

CESI

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CESI S.p.A.
Via Rubattino 54
I-20134 Milano - Italy
Tel: +39 02 21251
Fax: +39 02 21255440
e-mail: info@cesi.it
www.cesi.it

CERTIFICATE



[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

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 /03

[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 n. 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-B6019846.

[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 equipment or protective system shall include the following:

II 2G Ex db IIB T4 Gb

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

Date 26/09/2016 - Translation issued the 26/09/2016

Prepared
Tiziano Cola

Verified
Mirko Balaž

Approved
Roberto Piccin

CESI S.p.A.

Testing & Certification Division
Business Area Certification
Il Responsabile

(Roberto Piccin)

Schema di certificazione

CESI-ATEX

ACCREDIA
ENTE 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

[13]

Schedule

[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 033 X /03**

[15] **Description of the variation to the product**

- A new type of electro-pumps has been added: EX75 powered at 12 V;
- Gas group has been changed from IIA to IIB for all the pump models;
- Sealing O-rings of the hydraulic part have been changed with other of higher quality;
- Thermal protections of the model EX 50 12V have been changed with manual reset circuit-breakers;
- Reference standards have been updated as well as the marking on the plate:
 - EN 60079-0: 2012 + A11: 2013 (non-updated standard)
 - EN 60079-1: 2014 (updated standard)
 - EN 1127-1: 2011 (non-updated standard)
 - EN 13463-1: 2009 (non-updated standard)

Description of equipment

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

The electrical part (motor and junctions) is held in a 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 electrical motors are equipped with protecting devices of different type and principle of operation:

- Automatic reset thermal protection, in the model EX50 230V, with a pre-set threshold;
- Manual reset circuit-breakers, in the models EX50 and EX75 12V, with a pre-set threshold;

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

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

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

The apparatus is equipped with an earthing screw which shall be connected, using a suitable cable, to an earthing point common with the fuel tank, before energizing the motor.

Electrical characteristics

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

Marking: II 2G Ex db IIB T4 Gb

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

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[13]

Schedule

[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 033 X /03**

Warning label

“DO NOT OPEN WHEN ENERGIZED”

“CAUTION - AUTOMATIC THERMAL PROTECTED MOTOR”

Cable entries

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

[16] **Report n. EX-B6019846**

Routine tests

The manufacturer is exempted from carrying out the routine overpressure test because the enclosures Ex d have overcome the type test at four times the reference the pressure: 3200 kPa (32 bar).

[17] **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 protection device and the pump stop;
- Follow the foreseen type of service, shown on the table at page 2, and avoid using the pump dry or in bypass conditions;
- In case the intervention of the internal protection 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 flame proof enclosure and the pump, in connection with open air;
- The electric connection of the electro-pump, especially when used as portable equipment, 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 flame-proof enclosure are identified in the manufacturer’s drawings; for information concerning their sizes do contact the manufacturer.

[18] **Essential Health and Safety Requirements**

Compliance to the EHSR of the new design is influenced by the use of a different type of protection against overloading of the motor. The compliance to the following requirement is influenced by the change adopted on the models EX50 12V and by the same kind of protection used on the new model EX75 supplied at 12V too.

Clause	Subject
1.2.8	Overload of equipment

This requirement has been covered by the evaluations carried out by the manufacturer, through risk analysis and guessing different failure scenery, and by the tests which showed the effective intervention of the circuit breaker earlier than dangerous condition could be reached.

[13]

Schedule

[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 12 ATEX 033 X /03**

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

- **EN 60079-0: 2012 + A11: 2013** Explosive atmospheres - Part 0: Equipment - General requirements;
- **EN 60079-1: 2014** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d";
- **EN 1127-1: 2011** Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology;
- **EN 13463-1: 2009** Non-electrical equipment for use in potentially explosive atmospheres — Part 1: Basic method and requirements.

[19] **Descriptive documents (prot. EX-B6019848)**

- | | | | |
|----------------------------------------------------------------------------------|-----|-------|------------|
| - Technical file of the equipment 3 rd edition (48 pages) | | dated | 2016/04 |
| - Installation, use and maintenance manual (2 pages) | | | |
| - Technical drawing n. EX001 rev. 01 – overall EX50, EX75 12V (2 pages) | | dated | 2016/04/21 |
| - Technical drawing n. EX002 rev. 03 – flameproof joints (2 pages) | | dated | 2016/03/07 |
| - Technical drawing n. EX003 rev. 02 – pump body | (*) | dated | 2015/05/25 |
| - Technical drawing n. EX004 rev. 03 – terminal box | (*) | dated | 2015/06/25 |
| - Technical drawing n. EX005 rev. 02 – terminal lid | (*) | dated | 2015/06/25 |
| - Technical drawing n. EX006 rev. 02 – pipe and motor stator | | dated | 2016/03/07 |
| - Technical drawing n. EX007 rev. 01 – motor rotor | | dated | 2016/03/07 |
| - Technical drawing n. EX008 rev. 01 – pivot lever | (*) | dated | 2015/06/25 |
| - Technical drawing n. EX009 rev. 01 – electrical scheme EX50 12V | | dated | 2014/12/15 |
| - Technical drawing n. EX010 rev. 00 – brush holder card 12V | (*) | dated | 29/05/2012 |
| - Technical drawing n. EX011 rev. 01 – plates drawing | | dated | 2016/06/26 |
| - Technical drawing n. EX012 rev. 01 – overall EX50 230V (2 pages) | | dated | 2016/04/22 |
| - Technical drawing n. EX013 rev. 00 – electrical scheme EX50 230V (2 pages) (*) | | dated | 2012/09/14 |
| - Technical drawing n. EX024 rev. 00 – electrical circuit EX75 12V | | dated | 2016/03/07 |
| - Technical drawing n. EX025 rev. 00 – brushes assembly EX75 (2 pages) | | dated | 2016/03/07 |
| - Data sheet Viton and motor protections (3 pages) | | | |
| - Facsimile EU declaration of conformity | | | |
| (*) Unchanged drawings since previous extension | | | |

One copy of all documents is kept in CESI files.

Certificate history

Issue N.	Issue Date	Summary description of variation
03	2016/09/26	New pump type EX75-12V, gas group IIB added, new O-rings, use of circuit breakers, 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)

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