

## Translation

# (1) EC-TYPE EXAMINATION CERTIFICATE

# TÜV NORD

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



(3) EC-Type Examination Certificate Number

## TÜV 97 ATEX 1164

(4) **Equipment:** Isolating signal converter type TV501-Ex

(5) **Manufacturer:** Martens Elektronik GmbH

(6) **Address:** Kiebitzhörn 18  
D-22885 Barsbüttel

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

(8) The TÜV NORD CERT GmbH & Co. KG notified body number N° 0032 in accordance with Article 9 of the Council Directive of the EC of March 23, 1994 (94/9/EC), 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 the confidential report N° 125/97/4046.

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

**EN 50 014:1994-03                      EN 50 020:1996-04**

(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, examination and tests of the specified equipment in accordance 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 or protective system must include the following:

II 1 G [EEx ia] IIC

TÜV NORD CERT GmbH & Co. KG  
Am TÜV 1  
D-30519 Hannover  
Tel.: 0511 986-1470  
Fax: 0511 986-2555

Head of the  
Certification Body

Hannover, 2005-01-18

TÜV NORD CERT GmbH & Co. KG legal successor of the notified body of TÜV Hannover/Sachsen-Anhalt e.V.  
German original certificate issued on 1997-03-25

(13) **SCHEDULE**

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 97 ATEX 1164**

(15) Description of equipment

The isolating signal converter type TV501-Ex is used for the separation and conversion of industry standard signals.

The intrinsically safe output circuit is safely galvanically separated from the non intrinsically safe circuits.

The maximum permissible ambient temperature is 55°C.

Electrical data

Supply circuit ..... U = 85 ...253 V a.c., 47 ...63 Hz or 10 ...30 V d.c.,  
 (terminals U<sub>m</sub> = 253 V a.c. resp. 125 V a.c./d.c.  
 10, 12 and 11 [PA] ) about 3.5 VA

Measuring input circuit..... current input: 0 ... 20 mA resp. 4 ... 20 mA,  
 (terminals burden 25Ω  
 7, 8 and 9) voltage input: 0 ... 10 V resp. 2 ... 10 V  
 Ri about 40kΩ  
 U<sub>m</sub> = 250 V a.c.

Measuring output circuit..... in type of protection "intrinsic safety" EEx ia IIC/IIB  
 (TV501-Ex [current/voltage]: resp. EEx ib IIC/IIB  
 terminals 4, 5 and 6, maximum values:  
 TV501-Ex-20 [current]: U<sub>o</sub> = 31.5 V  
 terminals 5 and 6) I<sub>o</sub> = 89 mA  
 P<sub>o</sub> = 730 mW  
 Characteristic line: linear

EEx ia/ib	IIC	IIB
max. permissible outer inductance	1.4 mH	12 mH
max. permissible outer capacitance	47.4 nF	478 nF

The effective internal inductance is negligibly small.  
 effective internal capacitance: 10.4 nF

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The intrinsic safe circuit is safe galvanically separated from the non intrinsic safe circuits up to a peak crest value of the voltage of 375V.

(16) Test documents consisting of 22 pages including 5 drawings are listed in the test report.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

Translation

1. SUPPLEMENT to

EC-TYPE EXAMINATION CERTIFICATE No. TÜV 97 ATEX 1164

Equipment: Isolating signal converter type TV501-Ex  
Manufacturer: Martens Elektronik GmbH  
Address: Kiebitzhörn 18  
D-22885 Barsbüttel

Amendments:

The amendments concern the extension of the application for the isolating signal converter type TV501-Ex.

In the future, the intrinsic safe circuit (measuring output) may also be fed into areas with dust explosion hazard, which require devices of category 1, if the connected device meets the requirements of category 1D and it has to be certified accordingly.

In the future the marking of the equipment must include the following

 II (1) GD [EEx ia] IIC

The electrical data and all other data apply unchanged for this 1. Supplement.

The equipment according to EC-Type Examination Certificate TÜV 97 ATEX 1164 incl. of this 1. supplement also meets the requirements of

EN 50 014:1997 +A1+A2                      General requirements  
EN 50 020:2002                              Intrinsic safety "i"

(16) The test documents are listed in the test report N° 05 YEX 551802b.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones

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Hanover, 2005-02-15

  
Head of the  
Certification Body