



## (1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

**PTB 00 ATEX 4109 X**



(4) Equipment: Barrel pump of types "F 426 S-41/.. or F 426 HC-41/.."

(5) Manufacturer: Firma Flux - Geräte GmbH

(6) Address: D-75433 Maulbronn, Talweg 12

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

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council 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 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 the confidential report PTB Ex 00-40109.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**PTB Testing Instructions "Explosion protection of barrel pumps" in connection with EN 1127-1 and EN 50014**

(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 in accordance with Directive 94/9/EC. 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 1/2 G IIB T4

Zertifizierungsstelle Explosionsschutz

By order:

Dr. H. Förster  
Regierungsdirektor



Braunschweig, 2000-04-13

sheet 1/4



(13) **SCHEDULE**(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 4109 X**(15) Description of the equipment

Barrel pump of types "F 426 S-41/.." or F 426 HC-41/.." (the pumps differ from one another only by the material selected; the full points are replaced by the rotor type) with an immersion tube length between 500 and maximally 2000 mm and a connection of up to G 1 ¼ for pumping flammable liquids of explosion groups IIA and IIB and temperature classes T1 to T4 from transportable containers. The barrel pump is composed of the pump casing in the form of a steel pipe, a pump shaft with shaft bearing and shaft packing, a pump rotor and pump stator, and an element for connecting the drive motor. The pump can optionally be equipped with different rotors. The function of the barrel pump can optionally be changed into that of a proportioning pump. Turning of the handle of an adjustment sleeve exposes the lateral holes of the outer tube. The liquid enters at the pump foot and is discharged from the lateral holes.

Type, materials and dimensions are specified in the drawings, parts list and data sheet whose numbers are given in this Schedule.

Explosion protection requirements:

Category 1: The external part of the pump's tubing between suction port and delivery end.

Category 2: The external part of the tubing between delivery end and the element for the connection of a drive motor, and the internal part of the tubing (during normal delivery it is covered by the liquid pumped).

(16) Test report PTB Ex 00-40109 (comprising 4 pages, 40 drawings, one parts list and 2 data sheets).

Result: The pattern complies with the provisions of Directive 94/9/EC for instruments of group II, (subgroup IIB according to EN 50014), temperature class T4 according to EN 50014 and with the requirements of category I (one part) and of category 2 (the other part) as specified under (15) above for the explosion protection requirements.

(17) Special conditions for safe use

- During use of barrel pumps of types "F 426 S-41/38", "F 426 S-41/37Z", "F 426 HC-41/38" and "F 426 HC-41/37Z", all components which are additionally attached to the connecting element (coupling, gear, drive motor, etc.) must be outside the transportable container. The requirements of equipment group II (subgroup IIB), category 2, temperature class T4 (EN 50014) must be met.
- The power of the drive motor (electrical or compressed-air-operated) must not exceed 1,2 kW and a number of revolutions of 14.000 min<sup>-1</sup>.
- The barrel pump must not be used in a stationary arrangement. During the pumping process, operation of the pump must be supervised so that phases in which the pump runs dry or empty are reduced to the minimum absolutely necessary in service.
- Before the barrel pump is put into operation, equipotential bonding must be ensured throughout the system in compliance with EN 50014:1992, section 15, and other EN, IEC and ISO provisions which are also applicable.



- Appropriate measures for equipotential bonding must be taken to prevent dangerous electrostatic charging of instrument parts. The following measures are required:
  - a) Earthing of the pump.
  - b) Equipotential bonding of the pump pipe with the container (barrel).
  - c) Equipotential bonding of the motor with the container (barrel) or with the pump pipe if pump pipe and drive motor are not conductively connected.
  - d) The container must be separately earthed if this is not already guaranteed by the installation.
  - e) The hose connected to the delivery end of the barrel pump must always be sufficiently conductive for electrostatic charges. If this is not guaranteed in an exceptional case, separate earthing of all conductive parts (for example, metallic nose piece at the hose end) is absolutely necessary.
- As in all circulation processes with electrically non-conductive flammable liquids, use of the pump as a proportioning pump may lead to electrostatic charging of the liquid circulated, in particular if it contains larger amounts of non-dissolved solid or liquid components.
- It must be ensured that in potentially explosive atmospheres, in compliance with the relevant provisions, the pump is connected
  - a) via an explosion-protected plug, or
  - b) via an explosion-protected terminal box.

If the connecting coupler (plug) or the terminal box is clearly outside the potentially explosive atmosphere, the point of connection need not be explosion-protected.

The above requirements must be included in the operating instructions of each barrel pump and are to be met/observed by the operator.

(18) Essential health and safety requirements

The essential ATEX requirements are met.



# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

## SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 4109 X

### Test documents


- a) Specimen of the barrel pump of type "F420 S2-../.." (construction of shaft bearing identical with that of type "F 426 S-41/.." and "F 426 HC-41/.." barrel pumps)
- b) PTB Test Certificate No. III B/S 1924 of March 6, 1987
- c) Drawings, parts list and data sheets

Drawing-No.	Date	Drawing-No.	Date
426 80 010	24.02.2000	426 21 002	24.02.2000
410 14 028	05.10.1998	426 21 003	24.02.2000
420 24 008	05.10.1998	426 21 005	24.02.2000
420 24 296	05.10.1998	426 21 007	24.02.2000
420 51 242	05.10.1998	426 21 009	24.02.2000
420 51 275	05.10.1998	426 21 010	24.02.2000
420 51 276	05.10.1998	426 21 013	24.02.2000
425 21 151	24.02.2000	426 21 014	24.02.2000
425 21 156	06.10.1998	426 21 018	24.02.2000
425 21 162	06.10.1998	430 21 100	17.02.2000
425 21 356	06.10.1998	430 21 400	17.02.2000
425 21 800	06.10.1998	430 21 431	06.10.1998
425 21 801	06.10.1998	900 77 013	24.02.2000
425 21 802	06.10.1998	900 97 007	06.10.1998
425 21 803	06.10.1998	907 90 003	06.10.1998
425 21 804	24.02.2000	909 74 000	06.10.1998
425 21 805	24.02.2000	912 19 002	06.05.1999
425 21 806	24.02.2000	914 90 010	06.10.1998
426 21 000	22.02.2000	920 51 011	06.10.1998
430 80 046	06.10.1998	920 51 013	06.10.1998
data sheet		Date	
426 80 010 (3 sheets)		24.02.2000	

List of test documents (2 sheets)	of 24.02.2000
Special steel data sheet No. 420 80 038	of 28.02.2000
Lubricant data sheet No. 430 80 003	of 28.02.2000

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