

AMP Drawer Connector
ドロワーコネクタ**Contents**

First 6 pages following this top sheet : English version
Next 6 pages : Japanese version

When only one of above versions is supplied to customers, this top sheet shall be attached.

目次

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次の 6 ページ : 日本語版

カスタマーに英語または日本語版の片方のみを提出する場合は、このトップシートが必ず添付されなければならない。

Revision Record (改訂記録)

Revision Letter (改訂記号)	EC number (改訂記録番号)	Date (日付)
F3	FJ00-0907-00	24 MAY 2000

Outline of the latest revision (最新改訂の概要)

Combine two language versions into one document. No change was made on product specification. Change non-SI unit to SI unit.

2ヶ国語の文書を一括管理とした。仕様内容に変更なし。非 SI 単位を SI 単位に換算。

108-5125
Product Specification
AMP* Drawer Connector

1. Scope:

This specification covers requirements for product performance and test methods of AMP* Drawer Connectors, The connectors of the types of wire-to-wire and wire-to-board are available.

2. Product Design Feature, Construction and Dimensions:

Product design feature, construction and dimensions shall be conforming to the applicable customer product drawing(s). The product connectors shall be manufactured by using the materials specified in the drawing(s). They shall consist of the contacts and insulation housings that contain contacts.

3. Requirements:

- 3.1 Voltage Rating: 250V AC for power circuit
- 3.2 Current Rating: 9.0 A max. for signal circuit
15.0 A max. for power supply circuit

The detailed classification of the rated current, depending upon the wire sizes applied, are shown in the table below.

Wire Size		Rated Current (max.)	Wire Size		Rated Current (max.)	
mm ²	(AWG)		mm ²	(AWG)	Signal Line	Power Line
0.2	(#24)	4 A	0.8	(#18)	8 A	10 A
0.3	(#22)	5 A	1.3	(#16)	9 A	12 A
0.5	(#20)	7 A	2.0	(#14)	//	15 A

Note: The contact positions of the connector consist of two different types, i. e. two power line positions one the both ends making a total of four positions, and the signal line positions for the ones other than the power line positions.

- 3.3 Temperature Rating: -20 through +120°C (including temperature rising)
- 3.4 Applicable Wire Size: 0.22 through 2.18mm² (#22 through #14 AWG)
- 3.5 Insulation Size: 1.5 through 3.9mm
- 3.6 UL Flammability Rating: 94V-0

4. Quality Assurance Provisions:

Unless otherwise specified, all the tests shall be conducted in accordance with any combination of the following test conditions:

- Temperature: 15 through 35°C
- Relative Humidity: 45 through 75%
- Atmospheric Pressure: 650 through 800mmHg

AMP SECURITY CLASSIFICATION
Customer Release

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				DR	<i>[Signature]</i> 3-20-86		AMP Tyco Electronics AMP K.K. Kawasaki, Japan
F3	Revised F500-0907-00	K.S. Kik	4/25/86	CHK	<i>[Signature]</i> 3-20-86		
F2	Revised RFA-1657	<i>[Signature]</i>	7-17-86	APP	<i>[Signature]</i> 3/20/86		LOC J A NO 108-5125 REV. F3
F1	Revised RFA-1481	<i>[Signature]</i>	7-30-86				
F	Revised and Retyped RFA-742	<i>[Signature]</i>	1-23-86				
LTR	REVISION RECORD	DR	CHK	DATE	SHEET 1 OF 6 Product Specification AMP Drawer Connector		

4.2 Sample Preparation:

All the samples employed for the tests shall be conforming to the applicable product drawing(s). Wires used for termination shall be conforming to the specified requirements shown in Table 1. The samples shall be terminated in accordance with AMP specified terminating procedure on appropriate applicator. No sample shall be reused unless otherwise, specified.

