

Class	MES	Control No.	MES B 015
Title	Part standard Terminal	Edition No.	15
		Mitsuba Corporation	

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1. Scope of application

This standard specifies types, quality, etc. of cable terminals for automobiles, (hereafter referred to as “terminal”) used in products of Mitsuba Corporation.

2. Terms and definitions

- (1) Electric cable: Low-tension cables for automobiles (AV, AVS, AVSS, CAVS), polyvinyl chloride insulated wires for communication apparatus (KV), etc. which consist of conductive copper wires and insulating coating made of mainly polyvinyl chloride. Hereafter referred to as “cable”.
- (2) Terminal: Electric contacts crimped to a cable and used singly or with connector (narrow sense) or insulating sleeve.
- (3) ○○○ series: Representation of nominal size of a terminal in inch/1000. It is based on the dimension of insertion portion (width) of male blade, tab receptacle and flag terminal. (Example) 250 series (= 250/1000 inch = 6.35 mm: terminal width)
- (4) Connector (narrow sense): A constituent part of connector (wide sense) which accommodates terminal(s).
- (5) Connector (wide sense): An assembly of terminal(s) and connector (narrow sense).
(Remark) In accordance with the change in part name designation from Japanese to English, “housing” is changed to “connector”. However, connector is also used in the conventional meaning, so in the senction of “Terms and definitions”, conventional “housing” is described as “connector (narrow sense)” and conventional “connector” is described as “connector (wide sense)”.

3. Types of terminals

Types of terminals used in Mitsuba Corporation shall be in accordance with Table 1.

Table 1.

Type of terminal	Symbol	Shape and size	Remarks
Eyelet terminal	LA	Attached table 1	
Spade terminal	LE	Attached table 2	
Plug	CA	Attached table 3	
Plug receptacle	CB	Attached table 4	
Double plug receptacle	CW	Attached table 5	
Male blade, to be used singly	—	Attached table 6	To be used singly
Tab receptacle, to be used singly	—	Attached table 7	To be used singly
Male blade, to be used with connector	—	Attached table 8~10	To be used with connector
Tab receptacle, to be used with connector	—	Attached table 11~13	To be used with connector
Flag terminal		Attached table 14	
Hook terminal	—	Attached table 15	

4. Quality

4.1 Appearance

When tested in accordance with 5.2, there shall be no defects such as harmful burr, crack, scar, rust, etc. or no sharp projections on the surface of terminal.

4.2 Shape and size

Shape and size of terminal shall be as specified in the attached tables, when tested in accordance with 5.3.

However, these attached tables contain reference dimensions, details shall be confirmed with the terminal manufacturers.

4.3 Material

In principle, terminals shall be made of brass materials (C 2680R, C 2801R, C 2600R) or phosphor bronze materials (C 5102R, C 5111R, C 5191R).

The quality of the material for each terminal shall be in as specified in the corresponding attached table. However, details shall be confirmed with the terminal manufacturers as some of the materials in the tables may be incorrect.

The quality of each brass material and phosphor bronze material shall be in accordance with JIS H 3100 "Copper and copper alloy sheets, plates and strips" and JIS H 3110 "Phosphor bronze and nickel silver sheets, plates and strips" in order.

4.4 Surface treatment

The surface treatment of terminal shall be, in principle, Ep-Cu/Sn 5 or Ep-Cu/Ni 5.

In case surface treatment is not applied to terminal, corrosion protection shall be applied.

The quality of plating shall be in accordance with MES E 001 "Electroplating".

4.5 Insertion force and removal force

Insertion force and removal force of terminal shall be as described in Table 2 when tested in accordance with 5.4.

Table 2. Unit: N

Type of terminal	Insertion force and removal force	Initial		Force for sixth removal
		Insertion force	Removal force	
Plug and plug receptacle Male blade and tab receptacle, to be used singly Flag terminal		68.6 or less	19.6~68.6	14.7 or more
Male blade and tab receptacle, to be used with connector	375 series	14.7~29.4		12.7 or more
	305 series	4.9~29.4		3.9 or more
	250 series 187 series	3.9~17.7		3.9 or more
	110 series 090 series	3.9~14.7		3.9 or more
	070 series	1.96~9.8		1.96 or more
	040 series 035 series	0.98~4.9		0.98 or more

4.6 Crimp strength

Crimp strength of terminal shall be not less than the value specified in Table 3 when tested in accordance with 5.5.

However, when a terminal is crimped with the strength not less than the value in Table 3, there shall be no displacement and play in the core wire portion.

Table 3.

Unit: N

Nominal size of cable	AVS 0.3f AVS 0.3f AVSS 0.3 CAVS 0.3	AV 0.5 AV 0.5f AVS 0.5 AVS 0.5f AVSS 0.5 CAVS 0.5	AV 0.75f AV 0.85 AVS 0.75f AVS 0.85 AVSS 0.85 CAVS 0.85	AV 1.25f AV 1.25 AVS 1.25f AVS 1.25 AVSS 1.25 CAVS 1.25	AV 2f AV 2 AVS 2f AVS 2 AVSS 2 CAVS 2	AV 3f AV 3 AVS 3f AVS 3
Crimp strength	58.8	98.1	137.3	196.2	264.8	343.3
Crimp strength of core wire	49.0	88.3	127.5	176.5	245.2	294.2

Nominal size of cable	AV 5 AVS 5	AV 8	AV 15	KV 0.3 *	KV 0.5 *
Crimp strength	539.4	833.6	1225	49	79
Crimp strength of core wire	490.3	784.5	1176	40	69

(Note) Crimp strength and crimp strength of core wire of KV0.3 and KV0.5 affixed an asterisk (*) are shown as reference values.

4.7 Voltage drop

Voltage drop of terminal shall be in accordance with Table 4, when tested in accordance with 5.6.

Table 4.

Type of terminal	Voltage drop
Eyelet terminal Spade terminal Hook terminal	0.1 mV/A or less
Plug Plug receptacle	3 mV/A or less
Male blade and tab receptacle	2 mV/A or less
Flag terminal	3 mV/A or less
375 series	5 mV/A or less
305 series	
250 series	
187 series	
110 series	
090 series	5 mV/A or less
070 series	
040 series	
035 series	

4.8 Control of crimping process in production

Terminal crimping operation shall be conditioned in accordance with (1) and (2) below and controlled in production stage.

(1) Crimping condition setting

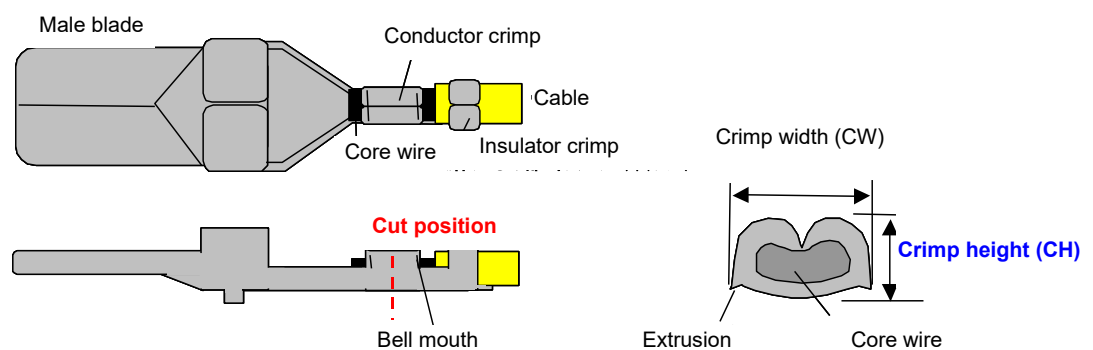
For stabilization of tensile strength and voltage drop, control items (crimp height, etc.) and their control limits shall be determined based on the following items to be confirmed:

(a) Check items

- Setting of applicator
- Recommended value for applicator setting
- Relation of control items (crimp height etc.) and tensile strength as well as voltage drop
- Breakage (i. and v. not acceptable)
 - i. Wire breaking at crimped part: Due to excessive crimping, wire is cut at crimped portion.
 - ii. Wire breaking: Wire is cut at any parts other than crimped part.
 - iii. Wire tearing: Wire stretches from crimped part and is finally cut.
 - iv. Terminal breakage: Terminal breaks before wire breaks or is pulled out.
 - v. Loose crimping: Wire separates from terminal at crimped part.
- Appearance of crimped part (bell mouth, extrusions, etc.)
- Cross section of crimped portion (compression ratio of core wire)

Note: Compression ratio = cross section of core wire after crimping / cross section of core wire before crimping

Figure 1. Illustration of crimping area



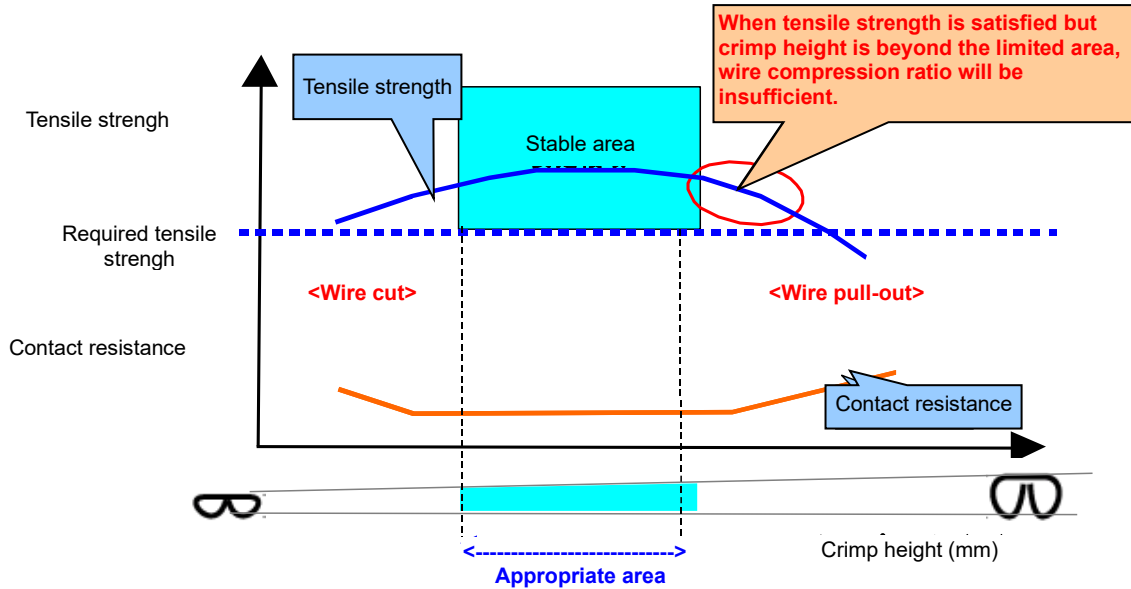
Cross section of conductor crimp and wire

*Crimp height (CH) => Height of conductor crimp after crimping

(b) Determination of control limits (e.g. crimp height)

Control limits of the crimp height shall be determined as an area where tensile strength and voltage drop are stable.

Figure 2. Correlation between crimp and performance



(2) Verification of crimp

Ensure the stabilization of change in contact resistance caused by usage environment.

1. Compression ratio of core wire shall conform to the recommendation by wire or terminal manufacturer.

<Purpose>

To stabilize contact resistance

<Items to be checked>

- Resistance value at crimped portion
- Tensile strength of crimped portion
- Compression ratio of core wire at crimped portion

2. Crimp seam shall not be open.

<Purpose>

To check that core wire is not caught in the crimp seam.

