

# EC-TYPE EXAMINATION CERTIFICATE



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**Equipment or Protective System intended for use  
in Potentially Explosive Atmospheres  
Directive 94/9/EC**

[3]

EC-Type Examination Certificate Number: **DEMKO 07 ATEX 0705753X Rev.5**

[4]

Equipment or Protective System: **Purge and Pressurization System, 6000 Series**

[5]

Manufacturer: **Pepperl + Fuchs GmbH**

[6]

Address: **Lilienthalstrasse 200, 68307 Mannheim Germany**

[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]

UL International Demko A/S, notified body number 0539 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to 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 confidential report no. **4786465691**

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

**EN 60079-0:2012+A11:2013  
EN 60079-11:2012**

**EN 60079-1:2007  
EN 60079-31:2009**

**EN 60079-2:2007**

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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.

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This EC-Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by the certificate.

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The marking of the equipment or protective system shall include the following:

**Ex II 2 G Ex db ib [ib pxb] IIC T4 Gb / Ex II 2 D Ex ib tb [ib pxb] IIIC T60°C Db**

**Ex II 2 G Ex db [ib pxb] IIC T4 Gb / Ex II 2 D Ex tb [ib pxb] IIIC T80°C Db**

**Ex II 2 G Ex ib [pxb] IIC T4 Gb**

**Ex II 2 G Ex ib IIC T4 Gb / Ex II 2 D Ex ib IIIC T60°C Db**

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

**Ex II 2 G Ex ib IIC T4 Gb / Ex II 2 D Ex ib IIIC T210°C Db**



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**Schedule**  
**EC-TYPE EXAMINATION CERTIFICATE No.**  
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**Report: 4786465691**

**Certification Manager**  
Jan-Erik Storgaard

This is to certify that the sample(s) of the Equipment described herein ("Certified Equipment") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Equipment Certification Program Requirements. This certificate and test results obtained apply only to the equipment 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 equipment. UL has not established Follow-Up Service or other surveillance of the equipment. The Manufacturer is solely and fully responsible for conformity of all equipment to all applicable Standards, specifications, requirements or Directives. 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:** 2008-03-26

**Re-issued:** 2016-04-17

**Notified Body**

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## Schedule

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### Description of Equipment or protective system

Model 6000 is a permanently installed purge and pressurization control system intended to provide "pxb" purge and pressurization in accordance with EN 60079-2. Instructions and markings are provided with the control system indicating how to install this device to the electrical enclosure to be purged and pressurized in accordance with EN 60079-2. The purge control enclosure is composed of stainless steel and has been evaluated for Ingress Protection level IP 64. It is comprised of a cover and body, power supply and main controller, user interface, vent (see Certificate No. DEMKO 15 ATEX 1622X for details), optional I.S. Termination Board DIN mounted, optional temperature hub, and up to three temperature sensors when the temperature hub is provided. The power supply and main controller are housed in a flameproof ("d") enclosure. The user interface, temperature hub, temperature sensors, and vent are intrinsically safe ("ib"). Additionally, the temperature hub provides intrinsically safe circuits for use in dust atmospheres ("ib") and the temperature sensors are intrinsically safe for use in dust atmospheres ("ib"). The control system enclosure contains the IS interface board, which has connection facilities for intrinsically safe circuits. The IS interface board is provided with five connection facilities that have assigned entity parameters. The component kit is comprised of the power electronics, user interface, vent, optional bushing (wiring harness), optional temperature hub, and up to three temperature sensors when the temperature hub is provided. The vent is separately certified.

The following devices are covered by this certificate:

### Purge and Pressurization Control System

Ⓔ II 2 G Ex db ib [ib pxb] IIC T4 Gb / Ⓔ II 2 D Ex ib tb [ib pxb] IIIC T60°C Db

<u>6000</u>	<u>-DV</u>	<u>-S2</u>	<u>-UN</u>	<u>-WH</u>	<u>-AC</u>
I	II	III	IV	V	VI

I. Series Family

-6000 – Basic Model

II. Valve Type

-DV – Digital Solenoid Valve  
-NV – No Valve Supplied

III. Safety Integrity

-S2 – Safety level 2

IV. Certification Type

-UN – Universal

V. Housing Configuration

-WH – Standard Housing  
-CK – Component Kit  
-XX – Any 2 alpha-numeric combinations that indicates some combination of either a CK or WH version with no or some number of specific permitted rated fittings

V. Voltage Version

-AC – 100-250 V ac  
-DC – 20-30 V dc

The AC and DC versions employ the same board layouts and circuitry. They differ only in input transformers and components in input circuitry to transformers.

### Purge and Pressurization Control System Alternate Kit

Power Electronics:

Ⓔ II 2 G Ex db [ib pxb] IIC T4 Gb / Ⓔ II 2 D Ex tb [ib pxb] IIIC T80°C Db

<u>6000</u>	<u>-EXKIT</u>	<u>-AC</u>	<u>-01</u>	<u>-GO</u>
I	II	III	IV	V

I. Series Family

-6000 – Basic Model

II. Kit Housing Type

-EXKIT – Indication that standard kit version (6000-xx-S2-UN-CK-xx) is placed into an appropriate enclosure for use in hazardous areas.

