

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
R 50052657

Blatt *Page*
0001

Ihr Zeichen *Client Reference*
ML-4500-1

Unser Zeichen *Our Reference*
ZJ-RWA- 12009269 001

Ausstellungsdatum
18.11.2004

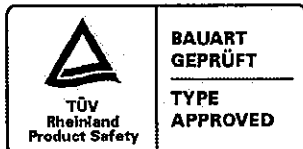
Date of Issue
(day/mo/yr)

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 61984:2001



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Steckverbinder Terminal Block with integrated Connecting device

Type Designation: ML-4500-b-cP-d	5
b = AS, ASV, ASH, AWSV, AWSH, BWSV, BWSH, CWSV, CWSH, AP, BP, CP, AJ, ASJV, ASJH, AWJV, AWJH, BWJV, BWJH, CWJV or CWJH	1
c = 2 to 20	1
d = A-Z, 0-9 (up to 15 characters) or blank	1

Number of Poles (c) : 2 to 20
Rated Operational Voltage : AC/DC 300V
Rated Operational Current : 10A
Overvoltage Category : III
Pollution Degree : 3
Protection Degree : IP20 (except models w/ soldering posts)
Temperature Range : -20°C to +105°C
Ambient Temperature at rated current : max. 70°C
Rated Connection Capacity : (see Appendix 1)
Creepage Distance : 4.9mm
Clearance : 4.08mm



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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.

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

W. Nölke

Dipl.-Ing. W. Nölke

Zertifikat

Certificate



Zertifikat Nr. Certificate No.
R 50052657

Blatt Page
0002

Ihr Zeichen Client Reference
M.K.

Unser Zeichen Our Reference
ZJ-YM- 12009269 001

Ausstellungsdatum
20.04.2005

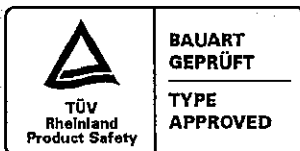
Date of Issue
(day/mo/yr)

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

Fertigungsstätte Manufacturing Plant
Sato Parts Co., Ltd.
Kasukabe Factory
8-4 Minami-Sakae-cho
Kasukabe-shi, Saitama 344-0057
Japan

Prüfzeichen Test Mark

Geprüft nach Tested acc. to
EN 61984:2001



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Steckverbinder Terminal Block with integrated Connecting device

Addition

Factory : (see above)

Change

Facotry : Niigata Sato Parts Co., Ltd.
2255-2 Torigoe, Mishima-machi
Santo-gun, Niigata 940-2316
Japan

withdrawn



Zertifizierungsstelle

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Das Produkt entspricht den o.g. Anforderungen, die Herstellung wird überwacht.
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fulfills above-mentioned-requirements, the production is subject to surveillance.

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

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W. Nölke

Dipl.-Ing. W. Nölke

Zertifikat Certificate



Zertifikat Nr. *Certificate No.*
R 50052657

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0003

Ihr Zeichen *Client Reference*
ML-4500-2

Unser Zeichen *Our Reference*
ZJL-CDR- 12009269 002

Ausstellungsdatum
02.09.2005

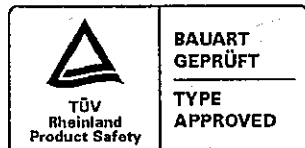
Date of Issue
(day/month/year)

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

Fertigungsstätte *Manufacturing Plant*
Sato Parts Co., Ltd.
Kasukabe Factory
8-4 Minami-Sakae-cho
Kasukabe-shi, Saitama 344-0057
Japan

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 61984:2001



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Steckverbinder Terminal Block with integrated Connecting device

Addition

for Type Designation ML-4500-b-cP-d :

Item for suffix b : ASF or ASJF (ASJF is a part of ASF)

Between contact and panel (ASF) :

Creepage Distance : 4.4mm

Clearance Distance : 4.4mm

Remarks : Only basic insulation is provided between
ML-4500-ASF-cP-d contacts and mounting plate.
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.
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This certificate is based on our Testing and Certification Regulation. The product
fulfills above-mentioned-requirements, the production is subject to surveillance.

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

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Zertifizierungsstelle

Dipl.-Ing. M. Geiser

Zertifikat Certificate



Zertifikat Nr. Certificate No.
R 50052657

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0004

Ihr Zeichen Client Reference
T.M.

Unser Zeichen Our Reference
ZJL-MIU- 12009269 004

Ausstellungsdatum
11.09.2012

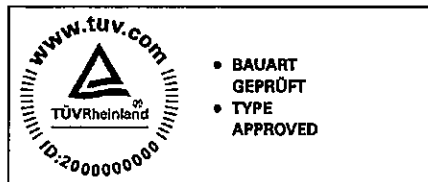
Date of Issue
(day/mo/yr)

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

Fertigungsstätte Manufacturing Plant
Sato Parts Co., Ltd.
Kasukabe Factory
8-4 Minami-Sakae-cho
Kasukabe-shi, Saitama
344-0057 JAPAN

Prüfzeichen Test Mark

Geprüft nach Tested acc. to
EN 61984:2009



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Steckverbinder Terminal Block with integrated Connecting device, as page 0001

Change

Test Requirement : EN 61984:2001

changed to : (see above)



Zertifizierungsstelle

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

Dipl.-Ing. (FH) J. Taylor

Zertifikat Certificate



Zertifikat Nr. Certificate No.
R 50052657

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0005

Ihr Zeichen Client Reference
T.M.

