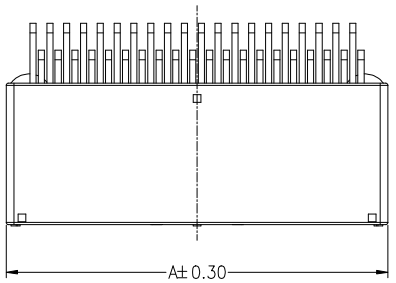
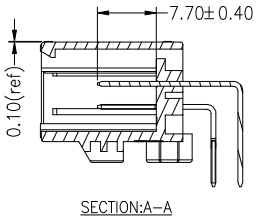
HSF RoHS

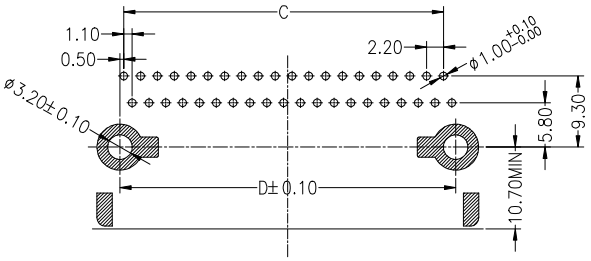
NOTES:
Rated Current:3AMP
Contact Resistance:10mΩ Max
Withstand Voltage:1000V AC
Insulation Resistance:100MΩ Min
Operation Temperature:−40°c to +105°c

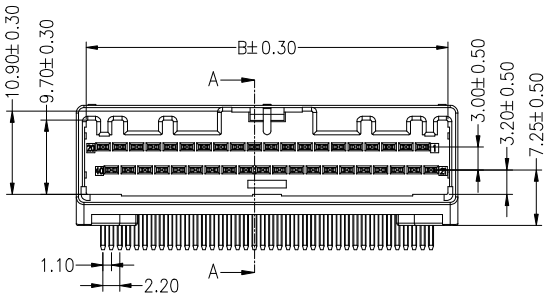
Contact Material:Brass
Contact Plating: Sn Over Ni
Insulator Material:Polyester(UL94V−0)
GRAY&BLACK
Standard: PA9T+30%G.F

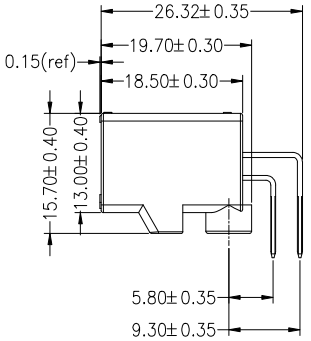


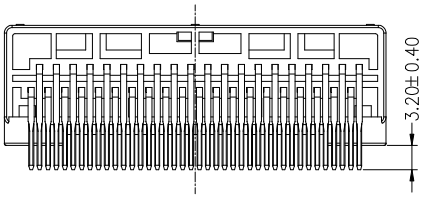


Recommended P.C.B Layout(Top Side)
T=1.60(PCB BOARD TOLERANCE± 0.05)





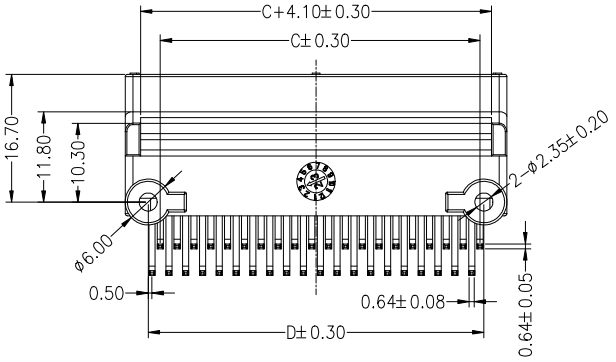


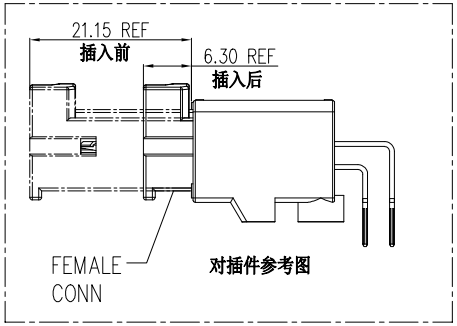


Ordering Information

92201MR - XXX SN X T 01

No.of pins	Contact Plating	Housing Color	Packing	Serial code
	S0:Gold Flash/Tin SN:Bright Tin	B=Black G=Grey U=Blue Z=Brown	T=Tube	





PIN	A	B	C	D
12P	19.1	16.9	11.0	13.1
16P	23.5	21.3	15.4	17.5
20P	27.9	25.7	19.8	21.9
24P	32.3	30.1	24.2	26.3
28P	36.7	34.5	28.6	30.7
32P	41.1	38.9	33.0	35.1
36P	45.5	43.3	37.4	39.5
40P	49.9	47.7	41.8	43.9

REV	DATE	MODIFICATION DESCRIPTION	CHANGE
A0	2021.3.18	NEW DRAWING	

OPERATION	
X.	± 0.60
X.X	± 0.40
X.XX	± 0.25
Angle	± 3°
DIM	TOL

DRAW: RICH LIN 2021.3.18
CHECK:
APPROVE:

SCALE: FIT
UNIT: mm
SIZE: A4
SHEET: 1/3
PROJ.:

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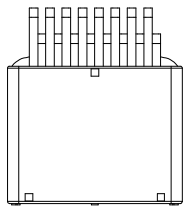
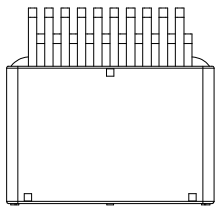
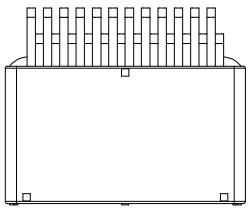
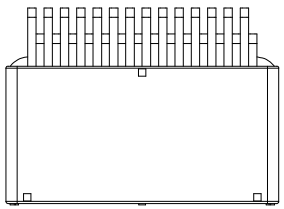
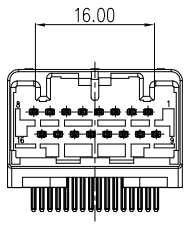
PART NO.: 92201MR−XXXSNXT01
TITLE: 2.2mm Pitch Connector 90° Receptacle Dislocation Type

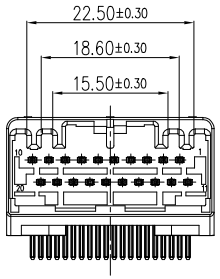


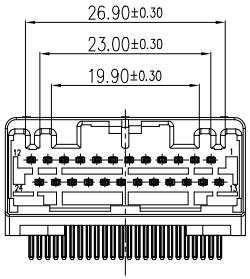


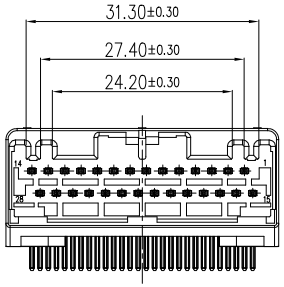


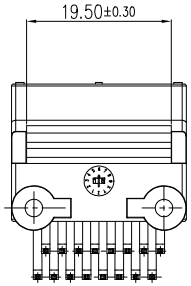




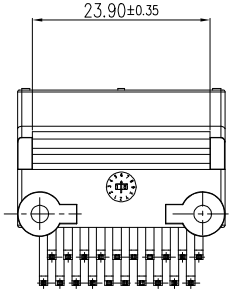




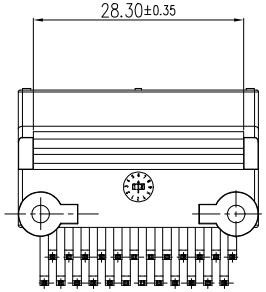




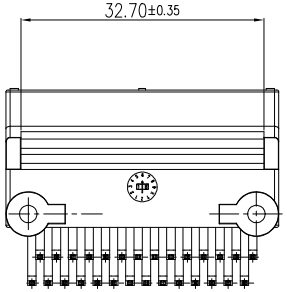
16P



20P



24P



28P

REV	DATE	MODIFICATION DESCRIPTION	CHANGE
A0	2021.3.18	NEW DRAWING	

OPERATION		DRAW	RICH LIN	2021.3.18
X.	±0.60			
X.X	±0.40	CHECK		
X.XX	±0.25			
Angle	±3°	APPROVE		
DIM	TOL			

SCALE	FIT
UNIT	mm
SIZE	A4
SHEET	2/3
PROJ.	

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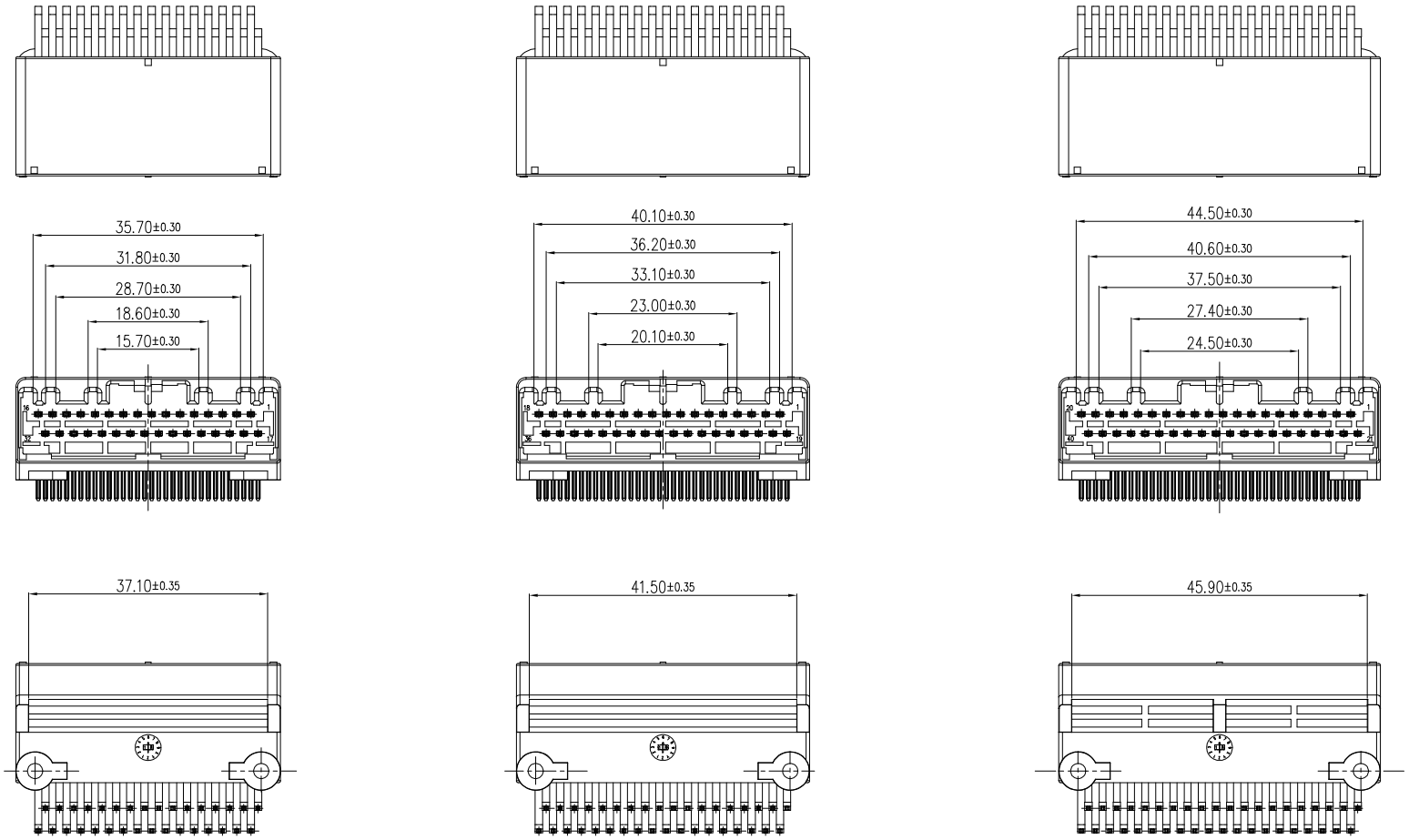
PART NO.	92201MR-XXXSNBT01
TITLE:	2.2mm Pitch Connector 90° Receptacle Dislocation Type



32P 36P 40P

REV	DATE	MODIFICATION DESCRIPTION	CHANGE
A0	2021.3.18	NEW DRAWING	

OPERATION		DRAW	RICH LIN	2021.3.18
X.	±0.60			
X.X	±0.40	CHECK		
X.XX	±0.25			
Angle	±3°	APPROVE		
DIM	TOL			

SCALE	FIT
UNIT	mm
SIZE	A4
SHEET	3/3
PROJ.	

