

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50117320

Blatt *Page*
0006

Ihr Zeichen *Client Reference*
Y.O.

Unser Zeichen *Our Reference*
05-HUANGHA- 17007371 006 27.11.2012

Ausstellungsdatum *Date of Issue*
(day/mo/yr)

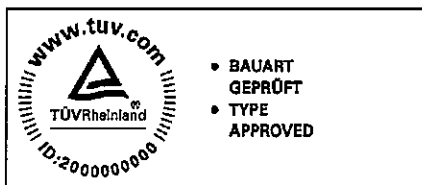
Genehmigungsinhaber *License Holder*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Fertigungsstätte *Manufacturing Plant*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Prüfzeichen *Test Mark*



Geprüft nach *Tested acc. to*
EN 61810-1:2008
IEC 61810-1:2008

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Relais (Electromechanical Elementary Relay)

as pages 0001-0005

Change

Ambient Temperature : -40°C to 85°C
Rated Contact Current : 1)20A cos (phi)=1
(Flat Quick-connect terminations)
2)16A cos (phi)=1
(Solder terminals)
Electrical Endurance : 1)50,000 cycles at 360 cycles/h
2)100,000 cycles at 360 cycles/h

Continuation on Page 0007

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Zertifizierungsstelle



Dipl.-Ing. (FH) T. Zimmer

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50117320

Blatt *Page*
0007

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Unser Zeichen *Our Reference*
05-HUANGHA- 17007371 006 27.11.2012

Ausstellungsdatum
Date of Issue
(day/month)

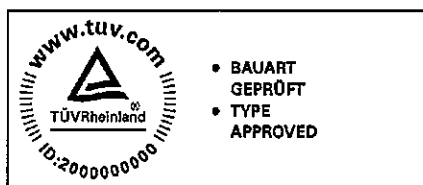
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Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

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Prüfzeichen *Test Mark*



Geprüft nach *Tested acc. to*

EN 61810-1:2008
IEC 61810-1:2008

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Relais (Electromechanical Elementary Relay)

Continuation from page 0006

Ambient Temperature : 25°C
Rated Contact Current : Inrush current 80A
cos (phi) = 0.7, for 0.3S
Stable current 20A
cos (phi) = 0.9, for 1.2S
(Flat quick-connect terminations)
Electrical Endurance : 100,000 cycles at 360 cycles/h
Duty Factor : ON: 1.5S ; OFF: 8.5S

Appendix 1.1 dated on 2012.11.26 replace appendix 1.1
dated on 2012.10.27

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Zertifizierungsstelle



Dipl.-Ing. (FH) T. Zimmer

Zertifikat

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Zertifikat Nr. *Certificate No.*
R 50117320

Blatt *Page*
0005

Ihr Zeichen *Client Reference*
Y.O.

Unser Zeichen *Our Reference*
02-CHENAND- 17007371

Ausstellungsdatum
005 29.12.2010

Date of Issue
(day/mo/yr)

Genehmigungsinhaber *License Holder*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Fertigungsstätte *Manufacturing Plant*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 61810-1:2008
IEC 61810-1:2008



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Relay (Electromechanical Elementary Relay)

as pages 0001-0004

Change

Test Requirement : see above

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
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Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Zertifizierungsstelle



Dipl.-Ing. C. Nasca

Tyco Electronics (Shenzhen) Co.,
Ltd.
Mr. Gao Wei
-

Date : 29.12.2010
Our ref. : CHENAND 02
Your ref.: Y.O.

Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Ref : R TÜV-Mark Approval

Type of Equipment : Electromechanical Elementary Relay
Model Designation : See Certificate
Certificate No. : R 50117320 0005
Report No. : 17007371 005

Dear Mr. Gao Wei,

The above specified technical equipment has been tested and found to be in accordance with the relevant requirements.

Enclosed you will find the certificate of approval.

If cancellation of the certificate is submitted by November 15 in a given year, no fee will be charged for the following year.

We appreciate your kind support and would like to offer our assistance and continuous services in the future.

Please contact our office for approval of your new products.

With kind regards,

Certification Body



Dipl.-Ing. C. Nasca

Enclosure

TÜV Rheinland
(Shenzhen) Co.,Ltd.