Wire Size mm ² (AWG)	Cross-section al Area mm ²	Strand Composition No. of Dia. Strands	Insulation Diameter (mm)	Specifi- cation of Wire	Test Current A (DC)
0.2 (#24)	0.22	11/0.16	1.5	UL 1007	4
0.3 (#22)	0.34	17/0.16	1.75	↑	5
0.3 (#22)	0.34	7/0.26	1.75		5
0.5 (#20)	0.53	21/0.18	1.95	↓	7
0.5 (#20)	0.53	10/0.26	1.95		7
0.75 (#18)	0.87	34/0.18	2.25	UL 1007	10
0.75 (#18)	0.87	34/0.18	3.05	UL 1015	10
1.25 (#16)	1.38	26/0.26	2.6	UL 1007	12
1.25 (#16)	1.38	26/0.26	34	UL 1015	12
2.0 (#14)	2.18	41/0.26	3.9	UL 1015	15

Table 1

SHEET		AMP		Tyco Electronics AMP K.K.	
2 OF 6				Kawasaki, Japan	
LOC	A	NO	108-5125	REV	F3
NAME		Product Specification			
		AMP Drawer Connector			

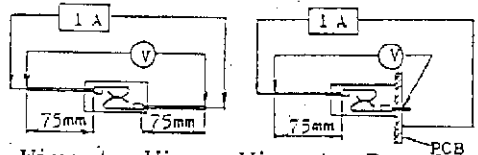
AMP SECURITY CLASSIFICATION Customer Release NUMBER 108-5125	5. Performance Requirements and Summary of Test Methods: When tested in accordance with the test methods specified in Table 2, in the test sequence specified in Para. 6, specified product performance shall be met.																	
	Test Items (Paragraph Number)	Specified Requirements	Test Methods															
Confirmation of Product (Para. 5.1)	Product shall be free from any defects such as cracks, dirt and damages that are detrimental to connector functions.	Visually and tactically inspect the products per applicable quality inspection procedure.																
Crimp Tensile Strength (Para. 5.2)	<table border="1"> <thead> <tr> <th>Wire Size</th> <th>Tensile Strength</th> </tr> <tr> <th>mm² (AWG)</th> <th>N (lbs.)</th> </tr> </thead> <tbody> <tr> <td>0.2 (#24)</td> <td>29.4 (4.41)</td> </tr> <tr> <td>0.3 (#22)</td> <td>49.0 (11.0)</td> </tr> <tr> <td>0.5 (#20)</td> <td>78.5 (17.6)</td> </tr> <tr> <td>0.75 (#18)</td> <td>117.7 (26.5)</td> </tr> <tr> <td>1.25 (#16)</td> <td>186.3 (41.9)</td> </tr> <tr> <td>2.0 (#14)</td> <td>225.6 (50.7)</td> </tr> </tbody> </table>	Wire Size	Tensile Strength	mm ² (AWG)	N (lbs.)	0.2 (#24)	29.4 (4.41)	0.3 (#22)	49.0 (11.0)	0.5 (#20)	78.5 (17.6)	0.75 (#18)	117.7 (26.5)	1.25 (#16)	186.3 (41.9)	2.0 (#14)	225.6 (50.7)	Fasten applicator-cripped contact on the head of tensile testing machine, and apply an axial pull-off load on the crimped wire by operating the head to travel with the speed at a rate of 100mm a minute, until the wire is broken or is pulled off from the wire drimp. Measure and record the load required to pull-off the wire from the wire crimp.
	Wire Size	Tensile Strength																
	mm ² (AWG)	N (lbs.)																
	0.2 (#24)	29.4 (4.41)																
	0.3 (#22)	49.0 (11.0)																
	0.5 (#20)	78.5 (17.6)																
0.75 (#18)	117.7 (26.5)																	
1.25 (#16)	186.3 (41.9)																	
2.0 (#14)	225.6 (50.7)																	
Contact Retention Force (Para. 5.3)	49.0 N (11.0 lbs.) Minimum	Secure contact-loaded housing on the head of tensile testing machine, and apply an axial pull-off load to the end of crimped wire by operating the head to travel with the speed at a rate of 100mm a minute, until the contact is dislodged. For this test, 0.5mm ² (#20) or greater wire shall be used.																
Termination Resistance (Para. 5.4)	10.0 mΩ max. (initial) 20.0 mΩ max. (final) 	Apply test current of 1 A DC through the test circuit shown in this column across the terminated area consisting of mated contacts and wires, and measure millivolt drop. Termination resistance is obtained by calculation after deducting the resistance of crimped wires of 150mm or 75mm in length.																
Insulation Resistance (Para. 5.5)	Initial 5,000MΩ Minimum Final 2,000MΩ Minimum	Insulation resistance is tested in accordance with Test Condition B (500V DC ±10%), Test Method 302 of MIL-STD-202, by applying test potential between the adjacent contacts and between the contacts and the ground.																

