

Zertifikat

mit überwachter Konformität

Certificate

of surveyed conformity



Zertifikat Nr. Certificate No.
J 9950831

Blatt Page
01

Ihr Zeichen Client Reference
ML-1800-1

Unser Zeichen Our Reference
00042- NA/sot E9961415E01

Ausstellungsdatum Date of Issue
21.09.99 (day/month/year)

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



Geprüft nach Tested Acc. to

EN 60947-1:1997+A1+A2

EN 60947-7-1:1991+A11

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Terminal Block

Type Designation	: ML-1800 xyP	5
x =	0-9, A-Z and/or blank (see Appendix 1)	1
y =	02 to 200 (number of poles)	1
Rated Current	: 10A	
Rated Voltage:	Pollution Degree:	
250V	3	
300V	2 or	
	3 with 2.5mm/5mm spacing piece	

Overvoltage Category: III

Rated Impulse

Withstand Voltage : 4kV

Creepage Distance : 3.2mm (5.7mm with spacing piece)

Clearance : 3.2mm (5.7mm with spacing piece)

Rated Ambient Temp. : -20 to +50°C

Rated Cross Section : 0.3mm² to 1.65mm² (AWG22 to AWG14)

Remark: Screwless and solder terminal.

Remark: Replaces J 9950831 page 01, dated 07.09.99

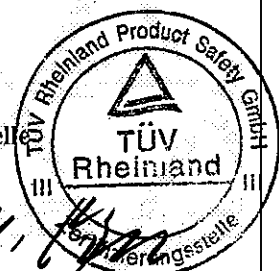
ANLAGE (Appendix): 1

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

Dipl.-Ing. M. Borgmann

Zertifikat

mit überwachter Konformität

Certificate

of surveyed conformity



Zertifikat Nr. *Certificate No.*
J 9950831

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02

Ihr Zeichen *Client Reference*
ML-1800-2

Unser Zeichen *Our Reference*
ZO-BWE- 09961415 002

Ausstellungsdatum
01.07.2003

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

Terminal Block

Change

Test Requirements : EN 60947-1:1997+A1+A2
EN 60947-7-1:1991+A11

changed to : (see above)

Addition

Type Designation : ML-1800TxyPz
x, y, z = (see Appendix 1.1)
(Terminals with half pitch offset)

1
1

Remark : EN 60947-1 removed since included in EN 60947-7-1.

2

ANLAGE (Appendix): 1.1

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

W. Nölke

Dipl.-Ing. W. Nölke

Zertifikat **Certificate**
mit überwachter Konformität *of surveyed conformity*



Zertifikat Nr. *Certificate No.*
J 9950831

Blatt *Page*
03

Ihr Zeichen *Client Reference*
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Unser Zeichen *Our Reference*
ZJL-MIU- 09961415 004

Ausstellungsdatum
01.06.2012

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*
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

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.
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 LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax: +49 221 806-3935 <http://www.tuv.com/safety>

Dipl.-Ing. (FH) M. Geiser

Zertifikat *Certificate*
mit überwachter Konformität *of surveyed conformity*



Zertifikat Nr. *Certificate No.*
J 9950831

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04

Ihr Zeichen *Client Reference*
FACH-NGT

Unser Zeichen *Our Reference*
ZJL-MAA- 09961415 005

Ausstellungsdatum
30.04.2015

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. 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

Terminal Block, as page 0001

Change

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

changed to: (see above)



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 LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax: +49 221 806-3935 http://www.tuv.com/safety

Vilmos Sztaroveczki

Zertifikat *Certificate*
mit überwachter Konformität *of surveyed conformity*



Zertifikat Nr. *Certificate No.*
J 9950831

Blatt *Page*
05

Ihr Zeichen *Client Reference*
TUV-ADD-CH

Unser Zeichen *Our Reference*
ZJL-MAA- 09961415 005

Ausstellungsdatum *Date of Issue*
27.09.2016
(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 60947-7-1:2009

