CECN0100 版本（REV）：B
密级（SECURITY CLASSIFICATION）：内部(Internal)

中国商用飞机有限责任公司文件

DOCUMENT OF COMMERCIAL AIRCRAFT CORPORATION OF CHINA,LTD.

CECN0100系列微型圆形电连接器产品规范

CECN0100 SERIES MINIATURE CIRCULAR CONNECTOR

中国商用飞机有限责任公司

COMMERCIAL AIRCRAFT CORPORATION OF CHINA,LTD.

编制(PREP.)： 张倩 120822

校对(CHECK)： 徐炯 120822

审核(VERIFY)： 王旭 120822

标审(STD)： 焦妍琼 120827

审定(AUTHORIZE)： 章骏 120828

审批(ENDORSE)： 周良道 120830

批准(APPROVE)： 周良道 120830

会签栏 (Signature)					
单位/部门 (Company/ Dep.)	签名 (Signature)	单位/部门 (Company/ Dep.)	签名 (Signature)	单位/部门 (Company/ Dep.)	签名 (Signature)

更改类型(Change Type): 文件换版(File Revise)
文档状态(Document Status)：已发布(Release)

更改记录（LIST OF REVISIONS）

版本 (REVISION)	更改说明 (SUBJECT OF MODIFICATION)	日期 (DATE)
A	新发(New)	120521
B	表15增加“相应的供应商系列号”一栏。 Add the "Corresponding supplier series number" in Table 15.	120830

目　　次(CONTENTS)

1 范围(SCOPE)

本规范规定了 CECN0100 系列微型圆形电连接器的材料、性能等技术要求。

本规范适用于 CECN0100 系列微型圆形电连接器的生产和验收等。

This document specifies the technical requirements of CECN0100 series miniature circular connectors.

This document is applicable to the manufacture and acceptance of CECN0100 series miniature circular connectors.

2 引用文件(NORMATIVE REFERENCES)

下列文件对于本文件的应用是必不可少的。凡是注版本的引用文件，仅该版本文件适用于本文件。凡是不注版本的引用文件，其最新版本（包括所有的修改单）适用于本文件。

The following referenced documents are indispensable for the application of this document. For references with edition, only the edition cited applies. For references without edition, the latest edition of the referenced document (including any amendments) applies.

MIL-STD-202 TEST METHOD STANDARD ELECTRONIC AND ELECTRICAL COMPONENT PARTS

MIL-STD-810 ENVIRONMENTAL ENGINEERING CONSIDERATIONS AND LABORATORY TESTS

MIL-DTL-38999 CONNECTORS, ELECTRICAL, CIRCULAR, MINIATURE, HIGH DENSITY, QUICK DISCONNECT (BAYONET, THREADED, AND BREECH COUPLING), ENVIRONMENT RESISTANT, REMOVABLE CRIMP AND HERMETIC SOLDER CONTACTS, GENERAL SPECIFICATION FOR

MIL-R-25988 RUBBER, FLUOROSILICONE ELASTOMER, OIL-AND FUEL-RESISTANT, SHEETS, STRIPS, MOLDED PARTS, AND EXTRUDED SHAPES

MIL-M-24519 MOLDING PLASTICS, ELECTRICAL, THERMOPLASTIC

EIA-364-03 TP-03C ALTITUDE IMMERSION TEST PROCEDURE FOR ELECTRICAL CONNECTORS

EIA-364-06 TP-06B Contact Resistance Test Procedure for Electrical Connectors

EIA-364-09 TP-09C Durability Test Procedure for Electrical Connectors and Contacts

EIA-364-10 TP-10C FLUID IMMERSION TEST PROCEDURE FOR ELECTRICAL CONNECTORS

EIA-364-20 TP-20D WITHSTANDING VOLTAGE TEST PROCEDURE FOR ELECTRICAL CONNECTORS, SOCKETS, AND COAXIAL CONTACTS

EIA-364-21	TP-21C Insulation Resistance Test Procedure for Electrical Connectors, Sockets, and Coaxial Contacts
EIA-364-23	TP-23B Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets
EIA-364-26	SALT SPRAY TEST PROCEDURE FOR ELECTRICAL CONNECTORS, CONTACTS AND SOCKETS
EIA-364-27	TP-27C MECHANICAL SHOCK (SPECIFIED PULSE) TEST PROCEDURE FOR ELECTRICAL CONNECTORS AND SOCKETS
EIA-364-28	TP-28F Vibration Test Procedure for Electrical Connectors and Sockets
EIA-364-29	CONTACT RETENTION TEST PROCEDURE FOR ELECTRICAL CONNECTORS
EIA-364-31	TP-31C HUMIDITY TEST PROCEDURE FOR ELECTRICAL CONNECTORS AND SOCKETS
EIA-364-32	TP-32F THERMAL SHOCK (TEMPERATURE CYCLING) TEST PROCEDURE FOR ELECTRICAL CONNECTORS AND SOCKETS
EIA-364-35	TEST PROCEDURE #35A INSERT RETENTION TEST PROCEDURE FOR ELECTRICAL CONNECTORS
EIA-364-42	IMPACT TEST PROCEDURE FOR ELECTRICAL CONNECTORS
EIA-364-54	TP-54A Magnetic Permeability for Test Procedure for Electrical Connectors, Contacts, and Sockets
EIA-364-66	EMI SHIELDING EFFECTIVENESS TEST PROCEDURE FOR ELECTRICAL CONNECTORS
EIA-364-70	TP-70 Test Procedure for Current vs Temperature Rise of Electrical Connectors
EIA-364-83	SHELL-TO-SHELL AND SHELL-TO-BULKHEAD RESISTANCE TEST PROCEDURE FOR ELECTRICAL CONNECTORS
ASTM B488	Standard Specification for Electrodeposited Coatings of Gold for Engineering Uses
ASTM E595	Standard Test Method for Total Mass Loss and Collected Volatile Condensable Materials from Outgassing in a Vacuum Environment
ASTM F3	Standard Specification for Nickel Strip for Electron Tubes
AS22759/11	WIRE, ELECTRICAL, FLUOROPOLYMER-INSULATED, EXTRUDED TFE, SILVER-COATED COPPER CONDUCTOR, 600 VOLT
AS39029	Contacts, Electrical Connector, General Specification For

