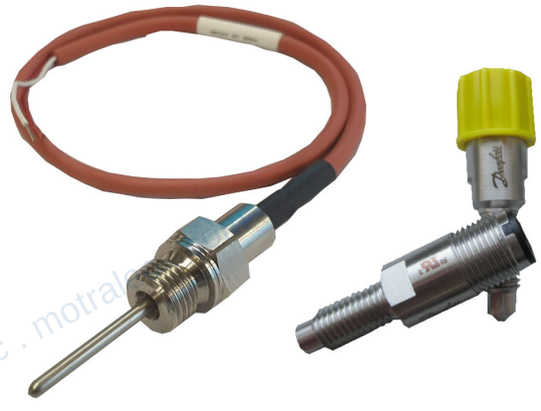
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ENGINEERING TOMORROW

Data Sheet

Temperature sensor Type **MBT 5270**

Compact temperature sensor for harsh marine applications.



The flexible temperature sensor MBT 5270 can be used in many marine and industrial applications such as: Air Compressors, Mobile Hydraulics and Marine EGR systems. In other words applications where robustness, size and performance are essentials.

The sensor can be equipped with different sensing elements (RTD and NTC).

Features:

- OEM Temperature Sensor program
- Various sensor elements available (RTD and NTC)
- Robust, high protection against moisture
- Fixed measuring insert
- Stainless steel
- Very low response times
- Temperature range up to 300 °C
- Available with cable and plug

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Product specifications

Technical data

Cable version

Figure 1: Cable version

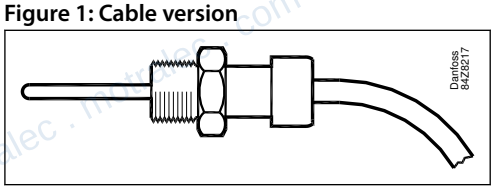


Table 1: General data

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
		Deutsch DT04-3P	-40 – 125 °C
Media temperature		Pt 100	-50 – 300 °C
		NTC	-50 – 150 °C, Special versions up to 300 °C
Max. external pressure		Operating pressure	400 bar
		Burst pressure	Max. 500 bar
Max. tightening torque		M14	24 Nm

Table 2: Performance

Features		Description
Sensor Element		Pt 100, Pt 1000, NTC
Process Connection		Refer to ordering standard, see page Cable version
Sensor insertion length	Stainless steel	35 mm @ d ≤ 5 mm
Electrical Connection		Stripped wire ends Cable with AMP spade (6.35) Cable with Deutsch DT04-3P-2P Other on request
Connection		2, 3 or 4 wire (depending on electrical connection)

Table 3: Indicative response times

Material protection tube	Protection tube	Indicative response times	
		Water 0,2 m/s	
		$t_{0.5}$	$t_{0.9}$
Stainless steel	ø3 mm	0.5 s	1.5 s

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

Table 4: Mechanical and environmental specifications

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

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Table 5: Materials

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

Integrated plug version

Figure 2: Integrated plug version

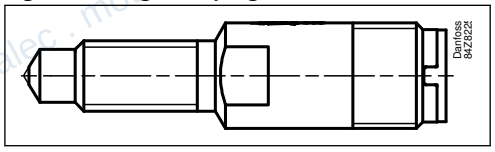


Table 6: General data

Features		Description
Ambient temperature	Plug	-40 – 125 °C
Media temperature	Pt 1000, Pt 100 NTC	-50 – 300 °C -50 – 150 °C special versions up to 300 °C
Max. external pressure	Operating pressure	400 bar
	Burst pressure	> 500 bar
Max. tightening torque	M8	10 Nm

Table 7: Performance

Features		Description
Sensor Element		Pt 100, Pt 1000, NTC
Process Connection		Refer to ordering standard, see page Integrated plug version
Sensor insertion length	Stainless steel	70 mm @ d ≥ 8 mm 50 mm @ 8 > d > 5 mm
Electrical Connection		M12 x1
Connection		2 wire

