

(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



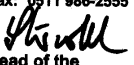
TÜV 04 ATEX 2604

- (4) Equipment: Isolating Switch Amplifier type IM1-4**-Ex-*
- (5) Manufacturer: Hans Turck GmbH & CO KG
- (6) Address: Witzlebenstraße 7
D-45472 Mülheim

- (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) The TÜV NORD CERT GmbH & Co. KG, TÜV Certification Body N° 0032 in accordance with Article 9 of the Council Directive 94/9/EC of March 23, 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 N° 04YEX551413.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- EN 50 014:1997 + A1 + A2 EN 50 020:2002**
- (10) If the sign "X" is placed after the certification 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 D [EEx ia] IIC**

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


Head of the
Certification Body

Hanover, 2004-08-24



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(13)

SCHEDULE

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 04 ATEX 2604**

(15) Description of equipment or protective system

The isolating switch amplifier type IM1-4**-Ex-* is used for the transmission of binary signals from the explosion hazardous area into the non explosion hazardous area as well as for the safe galvanic separation of the intrinsically safe circuits and the non intrinsically safe circuits. The device is executed with max. 4 channels.

The permissible ambient temperature range is -25°C ... 70°C.

Electrical Data

Supply circuit U = 20 ... 250 V a. c./20 ... 125 V d. c., P ≤ 3 W
(Connections 19 and 20) U_m = 250 V a. c. resp. 125 V d. c.

Input circuits in type of protection Intrinsic Safety EEx ia IIC/IIB
(Connections 1, 2; 4, 5; 6, 7 and 9, 10) Maximum values per channel:
U_o = 11.3 V
I_o = 13 mA
P_o = 36 mW
Characteristic line: linear
effective internal capacitance: 1,1 nF
effective internal inductance: 100 µH

EEx ia	IIC			IIB		
max. permissible external inductance	1 mH	5 mH	10 mH	2 mH	10 mH	20 mH
max. permissible external capacitance	0.84 µF	0.62 µF	0.55 µF	4 µF	2.8 µF	2.5 µF

The maximum values of the tables are also allowed to be used up to the permissible limits as concentrated capacitances and as concentrated inductances.

Type IM1-4Ex-T**

Output circuits Electrical data of each transistor output:
(Connections 11 ... 18) U ≤ 30 V d. c., I ≤ 50 mA, P ≤ 1,5 W
U_m = 250 V

Type IM1-4Ex-R**

Output circuits Electrical data of each relay output:
(Connections 11 ... 18) U = 250 V a. c., I = 3 A, S = 750 VA, P = 100 W
U = 125 V d. c., I = 0.25 A resp.
U = 30 V d. c., I = 6 A

The intrinsically safe input circuits are safely galvanically separated from the non intrinsically safe circuits up to the peak crest value of the voltage of 375 V.
The intrinsically safe input circuits are galvanically connected with each other.



- (16) The test documents are listed in the test report no. 04YEX551413.
- (17) Special conditions for safe use
none
- (18) Essential Health and Safety Requirements
no additional ones

Translation
1. SUPPLEMENT

to Certificate No. TÜV 04 ATEX 2604

Equipment: Isolating switch amplifiers IM1-4**Ex-*

Manufacturer: Hans Turck GmbH & Co. KG
Address: Witzlebenstraße 7
D-45472 Mülheim an der Ruhr

Order number: 8000554689

Date of issue: 21.08.2008

Amendments:

The isolating switch amplifiers type IM1-4**Ex-* is used for the transmission of binary signals from the explosion hazardous area into the non explosion hazardous area as well as for the safe galvanic separation of the intrinsically safe and the non intrinsically safe. In the future the isolating switch amplifier can be produced in the versions listed below.

Electrical data

Supply circuits
(terminals 19 and 20) $U = 20 \dots 250 \text{ V AC resp. } 20 \dots 125 \text{ V DC, } P \leq 3 \text{ W}$
 $U_m = 250 \text{ V AC resp. } 125 \text{ V DC}$

Input circuits
(terminals 1, 2; 4, 5;
6, 7 and 9, 10) in type of protection Intrinsic Safety EEx ia IIC/IIB
Maximum values per channel:
 $U_o = 11.3 \text{ V}$
 $I_o = 13 \text{ mA}$
 $P_o = 36 \text{ mW}$
Characteristic line: linear
Effective internal capacitance: 1.1 nF
Effective internal inductance: 100 µH

EEx ia	IIC			IIB		
	1 mH	5 mH	10 mH	2 mH	10 mH	20 mH
Max. permissible external inductance						
Max. permissible external capacitance	0.84 µF	0.62 µF	0.55 µF	4 µF	2.8 µF	2.5 µF

The maximum values of the tables are also allowed to be used up to the permissible limits as concentrated capacitances and as concentrated inductances.

