



- [1] **EC-TYPE EXAMINATION CERTIFICATE**  
according to Directive 94/9/EC, Annex III  
(Translation)
- [2] Equipment and Protective Systems intended for use  
in Potentially Explosive Atmospheres, Directive 94/9/EC
- [3] EC-Type Examination Certificate Number: **IBExU07ATEX1132**
- [4] Equipment: Rotation Speed Monitor  
type IM21-\*\*Ex-\*\*\*\*\*
- [5] Manufacturer: Hans Turck GmbH & Co. KG
- [6] Address: Witzlebenstraße 7  
45472 Mülheim an der Ruhr  
GERMANY
- [7] The equipment mentioned under [4] and any acceptable variation there to are specified in the  
schedule to this EC-Type Examination Certificate.
- [8] IBExU Institut für Sicherheitstechnik GmbH, NOTIFIED BODY number 0637 in accordance with  
article 9 of the Council Directive 94/9/EC of 23<sup>rd</sup> March 1994, certifies that the under [4] mentioned  
equipment has been found to comply with the Essential Health and Safety Requirements relating to  
the design and construction of the equipment intended for use in potentially explosive atmospheres  
given in Annex II to the Directive.  
The examination and test results are recorded in test report IB-07-3-273 of 01<sup>st</sup> October 2007.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance  
with EN 60079-0:2004, EN 60079-11:2007, EN 61241-0:2006 and EN 61241-11:2006.
- [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 under [17] in the schedule to this EC-Type Examination  
Certificate.
- [11] This EC-Type Examination Certificate relates only to the design and construction of the specified  
equipment. If applicable, further requirements of this Directive apply to the manufacture and supply  
of this equipment.
- [12] The marking of the equipment mentioned under [4] shall include the following:

**Ex II (1) GD [Ex ia] IIC/IIB**

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☎ +49 (0) 3731 3805-0 - 📠 +49 (0) 3731 23650

Authorised for certifications  
- Explosion protection -

By order  
  
(Dr. Lösch)



- Seal-  
(ID no. 0637)

Freiberg, 5<sup>th</sup> October 2007

Certificates without signature and  
seal are not valid.  
Certificates may only be duplicated  
completely and unchanged.  
In case of dispute, the German text  
shall prevail.

- [13] **Schedule**
- [14] **to EC-TYPE EXAMINATION CERTIFICATE IBExU07ATEX1132**
- [15] **Description of the equipment**  
The Rotation Speed Monitor IM21-\*\*Ex-\*\*\*\*\* is used for the galvanically isolated monitoring and  
evaluation of frequencies, revolutions and impulse sequences. The equipment can supply into ar-  
eas which require Category 1 G or 1D-operating supplies. The amplifiers are single- or double-  
channel types.

Type code:  
**IM21- 1 4 Ex-C D T R i**  
a b c d e f g h i

a Type designation for Rotation Speed Monitor (IM21)  
b Number of the channels (1 or 2)  
c Number of the outputs (1 to 4)  
d Equipment with Ex-approval (Ex)  
e PC-connection (C)  
f Digital display (D)  
g Transistor outputs (T)  
h Relay outputs (R)  
i Sort of the analogous output (i or u for current or voltage  
output)

Ambient temperature range: -25 °C to +70 °C  
Degree of protection of the enclosure: ≥ IP 20

**Electrical data**  
**Supply current circuit**  
Rated voltage:

U<sub>B</sub> 20 ... 250 V AC or  
20 ... 125 V DC

max. effective value of alternating voltage  
or max. direct voltage:

U<sub>m</sub> 250 V AC / 125 V DC

**Sensor current circuit**

in type of protection Intrinsic safety Ex ia IIC/IIB

(Terminal 1; 2, 6; 7 or 9;10)

U <sub>0</sub>	9.6 V
I <sub>0</sub>	10.7 mA
P <sub>0</sub>	25 mW
L <sub>i</sub>	negligible
C <sub>i</sub>	negligible