34/F, Tower A,
World Finance Centre,
Shennan East Road 4003,
Luohu District,
518001 Shenzhen, P.R.China

Tel: +86 755 8268-1188
Hot Line: +86 755 8268-1234
800-999-3668 (Free)
Fax: +86 755 2598-0321
www.chn.tuv.com

莱茵技术监督(深圳)有限公司
地址 深圳市罗湖区深南东路4003号
世界金融中心A座34楼
邮编 518001
电话 +86 755 8268-1188
热线 +86 755 8268-1234
800-999-3668(免费)
传真 +86 755 2598-0321
www.chn.tuv.com

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50117320

Blatt *Page*
0001

Ihr Zeichen *Client Reference*
Y.O.

Unser Zeichen *Our Reference*
02-CHENAND- 17007371 001 07.11.2007

Ausstellungsdatum *Date of Issue*
(day/mo/yr)

Genehmigungsinhaber *License Holder*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Fertigungsstätte *Manufacturing Plant*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 61810-1:2004
IEC 61810-1:2003



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Relay (Electromechanical Elementary Relay)

Type Designation : EF00-1A2-Duuu-Fvwxyz

5

uuu stands for 005, 006, 009, 012, 018, 024, 048

v, w and z can be 0 or blank

x can be E, 0 or blank

y can be 4, 0 or blank

Rated Contact Voltage : AC 250V; 50/60Hz

Pollution Degree : 2

Mechanical Endurance : 5,000,000 cycles at 18,000 cycles/h

Continuation on page 0002

5

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product
fulfills above mentioned requirements, the production is subject to surveillance.

Zertifizierungsstelle



TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Ing. M. Eichenseder

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50117320

Blatt *Page*
0002

Ihr Zeichen *Client Reference*
Y.O.

Unser Zeichen *Our Reference*
02-CHENAND- 17007371

Ausstellungsdatum
001 07.11.2007

Date of Issue
(day/mo/yr)

Genehmigungsinhaber *License Holder*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Fertigungsstätte *Manufacturing Plant*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 61810-1:2004
IEC 61810-1:2003



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Relay (Electromechanical Elementary Relay) [®]

Continuation

Ambient Temperature : -40°C to 85°C
Rated Contact Current : 20A cos (phi)=1
(Flat quick-connect terminations)
16A cos (phi)=1 (Solder terminals)
Electrical Endurance : 100,000 cycles at 360 cycles/h

Continuation on page 0003

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product
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Zertifizierungsstelle



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Ing. M. Eichenseder

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50117320

Blatt *Page*
0003

Ihr Zeichen *Client Reference*
Y.O.

Unser Zeichen *Our Reference*
02-CHENAND- 17007371

Ausstellungsdatum *Date of Issue*
(day/mo/yr)
001 07.11.2007

Genehmigungsinhaber *License Holder*
Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Fertigungsstätte *Manufacturing Plant*
Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 61810-1:2004
IEC 61810-1:2003



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Relay (Electromechanical Elementary Relay) [®]

Continuation

Ambient Temperature : 25°C
Rated Contact Current : Inrush current 80A
cos (phi) = 0.7 0.3S/
Stable current 20A
cos (phi) = 0.9 1.2S
(Flat quick-connect terminations)
Electrical Endurance : 100,000 cycles at 1200 cycles/h

Remark: The labelling requirements acc. to EU Directive
2001/95 have to be observed for distribution within the EEA.

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
This certificate is based on our Testing and Certification Regulation. The product
fulfills above mentioned requirements, the production is subject to surveillance.

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Zertifizierungsstelle



Ing. M. Eichenseder

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50117320

Blatt *Page*
0004

Ihr Zeichen *Client Reference*
Y.O.

