

ECONOLATCH™ WIRE TO WIRE

1.0 SCOPE

This Test Summary covers the 3.68 mm centerline (pitch) connector series terminated with 16 to 22 AWG wire using Crimp technology with Tin plating.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND PART NUMBER(S)

DESCRIPTION	SERIES
Econolatch Single Row WTW Plug Housing 1x2	150176
Econolatch Single Row WTW Plug Housing 1x3	
Econolatch Dual Row WTW Plug Housing 2x2	150177
Econolatch Dual Row WTW Plug Housing 2x3	
Econolatch Dual Row WTW Plug Housing 2x4	
Econolatch Dual Row WTW Plug Housing 2x5	
Econolatch Single Row WTW Receptacle Housing 1x2	150178
Econolatch Single Row WTW Receptacle Housing 1x3	
Econolatch Dual Row WTW Receptacle Housing 2x2	150179
Econolatch Dual Row WTW Receptacle Housing 2x3	
Econolatch Dual Row WTW Receptacle Housing 2x4	
Econolatch Dual Row WTW Receptacle Housing 2x5	
Male Crimp Terminal	150180
Female Crimp Terminal	150181

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

REFER SD-150176-001, SD-150177-001, SD-150178-001, SD-150179-001, SD-150181-0001, SD-150180-0001

2.3 PRODUCT SPECIFICATION TITLE AND DOCUMENT NUMBER

1501760001-PS

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

1.1 TESTING PROCEDURES AND SEQUENCES

Reference Section 6.0 for Test sequence.

1.2 OTHER DOCUMENTS AND SPECIFICATIONS

4.0 QUALIFICATION

Laboratory conditions and sample selection are in accordance with Product spec **1501760001-PS**

REVISION: A	ECR/ECN INFORMATION: EC No: 107456 DATE: 2016 / 10 / 19	TITLE: TEST SUMMARY FOR ECONOLATCH WTW CONNECTORS	SHEET No. 1 of 6
DOCUMENT NUMBER: 1501760001-TS	CREATED / REVISED BY: snagaravenka	CHECKED BY: kprasad	APPROVED BY: kprasad

5.0 PERFORMANCE

5.1 ELECTRICAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM		
5.1.1	Contact Resistance (Low level)	Apply Maximum Voltage of 20mV and a current of 100 mA.	10 milliohms MAXIMUM (Initial)	2.31 mΩ	1.73 mΩ	3.19 mΩ		
5.1.2	Insulation Resistance	Apply a voltage of 500 VDC between adjacent terminals and between terminals to ground	1000 MegaOhms Minimum	Meets the Requirement				
5.1.3	Dielectric Withstanding Voltage	Apply Voltage of 1500 VAC for 1 minute between adjacent terminals and between terminals to Ground.	No Break down	Meets the Requirement				
			Current leakage < 5 mA	Meets the Requirement				
5.1.4	Temperature Rise (via Current Cycling) [+30°C Rise above ambient]	1 Circuit	16 AWG	*30°C @ 11.5 amps				
			18 AWG	*30°C @ 8.5 amps				
			20 AWG	*30°C @ 7.5 amps				
			22 AWG	*30°C @ 6.5 amps				
		2 Circuit	16 AWG	30°C @ 11.5 amps				
			18 AWG	*30°C @ 8.5 amps				
			20 AWG	*30°C @ 7.5 amps				
			22 AWG	30°C @ 6.5 amps				
		3 Circuit	16 AWG	*30°C @ 10 amps				
			18 AWG	*30°C @ 7 amps				
			20 AWG	*30°C @ 6 amps				
			22 AWG	*30°C @ 5.5 amps				
		4 Circuit	16 AWG	*30°C @ 9 amps				
			18 AWG	*30°C @ 6.5 amps				
			20 AWG	*30°C @ 5.5 amps				
			22 AWG	*30°C @ 5 amps				
		6 Circuit	16 AWG	30°C @ 8.5 amp				
			18 AWG	*30°C @ 6.5 amps				
			20 AWG	*30°C @ 5.5 amps				
			22 AWG	30°C @ 5.0 amps				
		8 Circuit	16 AWG	*30°C @ 8 amps				
			18 AWG	*30°C @ 6 amps				
			20 AWG	*30°C @ 5 amps				
			22 AWG	*30°C @ 4.5 amps				
		10 Circuit	16 AWG	30°C @ 7.5 amps				
			18 AWG	*30°C @ 6 amps				
			20 AWG	*30°C @ 5 amps				
			22 AWG	30°C @ 4.5 amps				
					+30 °C MAXIMUM RISE above ambient			