Table 2 (to be continued)

SHEET		AMP Tyco Electronics AMP K.K. Kawasaki, Japan	
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LOC	J	NO	A 108-5125
REV	F3	NAME Product Specification	
AMP Drawer Connector			

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5. Performance Requirements and Summary of Test Methods:(Continued)

Test Items (Paragraph Number)	Specified Requirements	Test Methods	
Dielectric Strength (Para. 5.6)	No insulation break-down nor creepage flashover shall occur.	Dielectric strength of connector shall be tested in accordance with Test Method 301 of MIL-STD-202 by applying test potential of AC 2000V (RMS) between the adjacent contacts and between the contacts and the ground for 1 minute. During the test monitor the sample for insulation break-down or flashover on the surface of sample.	
Connector Insertion and Extraction Force (Para. 5.7)	Insertion Extraction Force (kg)	Contact-loaded and mated connector is tested by securing one of them on the head of tensile testing machine, and apply an axial insertion/extraction force by operating the head to travel with the speed at a rate of 100mm a minute. Initial insertion and extraction force shall be measured and recorded.	
			No. of Pos.
			8P 12P 16P 20P 24P
	Insertion Force (Max.)		2.0 3.0 4.0 5.0 6.0
	Extraction Force (Min.)	0.3 0.5 0.7 0.9 1.1	
Durability (Para. 5.8)	After durability conditioning the following requirements shall be met.	Contact-loaded and mated connector is tested by securing them on the head of tensile testing machine, and apply 1000 cycles of insertion/extraction conditioning by operating the head to travel with the speed at a rate of 100mm a minute. After specified number of cycles insertion/extraction force shall be measured and recorded.	
	Insertion Extraction Force (kg)		No. of P s.
			8P 12P 16P 20P 24P
	Insertion Force (Max.)		2.4 3.6 4.8 6.0 7.2
	Extraction Force (Min.)	0.3 0.5 0.7 0.9 1.1	
Temperature Rising:	60°C Maximum	Contact-loaded and mated pair of connectors shall be energized with the test current of specified intensity shown in Table 1. Temperature rising is measured after it becomes stabilized. (See Note 1.)	

Table 2 (to be continued)

Note: 1. For testing ⁽¹⁷⁰⁴⁸⁴⁻¹⁾ 170311-1, energize all contact positions, while for testing 170312-1, test current is applied on 4 corner contact positions which are designated for use of power supply lines.

SHEET		Tyco Electronics AMP K.K. Kawasaki, Japan		
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NAME		Product Specification AMP Drawer Connector		

5. Performance Requirements and Summary of Test Methods: (Continued)

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 AMP SECURITY CLASSIFICATION

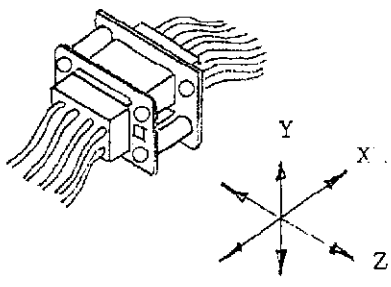
Test Items (Paragraph Number)	Specified Requirements	Test Methods												
Vibration, Low Frequency (Para. 5.10)	No electrical discontinuity greater than 0.1 microsecond shall occur during vibration. After test condition, termination resistance shall not exceed 20 mΩ.	Contact-loaded and mated pair of connectors shall be vibrated on the testing machine, after all the contacts are sereis wired in accordance with Test Method 201 of MIL-STD-202. During vibration, test current of 0.1 A DC is appied and monitored for occurence of electrical discontinuity greater than 1 microsecond. Magnitude of vibration must be: Amplitude: 1.5mm both sides Frequency: 10-55-10 Hz. reciprocating one cycle a minute. Test Duration: 2 hours each plain, for 3 axial plains (Totally 6 hours)												
														