AMS-QQ-P-35 Passivation Treatments for Corrosion-Resistant Steel

AMS-QQ-S-763 Steel, Corrosion Resistant, Bars, Wire, Shapes, and Forgings

ZZ-R-765 RUBBER, SILICONE (GENERAL SPECIFICATION)

QQ-N-290 NICKEL PLATING (ELECTRODEPOSITED)

IEC 60512-2-1 Connectors for Electronic Equipment; Tests and Measurements - Part 2-1: Electrical Continuity and Contact Resistance Tests - Test 2a: Contact Resistance - Millivolt Level Method First Edition; This Standard Along with IEC 60512-1-2, 60512-2-3, 60512-2-6, 60512-3-1, 60512-4-2, and 60512-4-3 Replaces IEC 60512-2

IEC 60512-2-6 Connectors for Electronic Equipment; Tests and Measurements - Part 2-6: Electrical Continuity and Contact Resistance Tests - Test 2f: Housing (Shell) Electrical Continuity First Edition; This Standard Along with IEC 60512-1-2, 60512-2-1, 60512-2-3, 60512-3-1, 60512-4-2, and 60512-4-3 Replaces IEC 60512-2

IEC 60512-3-1 Connectors for Electronic Equipment; Tests and Measurements - Part 3-1: Insulation Tests - Test 3a: Insulation Resistance First Edition; This Standard Along with IEC 60512-1-2, 60512-2-1, 60512-2-3, 60512-2-6, 60512-4-2, and 60512-4-3 Replaces IEC 60512-2

IEC 60512-4-1 Connectors for electronic equipment Tests and measurements Part 4-1: Voltage stress tests Test 4a: Voltage proof First Edition

IEC 60512-5 Electromechanical components for electronic equipment; basic testing procedures and measuring methods - Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests

IEC 60512-6-3 Connectors for Electronic Equipment - Tests and Measurements - Part 6-3: Dynamic Stress Tests - Test 6c: Shock First Edition; Replaces IEC 60512-4

IEC 60512-6-4 Connectors for Electronic Equipment - Tests and Measurments - Part 6-4: Dynamic Stress Tests - Test 6d: Vibration (Sinusoidal) First Edition

IEC 60512-11-4 Connectors for Electronic Equipment - Tests and Measurements - Part 11-4: Climatic Tests - Test 11d: Rapid Change of Temperature First Edition

IEC 60512-11-6 Connectors for Electronic Equipment - Tests and Measurements - Part 11-6: Climatic Tests - Test 11f: Corrosion, Salt Mist First Edition; This Standard Along with IEC 60512-11-5, 60512-11-9, 60512-11-10, 60512-11-12 and 60512-11-13 Replaces IEC 60512-6

IEC 60512-11-12 Connectors for Electronic Equipment - Tests and Measurements - Part 11-12: Climatic Tests - Test 11m: Damp Heat, Cyclic First Edition; This Standard Along with IEC 60512-11-5, 60512-11-6, 60512-11-9, 60512-11-10 and 60512-11-13 Replaces IEC 60512-6

IEC 60512-23-3 Electromechanical Components for Electronic Equipment - Basic Testing Procedures and Measuring Methods - Part 23-3: Test 23c: Shielding Effectiveness of Connectors and Accessories First Edition; Corrigendum 1: 4/2003

3 材料和表面处理(MATERIALS AND FINISHES)

CECN0100 系列电连接器的材料及表面处理要求见表 1。

The materials and finishes of CECN0100 series miniature circular connectors see Table1.

表 1　材料及表面处理

Table1　Materials and finishes

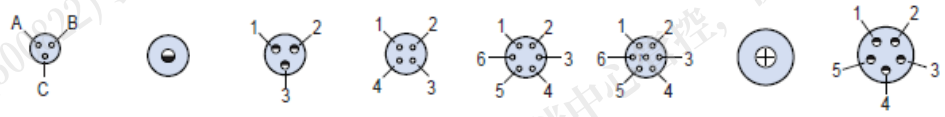
零件名称 PART NAME	材料 MATERIAL
铝合金外壳，套筒，联结螺母 Aluminum shell, Barrel, and Coupling nut	铝合金 6061 T6 Aluminum alloy 6061 T6
不锈钢外壳，套筒，联结螺母及夹紧式螺母 Stainless steel shell, Barrel, Coupling and jam nut	不锈钢，符合 AMS-QQ-S-763 Stainless steel per AMS-QQ-S-763
前后安装板 Front and rear insulators	玻璃纤维填充的液晶聚合物，符合 MIL-M-24519, Type GLCP-30F Glass-filled liquid crystal polymer(LCP) in accordance with MIL-M-24519, Type GLCP-30F
卡爪 Contact retention clip	铍青铜，热处理，未电镀 Berylium copper, heat-treated, unplated
密封圈 Grommet, Peripheral seal and interfacial seal	复合弹性体，30% 硅橡胶(符合 ZZ-R-765)，70% 氟硅橡胶(符合 MIL-R-25988) Blended elastomer, 30% silicone per ZZ-R-765, 70% fluorosilicone per MIL-R-25988
密封塞 Hermetic insert	热塑性树脂 Vitreous glass
接触件 Contacts	铜合金，镀镍 50-100 microinches，符合标准 QQ-N-290 Class 2，然后再镀金 50 microinches，符合 ASTM B488 Type II Code C Class 1.25。 Copper alloy, 50 microinches gold plated per ASTM B488 Type II Code C Class 1.25 over nickel plate per QQ-N-290 Class 2, 50-100 microinches
密封型针接触件 Pin contact, hermetic	镍铁合金，符合ASTM F30 (Alloy 52)。镀镍50-100 microinches，符合标准QQ-N-290 Class 2，然后再镀金50 microinches，符合ASTM B488 Type II Code C Class 1.25。 Nickel-iron alloy per ASTM F30 (Alloy 52),50 microinches gold plated per ASTM B488 Type II Code C Class 1.25 over nickel plate per QQ-N-290 Class 2, 50-100 microinches
孔接触件套筒 Socket Contact Hood	Stainless steel, passivated per AMS-QQ-P-35 不锈钢钝化，符合 AMS-QQ-P-35
粘合剂 Adhesives	硅橡胶和环氧树脂 Silicone and epoxy
PCB 及焊杯的灌注混合物 Potting compound, PCB and solder cup versions	耐环境和气密封型电连接器：高强度环氧树脂Hysol EE4215 滤波连接器：Stycast 2850FT/Catalyst 11导热环氧密封剂 Environmental and Hermetic Connectors: High-strength epoxy, Hysol EE4215. Filter Connectors: Stycast 2850FT/Catalyst 11 thermally conductive epoxy encapsulant