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

Lizenzentgelte - Einheit
License Fee - Unit

Terminal Block, as page 0001

Change

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

changed to: (see above)



Zertifizierungsstelle

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 LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax: +49 221 806-3935 <http://www.tuv.com/safety>

Vilmos Sztaroveczki

Zertifikat *Certificate*
mit überwachter Konformität *of surveyed conformity*



Zertifikat Nr. *Certificate No.*
J 9950831

Blatt *Page*
06

Ihr Zeichen *Client Reference*
ADD-CH

Unser Zeichen *Our Reference*
ZJL-MAA- 09961415 005

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

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.
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 LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com
Fax: +49 221 806-3935 <http://www.tuv.com/safety>

Dipl.-Ing. (FH) F. Becker

Produktsicherheit und – qualität Product Safety and Quality	Certificate No.: J 9950831 Our reference: 0 9961415 002 Appendix No.: 1.1 (To be filled in by TÜV Rheinland)	 TÜV Rheinland Berlin Brandenburg
	Constructional Data Form Page 1/2	

Licenseholder : Sato Parts Co., Ltd
 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

Type or Model Number : ML-1800 series
 Kind of device: Terminal Block

Specifications	
Type designation	ML-1800 series
Type of terminals	
Rated cross section of conductor	AWG22 – AWG14
Kind of conductor	rigid
max. Stripping length	
max. Number of conductors per terminal	1
Number of poles	2 to 200
Rated voltage	300V (Pollution Degree 2 without Spacing Piece) 250V (Pollution Degree 3 without Spacing Piece) 300V (Pollution Degree 3 with 2.5mm Spacing Piece) 300V (Pollution Degree 3 with 5mm Spacing Piece)
Rated impulse withstand voltage	4000V
Rated current	10A
Overvoltage category	III
Pollution degree	2 or 3
Upper limit temperature	+50°C
Lower limit temperature	-20°C
IP code	IP00

Köln, den 17. 6. 2003


TÜV Rheinland
 Product Safety GmbH

Ebisu

(Place)

03.06.2003

(Date)

SATO PARTS Co., Ltd.

M. Kosho

(Stamp and Signature of Applicant)

Produktsicherheit und – qualität Product Safety and Quality	Certificate No.: J 9950831 Our reference: 0 9961415 002 Appendix No.: 1.1 (To be filled in by TÜV Rheinland)	 TÜV Rheinland Berlin Brandenburg
	Constructional Data Form Page 2/2	

Insulating Materials			
Part	Material	Type designation / Manufacturer	Material group
Base material	Polyamide, Type 66 Nylon	2015SV / UBE Industries Ltd	I
Wire Release	Polyphenylene Oxide	AN60+ / Mitsubishi Engineering-Plastics Corp	I

TYPE NOMENCLATURE:

ML-1800 w x yP z

ML-1800— Basic Construction (Model No.)

w— The mutual position between terminals:
 Blank— terminals stands in line
 T—terminals stands half pitch staggered.

x— Thickness of Spacing Piece:
 S1—no spacing piece
 S2—2.5mm Spacing Piece
 S3—5.0mm Spacing Piece

y — Number of poles: 2 to 200

z — Blank or maximum 15 digit(s) number and/or letters ^{without technical relevance.} such as drawing numbers.
~~Example: Specified drawing number that denote color variations of the base.~~

Köln, den 17.6.03


TÜV Rheinland
 Product Safety GmbH

Ebisu

(Place)

03.06.2003

(Date)

SATO PARTS Co.,Ltd.

