

# Zertifikat

# Certificate



Zertifikat Nr. *Certificate No.*  
R 50047802

Blatt *Page*  
0001

Ihr Zeichen *Client Reference*  
ML-850-1

Unser Zeichen *Our Reference*  
ZJ-CDR- 12008402 001

Ausstellungsdatum  
23.08.2004

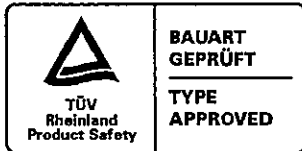
*Date of Issue*  
(day/mo/yr)

**Genehmigungsinhaber *License Holder***  
Sato Parts Co., Ltd.  
3-3-3 Ebisu  
Shibuya-ku, Tokyo 150-0013  
Japan

**Fertigungsstätte *Manufacturing Plant***  
Niigata Sato Parts Co., Ltd.  
2255-2 Torigoe, Mishima-machi  
Santo-gun, Niigata 940-2316  
Japan

## Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*  
EN 60947-7-1:2002



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

Lizenzentgelte - Einheit  
*License Fee - Unit*

Reihenklemmen Terminal Block

Type Designation : ML-850-y-z 5  
y = VAX, VBX, HAX, HBX, VBY or HBY 1  
z = A - Z, 0 - 9 (up to 15 characters) 1  
or blank

Number of Poles : 1 or 2  
Rated Operational Voltage : 250V  
Rated Operational Current : 20A  
Overvoltage Category : III  
Protection Degree : IP20  
Pollution Degree : 3  
Temperature Range : -20°C to +50°C  
Rated Connection Capacity : AWG16 to AWG12 (rigid conductor)  
Creepage Distance : 4.5mm  
Clearance : 4.5mm

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.



7

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln

Tel.:(+49/221)8 06 - 13 71 Fax:(+49/221)8 06 - 39 35 e-mail: Althoff@de.tuv.com

Dipl.-Ing. W. Nölke

# Zertifikat Certificate



Zertifikat Nr. *Certificate No.*  
R 50047802

Blatt *Page*  
0002

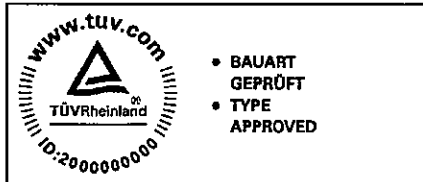
Ihr Zeichen <i>Client Reference</i>	Unser Zeichen <i>Our Reference</i>	Ausstellungsdatum	<i>Date of Issue</i> (day/mo/yr)
--	ZJL-MIU- 12008402 003	01.06.2012	

**Genehmigungsinhaber *License Holder***  
Sato Parts Co., Ltd.  
3-3-3 Ebisu  
Shibuya-ku, Tokyo  
150-0013 JAPAN

**Fertigungsstätte *Manufacturing Plant***  
Niigata Sato Parts Co., Ltd.  
2255-2 Torigoe  
Nagaoka-shi, Niigata  
940-2316 JAPAN

## Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*  
EN 60947-7-1:2009



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

**Lizenzentgelte - Einheit**  
*License Fee - Unit*

Reihenklemmen Terminal Block, as page 0001

Change

Test Requirement : EN 60947-7-1:2002

changed to : (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.

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.

**Zertifizierungsstelle**

**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>

**Dipl.-Ing. (FH) M. Geiser**

# Zertifikat *Certificate*



Zertifikat Nr. *Certificate No.*  
R 50047802

Blatt *Page*  
0003

Ihr Zeichen *Client Reference*  
FACH-NGT

Unser Zeichen *Our Reference*  
ZJL-MAA- 12008402 003

Ausstellungsdatum  
30.04.2015

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

Genehmigungsinhaber *License Holder*  
Sato Parts Co., Ltd.  
3-3-3 Ebisu  
Shibuya-ku, Tokyo  
150-0013 JAPAN

Fertigungsstätte *Manufacturing Plant*  
Sato Parts Co., Ltd. Niigata Factory  
2255-2 Torigoe  
Nagaoka-shi, Niigata  
940-2316 JAPAN

## Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*  
EN 60947-7-1:2009



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

Lizenzentgelte - Einheit  
*License Fee - Unit*

Serial Terminal Block Terminal Block, as page 0001

Change

Name of Factory: Niigata Sato Parts Co., Ltd.

changed to: (see above)