Table 8: 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

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

Table 9: Mechanical and environmental specifications

Features	Description	
Sensor tolerances	Pt 1000 / Pt 100 NTC	EN 60751 Class B On request
Vibration stability	Shock	50 g / 6 ms
	Vibrations, x-y-z directions	15.3 g sine, 20 – 2000 Hz, 8 hours
Enclosure	M12 x 1	IP65 according to IEC 60529

Table 10: Materials

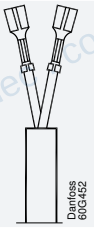
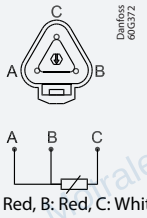
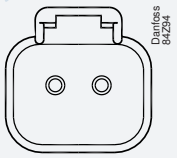
Features	Description
Protection tube in contact with media	AISI 316
Process connection	AISI 316
Gasket	Viton, NBR (other on request)
Plug	PPS (Ryton 4)

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Electrical connection

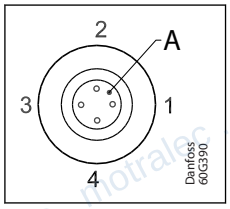
Cable version

Table 11: Electrical connections

AMP spade (6.35)	Deutsch DT04 3 pin	Deutsch DT04 2 pin
	 A: Red, B: Red, C: White	

Integrated plug version

Figure 3: M12 x 1



A	Key

Dimensions

Cable version

Examples:
Insertion length: Li = 21 to xx (max. 80 mm)
Cable length: Lc = 0.5 m to x.xx m

Figure 4: -50 – 150 °C

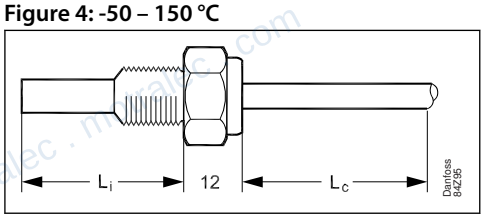
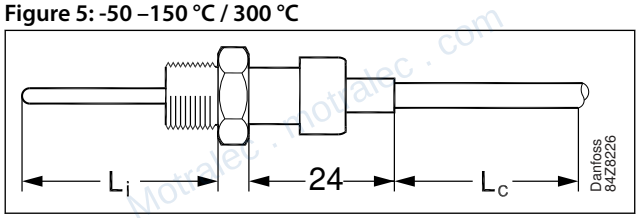
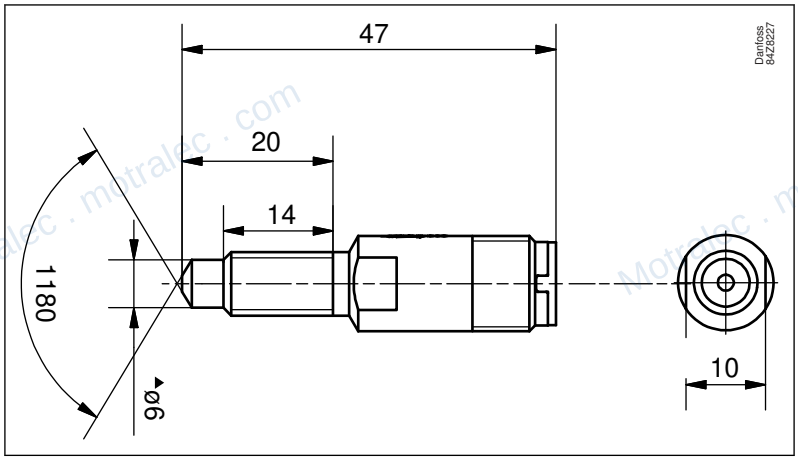