Linear characteristic: R<sub>i</sub> = 900 Ω

The following connection values can be indicated for together available concentrated outer capaci-  
ties and inductivities:

	Ex ia IIC				Ex ia IIB			
C <sub>0</sub>	510 nF	840 nF	1.2 μF	3.6 μF	2.7 μF	4.4 μF	6.3 μF	26 μF
L <sub>0</sub>	100 mH	5 mH	1 mH	10 μH	100 mH	5 mH	1 mH	10 μH

**Digital output (passive)**

in type of protection Intrinsic safety Ex ia IIC/IIB

(Terminal: 6;7)

U <sub>i</sub>	20 V
I <sub>i</sub>	21,3 mA
P <sub>i</sub>	400 mW

The intrinsically safe circuits are galvanically connected with one another, but to the non-intrinsically safe circuits up to a peak value of the nominal voltage of 375 V they are galvanically separated for certain.

[16] **Test report**

The test results are recorded in the test report IB-07-3-273. The test documents are part of the test report and listed there.

Summary of the test results:

The Rotation Speed Monitor IM21-\*\*Ex-\*\*\*\*\* fulfils the requirements of explosion protection on an associated apparatus for the Equipment Group II and Category 1G respectively 1D in type of protection Intrinsic safety for gases of the Explosion Group IIC/IIB and dusts.

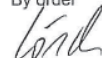
[17] **Special conditions**

none

[18] **Essential health and safety requirements**

Confirmed by compliance of standards (see [9]).

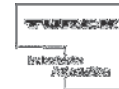
By order



(Dr. Lösch)

Freiberg, 5<sup>th</sup> October 2007

**Konformitätserklärung Nr. 3237-1 M**  
**Declaration of Conformity**



Diese Konformitätserklärung entspricht der Europäischen Norm EN 45014 "Allgemeine Kriterien für Konformitätserklärungen von Anbietern". Die Grundlage der Kriterien sind internationale Dokumente, insbesondere ISO/IEC Leitfaden 22, 1982: "Information on manufacturer's declaration of conformity with standards or other technical specifications".

This "Declaration of Conformity" complies with the European Standard EN 45014 "General criteria for a supplier's declaration of conformity". These criteria are based on the relevant international documentation, particularly the ISO/IEC Guide 22, 1982: "Information on the manufacturer's declaration of conformity with standards or other technical specifications".

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

**Drehzahlwächter Typ IM21 - \*\*Ex - \*\*\*\*\***

auf die sich die Erklärung bezieht, mit den folgenden Normen übereinstimmen  
to which this declaration relates are in conformity with the following standards

EN 60947-5-6:2000  
EN61326-1 :2006


und wo anwendbar  
and where applicable

EN 60079-0:2004      EN 60079-11:2007      EN 60079-15:2005  
EN 61241-0:2006      EN 61241-11:2006

Gemäß den Bestimmungen der Richtlinie (falls zutreffend)  
Following the provisions of Directive (if applicable)

EMV - Richtlinie	/ EMC Directive	2004 / 108 / EG	15. Dez. 2004
Richtlinie ATEX 100a	/ Directive ATEX 100a	94 / 9 / EG	23. März 1994

Weitere Normen  
additional standards

Aussteller der EG-Baumusterbescheinigung:  
IBExU Institut für Sicherheitstechnik GmbH  
Fuchsmühlenweg 7, D-09599 Freiberg, Germany  
Kenn-Nr. 0637, Registriernummer: IBExU 07 ATEX 1132, IBExU 07 ATEX B 010 X  
Kennzeichnung:  II (1) GD, II 3 G

Mülheim, den 03.07.08



(i.V. W. Stoll)

Ort und Datum der Ausstellung /  
Place and date of issue

Name und Unterschrift des Befugten /  
Name and signature of authorized person