M.Kosho

(Stamp and Signature of Applicant)

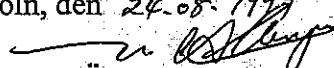
Constructional Data Form for Terminal Block

Page (1/10)

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

- 1.2 Mark of Origin : SATO PARTS**
- 1.3 Type designation : ML-1800 series**
(see nomenclature page 3/10)
- 1.5 Protection degree : IP 00**
- 1.6 Number of terminals : Number of terminals variable (2 to 200)**
- 1.7 Rated connecting capacity : AWG 14 to AWG 22 (rigid)**
- 1.8 Ambient air temperature range : -20°C to +50°C**
- 1.9 Material of housing : Polyamide, Type 66 Nylon**
Material of Wire Release : Polyphenylene Oxide
- 1.10 Flammabilityclass of housing : Polyamide, 66Nylon, 94V-0, any color.**
Sectional Block and End Plate : Polyphenylene, Oxide, 94V-2, 94V-1 or 94V-0,
Wire Release any color.
- 1.11 Material of contact : Plated Copper Alloy**
Spring : Stainless Steel
- 2.1 Rated operational current : 10A**
- 2.2 Rated operational voltage : 300V (Pollution Degree 2 without Spacing Piece)**
: 250V (Pollution Degree 3 without Spacing Piece)
: 300V (Pollution Degree 3 with 2.5 mm Spacing Piece)
: 300V (Pollution Degree 3 with 5 mm Spacing Piece)
- 2.3 Rated impulse withstand voltage : 4000V**

Köln, den 24.08.1999

TÜV Rheinland
Product Safety GmbH

Ebisu
(Place)

18.08.1999
(Date)

SATO PARTS Co., Ltd. K. Tsuge
(Stamp and Signature of Applicant)

Constructional Data Form for Terminal Block

Page (2/10)

3 Insulation coordination acc. to EN 60947-1

3.1 Pollution degree : 2 and 3

3.2 Overvoltage category : III

3.3 Kriechstrecke / creepage :
Luftstrecke / clearance distance :
Kriechstromfestigkeit / CTI value : ≥ 600 (Insulation material I)
zwischen / between :
Kontakten / Contacts :

Remark: Clause 3.3 does not need to be filled in, if the Table below is used.

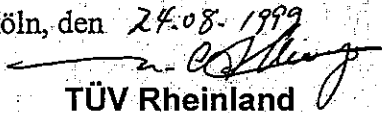
Type designation	Creepage (mm)	Clearance (mm)
Upper terminal to Lower terminal	≥ 5.0	≥ 5.0
Between terminal assemblies ML-1800S1	3.2	3.2
ML-1800S2	5.7	5.7
ML-1800S3	8.2	8.2

3.4 Information regarding mounting etc.

Type designation	Mounting	Mounting Screw size	Torque (Nm)
ML-1800S1	Mounting on PCB	Screwless terminal N/A	N/A
ML-1800S2	Mounting on PCB	N/A	N/A
ML-1800S3	Mounting on PCB	N/A	N/A

Operation instructions:

- Number of conductor on each terminal assemblies is : 1
- Suitable installation has to be maintained by built-in conditions.
- Marking shall be provide in final conditions.

Köln, den 24.08.1999

TÜV Rheinland
Product Safety GmbH

Ebisu
(Place)

18.08.1999
(Date)

SATO PARTS Co., Ltd. K. Tsuge
(Stamp and Signature of Applicant)

Constructional Data Form for Terminal Block

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3.5 Short-time withstand current and wire size

Type designation	Wire size AWG / mm ²	Short- time withstand current (A)
ML-1800 series	AWG 14 / 2.0 mm ²	240
	AWG 22 / 0.3 mm ²	36

3.6 Nomenclature (see below)

Example:

ML-1800 S1 14P
A B

A – Basic Constructuion
(Model No.)

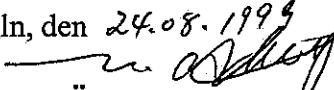
B – Thickness of Spacing Piece

S1 – None

S2 – 2.5 mm Spacing Piece

S3 – 5.0 mm Spacing Piece

or Maximum nine digits number and/or letters, denote various kinds of combination with hight of wire release and number of poles. one, two or three digit number (2 to 200) were followed by "P".