Unser Zeichen *Our Reference*
02-CHENAND- 17007371

Ausstellungsdatum
004 20.11.2008

Date of Issue
(day/mo/yr)

Genehmigungsinhaber *License Holder*

Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
Park, Shiyan Street, Baoan District
Shenzhen, Guangdong 518108
P.R. China

Fertigungsstätte *Manufacturing Plant*

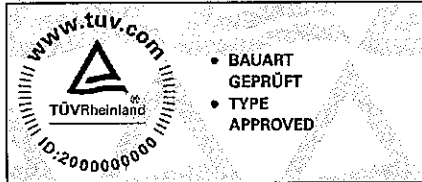
Tyco Electronics (Shenzhen)
Co., Ltd.
Tyco Electronics Technology
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Shenzhen, Guangdong 518108
P.R. China

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*

EN 61810-1:2004

IEC 61810-1:2003



Zertifiziertes Produkt (*Geräteidentifikation*)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Relay (Electromechanical Elementary Relay)

as pages 0001-0003
Change

Type Designation : EF00-1A2-Duuu-F, xxxxxx
(OEG) (SCHRACK) (Potter & Brumfield)
(P & B) (tyco) (Tyco Electronics)
uuu stands for 005, 006, 009, 012, 018, 024, 048

x = 0-9, a-z, A-Z or Blank

Remark: Replaces R 50117320 page 0004, dated 04.11.2008.
The labelling requirements acc. to EU Directive 2001/95
have to be observed for distribution within the EEA.

ANLAGE (Appendix): 1.1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.

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Zertifizierungsstelle



Certificate No. R 50117320 0006-0007 Our Reference 05-HUANGHA-17007371 006 Appendix No. 1.1

Constructional Data Form (CDF) for Electromechanical Relay

Page 1 of 5

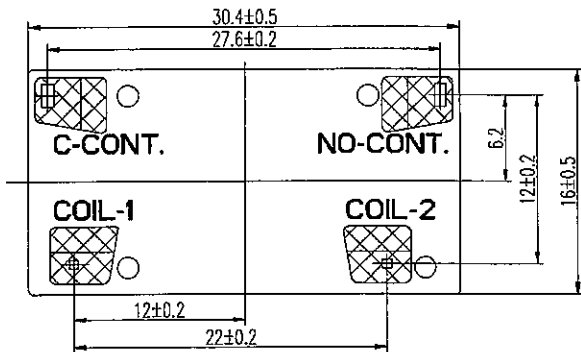
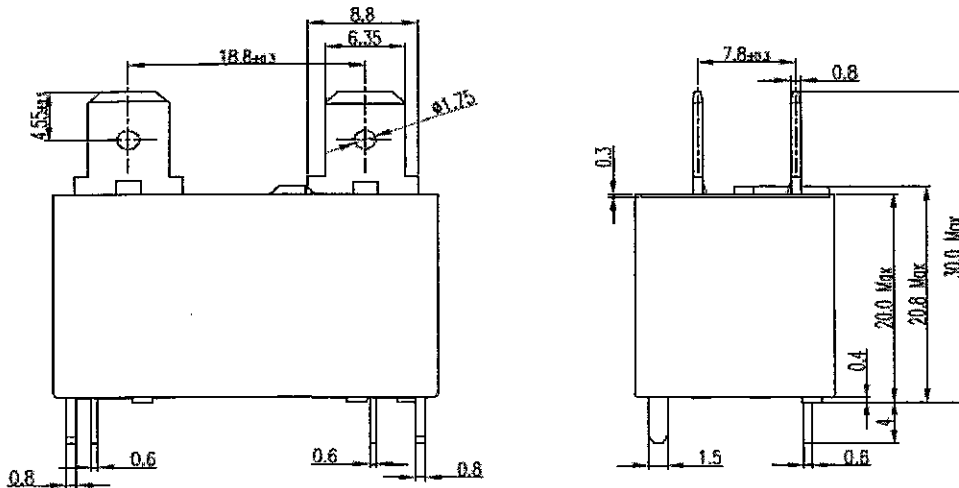
| | |
|-------------------|---|
| License holder | : Tyco Electronics (Shenzhen) Co., Ltd. Tyco Electronics Technology Park, Shiyan Street, Baoan District Shenzhen, Guangdong 518108, P.R. China |
| Factory | : Tyco Electronics (Shenzhen) Co., Ltd. Tyco Electronics Technology Park, Shiyan Street, Baoan District Shenzhen, Guangdong 518108, P.R. China |
| Type of Appliance | : Electromechanical Elementary Relay |
| Type Designation | : EF00-1A2-Duuu-F, xxxxxx series (see type nomenclature) |