<Item to be observed>

- Cross section

3. Extrusion points shall be lower than the back of the crimp.

<Purpose>

To prevent crack in the terminal

To prevent deterioration of the applicator

<Item to be observed>

- Cross section

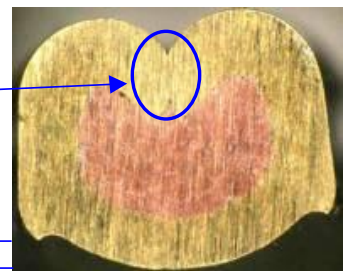


Figure 3

5. Tests

5.1 Test conditions

Tests shall be carried out at ordinary temperature ($20\pm 15^{\circ}\text{C}$) and humidity (relative humidity $65\pm 20\%$), unless otherwise specified.

5.2 Appearance

Appearance of terminal shall be inspected visually and tactilely using hands and fingers. Visual inspection shall be carried out by the naked eye (with no problem in visual acuity and color vision), at a suitable distance and under suitable brightness.

5.3 Shape and size

Shape and size of terminal shall be as specified in the attached tables when measured with calipers, micrometers or gauges.

5.4 Insertion force and removal force

Insertion force and removal force of a terminal shall be measured with a push-pull scale after it is connected to a mating terminal.

In case of no measurement equipment, platform balance, spring balance, etc. may be used for the measurement.

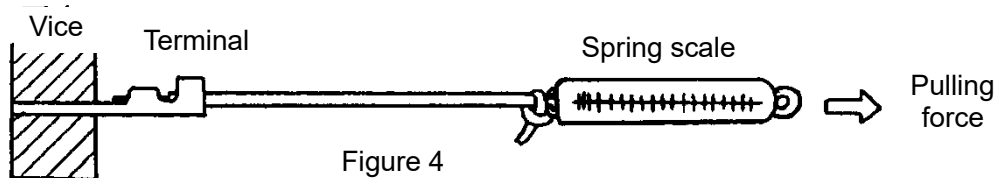
Furthermore, the moving speed of the scale in measuring should be about 200 mm/min.

5.5 Crimp strength

(1) Crimp strength

Crimp strength of terminal shall be measured in the following steps: fix a terminal to be measured on a vice as in Fig. 4, hook a wire cable to a spring scale and pull the cable in the arrow direction, then read the value indicated on the scale when the cable separates from the terminal at the crimped part.

Furthermore, the moving speed of the scale in measuring should be about 200 mm/min.



(2) Crimp strength for core wire

Crimp strength for core wire shall be measured in the following steps: fix a terminal on a vice as in Fig. 5, hook a core wire to a spring scale (Insulator crimp shall be released) and pull the cable in the arrow direction, then read the value indicated on the scale when the core wire separates from the terminal at the crimped part.

Furthermore, the moving speed of the scale in measuring should be about 200 mm/min.

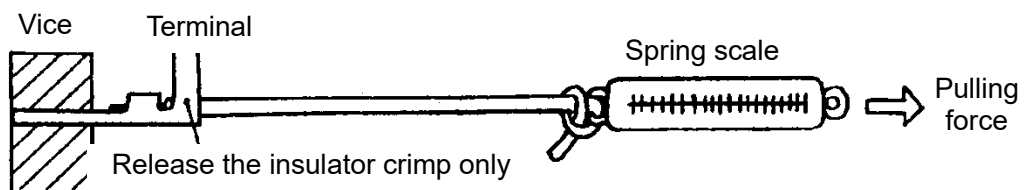


Figure 5

[For reference]

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5.6 Voltage drop

Voltage drop of terminal shall be measured with the measuring circuit in Fig. 6, and the readings of voltmeter and ammeter shall be calculated by the following equation:

$$(\text{Reading of voltmeter}) \div (\text{Reading of ammeter}) \text{ [Unit: mV/A]}$$

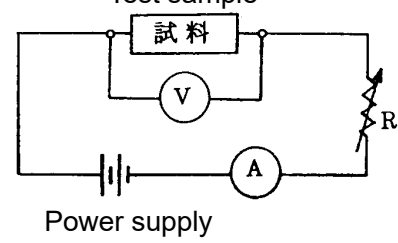


Figure 6

Test sample shall be used with insulation coating removed at 5mm from the terminal end (See Fig.7). Test current in measuring shall not exceed the values in Table 5.

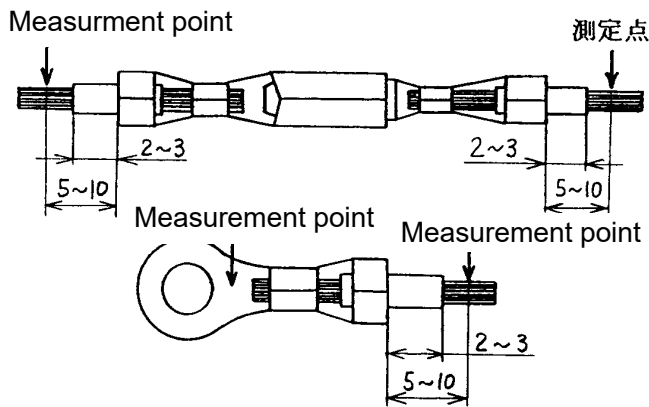


Figure 7

Table 5

Nominal cross section of cable (mm ²)	Current applied (A)
0.3	7
0.5	9
0.75	12
0.85	
1.25	15
2.0	20
3.0	27
5.0	35
8.0	45
15.0	60

Meas

6. Notices in use

(1) The material of terminal shall be brass. If such terminal is used in the environment that could generate ammonia gas, plating should be applied on terminal for the protection from the gas and thus for the prevention against stress corrosion crack.

7. Designation of part name of terminals

Designation of part name of terminals shall be written by “Subject 1), **Modifier 2), Supplemental words 3), 4), 5), 6)**” as in Table 6. The total number of letters including comma shall be 30 or less.

Table 6.

Subject	Modifier	Supplemental words			
1) General name	2) Type 1 *1	3) Type 2 *2	4) Material *3	5) Surface treatment *4	6) Cable size & Locking type *5
(Ex. 1) Eyelet terminal LA-103, Material: Brass, Surface treatment: Rust prevention treatment, Cable size: 0.5~1.25, Locking type: No locking tab					
TERMINAL	LA-103	-	BRASS	RP	F
Designation: TERMINAL,LA-103,BRASS,RP,F					
(Ex. 2) Plug terminal CA-103mini, Material: C2680, Surface treatment: Tin plating, Cable size: 0.5~1.25, Locking type: No locking tab					
TERMINAL	CA-103	-	C2680	SN	F
Designation: TERMINAL,CA-103,C2680,SN,F					
(Ex. 3) Tab receptacle 090 series, Material: Brass, Surface treatment: Tin plating, Cable size: 0.3~1.25, Locking type: Male locking tab					
TERMINAL	090	FE.	BRASS	SN	DM
Designation: TERMINAL,090,FE.,BRASS,SN,DM					

*1. “Type 1” shall be indicated according to Table 7. “Type 1” means the nominal size for eyelet terminal, spade terminal and plug terminals, and means the series for male blade, tab receptacle and flag terminal, and means the shape “HOOK” for hook terminal.

Table 7.

Terminal	Type 1
Eyelet terminal	LA-103, LA-104, LA-105, LA-106, LA-108, LA-203, LA-204, LA-205, LA-206, LA-208, LA-304, LA-305, LA-306, LA-308, LA-405, LA-406, LA-408, LA-410, LA-412, LA-414
Spade terminal	LE-103, LE-104, LE-105, LE-106, LE-203, LE-204, LE-205, LE-206, LE-304, LE-305, LE-306
Plug terminal	CA-103, CA-103M, CA-104
Plug receptacle	CB-103, CB-104
Double plug receptacle	CW-103, CW-104
Male blade, tab receptacle and flag terminal	035, 040, 070, 090, 110, 187, 250, 305, 375
Hook terminal	HOOK

*2. For “Type 2”, use “MA.” for male blade, “FE.” for tab receptacle, “FE.FL” for flag female terminal, “Applicable screw diameter 4mm: DIA4” for hook terminal. (Not applicable to eyelet terminal, spade terminal and plug terminals.)

*3. Materials shall be indicated according to Table 8.

Table 8.

	Material
Material code	C2600: C2600P,C2600R C2680: C2680P,C2680R C2801: C2801P,C2801R, C5102: C5102P,C5102R C5111: C5111P,C5111R, C5191: C5191P,C5191R
Material code unknown	BRASS, BRONZE

(Note) 1. Omit a property code (H, 1/2H etc.).

*4. Surface treatment shall be indicated according to Table 9.

Table 9.

Abbreviation	Surface treatment	Abbreviation	Surface treatment
(Blank)	None	NI	Nickel plating
RP	Rust proofing	SN	Tin plating
MIX	Mixed acid coating	-	-

*5. Cable size shall be indicated according to Table 10.

“Locking type” means the type of locking tab which serves to fit terminal with mating terminal in a connector. “M: w/ male locking tab” and “F: w/ female locking tab” shall be used according to the shape.

For designation of terminal, cable size and locking type shall be indicated in this order. If a terminal has no locking tab, symbol shall not be needed.

Table 10.

Symbol	Nominal size of cable (mm ²)	Symbol	Nominal size of cable (mm ²)	Symbol	Nominal size of cable (mm ²)
A	0.25~0.75	G	0.5~2	N	2~3
B	0.3	H	0.75~1.25	P	3
C	0.3~0.5	I	0.75~2	Q	5~8
D	0.3~1.25	J	0.85~1.25	R	15
E	0.5~0.85	K	0.85~2	-	-
F	0.5~1.25	M	2	-	-

8. Cited and related standards

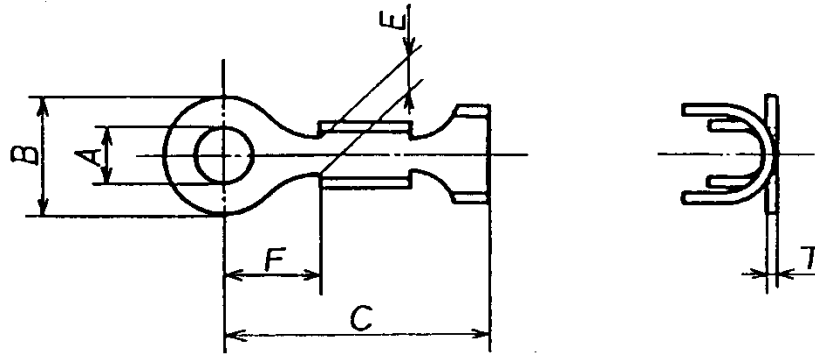
(1) Cited standards

MES E 001	Electroplating
JIS H 3100- <u>2012</u>	Copper and copper alloy sheets, plates and strips
JIS H 3110- <u>2012</u>	Phosphor bronze and nickel silver sheets, plates and strips

(2) Related standards

MES A 001	Lead wires
JIS D 5403-1989	Cable terminals for automobiles

Attached table 1: Shape and dimensions of eyelet terminal (LA)

