

[1] **TYPE EXAMINATION CERTIFICATE**
(Translation)



[2] for electrical equipment of Equipment Group II, Equipment Category 3

[3] Type Examination Certificate Number: **IBExU07ATEXB010 X**

[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 design of the equipment mentioned under [4] and any acceptable variations thereto are specified in the schedule to this Type Examination Certificate.

[8] IBExU Institut für Sicherheitstechnik GmbH certifies that the equipment mentioned under [4] has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive 94/9/EC.
The test results are recorded in the test report IB-07-3-273 of 01st October 2007.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2004 and EN 60079-15:2005.

[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 Type Examination Certificate.

[11] This 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 3 G Ex nA nC [nL] IIC/IIB T4
-25 °C ≤ T_a ≤ +70 °C

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Freiberg, 5th October 2007

By Order

(Dr. Lösch)

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- Stamp -

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

Schedule

[13] **Schedule**

[14] **to the TYPE EXAMINATION CERTIFICATE IBExU07ATEXB010 X**

[15] **Description of equipment**

The Rotation Speed Monitor IM21-**Ex-**** is used the galvanic isolated supervision and evaluation of frequencies, revolutions and impulse consequences. The equipment is provided for use in potentially hazardous areas which require category 3 G of operating supplies. It can supply into areas the category 1 G or 1D of operating supplies require. The amplifiers are of the 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-admittance (Ex)
- e PC-connect (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_B 20 ... 250 V AC or
20 ... 125 V DC

Sensor current circuit

in type of protection Intrinsic safety Ex nL IIC/IIB

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

U _o	9.6 V
I _o	10.7 mA
P _o	25 mW
L _i	negligible
C _i	negligible

Linear characteristic: R_i = 900 Ω

The following connection values can be indicated for together available concentrated outer capacities and inductivities:

	Ex nL IIC				Ex nL IIB			
C _o	765 nF	1,2 µF	1.8 µF	5.4 µF	4.0 µF	6.6 µF	9.4 µF	39 µF
L _o	100 mH	5 mH	1mH	10 µH	100 mH	5 mH	1 mH	10 µH

Digital output (passiv)

in type of protection Intrinsic safety Ex nL IIC/IIB

(Terminal: 6;7)

U _i	20 V
I _i	21,3 mA
P _i	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 for certain galvanically separated.

[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

The Rotation Speed Monitor IM21-**Ex-**** fulfill the requirements of explosion protection on an associated apparatus for the Equipment Group II and Category 3 G in type of protection non-sparking, encapsulated device and energy-limited apparatus for gases of the Explosion Group IIC/IIB.

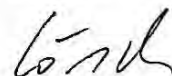
[17] **Special conditions for safe use**

- At erection within the hazarded area of the category 3, zone 2, the Rotation Speed Monitor must built in meet the requirements on the EN 60079-15 (at least IP54) this one into enclosures.
- Maintenance repair purpose connects using the switches at the front side as well as this and disconnect of the connections of not energy limited electrical circuits under tension is only at installation, for-or for permitted.

[18] **Essential Health and Safety Requirements**

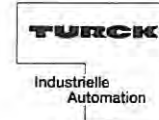
Confirmed by compliance with standards (see [9])

By Order



(Dr. Lösch)

Freiberg, 05th October 2007



Konformitätserklärung Nr. 4123M
Declaration of Conformity

Diese Konformitätserklärung entspricht der Europäischen Norm EN ISO/IEC 17050-1:2010 "Allgemeine Kriterien für Konformitätserklärungen von Anbietern".

This "Declaration of Conformity" complies with the European Standard EN ISO/IEC 17050-1:2010 "General criteria for a supplier's declaration of conformity".

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

EN 61326-1:2006

bei ATEX Richtlinie

in case of ATEX Directive

EN 60079-0:2009 EN 60079-11:2007 EN 61241-11:2006 EN 60079-15:2005

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, Bemerkungen
additional standards, remarks

Das Produkt stimmt mit den Anforderungen der Richtlinie 94/9/EG überein. Eine oder mehrere in der zugehörigen EG-Baumusterprüfbescheinigung IBExU 07 ATEX 1132 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 94/9/EG. One or more norms mentioned in the respective EC type examination certificate IBExU 07 ATEX 1132 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.

Aussteller der EG- Baumusterprüfbescheinigung:


IBExU Institut für Sicherheit GmbH

Fuchsmühlenweg 7, 09599 Freiberg, Germany

Kenn-Nr. 0637, Registriernummer: IBExU 07 ATEX 1132

Kennzeichnung  II (1) GD

IBExU 07 ATEX B010 X

Kennzeichnung  II 3 G

Mülheim, den 20.10.2012



(i.V. W. Bibernell)

Ort und Datum der Ausstellung /
Place and date of issue

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