



Marine & Offshore

Certificate number: 03407/10 BV

File number: AP 664

Product code: 3891H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**DANFOSS A/S**

NORDBORG - DENMARK

*for the type of product*

**PRESSURE TRANSMITTERS / TRANSDUCERS**

"RT 5, RT 110, RT 112, RT 113, RT 116, RT 117, RT 200"

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships.

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 18 Mar 2025**

**For Bureau Veritas Marine & Offshore,**

At BV FREDERICIA, on 18 Mar 2020,

Jesper JENSEN



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarnb.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=w2vbdyo0kz>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

**PRESSURE SWITCHES** types: "RT 5, RT 110, RT 112, RT 113, RT 116, RT 117, RT 200"

#### 1.1 - Pressure controls:

Type	Regulation range (pe = effective pressure) (bar)	Adjustable / fixed mechanical differential (bar)	Max. operating pressure PB (bar)	Pressure connection ISO 228/1
RT 113	0-0.3	0.01-0.05	0.4	G 3/8 A
RT 112	0.1-1.1	0.07-0.16	7	G 3/8 A
RT 110	0.2-3	0.08-0.25	7	G 3/8 A
RT 200	0.2-6	0.25-1.2	22	G 3/8 A
RT 116	1-10	0.3-1.3	22	G 3/8 A
RT 5	4-17	1.2	22	G 3/8 A
RT 117	10-30	1-4	42	G 3/8 A

#### 1.2 - Switch:

Contact load

<b>Alternating current:</b>	
AC-1 (ohmic):	10 A, 400 V
AC-3 (motor):	4 A, 400 V
AC-14/15 (coil/transformer):	3 A, 400 V
Blocked rotor:	28 A, 400 V
<b>Direct current:</b>	
DC-13/14:	12 W, 230 V

### 2. DOCUMENTS AND DRAWINGS :

According to Manufacturer's data sheet IK.20.D8.02 dated 05.95 and drawing N° 017-9001

Manufacturer's specifications: pressure switches for pressure controls, differential pressure controls and pressure controls for neutral zone regulation.

Data sheet N°IC.PD.P10.6B.02/520B8146

### 3. TEST REPORTS :

- Test report N°307.02/NZL/NBW/2014/O, dated 17.Oct.2014.

- Test report BOS/1598/BE/17 dated 21.Apr.2017

### 4. APPLICATION / LIMITATION :

4.1 - As per BV Rules for the Classification of Steel Ships.

4.2 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

### 5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The **RT 5, RT 110, RT 112, RT 113, RT 116, RT 117, RT 200** are to be supplied by **DANFOSS A/S** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **DANFOSS A/S** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products :

**DANFOSS A/S**  
**Head Office**  
**DK-6430 NORDBORG**  
**DENMARK**

**Danfoss Sp. z o.o.**  
**ul. Chrzanowska 5**  
**05-825 GRODZISK MAZOWIECKI**  
**POLAND**

### 6. MARKING OF PRODUCT :

- Maker's name or trade mark.

- Serial number of the units.

- Equipment type number or model identification under which it was type-tested.

**7. OTHERS :**

7.1 - It is **DANFOSS A/S** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 03407/H0 BV, issued on January 28th 2015 by the Society.

**\*\*\* END OF CERTIFICATE \*\*\***