Humidity (Para. 5.11)	After humidity conditioning, the following requirements shall be met.	Contact-loaded and mated pair of connectors shall be tested in accordance with Test Condition B, Test Method 103 of MIL-STD-202 by exposing in the following test conditions.												
	<table border="1"> <tr> <td>Termination Resistance</td> <td>20 mΩ Max.</td> </tr> <tr> <td>Insulation Resistance</td> <td>2000 MΩ Min.</td> </tr> <tr> <td>Dielectric Strength</td> <td>Must withstand test potential of AC 2000V for 1 minute without abnormality</td> </tr> </table>	Termination Resistance	20 mΩ Max.	Insulation Resistance	2000 MΩ Min.	Dielectric Strength	Must withstand test potential of AC 2000V for 1 minute without abnormality	<table border="1"> <tr> <td>Temperature</td> <td>40°C ±2°C</td> </tr> <tr> <td>Relative Humidity</td> <td>90 - 95%</td> </tr> <tr> <td>Duration</td> <td>96 hours</td> </tr> </table>	Temperature	40°C ±2°C	Relative Humidity	90 - 95%	Duration	96 hours
Termination Resistance	20 mΩ Max.													
Insulation Resistance	2000 MΩ Min.													
Dielectric Strength	Must withstand test potential of AC 2000V for 1 minute without abnormality													
Temperature	40°C ±2°C													
Relative Humidity	90 - 95%													
Duration	96 hours													
		After exposure conditioning, recondition in room temperature for 1 - 2 hours, beofre measurement of termination resistance, insulation resistance and dielectric strength.												
Heat Resistibility (Para. 5.12)	Termination Resistance 20 mΩ Max.	Contact-loaded and mated pair of connectors shall be tested in accordance with Test Condition A, Test Method 108 of MIL-STD-202 in the following test conditions.												
		<table border="1"> <tr> <td>Temperature</td> <td>100°C ±2°C</td> </tr> <tr> <td>Duration</td> <td>96 hours</td> </tr> </table>	Temperature	100°C ±2°C	Duration	96 hours								
Temperature	100°C ±2°C													
Duration	96 hours													
		After conditioning, recondition in the room temperature for 1 - 2 hours, before measurement of termination resistance, insulation resistance and dielectric strength.												

Table 2 (to be continued)

SHEET		AMP Tyco Electronics AMP K.K. Kawasaki, Japan	
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LOC	NO	REV	
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		AMP*Drawer Connector	

5. Performance Requirements and Summary of Test Methods:

Test Items (Paragraph Number)	Specified Requirements	Test Methods
Salt Spray (Para. 5.13)	Termination Resistance 20 mΩ Max.	Contact-loaded and mated pair of connectors shall be tested in accordance with Test Condition A, Test Method 101 of MIL-STD-202; by exposing under salt spray conditioning, stated as follows.
		Density of Solution 5%
		Duration 96 hours
		After exposure, samples shall be rinsed in tap water and dried and reconditioned in the room temperature for 1 - 2 hours, before measurement of termination resistance.

Table 2 (End)

6. Test Sequence:

Five sample groups shall be prepared for the tests, each group consisting of same contents and quantity of sample pieces. The numbers in the columns below indicate the sequence in which the tests are performed.

Test Items	Paragraph No.	Sample Group				
		A	B	C	D	E
Confirmation of Products	5.1	1	1	1	1	1
Crimp Tensile Strength	5.2	2				
Contact Retention Force	5.3		7			
Termination Resistance	5.4				2, 5, 7	2,4,6,8
Insulation Resistance	5.5		2, 5			
Dielectric Strength	5.6		3, 6			
Connector Insertion and Extraction Force	5.7				3	
Durability	5.8				4	
Temperature Rising	5.9			2		
Vibration, Low Frequency	5.10					3
Humidity	5.11		4		6	
Heat Resistibility	5.12					5
Salt Spray	5.13					7

Table 3

SHEET		Tyco Electronics AMP K.K. Kawasaki, Japan		
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LOC	J	A	REV	F3
NAME		Product Specification		
		AMP* Drawer Connector		

4 品質保証条件

4.1 試験条件

特に規定のある場合を除き、性能試験は下記の環境条件のもとで行うこと。

温	度	15 ~ 35 °C
湿	度	45 ~ 75 %
気	圧	650 ~ 800 mm Hg

4.2 試験試料

- (1) 試験に用いる試料は該当製品図面に合致したものであること。
- (2) 電線は表1に規定された適用電線範囲のサイズ、種類のものを用い、正規アプリケーションにて圧着された試料であること。
- (3) いずれの試料も特に規定しない限り、再度試験に用いてはならない。

