

**PRODUCT SPECIFICATION** For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 1/13** 

# TEST ITEM :1.ELECTRICAL 2.MECHANICAL **3.ENVIRONMENTAL**

# **TEST EQUIPMENT :1.INSERTION & REMOVAL APPARATUS** 2. ELECTRONIC MEASURING APPARATUS **3.ENVIRONMENTAL APPARATUS**

# SERIES NO.: CVS3502M1RM-NH SERIES

DATE OF TESTING : 01/21/2016"

TEST DEPART : R & D

LOT Number:

**CONTAIN:** 

TEST RESULT: ACCEPT REJECT

APPROVE BY: Eisely CHECKED By: Clark TESTER BY: Clark

(Q440404X, 2)



### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

PAGE: 2/13

-	ITFM	TEST CONDITION	REQUIREMENT	TFS	
1	Examination of		No domago	Sample	No damage
	Product		No dallage	1	Pass
	Tioudet			2	Pass
				3	Pass
				4	Pass
				5	Pass
	Insertion Force	Measure the force necessary	50P:8.5 Kgf max.	Sample	< 8.5 Kgf
	Insertion r oree	to insert the connector		1	4.98 Kgf
		between male and female at		2	5.08 Kgf
		a maximum rate of 12.5 mm		3	5.02 Kgf
		per minute.		4	4.92 Kgf
		Test as per EIA364-13		5	4.95 Kgf
	Low level Contact	Measured at 20 mV	Initially :	Sample	< 80 mΩ.
Resistance	Resistance	maximum open circuit at	Less than 80 mQ	1	53.23 mΩ
		100mA .Mated test contacts must be in a connector	Finally:	2	52.86 mΩ
			Less than $100 \text{ mO}$	3	53.24 mΩ
		housing.	Less than 100 ms2	4	53.35 mΩ
		lest as per EIA364-23		5	53.88 mΩ
	Removal Force	Measure the force necessary	50P:1.4 Kgf max.	Sample	> 1.4 Kgf
		to insert the connector		1	1.72 Kgf
		between male and female at		2	1.78 Kgf
		a maximum rate of 12.5 mm		3	1.76 Kgf
		per minute.		4	1.81 Kgf
		Test as per Linx504-15		5	1.84 Kgf
	Durability	The connector shall be	Appearance:	Sample	No damage
		subject to 20 cycles for	No damage	1	Pass
		insertion and extraction .Test	i to duinage	2	Pass
		done at a maximum rate of 200 cycles per hour. Test as		3	Pass
		per EIA364-09		4	Pass
				5	Pass
			Contact resistance:	Sample	$< 100 \text{ m}\Omega$
			Less than $100 \text{ m}\Omega$	1	53.89 mΩ
				2	54.01 mΩ
				3	53.95 mΩ
				4	53.74 mΩ
				5	53 66 mQ

(Q440404X, 2)



#### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

m PAGE

PAGE: 3/13

	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
6	Insertion Force	Measure the force necessary	50P:8.5 Kgf max.	Sample	< 8.5 Kgf
		to insert the connector		1	4.07 Kgf
		between male and female at		2	4.32 Kgf
		a maximum rate of 12.5		3	4.48 Kgf
		Tast as per EIA264 12		4	3.92 Kgf
		Test as per EIA304-15		5	3.95 Kgf
7	Low level Contact	Measured at 20 mV	Initially :	Sample	< 100 mΩ.
	Resistance	maximum open circuit at	Less than 80 m $\Omega$	1	53.43 mΩ
		100mA .Mated test contacts must be in a connector housing. Test as per EIA364-23	Finally: Less than 100 mΩ	2	52.88 mΩ
				3	53.38 mΩ
				4	53.45 mΩ
				5	53.88 mΩ
8	Removal Force	Measure the force necessary	50P:1.4 Kgf max.	Sample	> 1.4 Kgf
		to insert the connector		1	1.52 Kgf
		between male and female at		2	1.61 Kgf
		a maximum rate of 12.5		3	1.56 Kgf
		Tast as per EIA264 12		4	1.48 Kgf
		Test as per EIA304-13		5	1.62 Kgf
9	Examination of		No damage	Sample	No damage
	Product		_	1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 4/13** 

