Where to use

Danfoss offer a broad selection of temperature switches and sensors providing control and measurement solutions for a wide variety of applications. The selection of products in this guide are some of the most commonly used products in the Danfoss range and provides one of the most accurate and reliable product selections available on the market today.

The product range covers applications for both light and heavy industry including Marine, Agriculture, Heating and Ventilation, Air Conditioning, Steam plant and Hydraulics to name but a few.

The KP temperature switches provide a compact and cost effective control solution for industrial applications within dry environments (IP33 enclosure).
RT and KPS temperature switches feature a high grade of enclosure and are thus well suited for use in harsh environments. The KPS switches are further more extremely resistant to the effects of shock and vibration, making them an appropriate selection for the most demanding applications such as engine monitoring.

Technology

Danfoss thermostat products are electromechanical controls which provide a volt free switch contact which will operate at the set temperature, thus providing a simple ON /OFF control. The products provide user adjustment to increase or decrease the differential temperature between switch ON/OFF on rising / falling temperature, this enables their operation to be tuned to the application. Danfoss utilise over 60 years experience in design and manufacture of temperature switch products making them the best in their class.

MBT temperature sensors provide a dynamic measurement of temperature utilising PT100 Platinum Resistance technology. The PT100 element is an industry standard sensor, giving a 100 Ohms resistance at 0C and 138.4 Ohms at 100C with near liner characteristic. Danfoss MBT sensors are calibrated to provide high accuracy and have a fast reaction to temperature change. Temperature transmitter options convert the PT100 output to a mA signal.

Danfoss temperature measurement and control products are based on proven designs and technology. All products are produced to exacting quality standards in modern ISO - certified manufacturing plants.

Installation

KP temperature switches can be supplied with optional mounting bracket accessories and a protective cover to improve the sealing integrity to IP44. The RT provides corner fixing holes for surface mounting, whilst KPS products, which are designed to withstand shock and vibration, are supplied mounted onto a 3mm steel plate for bulkhead fixing. Capillary tubes are flexible and can be formed to suit the installation, bending sharp angles should however be avoided.

Maintenance

Danfoss temperature control products should provide you with years of reliable service and are virtually maintenance free. When using temperature switches with low level signals (low voltage DC) it is recommended to use switches with Gold Plated contacts which are standard in KPS products and available as an option for RT switches. Replacement contact sets for RT switches are also available. When installing the sensor in a sensor pocket heat conducting paste should be used to improve thermal conductivity and reduce reaction time.

The PT100 sensor insert for MBT 5250 and MBT 5252 can be replaced in situ i.e. without the need to remove the sensor from the application. This is particularly useful in tank applications where drain down of the tank would otherwise be necessary. Optional Stainless Steel sensor pockets are also available for the temperature transmitter MBT 3560 which also enables the product to be replaced in situ.

Temperature monitoring & control

Industrial valves

Pressure monitoring & control

Making modern living possible

The Danfoss Group is a leader in development and production of mechanical and electronic products and controls. Our products help to heat and cool homes and offices, refrigerate food and control production lines.

In short, Danfoss contributes to the conveniences of modern life as well as to a safer and cleaner environment.

Our wide product range goes beyond the product mentioned here, so be sure to pay our website www.danfoss.com a visit to explore our product line breadth.

Temperature monitoring & control

In addition to the temperature switches and sensors in this guide, Danfoss can offer you tailor-made solutions for even the toughest of applications. Whether it be basic applications like controlling room temperature or demanding applications such as hot exhaust gas, you'll find Danfoss components are trusted day and night to deliver accuracy and durability.

Industrial valves

In general valves are usually a small but crucial part of a design, and not always easy to specify. But by working in partnership with Danfoss, you can get precisely the valve needed for your application as quickly and inexpensively as possible. Our range of solenoid valves are accompanied by externally and thermostatically operated valves to complete a high-quality programme.

Pressure monitoring & control

Danfoss has been involved with industrial pressure applications for more than 50 years and today offers one of the widest switch and transmitter range of any manufacturer. Accurate, robust and built for long life, they perform flawlessly day after day, even under the harshest conditions.