Zertifizierungsstelle

Vilmos Sztaroveczki

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# Zertifikat *Certificate*



Zertifikat Nr. *Certificate No.*  
R 50047802

Blatt *Page*  
0004

Ihr Zeichen *Client Reference*  
TUV-ADD-CH

Unser Zeichen *Our Reference*  
ZJL-MAA- 12008402 003

Ausstellungsdatum  
27.09.2016

*Date of Issue*  
(day/month/year)

**Genehmigungsinhaber *License Holder***  
Sato Parts Co., Ltd.  
3F Sanyu Bldg. 3-42-1, Hongo  
Bunkyo-ku, Tokyo  
113-0033 Japan

**Fertigungsstätte *Manufacturing Plant***  
Sato Parts Co., Ltd. Niigata Factory  
2255-2 Torigoe  
Nagaoka-shi, Niigata  
940-2316 Japan

## Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*  
EN 60947-7-1:2009



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

Lizenzentgelte - Einheit  
*License Fee - Unit*

Serial Terminal Block Terminal Block, as page 0001

Change

Address of  
License Holder: 3-3-3 Ebisu, Shibuya-ku, Tokyo  
150-0013 JAPAN

changed to: (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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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

Vilmos Sztaroveczki

# Zertifikat Certificate



Zertifikat Nr. *Certificate No.*  
R 50047802

Blatt *Page*  
0005

Ihr Zeichen *Client Reference*  
ADD-CH

Unser Zeichen *Our Reference*  
ZJL-MAA- 12008402 003

Ausstellungsdatum  
27.02.2020

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

**Genehmigungsinhaber *License Holder***  
Sato Parts Co., Ltd.  
3-3-8, Sotokanda,  
Chiyoda-ku, Tokyo  
101-0021 Japan

**Fertigungsstätte *Manufacturing Plant***  
Sato Parts Co., Ltd. Niigata Factory  
2255-2 Torigoe  
Nagaoka-shi, Niigata  
940-2316 Japan

## Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*  
EN 60947-7-1:2009



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

**Lizenzentgelte - Einheit**  
***License Fee - Unit***

Serial Terminal Block Terminal Block, as page 0001

Change

Address of  
License Holder: 3F Sanyu Bldg. 3-42-1, Hongo  
Bunkyo-ku, Tokyo  
113-0033 Japan

changed to: (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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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) F. Becker**

TÜV Rheinland  
Product safety Gmbh  
Am Grauen Stein  
D-51105 Köln

Certificate No.: R 50047802  
Our reference : ZJ-CDR- 12008402 001  
Appendix No. : 1

TÜV  
Rheinland

## Construction Data Form

Page 1/2

Applicant : Sato Parts Co., Ltd

Full address : 3-3-3 Ebisu, Shibuya-ku, Tokyo 150-0013 Japan.

Factory : Niigata Sato Parts Co., Ltd.

Full address : 2255-2 Torigoe, Mishima-machi, Santo-gun , Niigata 940-2316 JAPAN

Kind of Equipment : Terminal block

Mark of Origin : **SATO PARTS**

Type Designation : ML-850 Series (See also page 2/2)

Protection Degree : IP20

Rated connection capacity : Rigid conductor only  
AWG16 to AWG12

Strip Length : 14mm

Ambient air temperature range : -20°C to +50°C

Parts Name and the materials :

Parts Name	Materials
Housing (VX type, VY type, HX type, HY type)	Polybutylene terephthalate R/C plastic(QMFZ2)(E45587),any color,GE PLASTICS JAPAN LTD. Cat No.DR48,DR48M FLAME CLASS(94V-0), CTI Range : 175 to 249
Button (V type, H type)	Polyphenylene oxide, PPHOX R/C plastic(QMFZ2)(E41179),any color, MITSUBISHI ENGINEERING-PLASTICS CORP. Cat No.AN91 Base Material Temperature Ratings : 80°C FLAME CLASS(94V-0), . CTI Range : 175 to 249
Insulating mould (For VAX and HAX type body)	Polyphenylene oxide, PPHOX R/C plastic(QMFZ2)(E41179),any color, MITSUBISHI ENGINEERING-PLASTICS CORP. Cat No.AN91 Base Material Temperature Ratings : 80°C FLAME CLASS(94V-0), . CTI Range : 175 to 249
Wire terminal (VA1,VA2,VB1,VB2,HA1,HA2,HB1,HB2)	Brass(Sn Plated)
Spring	Stainless Steel (t0.35)

Rated operational Current : 20A

Rated operating Voltage : 250V (Pollution Degree 3)

Rated Impulse Withstand Voltage : 4000V

Köln, den 6/AUGUST/2004

Ebisu

03.08.2004

(Place)

(Date)