	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
1	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Low level Contact	Measured at 20 mV	Initially :	Sample	$< 80 \text{ m}\Omega.$
	Resistance	maximum open circuit at	Less than 80 m $\Omega$	1	$53.42 \text{ m}\Omega$
	100mA .Mated test contacts	Finally:	2	$52.75 \text{ m}\Omega$	
		housing. Test as per EIA364-23	Less than 100 m $\Omega$	3	53.32 mΩ
				4	$53.56 \text{ m}\Omega$
			5	53.71 mΩ	
3	Insulation resistance	After 250 VDC for 1	More than $100 \text{ M}\Omega$	Sample	$> 100 \text{ M}\Omega$
		minute, measure the		1	$18 \times 10^4 \mathrm{M}\Omega$
		between the adjacent		2	$18 \times 10^4 \mathrm{M}\Omega$
		contacts.		3	$17 \times 10^4 \mathrm{M}\Omega$
		Test as per EIA364-21		4	$17 \times 10^4 \mathrm{M}\Omega$
				5	$18 \times 10^4 \mathrm{M}\Omega$
ŀ	Dielectric	Test between adjacent	No current leakage	Sample	No damage
	Withstanding Voltage	contacts with a voltage of	And flashover or	1	Pass
		150 VAC for 1 minute at	Damage detected	2	Pass
		EIA364-20 Method B		3	Pass
				4	Pass
				5	Pass



#### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

PAGE: 5/13

	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
5	Humidity	Subject unmated	Appearance:	Sample	No damage
	Ĵ	connectors to 96 hours at	No damage	1	Pass
		40°C with 90% to 95%RH.		2	Pass
		Test as per EIA 364-31		3	Pass
		Method II Test Condition		4	Pass
		А.		5	Pass
6	Low level Contact	Measured at 20 mV	Initially :	Sample	$< 100 \text{ m}\Omega$
	Resistance	maximum open circuit at	Less than 80 m $\Omega$	1	53.85 mΩ
		100mA .Mated test contacts	Finally:	2	53.79 mΩ
		must be in a connector	Less than 100 m $\Omega$	3	53.88 mΩ
		nousing. Test as per $FIA364-23$		4	53.84 mΩ
				5	54.09 mΩ
7	Insulation resistance	After 250 VDC for 1	More than $100 M\Omega$	Sample	$> 100 \text{ M}\Omega$
		minute, measure the		1	$5 \times 10^4 \mathrm{M}\Omega$
		insulation resistance		2	$4 \times 10^4 \text{ M}\Omega$
		between the adjacent		3	$4 \times 10^4 \text{ M}\Omega$
		contacts.		4	$4 \times 10^4 \text{ M}\Omega$
		Test as per EIA304-21		5	$6 \times 10^4 \mathrm{M}\Omega$
8	Dielectric	Test between adjacent	No current leakage	Sample	No damage
	Withstanding Voltage	contacts with a voltage of	And flashover or	1	Pass
		150 VAC for 1 minute at	Damage detected	2	Pass
		Sea level. Test as per		3	Pass
		LIA304-20 Michiou D		4	Pass
				5	Pass
9	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 6/13** 

C.					
	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
1	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Low level Contact	Measured at 20 mV	Initially :	Sample	$< 80 \text{ m}\Omega.$
	Resistance	maximum open circuit at	Less than 80 m $\Omega$	1	53.14 mΩ
		100mA .Mated test contacts must be in a connector	Finally:	2	52.99 mΩ
			Less than 100 m $\Omega$	3	53.36 mΩ
		Test as per $FIA364.23$		4	53.41 mΩ
		Test as per EIA304-23		5	53.78 mΩ
3	Temperature Life	Subject mated connectors	Appearance :	Sample	No damage
	(Heat aging)	to temperature life at	No damage	1	Pass
		$85\pm5$ ( for 250 hours.		2	Pass
		Test as per EIA 364-17		3	Pass
		Test Condition 3 Method A.		4	Pass
				5	Pass
4	Low level Contact	Measured at 20 mV	Initially :	Sample	$100 \text{ m}\Omega \text{ max}.$
	Resistance	maximum open circuit at	Less than 80 m $\Omega$	1	54.05 mΩ
		100mA .Mated test contacts	Finally:	2	53.82 mΩ
		housing	Less than 100 m $\Omega$	3	54.13 mΩ
		Test as per FIA 364-23		4	$53.52 \text{ m}\Omega$
		Test as per EIN30+-23		5	$54.18 \text{ m}\Omega$
5	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 7/13** 