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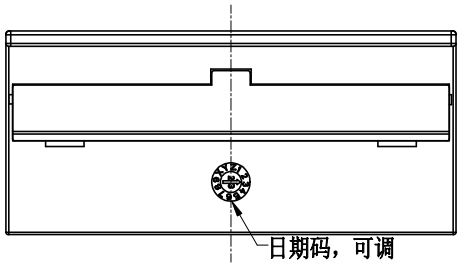
Tel：86-755-27483253 Fax：86-755-2997-5588

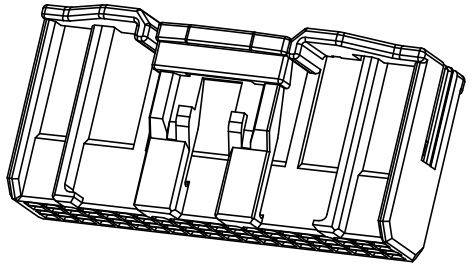
PART NO.	92201MR-XXXSNBT01
TITLE:	2.2mm Pitch Connector 90° Receptacle Dislocation Type

HSF RoHS

NOTES:
Rated Current:4AMP
Contact Resistance:10mΩ Max
Withstand Voltage:1000V AC
Insulation Resistance:100MΩ Min
Operation Temperature:-40°c to +105°c

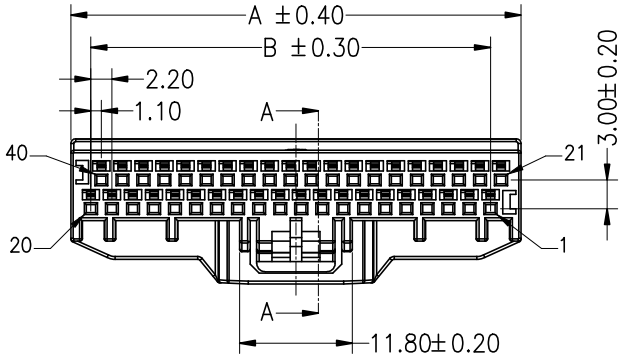
Insulator Body Material: PPE+PS GRAY&BLACK UL94V-0
Cover Material: PPE+PS GRAY&BLACK UL94V-0

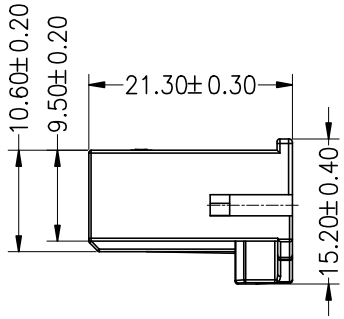


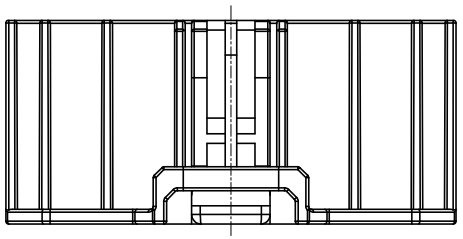


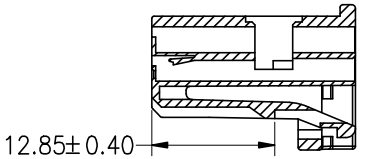
40P

PIN	A	B
12P	16.3	11.0
16P	20.7	15.4
20P	25.1	19.8
24P	29.5	24.2
28P	33.9	28.6
32P	38.3	33.0
36P	42.7	37.4
40P	47.1	41.8









SECTION:A-A

Ordering Information

92201H - XXX X 01

- XXX: No.of pins
- X: Housing Color
  - B=Black
  - G=Grey
  - U=Blue
  - Z=Brown

REV	DATE	MODIFICATION DESCRIPTION	CHANGE
A0	2021.3.18	NEW DRAWING	

OPERATION		DRAW	Lujunhui	2021.3.18
X.	±0.60			
X.X	±0.40	CHECK		
X.XX	±0.25			
Angle	±3°	APPROVE		
DIM	TOL			

SCALE	FIT
UNIT	mm
SIZE	A4
SHEET	1/3
PROJ.	

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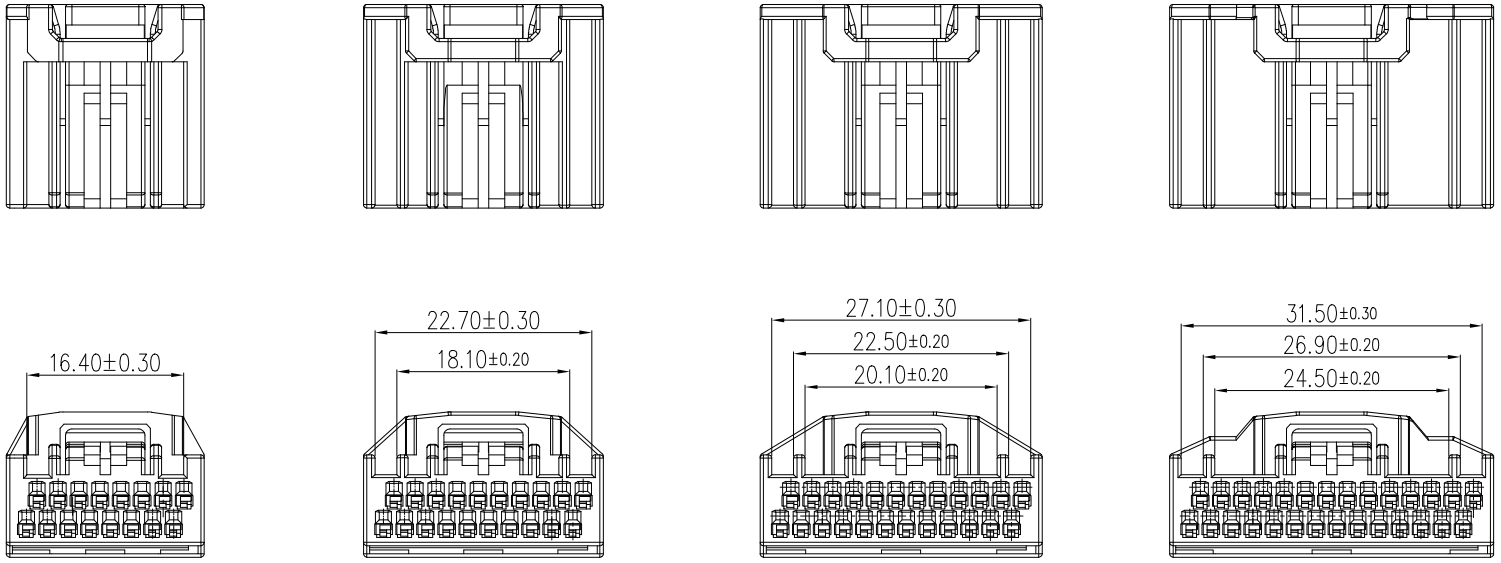
PART NO.	92201H-XXXX01
TITLE:	2.2mm Pitch Connector Female 12,16,20,24,28,32,36,40

HSF RoHS



16P 20P 24P 28P

REV	DATE	MODIFICATION DESCRIPTION	CHANGE
A0	2021.3.18	NEW DRAWING	

OPERATION	
X.	±0.60
X.X	±0.40
X.XX	±0.25
Angle	±3°
DIM	TOL

DRAW	Lujunhui	2021.3.18
CHECK		
APPROVE		

SCALE	FIT
UNIT	mm
SIZE	A4
SHEET	2/3
PROJ.	

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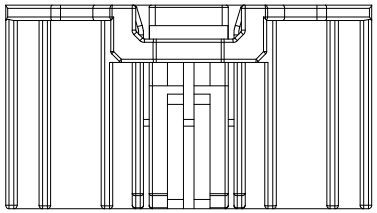
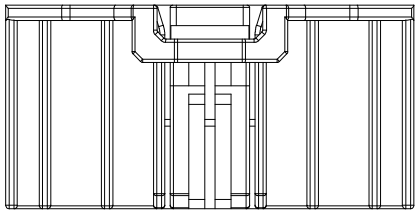
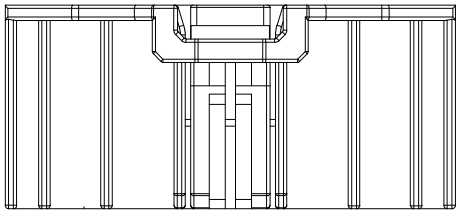
Tel：86-755-27483253 Fax：86-755-2997-5588

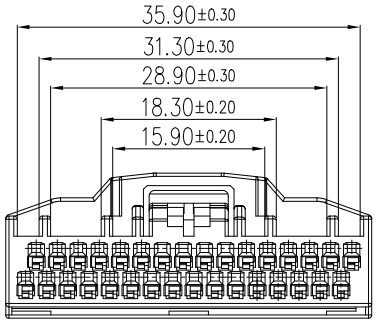
PART NO.	92201H-XXXB01
TITLE:	2.2mm Pitch Connector Female 12,16,20,24,28,32,36,40

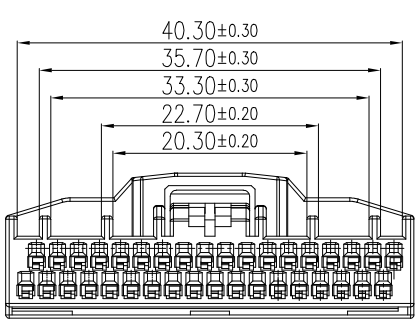
HSF RoHS

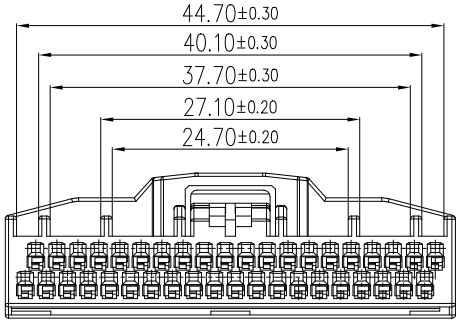


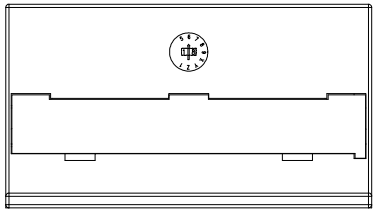




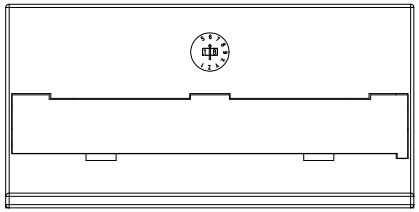




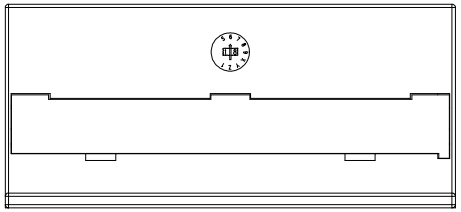




32P



36P



40P

REV	DATE	MODIFICATION DESCRIPTION	CHANGE
A0	2021.3.18	NEW DRAWING	

OPERATION	
X.	±0.60
X.X	±0.40
X.XX	±0.25
Angle	±3°
DIM	TOL

DRAW	Lujunhui	2021.3.18
CHECK		
APPROVE		

SCALE	FIT
UNIT	mm
SIZE	A4
SHEET	3/3
PROJ.	