TÜV Rheinland  
Product Safety GmbH

SATO PARTS Co., Ltd. M.Kosho

(Stamp and Signature of Applicant)



TÜV Rheinland  
Product safety GmbH  
Am Grauen Stein  
D-51105 Köln

Certificate No.: R 50047802  
Our reference : ZJ-CDR- 12008402 001  
Appendix No. : 1

TÜV  
Rheinland

## Construction Data Form

Page 2/2

Pollution Degree : 3  
Overvoltage Category : III  
Clearance :  $\geq 4.5$  mm   
Creepage Distance :  $\geq 4.5$  mm   
Number of Contact : 1 or 2

### NOMENCLATURE

ML- 8 5 0 - y - z

ML- 8 5 0 - Basic construction (Model No.)

- y - Housing type with/without insulating mould. Bottom terminal type.  
VAX - VX type body with insulating mould. Solder terminals.  
VBX - VX type body. P.C.B. terminals.  
HAX - HX type body with insulating mould. Solder terminals.  
HBX - HX type body. P.C.B. terminals.  
VBY - VY type body. P.C.B. terminals.  
HBY - HY type body. P.C.B. terminals.

z - Blank or maximum 15 digits numbers or letters denotes drawing numbers, etc.

Köln, den 6 / AUGUST / 2004  
*chur.*

TÜV Rheinland  
Product Safety GmbH

Ebisu

(Place)

SATO PARTS Co., Ltd. M.Kosho 

(Stamp and Signature of Applicant)


03.08.2004

(Date)

# NOTICE OF ALTERATIONS/MODIFICATION

## ( 変更通知 )

Applicant (申請会社名) : Sato Parts Co., Ltd. (サトーパーツ株式会社)

2010   
Date: ~~2009~~4/26

Signature: Y. SAKURAGI

Ref. No.: ML-0850-2

Page: 1/1

(サイン)

Product (製品名) : TERMINAL BLOCK

Type designation (型式) : ML-850-y-z

Report No.: ZJ-CDR-12008402 001

License No.: R50047802


Methods (Design / Component) Presently Employed (変更前 : 現行)	Alteration/Modification to be Introduced (変更後)
<p>Parts: Materials: Insulating mould: Polyphenylene oxide, PPHOX (For VAX and HAX type body) R/C plastic(QMFZ2)(E41179), any color Mitsubishi Engineering-plastics Corp. Cat No. AN91 Base Material Temperature Ratings : 80°C FLAME CLASS(94V-0), CTI Ranges : 175 to 249</p>	<p>Parts: Materials: Insulating mould: Polyphenylene oxide, PPHOX (For VAX and HAX type body) R/C plastic(QMFZ2)(E41179), any color Mitsubishi Engineering-plastics Corp. Cat No. AN91 Base Material Temperature Ratings : 80°C FLAME CLASS(94V-0), CTI Ranges : 175 to 249</p> <p style="margin-top: 20px;">Polybutylene terephthalate R/C plastic(QMFZ2)(E45587), any color SABIC INNOVATIVE PLASTICS JAPAN L L C Cat No. DR48,DR48M Base Material Temperature Ratings : 120°C FLAME CLASS(94V-0), CTI Range : 175 to 249</p> <p style="margin-top: 20px;">Polyamide, Type 66 Nylon R/C plastic(QMFZ2)(E48133), any color UBE INDUSTRIES LTD., Cat No. 2015SE Base Material Temperature Ratings : 105°C FLAME CLASS(94V-0), CTI Range : 600 and greater</p> <div style="border: 1px solid black; padding: 5px; margin-top: 20px; width: fit-content;"> <p style="font-size: small;">△ TÜV Rheinland Japan Genehmigt/Approved <i>24. May 2010</i> <i>m. Ueki</i></p> <p style="font-size: x-small;">Ref. No.: <i>12008402 002</i></p> </div>

● 記入の仕方 : 変更前 (現行) と変更後の対比、違いが明確に理解できる書き方 (英語) でお願いします。特に1次側の変更か2次側の変更かを明記下さい。



# NOTICE OF ALTERATIONS/MODIFICATION ( 変更通知 )

Applicant (申請会社名):	Sato Parts Co., Ltd.		Date:	2023-12-5
Signature (サイン):	Yutaka Kodama	Ref. No.:	Page:	1 of 1
Product (製品名):	Terminal Block	Type designation (型式):	ML-850-y-z	
Report No.:	12008402 004	License No.:	R 50047802	


TÜV Rheinland Japan

Genehmigt/Approved

2024-01-30

Kodama

Rep. No.:

12008402 004  
(150285568)