D.					
	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
1	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Low level Contact	Measured at 20 mV	Initially :	Sample	$< 80 \text{ m}\Omega.$
	Resistance	maximum open circuit at	Less than 80 m $\Omega$	1	53.15 mΩ
		100mA .Mated test contacts	Finally:	2	52.68 mΩ
		must be in a connector	Less than 100 m $\Omega$	3	52.74 mΩ
		nousing.		4	53.21 mΩ
		lest as per EIA364-23		5	53.32 mΩ
3	Salt Spray	Unmated connectors shall	Appearance of	Sample	No rusted
		be tested in accordance with	contact area shall	1	Pass
		EIA364-26 Condition B.	be no rusted or	2	Pass
		$1^{\circ}$	erodent.	3	Pass
		Density: 5% in weight		4	Pass
		Duration : 48 hours		5	Pass
4	Low level Contact	Measured at 20 mV	Initially :	Sample	$< 100 \text{ m}\Omega$
	Resistance	maximum open circuit at	Less than 80 m $\Omega$	1	54.78 mΩ
		100mA .Mated test contacts	Finally:	2	54.65 mΩ
		must be in a connector	Less than 100 m $\Omega$	3	54.62 mΩ
		nousing.		4	54.42 mΩ
		lest as per EIA364-25		5	54.84 mΩ
5	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 8/13** 

E.					
	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
1	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Low level Contact	Measured at 20 mV	Initially :	Sample	$< 80 \text{ m}\Omega.$
	Resistance	maximum open circuit at	Less than 80 m $\Omega$	1	54.21 mΩ
		100mA .Mated test contacts	Finally:	2	53.65 mΩ
		housing	Less than 100 m $\Omega$	3	52.69 mΩ
		Test as per EIA364-23		4	54.76 mΩ
				5	53.33 mΩ
3	Insulation resistance	After 250 VDC for 1	More than 100 M $\Omega$	Sample	$> 100 \text{ M}\Omega$
		minute, measure the		1	$17 \times 10^4 \mathrm{M}\Omega$
		insulation resistance between		2	$17 \times 10^4 \mathrm{M}\Omega$
		Test of per ELA 264 21		3	$17 \times 10^4 \mathrm{M}\Omega$
		Test as per EIA304-21		4	$18 \times 10^4 \mathrm{M}\Omega$
				5	$18 \times 10^4 \mathrm{M}\Omega$
4	Dielectric strength	Test between adjacent	No current leakage	Sample	No damage
		contacts with a voltage of	And flashover or	1	Pass
		150 VAC for 1 minute at	Damage detected.	2	Pass
		EIA364-20 Method B		3	Pass
				4	Pass
				5	Pass



## **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 9/13** 

	ITEM	TEST CONDITION	REQUIREMENT	TES	T RESULT
	Temperature cycling	Subject unmated	Appearance :	Sample	No damage
	i emperante e jerneg	connectors shall be tested in accordance with	No damage	1	Pass
		EIA364–32 Test Condition I $(1)-55^{\circ}C,30$ minute		2	Pass
		(2)+25°C,5 minute (3)+85°C,30 minute		3	Pass
		$(4)+25^{\circ}$ C,5 minute consecutive 5 cycles		4	Pass
				5	Pass
	Low level Contact	Measured at 20 mV	Initially :	Sample	$< 100 \text{ m}\Omega$
	Resistance	esistance maximum open circuit at 100mA .Mated test contacts must be in a connector	Less than 80 m $\Omega$	1	53.74 mΩ
			Finally: Less than 100 mΩ	2	53.65 mΩ
				3	53.92 mΩ
		housing.		4	53.62 mΩ
		lest as per EIA364-23		5	54.08 mΩ
I	Insulation resistance	After 250 VDC for 1 minute , measure the	More than 100 M $\Omega$	Sample	>100 MΩ
				1	$5 \times 10^4 \mathrm{M}\Omega$
		insulation resistance		2	$6 \times 10^4 \mathrm{M}\Omega$
		between the adjacent		3	$6 \times 10^4 \mathrm{M}\Omega$
		contacts.		4	$5 \times 10^4 \mathrm{M}\Omega$
		Test as per EIA364-21		5	$5 \times 10^4 \mathrm{M}\Omega$
	Dielectric	Test between adjacent	No current leakage	Sample	No damage
	Withstanding Voltage	contacts with a voltage of	And flashover or Damage detected	1	Pass
	0.00	150 VAC for 1 minute at		2	Pass
		Sea level. Test as per		3	Pass
		EIA364-20 Method B		4	Pass
				5	Pass
	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 10/13** 