III. Voltage Selection

-AC – 100-250 V ac  
-DC – 20-30 V dc

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- IV. Enclosure Configuration  
 -XX – Any 2 alpha-numeric combination that indicates specific enclosure design and entry layout based on customer requirements.
- V. Certification Type  
 -Blank or GO – Gas only certification  
 -GD – Gas and Dust certifications

The AC and DC versions employ the same board layouts and circuitry. They differ only in input transformers and components in the input circuitry to transformers.

The component kit above includes the following components in addition to the power electronics:

User Interface: Model 6000-UIC-xx, Ⓢ II 2 G Ex ib [pxb] IIC T4 Gb;

The following items are able to be used with the system:

Temperature Hub: Model 6000-TEMP-01, Ⓢ II 2 G Ex ib IIC T4 Gb;

Temperature Sensor: Model 6000-TSEN-01, Ⓢ II 2 G Ex ib IIC T4 Gb; Ⓢ II 2 D Ex ib IIIC T210°C Db

I.S. Termination Board DIN mounted: Model 6000-ISB-XX, Ⓢ II 2 G Ex ib [pxb] IIC T4 Gb

Accessory Enclosure: 6000-DPE-01-XXXX: Ⓢ II 2 G Ex ib IIC T4 Gb; Ⓢ II 2 D Ex ib IIIC T60°C Db

Alternate Housing: 6000-EXKIT-XX-XX-GO: Ⓢ II 2 G Ex db ib [ib pxb] IIC T4 Gb

Alternate Housing: 6000-EXKIT-XX-XX-GD: Ⓢ II 2 G Ex db ib [ib pxb] IIC T4 Gb / Ⓢ II 2 D Ex ib tb [ib pxb] IIIC T60°C Db

Accessory Enclosure:  
 Ex ib IIC T4 Gb / Ex ib IIIC T60°C Db

6000    -DPE        -01        -ISBC  
 I            II                III            IV

- I. Series Family  
 -6000 – Basic Model
- E
- II. Housing Description  
 -DPE – Dust proof enclosure
- III. Enclosure Size / Number of Entries  
 -XX – Any 2 alpha-numeric combination that indicates an approx. 6" x 7.5" x 3.25" box with DIN rail and some number of entries, intended for use with I.S termination board and/or temperature hub.
- IV. Entry Type  
 -XXXX – Any 4 alpha-numeric combination that indicates the type of properly rated cable gland and plug combination provided with the enclosure.

Temperature range

	Gas	Dust
6000 Main Control Unit (Standard Main Housing) 6000-xx-S2-UN-XX-XX	-20°C to +60°C	-20°C to +50°C
6000 Main Control Unit (Kit version) 6000-xx-S2-UN-CK-XX	-20°C to +60°C	-20°C to +60°C
Accessory Enclosure 6000-DPE-01-XXXX	-20°C to +60°C	-20°C to +60°C
User Interface 6000-UIC-XX	-20°C to +60°C	N/A
IS Interface Board	-20°C to +60°C	N/A

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IS Interface Board DIN Mounted 6000-ISB-XX	-20°C to +60°C	N/A
Temperature Hub 6000-TEMP-XX	-20°C to +60°C	N/A
Temperature Sensor 6000-TSEN-XX	-20°C to +100°C	
6000 Main Control Unit (Kit version – Alternate) 6000-EXKIT-XX-XX- YY	-20°C to +60°C	20°C to +50°C
Accessory Enclosure 6000-DPE-01-XXXX	-20°C to +60°C	-20°C to +60°C
User Interface 6000-UIC-XX	-20°C to +60°C	N/A
IS Interface Board	-20°C to +60°C	N/A
IS Interface Board DIN Mounted 6000-ISB-XX	-20°C to +60°C	N/A
Temperature Hub 6000-TEMP-XX	-20°C to +60°C	N/A
Temperature Sensor 6000-TSEN-XX	-20°C to +100°C	

**Electrical data**

Intrinsically safe specifications:

U<sub>m</sub>: 250 V

Purge and Pressurization Control Input:

AC Version - 100-250 V ac, 50-60 Hz, 200 mA

DC Version - 20-30 V dc, 600 mA

Purge Control Output:

Enclosure Contact Output - 8 A at 240 V ac

Dry Contact (2) SPST N.O. - 8 A at 24 V dc

Auxiliary 1 Contact Output - 2 A at 240 V ac

Dry Contacts, SPDT - 2 A at 24 V dc

Auxiliary 2 Contact Outputs - 2 A at 240 V ac

Dry Contacts, SPDT - 2 A at 24 V dc

Maximum Inlet Pressure - 8.27bar (120 psi)

Intrinsic Safety Terminals:

Terminals:	U <sub>o</sub> (V)	I <sub>o</sub> (mA)	Groups	C <sub>o</sub> (uF)	L <sub>o</sub> (mH)
Input 1+,1-, Input 2+,2- Input 3+,3-, Input 4+,4-	8.61	5	IIC	0.6	50
			IIB, IIA	1.0	150
Solenoid	28	110	IIC	0.041	0.5
			IIB, IIA	0.32	1.5

**Installation instructions**

See Special Conditions for Safe Use.

