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Schema di certificazione
CESI-ATEX



CERTIFICATE

[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use
in potentially explosive atmospheres
Directive 2014/34/EU**

[3] Supplementary EU-Type Examination Certificate number:

CESI 12 ATEX 033 X /05

[4] Product: **Electro-pumps type EX50 12V, EX50 230V and EX75 12V**

[5] Manufacturer: **Piusi S.p.A.**

[6] Address: **via Pacinotti, 16A
46029 Suzzara - MN
Italy**

[7] This supplementary certificate extends EC-Type Examination Certificate CESI 12 ATEX 033 X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] CESI, notified body n. 0722 in accordance with Article 17 of the Directive 2014/34/EU of the Parliament and Council of 26 February 2014, 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 confidential report n. EX-C0011789.

[9] In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

[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 EU-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

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

II 2G Ex db h IIB T4 Gb

This certificate may only be reproduced in its entirety and without any change, schedule included.

Date 2020/09/15 - Translation issued on 2020/09/15

Prepared
Tiziano COLA

Verified
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Approved
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ACCREDIA
CENTRO ITALIANO DI ACCREDITAMENTO

PRD N. 018B
Membro degli Accordi di Mutuo
Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC
Mutual Recognition Agreements

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Schedule

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SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 033 X /05

[15]

Description of the variations to the product

With this supplementary certificate, the original project has been subjected to the following variations:

- Product assessment according to the new harmonized standards:
 - **EN IEC 60079-0: 2018** (updated with respect to the previous issue)
 - **EN 60079-1: 2014** (already up to date)
 - **EN ISO 80079-36: 2016** (updated with respect to the previous issue)
 - **EN ISO 80079-37: 2016** (updated with respect to the previous issue, applied protections: “c” and “k”);
- For the model EX50 230V, it has been added new electric motor and the relevant supply electronics, thermal protection included; external sizes are unchanged;
- It has been added the possibility of using other materials for the motor shaft and for its cylindrical enclosure.
- The annexed drawings have been updated in order to better define all the aspects of the design. In the drawing EX002 the joints have been redefined, but the changes maintain previous gaps, according to the tested samples.
- According to the new harmonized standards, it has been changed the marking of the product:

 **II 2G Ex db h IIB T4 Gb**

Description of equipment

Electric pumps type EX50 (12V or 230V supplied) and EX75 (12V supplied) are flame proof apparatuses made of an electric motor and a coupled hydraulic pump. The product is suitable for the transfer of flammable fluids as foreseen by the manufacturer.

The electrical part (motor, supply electronics, switch and electrical junctions) is held in a multi compartment flame proof enclosure, a side of which is closed by the body of the hydraulic part: a volumetric rotating pump equipped with a bypass valve.

The electric motors are equipped with protecting devices of different type and principle of operation:

- Automatic rearm thermal protection, on the type EX50 230V, with a pre-set threshold;
- Manual rearm circuit-breakers, on the types EX50 and EX75 12V, with a pre-set threshold.

A stretch of the motor shaft, between flameproof enclosure and hydraulic part, is ventilated through three radial openings which allow ventilation, creating a separation zone between the hydraulic circuit and the electrical part.

These electric pumps are foreseen for discontinuous service as defined in the table below.

This certificate bases on the assumption that the operation conditions are compliant with the classification zone 1 inside the pump.

Electrical characteristics

<i>Electric pump type</i>	<i>EX50 230V</i>		<i>EX50 12V</i>	<i>EX75 12V</i>
	<i>Version A (*)</i>	<i>Version B</i>		
<i>Rated voltage</i>	230 Vac (50/60Hz)		12 Vdc	
<i>Rated current</i>	0.8 A		17 A	20 A
<i>Max power in bypass</i>	230 W		300 W	312 W
<i>Insulation class</i>	H	F		
<i>Rotation speed (max)</i>	2700 min ⁻¹			
<i>Type of service</i>	max 30' ON min 30' OFF		max 30' ON min 60' OFF	max 30' ON min 30' OFF
<i>Motor protection</i>	BR-B2D 90°C	Klixon Sensata 15AM 125°C	Sensata EXT 248-28	Sensata EXT 248-30

(*) New motor, added with this issue of the certificate.

Marking: II 2G Ex db h IIB T4 Gb

Ambient temperature: -10°C < T_{amb} < 40°C

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Schedule

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SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 033 X /05

Warning labels

“DO NOT OPEN WHEN ENERGIZED”

“CAUTION - AUTOMATIC THERMAL PROTECTED MOTOR”

Cable entry

The accessory used for the cable entry shall be certified according to standard EN 60079-0 and EN 60079-1 and according to the ATEX marking of the equipment. The selection of the cable gland and the electrical connection shall be carried out according to the standard EN 60079-14.