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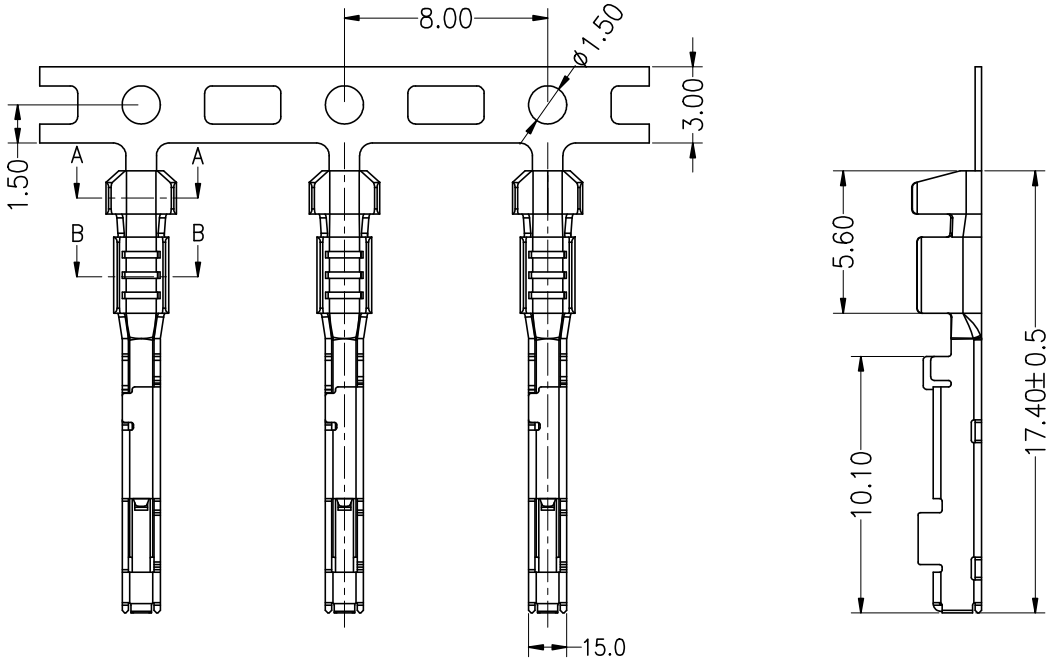
Tel：86-755-27483253 Fax：86-755-2997-5588

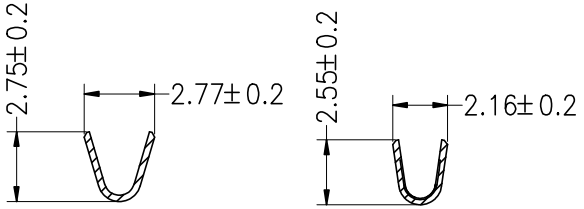
PART NO.	92201H-XXXB01
TITLE:	2.2mm Pitch Connector Female 12,16,20,24,28,32,36,40

HSF RoHS

SPECIFICATIONS
Rated Current:3.00AMP
Voltage Rating:50V AC/DC
Contact Resistance:20mΩ Max
Withstand Voltage:1000V AC/minute
Insulation Resistance:100MΩ Min
Operation Temperature:−40°c to +105°c

TERMINAL
Applicable wire: AWG#20−#22
Insula Tion O.D:1.6mm MAX
Material: Phosphor Bronze
Finish: Au or Sn





SECTION:A−A SECTION:B−B

Ordering Information

92201T - F S1 P 01

Contact Plating
S0:Gold Flash/Tin
S1:3u" Gold/Tin
S2:5u" Gold/Tin
S3:10u" Gold/Tin
S4:15u" Gold/Tin
S5:30u" Gold/Tin
SN:Tin

Material
Phosphor Bronze

REV	DATE	MODIFICATION DESCRIPTION	CHANGE
A0	2021.3.18	NEW DRAWING	

OPERATION		DRAW	Lujunhui	2021.3.18
X.	±0.60			
X.X	±0.40	CHECK		
X.XX	±0.25			
Angle	±3°	APPROVE		
DIM	TOL			

SCALE	FIT
UNIT	mm
SIZE	A4
SHEET	3/3
PROJ.	

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Tel：86-755-27483253 Fax：86-755-2997-5588

PART NO.	92201T-FS1P01
TITLE:	2.2mm Pitch Crimp Terminal

JILN® 锦凌电子 JINLING ELECTRONICS

PRODUCT SPECIFICATION (产品规格书)

*MANUFACTURER（产品制造商）：深圳市锦凌电子有限公司

*PART DESCRIPTION（产品描述）：BMS信号连接器

*VENDOR PART NO.（产品型号）：92201系列

Rev（版本）	Date（日期）	Description（描述）	Edited by（编辑）	Approvals（批准）	
A0	2021-03-18	首版发行		Prepared :（制作）	RICH LIN
				Checked :（审核）	Chen Wei
				Approved :（核准）	Yang Ou
				Issued No :（发行编号）	JLWI-EGD1-E001
				Sheet :（页次）	共28页

目录 LIST

第一章：产品介绍 Unit 1 :PRODUCT INTRODUCE

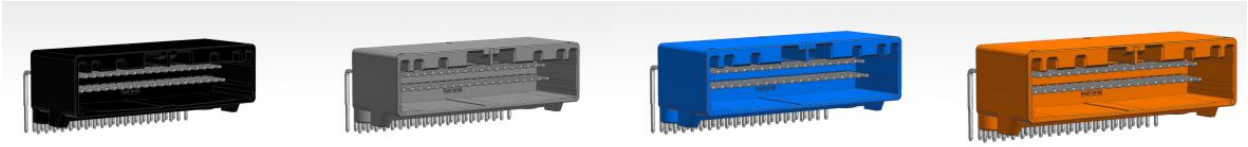
1.1 产品展示/Product display

(1) BMS CONNECTOR MALE,SERIES NUMBER: 92201MR- *** SN _* T01

BMS信号连接器公端料号说明

Key Code
B=Color Black
G=Color Gray
U=Color Blue
Z=Color Brown

Pin Number



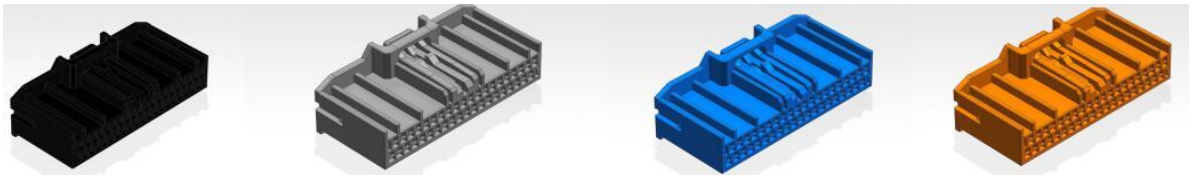
Key B/black **Key G/gray** **Key U/blue** **Key Z/brown**

(2)BMS CONNECTOR FEMALE, SERIES NUMBER: 92201H- *** * 01

BMS信号连接器线端母壳料号说明

Pin Number

Key Code
B=Color Black
G=Color Gray
U=Color Blue
Z=Color Brown



Key B/black **Key G/gray** **Key U/blue** **Key Z/brown**

(3)BMS CONNECTOR TERMINAL FOR FEMALE, SERIES NUMBER: BMS

(4)信号连接器线端所用端子料号说明

92201T- F ** P **

Product serial number
01:（M Code)
02:（S Code）

Contact Plating
S0:Gold Flash/Tin
S1:3u" Gold/Tin
S2:5u" Gold/Tin
S3:10u" Gold/Tin
S4:15u" Gold/Tin
SN:Tin

序号 SERIAL NO.	料号 PART NO.	规格 Specification	线芯面积 APPLICABLE WIRE
1	92201T-T**P01	M Code	0.50~0.75sq
2	92201T-T**P02	S Code	0.22~0.35sq

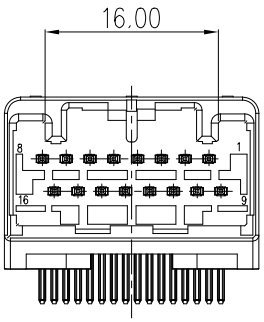
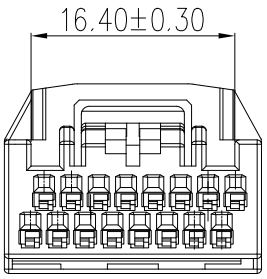
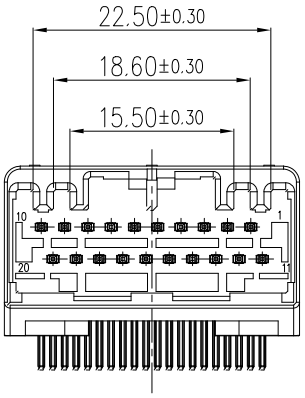
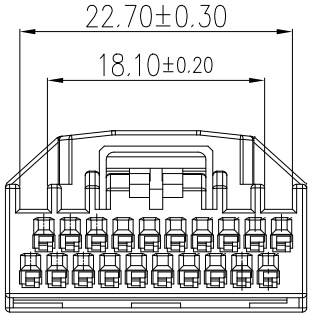
1.2 适用范围 Applicable scope:

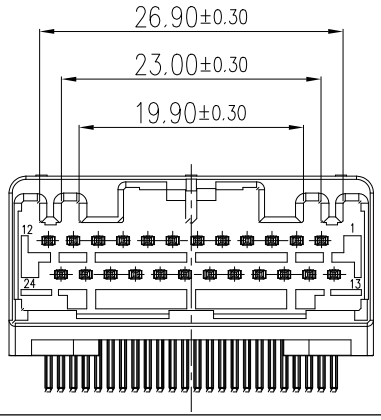
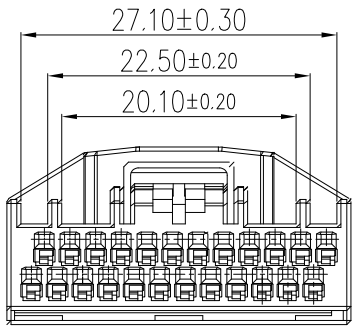
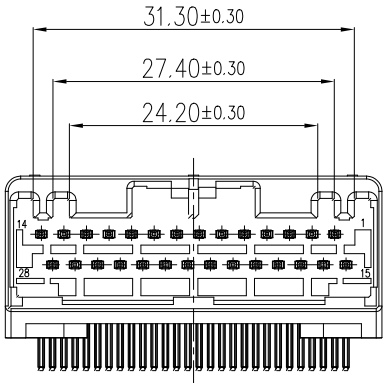
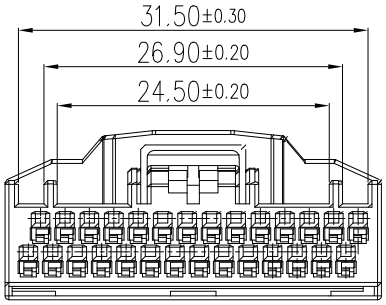
（1）本规范涵盖料号 92201MR 、92201H 与 92201T 连接器相关使用 信息/This specification covers performance, electrical and environmental requirements for the 92201MR 、92201H 与 92201T connector.

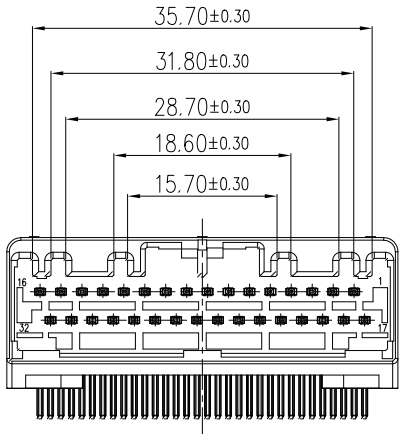
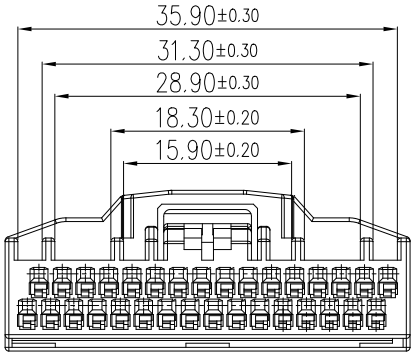
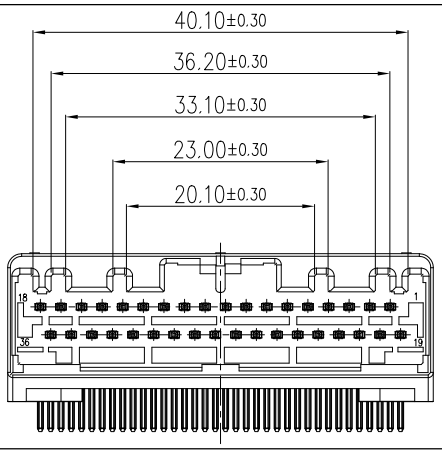
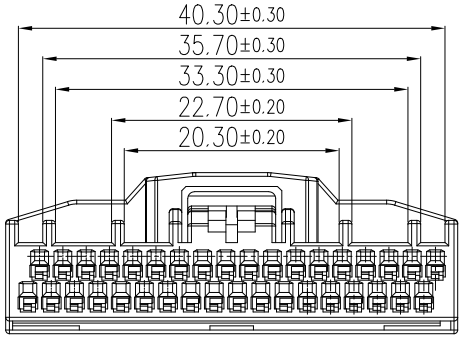
（2. 本规范参考 USCAR-2 Rev.6 。This specification reference USCAR-2 Rev.6 .