Unused apertures shall be closed with suitable blanking elements.

For ambient temperatures below -10 °C and above +60 °C use field wiring suitable for both minimum and maximum ambient temperature.

**Mounting instructions**

Refer to "Instructions".

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## Schedule

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### Routine tests

Routine tests according to EN 60079-11 cl. 11.2 are required for infallible transformers.

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### Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [ 8 ] on page 1 of this EC-Type Examination Certificate.

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### Specific conditions of use:

- Conduit seals shall be certified in type of explosion protection flameproof "db", suitable for the conditions of use and correctly installed to the two pipe nipples extending from the enclosure. All NPT Threads are to be minimum 5 thread engagement, wrench tight.
- Conduit seals shall be installed within 18 in. (450 mm) of the flameproof "db" enclosure.
- When the purge control unit is mounted to an enclosure, the complete unit shall be evaluated to the current revision of EN 60079-2.
- The purge control unit has an operating temperature of 135°C (T4 temperature class). This temperature shall be considered when mounted to an enclosure.
- The device must be installed in accordance with the manufacturer's installation drawing number 116-B027.
- Intrinsically safe cables extending from the flameproof "db" enclosure must be provided with at least 0.25mm insulation thickness per conductive core to maintain segregation between intrinsically safe circuits.
- The cable entries may be used only in places where they are protected against the influence of mechanical danger.
- The non-metallic membrane touchpad and display is a potential electrostatic discharge hazard. Use only water damp cloth and allow to air dry for cleaning device. Do not use or install in high charge areas.
- In hazardous dust environment, regularly remove dust from the Control Unit enclosure to prevent excessive temperature rise, including the solenoid valve.
- Only Pressure Relief Vent: Model EPV-6000-xx-xx, covered under the following certificates, DEMKO 15 ATEX 1622X, DEMKO 07 ATEX 0705753X or SIRA 09 ATEX93337X can be used with devices covered by this certificate.
- The 6000-ISB-XX I.S. termination board DIN mounted and the 6000-TEMP-XX I.S. temperature hub must be mounted in an enclosure that is certified for the area classification. This device cannot be mounted in the hazardous dust atmosphere unless the enclosure protecting it is certified for the area. The pressurized enclosure does not account for this type of enclosure because power to this device is required before safe operation. Separation of I.S. and Non – I.S. wiring is required by local codes.
- Caution must be used when handling or cleaning the products so there is no static charge buildup. Do not wipe off 6000-TSEN-xx sensor with dry cloth or use in the presence of high charge generating processes such as ionizers or electrostatic equipment.
- Also provided with previously certified cable glands as specified in the test reports.
- Enclosure 6000-DPE-xx is only for IS termination board 6000-ISB-xx and/or 6000-TEMP-xx.

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### Essential Health and Safety Requirements

Concerning ESRs this Schedule verifies compliance with the Annex III of ATEX directive only. By placing the product on the market, the manufacturer declares compliance with other relevant Directives, and all other safety related requirements including those of Annex II of this Directive.

### Additional information

For the purge and pressurization control system component kit, all markings are located on the power electronics enclosure. In addition, the user interface are marked II 2 G Ex ib [pxb] IIC T4 Gb, "Part of DEMKO 07 ATEX 0705753X". The temperature hub is marked II 2 G Ex ib IIC T4 Gb and II 2 D Ex ib IIIC T210°C Db, "Part of DEMKO 07 ATEX 0705753X". The temperature sensor is marked II 2 G Ex ib IIC T4 Gb and II 2 D Ex ib IIIC T210°C Db, "Part of DEMKO 07 ATEX 0705753X". The I.S. Termination Board DIN mounted is marked II 2 G Ex ib [pxb] "Part of DEMKO 07 ATEX 0705753X". The Conduit Cap is marked II 2 G Ex db IIC T4 Gb and II 2 D Ex tb IIIC T60°C Db, "Part of DEMKO 07 ATEX 0705753X".

The Stainless Steel Purge Controller enclosure has been evaluated for an IP64 rating in accordance with EN 60524:1991 + A1:2000.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in ANNEX III to Directive 94/9/EC of the European Parliament and the Council of 23 March 1994.

This EC-Type Examination Certificate applies for the products that were previously certified under SIRA 09ATEX9337X. This certification only covers those products that were manufactured according to the design covered by this certificate. Products shipped under the DEMKO 07 ATEX 0705753X may be used with already installed equipment certified under the SIRA 09ATEX9337X certificate. When this situation occurs, the specific conditions of use and installation instructions referenced in the DEMKO 07 ATEX 0705753X certificate shall be considered.