



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

Certificate No.: **IECEX CSAE 24.0007X** Page 1 of 3 [Certificate history:](#)
Status: **Current** Issue No: 0
Date of Issue: 2024-09-10
Applicant: **HCP PUMP MANUFACTURER CO., LTD.**
No. 33, Jingjian Rd.
Pingtung City
Taiwan
Equipment: **Side Discharge Explosion-Proof Pump. AF, AL, GF-EX series**
Optional accessory:
Type of Protection: **Flameproof "db" & Intrinsic Safety "ib"**
Marking: Ex db ib IIB T4 Gb
Ta = 0°C to +40°C

Approved for issue on behalf of the IECEX
Certification Body:

Michelle Halliwell

Position:

Director Operations, UK & Industrial Europe

Signature:
(for printed version)

Date:
(for printed version)

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:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom





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Manufacturer: **HCP PUMP MANUFACTURER CO., LTD.**
No. 33, Jingjian Rd.
Pingtung City
Taiwan

Manufacturing locations: **HCP PUMP MANUFACTURER CO., LTD.**
No. 33, Jingjian Rd.
Pingtung City
Taiwan

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 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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 Report:

[GB/CSAE/ExTR24.0041/00](#)

Quality Assessment Report:

[GB/CSAE/QAR24.0007/00](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The AF, AL, GF-EX series Side Discharge Explosion-Proof Pump are submersible pumps designed to be operated below the liquid surface. The main components of the equipment's housing are made from cast iron (FC200). The pump is wired through two openings at the top, with the cable entry openings featuring M20*P1.5 threaded specifications. The series includes two specifications of motor frames, with inner diameters of 140mm and 160mm. The flameproof enclosure is divided into three parts: the upper cover, motor frame, and bearing bracket. Additionally, there are components related to the pump's operation, including various sizes of impellers and casings, which are not related to the explosion-proof structure.

The operating liquid level of the submersible pump must be higher than the CWL (Continuous Pumping Water Level), defined in the manual. The pump is powered by three-phase electricity, 380, 400, 415 Vac, 50Hz. The suitable temperature range for the liquid is 0°C to +40°C.

The pump's motor is equipped with an intrinsically safe Motor Thermal Sensor (MTS) that provides over-temperature protection. The MTS is installed in each phase of the motor coil, and they are connected in series to form an independent circuit. This system is designed to trip at a temperature of 120°C. Additionally, an intrinsically safe Moisture Sensor (MS) is positioned on the oil chamber of the unit. This sensor establishes a connection to the housing ground when water or conductive liquid is present, as the original lubricant is non-conductive. The wiring associated with both sensors complies with the requirements for intrinsically safe circuits.

Refer to certificate Annexe for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The control circuit needs to be connected to both the moisture and motor thermal sensors. This arrangement ensures the motor automatically stops if it detects either overheating or water ingress. These sensors are considered part of the intrinsic safety circuits. Adherence to the specified cable specifications and safety barrier, as outlined in the instructions, is mandatory. Further guidance relating to correct installation in accordance with this clause can be found in IEC 60079-14 Clause 16.
2. It is essential for the pumps to function with their main body submerged above the Continuous Pumping Water Level (CWL) at all times.
3. Level switches must regulate the minimum level of the process fluid being pumped. These switches are integrated into the motor control circuit, as described in item 1. The specific minimum level required depends on the version of the installation and is detailed in the manufacturer's documentation for installation, operation, and maintenance.
4. The provided cable must be adequately safeguarded mechanically and should be terminated at an appropriate terminal facility.
5. The motor incorporates thermal protection through the use of either a single 120°C thermistor or a 120°C thermal switch for each phase, embedded in the stator winding. These are meant to be connected to a protection circuit designed to maintain the stator temperature at a maximum of 120°C. With this configuration, the temperature class is designated as T4.
6. Use fasteners with yield stress ≥ 210 MPa.
7. The pump shall use IECEx/ATEX-certified Ex cable gland(s), M20x1.5, and the Ex cable gland(s) shall have same protection level as (Ex db IIB Gb) or better.

Annex:

[IECEX CSAE 24.0007X Annexe Iss 0.pdf](#)

Annexe to: IECEx CSAE 24.0007X Issue 0

Applicant: HCP Pump Manufacturer Co. Ltd.

Apparatus: Side Discharge Explosion-Proof Pump. AF, AL, GF-EX series



EQUIPMENT (continued)

The MTS and MS are intended to be connected to external IS barriers and have the following intrinsically safe entity parameters:

Ui: 30VDC, Ii: 120mA, Pi: 1.3W, Ci: 0.3nF, Li: 1μH

The model designation of the Side Discharge Explosion-Proof Pump is as follows:

80	AF	U	2	3.7	L	A	-	MS	-	Ex
①	②	③	④	⑤	⑥	⑦		⑧		⑨

No.	Description	Details
①	Discharge (mm)	32; 50; 80; 80(100)
②	Model	AF: SUBMERSIBLE SEWAGE WASTEWATER PUMPS AL: SUBMERSIBLE WASTEWATER/ EFFLUENT PUMPS GF: SUBMERSIBLE GRINDER PUMPS
③	Impeller Type	AF only: U: Vortex P: Open E: Channel C: Open Impeller with Cutter
④	Pole	Pole
⑤	Power	kW
⑥	Special version	L: Large Flow/Solid Passage H: High Head version
⑦	Version Remark	A, B, C, etc.
⑧	Moisture Sensor	MS
⑨	Explosion-Proof Version	Ex