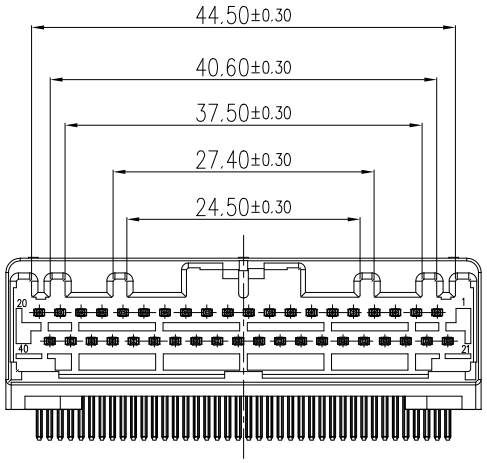
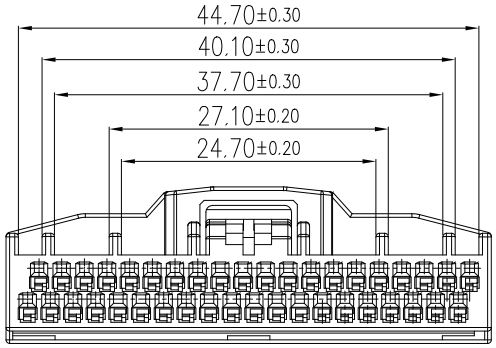
1.3 尺寸料号/规格说明/Dimensions, Patr NO./specification

产品信息，请参阅以下表格中的尺寸，颜色/For product information, please refer to the sales drawing number, size and color in the table below

PIN数	料号/Part NO.	产品框口 Product frame
16 PIN	92201MR-016SN*T01	
	92201H-016*01	
20 PIN	92201MR-020SN*T01	
	92201H-020*01	

PIN数	料号/Part NO.	产品框口 Product frame
24 PIN	92201MR-024SN*T01	
	92201H-024*01	
28 PIN	92201MR-028SN*T01	
	92201H-028*01	

PIN数	料号/Part NO.	产品框口 Product frame
32 PIN	92201MR-032SN*T01	
	92201H-032*01	
36 PIN	92201MR-036SN*T01	
	92201H-036*01	

PIN数	料号/Part NO.	产品框口 Product frame
40 PIN	92201MR-040SN*T01	
	92201H-040*01	

1.4零件材料参数/MATERIAL PARAMETER OF PARTS

1.4.1公端本体Male Housing： PA9T
1.4.2公端端子Male TERMINAL：C2680
1.4.3 线端本体 FemaleHousing :PPE+PS
1.4.4 线端后盖Female FOR TPA：PPE+PS
1.4.5 线端端子Female FOR TERMINAL :C7025 &C19002

第二章：性能参数/Unit 2 PERFORMANCE PARAMETER

2.1 工作电压:100V Max /Working voltage:100V Max

2.2 绝缘, 电压/Insulation Resistance ,VOLTAGE

绝缘Insulation Resistance：在相邻端子之间使用500伏直流电压,30S,达到100 MΩ最小 /100MΩ Minimum when 500 Volts DC between adjacent terminals and terminals to ground， Time 30s

耐电压/Dielectric Withstanding Voltage: AC 1000V(60s)

2.3 额定电流/RATED CURRENT : 3A

2.4 工作温度/Ambient Operating Temperature: - 40° C to + 125° C

2.5 阻燃性/FLAMMABILITY

塑胶材料符合燃烧性能UL94 V-0标准/Insulator materials compliant with the flammability standard UL94 V-0

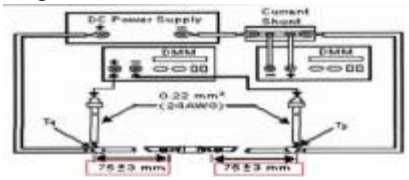
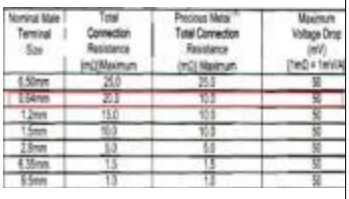
2.6 接触电阻/CONTACT RESISTANCE：20mΩ max.

2.7 震动/VIBRATION CLASS

USCAR2 (Rev 6) -机械冲击和震动等级V1/ USCAR2 (Rev 6) - Mechanical Shock & Vibration Class V1

2.8 性能测试/PERFORMANCE

2.8.1 电气性能/Electrical performance

测试Test	参考 Reference	实验条件Test Conditions	要求Requirement
电流老化 Current Cycling	USCAR-2 Rev.6_5.3.4	测试环境：温度23+/-5℃ 湿度 :45-85% RH 测试周期：1008H，每天记录一次数据. 测试电流:3ATemperature :23 + / - 5 ℃, Humidity: 45-85% RH Test cycle: 1008H, record data once a day. Test current :3A	温升≤55 ° C Temperature Rise ≤55 ° C
绝缘阻抗 Insulation Resistance	USCAR-2 Rev.5_5.5.1&Sp ec.	电压： 500V DC 测试时间:30S Min（样品测试前需在室温下放置3H以上） Apply DC 500V,Test time :30S Min (The sample should be placed at room temperature for more than 3 hours before test)	100MΩ Min
电压降 Voltage Drop	USCAR-2 Rev.6_5.3.2	电压： 14+/-0.1V DC,电流：3A,测试导线总长度150mm Voltage：14+/ -0.1V DC, Current: 3A, total length of test wire 150mm: 	50mV Max. 
干电路电阻 Dry Circuit Resistance	USCAR-2 Rev.6_5.3.1&Sp ec.	电压： 20mV DC,电流:100mA Voltage: 20mV DC, current: 100mA	20mΩ Max.

2.8.2 机械性能/Mechanical performance

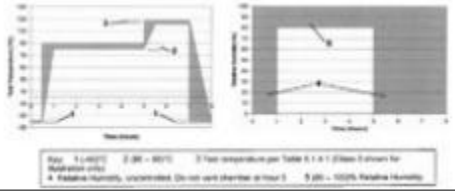
测试Test	参考 Reference	实验条件Test Conditions	要求Requirement
端子插入力 Contact Insertion Force	USCAR -2 Rev.6_5 .4.1	测试速度：50mm/min. （垂直方向插入） Test speed:50mm/min（Vertical insertion）	30N Max，插入后产品无物理损坏 30N Max.After insertion,no physical damage
连接器互配声音 Connector to connnector Audible Click	USCAR -2 Rev.6_5 .4.7	测试环境：温度23+/-5℃ 湿度 :45-85% RH， 环境噪音：30~50dB 两组样品，一组在常温下测试， 一组在 40℃, 95%~98%HR环境下保存6H后再测试.,测试时间30最长分钟,话筒距离： 600+/-50mm Temperature :23 + / - 5 ℃ , Humidity: 45-85% RH ， The ambient noise level must be between 30 and 50 dB . Two groups of samples, a set of test at room temperature, a groups of 40 ℃, 95% ~ 98% HR environment preservation test again after 6 h，then completing the test within 30 minutes Microphone distance: 600+/-50mm.	记录实际测试值，通常在无条件下测试直接测试分贝值应 大于环境噪音7dB以上， 在有环境测试条件下测试值应大于环境噪音5dB以上. Record the actual test value, usually under unconditional test direct test db value should be greater than the environmental noise of more than 7dB, in the environmental test conditions should be greater than the environmental noise of more than 5dB.
卡锁强度 Lock Retention Force	USCAR -2 Rev.6_5 .4.2	测试环境：温度23+/-5℃ 湿度 :45-85% RH 测试速度： 50mm/min 公母端匹配后，对母端施加拉出力，力量逐渐增加直到被完全拉出.（公母端不需组装端子） . Temperature :23 + / - 5 ℃ , Humidity: 45-85% RH ,Test speed:50mm/min After the male and female ends are matched, elncrease the Retention Force at a uniform rate not to exceed 50mmlmin. until complete separation occurs (The male and female terminals do not need to be assembled)	110N Min.

机械冲击 Mechanical Shock	USCAR -2 Rev.6_5 .4.6	加速度： 35g，持续:10ms 测试周期：每个轴向10次（X/Y/Z)，样品需在室温环境下保存48H,波形：半正弦波 Acceleration：35g ，Duration：5-10ms Shocks per Axis：10 times（X/Y/Z) , Age the samples for 48 hours at ambient conditions,Wave Shape:Half Sine Wave (Class Schedule for Shock: see table below)	样品无物理损坏。电气试验符合要求， 机械冲击时7Ω/1us内 无瞬断。 No physical damage to the sample. electrical test meets the requirements,No disconnection within 7Ω/1us when mechnical shock.
端子保持力 （线端） Contact Retention Force （FEMALE）	USCAR -2 Rev.6_5 .4.1	测试速度：50mm/min，测试环境：温度23+/-5°C 湿度 :45-85% RH Test speed:50mm/min, testing environment: Temperature23+/-5°C, Humidity :45-85%RH	母端： 60N Min.(两道卡琐) 环境测试后： 50N Min(两道卡 琐) Initial force 60N Min（1st lock+2nd lock） After enviroment test，50N Min（1st lock+2nd lock）
端子保持力 （板端） Contact Retention （MALE）	USCAR -2 Rev.6_5 .7.1	测试速度：50mm/min， 测试环境：测试样品在40°C, 95%~98%RH环境下持续6H Test speed:50mm/min, testing environment: test samples in 40 °C, Humidity 95% ~ 98% RH environment for 6 h	公端（板端）： 15 N Min. Male connector :15N Min.
震动 Vibration	USCAR -2 Rev.6_5 .4.6	采取V1标准测试 持续时间：8H每个轴向（X/Y/Z),样品需在室温环境下保存48H, 测试加速度频率：5.0-1000.0 Hz Time of duration：8Hrs/axis(X/Y/Z) . Age the samples for 48 hours at ambient conditions Test acceleration Frequency:5-2000.0 Hz	测试样品无物理损坏， 震动时7Ω/1us内无瞬断。 No physical damage to the sample. electrical test meets the requirements,No disconnection within7Ω/1us when vibrating.

Class Schedule for Shock

Vibration Class		Shocks per Axis	Wave Shape	Direction (+/-)	Duration (ms)	Acceleration (g)
V1		10	Half Sine Wave	Positive	5 - 10	35
V2		10	Half Sine Wave	Positive	5 - 10	35
V3 V4	1	132 x 6 =792	Half Sine Wave	Positive/Negative	15	25
V5 (Perform Both Tests	2	3 x 6 =18	Half Sine Wave	Positive/Negative	11	100

2.8.3 环境性能Environmental performance

测试Test	参考 Reference	实验条件Test Conditions	要求Requirement
热冲击 Thermal Shock	USCAR-2 Rev.6_5.6.1	温度： -40~125℃（T3） 测试周期： 每个温度点30分钟， 中间转换时间不能超过30秒， 循环测试99cycles 样品分为两组， 一组测试干电路阻抗， 一组测试电压降及瞬断 Temperature:-40℃~125℃（T3） Test cycle: 30 minutes at each temperature point, with the intermediate conversion time not exceeding 30 seconds; test cycle: 99cycles. It is permissible to divide the test samples into two groups.The first group shall be used for Dry Circuit Resistance measurement. The second group shall be used for Voltage Drop measurement and Circuit Continuity Monitoring.	样品无物理损坏。 电气试 验符合要求，在7Ω/1us内热冲击时无瞬断。 No physical damage to the sample. electrical test meets the requirements,No disconnection within 7Ω/1us when thermal shock.
温湿循环 Temperature/Humidity Cycling	USCAR-2 Rev.6_5.6.2	温度： -40-125℃,湿度：0%~95%,循环测试40cycles Temperature ： -40-125℃, humidity ： 0%~95% Loop test ： 40cycles 	样品无物理损坏，电性测试OK. No physical damage, electrical testis OK.
高温老化 High Temperature Exposure	USCAR-2 Rev.6_5.6.3	温度： 125℃ 测试时间：1008H Temperature：125℃ Test Time ：1008H	产品无物理损害、电气性符合要求 No physical damage to the sample. electrical test meets the requirements

第三章：组装/操作说明 Unit 3 Assembly / operation instructions

3.1 铆压规格书/Crimping Specification

(1) 适用范围： 本规格书仅适用于我司BMS信号传输连接器线端端子以9220开头的各型端子，且刀模规格和电线规格符合本规格书中要求的 铆压标准。Scope of application: This specification is only applicable to the terminals of our BMS signal transmission connector starting with 9220 the cutter die and wire specifications meet the requirements of crimp pressure standards in this specification.