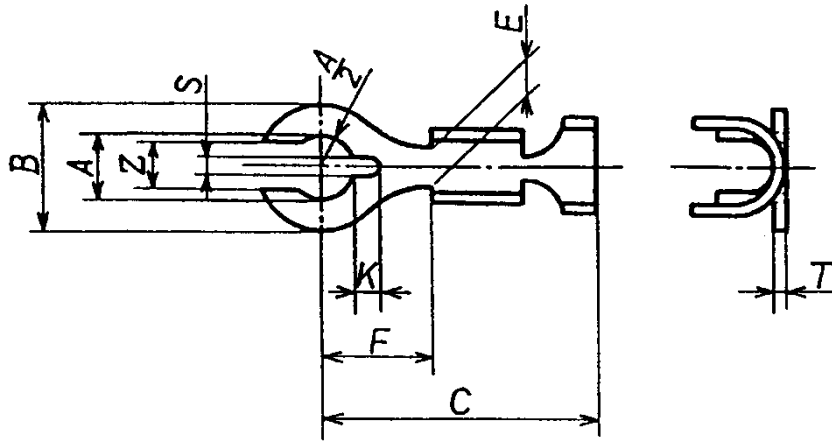


Unit: mm

Nominal size LA-***	A	B	C	E	F	T	Diameter of Screw to be applied	Nominal cross-section of cable (mm ²)	Part code *1
103	3.3±0.2	7	15	4	6	0.6	3	0.5~1.25	00800-103-2X
104	4.4±0.2	8	16	4	7	0.6	4	0.5~1.25	00800-104-2X
105	5.4±0.2	10	17	4	8	0.6	5	0.5~1.25	00800-105-2X
106	6.4±0.2	12	18	4	9	0.6	6	0.5~1.25	00800-106-2X
108	8.4±0.2	16	20	4	11	0.6	8	0.5~1.25	00800-108-2X
203	3.3±0.2	7	17	5	6	0.8	3	2~3	00800-203-2X
204	4.4±0.2	8	18	5	7	0.8	4	2~3	00800-204-2X
205	5.4±0.2	10	19	5	8	0.8	5	2~3	00800-205-2X
206	6.4±0.2	12	20	5	9	0.8	6	2~3	00800-206-2X
208	8.4±0.2	16	22	5	11	0.8	8	2~3	00800-208-2X
210	10.4±0.2	20	24	5	13	0.8	10	2~3	00800-210-2X
304	4.4±0.2	10	22	6	9	1.0	4	5~8	00800-304-2X
305	5.4±0.2	10	22	6	9	1.0	5	5~8	00800-305-2X
306	6.4±0.2	12	23	6	10	1.0	6	5~8	00800-306-2X
308	8.4±0.2	16	25	6	12	1.0	8	5~8	00800-308-2X
310	10.4±0.2	20	27	6	14	1.0	10	5~8	00800-310-2X
312	12.6±0.3	24	29	6	16	1.0	12	5~8	00800-312-2X
405	5.4±0.2	10	25	7	9	1.2	5	15	00800-405-2X
406	6.4±0.2	12	26	7	10	1.2	6	15	00800-406-2X
408	8.4±0.2	16	28	7	12	1.2	8	15	00800-408-2X
410	10.4±0.2	20	30	7	14	1.2	10	15	00800-410-2X
412	12.6±0.3	24	32	7	16	1.2	12	15	00800-412-2X
414	14.7±0.3	24	32	7	16	1.2	14	15	00800-414-2X

- (Remarks)
- Terminal material shall be "C 2801R-1/4H" for Yazaki, "C 2680R-H" for Nihon Tanshi.
 - Unless otherwise specified, dimensional tolerance shall be ±0.5 mm. However, the tolerance of the dimension T shall be according to JIS H 3100 "Copper and copper alloy sheets, plates and strips".
 - *1 "X" in the column of part code shows the position of a surface treatment code.
 - This terminal type has no locking tab.

Attached table 2: Shape and dimensions of spade terminal (LE)

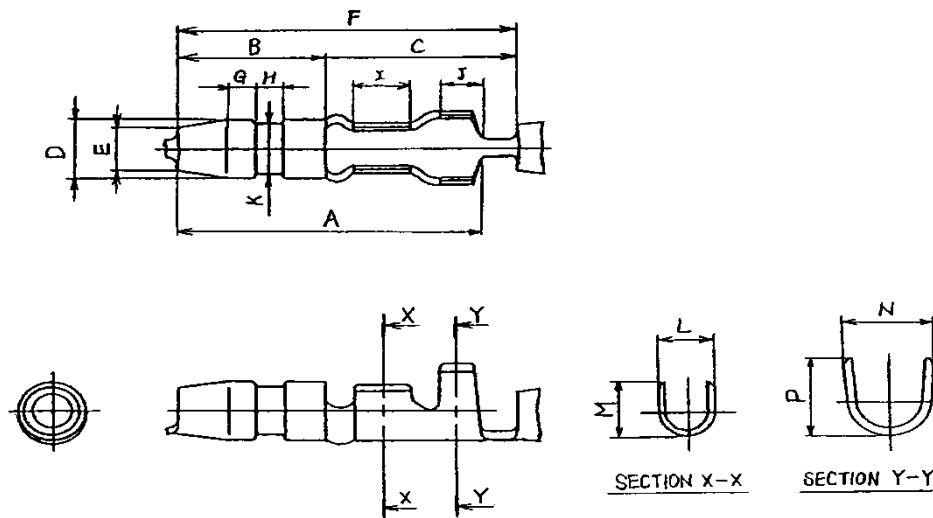


Unit: mm

Nominal size LE-***	A *1	B	C	E	F	K	S *1	Z *1	T	Diameter of Screw to be applied	Nominal cross-section of cable (mm ²)	Part code *2
103	3.3	7	16	4	7	2.5	1.6	2.4	0.6	3	0.5~1.25	00804-103-2X
104	4.4	8	17	5.5	8	2.5	1.6	3.4	0.8	4	0.5~1.25	00804-104-2X
105	5.4	10	18	5.5	9	2.5	1.6	4.4	0.8	5	0.5~1.25	00804-105-2X
106	6.4	12	19	5.5	10	2.5	1.6	5.1	0.8	6	0.5~1.25	00804-106-2X
203	3.3	7	18	5	7	2.5	1.6	2.4	0.8	3	2~3	00804-203-2X
204	4.4	8	19	5.5	8	2.5	1.6	3.4	0.8	4	2~3	00804-204-2X
205	5.4	10	20	5.5	9	2.5	1.6	4.4	0.8	5	2~3	00804-205-2X
206	6.4	12	21	5.5	10	2.5	1.6	5.1	0.8	6	2~3	00804-206-2X
304	4.4	8	21	5.5	8	2.5	1.6	3.4	1.0	4	5~8	00804-304-2X
305	5.4	10	22	5.5	9	2.5	1.6	4.4	1.0	5	5~8	00804-305-2X
306	6.4	12	23	5.5	10	2.5	1.6	5.1	1.0	6	5~8	00804-306-2X

- (Remarks) 1. Terminal material shall be "C 2680R-H" for Nihon Tanshi. (Old symbol "BsR" for Yazaki)
2. *1 Tolerances of the dimensions A, S and Z shall be ± 0.2 mm each.
3. Tolerances of the other dimensions shall be ± 0.5 mm each.
However, the tolerance of the dimension T shall be according to JIS H 3100 "Copper and copper alloy sheets, plates and strips".
4. *2 "X" in the column of part code shows the position of a surface treatment code.
5. This terminal type has no locking tab.

Attached table 3: Shape and dimensions of plug (CA)

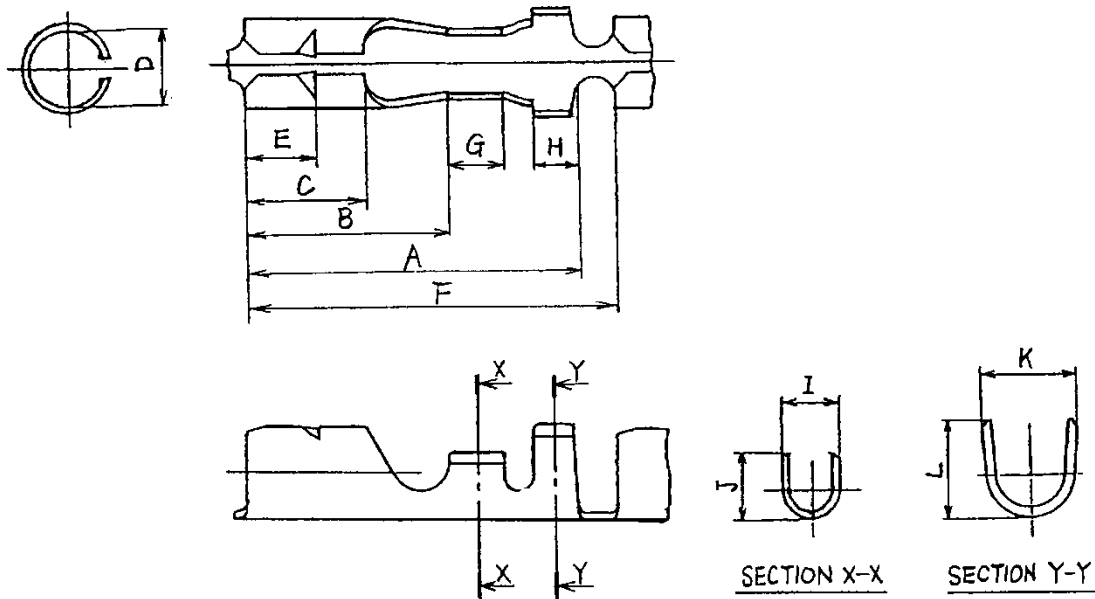


Unit: mm

Nominal size	CA-103 mini	CA-103		CA-104		
Part code	00816-103-2X	00810-103-2X	-	00810-104-2X	00810-104-2X	-
Name and part No. of manufacturer	Nihon Tanshi 18211-2 etc.	Nihon Tanshi 18032-2 etc.	(For reference) JIS D 5403 -1989	Yazaki 7113-1020 etc.	Nihon Tanshi 18042-2 etc.	(Reference) JIS D 5403 -1989
A	12.4±0.3	16.3±0.3	-	-	17.7±0.3	-
B	6.8±0.3	7.8±0.3	7.3±0.3	8.7±0.3	9±0.3	8.7±0.3
C	-	-	-	10.8±0.5	-	-
D	∅ 3.55±0.05	^{+0.1} ₀ ∅ 3.5	∅ 3.5	∅ 3.96±0.06	^{+0.04} _{-0.06} ∅ 3.96	∅ 3.96
E	(∅ 2.8)	(∅ 2.6)	-	∅ 2.7±0.3	∅ 2.8±0.3	-
F	14±0.3	18.5±0.3	-	19.5±0.5	(19.8)	-
G	1.3±0.3	0.7±0.3	0.7±0.3	1.8±0.3	1.5±0.3	1.5±0.3
H	1.6±0.3	1.7±0.3	(1.7)	1.55±0.3	1.7±0.3	(1.7)
I	2.2±0.3	3.3±0.3	-	3.4±0.3	3.3±0.3	-
J	1.1±0.3	^{+0.1} ₀ 2.5	-	2.5±0.3	2.5±0.3	-
K	-	-	∅ 3.0±0.3	∅ 3.5±0.3	-	∅ 3.2±0.3
L	3.3±0.3	3.6±0.2	-	3.7±0.3	3.8±0.3	-
M	3.4±0.3	3.8±0.3	-	(3.6)	3.7±0.3	-
N	4.5±0.3	4.6±0.2	-	5.0±0.3	5.7±0.3	-
P	4.3±0.3	5.4±0.3	-	(5.2)	5±0.3	-
Material	C 2600R-H	C 2600R-H	-	C 2680R	C2600R-H	-
Thickness	0.5	0.5	-	0.5	0.5	-
Nominal cross-section of cable (mm ²)	0.5~1.25	0.5~2	0.5~2	0.5~2	0.5~2	0.5~2

- (Remarks) 1. CA-103 mini is the small type of plug CA-103.
 2. The dimensions in parentheses are for reference.
 3. "X" in the column of part code shows the position of a surface treatment code.
 4. This terminal type has no locking tabs.

