



TYPE APPROVAL CERTIFICATE

No.
ELE086320XG/001

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Temperature switches
<i>Type</i>	KP, KPS
<i>Applicant</i>	DANFOSS A/S Nordborgvej 81 DK-6430 Nordborg (office E14-S1) DENMARK
<i>Manufacturer</i>	DANFOSS SP. Z O.O.
<i>Place of manufacture</i>	UL. Chrzanowska 5, PL-05-825 Grodzisk Mazowiecki POLAND
<i>Reference standards</i>	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in **HAMBURG** on **July 15, 2020**. *This Certificate is valid until* **July 14, 2025**

**RINA Services S.p.A.
Giuseppe Russo**

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE

No.

ELE086320XG/001

Enclosure - Page 1 of 1

KP, KPS

Temperature switches Series KP

Type	lowest setting °C	highest setting°C	Differential
KP61	-20 → +60	10 → 40	2.7 → 13
KP61	-20 → +55	8 → 40	2.2 → 13
KP61	-20 → +60	11 fixed	3.6 fixed
KP62	-20 → +60	10 → 40	2.7 → 13
KP62	-20 → +60	9 → 36	3.6 → 14.5
KP63	-60 → +15	18 → 25	4.9 → 15
KP68	25 → 95	8 → 45	3.2 → 13
KP71	25 → 70	4.5 → 18	4 → 18
KP71	25 → 70	5.4 fixed	5.4 fixed
KP73	-15 → 60	8 → 36	6.3 → 38
KP73	-15 → 60	22 → 125	15 → 45
KP73	-15 → 60	9 → 18	6.5 → 18
KP73	0 → 80	10 → 35	10 → 35
KP75	32 → 95	6.3 → 29	4.5 → 22
KP77	70 → 140	6.3 → 18	5.4 → 18
KP79	120 → 210	9 → 27	9 → 27
KP81	175 → 300	16 → 36	14.5 fixed
KP81	175 → 300	18 fixed	18 fixed
KP98	140 → 250	25 fixed	
KP98	210 → 350	45 fixed	
KP98	30 → 90	22 fixed	
KP98	210 → 350	45 fixed	

Temperature switches Series KPS

Type	Setting range (°C)	Differential (°C)
KPS 76	-10 → -30	3 → 10
KPS 77	20 → 60	3 → 14
KPS79	50 → 100	4 → 16
KPS79	60 → 100	4 → 16
KPS79	50 → 100	9 fixed
KPS80	70 → 120	4.5 → 18
KPS81	60 → 150	5 → 25
KPS83	100 → 200	6.5 → 30
KPS83	100 → 200	18 fixed

Reference Documents

Danfoss catalogue n° RK.OX.E1.22

This certificate replace the previous certificate ELE004815XG/002.

HAMBURG July 15, 2020





TYPE APPROVAL CERTIFICATE

No.
ELE086320XG/002

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Pressure switches
<i>Type</i>	Series MBC 5100
<i>Applicant</i>	DANFOSS A/S Nordborgvej 81 DK-6430 Nordborg (office E14-S1) DENMARK
<i>Manufacturer</i>	DANFOSS POLAND SP. Z.O.O.
<i>Place of manufacture</i>	UL. CHRZANOWSKA 5 PL-05-825 GRODZISK MAZOWIECKI POLAND
<i>Reference standards</i>	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in **HAMBURG** on **July 15, 2020**. This Certificate is valid until **July 14, 2025**



RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE

No.

ELE086320XG/002

Enclosure - Page 1 of 1

Series MBC 5100

Pressure switches Series **MBC 5100**

Pressure range:

0.2 - 10 bar	(Low pressure bellow)
5.0 - 30 bar	(High pressure bellow)
0.5 - 25 bar	(Low pressure diaphragm)
5.0 - 100 bar	(High pressure diaphragm)
16 - 400 Bar	(High pressure piston)

Low differential (fixed microswitch)

Remark: Premounted cable version is covered by this certificate

Reference Documents:

Danfoss Instruction: 061R9302

Danfoss Data sheet: Heavy duty pressure controls MBC500 / MBC 5100 - IC.PD.P10.A1.02-520B1771

Appendix 1 to vibration tests BOS-3087-BS-14_BOS-3088-BS-14.pdf

BOS-3088-BS-14 vibration test - pressure switch.pdf

Data Sheet TE Cable v.03.pdf

DNV TE HF Cable Certificate.pdf

e-13397.pdf

IC.PI.P10.D1.02.pdf

TR_8540_NZL-NBR_1014_Test IP65.pdf

This certificate replace the previous certificate ELE013615XG.

