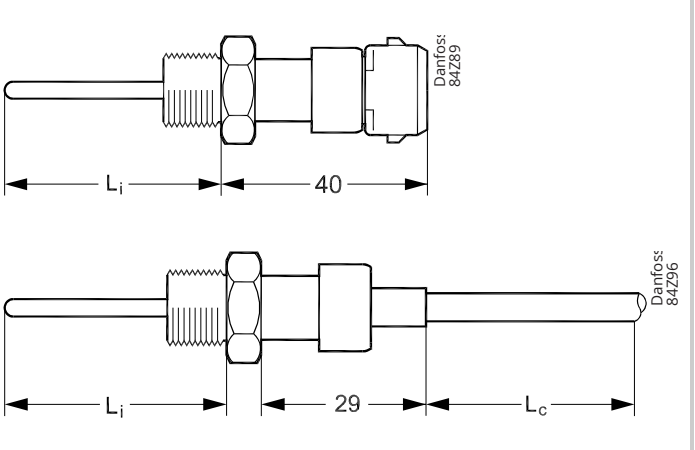
Features	Description	
Sensor tolerances	Pt 1000 / Pt 100 NTC PTC 2000 (KTY 81 – 210)	EN 60751 Class B On request ± 1% at 25 °C
Vibration stability	Shock	50 g / 6 ms
	Vibrations, x-y-z directions	15.3 g sine, 20 – 2000 Hz, 8 hours
Enclosure	AMP Junior Power Timer Delphi Metri Pack Deutsch DT04	IP65 according to IEC 60529

Materials

Features	Description
Protection tube in contact with media	AISI 316 Brass
Process connection	AISI 316 Brass
Gasket	Viton, NBR (other on request)
Plug	PPS (Ryton 4)

Dimensions

Cable version dimensions

-50 – 150 °C	-50 – 150 °C / 300 °C
	

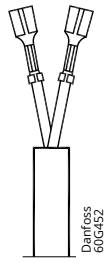
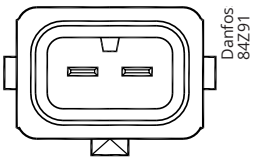
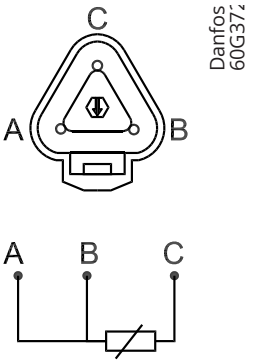
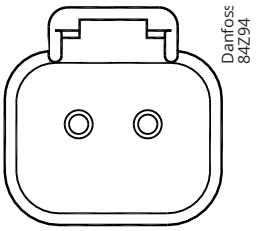
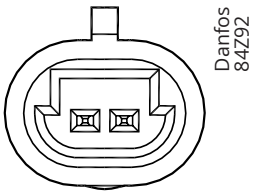
Examples:
Insertion length: Li = 21 to xx (max. 80 mm)
Cable length: Lc = 0.5 m to x.xx m
Tube diameter depends on the chosen sensor element and the wanted response time.

Note: Dimensions are in mm, unless stated otherwise.

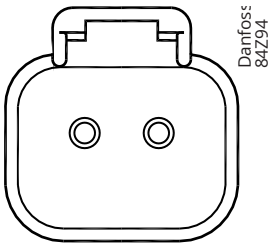
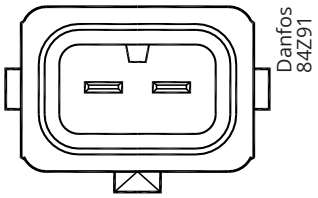
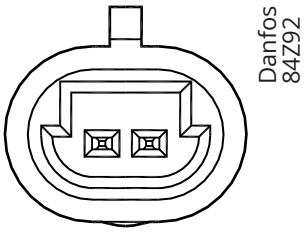
Connections

Electrical connection

Electrical connection of cable version

AMP spade (6.35)	AMP Junior Power Timer	Deutsch DT04 3 pin	Deutsch DT04 2 pin	Delphi Metri Pack 102
				

Electrical connection of integrated plug version

Deutsch DT04	AMP Junior Power Timer	Delphi Metri Pack 102
		

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	Issuer	Approval topic
Manufacturer's Declaration	Danfoss MD 084R1022.01	Danfoss	China RoHS
EU-UK Declaration	Danfoss EU-UK 084R1019.04	Danfoss	EMC
Manufacturer's Declaration	Simple Apparatus	Danfoss	Simples apparatus
Export Control Declaration	Pressure & Temperature Sensors	Danfoss	
EU Declaration	PL 04 Packaging	Danfoss	Packaging

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