Köln, den 24.08.1999

TÜV Rheinland
Product Safety GmbH

Ebisu

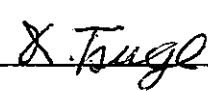
(Place)

18.08.1999
(Date)

SATO PARTS Co., Ltd.

K. Tsuge

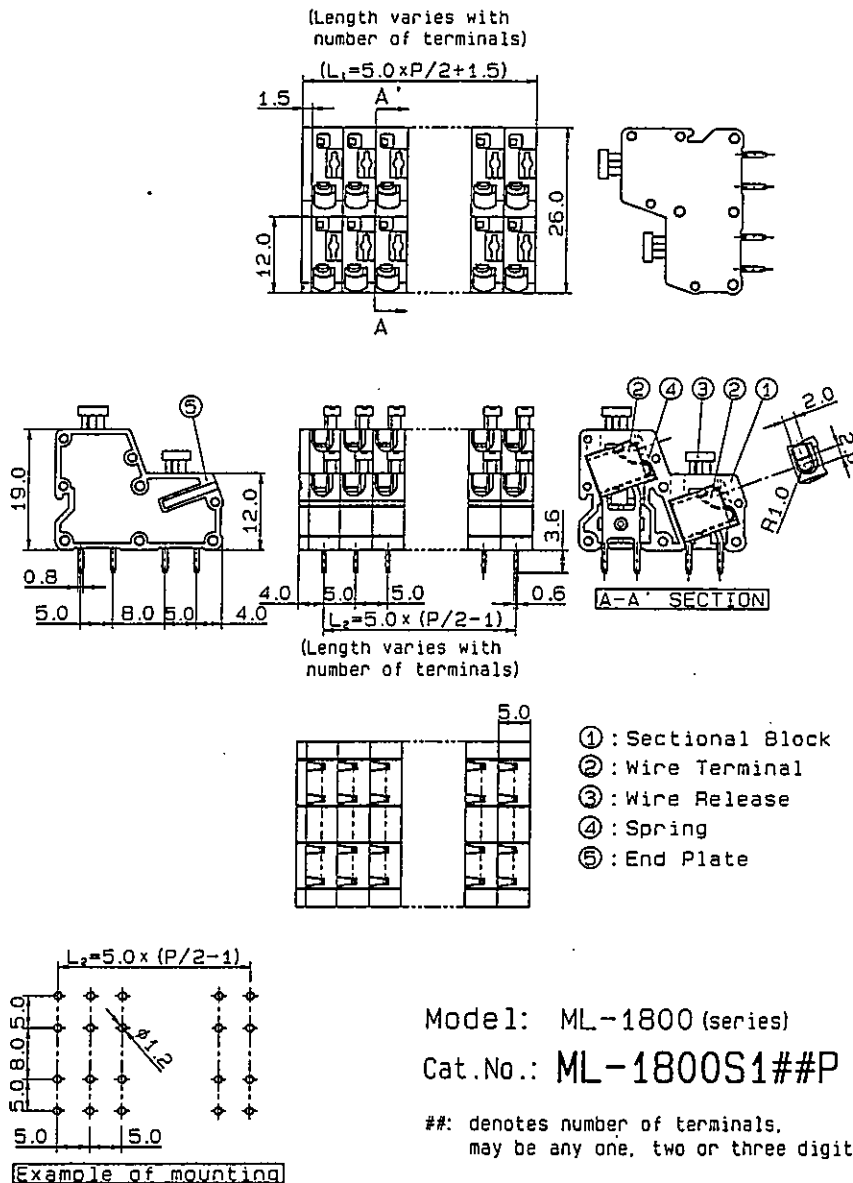
(Stamp and Signature of Applicant)



Constructional Data Form for Terminal Block

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All dimensions are nominal, except where specifically described.



