

EU-TYPE EXAMINATION CERTIFICATE



Equipment or Protective System intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

EU-Type Examination Certificate Number: **DEMKO 07 ATEX 0705753X Rev. 10**

Product: **Purge and Pressurization System, 6000 Series**

Manufacturer: **Pepperl+Fuchs SE**

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

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

UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive.

The examination and test results are recorded in the confidential report no. **US/UL/ExTR14.0117/05.**

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

EN IEC 60079-0:2018
EN 60079-11:2012

EN 60079-1:2014
EN 60079-31:2014

EN 60079-2:2014
EN IEC 60079-31:2024

Where additional criteria beyond those given here have been used, they are listed at item 18 in the Schedule.

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed under item 17 of this certificate.

This EU-Type Examination Certificate relates only to the technical design of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by the certificate.

The marking of the product shall include the following (marking is provided in the Schedule as a part of item 15, if applicable):

 II 2 G Ex db ib [ib Gb] [pxb Gb] IIC T4 Gb /  II 2 D Ex ib tb [ib Db] [pxb Db] IIIC T60°C Db
 II 2 G Ex db [ib Gb] [pxb Gb] IIC T4 Gb /  II 2 D Ex tb [ib Db] [pxb Db] IIIC T80°C Db
 II 2 G Ex ib [pxb Gb] IIC T4 Gb
 II 2 G Ex ib [ib Gb] IIC T4 Gb /  II 2 D Ex ib [ib Db] IIIC T60°C Db
 II 2 G Ex ib [ib Gb] IIC T4 Gb
 II 2 G Ex ib [ib Gb] IIC T4 Gb /  II 2 D Ex ib [ib Db] IIIC T210°C Db

Certification Manager
Thomas Wilson

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 ATEX 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 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

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Notified Body

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
Tel. +45 44 85 65 65, info.dk@ul.com, www.ul.com



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Description of Product

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

6000	-DV	-S2	-UN	-WH	-AC
Series Family	Valve Type	Safety Integrity	Certification Type	Housing Configuration	Voltage Version
-6000 – Basic Model					
	-DV – Digital Solenoid Valve				
	-NV – No Valve				
		-S2 – Safety level 2			
			-UN - universal design		
			-4AN – universal, no mounting bracket		
				-WH – Stainless Steel	
				-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.	
					-AC – 100-250 V ac (standard current)
					-AH – 100-250 V ac (high current)
					-DC – 20-30 V dc (standard current)
					-DH – 20-30 V dc (high current)

The AC and AH, and DC and DH versions employ the same board layouts and circuitry. They differ only in input transformers and components in input circuitry to transformers, and alarm relay rating.

Purge and Pressurization Control System Alternate Kit

Power Electronics:

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

6000	-EXKIT	-AC	-01	-GO
Series Family	Kit Housing Type	Voltage Selection	Enclosure Configuration	Certification Type
-6000 – Basic Model				
	-EXKIT – Indication that standard kit version (6000-xx-S2-XX-CK-xx) is placed into an appropriate enclosure for use in hazardous areas.			
		-AC – 100-250 V ac (standard current)		
		-AH – 100-250 V ac (high current)		
		-DC – 20-30 V dc (standard current)		
		-DH – 20-30 V dc (high current)		
		-XX – Any 2 alpha-numeric combination that indicates specific enclosure design and entry layout based on customer requirements.		
				-Blank or GO – Gas only certification
				-GD – Gas and Dust certifications



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The AC and AH, and DC and DH versions employ the same board layouts and circuitry. They differ only in input transformers and components in the input circuitry to transformers, and alarm relay rating.

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 Gb] 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 Gb] 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 Gb] [pxb Gb] IIC T4 Gb

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

Accessory Enclosure:

Ex ib [ib Gb] IIC T4 Gb / Ex ib [ib Db] IIIC T60°C Db

6000	-DPE	-01	-ISBC
Series Family	Housing Description	Enclosure Size / Number of Entries	Entry Type
-6000 – Basic Model	-DPE – Dust proof enclosure	-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.	-XXXX – Any 4 alpha-numeric combinations that indicates the type of properly rated cable gland and plug combination provided with the enclosure.

Performance testing

The optical radiation output of the product with respect to explosion protection, according to Annex II clause 1.3.1 of the Directive 2014/34/EU is covered in this certificate based on Exception 1) to the scope of EN 60079-28:2015.

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Temperature range

<i>Model</i>	<i>Gas</i>	<i>Dust</i>
6000 Main Control Unit (Standard Main Housing) 6000-xx-S2-XX-XX-AC 6000-xx-S2-XX-XX-DC	-20°C to +60°C	-20°C to +50°C
6000 Main Control Unit (Standard Main Housing) 6000-xx-S2-XX-XX-AH 6000-xx-S2-XX-XX-DH	-20°C to +60°C (8A), derated to -20°C to +55°C (12A)	-20°C to +50°C
6000 Main Control Unit (Component Kit) 6000-xx-S2-XX-CK-AC 6000-xx-S2-XX-CK-DC	-20°C to +60°C	-20°C to +60°C
6000 Main Control Unit (Component Kit) 6000-xx-S2-XX-CK-AH 6000-xx-S2-XX-CK-DH	-20°C to +60°C (8A), derated to -20°C to +55°C (12A)	-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	
6000 Main Control Unit (Alternate housing) 6000-EXKIT-AC-XX-XX 6000-EXKIT-DC-XX-XX	-20°C to +60°C	-20°C to +50°C
6000 Main Control Unit (Alternate Enclosure) 6000-EXKIT-AH-XX-XX 6000-EXKIT-DH-XX-XX	-20°C to +60°C (8A), derated to -20°C to +55°C (12A)	-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	

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Electrical data

Intrinsically safe specifications:

U_m : 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:

Standard Current (AC/DC Variants)

Enclosure Contact Output - 8 A at 240 V ac

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

High Current (AH/DH Variants)

Enclosure Contact Output - 12 A at 240 V ac

Dry Contact (2) SPST N.O. - 12 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_o (V)	I_o (mA)	P_o (mW)	Groups	C_o (uF)	L_o (mH)
Input 1+,1-, Input 2+,2- Input 3+,3-, Input 4+,4-	8.61	5	11	IIC	0.6	50
				IIB, IIA	1.0	150
Solenoid	28	110	770	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 $-10\text{ }^{\circ}\text{C}$ and above $+60\text{ }^{\circ}\text{C}$ use field wiring suitable for both minimum and maximum ambient temperature.

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 EU-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 conduit extensions extending from the enclosure. All NPT threads are to be minimum 5 thread engagement, wrench tight.
- Conduit seals shall be installed directly to the flameproof "db" enclosure, or the conduit extensions provided with it.
- When the purge control unit is mounted to an enclosure, the complete unit shall be evaluated to the current revision of IEC/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. See IEC 60079-32-1 for further information.
- 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 can be used with devices covered by this certificate:
 - For ATEX applications: Certificate No. DEMKO 15 ATEX 1622X, DEMKO 07 ATEX 0705753X, or SIRA 09ATEX9337X
- 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 build-up. 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. See IEC 60079-32-1 for further information.
- The 6000 systems may also be provided with previously certified items (operators, cable glands, terminals box, etc.) as specified in the test reports.
- Enclosure 6000-DPE-xx is only for IS termination board 6000-ISB-xx and/or 6000-TEMP-xx
- The flameproof joints are not intended to be repaired.

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Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

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 Gb] 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 Gb] "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 trademark  **PEPPERL+FUCHS** will be used as the company identifier on the marking label.

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.

This EU-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.