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Creating Customer Value

At Danfoss Industrial Automation, we combine uncompromising product quality and extreme reliability with a single-minded focus on customer needs. Danfoss expertise builds on more than 60 years of creating value for customers around the world.
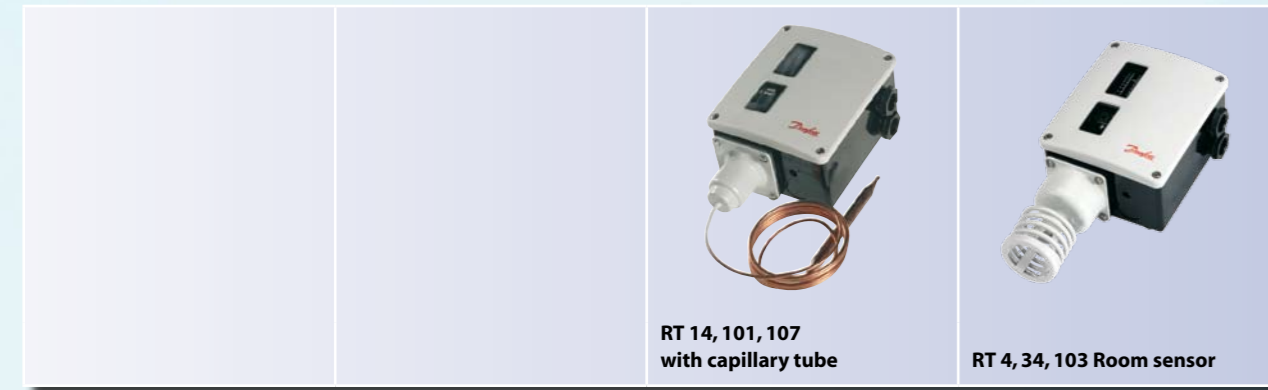
Our extensive product range includes best-in-class temperature controls, industrial valves, pressure switches and transmitters.

This handy Selection Guide makes it easier than ever to find and order the Danfoss product that fits your needs – and to create value for your customers.

Matchmaking the easy way

Selection Guide
Temperature sensors and switches

INDUSTRIAL AUTOMATION

Applications

Products	Purpose	Light industry	General industry	Heavy industry	Farming	Marine	Enviroment	
							Dry	Humid
KP	On/off switching	✓					✓	
RT	On/off switching		✓		✓		✓	✓
KPS	On/off switching			✓		✓	✓	✓
MBT	Analogue measurement		✓		✓	✓	✓	✓

KP 61, 78, 79, 81 with capillary tube

KP 75 Room sensor

RT 14, 101, 107 with capillary tube

RT 4, 34, 103 Room sensor

KPS 77 with regular capillary tube

KPS 77, 79 & 80 with armoured capillary tube

KPS 79 & 80 with fixed sensor

MBT 3260

MBT 5250 & 3560

MBT 5252

MBT 5410

Switches, type KP

Type	Setting range °C	Adjustable differential °C (min-max)	Enclosure (IP)	Capillary tube length	EAN no	Code no	
KP 61 (capillary tube)	-30 - 15	1.5 - 23	30/33*	2 m	5702428014489	060L110066	●
KP 78 (capillary tube)	30 - 90	5 - 15	30/33*	2 m	5702423148783	060L118466	●
KP 79 (capillary tube)	50 - 100	5 - 15	30/33*	2 m	5702423148653	060L112666	●
KP 81 (capillary tube)	80 - 150	7 - 20	30/33*	2 m	5702423148646	060L112566	●
KP 75 (with room sensor)	0 - 40	3 - 10	30/33*	Room sensor	5702423148769	060L117166	

* when mounted on wall

Switches, type RT

Type	Setting range °C	Adjustable differential °C (min-max)	Enclosure (IP)	Capillary tube length	EAN no	Code no		
RT 14 (capillary tube)	-5 - 30	2 - 10	66	2 m	5702428004206	017-509966	▲	■
RT 101 (capillary tube)	25 - 90	2.4 - 20	66	2 m	5702423119448	017-500366	▲	■
RT 101 (capillary tube)	25 - 90	2.4 - 20	66	5 m	5702423119486	017-502266	▲	■
RT 101 (capillary tube) - max. reset	25 - 90	2.4 - 20	54	2 m	5702423119455	017-500466	▲	✳
RT 107 (capillary tube) - max. reset	70 - 150	1.8 - 25	54	2 m	5702423119622	017-513666	▲	✳
RT 107 (capillary tube)	70 - 150	1.8 - 25	66	2 m	5702423119615	017-513566	▲	■
RT 120 (capillary tube)	120 - 215	1.8 - 30	66	2 m	5702423120659	017-520866	▲	■
RT 123 (capillary tube)	150-250	1.8 - 30	66	2 m	5702423120802	017-522066	▲	■
RT 4 (with room sensor)	-5 - 30	1.2 - 7	66	Room sensor	5702428003629	017-503666		■
RT 34 (with room sensor)	-25 - 15	2 - 12	66	Room sensor	5702428004244	017-511866		■
RT 103 (with room sensor)	10 - 45	1 - 7	66	Room sensor	5702423120420	017-515566		■

