

Translation

(1) **EC-Type Examination Certificate**

**TÜV NORD**

- (2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 94/9/EC**



- (3) **Certificate Number** TÜV 08 ATEX 364136

- (4) for the equipment: Actuators – hydraulically operated types and brand names in accordance with "Type Key" in schedule

- (5) of the manufacturer: **Damcos A/S**

- (6) Address: Aaderupvej 41  
DK-4700 Naestved, Denmark

Order number: 8000 364136

Date of issue: 2008-11-10


- (7) This equipment or protective system and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The TÜV NORD CERT GmbH, notified body No. 0044 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential report No. 08203364136.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 13463-1:2001**

**EN 13463-5:2003**

**EN 13463-8:2003**

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC-type examination certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment or protective system must include the following:

 II 1GD c/k T4 – T6

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body

  
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(13) **SCHEDULE**

(14) **EC-Type Examination Certificate No. TÜV 08 ATEX 364136**

(15) Description of equipment

The actuators are designed for opening and closing of different kind of valves such as ball valves, butterfly valves and globe valves.

They are all hydraulically operated and are designed for operation pressure of 135 bar/1958 psi, but might as well be operated at 210 bar/3000 psi, which will give a shorter lifetime of the sealing's, or they might be operated at lower pressure as well.

Applying pressure to B-port will open the valve; applying pressure to A-port will close the valve.

The fail close actuators are hydraulically opened by adding hydraulic pressure to the B-Port and will close by means of force from mechanical springs when pressure is removed from B-port.

The fail open actuators are hydraulically closed by adding hydraulic pressure to the A-port and will open by means of force from mechanical springs when pressure is removed from A-port

The actuators can be operated in an ambient temperature range of -20 °C to + 80 °C, with special sealing's down to -45 °C or up to + 120 °C.

All actuators and direct mounted equipment have an Ingres Protection of IP 68.

Type Key

| ID-No.   | Brand: "Damcos" | Brand: "Bettis" |
|--|-----------------|-----------------|
| <b>Quarterturn actuators</b>                                   |                 |                 |
| <b>Double acting, fail set, version B1 (-20 °C to +80 °C)</b>  |                 |                 |
| 160N1097   | BRC 125 B1      | BHH 125 B1      |
| 160N1098   | BRC 250 B1      | BHH 250 B1      |
| 160N1099   | BRC 500 B1      | BHH 500 B1      |
| 160N1100   | BRC 1000 B1     | BHH 1000 B1     |
| 160N1101   | BRC 2000 B1     | BHH 2000 B1     |
| 160N1102   | BRC 4000 B1     | BHH 4000 B1     |
| 160N1103   | BRC 8000 B1     | BHH 8000 B1     |
| 160N1104   | BRC 16000 B1    | BHH 16000 B1    |
| <b>Double acting, fail set, version B2 (-20 °C to +120 °C)</b> |                 |                 |
| 160N1113   | BRC 125 B2      | BHH 125 B2      |
| 160N1114   | BRC 250 B2      | BHH 250 B2      |
| 160N1115   | BRC 500 B2      | BHH 500 B2      |
| 160N1116   | BRC 1000 B2     | BHH 1000 B2     |
| 160N1117   | BRC 2000 B2     | BHH 2000 B2     |
| 160N1118   | BRC 4000 B2     | BHH 4000 B2     |
| 160N1119   | BRC 8000 B2     | BHH 8000 B2     |
| 160N1120   | BRC 16000 B2    | BHH 16000 B2    |
| <b>Double acting, fail set, version B3 (-45 °C to +80 °C)</b>  |                 |                 |
| 160N1131   | BRC 125 B3      | BHH 125 B3      |
| 160N1132   | BRC 250 B3      | BHH 250 B3      |

Schedule EC-Type Examination Certificate No. TÜV 08 ATEX 364136

|          |              |              |
|----------|--------------|--------------|
| 160N1133 | BRC 500 B3   | BHH 500 B3   |
| 160N1134 | BRC 1000 B3  | BHH 1000 B3  |
| 160N1135 | BRC 2000 B3  | BHH 2000 B3  |
| 160N1136 | BRC 4000 B3  | BHH 4000 B3  |
| 160N1137 | BRC 8000 B3  | BHH 8000 B3  |
| 160N1138 | BRC 16000 B3 | BHH 16000 B3 |

**Single acting, fail close, 135 bar**

|          |               |               |
|----------|---------------|---------------|
| 160N4177 | BRCF 125 B1   | BHHF 125 B1   |
| 160N4178 | BRCF 250 B1   | BHHF 250 B1   |
| 160N4179 | BRCF 500 B1   | BHHF 500 B1   |
| 160N4180 | BRCF 1000 B1  | BHHF 1000 B1  |
| 160N4181 | BRCF 2000 B1  | BHHF 2000 B1  |
| 160N4182 | BRCF 4000 B1  | BHHF 4000 B1  |
| 160N4183 | BRCF 8000 B1  | BHHF 8000 B1  |
| 160N4184 | BRCF 16000 B1 | BHHF 16000 B1 |