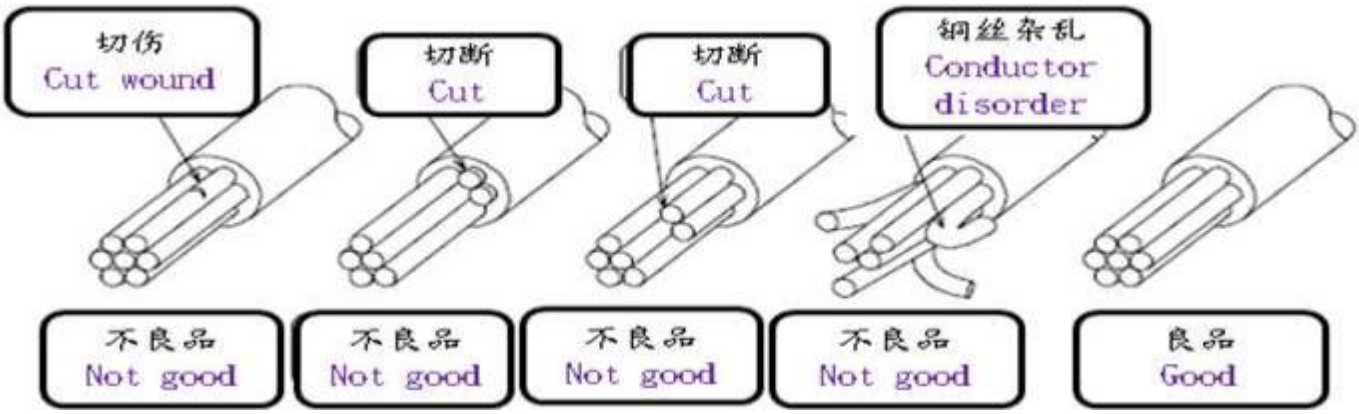
(2) 端子型号适配电线规格/Terminal type adaptor wire specification

端子型号 Terminal type	适配电线规格 Wiring specifications	电线绝缘外径 Outside diameter of wire insulation
9220T-F**P01	FLR9Y-A 0.22mm² （裸铜） FLR9Y-A 0.22mm² (bare copper)	1.10±0.10mm
	UL1332 22AWG（镀锡铜） UL1332 22AWG (tinned copper)	1.42±0.08mm
	AESSX 0.30fmm² （裸铜） AESSX 0.30fmm² (bare copper)	1.45±0.10mm
9220T-F**P02	AESSX 0.50fmm² （裸铜） AESSX 0.50fmm² (bare copper)	1.60±0.10mm
	AESSX 0.75fmm2 (裸铜） AESSX 0.75fmm² (bare copper)	1.80±0.10mm

(3) 电线剥外皮长度/Wire stripping length

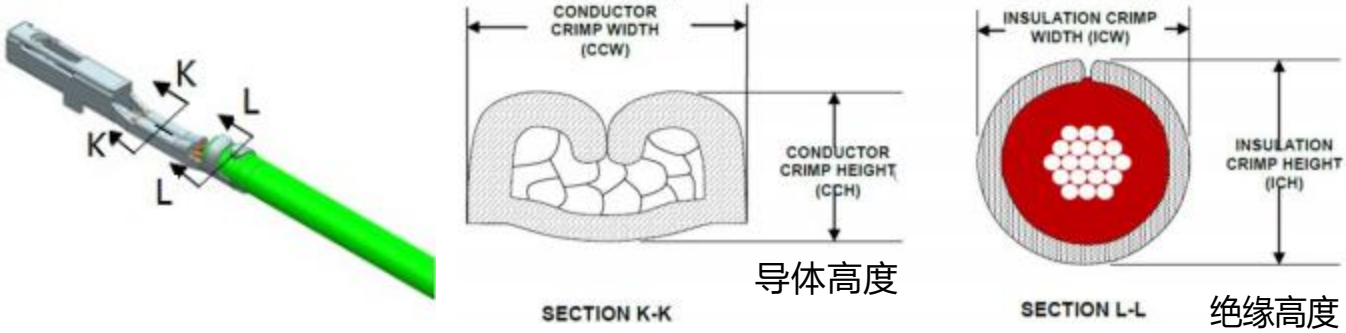
电线剥外皮长度/Wire stripping length：A=4.30±0.3mm

(4) 电线剥外皮外观判定/Appearance judgment of wire peeling



电线剥外皮外观/The appearance of wire peeling

(5) 剖面图示 Sectiong diagram



剖面图示说明/Section illustration

(6) 端子铆压尺寸规格/Dimension specification of terminal crimp

端子料号 Terminal P/N	电线规格 Wire size	线缆 OD(mm) Cable OD(mm)	剥线长度（mm） Strip length (mm)	导体铆压 Conductor crimp		绝缘铆压 Insulation crimp		保持力 Retention Force	导体压接截面 压缩比 70~90% Copper conductor crimping section Compression ratio of 70~90%
				压接宽度 CCW(mm) Crimping width CCW(mm)	压接高度 CCH(mm) Crimping height CCH(mm)	压接宽度 ICW(mm) Crimping width ICW±0.05mm	压接高度 ICH(mm) Crimping height ICH±0.1mm		
9220T-F**P01	FLR9Y-A 0.22fmm²	1.10±0.10	4.30±0.3	1.53±0.03	1.01±0.03	1.68	1.76	30N min	
	AESSX 0.30fmm²	1.45±0.10	4.30±0.3	1.54±0.03	1.14±0.03	1.68	2.01	50N min	

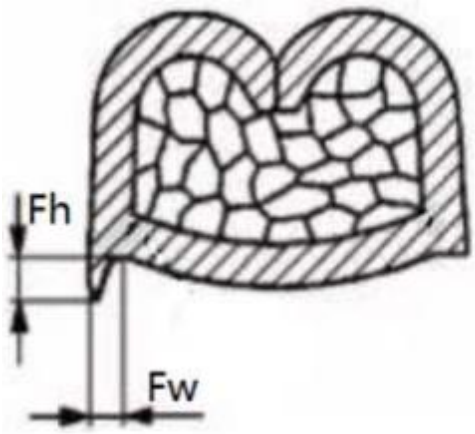
	UL1332 22AWG /	1.42±0.08	4.30±0.3	1.54±0.03	1.08±0.03	1.68	1.95	50N min	
9220T-F**P02	AESSX 0.50fmm²	1.60±0.1	4.30±0.3	1.74±0.05	1.12±0.05	1.76	2.08	70N min	
	AESSX 0.75fmm²	1.80±0.1	4.30±0.3	1.76±0.05	1.32±0.05	1.79	2.24	80N min	

备注Notes：

1、铆压后每根铜丝有明显的变形，且铜丝与铜丝之间的间隙小于单根铜丝OD的1/5， 是可接受(供参考) 。After crimp , each copper wire has obvious deformation, and the gap between each copper wire is less than 1/5 of the OD of a single copper wire, which is acceptable

2、导体铆压和绝缘铆压的尺寸供参考Conductor crimp and insulation crimp dimensions for reference

(7) 端子压接剖面判定：（依 USCAR21-2014）The end of the terminal is determined by the section（according to USCAR21-2014）



端子压接毛刺高度（Fh） ≦1.0*S（端子料厚）

Terminal crimping burr height (Fh) ≦1.0*S (terminal material thickness)

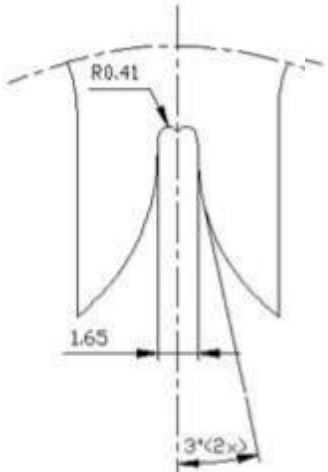
端子压接毛刺宽度（Fw）≦0.5*S（端子料厚）

Width of terminal pressing burr (Fw) ≦0.5*S (thickness of terminal material)

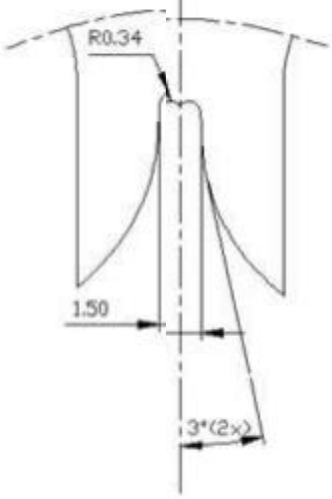
(8) 压接刀模尺寸/Crimp Tooling Geometry:

压接刀模对应端子及电线规格Crimp Tooling For terminal and wire SPEC		
端子料号 Terminal P/N	适配电线(Suitable wire size)	电线绝缘外径(Wire Insulator overall Diameter)
9220T-F**P01	0.22fmm² ~22AWG	Ø0.9~ Ø 1.7mm

Insulator Punch Tooling Grip Size
绝缘内上刀尺寸

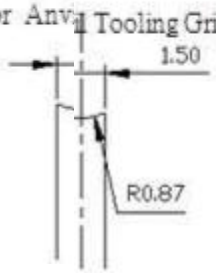


Conductor Punch Tooling Grip Size
导体外上刀尺寸



绝缘内下刀尺寸
Insulator Anvil Tooling Grip Size

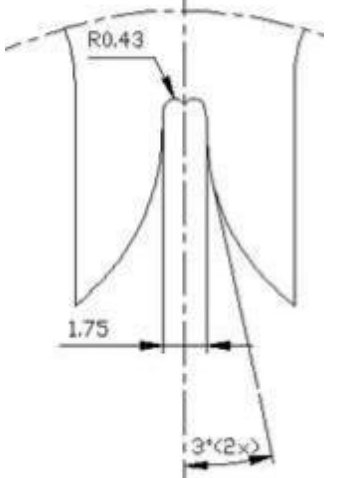
导体外下刀尺寸
Conductor Anvil Tooling Grip Size



压接刀模对应端子及电线规格Crimp Tooling For terminal and wire SPC		
端子料号 Terminal P/N	适配电线(Suitable wire size)	电线绝缘外径(Wire Insulator overall Diameter)
9220T-F**P02	0.50fmm² ~0.75fmm²	Ø1.0~ Ø 1.9mm

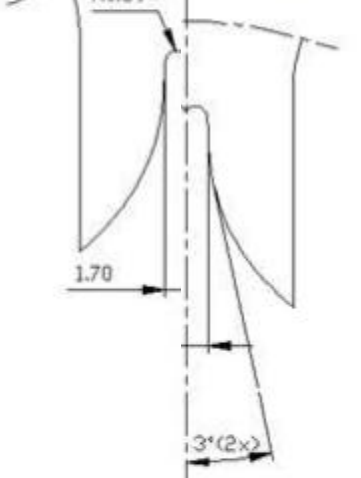
绝缘内上刀尺寸 p Size

Insulator Punch Tooling Gri



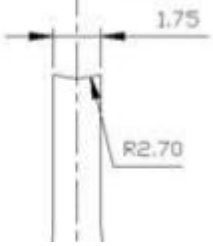
Conducter Punch T 导体外上刀尺寸

ooling Grip Size



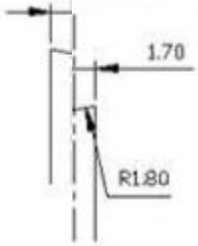
绝缘内下刀尺寸 p Size

Insulator Anvil Tooling Gri

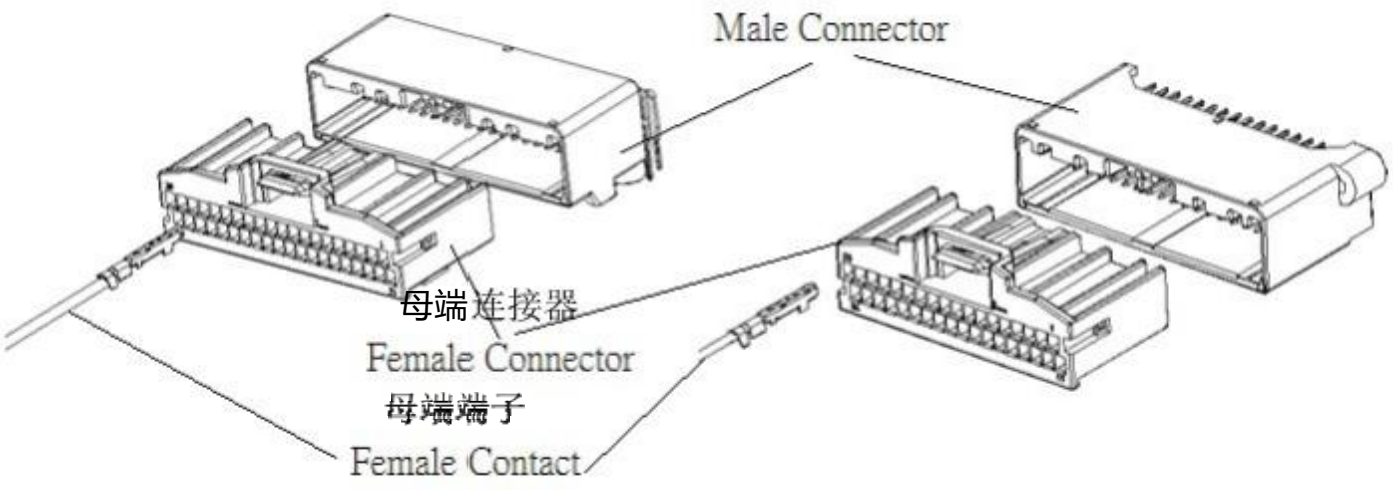


Conducter Anvil 导体外下刀尺寸

Tooling Grip Size



3.2 组装图Aassembly drawing



3.3 客户验收/ Customer Receiving Inspection

为保持全面管控，我们是根据质量管理条例进行检验。另外，客户应根据具体的客 户图纸进行验收。We conduct inspections according to our quality control regulations to maintain an over all lot control. In addition, the customers should conduct receiving inspections based on the specific customer drawings.