Attached table 4: Shape and dimensions of plug receptacle (CB)



Unit: mm

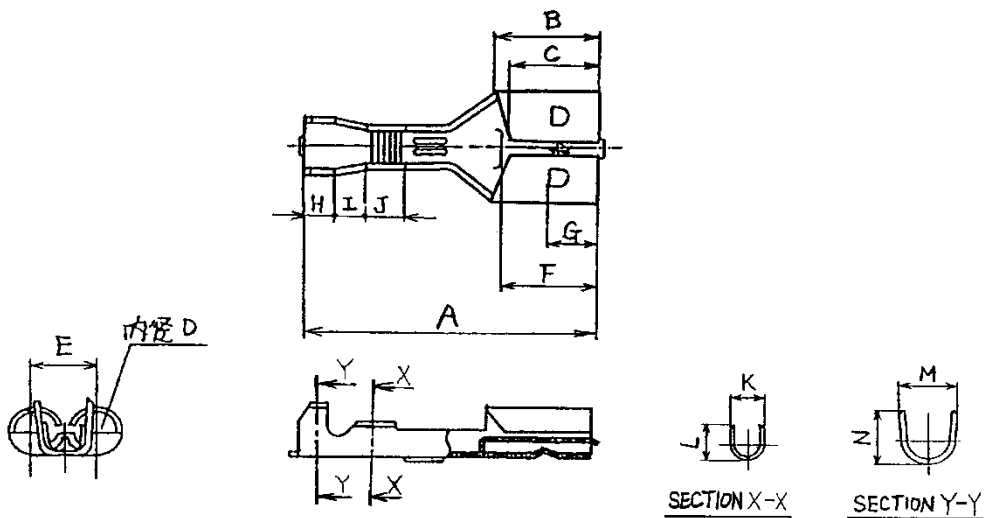
Nominal size	CB-103				CB-104		
Part code	00811-103-2X	00811-113-2X	00811-123-24	(Reference) JIS D 5403 -1989	00811-104-2X	00811-104-2X	(Reference) JIS D 5403 -1989
Name and part No. of terminal manufacturer	Nihon Tanshi 17033-2 etc.	Nihon Tanshi 17622-1 etc.	Hulane Associate INC 606002BS0		Yazaki 7115-1050 etc.	Nihon Tanshi 17072-2 etc.	
A	18.0±0.3	17.8±0.3	16.5±0.3	17.5±0.3	-	18.0±0.3	17.5±0.3
B	(10.5)	(10.5)	(9.1)	10.5±0.3	-	(10.5)	10.4±0.3
C	6.4±0.3	6.4±0.2	-	6.4±0.3	6.4±0.3	6.4±0.2	6.4±0.3
D	Nominal size Ø 3.5	Mating with Ø3.5	Ø 3.5±0.05	Ø 3.5	(Ø 3.96)	Nominal size Ø 3.96	Ø 3.96
E	^{+0.2} -0.1 3.2	-	3.2±0.15	⁰ -0.3 3.3	3.2±0.3	^{+0.2} -0.1 3.2	3.2±0.3
F	20.0±0.3	19.8±0.3	18.5±0.3	-	19.5±0.5	20.0±0.3	-
G	3.3±0.2	3.3±0.2	3.2±0.3	-	3±0.3	3.3±0.2	-
H	^{+0.2} 0 2.5	2.3±0.2	2.5±0.3	-	-	2.5±0.2	-
I	3.5±0.2	3.6±0.3	3.3±0.3	-	3.6±0.3	3.2±0.2	-
J	3.7±0.3	3.5±0.3	3.3±0.3	-	3.5±0.3	3.7±0.3	-
K	4.5±0.2	5.6±0.3	5±0.3	-	5.7±0.3	4.5±0.2	-
L	5.4±0.3	5±0.3	5±0.3	-	4.9±0.3	5.4±0.3	-
Material	C 2600R-EH	C 2600R-EH	C 2600R	-	C 2680R	C 2600R-EH	-
Thickness	0.4	0.32	0.4	0.4	0.4	0.4	0.4
Nominal cross-section of cable (mm ²)	0.5~2	0.5~2	0.5~2	0.5~2	0.5~2	0.5~2	0.5~2

(Remarks) 1. The dimensions in parentheses are for reference.

2. "X" in the column of part code shows the position of a surface treatment code.

3. This terminal type has no locking tab.

Attached table 5: Shape and dimensions of double plug receptacle (CW)

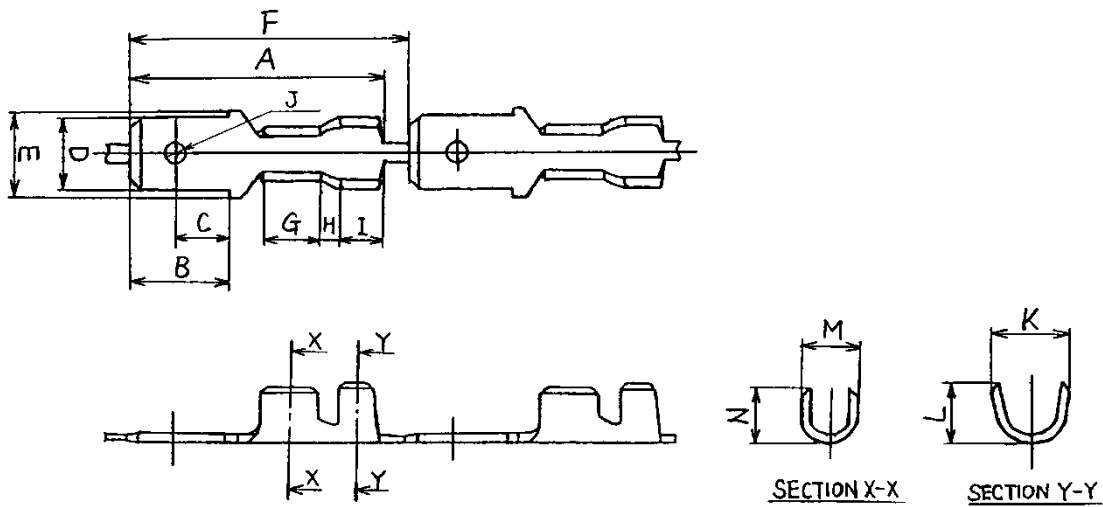


Unit: mm

Nominal size	CW-103	CW-104	
Part code	00813-103-2X	00813-104-2X	-
Name and part No. of terminal manufacturer	Sumitomo Denso 8240-2405 etc.	Yazaki 7115-4030 etc.	(For reference) JIS D 5403-1989
A	22±0.5	(20.4)	(17.5)
B	8±0.5	-	-
C	7±0.5	-	5±0.5
D	3.4±0.5	(Ø 3.96)	Ø 3.96
E	6±0.5	(6)	6.5±0.5
F	7.5±0.5	(8.5)	-
G	3.5±0.5	3.7±0.2	3.2±0.5
H	2±0.5	-	-
I	5±0.5	-	-
J	3±0.5	-	-
K	3.1±0.5	(3)	-
L	3.4±0.5	-	-
M	5.5±0.5	(5.2)	-
N	4.9±0.5	-	-
Material	C 2680R-H	C 2680R-H	-
Thickness	0.3	0.4	0.3
Nominal cross-section of cable (mm ²)	0.5~2	0.5~2	0.5~2

- (Remarks) 1. The dimensions in parentheses are for reference.
 2. "X" in the column of part code shows the position of a surface treatment code.
 3. This terminal type has no locking tab.

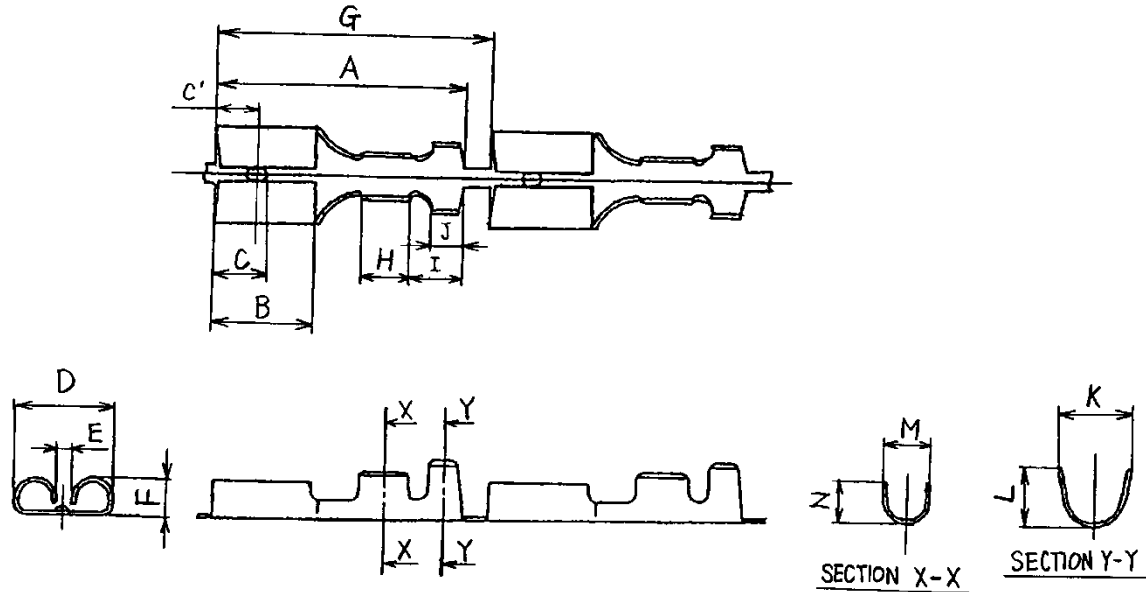
Attached table 6: Shape and dimensions of male blade (for independent use)



Series	250 series				Unit: mm	(Reference) 187 series
Part code	00821-004-2X	00821-004-2X	00821-004-2X	(Reference) JIS D 5403 -1989		43914-352-00
Name and part No. of terminal manufacturer	Yazaki 7114-2100 etc.	Nihon Tanshi 18163-1 etc.	AMP 41411 etc.			Nihon Tanshi 18251-1
A	2±0.5	19.6±0.3	19.68±0.4	-		16.3±0.3
B	8±0.3	7.92±0.4	7.92±0.4	+0.1 -0.2 8		6.35±0.15
C	4±0.1	4±0.15	4.06±0.4	4±0.1		3.2±0.3
D	6.3±0.1	6.35±0.1	6.35±0.4	6.3±0.1		4.75±0.1
E	7.5±0.3	7.6±0.3	7.6±0.4	7.4~9.4		5.3±0.3
F	(22)	21.6±0.3	21.53~21.8	-		-
G	-	4±0.3	4.7±0.4	-		3.2±0.3
H	-	1.5±0.3	-	-		(1.5)
I	-	3.1±0.3	3.18±0.4	-		20.3
J	∅ 2±0.2	+0.1 0 ∅ 2.0	∅ 1.73±0.4	∅ 2±0.3		+0.1 0 ∅ 1.3
K	(5)	5.3±0.3	5.53~6.23	-		4.6±0.3
L	-	5.2±0.3	4.87~5.52	-		4.8±0.3
M	(4)	4±0.3	4.06~4.7	-		3.6±0.3
N	-	3.8±0.3	4.57~5.21	-		3.7±0.3
Material	C 2680R-1/4H	2600R-1/2H	(Brass)	-		C 2600R-H
Thickness	0.8	0.8	0.8	+0.04 -0.03 0.8		0.5
Nominal cross-section of cable (mm ²)	0.5~1.25	0.5~0.85	0.75~2	0.5~2		0.5~1.25

- (Remarks) 1. The dimensions in parentheses are for reference.
2. "X" in the column of part code shows the position of a surface treatment code.
3. This terminal type has no locking tab.

Attached table 7: Shape and dimensions of tab receptacle (for independent use)



Unit: mm

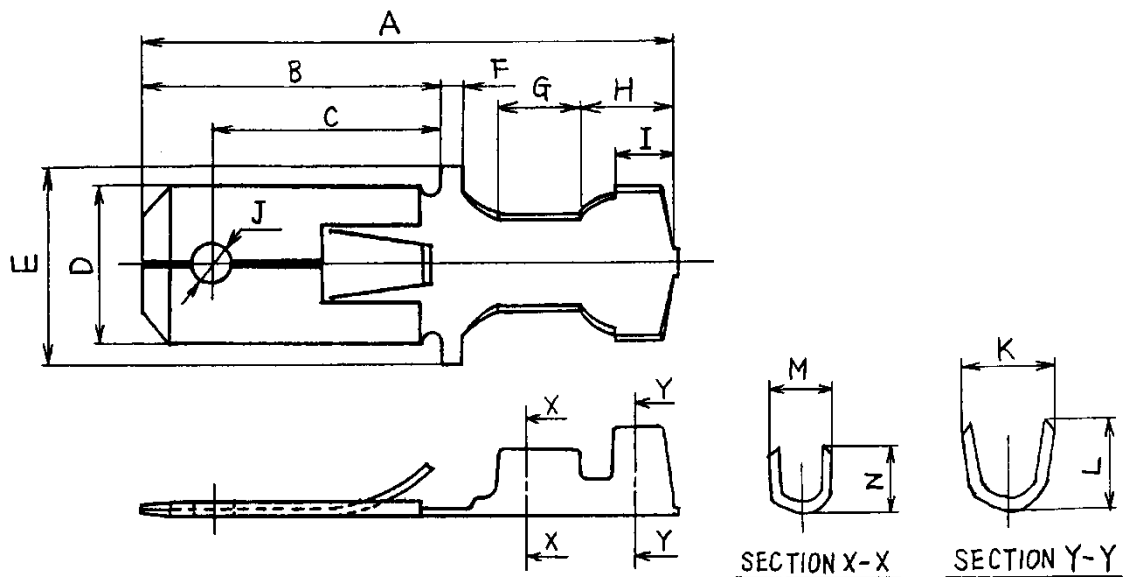
Series	110 series			250 series		(Reference) 187 series
Part code	00822-005-2X			00822-003-2X	00822-003-2X	31601-497-00
Name and part No. of terminal manufacturer	Yazaki 7116-1021 AMP 170043-1 etc.	Toyo Tanshi 211022-2 etc.	Nihon Automatic Machine JC-0022-01 etc.	Yazaki 7116-2270 etc.	Nihon Tanshi 17212-1 etc.	Nihon Tanshi 17251-1
A	(16)	15.4±0.3	15.4±0.3	(19.2)	19.5±0.2	15.5±0.3
B	6.3±0.3	6.3±0.3	6.12±0.3	7.8±0.3	7.7±0.2	6.5±0.3
C	-	-	-	4.5±0.2	4.8±0.1	3.6±0.2
C'	5.54±0.1	5.5±0.3	5.5±0.3	-	-	-
D	3.75±0.1	3.7±0.1	3.7±0.1	7.5±0.2	7.5±0.2	5.6±0.3
E	-	0.7±0.3	0.7±0.3	(0.9)	0.9±0.3	+0.2 -0.1 1.5
F	1.9±0.2	1.9±0.2	1.9±0.2	2.9±0.2	2.8±0.2	2.4±0.3
G	-	16.9±0.3	16.9±0.3	-	21.5±0.3	17±0.3
H	-	3.1±0.3	3.2±0.3	-	4±0.2	3±0.3
I	-	(3.2)	3.2±0.3	-	4±0.3	(3.5)
J	-	2±0.3	2±0.3	-	2.5±0.3	2±0.3
K	-	4.2±0.3	4.2±0.3	-	5.8±0.3	5.1±0.3
L	-	4.0±0.3	4.0±0.3	-	4.8±0.3	4.8±0.3
M	-	2.8±0.3	2.8±0.3	-	3.6±0.3	3.0±0.3
N	-	3.1±0.3	3.1±0.3	-	3.5±0.3	3.4±0.3
Material	(BsR)	C 2600R-H	C 2600R-H	(BsR)	C 2600R-EH	C 2600R-EH
Thickness	0.26	0.25	0.25	0.32	0.32	0.3
Nominal cross-section of cable (mm ²)	0.5~1.25	0.5~1.25	0.5~1.25	0.5~2	0.5~2	0.5~1.25

(Remarks) 1. The dimensions in parentheses are for reference.

2. "X" in the column of part code shows the position of a surface treatment code.

3. This terminal type has no locking tab.

Attached table 8: Shape and dimensions of male blade (for use with connector) #1



Unit:mm

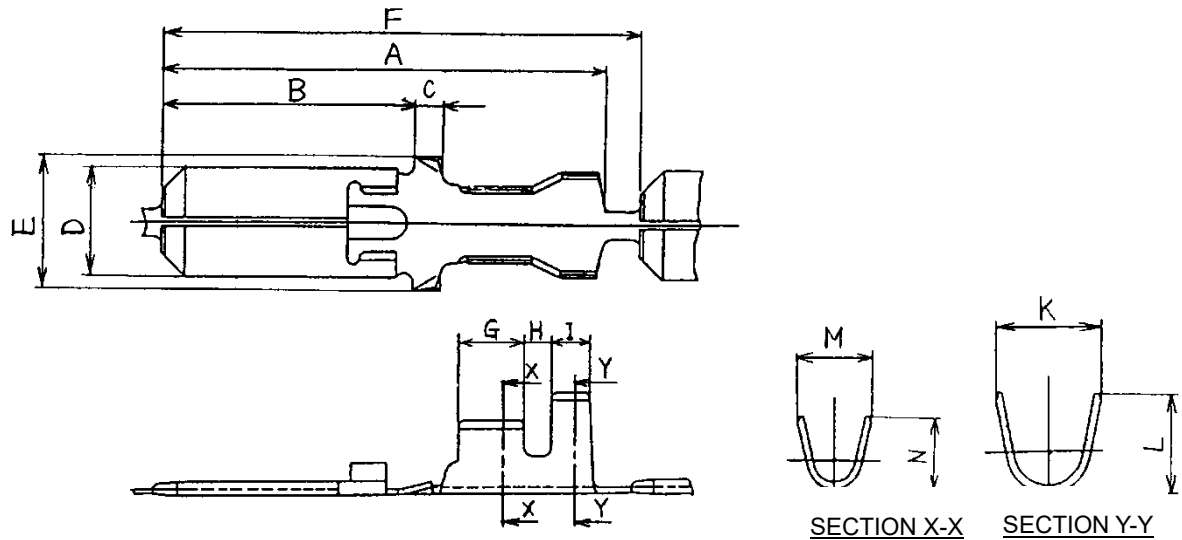
Series	110 series	250 series	
Part code	00821-001-2X	00821-003-2X	00821-003-2X
Name and part No. of terminal manufacturer	Yazaki 7114-1010 etc.	Yazaki 7114-2020 AMP 170030-1 etc.	Nihon Tanshi 18091-1 etc.
A	(20.4)	24.5±0.3	24.5±0.3
B	12±0.5	+0.1 -0.3 14	14±0.3
C	10.14±0.1	11±0.3	-
D	2.79±0.15	+0.3 -0.1 6.0	+0.1 -0.2 6
E	3.81±0.1	7.5±0.2	7.5±0.1
F	-	1±0.2	1±0.3
G	-	-	3.6±0.3
H	-	-	3.9±0.3
I	-	-	2.4±0.3
J	1.2±0.5	-	2±0.3
K	-	-	5.6±0.3
L	-	-	4.8±0.3
M	-	-	3.2±0.3
N	-	-	3.4±0.3
Material	(BsR)	(BsR)	C 2680R-H
Thickness	0.51	0.8±0.1	+0.02 -0.04 0.84
Nominal cross-section of cable (mm ²)	0.5~1.25	0.5~2.0	0.5~2

(Remarks) 1. The dimensions in parentheses are for reference.

2. "X" in the column of part code shows the position of a surface treatment code.

3. This terminal type has male locking tab (M).

Attached table 9: Shape and dimensions of male blade (for use with connector) #2



Unit: mm

Series	250 series					
Part code	00821-006-2X	00821-013-2X	00821-007-2X	00821-007-2X	00821-011-2X	00821-011-2X
Name and part No. of terminal manufacturer	Yazaki 7114-2251 etc.	Yazaki 7114-2630 etc.	Yazaki 7114-2631 etc.	Sumitomo Denso 8230-4040 etc.	Yazaki 7114-2632 etc.	Sumitomo Denso 8230-4060 etc.
A	(24.5)	24.3±0.5	24.3±0.5	24.3±0.1	24.3±0.5	24.3±0.1
B	(14)	13.8±0.5	13.8±0.5	13.8±0.25	13.8±0.5	13.8±0.25
C	(1.5)	1.5±0.3	1.5±0.3	1.5±0.2	1.5±0.3	1.5±0.2
D	(6)	6±0.3	6±0.3	^{+0.3} ₀ 6	6±0.3	^{+0.3} ₀ 6
E	(7.5)	7.5±0.3	7.5±0.3	-	7.5±0.3	-
F	-	-	-	26.4±0.1	-	26.4±0.1
G	-	3.6±0.3	3.6±0.3	^{+0.3} _{-0.2} 3.6	3.6±0.3	^{+0.3} _{-0.2} 3.6
H	-	(1.5)	(1.5)	1.5±0.2	(1.5)	1.5±0.2
I	-	2.2±0.3	2.2±0.3	^{+0.3} _{-0.2} 2.1	2.2±0.3	^{+0.3} _{-0.2} 2.1
K	-	3.8±0.3	5.5±0.3	5.5±0.3	6.5±0.3	5.9±0.3
L	-	(3.7)	4.8±0.3	4.9±0.3	5.9±0.3	5.6±0.3
M	-	2.8±0.3	3.6±0.3	3.6±0.3	4.7±0.3	4.3±0.3
N	-	(2.6)	3.5±0.3	3.4±0.3	4.5±0.3	4.1±0.3
Material	(BsR)	(BsR)	(BsR)	C 2600R-H	(BsR)	C 2600R-H
Thickness	0.4	0.4	0.4	0.4	0.4	0.4
Nominal cross-section of cable (mm ²)	0.85~2	0.3	0.5~2	0.5~2	3	2~3

(Remarks) 1. The dimensions in parentheses are for reference.