Unser Zeichen Our Reference
ZJL-MAA- 12009269 004

Ausstellungsdatum
15.06.2016

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 61984:2009



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Connector Terminal Block with integrated Connecting device, as page 0001

Addition

Factory: (see above)



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Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Zertifizierungsstelle

Dipl.-Ing. (FH) F. Becker

Zertifikat Certificate



Zertifikat Nr. Certificate No.
R 50052657

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0006

Ihr Zeichen Client Reference
TUV-ADD-CH

Unser Zeichen Our Reference
ZJL-MAA- 12009269 004

Ausstellungsdatum
27.09.2016

Date of Issue
(day/mo/yr)

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 61984:2009



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Connector Terminal Block with integrated Connecting device, 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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Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Zertifizierungsstelle

Vilmos Sztaroveczki

Zertifikat Certificate



Zertifikat Nr. Certificate No.
R 50052657

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0007

Ihr Zeichen Client Reference	Unser Zeichen Our Reference	Ausstellungsdatum	Date of Issue
Factory-Del-Kasukabe	ZJL-MAA- 12009269 004	27.01.2017	(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 61984:2009



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Connector Terminal Block with integrated Connecting device, as page 0001
Change

Factory: Sato Parts Co., Ltd.
Kasukabe Factory
8-4 Minami-Sakae-cho
Kasukabe-shi, Saitama
344-0057 JAPAN

withdrawn

Remark: Replaces R 50052657 page 0007, dated 17.01.2017.



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

Dipl.-Ing. (FH) F. Becker

Zertifikat Certificate



Zertifikat Nr. Certificate No.
R 50052657

Blatt Page
0008

Ihr Zeichen Client Reference	Unser Zeichen Our Reference	Ausstellungsdatum	Date of Issue (day/mo/yr)
ADD-CH	ZJL-MAA- 12009269 004	27.02.2020	

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 61984:2009



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Connector Terminal Block with integrated Connecting device, 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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Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Zertifizierungsstelle

Dipl.-Ing. (FH) F. Becker

Constructional Data Form

Page 1/4

Licenseholder : **Sato Parts Co., Ltd.**
 3-3-3 Ebisu, Shibuya-ku, Tokyo 150-0013 Japan

Factory : **Sato Parts Co., Ltd Kasukabe Factory**
 (full address) 8-4 Minami-sakae-chou, Kasukabe-shi, Saitama 344-0057 Japan.

Type or Model Number : **ML-4500 series**
 Kind of device: **Terminal Block with Connecting Device**

Specifications			
Type designation	ML-4500 series		
Contact material	Copper Alloy (gold Plating)		
Number of poles	2 to 20		
Rated voltage	AC 300V / DC 300V		
Rated current	10A		
Rated frequency	AC 50/60		
Rated withstand Impulse voltage	AC 4000V		
Breaking Capacity	N/A		
Mechanical endurance	100 times		
Number of bendings	N/A		
Overvoltage category	III		
Pollution degree	3		
Creepage / Clearance distances ①(contact - contact): All except AS type ②(contact - panel): AS type ASF	Between	Creepage Distance	Clearance Distance
	①(Contact - Contact)	4.9mm	4.08mm
	Between	Creepage Distance	Clearance Distance
	②(Contact - Panel)	4.4mm	4.4mm
Upper limit temperature	105°C		
Lower limit temperature	-20°C		
Max. ambient temp. at rated current	70°C		
IP code	IP20 (except models with soldering posts)		
Classification	☐ CBC ☒ NCB		

Köln, den 30. Aug 2005

TÜV Rheinland
 Product Safety GmbH

Ebisu

(Place)

13.07.2005

(Date)

SATO PARTS Co., Ltd

M.Kosho

(Stamp and Signature of Applicant)

Constructional Data Form

Page 2/4

Specifications (terminals)	
Type of terminals	☐ WRAPPED CONNECTION ☐ CRIMPED CONNECTION ☐ CLIP CONNECTION ☐ PRESS-IN CONNECTIONS ☐ INSULATION DISPLACEMENT CONNECTION ☒ SCREWLESS TERMINALS ☐ SCREW TERMINALS ☐ FLAT, QUICK CONNECT TERMINATIONS ☒ SOLDER TERMINALS ☐ other:
Terminal designation	Terminal Symbol display : 1,2,3... (except receptacle side with soldering post)
Spec. Tightening torque	N/A
Rated cross section of conductor	For flexible conductor: 0.2~2.0mm ² (AWG24~14) For rigid conductor: Ø0.4mm~Ø1.6mm (AWG26~14)
Kind of conductor	Flexible / rigid
Required preparation of the conductor	N/A
Max. Stripping length	10.0mm
Max. Number of conductors perTerminal	1