3.4 储存和运输/ Storage and transportation

3.4.1 端子/ Terminal

(1) 在没有用适当的材料包裹的情况下，避免将端子卷盘留在或携带在开放区域。Avoid leaving or carrying the terminal reel in an open area without wrapping it in proper material.

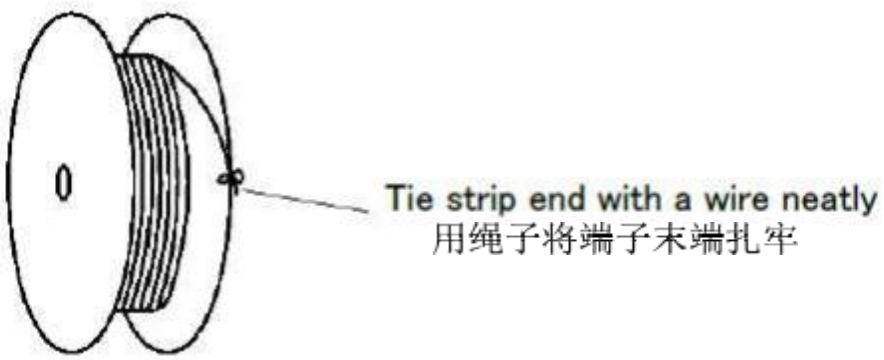
(2) 端子拿取过程中不可用手拿卷盘的横向两侧，可能会损坏端子盘。 Do not lift up and carry the contact reel by gripping one the side of reel, this may result in damage to the reel, and contacts before use.

Do not lift up laterally holding one side only.
不可只提起一侧

Acceptable
可接受

(3) 避免在潮湿或布满灰尘的地方储存端子。应放在相对干燥和清洁的地方(5～35℃,45～85%RH)远离阳光直射。Avoid storing the contact reel in a moist or dusty place. Stock the reel in a comparatively dry and clean place (5～35℃, 45～85%RH) away from direct sunlight.

(4) 当将端子从卷盘取出时,端子的尾端需用适当的绳子或电线固定在卷盘边缘。 When removing the contact reel from the machine, fasten the end of contact strip onto the edge of the reel with use of proper string or wire.



3.4.2 本体和连接器/Housing and Connector

(1) 避免在潮湿或布满灰尘的地方储存连接器，应在相对干燥和清洁的地方(5～35℃,45～85%RH)远离阳光直射。Avoid storing the connector in a moist or dusty place. Stock the connector in a comparatively dry and clean place (5～35℃, 45～85%RH) away from direct sunlight.

(2) 运输连接器过程中需包装在适当的包材中， 避免裸漏在外面。Avoid leaving or carrying the connector in an open area without wrapping it in proper material.

(3)搬运时不得将连接器掉落或撞击 Do not drop or shock the connector when carrying it.

3.4.3固定本体与PCB板 Fixing Housing and PCBoard

将板端连接器的引脚插入PCB板的孔中，使用螺丝固定好本体与PCB板焊接位置， 再处 理下一步工序。 Insert the contact of the male connector into the hole of PC Board. Then after fixing the housing and the board with a screw, solder the contacts. And take care of the following at the work.

(1) 购买后需3个月内组装焊PCB板。Mount and solder onto PC Board within 3 months after purchase.

(2) PCB板尺寸见客户图纸。 See the customer drawing for the PC Board dimension.

(3) 作业时请勿将端子引脚弄变形，否则将导致连接器无法正常下PCB板。Do not deform the contact (PC Board side), otherwise the male connector can not be fixed on the PC Board.

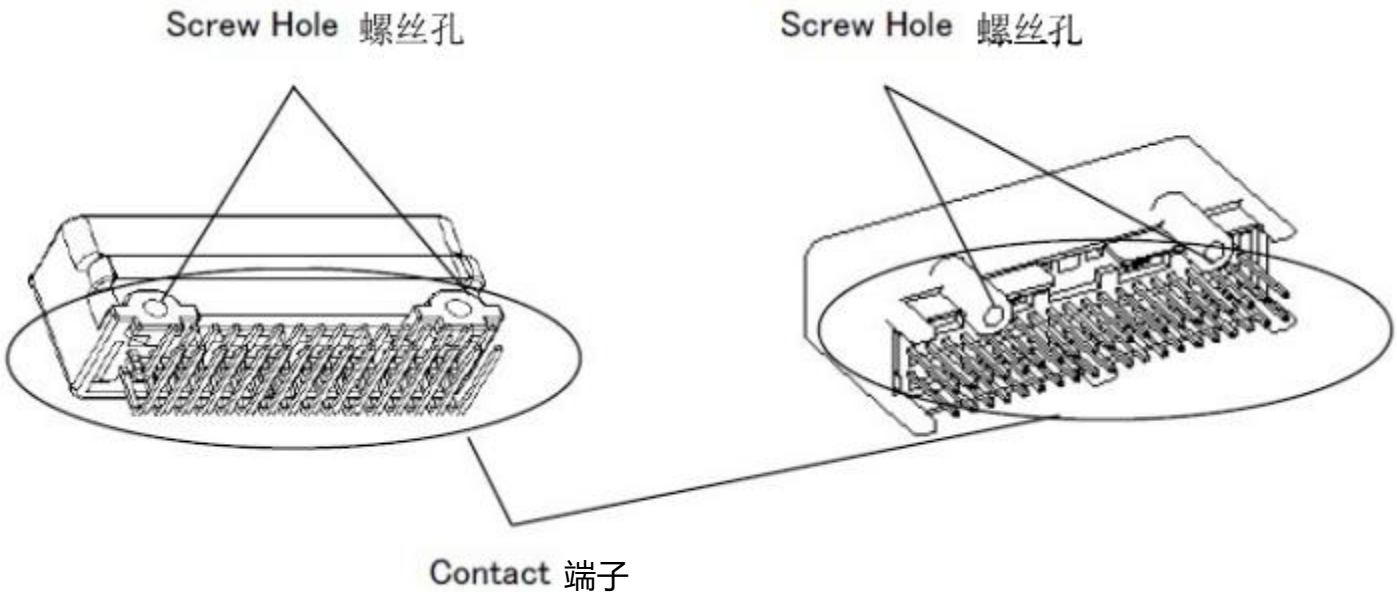
（4）产品固定在PCB上应采用合适的螺钉类型和扭矩.The fixing should be made with the proper type of screw and torque.

推荐螺钉:参与LOTES扭矩规范，自攻螺钉， ST2.9。Recommended Screw: Participate in the LOTES torque specification , Tapping screw, ST2.9

紧扭矩:0.45±0.05 n ·m供参考。Tightening Torque: 0.45±0.05N ·m for reference.

（5）产品不能因焊接温度导致变色或变形。No discoloration nor deformation should be caused by the heat of soldering.

（6）连接器本体两侧(对插面和焊锡面)不得因操作而损坏或变形。对插区域不允许有异 物进入。 In addition, both sides (mating side and solder side) of the contact and the housing must not be damaged or deformed by the operation. No foreign substances are permissible in the mating area.

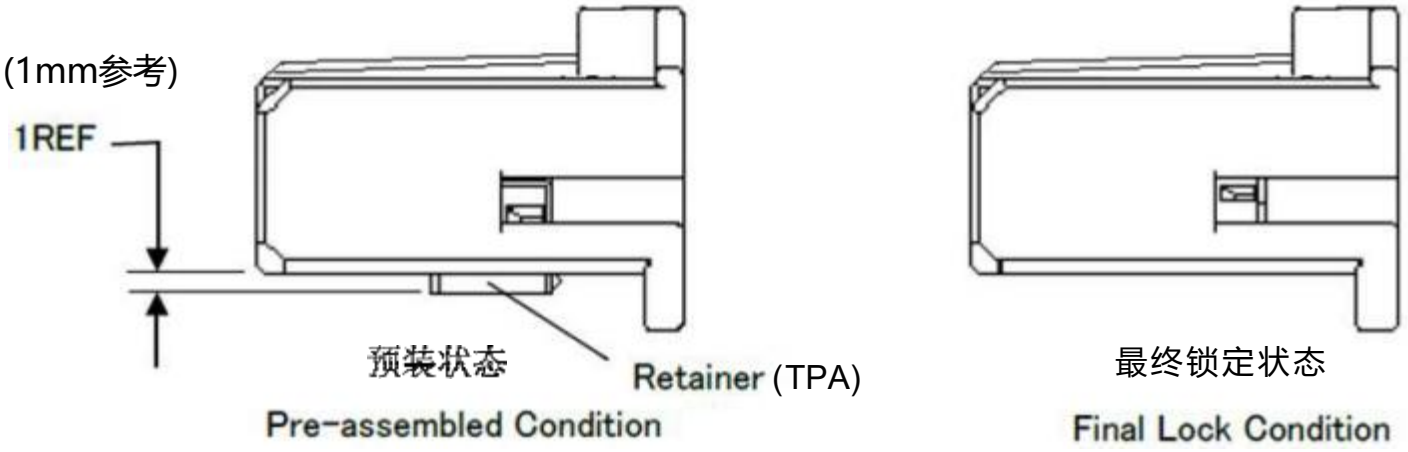


3.4.4.压接作业Crimping Operation

端子压接应参考 锦凌 的压接规格书，使用 锦凌 设计标准工具 Any crimping of contacts must be performed by using appropriate JILN tools according to the 。 3.5 线束制作Harness Making

3.5.1 包方端子插入本体的步骤。 Procedure for Female Contact Insertion into Housing (1)确认TPA处于预装状态。当TPA处于最后锁定状态时,必须将其解锁至预装状态，否则端子无法插入本体内。 Confirm the retainer is in pre-assembled condition. When the retainer is in final lock condition, it must be unlocked to pre-assembled condition. The contact can not be inserted in final lock condition.

(2) 确认端子的电镀类型， 公端和母触接触点必须是相同类型的镀层。Confirm type of plating on the contact. It must be the same type of plating on the female contact and on the male contact.

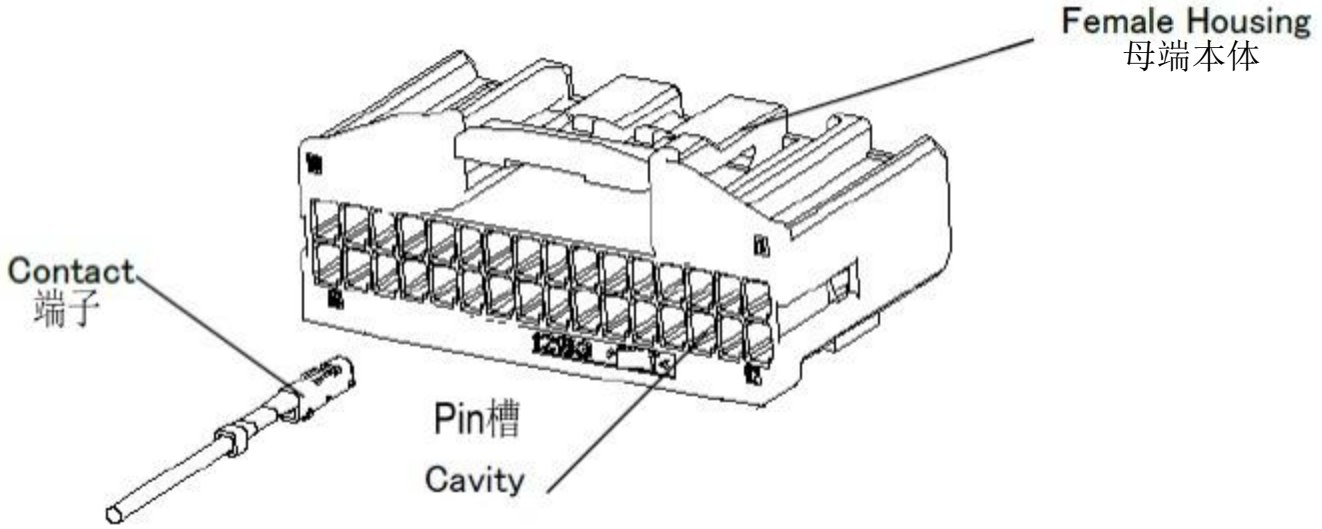


电镀的类型可以在客户的图纸上看到。The type of plating can be seen on the customer drawing.