*Interpolated Values

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5.1 ELECTRICAL PERFORMANCE RESULTS (continued)

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
5.1.5	18-day Current cycling EIA-364-55	2 Circuit	+30 °C MAXIMUM RISE above ambient	11.5 A @29.7° C		
		10 Circuit		6.5 A @28.39°C		
		16 AWG		7.5 A @28.33°C		

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5.2 MECHANICAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
5.2.1	Connector Mate and Un mate Forces 2 CKT	Mating Initial	9 N/ CKT MAXIMUM (2.02 lb _f) MAXIMUM	7.86 N (1.77 lb _f)	7.47 N (1.68 lb _f)	8.47 N (1.90 lb _f)
		Un-mating Initial	4.5 N/CKT MINIMUM (1.10 lb _f) MINIMUM	13.17 N (2.96 lb _f)	11.55 N (2.60 lb _f)	16.67 N (3.75 lb _f)
5.2.2	Connector Mate and Un mate Forces 10 CKT	Mating Initial	9 N/ CKT MAXIMUM (2.02 lb _f) MAXIMUM	5.51 N (1.24 lb _f)	4.95 N (1.11 lb _f)	5.87 N (1.32 lb _f)
		Un-mating Initial	4.5 N/CKT MINIMUM (1.10 lb _f) MINIMUM	5.59 N (1.26 lb _f)	4.84 N (1.09 lb _f)	6.02 N (1.35 lb _f)
5.2.3	Terminal Retention Force (in Housing)	Initial	26 N MINIMUM (5.84 lb _f) MINIMUM	77.67 N (17.46 lb _f)	26.97 N (6.06 lb _f)	123.33 N (27.72 lb _f)
5.2.4	Durability	See Section 6.0 test Sequences. Group1/2/3/7	10 milliohms Max. (change from Initial)	0.09mΩ	-0.22 mΩ	1.33 mΩ
5.2.5	Vibration (Random)	See Section 6.0 test Sequences. Group 3	10 milliohms Max. (change from Initial)	0.24 mΩ	-0.135 mΩ	0.79mΩ
			Discontinuity<1 microsecond	Meets the Requirements		
5.2.6	Shock (Mechanical)	See Section 6.0 test Sequences. Group 3	10 milliohms Max. (change from Initial)	0.555 mΩ	-0.013 mΩ	2.47mΩ
			Discontinuity<1 microsecond	Meets the Requirements		
5.2.7	Wire Pullout Force (Axial)	16 AWG	89 N MINIMUM (20 lb _f) MINIMUM	202.38 N (45.49 lb _f)	192.13 N (43.19 lb _f)	220.27 N (49.51 lb _f)
		18 AWG	89 N MINIMUM (20 lb _f) MINIMUM	180.25 N (40.52 lb _f)	151.13 N (33.97 lb _f)	199.30 N (44.80 lb _f)
		20 AWG	36 N MINIMUM (8 lb _f) MINIMUM	132.34 N (29.75 lb _f)	107.24 N (24.10 lb _f)	143.50 N (32.26 lb _f)
		22 AWG	36 N MINIMUM (8 lb _f) MINIMUM	85.77 N (19.28 lb _f)	75.08 N (16.87 lb _f)	94.46 N (21.23 lb _f)
5.2.8	Terminal Insertion Force (into Housing)	Initial	11 N MAXIMUM 2.47 lb _f) MAXIMUM	8.29 N (1.86 lb _f)	5.79 N (1.16 lb _f)	10.36 N (2.32 lb _f)
5.2.9	Panel Insertion Force	Insertion	52 N MAXIMUM (11.69 lb _f) MAXIMUM	25.51 N (5.73 lb _f)	18.85 N (4.23 lb _f)	32.06 N (7.20 lb _f)

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5.2 MECHANICAL PERFORMANCE RESULTS (continued)