Type IM1-2Ex-T**

Output circuits
(Terminals 11 ...18) **Electrical data of each transistor output:**
 $U \leq 30 \text{ V DC, } I \leq 50 \text{ mA, } P \leq 1.5 \text{ W}$
 $U_m = 250 \text{ V}$

Type IM1-2Ex-R**

Output circuits
(Terminals 11 ...18)

Electrical data of each relay output:
 $U = 250 \text{ V AC}, I = 2 \text{ A}, S = 500 \text{ VA}, P = 60 \text{ W}$
 $U = 125 \text{ V DC}, I = 0.25 \text{ A resp.}$
 $U = 30 \text{ V DC}, I = 2 \text{ A}$

Type IM1-3Ex-T**

Output circuits
(Terminals 11 ...18)

Electrical data of each transistor output:
 $U \leq 30 \text{ V DC}, I \leq 50 \text{ mA}, P \leq 1.5 \text{ W}$
 $U_m = 250 \text{ V}$

Type IM1-3Ex-R**

Output circuits
(Terminals 11 ...18)

Electrical data of each relay output:
 $U = 250 \text{ V AC}, I = 2 \text{ A}, S = 500 \text{ VA}, P = 60 \text{ W}$
 $U = 125 \text{ V DC}, I = 0.25 \text{ A resp.}$
 $U = 30 \text{ V DC}, I = 2 \text{ A}$

The intrinsically safe circuits are safely galvanically separated from all non intrinsically safe circuits up to the peak crest value of the voltag of 375 V.
 The intrinsically safe circuits are galvanically connected with each other.

The electrical data and all other data apply unchanged for this supplement.

The amendments in this supplement meets the requirements of these standards:

EN 60079-0:2006 **EN 60079-11:2007**

(16) The test documents are listed in the test report No. 08 203 554689.

(17) Special conditions for safe use

no additional ones

(18) Essential Health and Safety Requirements

no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZLS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body

Schwedt

Hanover office, Am TÜV 1, 30519 Hanover, Tel.: +49 (0) 511 988-1455, Fax: +49 (0) 511 986-1590

Translation
2. SUPPLEMENT

to Certificate No.	TÜV 04 ATEX 2604
Equipment:	Isolating switch amplifier type IM1-4/3/2**-Ex*
Manufacturer:	Hans Turck GmbH & Co. KG
Address:	Witzlebenstraße 7 45472 Mülheim an der Ruhr, Germany 8000393972
Order number:	8000393972
Date of issue:	22.07.2011

In future, the isolating switch amplifier type IM1-4/3/2**-Ex* is manufactured according to the documents listed in the test report.

The changes refer to the internal construction, the electrical data and the marking.

This reads as follows:

II (1) G [Ex ia Ga] IIC and II (1) D [Ex ia Da] IIIC

Electrical data:

Supply circuit
(Terminals 19 and 20)

$U = 20 \dots 250 \text{ V a. c. resp. } 20 \dots 125 \text{ V d. c.};$
 $P \leq 3 \text{ W}$

Input circuits
(Terminals 1, 2, 4, 5; 6, 7 and 9, 10)

$U_m = 250 \text{ V a. c. resp. } 125 \text{ V d. c.}$
 in type of protection Intrinsic Safety
 Ex ia IIC resp. Ex ia IIIC

Maximum values per channel:

$U_o = 11.3 \text{ V}$
 $I_o = 13 \text{ mA}$
 $P_o = 36 \text{ mW}$
 Characteristic line: linear
 Effective internal capacitance: 1.1 nF
 Effective internal inductance: 100 µH

	IIC			IIB			
	Ex ia	1 mH	5 mH	10 mH	2 mH	10 mH	20 mH
max. permissible external inductance		1 mH	5 mH	10 mH	2 mH	10 mH	20 mH
max. permissible external capacitance		0.84 µF	0.62 µF	0.55 µF	4 µF	2.8 µF	2.5 µF

The maximum values of the tables are also allowed to be used up to the permissible limits as concentrated capacitances and as concentrated inductances.

The values of the tables for IIB and for IIC are also permissible for explosive dust atmospheres.

