KEMA

(1) # EC-TYPE EXAMINATION CERTIFICATE

(2) **Equipment and protective systems intended for use in potentially explosive atmospheres – Directive 94/9/EC**

(3) EC-Type Examination Certificate Number: **KEMA 02ATEX1012 X**

(4) Equipment: **Reflex Radar Level Transmitter Model VF03 Type VF030...**

(5) Manufacturer: **Hycontrol Ltd.**

(6) Address: **Larchwood House, Orchard Street, Redditch, Worcestershire, B98 7DP England**

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

(8) KEMA Quality B.V., notified body number 0344 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 confidential test report no. 2092571.

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

EN 50014 : 1997 + A1, A2 **EN 50020 : 2002** **EN 50284 : 1999** **EN 50281-1-1 : 1998 + A1**

(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 according to the 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 1 G EEx ia IIC T6 ... T3 or EEx ia IIB T6 ... T3
II 1/2 D T 100 °C IP 65

Arnhem, 3 May 2006
KEMA Quality B.V.

C.G. van Es
Certification Manager

PRODUCTS RvA C 001

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(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 02ATEX1012 X**

(15) **Description**

Reflex Radar Level Transmitter Model VF03 Type VF030.., consisting of an enclosure containing the electronics circuit and a passive probe, is used to measure the level or the volume of a fluid or solid process medium inside a vessel or tank. The distance to the surface of the process medium is determined by the reflexion time of an electro-magnetic pulse, transmitted in the probe system. The measured pulse delay is converted into a 4 ... 20 mA current signal.

There are variations in the probe type, material and length, in the process connection, in the mounting of the transmitter and in the electrical connections.
Depending on the process temperature, an extension tube between the enclosure and the process connection is present.

Ambient temperature range of the transmitter enclosure -30 °C ... +60 °C.
For the relation between ambient temperature, process temperature, temperature class and maximum surface temperature, refer to the Special conditions for safe use at (17).

Electrical data

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

U_i	=	30	V
I_i	=	150	mA
P_i	=	1	W
C_i	=	10	nF
L_i	=	10	µH

Routine tests

None.

(16) **Test Report**

KEMA No. 2092571.

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 02ATEX1012 X**

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

1. When the probe of a Level Transmitter is coated with a non-conductive layer, this probe may only be installed in a hazardous area where equipment category 1 G is required, under restriction of the apparatus group to IIA or IIB. For the enclosure however, this restriction does not apply.
2. The use of a Level Transmitter with a sensor with a non-conductive layer is not allowed in a potentially explosive atmosphere caused by combustible dust, unless precautions are taken to prevent electrostatic discharges. This must be pointed out to the user by means of a warning.
3. The enclosure of the level Transmitter may not be used in a potentially explosive atmosphere caused by combustible dust, requiring apparatus of equipment category 1 D.
4. Because the enclosure of the Level Transmitter is made of aluminium alloy, when used in an potentially explosive atmosphere requiring apparatus of equipment category 1 G, the transmitter must be installed so, that even in the event of rare incidents, an ignition source due to impact or friction between the enclosure and iron/steel is excluded.
5. Following tables show the relation between ambient temperature, process temperature and temperature class, depending on the presence of an extension tube:

   Transmitter without extension tube:

Temperature class	Ambient temperature	Process temperature
T6	≤ 60 °C	≤ 85 °C
T5	≤ 60 °C	≤ 100 °C
T4	≤ 60 °C	≤ 135 °C

   Transmitter with extension tube of 50 mm:

Temperature class	Ambient temperature	Process temperature
T3	≤ 55 °C	≤ 200 °C

   Transmitter with extension tube of 100 mm:

Temperature class	Ambient temperature	Process temperature
T3	≤ 60 °C	≤ 200 °C

   For use in a potentially explosive atmosphere caused by combustible dust, at a maximum process temperature of 200 °C and with a dust layer of maximum 5 mm, the maximum surface temperature of the enclosure is 100 °C.

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

Assured by compliance with the standards listed at (9).

(19) **Test documentation**

As listed in Test Report No. 2092571.