F.					
	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
1	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Solder ability	Steam age 1 hour at	Minimum:	Sample	95% of
	,	90°C ~96°C	95% of immersed	1	Pass
		Solder time to be	area	2	Pass
		5±1 seconds at 245°C,	ureu	3	Pass
		using unactivated flux.		4	Pass
		Test as per EIA364-52		5	Pass
3	Examination of		No damage	Sample	No damage
	Product		C C	1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



## **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 11/13** 

G.					
	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
1	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Soldering Heat	Reflow soldering(Infrared):	Inspect dimension	Sample	No damage
	WithstandingRefer soldering methodThe conditions specified on	during the test, no	1	Pass	
		physical damage	2	Pass	
		paragraph 10 shell be		3	Pass
		repeated twice.		4	Pass
				5	Pass
3	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



### **PRODUCT SPECIFICATION**

For CVS3 Series Connector System

SPEC.NO.: SPCVS003C

**PAGE: 12/13** 

H.	-			•	
	ITEM	TEST CONDITION	REQUIREMENT	TES	ST RESULT
1	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass
2	Vibration	Subject mated connectors	Appearance:	Sample	No damage
		to :	No damage	1	Pass
		Power spectral density :	C	2	Pass
		$0.02 \text{ g}^2/\text{Hz}$		3	Pass
		Overall RMS .g : 5.35		4	Pass
		Duration : 15 minute in		5	Pass
		each X X Z axis mutually	Discontinuity : 1	Sample	1 micro second
		perpendicular planes.	Micro second max.	1	Pass
	Test as per EIA 364 – 28 Condition V Test letter A.		2	Pass	
		Condition V Test letter A.		3	Pass
				4	Pass
				5	Pass
3	Physical Shock	Subject mated connectors	Appearance :	Sample	No damage
		to 30 g's half-sine shock	No damage	1	Pass
		pulses of 11ms duration.		2	Pass
		Three shocks in each		3	Pass
		direction applied along		4	Pass
		three mutually		5	Pass
		perpendicular planes for a	Discontinuity : 1	Sample	1 micro second
		Test as per FIA 364-27	Micro second max.	1	Pass
		condition H		2	Pass
				3	Pass
				4	Pass
				5	Pass
4	Examination of		No damage	Sample	No damage
	Product			1	Pass
				2	Pass
				3	Pass
				4	Pass
				5	Pass



ENGINEERING DEPT.

#### **PRODUCT SPECIFICATION**

SPEC.NO.: SPCVS003C

**REVISIONS** ECNT117158

For CVS3 Series Connector System

PAGE: 13/13

	Test Group								
Test of description		A	В	С	D	Е	F	G	Н
1	Examination of Product	1,9	1,9	1,5	1,5	1,9	1,3	1,3	1,4
2	Low level Contact Resistance	3,7	2,6	2,4	2,4	2,6			
3	Dielectric Withstanding Voltage		4,8			4,8			
4	Insulation Resistance		3,7			3,7			
5	Insertion Force	2,6							
6	Removal Force	4,8							
7	Durability	5							
8	Humidity		5						
9	Temperature Life			3					
10	Salt Spray				3				
11	Thermal shock (Temperature cycling)					5			
12	Solderability						2		
13	Soldering Heat withstanding							2	
14	Random vibration								2
15	Physical shock								3