Type IM1-4Ex-T, IM1-3**Ex-T, IM1-2**Ex-T**

Output circuits Electrical data of each transistor output:
 (Terminals 11 to 18) $U \leq 30 \text{ V d. c.}, I \leq 50 \text{ mA}, P \leq 1.5 \text{ W}$
 $U_{\text{ges}} = 250 \text{ V}$

Type IM1-4Ex-R, IM1-3**Ex-R, IM1-2**Ex-R**

Output circuits Electrical data of each relay output:
 (Terminals 11 to 18) $U = 250 \text{ V a. c.}, I = 2 \text{ A}, S = 500 \text{ VA}, P = 60 \text{ W}$
 $U = 125 \text{ V d. c.}, I = 0.25 \text{ A resp.}$
 $U = 30 \text{ V d. c.}, I = 2 \text{ A}$

The intrinsically safe circuits are safely galvanically separated from all non intrinsically safe circuits up to the peak crest value of the voltage of 375 V.
 The intrinsically safe circuits are galvanically connected with each other.

The equipment according to this supplement meets the requirements of these standards:

EN 60 079-0:2009 EN 60 079-11:2007 EN 61 241-11:2006

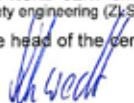
(16) The test documents are listed in the test report No. 11 203 080466.

(17) Special conditions for safe use
 none

(18) Essential Health and Safety Requirements
 no additional ones

TÜV NORD CERT GmbH, Langemarckstraße 20, 45141 Essen, accredited by the central office of the countries for safety engineering (ZfS), Ident. Nr. 0044, legal successor of the TÜV NORD CERT GmbH & Co. KG Ident. Nr. 0032

The head of the certification body



Schwedt

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Wir/We **HANS TURCK GMBH & CO KG**
WITZLEBENSTR. 7, D – 45472 MÜLHEIM A.D. RUHR

erklären in alleiniger Verantwortung, dass die Produkte
 declare under our sole responsibility that the products

Trennschaltverstärker Typ IM1-2Ex*, IM1-3**Ex*, IM1-4**Ex***

auf die sich die Erklärung bezieht, den Anforderungen der folgenden EU-Richtlinien durch Einhaltung der folgenden Normen genügen:
 to which this declaration relates are in conformity with the requirements of the following EU-directives by compliance with the following standards:

EMV – Richtlinie / EMC Directive EN 61326-1:2013	2014 / 30 / EU	26. Feb. 2014
Niederspannungsrichtlinie/ Low Voltage Directive (für die Geräte mit Versorgungsspannung / for equipment with supply voltage : EN 61010-1:2010	2014 / 35 / EU	26. Feb. 2014 >50V AC bzw. >75V DC)
Richtlinie / Directive ATEX EN 60079-0:2012 EN 60079-11:2012 EN 60079-15:2010	2014 / 34 / EU	26. Feb. 2014

Weitere Normen, Bemerkungen
 additional standards, remarks

Das Produkt stimmt mit den Anforderungen der Richtlinie 2014 / 34 / EU überein. Eine oder mehrere in der zugehörigen EG-Baumusterprüfbescheinigung genannten Normen wurden bereits durch neue Ausgaben ersetzt. Der Hersteller erklärt für das Produkt auch die Übereinstimmung mit den neuen Normenausgaben, da die veränderten Anforderungen der neuen Normenausgaben für dieses Produkt nicht relevant sind.

The product complies with the directive 2014 / 34 / EU. One or more norms mentioned in the respective EC type examination certificate were already replaced by new ones. The manufacturer declares that the product complies with the new valid norms, as the changed requirements mentioned there are not relevant for the product.

Die Niederspannungsrichtlinie ist nicht anwendbar bei Betrieb des Produktes im explosionsgefährdeten Bereich. In diesem Fall sind alle grundlegenden Zielsetzungen im Hinblick auf die Niederspannung von der Richtlinie 2014 / 34 / EU Anhang II Punkt 1.2.7 abgedeckt.

The low voltage directive is not applicable when the product is installed in the hazardous area. In this case all Low Voltage essential objectives are covered by the Directive 2014 / 34 / EU Annex II 1.2.7.

Zusätzliche Informationen:

Supplementary information:

Angewandtes ATEX-Konformitätsbewertungsverfahren / ATEX - conformity assessment procedure applied:
 Modul B + Modul D / E / module B + module D / E

EU-Baumusterprüfbescheinigung (Modul B) TÜV 04 ATEX 2604, TÜV 06 ATEX 552967 X /
 EC-type examination certificate (module B)

ausgestellt von / issued by: TÜV NORD CERT GmbH, Kenn-Nr. / number 0044
 Langemarckstraße 20, 45141 Essen

Zertifizierung des QS-Systems gemäß Modul D durch:
 certification of the QS-system in accordance with module D by:

Physikalisch Technische Bundesanstalt, Kenn-Nr. / number 0102,
 Bundesallee 100, D-38116 Braunschweig

Mülheim, den 20.04.2016



i.V. Dr. M. Linde, Leiter Zulassungen / Manager Approvals

Ort und Datum der Ausstellung /
 Place and date of issue

Name, Funktion und Unterschrift des Befugten /
 Name, function and signature of authorized person