THIRD UNIT: MM SATO PARTS
ANGLE

Köln, den 24.08.1999
[Signature]
TÜV Rheinland
Product Safety GmbH

Fbisu
(Place)

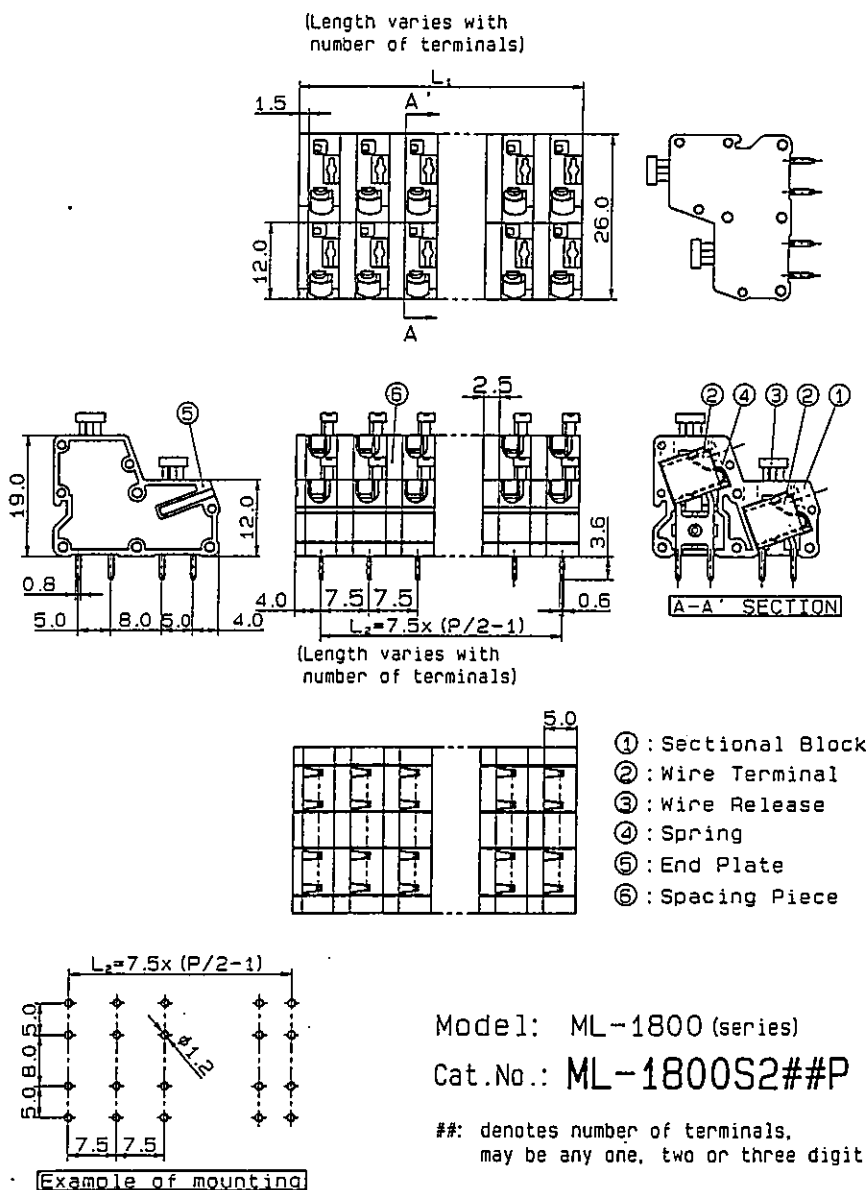
18.08.1999
(Date)

SATO PARTS Co., Ltd. K. Tsuge
(Stamp and Signature of Applicant)

Constructional Data Form for Terminal Block

Page (6/10)

All dimensions are nominal, except where specifically described.



THIRD ANGLE UNIT: MM SATO PARTS

Köln, den 24. 08. 1999

TÜV Rheinland
Product Safety GmbH

Ebisu
(Place)

18. 08. 1999
(Date)

SATO PARTS Co., Ltd.