Figure 5: -50 –150 °C / 300 °C



Integrated plug version

Figure 6: Dimensions of integrated plug version



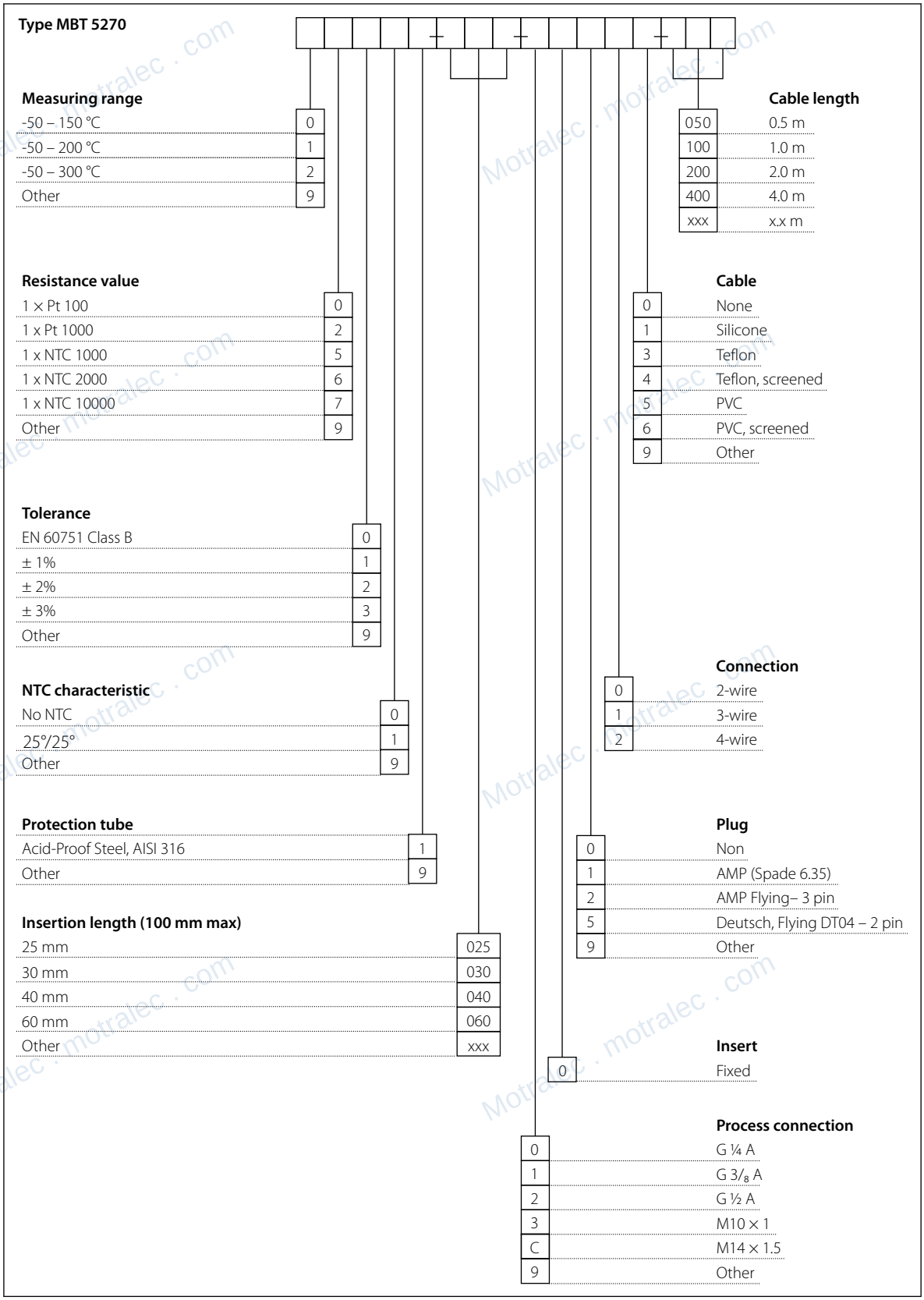
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Ordering