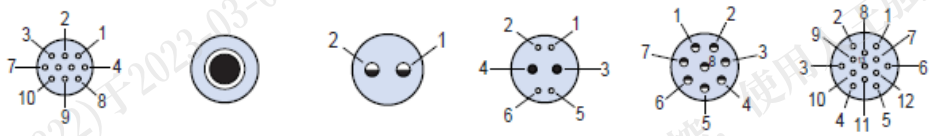
4 接触件及工具(CONTACTS AND TOOLS)

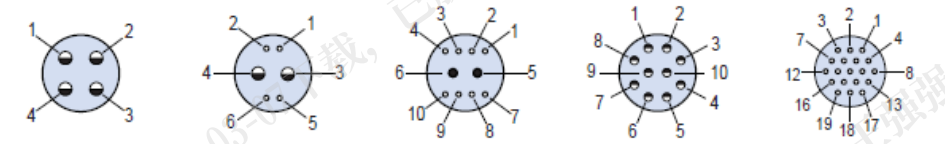
参见单篇规范 CECN0109。

Refer to detail specification sheet CECN0109.

5 型谱(CONTACT LAYOUTS)

Contact Legend #23 #20HD #20 #16 #12								
Series 800, 801, 802, 803, 804	5-3	6-1	6-23	6-4	6-6	6-7	7-1	7-25
Series 805	Not Avail.	8-1	8-23	8-4	8-6	8-7	9-1	9-25
No. of Contacts	3	1	3	4	6	7	1	5
Contact Size	#23	#16	#20HD	#23	#23	#23	#12	#20HD
DWV Voltage (VAC)	500	1800	750	500	500	500	1800	750
Current Rating (Amps)	5	13	7.5	5	5	5	23	7.5

Contact Legend #23 #20HD #20 #16 #12 #8						
Series 800, 801, 802, 803, 804	7-10	8-1	8-2	8-200	8-28	8-13
Series 805	9-10	10-1	10-2	10-200	10-28	10-13
No. of Contacts	10	1	2	2 4	8	13
Contact Size	#23	#8	#16	#20 #23	#20HD	#23
DWV Voltage (VAC)	500	1800	1800	1000 500	750	500
Current Rating (Amps)	5	46	13	7 5	7.5	5

Contact Legend #23 #20HD #20 #16 #12					
Series 800, 801, 802, 803, 804	9-4	9-200	9-201	9-210	9-19
Series 805	11-4	11-200	11-201	11-210	11-19
No. of Contacts	4	2 4	2 8	10	19
Contact Size	#16	#16 #23	#20 #23	#20HD	#23
DWV Voltage (VAC)	1800	1800 500	1000 500	750	500
Current Rating (Amps)	13	13 5	7.5 5	7.5	5

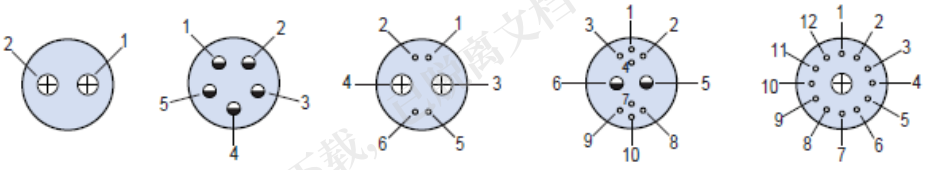
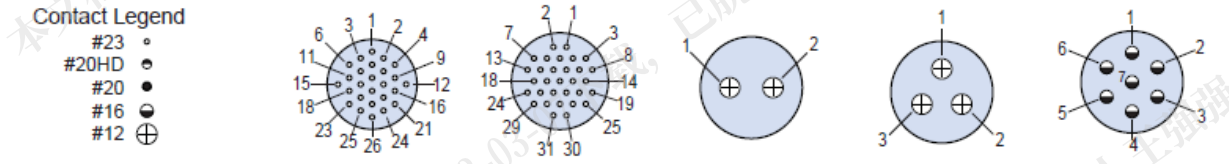
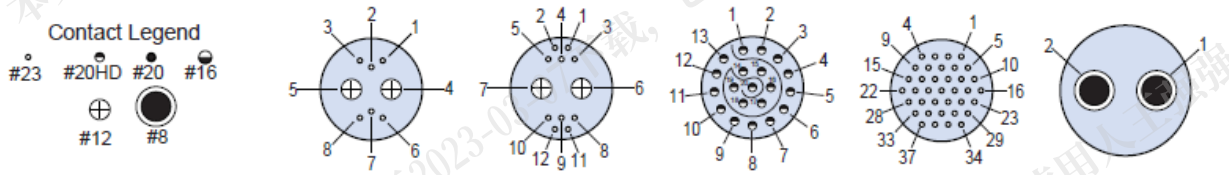
Contact Legend #23 #20HD #20 #16 #12					
Series 800, 801, 802, 803, 804	10-2	10-5	10-201	10-202	10-200
Series 805	12-2	12-5	12-201	12-202	12-200
No. of Contacts	2	5	2 4	2 8	1 12
Contact Size	#12	#16	#12 #23	#16 #23	#12 #23
DWV Voltage (VAC)	1800	1800	1800 500	1800 500	1800 500
Current Rating (Amps)	23	13	23 5	13 5	23 5

图 1 型谱排列

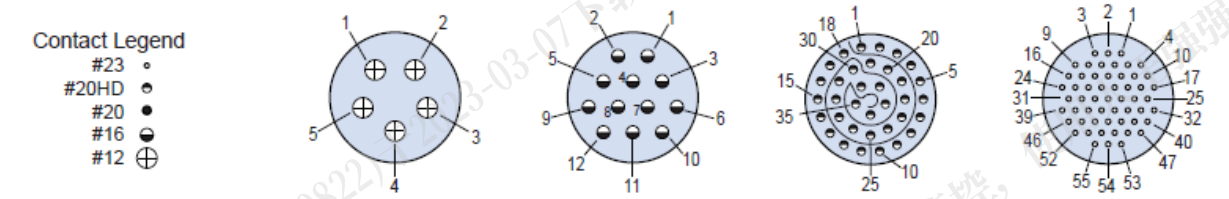
Figure1 Contact layouts



Series 800, 802, 803, 804	10-26	11-31	12-2	12-3	12-7
Series 801	10-26	11-31	13-2	13-3	13-7
Series 805	12-26	13-31	15-2	15-3	15-7
No. of Contacts	26	31	2	3	7
Contact Size	#23	#23	#12	#12	#16
DWV Voltage (VAC)	500	500	1800	1800	1800
Current Rating (Amps)	5	5	23	23	13



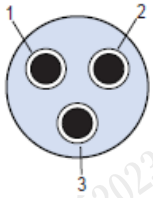
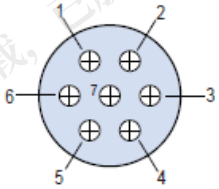
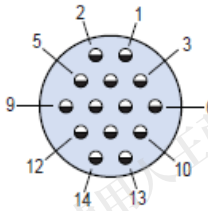
Series 800	12-200	12-201	12-220	12-37	Not Avail.
Series 802, 803, 804	12-200	12-201	12-220	12-37	14-2
Series 801	13-200	13-201	13-220	13-37	16-2
Series 805	15-200	15-201	15-220	15-37	18-2
No. of Contacts	2 6	2 10	20	37	2
Contact Size	#12 #23	#12 #23	#20HD	#23	#8
DWV Voltage (VAC)	1800 500	1800 500	750	500	1800
Current Rating (Amps)	23 5	23 5	7.5	5	46

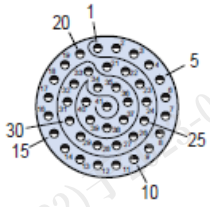
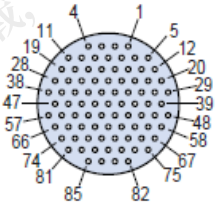
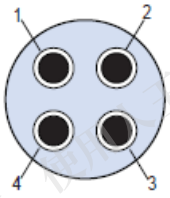


Series 802, 803, 804	14-5	14-12	14-235	14-55
Series 801	16-5	16-12	16-235	16-55
Series 805	18-5	18-12	18-235	18-55
No. of Contacts	5	12	35	55
Contact Size	#12	#16	#20HD	#23
DWV Voltage (VAC)	1800	1800	750	500
Current Rating (Amps)	23	13	7.5	5

图 1(续)　型谱排列

Figure1(Continued)　Contact layouts

Contact Legend			
#23 ∘ #20HD ◓ #20 ● #16 ◒ #12 ⊕ #8 ⬤			
Series 801	17-3	17-7	17-14
Series 802	15-3	15-7	15-14
Series 805	19-3	19-7	19-14
No. of Contacts	3	7	14
Contact Size	#8	#12	#16
DWV Voltage (VAC)	1800	1800	1800
Current Rating (Amps)	46	23	13

Contact Legend			
#23 ∘ #20HD ◓ #20 ● #16 ◒ #12 ⊕ #8 ⬤			
Series 801	17-241	17-85	19-4
Series 802	15-241	15-85	19-4
Series 805	19-241	19-85	21-4
No. of Contacts	41	85	4
Contact Size	#20HD	#23	#8
DWV Voltage (VAC)	750	500	1800
Current Rating (Amps)	7.5	5	46

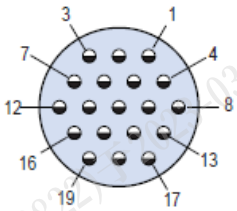
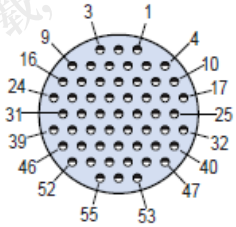
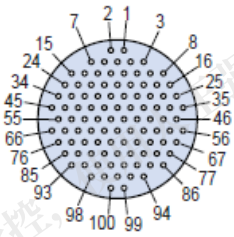
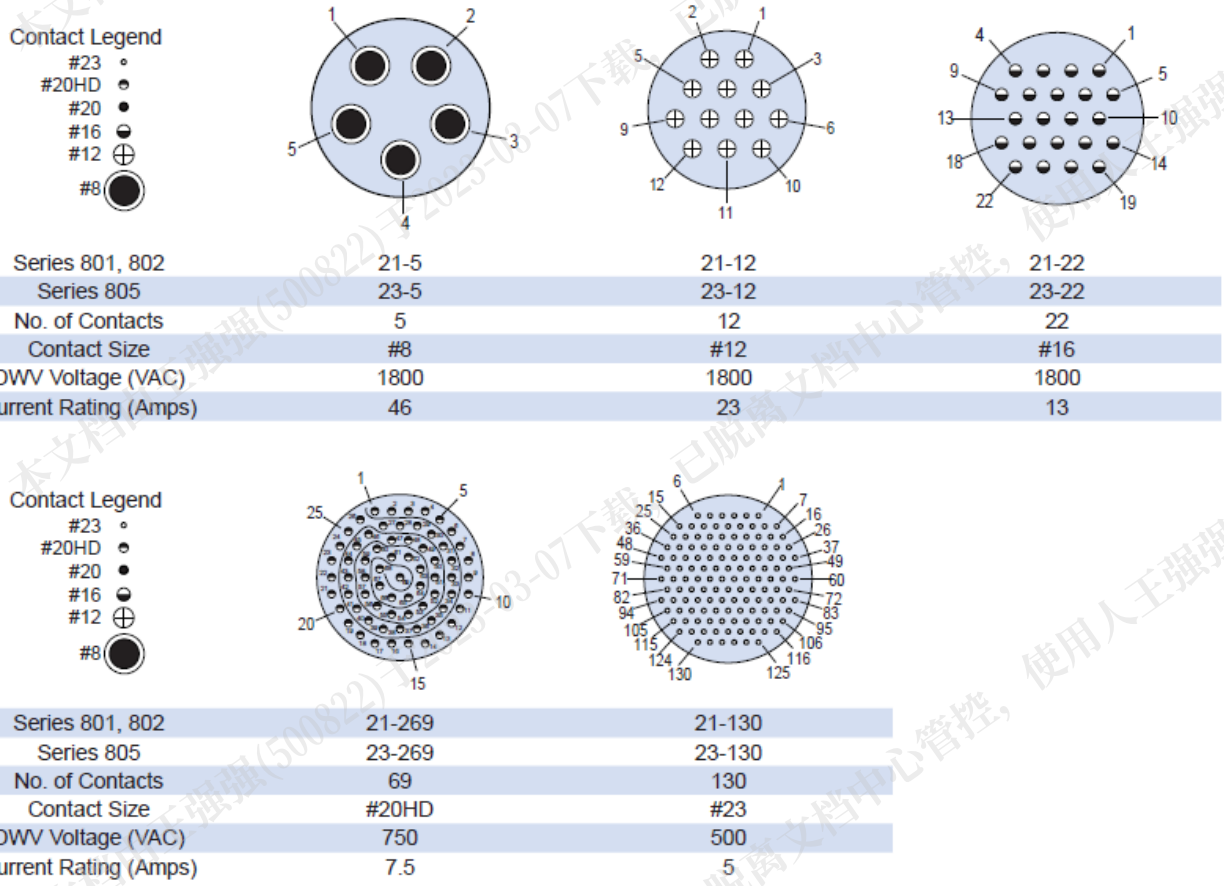
Contact Legend			
#23 ∘ #20HD ◓ #20 ● #16 ◒ #12 ⊕ #8 ⬤			
Series 801, 802	19-19	19-255	19-100
Series 805	21-19	21-255	21-100
No. of Contacts	19	55	100
Contact Size	#16	#20HD	#23
DWV Voltage (VAC)	1800	750	500
Current Rating (Amps)	13	7.5	5

图 1(续)　型谱排列

Figure1(Continued)　Contact layouts



Series 801, 802	21-5	21-12	21-22
Series 805	23-5	23-12	23-22
No. of Contacts	5	12	22
Contact Size	#8	#12	#16
DWV Voltage (VAC)	1800	1800	1800
Current Rating (Amps)	46	23	13

Series 801, 802	21-269	21-130
Series 805	23-269	23-130
No. of Contacts	69	130
Contact Size	#20HD	#23
DWV Voltage (VAC)	750	500
Current Rating (Amps)	7.5	5

图 1(续)　型谱排列

Figure1(Continued)　Contact layouts

注：以上是插针接触件插合面的图示，插孔接触件图示与此相反。

Note: Here shown are mating face view of pin connector, socket connector numbers are reversed.

6　电性能要求(ELECTRICAL PERFORMANCE REQUIREMENTS)

6.1　绝缘电阻(INSULATION RESISTANCE)

6.1.1　室温绝缘电阻(INSULATION RESISTANCE AT AMBIENT TEMPERATURE)

按 EIA-364-21，IEC 60512-3-1 规定试验。试验电压 500volts DC±50volts，任一对相邻的接触件之间，以及任一接触件与外壳之间的绝缘电阻最小应为 5000MΩ。

5000 megohms minimum between any pair of adjacent contacts and any contact and the shell when tested in accordance with EIA-364-21 and IEC 60512-3-1, 500volts DC±50volts.

6.1.2 高温绝缘电阻(INSULATION RESISTANCE AT ELEVATED TEMPERATURE)

按EIA-364-21规定试验时，任一对接触件之间，以及任一接触件与外壳之间的绝缘电阻最小应为200MΩ。

200 megohms minimum between any pair of contacts and any contact and the shell when tested in

accordance with EIA-364-21.

6.2 介质耐电压(DIELECTRIC WITHSTANDING VOLTAGE)

6.2.1 海平面介质耐电压(DIELECTRIC WITHSTANDING VOLTAGE, SEA LEVEL)

按 EIA-364-20，IEC 60512-4-1 进行 DWV 测试时，不应有电击穿或飞弧现象，AC rms 60 Hz。

Connectors shall show no evidence of breakdown or flashover when subjected to the DWV test of EIA-364-20 and IEC 60512-4-1, AC rms 60 Hz.

表2 海平面介质耐电压测试电压值

Table2 Test voltage for sea level dielectric withstanding voltage

接触件大小 CONTACT SIZE	测试电压值(volts) TEST VOLTAGE
23	500
20/20HD	750
16	1800
12	1800

6.2.2 70000 feet 介质耐电压(DIELECTRIC WITHSTANDING VOLTAGE, 70000 feet)

按 EIA-364-20，IEC 60512-4-1 进行 DWV 测试时，插合的电连接器不应有电击穿或飞弧现象，AC rms 60 Hz。

Mated connectors shall show no evidence of breakdown or flashover when subjected to the DWV test of EIA-364-20 and IEC 60512-4-1, AC rms 60 Hz.

表3 海平面介质耐电压测试电压值

Table3 Test voltage for sea level dielectric withstanding voltage

接触件大小 CONTACT SIZE	测试电压值(volts) TEST VOLTAGE
23	100
20/20HD	150
16	1000
12	1000

6.3 接触电阻(CONTACT RESISTANCE)

按 EIA-364-06, IEC60512-2-1 试验时，接好线插合状态的接触件，电压降应符合不超出表 4 中要求。使用符合 AS22759/11 或等效规范的镀银铜导线，电压表两探针之间导线长为 6 inches，25℃。

The voltage drop of a mated pair of contacts attached to wires shall not exceed the values shown in Table4 when tested in accordance with EIA-364-06 and IEC60512-2-1, using AS22759/11 or equivalent silver-plated copper wire (six inches between probes of voltmeter), 25℃.

表4 最大电压降

Table4 Maximum voltage drop

线规号 WIRE SIZE	测试电流（Amps） TEST CURRENT	最大电压降(MilliVolt, 250℃) MAXIMUM MILLIVOLT DROP
12	23	42
14	17	40
16	13	49
20	7.5	55
22	5	73
24	3	45
26	2	52
28	1.5	54

6.4 微信号接触电阻(LOW-SIGNAL LEVEL CONTACT RESISTANCE)

按 EIA-364-23 试验时，接触电阻不应超过表 5 中所示数值。测试电压不超过 20 millivolts，测试电流不超过 100 milliamps。

Contact resistance shall not exceed the values shown when tested in accordance with EIA-364-23. Test voltage shall not exceed 20 millivolts and test current shall be limited to 100 milliamps.

表5 最大接触电阻

Table5 Maximum Contact Resistance

线规号 WIRE SIZE	最大接触电阻(milliohms) MAXIMUM CONTACT RESISTANCE
16	5
20	9
22	15
24	20
26	31
28	50

6.5 载流量(CURRENT CARRYING CAPACITY)

按 EIA-364-70 Method 1，IEC 60512-5 Test 9b 进行测试，接触件应能承受的最大工作电流应满足下表要求。

When test in accordance with EIA-364-70 and IEC 60512-5 Test 9b, mated pair of contacts shall be capable to carry max current as shown.

表6　最大载流量

Table6　Max current

接触件大小 CONTACT SIZE	最大载流量 MAX CURRENT
12	23
16	13
20/20HD	7.5
23	5

6.6　外壳间导电性(SHELL-TO-SHELL CONDUCTIVITY)

按照 EIA-364-83，IEC 60512-2-6 试验，在插合的化学镀镍电连接器两端测得的初始最大电压降和 48 小时盐雾试验后的最大电压降如下表所列。

The maximum voltage drop (initial and after 48 hours salt spray) across a mated pair of electroless nickel plated connectors shall not exceed the values shown. Testing shall be performed per EIA-364-83 and IEC 60512-2-6.

表7　外壳间导电性要求

Table7　Requirement for shell-to-shell conductivity

系列号 SERIES	初始电压降 VOLTAGE DROP, INITIAL	48小时盐雾试验后电压降 VOLTAGE DROP, AFTER 48 HOURS SALT SPRAY
800	10	20
801	10	20
802	10	20
803	100	200
804	2	4
805	2	4

6.7　电磁干扰屏蔽(EMI shielding effectiveness)

6.7.1　低频电磁干扰屏蔽(100MHz~1000MHz EMI shielding effectiveness)

按 MIL-DTL-38999 标准 4.5.28.1 节进行试验。化学镀镍外壳电连接器的屏蔽能力应不低于下表规定频率下的规定值。

When tested as MIL-DTL-38999 para 4.5.28.1, the EMI shielding effectiveness of electroless nickel plated connectors shall not be less than specified in the following tables at the specified frequencies.

表 8　低频电磁干扰屏蔽效果

Table8　EMI shielding effectiveness(100MHz~1000MHz)

频率 (MHz) FREQUENCY	最小泄露衰减(dB) MIN ATTENUATION	
	SERIES 800, 801, 802, 804, 805	SERIES 803
100	75	60
200	70	55
300	65	55
400	63	50
800	58	45
1000	55	40

6.7.2　高频电磁干扰屏蔽(1GHz~10GHz EMI shielding effectiveness)

按照 EIA-364-66，IEC 60512-23-3 进行试验。化学镀镍外壳电连接器的屏蔽能力应不低于下表规定频率下的规定值。

When tested in accordance with EIA-364-66 and IEC 60512-23-3, the EMI shielding effectiveness of electroless nickel plated connectors shall not be less than specified in the following tables at the specified frequencies.

表 9　高频电磁干扰屏蔽效果

Table9　EMI shielding effectiveness(1GHz~10GHz)

频率 (GHz) FREQUENCY	最小泄露衰减(dB) MIN ATTENUATION	
	SERIES 800, 801, 802, 804	SERIES 805
1	55	85
3	50	69
5	45	66
19	40	65

6.8　磁导率(Magnetic permeability)

按 EIA-364-54 进行测试，最大 2.0μ。

When test in accordance with EIA-364-54, the magnetic permeability shall be 2.0μ maximum.

7　机械性能要求(MECHANICAL REQUIREMENTS)

7.1　机械寿命(MECHANICAL DURABILITY)

按照 EIA-364-09，IEC 60512-5 Test 9a 进行试验，连接器应能承受 2000 次插合和分离。连接器应满足接触电阻、绝缘电阻、外壳间导电性、DWV 及插合分离力测试要求。

Connectors shall withstand 2000 cycles of mating without mechanical or electrical degradation. Testing shall be performed per EIA-364-09 and IEC 60512-5 Test 9a. Connectors shall meet contact resistance, insulation resistance, shell-to-shell resistance, DWV, and mating and unmating force.

7.2　接触件分离力(CONTACT SEPARATION FORCE)

按 AS39029 进行试验，施加的最小轴向载荷如下表所示。

Testing shall be performed per AS39029. Apply load as specified in the following table.

表 10　最小载荷

Table10　Min axial loads

接触件大小 CONTACT SIZE	最小载荷(ounces) MIN AXIAL LOADS
23	0.5
20/20HD	0.7
16	2.0
12	3.0

7.3　接触件固定性(CONTACT RETENTION)

按 EIA-364-29 进行测试，按表中规定施加最小轴向负荷 1 分钟，接触件位移不应超过 0.012 inches.。

Testing shall be performed per EIA-364-29. Apply load as specified in the following table for one minute, the contacts should be without exceeding a displacement of 0.012 inches.

表11　最小载荷

Table11　Min axial loads

接触件大小 CONTACT SIZE	最小载荷(pounds) MIN AXIAL LOADS
23	6
20	15
20HD	9
16	25
12	25

7.4　撞击(IMPACT)

按 EIA-364-42，IEC 60512-5 Test 7b 进行测试。无影响功能的损伤出现。连接器应满足接触电阻、绝缘电阻和防水密封测试。

Testing shall be performed per EIA-364-42 and IEC 60512-5 Test 7b. No impairment of function. Connector shall meet contact resistance, insulation resistance and waterproof sealing.

7.5 连接扭矩(COUPLING TORQUE)

螺纹连接连接器的连接扭矩应不超过下列值。

Threaded coupling connector coupling torque shall not exceed the following requirements.

表12 连接扭矩

Table12 Coupling torque

壳体大小 SHELL SIZE		磅·英寸 INCH POUND
SERIES 800, 801	SERIES 805	
5, 6, 7	8, 9	8
8, 9	10, 11	9
10	12	12
12, 13	15	16
14, 15	18	28
16, 17	19	24
21	-	32
-	23	36

7.6 绝缘安装板固定性(INSERT RETENTION)

按 EIA-364-35 进行测试。未插合连接器的绝缘安装板当承受表中所示的轴向力时，应能保持在外壳中的正确位置上，并不产生裂纹、破碎、与外壳分离或零件松动现象。

EIA-364-35. Unmated connectors shall retain their inserts in their proper location in the shell and there shall be no cracking or loosening when an axial force is applied to the mating face of the insert per the values shown.

表13 绝缘安装板可承受的最小力

Table13 Minimum insert retention force

壳体大小 SHELL SIZE			施加于绝缘安装板的最小力(pounds) MINIMUN INSERT RETENTION FORCE IN POUNDS
SERIES 800,803,804	SERIES 801	SERIES 805	
5	5	-	25
6	6	8	25
7	7	9	25
8	8	10	25
9	9	11	25
10	10	12	25
12	13	15	25
14	16	18	40
15	17	19	50
-	21	23	80

8 耐环境要求(ENVIRONMENTAL REQUIREMENTS)

8.1 操作温度(OPERATING TEMPERATURE)

连接器的正常工作温度为-55℃ to +150℃。

Connectors shall be capable of performing satisfactorily when exposed to -55℃ to +150℃.

8.2 盐雾试验(SALT SPRAY)

按 EIA-364-26，IEC 60512-11-6 进行盐雾试验，连接器应无基体金属的暴露。连接器可满足随后的介质耐电压和接触电阻试验。

Following exposure to the salt spray requirement of EIA-364-26 and IEC 60512-11-6, unmated connectors shall exhibit no exposure of base metal. Connectors shall meet DWV and contact resistance requirements following the test.

表14 盐雾试验暴露时间

Table14 Length of exposure for salt spray

代号 FINISH CODE	表面处理 FINISH	暴露时间(h) LENGTH OF EXPOSURE
M	铝合金镀镍 Aluminum / Electroless Nickel	48
C	铝合金黑色阳极化 Aluminum / Black Anodize	48
NF	铝合金镀军绿色镉 Aluminum / Cadmium with Olive Drab Chromate	500
MT	铝合金氟化物镀镍 Aluminum / Nickel-PTFE	500
ZN	铝合金镀军绿色锌镍 Aluminum / Zinc-Nickel with Olive Drab Chromate	500
ZNU	铝合金镀黑色锌镍 Aluminum / Zinc-Nickel with Black Chromate	500
Z1	不锈钢钝化 Stainless Steel / Passivated	1000

8.3 砂尘(SAND AND DUST)

插合的连接器应能承受 MIL-STD-810，方法 510.5 规定的砂尘试验。

Mated connectors shall be able to withstand the effects of blowing sand and dust test specified in MIL-STD-810, Method 510.5.