**Single acting, fail open, 135 bar**

|          |                  |                  |
|----------|------------------|------------------|
| 160N4193 | BRCF 125 B1 FO   | BHHF 125 B1 FO   |
| 160N4194 | BRCF 250 B1 FO   | BHHF 250 B1 FO   |
| 160N4195 | BRCF 500 B1 FO   | BHHF 500 B1 FO   |
| 160N4196 | BRCF 1000 B1 FO  | BHHF 1000 B1 FO  |
| 160N4197 | BRCF 2000 B1 FO  | BHHF 2000 B1 FO  |
| 160N4198 | BRCF 4000 B1 FO  | BHHF 4000 B1 FO  |
| 160N4199 | BRCF 8000 B1 FO  | BHHF 8000 B1 FO  |
| 160N4200 | BRCF 16000 B1 FO | BHHF 16000 B1 FO |

**Single acting, fail close, 90 bar**

|          |                   |                   |
|----------|-------------------|-------------------|
| 160N4217 | BRCF 125, 90 bar  | BHHF 125, 90 bar  |
| 160N4218 | BRCF 250, 90 bar  | BHHF 250, 90 bar  |
| 160N4219 | BRCF 500, 90 bar  | BHHF 500, 90 bar  |
| 160N4220 | BRCF 1000, 90 bar | BHHF 1000, 90 bar |
| 160N4221 | BRCF 2000, 90 bar | BHHF 2000, 90 bar |
| 160N4222 | BRCF 4000, 90 bar | BHHF 4000, 90 bar |

**Single acting, fail open, 90 bar**

|          |                         |                         |
|----------|-------------------------|-------------------------|
| 160N4226 | BRCF 125 B1 FO, 90 bar  | BHHF 125 B1 FO, 90 bar  |
| 160N4227 | BRCF 250 B1 FO, 90 bar  | BHHF 250 B1 FO, 90 bar  |
| 160N4228 | BRCF 500 B1 FO, 90 bar  | BHHF 500 B1 FO, 90 bar  |
| 160N4229 | BRCF 1000 B1 FO, 90 bar | BHHF 1000 B1 FO, 90 bar |
| 160N4230 | BRCF 2000 B1 FO, 90 bar | BHHF 2000 B1 FO, 90 bar |
| 160N4231 | BRCF 4000 B1 FO, 90 bar | BHHF 4000 B1 FO, 90 bar |

**Linear actuators for globe valves**

**Double acting, fail set**

|          |           |           |
|----------|-----------|-----------|
| 160F3035 | KC 65 A1  | BL 65 A1  |
| 160F3033 | KC 125 A1 | BL 125 A1 |
| 160F3034 | KC 250 A1 | BL 250 A1 |
| 160F3046 | KC 325 A1 | BL 325 A1 |
| 160F3047 | KC 400 A1 | BL 400 A1 |

Schedule EC-Type Examination Certificate No. TÜV 08 ATEX 364136

**Single acting, fail close**

|          |                |                |
|----------|----------------|----------------|
| 160F2067 | KF 65 A1       | BLF 65 A1      |
| 160F2041 | KF 125 A1      | BLF 125 A1     |
| 160F2042 | KFR 125 A1     | BLFR 125 A1    |
| 160F2051 | KF 250 A1      | BLF 250 A1     |
| 160F2052 | KFR 250 A1     | BLFR 250 A1    |
| 160F2064 | KF 250/150 A1  | BLF 250/150 A1 |
| 160F2065 | KFR 250/150 A1 | BLFR250/150 A1 |

**Single acting, fail open**

|          |              |               |
|----------|--------------|---------------|
| 160F2068 | KF 65 FO A1  | BLF 65 FO A1  |
| 160F2066 | KF 125 FO A1 | BLF 125 FO A1 |
| 160F2074 | KF 250 FO A1 | BLF 250 FO A1 |

Technical data

Permitted range of the ambient temperature: -20 °C to + 80 °C  
 or with special sealing's:  
 -45 °C or up to + 120 °C

| Type variant                | Ambient temperature area | T6    | T5    | T4     |
|-----------------------------|--------------------------|-------|-------|--------|
| Normal version - A1/B1      | -20 °C to +80°C          | 70 °C | 80 °C | 80 °C  |
| Viton version - A2/B2       | -20°C or up to +120°C    | 70 °C | 85 °C | 120 °C |
| Low nitrile version - A3/B3 | -45°C or up to +80°C     | 70 °C | 80 °C | 80 °C  |

(16) Test documents are listed in the test report No. 08 203 364136.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones