



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 03ATEX9302X** Issue: **4**

4 Equipment: **Sump Pumps**

5 Applicants: **Flowserve Pumps GB Limited** **Flowserve (Austria) GmbH**

6 Address: **Hawton Lane** **Industriestraße B6**  
**Balderton** **2345 Brunn am Gebirge**  
**Newark** **Austria**  
**Notts**  
**NG24 3BU**  
**UK**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 13463-1:2009                      EN 13463-5:2011                      EN 13463-6: 2005

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 1 G/2 G D c IIC T1 to T6  
Tamb -80°C to +55°C

or



II 1 G/3 G D c IIC T1 to T6  
Tamb -80°C to +55°C



II 1 G/2 G D cb IIC T1 to T6  
Tamb -80°C to +55°C

or



II 1 G/3 G D cb IIC T1 to T6  
Tamb -80°C to +55°C

Project Number 26485

C Ellaby  
Deputy Certification Manager

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13 DESCRIPTION OF EQUIPMENT

The CPXV, CSP, ECPJ, JCP and WUJ Series Sump Pumps are flange mounted pumps that are designed to be fitted to a vessel or tank. The drive motor is located externally to the tank, the flange is fitted to the tank wall and a column, comprising shaft, bearings and support tube, connects the motor to the impeller in the pump unit.

The drive motor and external parts are Category 2 or 3 equipment as appropriate, suitably certified or provided with declarations of conformity against Directive 94/9/EC. The pump unit is located beneath the surface of the liquid in the tank and therefore is not subject to the requirements of Directive 94/9/EC. The column, shaft seals and bearings are located in the ullage space inside the tank and are Category 1 equipment.

The bearings and seals are manufactured from polymer or other materials having a low coefficient of friction. In addition to pumping liquid from the tank, the impeller also forces a small amount of the liquid through small bore pipes to lubricate the bearings.

The shaft is sealed into the flange by a liquid flushed seal, a liquid flushed cartridge seal or a dry running seal.




To prevent debris from blocking the lubrication system a filter unit is fitted to the pump unit.

**Variation 1** - This variation introduced the following changes:

- i. The addition of a new pump design, designation WUJ, this pump has:
  - A multi-stage thrust bearing assembly
  - A backstop transmission device that ensures shaft rotation in one direction only
  - Thrust bearing cooling fan assembly.
  - Different specific speed hydraulic assemblies
- ii. The modification of nameplate drawing J218/397, these changes are administrative and do not affect the aspects of the product that are relevant to explosion safety.
- iii. The equipment description to be changed to 'CPXV, CSP, ECPJ, JCP and WUJ Series Sump Pumps'.
- iv. The introduction of an alternative manufacturing site, Flowserve (Austria) GmbH, Industriestraße B6, 2345 Brunn am Gebirge, Austria.

**Variation 2** - This variation introduced the following changes:

- i. The Applicant's name and address was changed from Flowserve Pump Division, Newark NG24 3EN, UK to Flowserve Pumps GB Limited, Hawton Lane, Balderton, Newark, Notts NG24 3BU, UK.
- ii. The marking was modified to re-introduce information that is relevant to its use in explosive dusts, in addition, the Categories have been amended to more clearly describe the actual application of the product, a history of the marking is listed below:

Original	Previous	Latest
 II 1/2 G D c IIC T4 II 1/3 G D c IIC T4 Ta -40°C to +40°C	 II 1/2 G c IIC T1 to T6 II 1/3 G c IIC T1 to T6 Tamb -80°C to +55°C	 II 1 G/2 G D c IIC T1 to T6 II 1 G/3 G D c IIC T1 to T6 Tamb -80°C to +55°C

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**Variation 3** - This variation introduced the following changes:

- i. The fluid flushed single cartridge seal has been removed and "Stuffing box" was replaced by "Seal chamber".
- ii. The cyclone separator was replaced by a filtration device.
- iii. Additional strainer/filter details were provided.
- iv. Following appropriate re-assessment to demonstrate compliance with the requirements of the latest standards, EN 13463-1:2001 and EN 13463-5:2003 were replaced by EN 13463-1:2009 and EN 13463-5:2011.
- v. The equipment was assessed against the requirements of EN 13463-6:2005 for protection by control of ignition, this has introduced requirements for safety monitoring devices and necessitates the application of special conditions for safe use, consequently, an 'X' suffix was added to the certificate number. The markings were also updated to incorporate type of protection 'b'.
- vi. The products covered by this certificate were reviewed and, as defined by the manufacturer, the following list details the specific pumps that are now approved:

Model	Description
CPXV	Sump pump with line shaft bearings
CPXRV	Recessed impeller with back vanes
CPXVC	Cantilever sump pump standard or recessed impeller
Mark 3 Hydraulics Sump Pumps	CPXV, CPXVC or ESP3 Pumps
ECPJ	Impeller with front wear ring and back vanes
ECPJ-F	Recessed impeller
ECPJ-O	Semi-open impeller with back vanes
ECPJ-R	Impeller with front and back wear ring
ECPJ-R-H	Impeller with front and back wear ring and heated jacket
JCP	Impeller with front wear ring and back vanes, cantilever version
JCP-F	Recessed impeller, cantilever version
JCP-O	Semi-open impeller with back vanes, cantilever version
WUJ	Vertical multistage pump
WUJ-M	Medium head hydraulic
WUJ-L	Low head hydraulic
WUJ-R	Radial hydraulic
WUJ-H	High head hydraulic

**14 DESCRIPTIVE DOCUMENTS**

**14.1 Drawings**

Refer to Certificate Annexe.

**14.2 Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	15 August 2003	R53A10272A	The release of the prime certificate.

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Issue	Date	Report no.	Comment
1	15 October 2004	V51V12271A	The re-issue of the prime certificate to permit: i The Sump Pumps to operate in an ambient temperature range of $-80\text{ }^{\circ}\text{C}$ to $+55\text{ }^{\circ}\text{C}$ and to modify the marking accordingly. ii The Sump Pumps to be marked with temperature classifications of T1 to T6. iii The inclusion of additional sizes to the CPXV and CPXRV sump pump range. iv The addition of Mark 3 and CSPRV sump pumps to the hydraulic series for cantilever and non-cantilever arrangements. v The standard number to be changed from prEN 13463-5:2003 to EN 13463-5:2003. vi The removal of the dust marking.
2	26 February 2008	R52A17677A	This Issue covers the following changes: • All previously issued certification was rationalised into a single certificate, Issue 2, Issues 0 and 1 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format. • The introduction of Variation 1.
3	4 September 2009	R51A20884A	The introduction of Variation 2.
4	28 May 2013	R26485A/00	The introduction of Variation 3.

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

15.1 The user shall comply with the following restrictions when the pumps are fitted with safety monitoring devices, as identified by the application of type of protection 'b' in the marking:

- i. The end user shall ensure that the equipment is fitted with temperature and flow monitoring devices where applicable, as defined by the manufacturer.
- ii. The temperature sensors shall be connected into the system such that in the event that the critical temperature is detected, the equipment is immediately disconnected and is required to be manually reset in order to restart the equipment.
- iii. Flow sensors shall be connected into the system such that detection of any drop in flow will render the equipment stopped via the control panel control circuit.
- iv. To ensure that the pump is adequately flooded with liquid, the end user shall ensure that the sump is fitted with liquid level monitoring to shut down the pump and avoid starting if the liquid level is below the minimum, as defined by the manufacturer.
- v. In cases where it is unsafe for the pump system to have uncontrolled shut down, the end user shall ensure that a manual control measure, as a result of a warning alarm, is applied. The facility to incorporate a warning alarm is provided by the manufacturer.
- vi. The Safety Operating Devices shall be functionally checked prior to use and then periodically according to the manufacturers' instructions.

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16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 The mechanical seals that are fitted to the sump pumps shall be suitable for the temperature of the process fluid and their operating conditions.
- 17.4 It is recognised that these mechanical pumps are intended to be used in conjunction with electrical devices not covered by this certificate, the manufacturer shall therefore ensure that these devices are suitable for their intended application, this is especially important for those devices used to achieve type of protection 'b'. In addition, the manufacturer shall provide the user/installer with an appropriate copy of the certificate for any previously certified devices associated with the equipment.

# Certificate Annexe

Certificate Number: Sira 03ATEX9302X  
Equipment: Sump Pumps  
Applicants: Flowserve Pumps GB Limited  
Flowserve (Austria) GmbH



## Issue 0

Drawing No.	Sheet	Rev.	Date	Description
B736/392	1 and 2	-	04 Jun 03	CPXV and ECPJ Sump Pumps
J218/397	1 of 1	-	08 Aug 03	Nameplates for ATEX Cat 1 Equipment

## Issue 1

Drawing No	Sheet	Rev.	Date	Description
B736/392	1 and 2	B	13 Oct 04	CPXV and ECPJ Sump Pumps
J218/397	1 of 1	B	14 Sep 04	Nameplate

## Issue 2

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
B736/392	1 to 4	C	25 Feb 08	Flowserve Sump Pump Details For ATEX Category 1 Compliance
J218/397	1 of 1	C	25 Feb 08	Nameplate for ATEX Category 1 Equipment

## Issue 3

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Title
J218/397	1 of 1	D	01 Sep 09	Nameplate for ATEX Category 1 Equipment

## Issue 4

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Title
B736/392	1 to 4	D	08 Apr 13	Flowserve Sump Pump Details For ATEX Category 1 Compliance
J218/397	1 of 1	E	08 Apr 13	Nameplate For ATEX Category 1 Equipment

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