2. "X" in the column of part code shows the position of a surface treatment code.

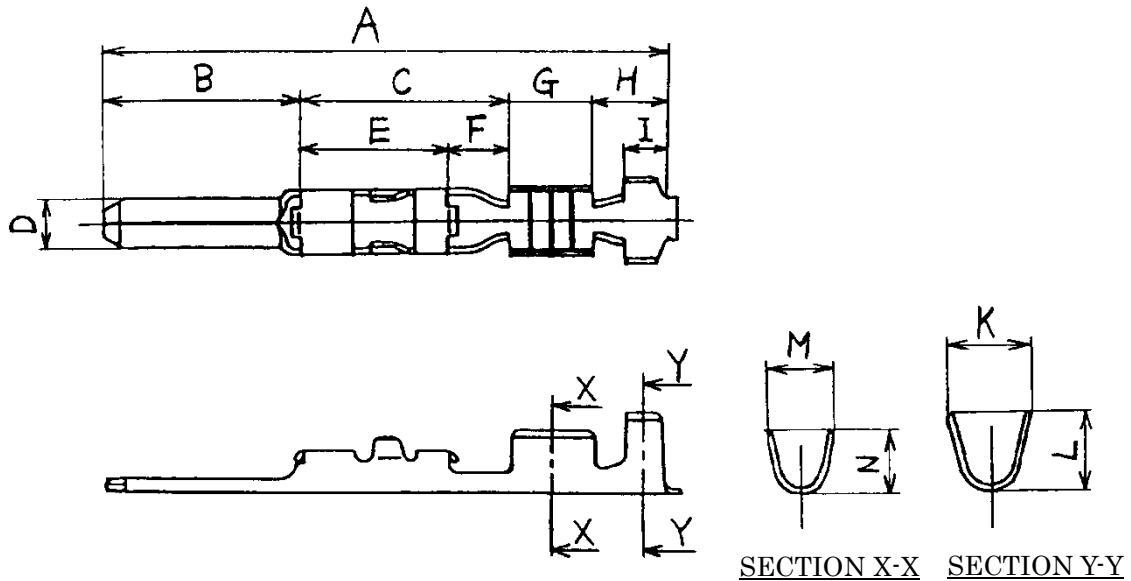
[For reference]

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3. This terminal type has female locking tab (F).

Attached table 10: Shape and dimensions of male blade (for use with connector) #3



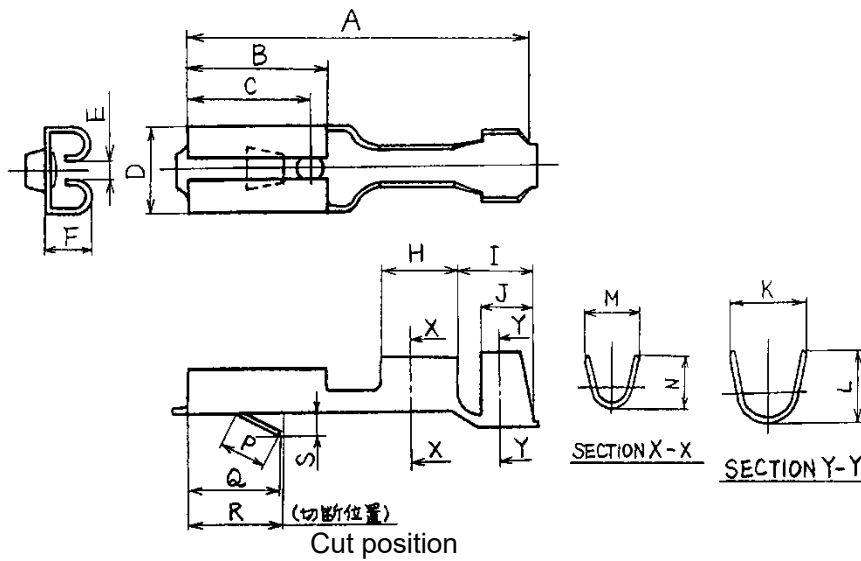
Unit: mm

Series	090 series						
Part code	00821-008-2X	00821-014-27	00821-012-2X		00821-009-2X	00821-009-2X	A0025-795-00
Name and part No. of terminal manufacturer	Sumitomo Denso 8230-4282 etc.	Sumitomo Denso 8230-4392	Sumitomo Denso 8230-4272 etc.	Yazaki 7114-1170 etc.	Yazaki 7114-1310 etc.	Sumitomo Denso 1500-0105 etc.	Sumitomo Denso 8230-4562
A	26.7±0.1	26.7±0.1	26.7±0.1	25.0±0.1	23.5±0.5	23.5±0.3	26.4±0.3
B	9.5±0.2	-	-	9.5±0.2	9.5±0.3	9.5±0.3	10.5±0.3
C	(10)	-	(10)	(10)	(7)	7±0.3	-
D	2.3±0.05	2.3±0.05	2.3±0.05	2.3±0.05	2.3±0.3	2.3±0.3	2.3±0.2
E	7±0.2	-	-	7±0.2	5±0.3	-	4±0.2
F	(3)	-	-	-	(2)	-	-
G	4±0.2	4±0.2	4±0.2	3.2±0.2	3±0.3	3±0.3	3±0.2
H	3.2±0.2	3.2±0.2	(3.2)	3.3±0.2	4±0.3	4±0.3	(4)
I	1.7±0.2	1.7±0.2	1.7±0.2	1.5±0.2	-	1.5±0.3	1.5±0.2
K	4.2±0.3	4.2±0.2	3.5±0.2	-	-	5.2±0.3	5.3±0.3
L	4±0.3	4±0.3	-	-	-	4.3±0.3	4.5±0.2
M	3.4±0.3	3.7±0.3	2.5±0.2	-	-	3±0.3	3.3±0.3
N	3.1±0.3	3.5±0.3	-	-	-	2.8±0.3	3.1±0.2
Material	C 2600R	C 2600R	C 2600R	Brass	(BsR)	C 2600R	Brass (Sn plating)
Thickness	0.3	0.3	0.3±0.01	0.3	0.3	0.3	0.3
Nominal cross-section of cable (mm ²)	0.5~1.25	2 (AVSS)	0.3	0.3	0.3~1.25	0.5~1.25	0.75~0.85
Locking type	F: w/ female locking tab	F: w/ female locking tab	F: w/ female locking tab	F: w/ female locking tab	F: w/ female locking tab	F: w/ female locking tab	No locking tab

(Remarks) 1. The dimensions in parentheses are for reference.

2. "X" in the column of part code shows the position of a surface treatment code.

Attached table 11: Shape and dimensions of tab receptacle (for use with connector) #1



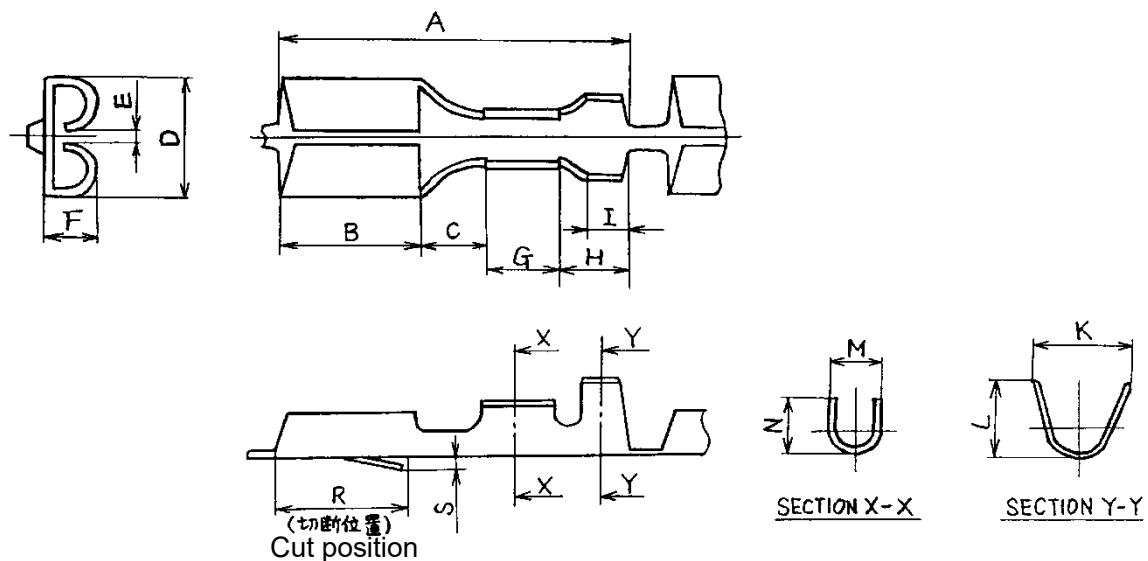
Unit: mm

Series	110 series				
Part code	00822-001-2X	00822-001-2X	00822-001-2X	00822-007-2X	00822-010-2X
Name and part No. of terminal manufacturer	Yazaki 7116-1010 etc.	AMP 170015-1 etc.	Nihon Tanshi 17085-1 etc.	Sumitomo Denso 8240-4050 etc.	Sumitomo Denso 8240-4602 etc.
A	15.4±0.5	(16.0)	15.5±0.3	15.5	15.5
B	6.3±0.3	6.3±0.4	6.4±0.3	7.0	7
C	5.54±0.05	5.5±0.4	5.2±0.2	-	-
D	3.75±0.1	3.8±0.4	3.7±0.1	4.1	4.1
E	(0.7)	0.7±0.4	0.8±0.3	-	-
F	1.9±0.2	-	1.9±0.1	2.7	2.7
H	-	-	3±0.3	3.2	3.2
I	-	-	3.5±0.3	3.3	3.3
J	-	-	2±0.3	1.3	1.5
K	4.2	-	4.2±0.3	4	4
L	4	-	4.1±0.3	-	(3.8)
M	2.3	-	2.9±0.3	2.6	2.6
N	3.0	-	3±0.3	-	(3.2)
P	-	-	-	2.5	(No projection)
Q	$\begin{matrix} 0 \\ -0.1 \\ 4 \end{matrix}$	(4.0)	(3.8)	-	(No projection)
R	-	-	$\begin{matrix} 0 \\ -0.2 \\ 4 \end{matrix}$	-	(No projection)
S	-	(0.85)	1±0.2	-	(No projection)
Material	C 2600R	(Brass)	C 2600R-EH	C 2600R-EH	C 2600R-EH
Thickness	0.26	0.25	0.25	0.26	0.26
Nominal cross-section of cable (mm ²)	0.5~1.25	0.5~1.25	0.5~1.25	0.5~1.25	0.5~1.25
Locking type	M: w/ male locking tab	M: w/ male locking tab	M: w/ male locking tab	M: w/ male locking tab	No locking tab

(Remarks) 1. The dimensions in parentheses are for reference. And, the dimensions without tolerances, except the thickness are also for reference.

2. "X" in the column of part code shows the position of a surface treatment code.