Materials	
Parts' Name	Material
Wire Release	Polyamide, Type 66 Nylon R/C plastic (QMFZ2) 、 File No. : E48133 any color, UL94V-0 、 0.78mm thick, UBE INDUSTRIES LTD., Type 2015SV RTI : 105°C, CTI : 0 (PLC)
Plug housing	
Shield block	
Receptacle housing	
Plug block for screw-lock type base	
Mounting block for screw- lock type(R)	
Mounting block for screw- lock type(L)	
Lock lever block	
Shield block for half lock type	
Mounting block for lock lever type(R)	
Mounting block for lock lever type(L)	
Receptacle block for relay type	
Mounting block for Vertical fixation	
Mounting block for Horizontal fixation(R)	
Mounting block for Horizontal fixation(L)	
Wire terminal with action contacts	Phosphor Bronze(t0.4) : Partial tin or gold plate on Nickel plate.
Wire terminal with pin contact	Phosphor Bronze(t0.4 and t1.0) : Partial tin or gold plate on nickel plate.

Köln, den 30. Aug. 2005

Ebisu

13.07.2005

(Place)

(Date)

TÜV Rheinland
 Product Safety GmbH

SATO PARTS Co., Ltd

M.Kosho

(Stamp and Signature of Applicant)

Constructional Data Form

Page 3/4

Materials

Parts' Name	Material
Spring	One provided per pole. Stainless steel, 11.7 by 9.82 by 4.2mm overall, 0.35mm thick. Secured to 'Wire terminal with action contacts' or 'Wire terminal with pin contact' by one notch.
Pin contact(V type)	Phosphor Bronze(t1.0) : Partial tin or gold plate on nickel plate.
Pin contact(H type)	Phosphor Bronze(t1.0) : Partial tin or gold plate on nickel plate.
Joint lock screw	Plated Steel M2.5×8
Joint lock nut	Plated Steel M2.5×2

TYPE NOMENCLATURE:

Example : $\frac{ML-4500}{A} - \frac{AS}{B} - \frac{1\ 2\ P}{C} - \frac{Z}{D}$

A — Basic construction (Model No.)

B — Type of plug side and Shape of soldering post

AS — Plug side: Lock lever type.
 Soldering post: None (Relay type)

ASV — Plug side: Lock lever type.
 Soldering post: None (Relay type with mounting block for vertical fixation)

ASH — Plug side: Lock lever type.
 Soldering post: None (Relay type with mounting block for horizontal fixation)

ASF — Plug side: Lock lever type.
 Soldering post: None (Panel mount type with flange)

AWSV — Plug side: Lock lever type.
 Soldering post: Straight

AWSH — Plug side: Lock lever type.
 Soldering post: 90° towards back

BWSV — Plug side: Screw lock type.
 Soldering post: Straight

BWSH — Plug side: Screw lock type.
 Soldering post: 90° towards back

CWSV — Plug side: Half lock type.
 Soldering post: Straight

Köln, den 30. AUG 2005

TÜV Rheinland
 Product Safety GmbH

Ebisu

(Place)

13.07.2005

(Date)

SATO PARTS Co., Ltd

M.Kosho

(Stamp and Signature of Applicant)

Constructional Data Form

Page 4/4

CWSH —Plug side: Half lock type.

Soldering post: 90° towards back

AP —Plug side: Lock lever type.

Soldering post: None, a part of AS, ASV, ASH, ASF, AWSV or AWSH (plug)

BP —Plug side: Screw lock type.

Soldering post: None, a part of BWSV or BWSH (plug)

CP —Plug side: Half lock type.

Soldering post: None, a part of CWSV or CWSH (plug)

AJ —Plug side: None

Soldering post: None, a part of AS (receptacle)

ASJV —Plug side: None

Soldering post: None, a part of ASV (receptacle)

ASJH —Plug side: None

Soldering post: None, a part of ASH (receptacle)

ASJF —Plug side: None

Soldering post: None, a part of ASF (receptacle)

AWJV —Plug side: None

Soldering post: Straight, a part of AWSV (receptacle)

AWJH —Plug side: None

Soldering post: 90° towards back, a part of AWSH (receptacle)

BWJV —Plug side: None

Soldering post: Straight, a part of BWSV (receptacle)

BWJH —Plug side: None

Soldering post: 90° towards back, a part of BWSH (receptacle)

CWJV —Plug side: None

Soldering post: Straight, a part of CWSV (receptacle)

CWJH —Plug side: None

Soldering post: 90° towards back, a part of CWSH (receptacle)

C — Number of poles : 2 to 20

D — Suffix : Blank or maximum 15 digit(s) number and/or letters such as drawing numbers.
Example; Specified drawing number that denote specified colors of the body.

Note : Dashes are optional.

Köln, den 30. AUG 2005

TÜV Rheinland
Product Safety GmbH

Ebisu

(Place)

13.07.2005

(Date)

SATO PARTS Co., Ltd

M.Kosho

(Stamp and Signature of Applicant)