★注意不允许不同类型镀层接触连接。★NOTEConnection between different types of contacts should never be allowed.

(3)将端子防呆方向插入本体内,如图所示。当端子插入到一次锁被卡住时即插到位。 Insert the contacts into the housing with same direction as shown in Fig. The insertion is finished when the lance (Contact Lance) is locked and the contact can not be more inserted.

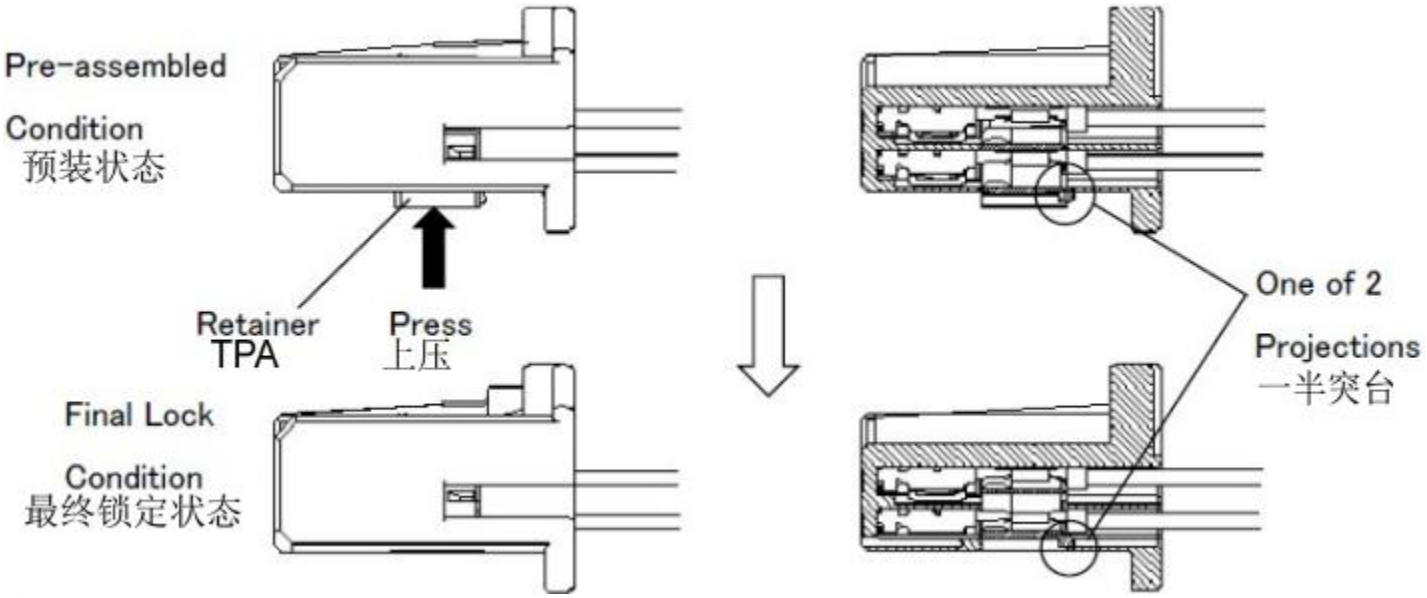
★注意插端时，回拉一下端子 自检是否有装到位。★NOTEWhen inserting terminals ， Pullback the terminal to check whether it is installed in place



(4)一次锁保持力最小要求30N，检查确保端子不能被拉出。By pulling the contact by 30N MAX, check to make sure that the contact can not be withdrawn.

3.5.2 二次锁操作/Double Lock (Secondary Lock) Operation

(1)在插入所有端子后，按下TPA以达到最终锁定状态。按下后TPA与本体在同一个 面，二次锁操作就完成了。After insertion of all of the contacts, press the retainer for final lock condition. The double lock operation is finished by confirmation that the retainer is kept in the final condition by the 2 projections.



(2)如果有任何端子未插入到位，TPA无法按到位。当TPA不能压到位时，不要用力 压，找到未插到位的端子，将其插到位即可。The double lock operation can not be completed if there are any half-inserted contacts. When the retainer can not be pressed to the final condition, do not press by force, find the half inserted contact, and insert it to proper position.

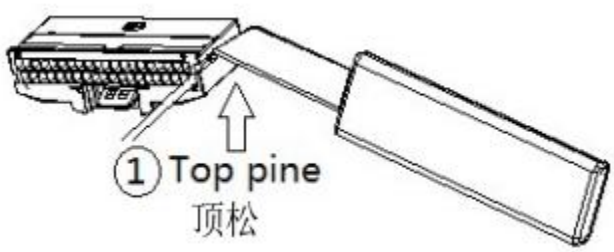
3.5.3 如何从最终锁定状态下解锁护套How to Unlock Retainer from Final Lock Condition

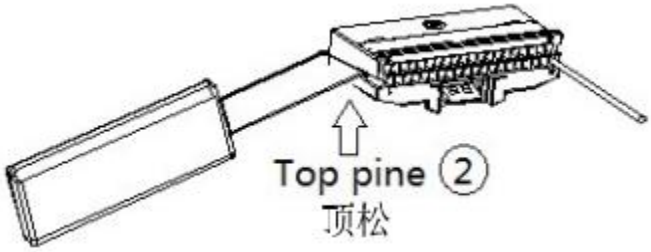
当包方端子需要插入或取出时,TPA必须在预装的状态下。插入或取出不能在最终锁定 条件下完成。 When the female contact requires insertion or extraction, the retainer must be in the pre-assembled condition. The insertion or extraction can not be done in final lockcondition.

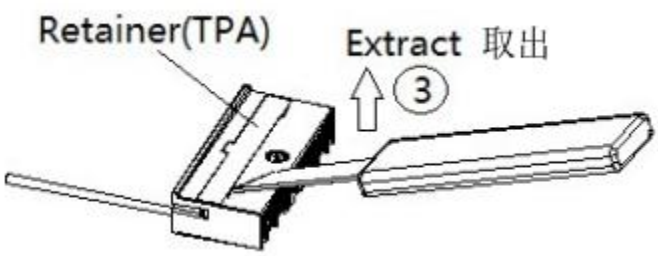
(1) 将一个工具(如1mm刀片)插入到TPA窗口内。Insert a tool such as a 1mm blade screw driver, into the window of the retainer pointed by the tear drop mark..

(2)将TPA拉出约1mm至预装配状态。确认已解锁.Draw out the retainer, about 1mm, to pre-assembled condition. Confirm that all of the projection is unlocked.

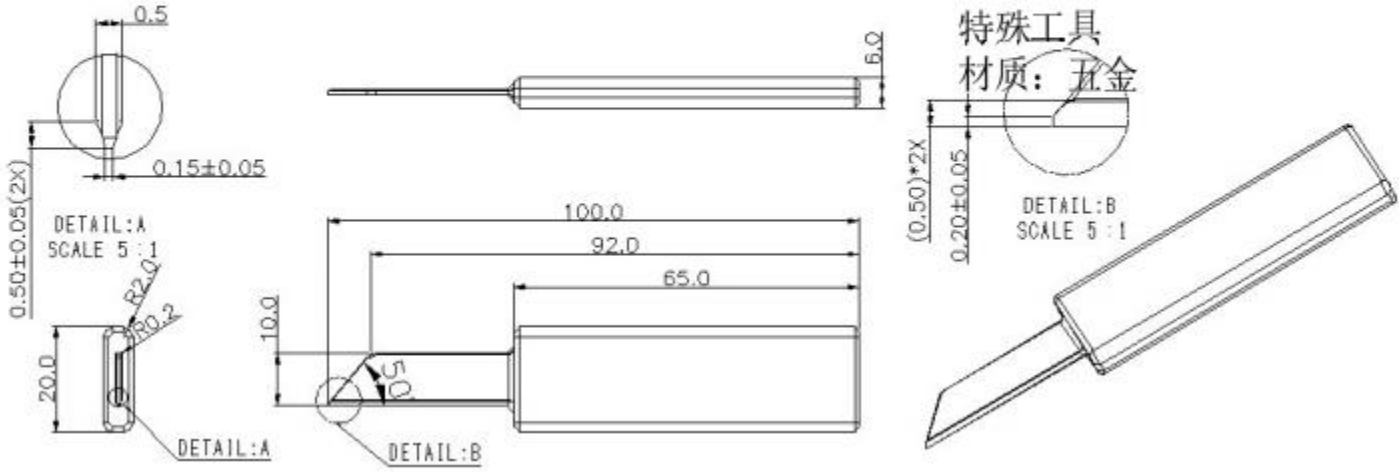
★注意TPA不要拔出超过适当长度,否则TPA可能会损坏。★NOTE Do not extract the retainer more than appropriate length. Otherwise the retainer ,maybe damaged.







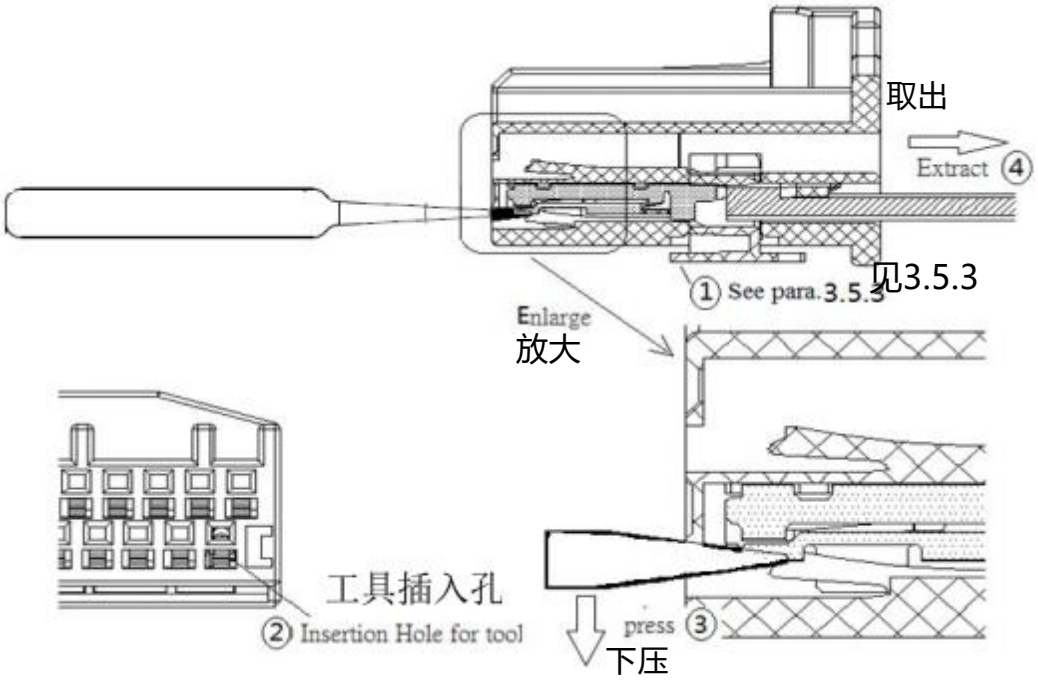
1、The Special Extractive Tool Material:Metal 特殊工具，材料：金属
2、Default Tolerance ±0.25mm，默认公差±0.25



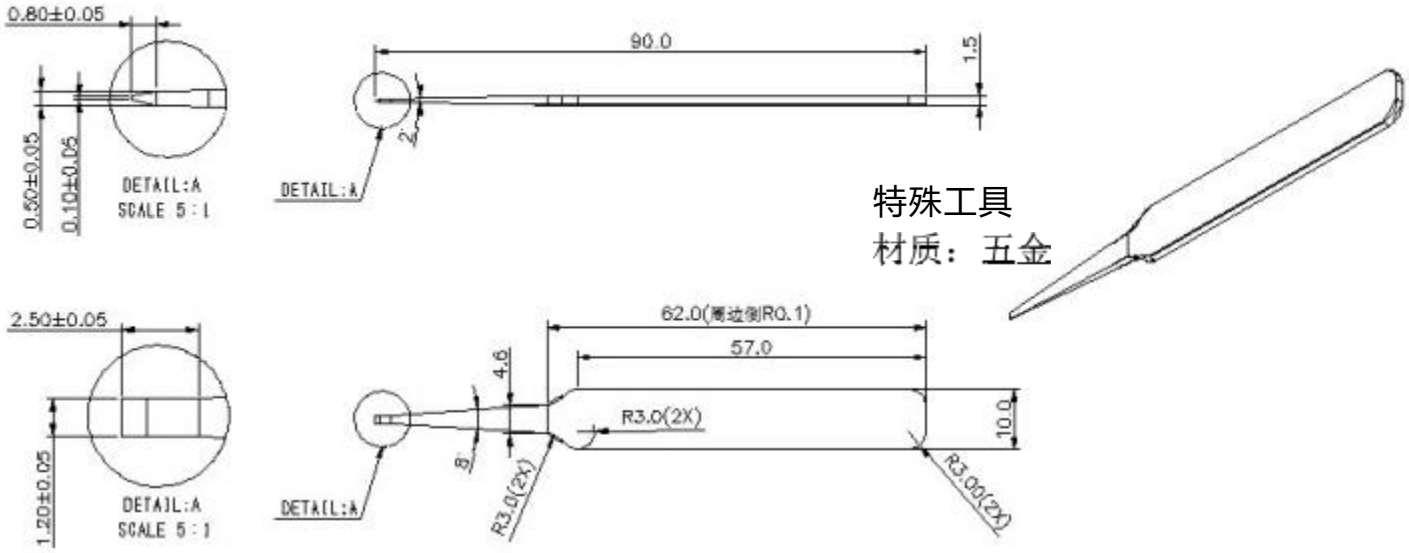
3.5.4 如何提取包方端子 How to Extract Female Contact

(1)确认TPA在预组装条件下。当TPA处于最终锁定状态时,必须将其转换为预装条件 见3.5.3，在最终组装条件下不能提取端子的。 Confirm the retainer is in pre-assembled condition. When the retainer is in final lock condition, it must be changed to pre-assembled condition. See 3.5.3 The female contact can not be extracted in final assembled condition.