| Specification (contact-circuit) | | |
|---------------------------------|---|--|
| Model name | EF00-1A2-Duuu-F, xxxxxx | |
| Contact material | AgSnO | |
| Contact loading schematic | Single-pole, 1 form a | |
| Rated voltage | AC 250V | |
| Inrush current | ----- | 80A(Flat quick-connect terminations) |
| Rated current (Stable current) | 20A(Flat quick-connect terminations) 16A(Solder terminals) | 20A(Flat quick-connect terminations) |
| cos φ or L/R, | 1.0 | (Flat quick-connect terminations) Inrush current 80Apf=0.7, for 0.3S / Stable current 20A pf=0.9, for 1.2S |
| frequency if a.c. | 50/60Hz | |
| Number of electrical cycles | 50,000 cycles (Flat quick-connect terminations) 100,000 cycles (Solder terminals) (360cycles/hour) | 100,000 cycles (Flat quick-connect terminations) (360cycles/hour) |
| Ambient temperature | -40°C ~ +85°C | 25°C |
| Duty factor | 5s ON, 5s OFF | 1,5s ON, 8,5s OFF |
| Number of mechanical cycles | 5,000,000 cycles (18,000 cycles/hour) | |

| Specification (coil-circuit) | | | | | | | |
|---------------------------------|---|-------|-------|--------|--------|--------|--------|
| Rated coil voltage | DC 5V | DC 6V | DC 9V | DC 12V | DC 18V | DC 24V | DC 48V |
| Coil resistance at 20°C | 27.7Ω | 40Ω | 90Ω | 160Ω | 360Ω | 640Ω | 2560Ω |
| Rated coil power (mW) | 900mW | | | | | | |
| Operative range of coil voltage | <input type="checkbox"/> class 1: 80% to 110% of rated coil voltage <input checked="" type="checkbox"/> class 2: 85% to 110% of rated coil voltage | | | | | | |
| Thermal insulation class | F (155°C) | | | | | | |

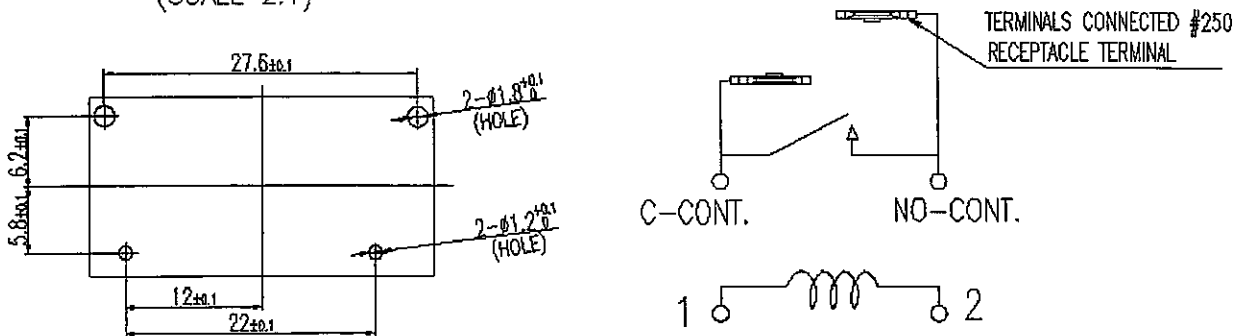


OUTLINE DRAWING


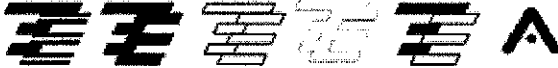












DRILLING DIAGRAM (BOTTOM VIEW)
(SCALE 2:1)

CONNECTION DIAGRAM (BOTTOM VIEW)



Trademarks

| | |
|--|--------------------|
| OEG | SCHRACK |
| P & B | Potter & Brumfield |
| <i>tyco</i> / Electronics | Potter & Brumfield |
| OEG | SCHRACK |
| P&B | tyco |
| <p>Tyco Electronics </p> <p>Tyco Electronics </p> <p> Tyco Electronics  Tyco Electronics</p> <p> Tyco Electronics  Tyco Electronics</p> <p> Tyco Electronics  Tyco Electronics</p> | |
|     | |

Remark: Appendix 1.1 dated on 2012.11.26 replace Appendix 1.1 dated on 2008.10.27.

