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Schema di certificazione

# CESI-atex



PRD N. 018B

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC  
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

[1] **EU-TYPE EXAMINATION CERTIFICATE**

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

[3] EU-Type Examination Certificate number:

**CESI 19 ATEX 003 X**

[4] Product: **Electric pumps model EX20 12V and EX30 12V**

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

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

[7] This product and any acceptable variation thereto is specified in the schedule 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 European Parliament and Council of 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 Product 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-B9000314.

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

**EN 60079-0:2012+A11:2013    EN 60079-1:2014  
EN 80079-36:2016    EN 80079-37:2016**

except in respect of those requirements listed at item 18 of the Schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the Product 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 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 this certificate.

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

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

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

**Date** 2019/02/18 - Translation issued the 2019/02/18

**Prepared**  
Tiziano COLA

**Verified**  
Mirko BALAZŽ

**Approved**  
Roberto PICCIN

[13]

## Schedule

[14]

**EU-TYPE EXAMINATION CERTIFICATE n. CESI 19 ATEX 003 X**

[15] **Description of Product**

Electro-pumps model EX20 12V and EX30 12V are equipment made up of a flame proof electric motor coupled with a hydraulic pump. The product is suitable for the transfer of flammable fluids, according to the manufacturer's specifications.

The electrical part (motor and supplying electronics) is held in a flame proof enclosure formed by a steel pipe, closed at one side by an end-shield having the calibrated shaft passage and at the other side by an end-shield which incorporate the cable gland.

The hydraulic part (volumetric rotative pump, with by-pass valve) is attached to the motor end-shield and leaves a free volume of air, with natural ventilation, between the two parts. The pump is keyed on the motor shaft.

The electric motors are equipped with a manual reset protecting device with a pre-set intervention threshold.

The two models differ one from the other for the electrical characteristics: EX20 is foreseen for continuous service and is equipped with a thermal protection with intervention threshold set at 130°C, EX30 is foreseen for discontinuous service: maximum 30 minutes ON interspersed by minimum 60 minutes OFF and is equipped with a protection against overload calibrated at 20A with temperature 25°C.

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 tanks, before energizing the motor.

At switch-on, the pump could operate in a bypass condition, in case of a closed outlet duct, and then pass into delivery when it opens. The time-length of the bypass functioning shall be limited to minimum time and anyway never longer than 30 seconds.

### *Electrical characteristics*

#### Model EX20

Rated supply voltage	<b>12 Vdc (±10%)</b>
Rated supply current	<b>7 A</b>
Rated power	<b>84 W</b>
Rotation speed (max)	<b>1400 min<sup>-1</sup></b>
Type of service	<b>CONTINUOUS S1</b>
Motor protection	<b>Klixon Sensata 3MP68393A-900 (intervention at 130°C)</b>
Insulation class	<b>H</b>

#### Model EX30

Rated supply voltage	<b>12 Vdc (±5%)</b>
Rated supply current	<b>12 A</b>
Rated power	<b>144 W</b>
Rotation speed (max)	<b>2700 min<sup>-1</sup></b>
Type of service	<b>DISCONTINUOUS max 30' ON - min 60' OFF</b>
Motor protection	<b>Klixon Sensata EXT 244-20 (intervention at I=20A @ 25°C)</b>
Insulation class	<b>F</b>
Ambient temperature:	<b>-10°C ÷ +40°C</b>
ATEX marking:	<b>II 2G</b>
Marking according to the harmonized standards:	<b>Ex db h IIA T4 Gb (with shaft passage gap ≤ 0.37 mm)</b> <b>Ex db h IIB T4 Gb (with shaft passage gap ≤ 0.30 mm)</b>

The only difference between models marked IIA and IIB is the maximum gap of the cylindrical flameproof joint through which the motor shaft crosses the end-shield. The apparatus is protected, against the ignition due to potential non-electrical sources, using the constructive protection "c" (standard EN 80079-37).