(2)将专用的拔出工具的尖端插入本体的退PIN孔中， 在下压的弹片的同时回拉线材 可从本体中取出端子。见图。 Insert the tip of a special extractive tool into the proper hole to the end, remove the loaded contact from housing while pull the crimped wire. See Fig.

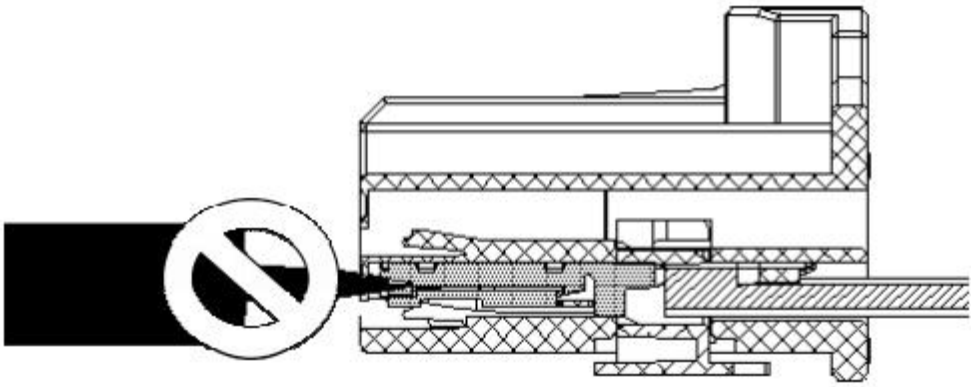


1、The Special Extractive Tool Material:Metal 特殊工具，材料：金属
2、Default Tolerance ±0.25mm，默认公差±0.25



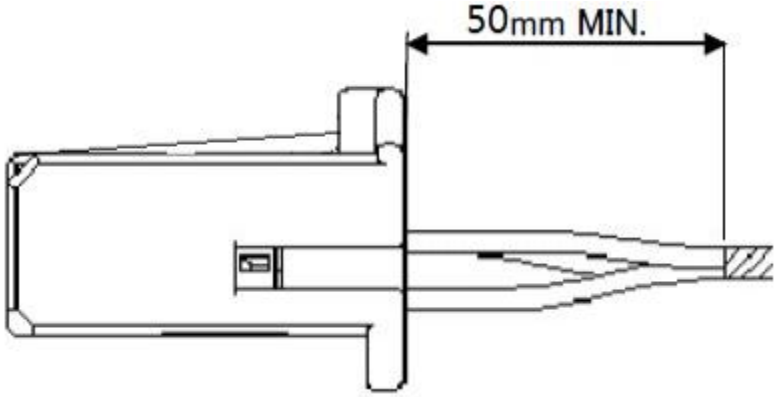
★注意插入退PIN针将一次锁翘起。注意力量不要过大，否则会导致退PIN针变形或损 坏。 一次锁由于退PIN产生的变形会影响保持力。不要重复提取端子超过2次，否则保持 力下降。
★NOTE If only insert the tool, the contact lance will be released. Take care not to apply ， unnecessary force, otherwise the deformation of the tool occurs or it is cause for falling ， of retention force by the deformation of the contact lance. And do not repeat extract more than 2 times, otherwise the retention force has fallen.
★注意不要用此退PIN针来退TPA。★NOTE Do not extract the retainer by this extractive tool.

(3)当包方端子无法拔出时， 不要用力拉线， 需确认TPA处于解锁状态。When the female contact can not be extracted, do not pull the wire by force but ensure the housing lance is unlocked.
★注意不要将刀片或退PIN针插入包方端子内。如果插入这些， 则必须更新线端子,绝不 允许重复使用。★NOTE Take care not to insert the screwdriver or the extractive tool into the female contact. If those should be inserted, the female contact must be renewed.
Re-using is never allowed.



3.5.5 手工操作/ Hand operation
(1) 操作/Handling
注意不要对连接器或导线施加不必要的力或冲击。Take care not to apply unnecessary force or shock to the connector or the wire.

（2）导线缠绕/Taping up Wires
为避免对导线施加不必要的力，导线缠绕本体尾部距离大于50mm。The wires must not be taped up more than 50mm from the end of the housing to avoid applying unnecessary force to the wires.



（3）电路检查/Electric Circuit Check

（3.1）检查电路时，应使用相应配套的产品。For making a check on electric circuit, the applicable mating half or equivalent product should be used.

（3.2）严禁将用于测试的探针插入端子的接触点，需从端子侧面探测。Never insert the probe pin for the inspection into the female contact. The pin must be probed from the wire side.

★注意如果需要插入探针，则必须更换包方端子。 NOTE If the probe pin should be inserted, the female contact must be renewed.

（4）存储Storage

避免将连接器存放在潮湿或有灰尘的地方。将连接器放置在远离阳光直射的地方。Avoid storing the connector in a moist or dusty place. Stock the connector away from direct sunlight. （5）运输和携带/Shipping and Carrying

连接器使用时应采用适当的包装， 以防止灰尘、湿气等进入。The connector should be used with the proper packaging to prevent the ingress of dust, moisture, etc.

3.6. 连接器的插入和拔出/Mating and Extraction of Connector

3.6.1 插入连接器/Mating of Connector

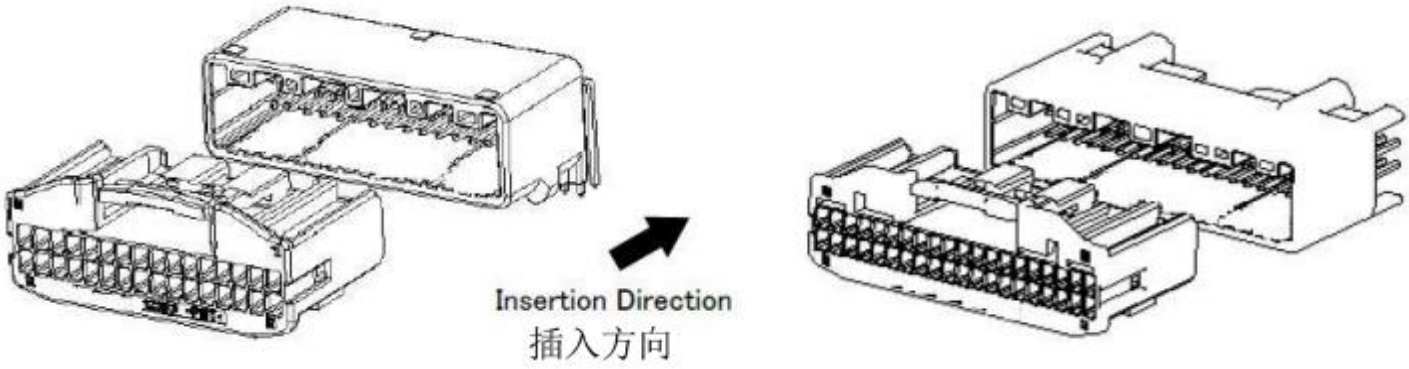
(1) 检查以确保连接器以适当的状态插入到本体中， 线材从适当的位置捆扎起来， TPA 处于最终锁定状态。如果TPA处于预装配状态， 则必须将其更改为最终锁定状态。Check to make sure that the contact is inserted into the housing in proper condition, the wire is taped up from proper position, and the retainer is in final lock condition. If the retainer is in pre-assembled condition, it must be changed to be in final lock condition.

(2) 然后检查本体有无缺陷、变形、变色、损坏、锈蚀、裂纹、缺陷等。And then check the contact and the housing into the male housing for defects, deformation, discoloration, damage, rust, crack, deficit, etc.

★注意如果发现任何缺陷， 连接器必须更新。 NOTE The connector must be renewed if any defects are found.

(3) 将匹配的线端插入板端, 防呆方向一致，如图所示。当听到卡塔声并不能进一步插 入时,操作就完成了。当不能插入时,不要强行插入,并检查这些物品。Insert the proper female housing into the male housing straight with same direction as shown in Fig. The operation is finished when you hear the click sound and can not insert further. When you can not insert the housing, do not insert by force, and check the items .

★注意在插入操作时，注意不要在插入方向以外施加力。 NOTE At the insertion operation, take care not to apply force except in the insertion direction.



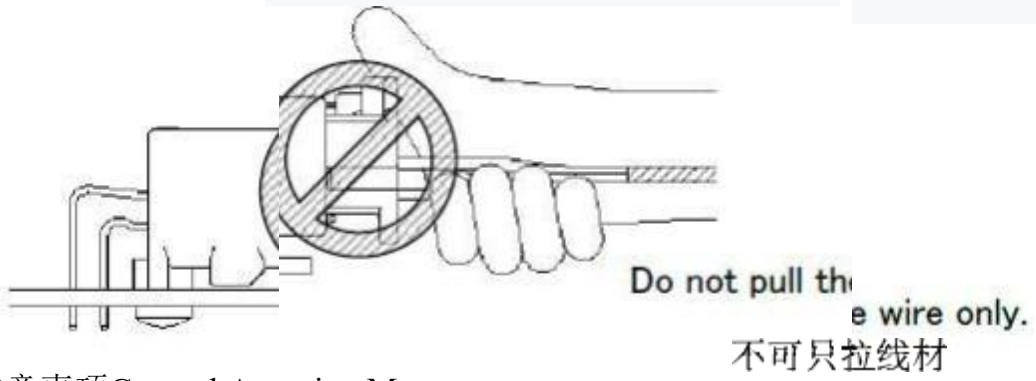
(4)轻拉线端连接器,确保连接器不能被拉出。Make sure the connector cannot be pulled out by gently pulling the wire end connector.

3.6.2拔出连接器/Extraction of Connector

握住线端，按下弹片时直接拔出。当不能拉出时，不要用力拉， 要检查确认弹片是否松开。Grip the female housing, and then draw straight out while pressing down the locking lever. When the housing can not be drawn out, do not pull it by force but check to make sure if the locking mechanism is released.

★注意在拔出操作时，请注意不要施加拔出方向以外的力。NOTE **At the extraction operation, take care not to apply force except in the extraction direction.**

★注意请不要只拉动电线 。 NOTE Do not pull the wire only.



3.6.3 一般注意事项General Attention Matters

(1)非必要的情况下，不要插拔连接器Do not mate and extract the connector unnecessarily.

(2)除正确连接器外，不可插入其它对象Do not insert any objects except the proper connector.

(3)在插拔操作时，或插拔后， 注意不要对导线和插头施加不必要外力At mating/extraction operation, or after mating operation, take care not to apply unnecessary force or shock to the wire and the connector.

3.6.4 关于锡须About the whisker

本产品使用无铅锡工艺,任何含无铅锡的产品都容易受到锡须的影响， 即使在正常情 况下,Lotes也不能保证锡须的生长， 由于锡须的增长，导致产品失效，客户自行一切责任。

This product utilizes lead-free tin plating.Any product with lead-free tin planting is susceptible to tin whisker，Lotes provides no assurances against the growth of tin whisker even under normal operating conditions ，customers assume all responsibility for any product failures due solely to the growth of tin whiskers.