KEMA
REGISTERED QUALITY

translation

original language: German

(1) EC-TYPE EXAMINATION CERTIFICATE

(2) Equipment or protective system intended for use in potentially explosive atmospheres - Directive 94/9/EC

(3) EC-Type Examination Certificate Number: **KEMA 97ATEX4490**

(4) Equipment or protective system: **Liquid Level Switch Liquiphant S type FDL 60-.... and Type FDL 61-....**

(5) Manufacturer: **Endress + Hauser GmbH + Co.**

(6) Address: **Hauptstraße 1, 79689 Maulburg, Germany**

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

(8) KEMA, notified body number 0344 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system 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 confidential report no. 74490.

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

EN 50014 : 1992 + prA1 **EN 50020 : 1994** **EN 50284 : 1997**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system 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 or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

(12) The marking of the equipment or protective system shall include the following:

Ex II 1 G or Ex II 1/2 G EEx ia IIC T3 ... T6

Arnhem, 3 November 1998
by order of the Board of Directors of N.V. KEMA

C.M. Boschloo
Certification Manager

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ACCREDITED BY
THE DUTCH COUNCIL
FOR ACCREDITATION

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 97ATEX4490**

(15) **Description**

The Liquid Level Switch Liquiphant S type FDL 60-.... and type FDL 61-.... is used in a potentially explosive atmosphere of a flammable gas, liquid or vapour.
The Liquid Level Switch directly detects the limit of a fluid level using a symmetrical resonator and converts it into an electrical signal.

The different types of Liquid Level Switches are distinguished by a resonator directly mounted to the electronics enclosure (compact version) or by a resonator mounted to the enclosure via an extension tube.

Ambient temperature range at the electronics enclosure: -20 °C ... +70 °C.
Fluid temperature range: -40 °C ... +150 °C.

The relation between fluid temperature at the sensor and temperature class is shown in the following table:

Temperature class	Fluid temperature (sensor)
T6	≤ 85 °C
T5	≤ 100 °C
T4	≤ 135 °C
T3	≤ 150 °C

Electrical data

Supply and output circuit ..... (terminals 1 and 2)

in type of explosion protection intrinsic safety EEx ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:

U_i = 16,7 V
I_i = 150 mA
P_i = 1,0 W

The effective internal capacitance and inductance are negligibly small.

Sensor circuit ..... (internal connection)

in type of explosion protection intrinsic safety EEx ia IIC

The supply and output circuit and the sensor circuit are infallibly galvanically isolated.

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 97ATEX4490**

(16) **Report**

KEMA No. 74490.

(17) **Special condictions for safe use**

Not applicable.

(18) **Essential Health and Safety Requirements**

Essential Health and Safety Requirements not covered by standards listed at (9)	
Clause	Subject
1.0.6	Instructions

These Essential Health and Safety Requirements are examined and positively judged. The results are laid down in the report listed at (16).

(19) **Test documentation**

1. Certificate of Conformity KEMA No. Ex-94.D.8365 X

signed

2. Description (4 pages))
   Description to Certificate of Conformity (10 pages))
)
3. Drawing No. 960373-0021 A)
   960337-0000 A)
   960337-0003 A)
   960337-0004 A)
   960337-0007 A)
   960337-0008 A) 26.03.1998
   960337-0009 A)
   960337-0010 A)
   960337-0022 A)
   960337-0023 A)
   960337-0028 A)
   960337-0029 A)
   960337-0150 A)
   960337-0151 A)

(13) SCHEDULE

(14) to EC-Type Examination Certificate KEMA 97ATEX4490

(19) **Test documentation** (continued)

			signed
Drawing No.	960337-0052 A	)	
	960337-0053 A	)	
	960337-0154 A	)	
	960337-0155 A	)	
	960337-0156 A	)	26.03.1998
	960337-0157 A	)	
	960337-0058 A	)	
	960337-0059 A	)	
	960337-0060 A	)	
	960337-5036 A	)	
	960337-5037 A	)	24.08.1998
	960337-5080 A	)	
	960356-6061 C	)	
	960317-1045 A		27.07.1998

4. Samples.