[16]

Report n. EX-C0011789

Routine tests

The manufacturer is exempted from carrying out the routine overpressure test, required by the standard EN 60079-1, because the enclosure has overcome the type test at four times the reference pressure: 3200 kPa (32 bar).

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Special conditions for safe use (X)

- The equipment shall be attended while working in order to suddenly detect possible malfunctioning, including the intervention of the internal protecting device and the pump stop;
- Follow the foreseen type of service, shown on the table at page 2, and avoid running the pump in bypass conditions or dry;
- In case the intervention of the internal protecting device repeats, in normal operation conditions, do not attempt to restart the electro-pump but send it to the manufacturer for due checks;
- Before any run, connect tanks and electro-pump, through the special screw, to a common earth;
- The usage shall comply with the classification zone 1 inside the pump;
- Keep clear the three openings which put the stretch of the shaft, between the flameproof enclosure and the pump, in connection with open air;
- The electrical connection of the electro-pump, especially when used on mobile vehicles, shall be carried out in safe zone or shall be suitably protected, using one of the protection methods foreseen by the standard EN 60079-0;
- The temperature of the fluid processed by the pump shall be inside the ambient temperature range;
- The flame paths of the flameproof enclosure are identified in the manufacturer's drawings; for information concerning their sizes do contact the manufacturer. Disassembly of the product is not allowed except for the opening of the cover, necessary for the electrical connection in the terminal box.
- Use steel fasteners having strength class not less than 8.8.

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Essential Health and Safety Requirements

EHSR are assured by compliance with safety conditions and by compliance with the following standards:

EN IEC 60079-0: 2018	Explosive atmospheres – Part 0: Equipment - General requirements
EN 60079-1: 2014	Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures “d”
EN ISO 80079-36: 2016	Explosive atmospheres – Part 36: Non-electrical equipment for explosive - Basic method and requirements atmospheres
EN ISO 80079-37: 2016	Explosive atmospheres – Part 37: Non-electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety “c”, control of ignition sources “b”, liquid immersion “k”

Schedule

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[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 033 X /05**

[19] **Descriptive documents** (prot. EX-C0011791)

- *Technical file EX50 & EX75 rev. 05 (110 pages)	dated	2020/04
- *Extract of the manual EX50, EX75 12V - doc. MO217E (18 pages)		
- *Extract of the manual EX50 230V - doc. MO218E (17 pages)		
- *Technical drawing n. EX001 rev. 02 – overview EX50, EX75 12V (2 pages)	dated	2020/09/15
- *Technical drawing n. EX012 rev. 02 – overview EX50 230V (2 pages)	dated	2020/09/15
- *Technical drawing n. EX002 rev. 05 – flameproof joints (2 pages)	dated	2020/08/04
- *Technical drawing n. EX003 rev. 04 – pump body	dated	2020/09/08
- *Technical drawing n. EX004 rev. 04 – junction box	dated	2020/09/08
- *Technical drawing n. EX005 rev. 03 – cover of the junction box	dated	2020/07/17
- *Technical drawing n. EX008 rev. 02 – lever pivot	dated	2019/05/21
- *Technical drawing n. EX006 rev. 03 – pipe and motor stator (2 pages)	dated	2020/07/17
- *Technical drawing n. EX007 rev. 02 – motor rotor (2 pages)	dated	2020/07/17
- *Technical drawing n. EX009 rev. 02 – electrical scheme EX50 12V	dated	2020/09/01
- *Technical drawing n. EX010 rev. 01 – brush older board EX50 12V	dated	2020/09/01
- *Technical drawing n. EX024 rev. 01 – electrical scheme EX75 12V	dated	2020/09/01
- *Technical drawing n. EX025 rev. 01 – brush older board EX75 12V	dated	2020/09/01
- *Technical drawing n. EX013 rev. 01 – electrical scheme & brush older board EX50 230V (4 pages)	dated	2020/09/01
- *Technical drawing n. EX011 rev. 02 – marking plates	dated	2020/07/24
- *Datasheet of the thermal protection and mechanical seal (4+2 pages)		

*Note: an * is included before the title of documents that are new or revised and annexed to this supplement.*

One copy of all documents is kept in CESI files.

Certificate history

Issue N.	Issue Date	Summary description of variations
05	Current	Standards updating, addition of a new electric motor for type EX50 230V, new materials for the shaft and the cylindrical enclosure of motor and other secondary variations
04	2017/05/15	Correction of the error concerning the flameproof joint of the shaft bore hole
03	2016/09/26	New pump type EX75-12V, gas group IIB added, new O-rings, use of circuit breakers for the thermal protection of the motor, standards updating
02	2015/09/11	Standards updating
01	2012/11/16	Addition of the pump type EX50 powered at 230 V
00	2012/08/31	First issue of the certificate (pumps EX50 powered at 12 V)