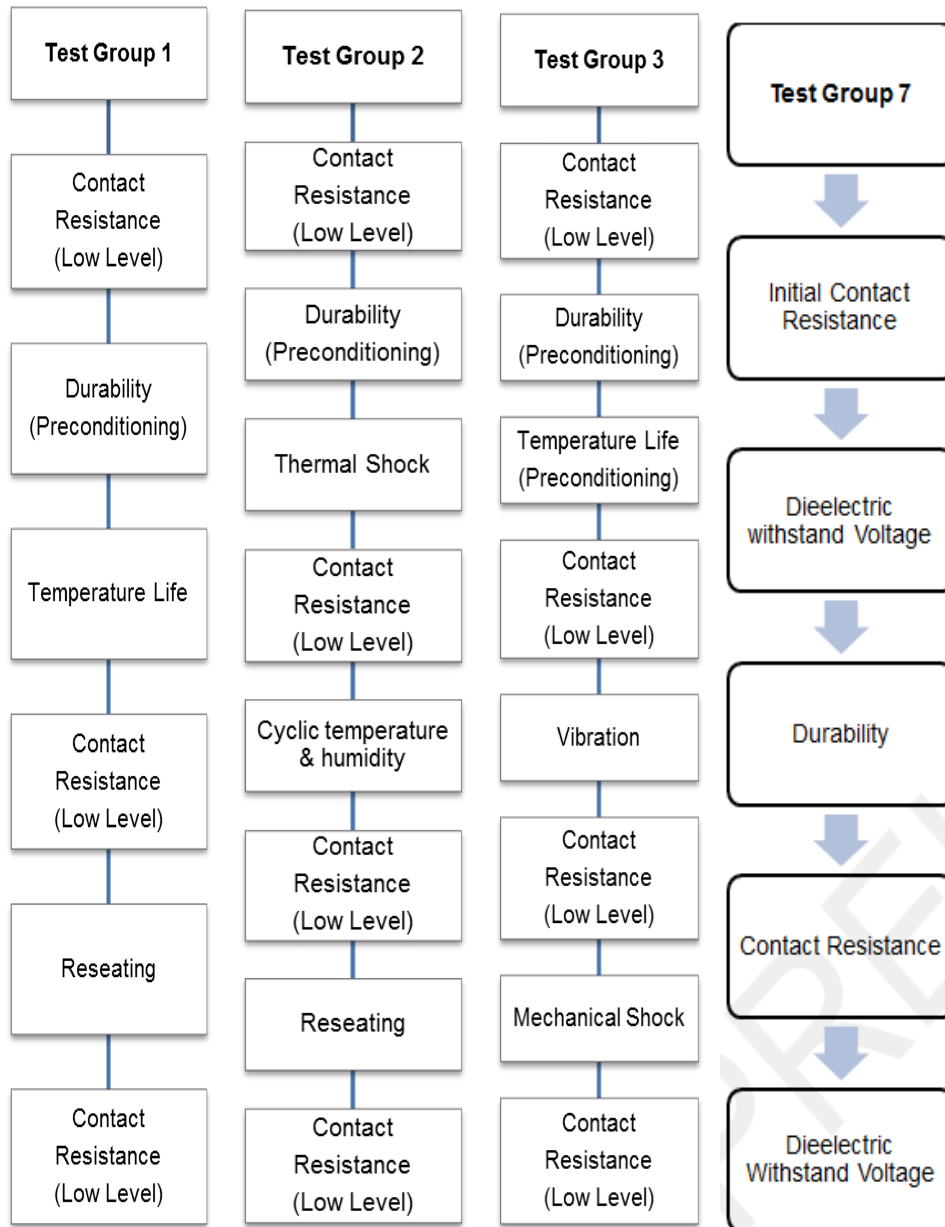
ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
5.2.10	Latch Retention Force with panel	Initial	200 N MINIMUM (44.97 lbf) MINIMUM	219.27 N (49.29 lbf)	211.14 N (47.47 lbf)	228.55 N (51.38 lbf)
5.2.11	Impact on Housing	Drop housing from 1meter height	No breakage/damage	Result: Meets the requirement		

5.3 ENVIRONMENTAL PERFORMANCE RESULTS

ITEM	DESCRIPTION	TREATMENT	REQUIREMENT	MEAN	MINIMUM	MAXIMUM
5.3.1	Temperature life	See Section 6.0 test Sequences. Group1	10 milliohms Max. (change from Initial)	-0.01 mΩ	-0.19 mΩ	0.12 mΩ
			Visual : No Damage	Pass		
5.3.2	Shock (Thermal) Group 2)	See Section 6.0 test Sequences. Group2	10 milliohms Max. (change from Initial)	0.041 mΩ	-0.16 mΩ	0.24 mΩ
			Visual : No Damage	Pass		
5.3.3	Humidity (Cyclic) Group 2	See Section 6.0 test Sequences. Group2	10 milliohms Max. (change from Initial)	0.054 mΩ	-0.165 mΩ	0.29 mΩ
			Die-Electric withstanding voltage: No breakdown at 500VAC	Meets the Requirements		
			Insulation Resistance: 1000Megaohms Minimum	Meets the Requirements		
			Visual : No Damage	Pass		

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6.0 TEST SEQUENCES



Note: Temperature life preconditioning applied in Test group-3 is 105°C for 132 hours.

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