K. Tsuge

(Stamp and Signature of Applicant)

X. Tsuge

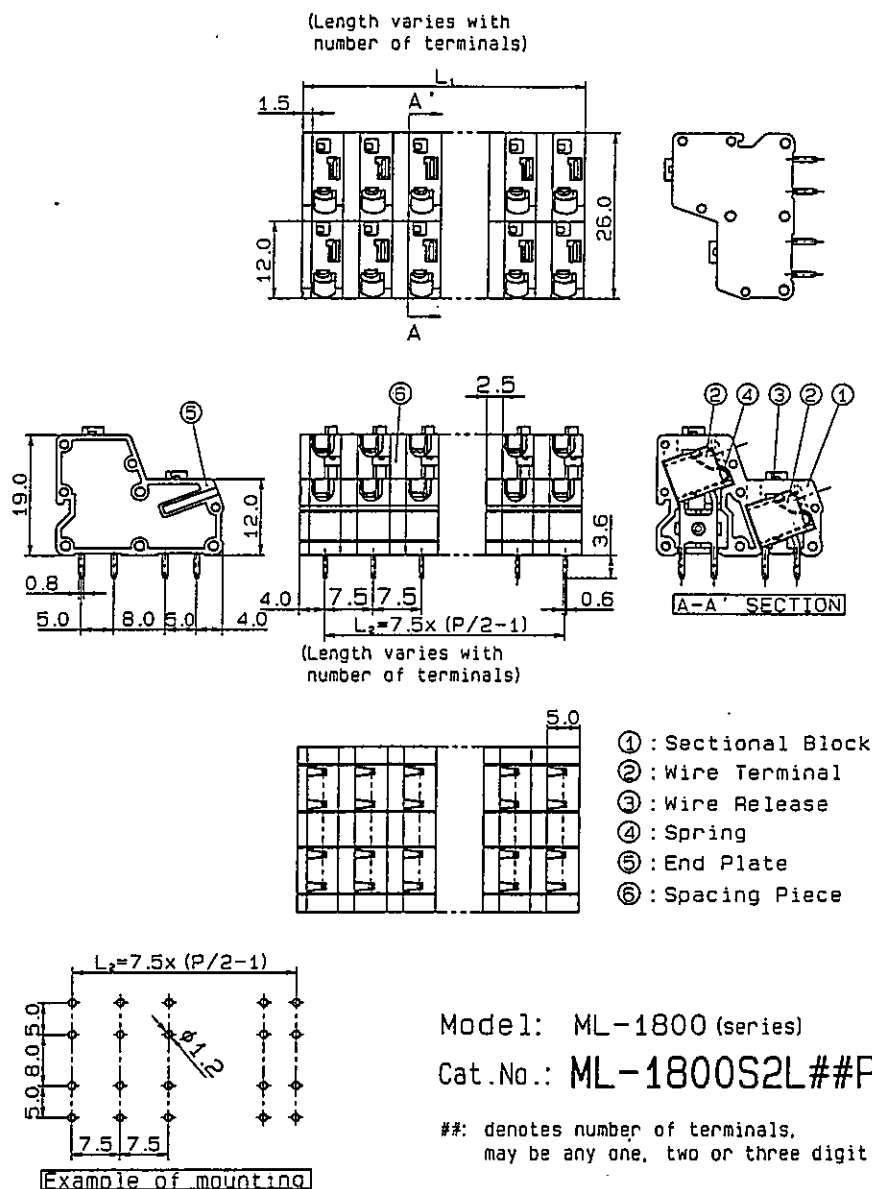
(To be filled in by TÜV Rheinland)

COMPONENTS

Constructional Data Form for Termminal Block

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All dimensions are nominal, except where specifically described.