HAMBURG July 15, 2020



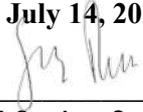


TYPE APPROVAL CERTIFICATE
No. **ELE086320XG/003**

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Pressure switches
<i>Type</i>	Series KP, KPI, KPS
<i>Applicant</i>	DANFOSS A/S Nordborgvej 81, (Office E14-S1) DK-6430 Nordborg DENMARK
<i>Manufacturer</i>	DANFOSS POLAND SP. Z.O.O.
<i>Place of manufacture</i>	UL. CHRZANOWSKA 5 PL-05-825 GRODZISK MAZOWIECKI POLAND
<i>Reference standards</i>	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in **HAMBURG** on **July 15, 2020**. This Certificate is valid until **July 14, 2025**


RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE

No. **ELE086320XG/003**

Enclosure - Page 1 of 1

Series KP, KPI, KPS

Description:

The KP and KPI pressure switches and thermostats are used for control, monitoring and alarm systems in wide variety of applications.

Enclosure: IP 30, IP 44 or IP 55 (see data sheet)

The KPS Series consist of a series of pressure and temperature controlled switches. The KPS Series has a high level of enclosure, robust and compact construction and resistance to shock and vibration.

Enclosure: IP 67 (including IP X6) according to EN60529.

Reference Documents:

Data Sheet; IC.PD.P10.F4.02 / 520B6484, Pressure switch and thermostat Types KP and KPI

IC.PD.P10.I1.02 / 520B6584, Pressure switch and thermostat Types KPS

This certificate replace the previous certificate ELE013715XG.

HAMBURG July 15, 2020

A handwritten signature in blue ink, appearing to read 'J. Rina', is positioned to the right of the date.



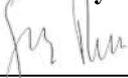
TYPE APPROVAL CERTIFICATE

No.
ELE086320XG/004

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Temperature switches
<i>Type</i>	Series RT
<i>Applicant</i>	DANFOSS A/S Nordborgvej 81 DK-6430 Nordborg (office E14-S1) DENMARK
<i>Manufacturer</i>	DANFOSS POLAND SP. Z.O.O.
<i>Place of manufacture</i>	UL. CHRZANOWSKA 5 PL-05-825 GRODZISK MAZOWIECKI POLAND
<i>Reference standards</i>	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in **HAMBURG** on **July 15, 2020**. This Certificate is valid until **July 14, 2025**



RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE

No.

ELE086320XG/004

Enclosure - Page 1 of 1

Series RT

The temperature controls incorporate a temperature controlled, single-pole changeover switch where the contact position depends on the temperature of the sensor and the set scale value.

The RT series consists of temperature controls with room sensors, duct sensors and capillary tube sensors for general industrial and marine applications.

Temperature switches with cylindrical remote sensors Series RT

Type	Setting range (°C)	Adjustable differential range °C		Max temp. °C
		at lowest range set. (°C)	at highest range set. (°C)	
RT 10	-60 → -25	1.7 → 7	1 → 3	150
RT 9	-45 → -15	2.2 → 10	1 → 4.5	150
RT 13	-30 → 0	1.5 → 6	1 → 4	150
RT 3	-25 → 15	2.8 → 10	2.5 → 9	150
RT 2	-25 → 15	5 → 18	6 → 20	150
RT 7	-25 → 15	2 → 10	2.5 → 14	150
RT 8	-20 → 12	1.5 → 7	1.5 → 7	145
RT 12	-5 → 10	1 → 3.5	1 → 3	65
RT 14	-5 → 30	2 → 8	2 → 10	150
RT 23	5 → 22	1.1 → 3	1 → 3	85
RT 15	8 → 32	1.6 → 8	1.6 → 8	150
RT 101	25 → 90	2.4 → 10	3.5 → 20	300
RT 106	20 → 90	4 → 20	2 → 7	120
RT 107	70 → 150	6 → 25	1.8 → 8	215
RT 120	120 → 215	7 → 30	1.8 → 9	260
RT 123	150 → 250	6.5 → 30	1.8 → 9	300
RT 124	200 → 300	5 → 25	2.5 → 10	350

Temperature switches with duct or capillary tube sensor Series RT

Type	Setting range (°C)	Adjustable differential range		Max temp. (°C)
		at lowest range set. (°C)	at highest range set. (°C)	
RT 17	-50 → -15	2.2 → 7	1.5 → 5	100
RT 11	-30 → 0	1.5 → 6	1 → 3	66
RT 34	-25 → 15	2 → 10	2 → 12	100
RT 4	-5 → 30	1.5 → 7	1.2 → 4	75
RT 115	10 → 35	see spec.	see spec.	92
RT 103	10 → 45	1.3 → 7	1 → 5	100
RT 140	15 → 45	1.8 → 8	2.5 → 11	240
RT 102	25 → 90	2.4 → 10	3.5 → 20	300

Differential temperature switch type RT 270

Setting: 0 → 15 °C ; mechanical diff. 2°C ; operating range -30 → 140 °C ; Max temp 65°C

Reference Documents:

Technical brochure: IC.PD.P10.E3..02 / 520B4871; Danfoss temperature controls Type RT;

Test Report:

Test report no. 307.02/NZL/NBW/2014/0 for flammability test

This certificate replace the previous certificate ELE013915XG/001.



