KEMA
REGISTERED QUALITY

(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 00ATEX1101 X**

(4) Equipment or protective system: **Reflex Radar Level Transmitter Model BM 102**

(5) Manufacturer: **Krohne S.A.**

(6) Address: **Usine des Ors, 26103 ROMANS CEDEX, France**

(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. 2005657.

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

EN 50014 : 1997 EN 50020 : 1994 EN 50284 : 1999

(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:

II 1 G or II 1/2 D T 100 °C

EEx ia IIC T6 ... T3 or EEx ia IIB T6 ... T3

Arnhem, 20 October 2000
by order of the Board of Directors of N.V. KEMA

L.M.J. Vries
Certification Manager

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ACCREDITED BY THE DUTCH COUNCIL FOR ACCREDITATION

(13) # SCHEDULE

(14) **to EC-Type Examination Certificate KEMA 00ATEX1101 X**

(15) **Description**

Reflex Radar Level Transmitter Model BM 102 Type VF03 4... and Type SF03 9..., 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 an 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 protection intrinsic safety EEx ia IIC, only for connection to a certified intrinsically safe circuit, with following maximum values:

U_i = 30 V
I_i = 150 mA
P_i = 1 W

The effective internal capacitance C_i = 10 nF, the effective internal inductance L_i = 10 µH.

(16) **Report**

KEMA No. 2005657

(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.

(13) **SCHEDULE**

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Special conditions for safe use (continued)

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**

Essential Health and Safety Requirements not covered by the standards listed at (9)	
Clause	Subject
1.0.5	Marking
1.0.6 b) and d)	Instructions
2.1.2	Explosive atmospheres caused by air/dust mixtures
2.2.2	Explosive atmospheres caused by air/dust mixtures

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

(13) **SCHEDULE**

(14) **to EC-Type Examination Certificate KEMA 00ATEX1101 X**

(19) **Test documentation**

			signed
1.	Description (15 pages)	)	
		)	
2.	Drawing No. F08208604 00	)	
	F08208604 01	)	
	F08208604 02	)	
	F08208604 03	)	
	F08208604 04	)	
	F08208604 05	)	
	F08208604 06	)	
	F08208604 08	)	
	F08208604 09	)	27.06.2000
	F08208604 10	)	
	F08208604 12	)	
	F08208604 20 (3 sheets)	)	
	F08208604 21	)	
	F08208604 22	)	
	F08208604 23 (2 sheets)	)	
	F08208604 24	)	
	F08208604 25	)	
	F08208604 26	)	
	F08208604 27	)	
	F08208604 28	)	
	F08208604 11		20.10.2000
3.	Samples		