



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

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|---------------------|---|-------------|--|
| Certificate No.: | IECEx CES 12.0016X | Page 1 of 5 | <u>Certificate history:</u> |
| Status: | Current | Issue No: 5 | Issue 4 (2018-08-21) Issue 3 (2017-06-15) Issue 2 (2015-10-30) Issue 1 (2013-05-03) Issue 0 (2012-10-08) |
| Date of Issue: | 2020-09-25 | | |
| Applicant: | Piusi S.p.A. Via Antonio Pacinotti, 16A I-46029 Suzzara (MN) Italy | | |
| Equipment: | Electric Pumps, Type EX50 230V, EX50 12V and EX75 12V | | |
| Optional accessory: | | | |
| Type of Protection: | Flameproof enclosures 'd', constructional safety 'c', liquid immersion 'k' | | |
| Marking: | Ex db h IIB T4 Gb | | |

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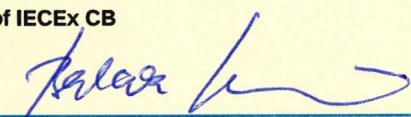
Approved for issue on behalf of the IECEx
Certification Body:

Mirko Balaz

Position:

Head of IECEx CB

Signature:
(for printed version)


25-9-2020

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

CESI
Centro Elettrotecnico
Sperimentale Italiano S.p.A.
Via Rubattino 54
20134 Milano
Italy

CESI



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Manufacturer: **Piusi S.p.A.**
Via Antonio Pacinotti, 16A
I-46029 Suzzara (MN)
Italy

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

ISO 80079-36:2016 Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic methods and requirements
Edition:1.0

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 source "b", liquid immersion "k"

This Certificate **does not** indicate compliance with safety and performance requirements
other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[IT/CES/ExTR12.0020/00](#)
[IT/CES/ExTR12.0020/03](#)

[IT/CES/ExTR12.0020/01](#)
[IT/CES/ExTR12.0020/04](#)

[IT/CES/ExTR12.0020/02](#)

Quality Assessment Report:

[DE/TPS/QAR18.0005/01](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Electric pumps type **EX50 230V**, **EX50 12V** and **EX75 12V** are transportable 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 electrical characteristics. This certificate bases on the assumption that 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.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- 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 electrical characteristics, avoiding to run the pump in bypass or dry conditions, according to the instruction manual;
- 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 IEC 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 fasteners of class 8.8 or better



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Equipment (continued):

Electrical characteristics

Model EX50 230V (Version "A")

- Rated voltage: 230 Vac - 50 Hz / 60 Hz
- Rated current: 0.8 A
- Maximum power: 300 W
- Insulation class: H
- Service type: max 30' ON - min 30' OFF
- Thermal protector: BR-B2D 90°C

Model EX50 230V (Version "B")

- Rated voltage: 230 Vac - 50 Hz / 60 Hz
- Rated current: 0.8 A
- Maximum power: 300 W
- Insulation class: F
- Service type: max 30' ON - min 30' OFF
- Thermal protector: Klixon Sensata 15AM 125A

Model EX50 12V

- Rated voltage: 12 Vdc
- Rated current: 17 A
- Maximum power: 300 W
- Insulation class: F
- Service type: max 30' ON - min 60' OFF
- Thermal protector: Sensata EXT 248-30

Model EX75 12V

- Rated voltage: 12 Vdc
- Rated current: 20 A
- Maximum power: 312 W
- Insulation class: F
- Service type: max 30' ON - min 30' OFF
- Thermal protector: Sensata EXT 248-30

All models

Maximum rotating speed: 2700 min⁻¹

Ambient temperature: -10°C ≤ Tamb ≤ +40°C

Marking according to the standards: **Ex db h IIB T4 Gb**

The protection against ignition by potential non-electrical ignition sources is obtained using the requirements of the constructive protection "c" and immersion in liquids "k" (standard ISO 80079-37).

Warning labels:

"Do not open when energized"

"Caution - Automatic thermal protected motor"

Installation conditions:

The accessory used for cable entry shall be suitably certified according to the standard IEC 60079-1 and shall be chosen with respect to the requirements of the current electrical installations rules.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Variation 5

Variation 5.1

For the model EX50 230V, it has been added a new electric motor and the relevant supply electronics, thermal protection included; external sizes are unchanged.

Variation 5.2

It has been added the possibility of using other materials for the motor shaft and for its cylindrical enclosure.

Variation 5.3

Other secondary variation, mainly documental.

Variation 5.4

With this issue the whole electric pump is evaluated, not only the electric motor: that means the potential non-electrical ignition sources are assessed as well, using the standards ISO 80079-36 and ISO 80079-37 for what concerns the types of protection "c" (constructive) and "k" (liquid immersion).

Variation 5.5

Updating of the standards.

Standards used for the assessment of the equipment up to last issue:

- IEC 60079-0: 2011
- IEC 60079-1: 2014

Now, all models have been assessed according to the standards:

- IEC 60079-0: 2017
- IEC 60079-1: 2014
- ISO 80079-36: 2016
- ISO 80079-37: 2016