



Translation

**EC-Type Examination Certificate**

(1)

(2)

**- Directive 94/9/EC -  
Equipment and protective systems intended for use  
in potentially explosive atmospheres**

(3)

**BVS 03 ATEX E 156**

(4)

**Equipment: Inductive Pulse Amplifier Type FOP60/\*\*\_\*\*\_\*\***

(5)

**Manufacturer: KEM Küppers Elektromechanik GmbH**

(6)

**Address: D 85757 Karlsfeld**

(7)

The design and construction of this equipment and any acceptable variation thereto are specified in the schedule to this type examination certificate.

(8)

The certification body of Deutsche Montan Technologie GmbH, notified body no. 0158 in accordance with Article 9 of the Directive 94/9/EC of the European Parliament and the Council 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 test and assessment report BVS PP 03.2101 EG.

(9)

The Essential Health and Safety Requirements are assured by compliance with:

EN 50014:1997+A1-A2    General requirements  
EN 50020:2002         Intrinsic safety 'i'

(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, examination and tests of the specified equipment in accordance to Directive 94/9/EC.

Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate

(12)

The marking of the equipment shall include the following:

**Ex II 2G EEx ia IIC T4**

**Deutsche Montan Technologie GmbH**

Essen, dated 16. May 2003

Signed: Jockers

DMT-Certification body

Signed: Eickhoff

Head of special services unit

(13)

Appendix to

(14)

## EC-Type Examination Certificate

### BVS 03 ATEX E 156

 (15) 15.1 Subject and type

Inductive Pulse Amplifier Type

FOP60/\*\*-\*\*-\*\*

Code-numbers marking mechanical details

Optical wave length 660 nm = LW

Optical wave length 890 nm = US

Code-letters marking mechanical details



#### 15.2 Description

The Inductive Pulse Amplifier Type FOP60/\*\*-\*\*-\*\* is a battery supplied intrinsically safe apparatus receiving r.p.m./ flow measuring signals of magnetic gear-wheel flow meters without contacting the measuring medium.

The Inductive Pulse Amplifier comprises a light alloy or stainless steel enclosure mountable to mechanical flow meters containing printed circuit boards with electronic components, a pulse pickup inductor and a power supply battery (primary cell).

The pulse pickup inductor and associated shunt voltage limiters (The battery and current limiting resistors) are embedded in casting compound.

The Inductive Pulse Amplifier does not provide any connection facilities for external circuits. The measuring signal is transmitted optically (optical fibres).

#### 15.3 Parameters

##### 15.3.1 Internal battery power supply (primary cell)

Voltage	DC 3,67 V
Nominal capacity	1,5 Ah

##### 15.3.2 Optical measuring signal

Wave length of radiation	660 nm / 890 nm
Density of radiation	≤ 1,8 mW / mm <sup>2</sup>

##### 15.3.3 The following ambient temperature ranges apply to the Inductive Pulse Amplifier:

- 20°C ≤ T<sub>a</sub> ≤ +20°C for temperature class T6
- 20°C ≤ T<sub>a</sub> ≤ +40°C for temperature class T5
- 20°C ≤ T<sub>a</sub> ≤ +70°C for temperature class T4

(16)

#### Test and assessment report

BVS PP 03.2101 EG as of 16.05.2003

(17) Special conditions for safe use

None

---

We confirm the correctness of the translation from the German original.  
In the case of arbitration only the German wording shall be valid and binding.

45307 Essen, 16.05.2003  
BVS-Scha/Mi A 20030003

**Deutsche Montan Technologie GmbH**



---

DMT-Certification body



---

Head of special services unit