Methods (Design / Component) Presently Employed ( 変更前 : 現行 )	Alteration/Modification to be Introduced ( 変更後 )																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: left;">Insulating Materials</th> </tr> <tr> <th style="width: 20%;">Parts Name</th> <th>Material</th> </tr> <tr> <td>Housing (VX type, VY type, HX type, HY type)</td> <td>Polybutylene terephthalate  R/C plastic (QMFZ2) (E45587), any color, GE PLASTICS JAPAN LTD., Cat No. DR48, DR48M FLAME CLASS (94V-0), CTI Range: 175 to 249</td> </tr> <tr> <td>Button (V type, H type)</td> <td></td> </tr> <tr> <td rowspan="3">Insulating mold (For VAX and HAX type body)</td> <td>Polyphenylene oxide, PPHOX  R/C plastic (QMFZ2) (E41179), any color, MITSUBISHI ENGINEERING-PLASTICS CORP., Cat No. AN91 Base Material Temperature Ratings: 80°C FLAME CLASS (94V-0), CTI Range: 175 to 249</td> </tr> <tr> <td>Polybutylene terephthalate  R/C plastic (QMFZ2) (E45587), any color, SABIC INNOVATIVE PLASTICS JAPAN L L C, Cat No. DR48, DR48M Base Material Temperature Ratings: 120°C FLAME CLASS (94V-0), CTI Range: 175 to 249</td> </tr> <tr> <td>Polyamid, Type 66 Nylon  R/C plastic (QMFZ2) (E48133), any color, UBE INDUSTRIES LTD., Cat No. 2015SE Base Material Temperature Ratings: 105°C FLAME CLASS (94V-0), CTI Range: 600 and greater</td> </tr> </table>	Insulating Materials		Parts Name	Material	Housing (VX type, VY type, HX type, HY type)	Polybutylene terephthalate  R/C plastic (QMFZ2) (E45587), any color, GE PLASTICS JAPAN LTD., Cat No. DR48, DR48M FLAME CLASS (94V-0), CTI Range: 175 to 249	Button (V type, H type)		Insulating mold (For VAX and HAX type body)	Polyphenylene oxide, PPHOX  R/C plastic (QMFZ2) (E41179), any color, MITSUBISHI ENGINEERING-PLASTICS CORP., Cat No. AN91 Base Material Temperature Ratings: 80°C FLAME CLASS (94V-0), CTI Range: 175 to 249	Polybutylene terephthalate  R/C plastic (QMFZ2) (E45587), any color, SABIC INNOVATIVE PLASTICS JAPAN L L C, Cat No. DR48, DR48M Base Material Temperature Ratings: 120°C FLAME CLASS (94V-0), CTI Range: 175 to 249	Polyamid, Type 66 Nylon  R/C plastic (QMFZ2) (E48133), any color, UBE INDUSTRIES LTD., Cat No. 2015SE Base Material Temperature Ratings: 105°C FLAME CLASS (94V-0), CTI Range: 600 and greater	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: left;">Insulating Materials</th> </tr> <tr> <th style="width: 20%;">Parts Name</th> <th>Material</th> </tr> <tr> <td>Housing (VX type, VY type, HX type, HY type)</td> <td>Polybutylene terephthalate  R/C plastic (QMFZ2) (E45587), any color, <b>SABIC JAPAN L L C</b>, Cat No. DR48, DR48M FLAME CLASS (94V-0), CTI Range: 175 to 249</td> </tr> <tr> <td>Button (V type, H type)</td> <td></td> </tr> <tr> <td rowspan="2">Insulating mold (For VAX and HAX type body)</td> <td>Polybutylene terephthalate  R/C plastic (QMFZ2) (E45587), any color, SABIC JAPAN L L C, Cat No. DR48, DR48M Base Material Temperature Ratings: 120°C FLAME CLASS (94V-0), CTI Range: 175 to 249</td> </tr> </table>	Insulating Materials		Parts Name	Material	Housing (VX type, VY type, HX type, HY type)	Polybutylene terephthalate  R/C plastic (QMFZ2) (E45587), any color, <b>SABIC JAPAN L L C</b> , Cat No. DR48, DR48M FLAME CLASS (94V-0), CTI Range: 175 to 249	Button (V type, H type)		Insulating mold (For VAX and HAX type body)	Polybutylene terephthalate  R/C plastic (QMFZ2) (E45587), any color, SABIC JAPAN L L C, Cat No. DR48, DR48M Base Material Temperature Ratings: 120°C FLAME CLASS (94V-0), CTI Range: 175 to 249
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