8.4 热冲击(THERMAL SHOCK)

按照 EIA-364-32 条件 IV，IEC 60512-11-4 的要求进行 5 个周期的测试，每一周期按照下列步骤进行。连接器应无机械损伤或零件的松动。热冲击试验后，连接器应能满足接触电阻、介质耐电压、绝缘电阻和壳体间电阻要求。

第一步：-65^{0}_{-5}℃，持续 30 分钟；

第二步：25^{10}_{0}℃，持续 5 分钟；

第三步：150^{5}_{0}℃，持续 30 分钟；

第四步：25^{10}_{0}℃，持续 5 分钟。

Connectors shall be capable to subjected to 5 cycles as defined in EIA-364-32 and IEC 60512-11-4,

with each cycle consisting of the following steps. No mechanical damage or loosening of parts. Following thermal shock, connector shall meet contact resistance, DWV, insulation resistance and shell-to-shell resistance requirements.

Step 1: 30 minute duration, -65^{0}_{-5} ℃

Step 2: 5 minute duration, 25^{10}_{0} ℃

Step 3: 30 minute duration, 150^{5}_{0} ℃

Step 4: 5 minute duration, 25^{10}_{0} ℃

8.5 低气压浸渍(ALTITUDE IMMERSION)

按 EIA-364-03 要求进行试验。连接器或接触件表面应无水汽出现，插合的连接器应满足规定的介质耐电压要求。

No evidence of moisture on connector interface or contacts. Connector shall meet dielectric withstanding voltage. EIA-364-03 shall define the test procedure.

8.6 液体浸渍(FLUID IMMERSION)

按 EIA-364-10 要求进行试验。未插合的连接器在规定的燃油液体中浸渍，无可见损伤。连接器应能满足连接扭矩试验和介质耐电压试验。

No visible damage from immersion in various fuels and oils. Connector shall meet coupling torque and dielectric withstanding voltage requirements. The testing shall be in accordance with EIA-364-10.

8.7 释气(OUTGASSING)

按 ASTM E595 的规定进行试验，成品连接器使用的材料的总质量损耗(TML)应不大于 1%，收集的挥发冷凝物(TCVML)应不大于 0.1%。

The entire connector assembly shall be capable of meeting a maximum Total Mass Loss (TML) of 1% and a Total Collected Volatile Material Loss (TCVML) of 0.1% when tested in accordance with ASTM E595.

8.8 振动(VIBRATION)

8.8.1 随机振动(VIBRATION, RANDOM,)

按EIA-364-28 Condition V Letter I，IEC 60512-6-4进行随机振动测试。应无超过1微秒的电气不连续和插合连接器的分离及零件的裂纹、破碎或松动现象。连接器应能满足随后的电气性能测试。

EIA-364-28 Condition V Letter I and IEC 60512-6-4. No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle.

Connectors shall meet electrical requirements after vibration test.

8.8.2 正弦振动(SINE VIBRATION)

按 MIL-STD-202 Method 204, 条件 G 进行正弦振动测试，在三个互相垂直的每一方向上进行 4 小时测试。应无超过 1 微秒的电气不连续和插合连接器的分离及零件的裂纹、破碎或松动现象。连接器应能满足随后的电气性能测试。

MIL-STD-202 Method 204, test Condition G, 3 axes, 4 hours per axis. No discontinuity of greater than 1 microseconds, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after vibration test.

8.9 机械冲击(MECHANICAL SHOCK)

按EIA-364-27 Condition D，IEC 60512-6-3进行测试，应无超过1微秒的电气不连续和插合连接器的分离及零件的裂纹、破碎或松动现象。连接器应能满足随后的电气性能测试。

EIA-364-27 Condition D and IEC 60512-6-3. No discontinuity of greater than 1 microsecond, no cracking, breaking or loosening of parts, plug shall not become disengaged from receptacle. Connectors shall meet electrical requirements after shock test.

8.10 真菌(FUNGUS)

按 MIL-STD-810, Method 508.5 进行测试，电连接器所用材料应可耐真菌入侵。

MIL-STD-810, Method 508.5. Connector materials shall be fungus inert.

8.11 潮湿(HUMIDITY)

按 EIA-364-31 Condition B Method III，IEC 60512-11-12 进行测试。应无对连接器性能产生有害影响的损伤，最后一次循环时，绝缘电阻应最小为 100 megohms 并可满足随后的连接器接触电阻、外壳间电阻及 DWV 测试要求。

EIA-364-31 Condition B Method III and IEC 60512-11-12. No deterioration which will adversely affect the connector. 100 megohms minimum insulation resistance during the final cycle. Following the recovery period, connectors shall meet contact resistance, shell-to-shell resistance and DWV requirements.

9 零件号命名(PART NUMBER)

见 CECN0100 标准的各单篇规范。

See detail specification sheet of CECN0100.

10 说明(NOTE)

本标准为 CECN0100 系列电连接器的通用规范。CECN0100 系列电连接器的各分规范列表如下：

This document is the general specification of CECN0100 series connectors. The detailed specification for CECN0100 series connectors see the following table.

表 15　CECN0100 系列电连接器的各分规范列表

Table15　Detailed specification for CECN0100 series connectors

分规范号 Detailed specification	零件号前缀 Basic part number	相应的供应商系列号 Corresponding supplier series number	备注 Note
CECN0110	CECN0110	SERIES 800	未发布 Not released
CECN0101	CECN0101	SERIES 801	未发布 Not released
CECN0102	CECN0102	SERIES 802	未发布 Not released
CECN0103	CECN0103	SERIES 803	未发布 Not released
CECN0104	CECN0104	SERIES 804	未发布 Not released
CECN0105	CECN0105	SERIES 805	已发布 Have released
CECN0109	CECN0109	SERIES 809	已发布。CECN0109 是 CECN0100 系列电连接器的接触件及工具的产品规范。 Have released . CECN0109 is the specification of contact and tool which is for CECN0100 series connectors.