Cable version

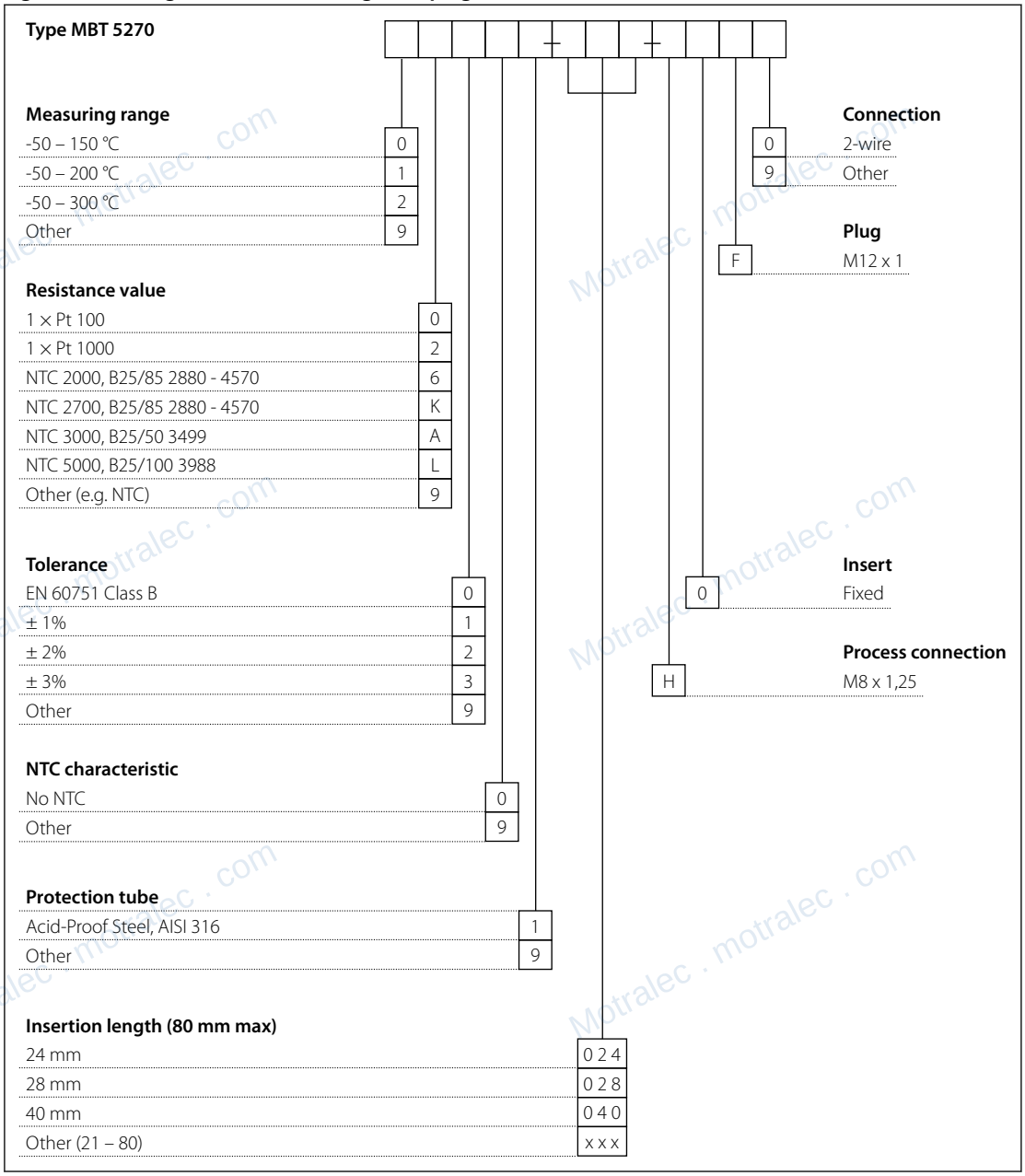
Figure 7: Ordering for MBT 5270 - Cable version



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Integrated plug version

Figure 8: Ordering for MBT 5270 - Integrated plug version



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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.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Table 12: MBT 5270

File name	Document type	Document topic	Approval authority
084R1022.01	Manufacturers Declaration	China RoHS	Danfoss
TAA000006F Rev. 2	Marine - Safety Certificate	–	DNV GL
097R0004.01	Manufacturers Declaration	RoHS	Danfoss

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