Attached table 12: Shape and dimensions of receptacle (for use with connector) #2



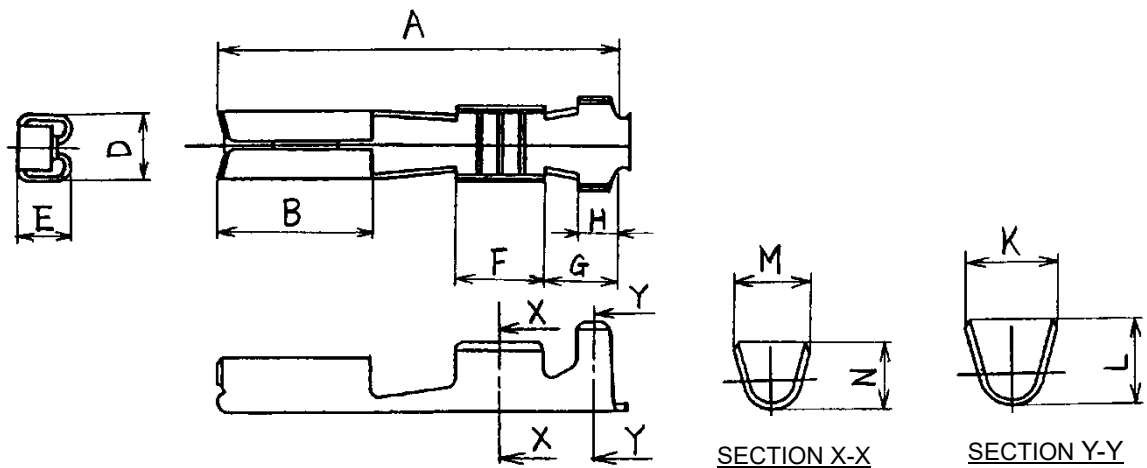
Unit: mm

Series	250 series					
Part code	00822-002-2X	00822-002-2X	00822-017-24	00822-018-24	00822-011-2X	00822-013-2X
Name and part No. of terminal manufacturer	Yazaki 116-2090 AMP 170031-1 etc.	Nihon Tanshi 17111-1 etc.	Sumitomo Denso 8240-4558	Sumitomo Denso 8240-4538	Sumitomo Denso 8240-4140 etc.	Sumitomo Denso 1500-0068 etc.
A	19.2±0.5	19.5±0.3	19.2±0.3	19.2±0.3	19.2±0.3	19.2±0.3
B	7.8±0.3	7.7±0.1	7.75±0.3	-	-	7.8±0.15
C	-	-	3.4±0.3	-	3.4 ^{+0.3} ₀	-
D	7.5±0.3	7.5±0.1	7.5±0.3	7.5±0.2	7.5±0.15	7.5±0.15
E	(0.9)	0.9±0.3	-	-	-	-
F	2.9±0.3	2.85±0.1	2.9±0.3	2.9±0.2	2.9±0.1	2.9±0.3
G	4±0.3	4±0.3	4±0.3	4 ^{+0.3} _{-0.2}	4 ^{+0.3} _{-0.2}	4±0.3
H	-	4±0.3	-	(4.05)	4±0.2	4±0.3
I	2.5±0.3	2.5±0.3	-	2.5 ^{+0.3} _{-0.2}	2.5 ^{+0.3} _{-0.2}	2.5±0.3
K	5.5±0.3	5.8±0.3	4.8±0.3	6.2±0.3	5.5±0.3	6.2±0.3
L	4.9±0.3	4.8±0.3	4.9±0.3	6.2±0.3	4.9±0.3	6.2±0.3
M	3.6±0.3	3.6±0.3	3.7±0.3	4±0.2	3.7±0.3	4±0.3
N	3.4±0.3	3.5±0.3	3.5±0.3	4.5±0.3	3.5±0.3	4.5±0.3
R	7.4±0.3	7.4 ^{+0.1} _{-0.15}	(No projection)	(No projection)	(No projection)	(No projection)
S	-	1±0.2	(No projection)	(No projection)	(No projection)	(No projection)
Material	(BsR)	C 2600R-H	Phosphor bronze	Phosphor bronze	C 2600R-EH	C 2600R-EH
Thickness	0.32	0.32	0.32	0.32	0.32	0.32
Nominal cross-section of cable (mm ²)	0.5~2	0.5~2	0.5~1.25	2~3 (AVS)	0.5~2	3
Locking type	M: w/ male locking tab	M: w/ male locking tab	No locking tab	No locking tab	No locking tab	No locking tab

(Remarks) 1. The dimensions in parentheses are for reference.

2. "X" in the column of part code shows the position of a surface treatment code.

Attached table 13: Shape and dimensions of tab receptacle (for use with connector) #3

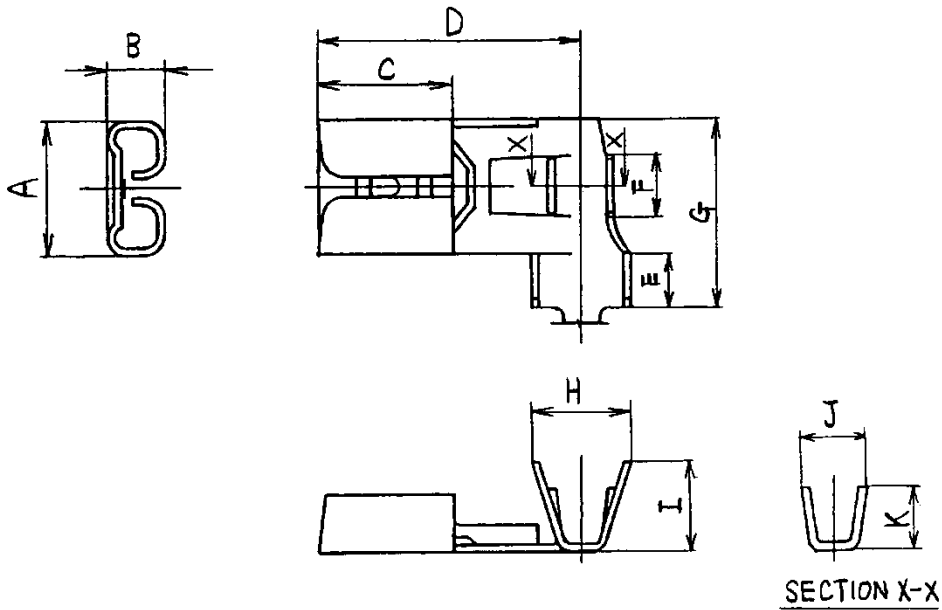


Unit: mm

Series	090 series					
Part code	00822-012-2X	00822-014-2X	00822-015-27	00822-016-27	A7616-787-00	A8399-500-00
Name and part No. of terminal manufacturer	Sumitomo Denso 8240-4422etc.	Sumitomo Denso 1500-0106etc.	Fujikura TF250 110P	Fujikura TF250 100P	Sumitomo Denso 8240-4992	Sumitomo Denso 1500-0110
A	17.2	16±0.1	17.6±0.6	17.6±0.6	18±0.3	16±0.3
B	7	7±0.1	8.9±0.4	8.9±0.4	7±0.2	7
D	3	-	3±0.4	3±0.4	3±0.2	3±0.2
E	2.5	-	-	-	2.4±0.2	2.5±0.2
F	4	3±0.2	4±0.4	4±0.4	3±0.2	3±0.2
G	3.2	4±0.2	-	-	-	4±0.2
H	1.7	1.5±0.2	1.7±0.4	1.7±0.4	1.5±0.2	1.5±0.2
K	4.2	5.2±0.3	4.3±0.4	3.9±0.4	5.2±0.3	5.2±0.3
L	4	4.3±0.3	3.4±0.4	2.85±0.4	4.5±0.2	4.3±0.3
M	3.4	3±0.3	3.1±0.4	2.3±0.4	3.0±0.3	3±0.3
N	3.1	2.8±0.3	2.8±0.4	2.05±0.4	3.0±0.2	2.8±0.3
Material	C 2600R	C 2600R	Brass	Brass	Brass heatproof (Sn plating)	Brass heatproof (Sn plating)
Thickness	-	-	-	-	0.25	0.25
Nominal cross-section of cable (mm ²)	-	0.3~1.25	0.75f~1.25	0.3~0.5	0.75~0.85	0.3~1.25
Locking type	F: w/ female locking tab	F: w/ female locking tab	No locking tab	No locking tab	No locking tab	F: w/ female locking tab

- (Remarks) 1. The dimensions in parentheses are for reference.
 2. "X" in the column of part code shows the position of a surface treatment code.
 3. If the dimensional tolerances for Fujikura-made terminals are not suitable for actual operation, it shall be adjusted and agreed on with the manufacturer.

Attached table 14: Shape and dimensions of flag terminal

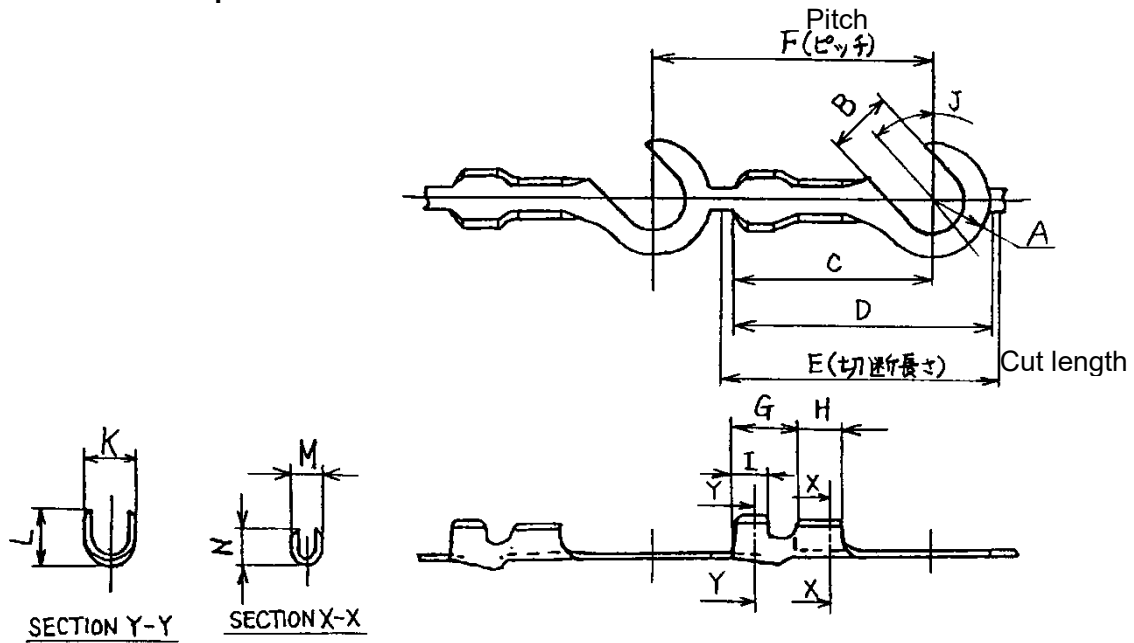


Unit:mm

Type	Flag terminal	
Series	250 series	
Part code	00822-006-24	00822-006-00
Name and part No. of terminal manufacturer	Yazaki 7116-5110 etc.	-
A	7.5±0.3	
B	3.2±0.3	
C	7.5±0.3	
D	14.5±0.5	
E	3±0.3	
F	3.5±0.3	
G	10.5±0.5	
H	5.5±0.3	
I	5±0.3	
J	3.6±0.3	
K	3.5±0.3	
Material	C 2680	Steel
Surface treatment	Rust proofing	None
Thickness	0.4	
Nominal cross-section of cable (mm ²)	0.5~2	

(Remark) 1. This terminal type has no locking tab.