THIRD ANGLE	UNIT: MM	SATO PARTS
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Köln, den 24. v 8. 1999

TÜV Rheinland
Product Safety GmbH

Eb i su
(Place)

18.08.1999
(Date)

SATO PARTS Co., Ltd. K. Tsuge

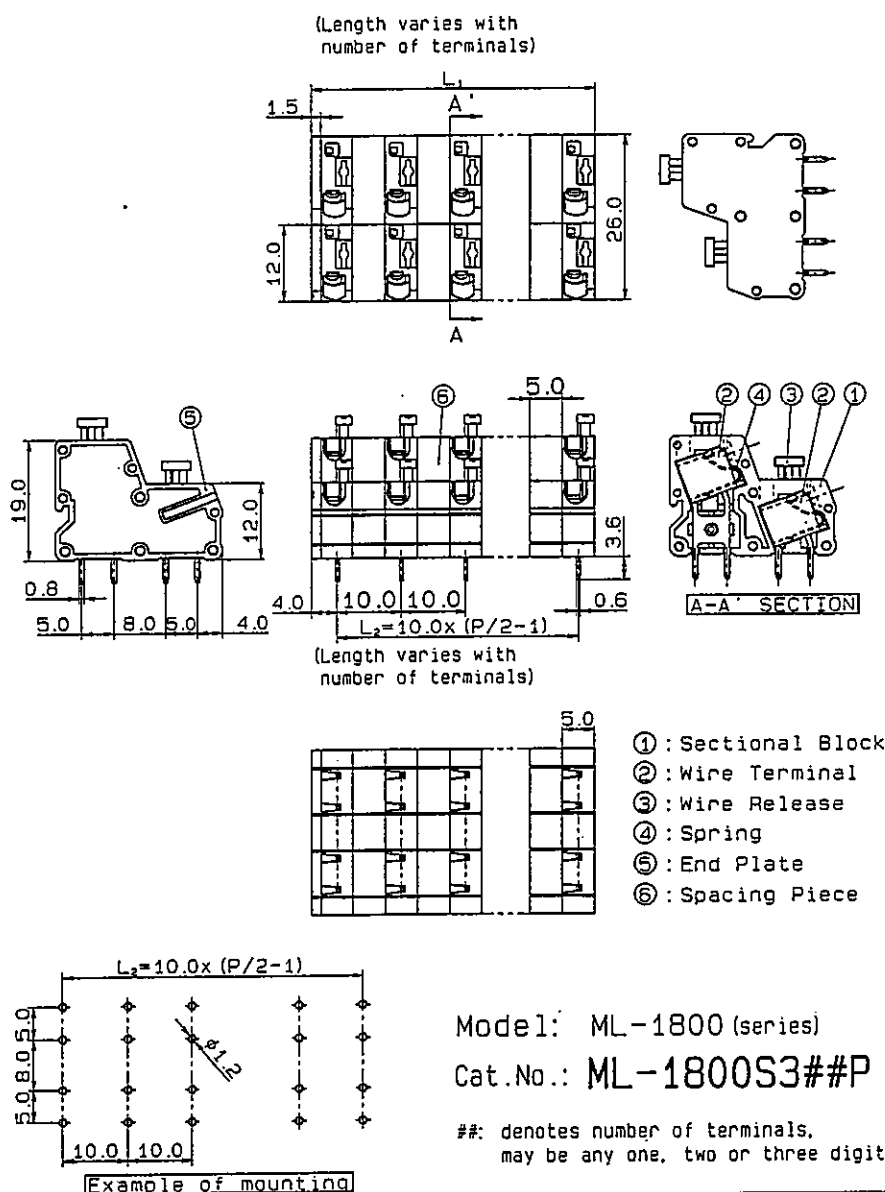
(Stamp and Signature of Applicant)

ARJ-KL-CASIIAREDCDF847-7-1VC9961415.ED1-V.1.0-15.06.1999

Constructional Data Form for Terminal Block

Page (8/10)

All dimensions are nominal, except where specifically described.