電線サイズ(AWG)	計算断面積	素線構成	被覆径	電線規格	試験電流
mm ² (#)	mm ²	本数/径	mm		A (DC)
0.2 (#24)	0.22	11/0.16	1.5	UL 1007	4
0.3 (#22)	0.34	17/0.16	1.75		5
0.3 (#22)	0.34	7/0.26	1.75		5
0.5 (#20)	0.53	21/0.18	1.95	↓	7
0.5 (#20)	0.53	10/0.26	1.95		7
0.75 (#18)	0.87	34/0.18	2.25	UL 1007	10
0.75 (#18)	0.87	34/0.18	3.05	UL 1015	10
1.25 (#16)	1.38	26/0.26	2.6	UL 1007	12
1.25 (#16)	1.38	26/0.26	3.4	UL 1015	12
2.0 (#14)	2.18	41/0.26	3.9	UL 1015	15

表 1

分類： 製品規格	標準の名称： ドロー・コネクタ	標準のコード： 108-5125	改訂 F3	2 頁 6 頁中
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5. 性能及び試験条件

表2の「試験方法」に基づき、6項の「試験順序」に従って試験したとき、本規格値を満足すること。

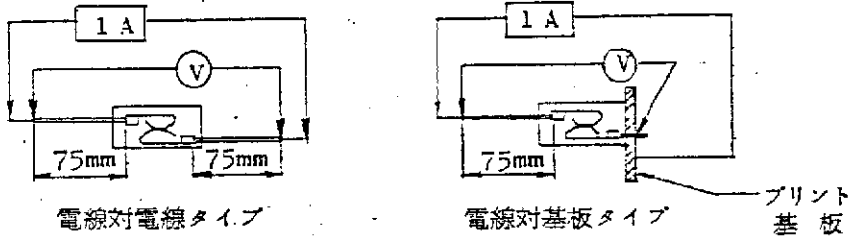
項番	試験項目	規格値	試験方法		
5-1	外観	機能上支障をきたす傷、割れ、汚れ等がないこと。	目視検査による		
5-2	圧着部引張強度	電線サイズ	強度(最小) (N)	適用アプリケーションを用いて、表1の各電線とコンタクトを圧着した試料を作る。但し絶縁被覆部は圧着しない。電線の長さは約100mmとし、軸方向に毎分100mmの速度で引張り測定する。電線の破断又は圧着部から電線の引抜ける時の値が引張り強度である。	
		mm ² (AWG)			
		0.2 (#24)			29.4
		0.3 (#22)			49.0
		0.5 (#20)			78.5
		0.75 (#18)			117.7
		1.25 (#16)			186.3
2.0 (#14)	225.6				
5-3	コンタクト保持力	49.0 N 最小	コンタクトが装着されたハウジングを引張試験機に固定し、電線を軸方向に毎分100mmの速度で引張り、コンタクトがハウジングから抜ける時の値を測定する。但し0.3mm ² (AWG#22)より細い電線サイズについてはコンタクト保持力より電線強度が小さい為0.5mm ² 以上の太い電線を使用のこと。		
5-4	総合抵抗	初期	10 mΩ 最大	嵌合した状態で接触している両コンタクトと電線間に1A(DC)の試験電流を流し、図1に示す方法で接触している両コンタクト間の電圧降下を測定し抵抗値に換算する。但し使用する電線(電線対電線タイプ:両端合計150mm,電線対基板タイプ:片端75mm)の抵抗値は差し引くものとする。	
		終期	20 mΩ 最大		
				図1 総合抵抗測定位置	

表 2 (続く)

分類:

製品規格

標準の名称:

ドロー・コネクタ

標準のコード:

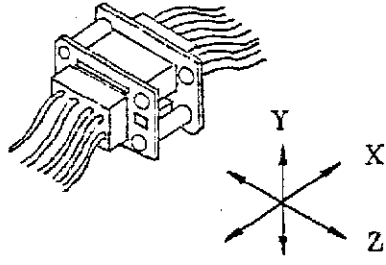
108-5125

改訂

F3

3頁

6頁中

項番	試験項目	規格値	試験方法
5-5	絶縁抵抗	初期 5000 MΩ 最小 終期 2000 MΩ 最小	MIL-STD-202, 試験方法 302, 条件 B (500V DC ± 10%) に規定する試験方法により, 隣接するコンタクト相互間及びコンタクト〜アース間の絶縁抵抗を測定する。
5-6	耐電圧	絶縁破壊, 沿面放電等のないこと。	MIL-STD-202, 試験法 301 に規定する試験方法により, コンタクト相互間及びコンタクト〜アース間へ AC 2000V (RMS) 1 分間印加し, 絶縁破壊, 沿面放電を観察する。
5-7	コネクタ挿入力 引抜き力	極数	8P 12P 16P 20P 24P
		挿入力 Kg (最大)	2.0 3.0 4.0 5.0 6.0
		引抜き力 Kg (最小)	0.3 0.5 0.7 0.9 1.1
5-8	耐久性	極数	8P 12P 16P 20P 24P
		挿入力 Kg (最大)	2.4 3.6 4.8 6.0 7.2
		引抜き力 Kg (最小)	0.3 0.5 0.7 0.9 1.1
5-9	温度上昇	60 °C 最大	コンタクトをハウジングに組込み, 嵌合した状態で圧着部に熱電対を固定し表 1 に示す試験電流を流し, 平衡に達した状態で測定する。*
5-10	低周波振動	0.1μ 秒をこえる電気的不導通のないこと。 総合抵抗 20 mΩ 最大	コネクタを直列回路になるように接続し, 0.1A の試験電流を通電してから MIL-STD-202, 試験法 201 に規定している下記の条件で試験する。
		 <p>周波数範囲 10-55-10 Hz / 1 分間 及び掃引時間 両振幅 1.5 mm 試験時間 X, Y, Z 軸各 2 時間 ◎一方のハウジングを固定する。</p>	
表 2.(続く)			
<p>* 170311-1 及び 170484-1 はハウジングの全極について通電し 170312-1 はハウジングの両側電源部 4ヶ所について通電する。</p>			
分類:	製品規格	標準の名称:	ドロワー・コネクタ
		標準のコード:	108-5125
		改訂	4 頁
		F3	6 頁中

項番	試験項目	規格値	試験方法
5-11	耐 湿 性	総合抵抗 20 mΩ 最大 絶縁抵抗 2000 MΩ 最小 耐電圧 AC 2000 V 1分間	MIL-STD-202, 試験法 103, 条件 B に規定する下記の条件により, 嵌合した状態で試験する。 温 度 40 °C ± 2 °C 湿 度 90 ~ 95 % 時 間 96 時間 試験後の試料は, 総合抵抗, 絶縁抵抗, 耐電圧を満足すること。 ただし, 試料は室温下で 1 ~ 2 時間放置後に測定のこと。
5-12	耐 熱 性	総合抵抗 20 mΩ 最大	MIL-STD-202, 試験法 108, 条件 A に規定する下記の条件により, 嵌合した状態で試験する。 温 度 100 °C ± 2 °C 時 間 96 時間 試験後の試料は総合抵抗を満足すること。 ただし, 室温下で 1 ~ 2 時間放置後測定のこと。
5-13	塩 水 噴 霧	総合抵抗 20 mΩ 最大	MIL-STD-202, 試験法 101, 条件 A に規定する下記の条件により, 嵌合した状態で試験する。 濃 度 5 % 時 間 96 時間 試験後の試料は, 総合抵抗を満足すること。 試料は直ちに水洗いし, 室温下で 1 ~ 2 時間放置後, 測定のこと。

表 2 (終り)

分類：	製品規格	標準の名称：	ドロワー・コネクタ	標準のコード：	108-5125	改訂	5 頁
						F3	6 頁中

6. 試験順序

試験は A～E の 5 グループの試料を準備し、各グループとも同一試料にて①②……の順序に従い試験を行う。

試験項目	項番	試験グループ				
		A	B	C	D	E
外観	5-1	①	①	①	①	①
圧着部引張強度	5-2	②				
コンタクト保持力	5-3		⑦			
総合抵抗	5-4				②⑤⑦	②④⑥ ⑧
絶縁抵抗	5-5		②⑤			
耐電圧	5-6		③⑥			
コネクタ挿抜力	5-7				③	
耐久性	5-8				④	
温度上昇	5-9			②		
低周波振動	5-10					③
耐湿性	5-11		④		⑥	
耐熱性	5-12					⑤
塩水噴霧	5-13					⑦

表 3

单击下面可查看定价，库存，交付和生命周期等信息

[>>TE Connectivity\(泰科\)](#)