

Optocoupler

Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin



(1) **EC-TYPE-EXAMINATION CERTIFICATE**
(Translation)

- (2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**
(3) EC-type-examination Certificate Number:



PTB 03 ATEX 2033 U

- (4) Component: Optocoupler, type CNY65 Exi
(5) Manufacturer: Vishay Semiconductor GmbH
(6) Address: Theresienstraße 2, 74072 Heilbronn, Germany
(7) This component and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this component 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 PTB Ex 03-22339.
(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997 + A1 + A2 **EN 50020:1994**
(10) The sign "U" placed behind the certificate number indicates that this certificate should not be confounded with certificates issued for equipment or protective systems. This Component Certificate only serves as a basis for the issuing of certificates for equipment or protective systems.
(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified component in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.
(12) The marking of the component shall include the following:

 **II (1) G [EEx ia] IIC**

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, April 14, 2003

Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

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Braunschweig und Berlin



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2033 U**

(15) Description of component

The optocoupler, type CNY65 Exi is used for the electrical isolation of intrinsically safe and non-intrinsically safe circuits in apparatus installed outside of the hazardous area. Either the emitter circuit or the receiver circuit may be designed for type of protection Intrinsic Safety.

Electrical data (Limit values):

Emitter: non-intrinsically safe or type of protection Intrinsic Safety EEx ia or EEx ib.
The category is determined by the connected circuit.

The intrinsically safe variant shall be connected only to a certified intrinsically safe circuit.

Maximum values:

reverse voltage	$U_R = 5 \text{ V}$
forward current	$I_F = 75 \text{ mA}$
power dissipation ($t_{amb} = 25 \text{ °C}$)	$P_V = 120 \text{ mW}$
junction temperature	$t_j = 100 \text{ °C}$

Receiver: non-intrinsically safe or type of protection Intrinsic Safety EEx ia or EEx ib.
The category is determined by the connected circuit.

The intrinsically safe variant shall be connected only to a certified intrinsically safe circuit.

Maximum values:

collector/emitter-voltage	$U_{CEO} = 32 \text{ V}$
emitter/collector-voltage	$U_{ECO} = 7 \text{ V}$
collector current	$I_C = 50 \text{ mA}$
power dissipation ($t_{amb} = 25 \text{ °C}$)	$P_V = 130 \text{ mW}$
junction temperature	$t_j = 100 \text{ °C}$

The emitter circuit and the receiver circuit are safely electrically isolated up to a peak value of the nominal voltage of 375 V.

The peak values of both circuits shall be $\leq 375 \text{ V}$ in total.

It shall be guaranteed by means of an appropriate circuitry that the permissible limit values for the non-intrinsically safe side of the optocoupler will not be exceeded.

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SCHEDULE TO EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2033 U



- (16) Test report PTB Ex 03-22339
- (17) Special conditions for safe use
none
- (18) Essential health and safety requirements
met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionschutz
By order:


Dr.-Ing. U. Johannsmeyer
Regierungsdirektor



Braunschweig, April 14, 2003

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1. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 2033 U

(Translation)

Equipment: Optocoupler, type CNY65 Exi

Marking: II (1) G [Ex ia] IIC

Manufacturer: Vishay Semiconductor GmbH

Address: Theresienstraße 2, 74072 Heilbronn, Germany

Description of supplements and modifications

In the future the optocoupler, type CNY65 Exi may also be manufactured and operated according to the test documents listed in the test report. The modifications concern the use of a different plastic material, the adaption to the currently valid state of the standard series EN 60079-** and therefore, the marking of the component. The type label (imprint) has been completed.

The electrical data and all other specifications of the EC-type examination certificate apply without changes.

Applied standards

EN 60079-0:2006

EN 60079-11:2007

Test report: PTB Ex 08-27375

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor



Braunschweig, May 13, 2008

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