THIRD ANGLE	UNIT: MM	SATO PARTS
----------------	----------	-------------------

Köln, den 24.08.1999

TÜV Rheinland
Product Safety GmbH

Eb i su
(Place)

18.08.1999
(Date)

SATO PARTS Co., Ltd.

K. Tsuge

(Stamp and Signature of Applicant)

X. Tunge

Constructional Data Form for Terminal Block

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Sample 1	(Example, an imaginary Cat. No.) Cat.No.: ML-1800A123456 Model Symbol of discrimination
Sample 2	(Example, an imaginary Cat. No.) Cat.No.: ML-1800ABCDE23 Model Symbol of discrimination
Sample 3	(Example, an imaginary Cat. No.) Cat.No.: ML-1800A2233BC Model Symbol of discrimination
Model: ML-1800(series) Cat.No.: ML-1800zz zz: Suffix, maximum 9 digit number and/or letters, denotes various kinds of combination.	
Combination samples	
THIRD ANGLE	UNIT: MM SATO PARTS

Köln, den **24.08.1999**

TÜV Rheinland
Product Safety GmbH

Ebisu
(Place)

18.08.1999
(Date)

SATO PARTS Co., Ltd. **K. Tsuge**
(Stamp and Signature of Applicant)

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)

Signature: D. Sato

(サイン)

Ref. No.: _____

Date: 2012/11/9

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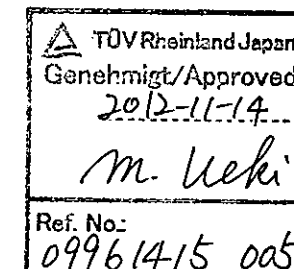
Product (製品名) : TERMINAL BLOCK

Type designation (型式) : ML-1800 series

Report No.: _____

License No.: J 9950831

Methods (Design / Component) Presently Employed (変更前 : 現行)				Alteration/Modification to be Introduced (変更後)			
Insulating Materials				Insulating Materials			
Part	Material	Type designation / Manufacturer	Material group	Part	Material	Type designation / Manufacturer	Material group
Base material	Polyamide, Type 66 Nylon	2015SV / UBE Industries Ltd 2015SE / UBE Industries Ltd FR370 / Asahi Kasei Chemicals Corp	I	Base material	Polyamide, Type 66 Nylon	2015SV / UBE Industries Ltd 2015SE / UBE Industries Ltd FR370 / Asahi Kasei Chemicals Corp Alternate: A30SFN31 / LANXESS AG	I



● 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. (サトーパーツ株式会社)

Date: 2009/8/17

Signature: Y. SAKURAGI
(サイン)

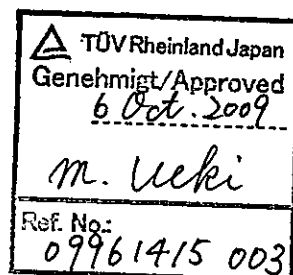
Ref. No.: 0 9961415 002

Page: 1/1

Product (製品名) : TERMINAL BLOCK Type designation (型式) : ML-1800 series

Report No.: 09961415 003 License No.: J 9950831

Methods (Design / Component) Presently Employed (変更前 : 現行)				Alteration/Modification to be Introduced (変更後)			
Insulating Materials				Insulating Materials			
Part	Material	Type designation / Manufacturer	Material group	Part	Material	Type designation / Manufacturer	Material group
Base material	Polyamide, Type 66 Nylon	2015SV / UBE Industries Ltd	I	Base material	Polyamide, Type 66 Nylon	2015SV / UBE Industries Ltd <u>Alternate:</u> 2015SE / UBE Industries Ltd FR370 / Asahi Kasei Chemicals Corp	I
Wire Release	Polyphenylene Oxide	AN60+ / Mitsubishi Engineering-Plastics Corp	I	Wire Release	Polyphenylene Oxide	AN60+ / Mitsubishi Engineering-Plastics Corp <u>Alternate:</u> LN60+ / Mitsubishi Engineering-Plastics Corp	I



● 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。

