



[1]

UNITED KINGDOM CONFORMITY ASSESSMENT
UK-TYPE EXAMINATION CERTIFICATE

[2]

**Product or Protective System Intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1**

[3] UK-Type Examination Certificate No.: **UL21UKEX2020X Rev. 0**

[4] Product: **Electronically Operated Solenoid Coils, Types BZ Series**

[5] Manufacturer: **Danfoss A/S**

[6] Address: **Nordborgvej 81, 6430 Nordborg, Denmark**

[7] This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8] UL International (UK) Ltd, Approved Body number 0843, in accordance with Regulation 44 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended by UKSI 2019:696), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.
The examination and test results are recorded in the confidential report **UKRCC-4789913512.3**.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN IEC 60079-18:2015 + A1:2017

Except in respect of those requirements listed at section 19 of the schedule to this certificate.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

[11] This UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

 **II 2 G Ex mb IIC T4 Gb**

Certification Manager
David Lloyd

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the Ex UK Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Regulations. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2021-11-26

Approved Body UL International (UK) Ltd Unit 1-3 Horizon Kingsland Business Park Wade Road, Basingstoke RG24 8AH, UK
Phone : +44 (0)1256 312100



[13] **Schedule**
[14] **UK-TYPE EXAMINATION CERTIFICATE No.**
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[15] Description of Product

These are solenoid coils for use with Danfoss 'B-series' valves. They are intended for permanent installation and are supplied with a permanently attached cable. They are intended for use with 13.5 mm armature direct/servo driven valve types (for example, EV . . . B).

The coils consist of a copper wire winding mounted on a plastic coil former over a thermal cut-out, which is intended to remove power to the winding in the event of the limit temperature being reached internally. The winding ends are connected to internally mounted contacts. The external cable is soldered to the internal contacts and the entire sub-assembly is then encapsulated using an injection moulding process. A metallic housing is then fitted around the encapsulated part of the coil, covering substantially all of the encapsulating compound, and earthed using a connection to the external cable. The coils are marked by printing the necessary information directly onto the metallic outer housing. The coils are intended to have an external protective fuse which provides additional limitation of the current available from the supply to ensure the rating of the thermal cut-out is not exceeded.

Types included and including electrical ratings:

Solenoid Coil	Rating
Type 018F4703	110 Vac (-10 - + 6 %) 50 Hz 0.14 A / 120 Vac (-10 - + 6 %) 60 Hz 0.13 A
Type 018F4704	230 Vac(-10 - + 6 %) 50 Hz 0.09 A / 240 Vac (-10 - + 6 %) 60 Hz 0.08 A
Type 018F4705	24 Vdc (-10 - +5 %), 0.43 A

Temperature range

The ambient temperature range is: -40 °C to +45 °C

The permitted process medium temperature range is: -40 °C to +70 °C

Routine tests

Each product shall be subjected to a visual inspection according to EN 60079-18 clause 9.1. No damage shall be evident, such as cracks in the compound, exposure of encapsulated parts, flaking, shrinkage, swelling, decomposition, failure of adhesion or softening.

Each product shall be subjected to a dielectric strength test according EN 60079-18 clause 9.2 between external supply connections and earth/case at 1500 Vrms for 1 s minimum, with no breakdown.

[16] Test Report No. (associated with this certificate issue)

DK/ULD/ExTR14.0001/06

[17] Specific conditions of use:

- An external protective fuse is required to protect the coils as follows:
018F4703: 250 mA, 1500 A breaking capacity, 250 V, Medium Time Lag
018F4704: 150 mA, 1500 A breaking capacity, 250 V, Medium Time Lag
018F4705: 500 mA, 1500 A breaking capacity, 24 V, Medium Time Lag
- The power supplying the solenoid must be limited to a prospective short circuit current of a maximum of 1500 A.
- The solenoid coil shall be protected against impact during use.
- The product is provided with a Y/G coloured earth wire as well as an external earth terminal. These shall not be used simultaneously. If the external earth connection is connected to earth or bonding system, the Y/G earth wire must be cut off, isolated and not connected. If the Y/G wire is connected to earth, the external earth terminal must be left without any connection.
- The solenoid shall be protected against direct sunlight and other ultraviolet sources.
- The cable supplied with the solenoids must not be handled or flexed and protected against impact if the ambient temperature is below 0 °C.

[18] Conditions of certification:

None

[19] Essential Health and Safety Requirements (Regulations Schedule 1)

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.



The manufacturer shall inform the approved body concerning all modifications to the technical documentation as described in Annex III to UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1.

[13]

[14]

Schedule
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[20]

Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
Installation guide	018R9667	-	2021.11
Approval drawing ATEX Coil with thermal fuse Ex mb IIC T4 Gb	032M0794	11	2021-10-26
Coil body assembled ATEX GPU coils with Thermal fuse	018F4700	06	ECM500000086068

Details of Ex Components or Ex Equipment used:
None