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[13]

**Schedule**

[14]

**EU-TYPE EXAMINATION CERTIFICATE n. CESI 19 ATEX 003 X**

**Cable entry**

Electric pumps are furnished with the supply cable already connected. The connection of the cable to the power supply shall be carried out according to the standard EN 60079-14 and in force regulations for electrical systems, observing the special conditions for safe use (X).

The cable, shown in the following table, has been flameproof tested (EN 60079-1) with length **1000 mm**, hence its length shall not be reduced below such value.

<i>type</i>	<i>Manufacturer</i>	<i>rating</i>
NONT14A-XX-013	WUXI XINHONGYE WIRE & CABLE Co. LTD	Up to +125°C 300V

It is also possible to use different cables of the same diameter; in such case its minimum length shall not be lower than **3000 mm** (standard EN 60079-14).

**Warning labels**

“CAUTION - AUTOMATIC THERMAL PROTECTED MOTOR”

[16]

**Report n. EX-B9000314**

**Routine tests**

The manufacturer is exempted from carrying out the routine overpressure test on the enclosure since it has overcome the type test at a pressure greater than four times the reference pressure.

[17]

**Special conditions for safe use**

- The electric pump is furnished with the supply cable permanently connected and without a switch for start and stop. The electrical cable shall be connected to the power supply in safe zone or using one of the protection methods foreseen by the standard EN 60079-0 with a switch off button; the cable cannot be reduced in length;
- The equipment shall be attended while working to suddenly detect possible malfunctioning, including the intervention of the internal protection device and the pump stop;
- Observe the type of service foreseen for the model of electric pump as shown on page 2, avoid using the pump dry or in bypass conditions;
- The apparatuses are equipped with internal protection devices against overheating, with manual restart; in case the intervention of the device repeats, in normal operation conditions, do not attempt to restart the pump but send it to the manufacturer for due checks;
- Before any run, connect tanks and pump, through the special screw, to a common earth;
- 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 temperature of the fluid processed by the pump shall be inside the ambient temperature range shown on the marking plate.
- The flame-paths of the flameproof enclosure are identified in the manufacturer’s drawings. For information concerning their sizes do contact the manufacturer.

[18]

**Essential Health and Safety Requirements**

Assured by conformity with the harmonized standards, by the manufacturer’s risk assessment and by compliance with the safety instructions.

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[13]

## Schedule

[14]

**EU-TYPE EXAMINATION CERTIFICATE n. CESI 19 ATEX 003 X**

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[19] **Descriptive documents** (prot. EX-B9000315)

- Technical file 1<sup>st</sup> edition FT Pumps EX30-EX20\_rev00 (199 pages) dated 2019/02
- Installation, use and maintenance manual, Bulletin MO436 ITEN\_OO (2 pages) dated 2019/02
- Technical drawing n. EX026 rev. 0 – overall EX20, EX30 (6 pages) dated 2019/02/15
- Technical drawing n. EX027 rev. 0 – flameproof joints (2 pages) dated 2018/10/25
- Technical drawing n. EX028 rev. 0 – brush holder card (3 pages) dated 2018/11/07
- Technical drawing n. EX029 rev. 0 – motor end-shield hydraulics side dated 2018/10/30
- Technical drawing n. EX030 rev. 0 – motor end-shield cable entry side dated 2018/10/25
- Technical drawing n. EX031 rev. 0 – cable gland thread dated 2018/10/18
- Technical drawing n. EX032 rev. 0 – cable gland sealing rubber dated 2018/02/13
- Technical drawing n. EX038 rev. 0 – plates drawing (2 pages) dated 2019/02/08
- Technical drawing n. EX039 rev. 0 – motor pipe and stator dated 2018/10/29
- Technical drawing n. EX040 rev. 0 – motor rotor dated 2018/10/29
- Data sheets of the components (14 pages)
- Facsimile UE declaration of conformity

One copy of all documents is kept in CESI files.