Our ref. 203735

CERTIFICATE

FI 11876 A4

FI

Product	Optocoupler with internal creepage distance
Type	K1010, KP1110, KP1010, KP1020, KP1040, K2010, KP2010, K3010, KP3010, KP3020, KP3040, KP4010, KP4020, KP4040, KP5010, KP6010
Trade mark	COSMO or WORLD WINDOW
Certificate Holder	Cosmo Electronics Corporation, 15F-1, No. 376, Sec. 4, Jen-Ai Rd., TAIPEI, TAIWAN
Manufacturer	Cosmo Electronics Corporation, No. 396, Lu-Pu Rd., Dong-Shan Town, Yi-Lan Hsien, TAIWAN
Technical information	Reinforced insulation. DIP, SMD and H types of pins.
Other information	Marking: When mark model # on the unit, it may be removed 'K' or 'KP'
The product is certified according to the following standard(s)	EN 60950 (1992), Am.1 (1993), Am.2 (1993), Am.3 (1995), Am.4 (1997), Am.11 (1997) and Nordic Deviations
Validity	This certificate is valid up to 31 December 2008 and it includes the right to use the FI mark under the condition that the conditions of the framework contract for testing and certification activities are fullfilled and that changes (if any) will be reported to FIMKO before they have been carried out.
Date of issue	27 October 2000
	FIMKO
Signature	Soili Martikainen Laboratory Manager

This certificate has 2 appendix

FIMKO FI

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Manufacturing sites

Cosmo Electronics Corporation,
No. 396, Lu-Pu Rd., Dong-Shan Town, Yi-Lan Hsien, Taiwan

Cosmo Electronics Corporation,
No. 16, Tsu-Chen Rd., Tung-Shan Town, I-Lan Hsien, Taiwan

Additional information

The component fulfils the requirement of the reinforced insulation.

Type KP1010, K1010, KP1110
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.5 mm.

Type KP1020
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.9 mm.

Type KP1040
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 1.0 mm.

Type KP2010, K2010
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.9 mm.

Type KP3010, K3010
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.9 mm.

Type KP3020
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.7 mm.

Type KP3040
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.6 mm.

Type KP4010
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.8 mm.

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FIMKO (FI)

Appendix to Certificate: 11876 A4

Additional information

Type KP4020
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.5 mm.

Type KP4040
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.6 mm.

Types KP5010 and KP6010
Internal creepage distances between input and output are more than 4 mm; measured a minimum of 5.3 mm.
Distance through insulation between input and output is more than 0.4 mm; measured a minimum of 0.7 mm.

For all types mentioned in this certificate:

External creepage distances between input and output are more than 5 mm; measured a minimum of 8.0 mm.

Insulation between input and output withstands electric strength test of 3 000 V/1 minute, it withstands even electric strength test of 5 000 V/1 minute.

Enclosure of the component withstands electric strength test of 1 500 V/ 1 minute and it fulfils the requirement of the basic insulation.

Enclosure is made of class V-0 material.

Type KP1010
Thermal cycling test has been carried out ten times for the component at 100°C / 25°C / 0°C / 25°C. Humidity treatment of 48 h as well as electric strength tests at 4800V/1 min were carried out for the component after thermal cycling tests.

This certificate replaces previous NCS certificate with ref. no. FI 11876 A3, dated 05 October 2000. DIP, SMD and H types of pins have been added to Technical information.

is based on test 203735, 214195

FIMKO (FI)

Supplement to Certificate: FI 11876 A4

Internal ref.
Soili Martikainen

27 October 2000

NORDIC CERTIFICATION SERVICE

We hereby confirm that the product(s) appearing from the certificate with above certificate reference also comply(ies) with requirements for secondary certification in the following countries: Denmark, Norway, Sweden

NOTIFICATION

Certificate holder for Denmark	Cosmo Electronics Corporation, 15F-1, No. 376, Sec. 4, Jen-Ai Rd., Taipei, TAIWAN
Certificate holder for Norway	As above
Certificate holder for Sweden	As above
	Attn: C. C. Chen
	Please send the invoice and the certificate directly to: FIMKO.
Safety standard(s) applied	EN 60950 (1992), Am. 1 (1993), Am. 2 (1993), Am. 3 (1995), Am. 4 (1997), Am. 11 (1997)
EMKO TS document(s) considered	EMKO-TSE(74-SEC)207/94
EMC requirements	---
The assignment is based on	Testing in own premises
Limitations or reservations regarding the testing / examination performed	None
Certification marks	Affixing of the certification mark(s) of the Nordic body(ies) on the product must not take place before notice about national certification is received from the individual body.
Production surveillance	Will be carried out by FIMKO according to agreed procedures.
Other information	Copy of the certificate, this Notification and other agreed documentation are transferred directly from FIMKO to DEMKO, NEMKO and SEMKO.
Test samples must be submitted to the secondary body(ies)	No
Date of issue	27 October 2000

This Notification may be challenged if it is more than 3 years old.