Switches, type KPS

Type	Setting range °C	Adjustable differential °C (min-max)	Enclosure (IP)	Capillary tube length	EAN no	Code no	
KPS 77 (capillary tube)	20 - 60	3 - 14	67	2 m	5702423147564	060L310266	◆
KPS 77 (armoured capillary tube)	20 - 60	3 - 14	67	2 m	5702423147557	060L310166	◆
KPS 79 (armoured capillary tube)	50 - 100	4 - 16	67	2 m	5702423147588	060L310466	◆
KPS 80 (armoured capillary tube)	70 - 120	4.5 - 18	67	2 m	5702423147809	060L312866	◆
KPS 79 (with rigid sensor)	50 - 100	4 - 16	67	Fixed sensor	5702423147731	060L312166	◆
KPS 80 (with rigid sensor)	70 - 120	4.5 - 18	67	Fixed sensor	5702423147786	060L312666	◆

Sensors and transmitters, type MBT

Type	Setting range °C	Output Signal	Temperature range °C (min-max)	Sensor element	Process connection	Electrical connection	Enclosure (IP)	Protection tube	Insertion length	EAN no	Code no	
MBT 3260 sensor			-50 - 120	Pt 100	G 1/2 A	PG 9 plug	65	Copper/brass	50 mm	5702423127610	084Z6055	
MBT 5250 sensor			-50 - 200	Pt 100	G 1/2 A	PG 11 plug	65	AISI 316 Ti	50 mm	5702423084388	084Z8036	
MBT 5250 sensor			-50 - 200	Pt 100	G 1/2 A	PG 11 plug	65	AISI 316 Ti	100 mm	5702423084685	084Z8039	
MBT 5252 transmitter	0 - 100	4 - 20 mA	-50 - 200	Pt 100	G 1/2 A	Type B, PG 16	65	AISI 316 Ti	100 mm	5702423114221	084Z8215	
MBT 3560 transmitter	0 - 100	4 - 20 mA	-50 - 200	Pt 1000	G 1/4 A	PG 9 plug	65	AISI 316 Ti	50 mm	5702423192601	084Z4030	✢
MBT 3560 transmitter	0 - 200	4 - 20 mA	-50 - 200	Pt 1000	G 1/4 A	PG 9 plug	65	AISI 316 Ti	50 mm	5702423197446	084Z4035	✢
MBT 5410 transmitter	-10 - 50	4 - 20 mA	-50 - 100	Pt 100	Room sensor	PG 13.5	67	AISI 316 Ti		5702423141647	084Z5064	

Sensor pockets

BRASS				STAINLESS STEEL			
	VVS no	EAN no	Code no		VVS no	EAN no	Code no
●	451299114	5702423155873	017-437066	●	451299314	5702428021012	017-436966

Insertion depth 112 mm, G1/2 process connection

Insertion depth 112 mm, G1/2 process connection

Sensor pockets

BRASS				STAINLESS STEEL			
	VVS no	EAN no	Code no		VVS no	EAN no	Code no
▲	451299114	5702423155873	017-437066	▲	451299314	5702428021012	017-436966

Insertion depth 112 mm, G1/2 process connection

Insertion depth 112 mm, G1/2 process connection

Contact sets

STANDARD				GOLD PLATED			
	VVS no	EAN no	Code no		VVS no	EAN no	Code no
■	472330801	5702428022552	017-403066	■	472330802	5702423160242	017-424066
✳		5702422013273	017-404266				

Standard contact sets can be used for both AC and DC, from 24 to 230 V.

Danfoss recommends gold-plated contact sets for low-voltage applications.

Sensor pockets

BRASS				STAINLESS STEEL			
	VVS no	EAN no	Code no		VVS no	EAN no	Code no
◆	472019264	5702423155958	060L326266	◆	472019284	5702423155989	060L326766

Insertion depth 75 mm, G1/2 process connection

Insertion depth 75 mm, G1/2 process connection

Plug-in display

MBD 1000			
	VVS no	EAN no	Code no
✢	475175850	5702423187898	060G2850

MBD 1000

The above code nos are only a selection of our wide program of temperature products. For variants not mentioned, please visit www.danfoss.com or contact your local sales office.