HAMBURG July 15, 2020

RINA Services S.p.A.
Via Corsica, 12 - 16128 Genova
Tel +39 010 53851
Fax +39 010 5351000



TYPE APPROVAL CERTIFICATE

No.
ELE086320XG/005

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Pressure switch, Differential pressure switch and Thermostat
<i>Type</i>	Series RT-E
<i>Applicant</i>	DANFOSS A/S Nordborgvej 81 DK-6430 Nordborg (office E14-S1) DENMARK
<i>Manufacturer</i>	DANFOSS POLAND SP. Z.O.O.
<i>Place of manufacture</i>	UL. CHRZANOWSKA 5 PL-05-825 GRODZISK MAZOWIECKI POLAND
<i>Reference standards</i>	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in **HAMBURG** on **July 15, 2020**. *This Certificate is valid until* **July 14, 2025**



**RINA Services S.p.A.
Giuseppe Russo**

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE

No.

ELE086320XG/005

Enclosure - Page 1 of 1

Series RT-E

...The RT-E series consist of pressure and differential pressure switches as well as thermostat.
The units are designed for industrial refrigeration and general industrial application in explosive zones acc. to 94/EC, ATEX Directive, explosive zone 1, for surface equipment category 2.

Pressure switches Series RT

Type	Regul. range (bar)	Differential (bar)	Max working press (bar)
RT 121	-1 → 0	0.1 → 0.4	7.0
RT 113	0 → 0.3	0.01 → 0.05	0,4
RT 112	0.1 → 1.1	0.07 → 0.16	7.0
RT 112	0.1 → 1.1	0.07 fixed	7.0
RT 110	0.2 → 3	0.08 → 0.25	7.0
RT 110	0.2 → 3	0.08 fixed	7.0
RT 1	-0.8 → 5	0.5 → 1.6	22.0
RT 1	-0.8 → 5	0.5 fixed	22.0
RT 1A	-0.8 → 5	0.5 → 1.6	22.0
RT 1A	-0.8 → 5	0.5	22.0
RT 1A	-0.8 → 5	1.3 → 2.4	22.0
RT 200	0.2 → 6	0.25 → 1.2	22.0
RT 200	0.2 → 6	0.25 fixed	22.0
RT 116	1 → 10	0.3 → 1.3	22.0
RT116	1 → 10	0.3 fixed	22.0
RT 5	4 → 17	0.6 → 3.0	22.0
RT 5	4 → 17	1.2 → 4	22.0
RT 5	4 → 17	1.2 → 1.3	22.0
RT 117	10 → 30	1 → 4	42.0

Differential pressure switches Series RT

Type	Regul. range (bar)	Differential (bar)	Max working press (bar)
RT 262A	0.1 → 1.5	0.1 fixed	22.0
RT 260A	0.5 → 4	0.3 fixed	22.0

Enclosure: IP66 or IP54 (please observe the additional information in the data sheet)

Reference Documents:

Data sheet: DKRCC.PD.CB0.B9.02/520H7869

Test report:

Test report no. 307.02/NZL/NBW/2014/0 for flammability test

This certificate replace the previous certificate ELE013915XG/002.

HAMBURG July 15, 2020





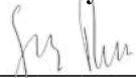
TYPE APPROVAL CERTIFICATE

No.
ELE086320XG/006

This is to certify that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	Differential pressure switch
<i>Type</i>	MP 55
<i>Applicant</i>	DANFOSS A/S Nordborgvej 81 DK-6430 Nordborg (office E14-S1) DENMARK
<i>Manufacturer</i>	DANFOSS SP. Z O.O.
<i>Place of manufacture</i>	UL. Chrzanowska 5, PL-05-825 Grodzisk Mazowiecki POLAND
<i>Reference standards</i>	Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.

Issued in **HAMBURG** on **July 15, 2020**. This Certificate is valid until **July 14, 2025**



RINA Services S.p.A.
Giuseppe Russo

This certificate consists of this page and 1 enclosure

TYPE APPROVAL CERTIFICATE

No.

ELE086320XG/006

Enclosure - Page 1 of 1

MP 55

Differential pressure switch type MP 55

Type	Range adjustment	Differential (psi)	relay time delay
MP 55	LP side 29 inch Hg to 170 psi	4.3 to 64	45 to 120 s

Reference Documents

Danfoss differential pressure controls / lube oil protection controls n° RK.0X.E1.22

This certificate replace the previous certificate ELE004815/001.

HAMBURG July 15, 2020