FIMKO

Signature

Soili Martikainen
Laboratory Manager

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TEST REPORT

IEC 950 / EN 60 950

Safety of information technology equipment

Report

Reference No. ..... : 214195

Compiled by (+ signature) ..... : Heikki Puranen, Testing Officer

Approved by (+ signature) ..... : Timo Silonsaari, Team Leader

Date of issue ..... : 2000-10-04

This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator (see below).

Testing laboratory

Name ..... : **FIMKO LTD.**

Address ..... : **Särkiniementie 3, FIN-00210 Helsinki, Finland**

Testing location ..... : as above

Applicant

Name ..... : **Cosmo Electronics Corporation**

Address ..... : **15F-1, No. 376 , Sec 4, Jen-Ai Road, TAIPEI, TAIWAN**

..... :

Manufacturer

Name ..... : **Cosmo Electronics Corporation**

Address ..... : **No. 396 Lu-Pu Rd., Dong-Shan Town, Yi-Lan Hsien, TAIWAN**

..... :

Factory

Name ..... : **Cosmo Electronics Corporation**

Address ..... : **No. 396 Lu-Pu Rd., Dong-Shan Town, Yi-Lan Hsien, TAIWAN**

..... : **Cosmo Electronics Corporation**

No. 16 Tsu-Chen Rd., Tung-Shan Town, I-Lan Hsien, TAIWAN

Test specification

Standard ..... : IEC 950:1991 + A1:1992 + A2:1993 + A3:1995 + A4:1996 / EN 60 950:1992 + A1:1993 + A2:1993 + A3:1995 + A4:1997 + A11:1997

Test procedure ..... : CB / CCA-scheme

Procedure deviation ..... : CENELEC Common Modifications

Non-standard test method ..... : N.A.

..... :

Test Report Form/blank test report

Test Report Form No. ..... : I950 / 60950___F/98-02

TRF originator ..... : FIMKO

Master TRF ..... : reference No. I950 / 60950 F, dated 98-02

IEC 950 / EN 60 950			
Clause	Requirement - Test	Result - Remark	Verdict

Test item

Description ..... Optocoupler

Trademark ..... COSMO by WORLD WINDOW

Model and/or type reference KP1010

Test case verdicts

Test case does not apply to the test object..... N(.A.)

Test item does meet the requirement..... P(ass)

Test item does not meet the requirement..... F(ail)

.....

Testing

Date of receipt of test item 2000-08-09

Date(s) of performance of test..... August – September 2000

.....

General remarks

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

IEC 950 / EN 60 950			
Clause	Requirement - Test	Result - Remark	Verdict
4	PHYSICAL REQUIREMENTS		P
4.4	Resistance to fire		P
4.4.3.2	Material and component: manufacturer; type; flammability .....:	Internal molding: Risho Electrical Industrial Co. Ltd. Rishomex AP-202, 94V-0, UL E 94217. Enclosure: Chang Chun Plastics Co. Ltd., EME-1200, 94V-0, UL E59481.	P

2.9.2 and 2.9.3	TABLE: clearance and creepage distance measurements	P

clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
External	< 420	250	4.0	7.6	5.0	8.0
Internal	<420	250	--	--	4.0	5.3

2.9.4.1	TABLE: distance through insulation measurements	P

distance through insulation di at/of:	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)
Input – output	250	3000	0.4	0.5

IEC 950 / EN 60 950			
Clause	Requirement - Test	Result - Remark	Verdict
2.9.6	Enclosed and sealed parts		P

Thermal cycling test has been carried out ten times for the component at 100 °C / 25 °C / 0 °C / 25 °C. Humidity treatment of 48 h as well as electric strength tests at 4800 V / 1 min were carried out for the component after thermal cycling tests.

5.3	TABLE: electric strength measurements	P

test voltage applied between:	test voltage (V)	breakdown Yes / No
Input – output	3000 V / 1 min / 5000 V / 1 min	No
Enclosure of the component withstands electric strength test 1500V / 1 minute and fullfills the requirements of basic insulation.		
Test voltage AC 50 Hz		