Attached table 15: Shape and dimensions of hook terminal



Unit: mm

Diameter of screw to be applied	Ø 4
Part code	00830-001-2X
Name and part No. of terminal manufacturer	Nihon Tanshi 16302-1 etc.
A	4±0.3
B	$\begin{matrix} +0.3 \\ 0 \\ 4.3 \end{matrix}$
C	(13)
D	17.0±0.3
E	17.5±0.3
F	18.0±0.3
G	4±0.3
H	3±0.3
I	2.4±0.3
J	40°
K	4±0.3
L	3.9±0.3
M	2.4±0.3
N	3.1±0.3
Material	C 2680R-H
Thickness	0.4
Nominal cross-section of cable (mm ²)	0.25~0.75

- (Remarks)
1. The dimensions in parentheses are for reference.
 2. "X" in the column of part code shows the position of a surface treatment code.
 3. This terminal type has no locking tab.

Appendix

1. Scope of application

This appendix applies to the existing drawings, specifications, etc. (prepared before March 1997), citing the old version of MES.

2. Quality

(1) Insertion force and removal force

Insertion force and removal force of terminal shall satisfy Appendix table 1, if tested according to Section 5.4 of this MES.

Appendix table 1			Unit: N
Insertion force and removal force	Initial		Force for sixth removal
	Insertion force	Removal force	
Type of terminal			
Plug and plug receptacle Male blade and tab receptacle (for independent use) Flag terminal	78.5 or less	19.6 to 78.5	14.7 or more
Male blade and tab receptacle (for use with connector)	3.9 to 17.7	3.9 to 17.7	3.9 or more

(2) Crimp strength

Crimp strength of terminal shall satisfy Appendix table 2, if tested according to Section 5.5.

However, there shall be no displacement and play of core wire even if crimp strength satisfies Appendix table 2.

Appendix table 2			Unit: N	
Cable	AV 0.5 AV 0.5f	AV 0.75f AV 0.85	AV 1.25	AV 2
Crimp strength	88.3	127.5	196.2	294.2
Crimp strength for core wire	78.5	112.8	176.5	264.8

(3) Voltage drop, shapes and dimensions

Voltage drop, shapes and dimension shall conform to the requirements specified in this standard.

Explanation

1. Description of the revised edition "01"

1.1 Purpose of the revision (Mar. 28, 1997)

- (1) To adapt this standard to the situation at that time because 17 years had passed since the enactment.
- (2) To give a clearer understanding of this standard in consideration of the use by beginners and younger engineers.

1.2 Contents

- (1) Following terminals were added. (→ Addition of terminals generally used at that time)
Male blade and tab receptacle: 375 series, 305 series, 187 series, 090 series, 070 series, 040 series and 035 series
(Only 250 series and 110 series in Edition 01.)
- (2) The standard values of insertion and removal forces of the added terminals as in (1) were added.
- (3) In response to MES "low-tension cables for automobiles", cable types, sizes and standard values of crimp strength were added.
- (4) The standard values of voltage drop for the added terminals as in (1) were added.
Following cross-section values of cable tested for voltage drop in the specified method were added
0.3, 3.0, 5.0, 8.0 and 15.0 (0.5, 0.85, 1.25 and 2 in Edition 01.)
- (5) The standard values of crimp strength, and insertion and removal forces and voltage drop of male blade and tab receptacle (for use with connector) were revised with consideration of HES and NISSAN standard (NDS).
Furthermore, the standard values of insertion and removal forces of the other terminals (for use with connector) were revised with consideration of JIS D 5403 (Cable terminals for automobiles).
- (6) Based on the answers to the opinions from document review, Notices in use and Appendix were added.
- (7) Contents, Definitions of terms, Explanation were added, and Attached tables (Shape and dimensions) were renewed.

2. Description of the revised edition "10"

(1) Purpose of revision

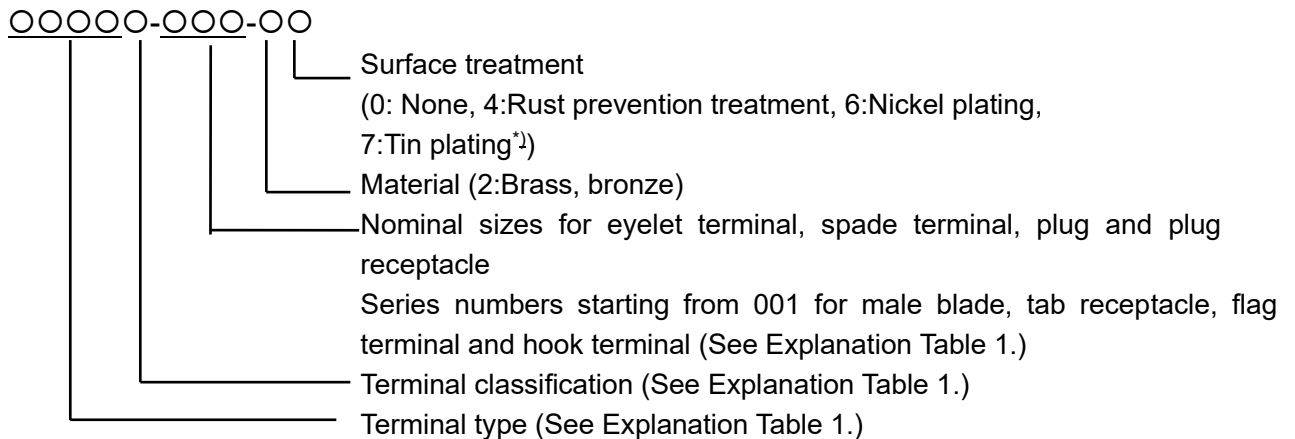
To respond only to the introduction of random (meaningless) coding system for in-house items and the change of the name setting rule for materials, subsidiary materials and standard parts.

(2) Contents

- ① Due to the introduction of random (meaningless) coding system for in-house items, "9. Standard part number" was omitted from this document.
But for the time being, the old standard part number is explained in (3) below.
- ② Due to the change of the name setting rule for standard parts, "7. Designation" is replaced with "7. Designation of terminal".
- ③ The standard part numbers in each table remain as "old standard part number". The information on "locking type" was added in each table. For clear understanding of this standard, "00822-006-00" used as the old standard part number was added and "00822-006-2X" was changed to "00822-006-24" in Table 14.

(3) Old standard part number

In the old numbering system, standard part No. of terminal has the following meaning.



(Note) ^{*} Pre-tinned material shall be included in tin-plated material.

(Ex.) 00800-103-24 → Eyelet terminal LA-103, brass, rust prevention treatment

00811-104-27 → Plug receptacle CB-104, brass, tin plating

00821-003-24 → 250 series male blade (for use with connector), brass, rust prevention treatment

00822-005-27 → 110 series tab receptacle (for independent use), brass, tin plating

Explanation Table 1.

Designation of terminal	1 st to 4 th digits: Type	5 th digits: Classification	6 th digits	7 th digits	8 th digits
Eyelet terminal Spade terminal	0080	0: LA 4: LE	Nominal size (Ex) 103: LA-103 104: CA-104 However, CB terminal with partly different cylindrical part shall be identified with "1" in 7 th digits.		
Plug Plug receptacle Double plug receptacle	0081	0: CA 1: CB 3: CW 6: CA mini			
Male blade Tab receptacle Flag terminal female	090 series 110 series 250 series	0082	1: Male 2: Receptacle (Female)	Serial numbers starting from 001	
Hook terminal		0083	0	Serial numbers starting from 001	

3. Description of the revised edition of "13"

Regarding terminal crimping failure, Section 4.8 "In-process control of crimping in production" is added.

This standard is a part standard specifying the required tensile strength and voltage drop as quality assurance items, and therefore, some people said that describing in-process control in production seemed to be unnecessary. However, we have decided to include the description with the intention to prevent recurrence of quality problem due to crimping failure.

Because the details of terminal crimping highly depend on terminal manufacturer's own know-how, the standard values of crimp height etc. are not given specifically in this standard and "values recommended by wire or terminal manufacturer" applies.

[For reference]

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Control No. MES B 015 (Edition 15)


History of original, revision and repeal			
Edition	Original / Revised date	Enforcement	Contents
00	5.22, 1979	6.21, 1979	Original
01	3.28, 1997	4.14, 1997	Revision (Details shown in Explanation.)
02	9.29, 1997	9.29, 1997	Revision (Standard part "00821-012-2X" added in Attached table 10.)
03	8.25, 1998	8.25, 1998	Revision (Correction: "Part No.→Standard part No." for Contents, 5.2, 5.4 and 9. and other descriptions.)
04	9.26, 2001	10.1, 2001	Revision (Addition due to inclusion of OEW standard parts: Toyo Tanshi "211022-2" and Nihon Automatic Machine "JC-0022-01" added in Attached table 7, Yazaki "7114-2630" added in Attached table 9, Yazaki "7114-1170" added in Attached table 10. Citation of JIS H 3110 in 4.3 Material removed. Year and name of cited JIS standards added.)
05	1.7, 2002	1.7, 2002	Revision (Description "Use the english designation in case of described in drawings, parts lists etc" added. "Housing" changed to "Connector". However, in "Meaning of terms", traditional "Housing" is described as "Connector (Narrow sense)" and traditional "Connector" is described as "Connector (Wide sense)".)
06	5.15, 2002	5.15, 2002	Revision (Sec.9, Note: "Pre-tinned material shall be included in tin-plated material" added. Two Fujikura terminals "00822-015-27 and 00822-016-27" added in Attached table 13. Error in the examples for English designation in Sec.7 (2) corrected.)
07	7.1, 2002	7.1, 2002	Revision (Tab receptacle "00822-017-24" by Sumitomo Denso added in Attached table 12. With this addition, phosphor bronze added in 4.3 Material and 8(1) Cited standards. Plug receptacle "00811-123-24" by Hulane Associate INC added in Attached table 4. Titles of JIS standards in remarks of Attached table 1 and 2 corrected.)
08	4.7, 2003	4.8, 2003	Revision (Male blade "8230-4392" by Sumitomo Denso added as "00821-014-27" in Attached table 10.)
09	6.27, 2003	6.27, 2003	Revision (Tab receptacle "8240-4538" by Sumitomo Denso added as "00822-018-24" in Attached table 10.)
10	11.19, 2004	11.25, 2004	Revision (Details shown in Explanation 2.)
11	3.15, 2005	3.15, 2005	Revision (Male blade "8230-4562" by Sumitomo Denso added as "A0025-795-00" in Attached table 10. Tab receptacle "8240-4992" by Sumitomo Denso added as "A7616-787-00" in Attached table 13. "Old standard part No." changed to "Part code No." in Attached tables. Description of locking type in Remarks included in the tables of Attached tables 10 to 13.
12	8.4, 2005	8.6, 2005	Revision (Tab receptacle "1500-0110" by Sumitomo Denso added as "A8399-500-00" in Attached table 13.)
13	4.25, 2008	4.25, 2008	Revised: 4.8 "Control of crimping process in production" added. Dual unit system discontinued.
14	11.10, 2017	11.10, 2017	Revised: Update of the revision years of the cited JIS standards
15	10.15, 2018	10.15, 2018	Revised: "7. Designation of part name of terminals"

Superordinate rule	Rules for MES Management
Subordinate rule	_____

[For reference]

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Control No. MES B 015 (Edition 15)

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Decision maker	Business Planning Dept. General Manager Niichi Yoshida 	Person in charge of control department	Development Management Sec. Manager Mitsuhisa Iino 