X Completed
P Pass
F Fail
O Open, Planned, Schedu

Par	Test Description DSGN-4015-T	Document	Level	Facility	34044-1	34044-2	34044-3	34044-4	34044-5	Comment
1.1	Environmental Tests	---	---	---						
1.1.1	Storage Temperature	DSGN-4015-S	1.1.1	Data Panel	P	P	P	P	P	-45C to +85C
1.1.2	Temperature Durability	DSGN-4015-S	1.1.2	Data Panel	P	P	P	P	P	-40C to +80C 3 cycles / 24 hr
1.1.3	Temperature Shock	IEC 60068-2-14:2000-08			P	P	P	P	P	-40C to +80C 10 cycles / 1 hr / 30 sec
1.1.4	Highly Accelerated Life Testing (HALT)	GMW8287 2011			X			X		
1.1.5	Environmental - Salt Exposure	IEC 60068-2-52:2000-02	Test Kb, Level 3							
1.1.6	Environmental - Chemicals Exposure	SAE J1211:1978-11	Part 4.4							
1.2	Vibration Tests	---	---	---						
1.2.1	Vibration - Swept Sine	JDQ 53.3 6.1.1	Level 4		P					Ref: MIL-STD-202G, method 204D
1.2.2	Vibration - Random	JDQ 53.3 6.1.2	Level 4		P					Ref: MIL-STD-202G, method 214A
1.2.3	Vibration - Shock	IEC 60068-2-27:2009	Test Ea		P					
1.2.4	Vibration - Bump	IEC 60068-2-29:2009	Test Eb		P					
1.2.5	Drop Test – With Shipping Container			Data Panel	P	P	P	P	P	
1.2.6	Drop Test – Without Shipping Container			Data Panel	F	F	F	F	F	
1.3	Product Unique Mechanical Tests	---	---	---						
1.3.1	Connector Torque Test	DSGN-4015-S	1.3	Data Panel						
1.3.2	Mounting Boss Torque Test	DSGN-4015-S	1.3	Data Panel			P			
1.3.3	PCB Thermal Profile Test	DSGN-4015-S	1.3	Data Panel						
1.3.4	PCB Component Thermal Profile Test	DSGN-4015-S	1.3	Data Panel						
1.3.5	IP Protection	EN 60529:2000-09	IP67, IP69K					P		
2.1	Standard Voltage Tests	---	---	---						
2.1.1	Power and Ground Shorts	DSGN-4015-S	2.1.1	Data Panel	P	O	P	P	P	
2.1.2	Battery Operation – Ignition OFF	DSGN-4015-S	2.1.2	Data Panel	P	O	P	P	P	
2.1.3	Battery Operation Range – Ignition ON	DSGN-4015-S	2.1.3	Data Panel	P	O	P	P	P	
2.1.4	Voltage Operation Range	DSGN-4015-S	2.1.4	Data Panel	P	O	P	P	P	
2.1.5	Battery Over Voltage	DSGN-4015-S	2.1.5	Data Panel	P	O	P	P	P	Ref: ISO 16750-2:2003
2.1.6	Jump Start Battery Voltage	DSGN-4015-S	2.1.6	Data Panel	P	O	F	P	P	Ref: JDQ 53.3 9.1.2
2.1.7	Reverse Battery Voltage	DSGN-4015-S	2.1.7	Data Panel	P	O	P	P & F	P	*Unit fails when GNDA and GNDB common
2.2	Electrical Durability Tests	---	---	---						
2.2.1	Vehicle Start Cycle – Brown Out	DSGN-4015-S	2.3.1	Data Panel	P		P	P		
2.2.2	Power Decay – Battery Drain	DSGN-4015-S	2.3.2	Data Panel	P		P	P		
2.2.3	Cold Crank (JDQ 9.2.1)	JDQ 53.3 9.2.1								
2.2.4.1	Electrical Disturbance	ISO 7637-2:2004-09	Level 4					F		
2.2.4.2	Electrical Disturbance	ISO 7637-3:1995	Level 4					P		
2.2.5.1	Direct Contact Discharge	ISO 10605:2001-12	Level 4							

2.2.5.2	Air Discharge	ISO 10605:2001-12	Level 4							
2.2.6	Conducted Emissions 0.15M to 108M Hz	ISO 7637-1								
(2.2.6)	Conducted Emissions	ISO 7637-2			F*	P		P		Failed ISO 7637-2, Pulse 5b; *24V Test
(2.2.6)	Conducted Emissions	ISO 7637-3			P	F		*F		Pulse 5A; *24V Test
2.2.7	Radiated Emissions 0.15M to 1000M Hz	ISO 14982	CISPR 25		*F	**F		*F		*Failed in frequency ranges: 150kHz - 25MHz; 200MHz-1GHz;
2.2.8	Electromagnetic Susceptibility	ISO 11452-4								
2.2.9	50/60 Hz "E" Field	SAE J1113-26								
2.2.10	Conducted Sinusoidal Burst									
2.2.11	FCC Compliance	FCC 47 CFR Part 15 Sub B	Class A, CISPR 22							
2.3	Product Unique Electrical Tests	---	---	---						
2.3.1	Hand Held 900 Mhz Test	DSGN-4015-S	2.3.1	Data Panel	P	O	P	P	P	
2.3.2	Input Voltage Threshold Test	DSGN-4015-S	2.3.2	Data Panel	P	O	P	P	N/A	
2.3.3	Output Load Circuit Test	DSGN-4015-S	2.3.3	Data Panel	O	N/A	P	P	F	
2.3.4	Output Short Circuit Test	DSGN-4015-S	2.3.4	Data Panel	O	N/A	P	P	P	
2.3.5	Max Temperature – Max Current	DSGN-4015-S	2.3.5	Data Panel	O	N/A	P	P	P	
2.3.6	Endurance Test	DSGN-4015-S	2.3.6	Data Panel						
	Additional Validation Tests									
3.1.1	DPBlock CAN BUS 15 Nodes	TC001	3.1.1	Data Panel	P	P	P	P	P	
3.1.2	AD Input Variation Max Nodes	TC002	3.1.2	Data Panel	P	P	P	P	P	
3.1.3	Input Response Time	TC003	3.1.3	Data Panel	P					"34044-201C Input Response Time.xls"
3.1.4	PID Control Over Temp Range	TC004	3.1.4	Data Panel						
3.1.5	Input Function Over Temp Range	TC005	3.1.5	Data Panel	P	P	P	P	P	
3.1.6	PID All Outputs	TC006	3.1.6	Data Panel						
3.1.7	Bank Faults Loading Operation	TC007	3.1.7	Data Panel						
3.1.8	Output Short Circuit Monitor Other Outputs	TC008	3.1.8	Data Panel						
3.1.9	Control Message Timing	TC009	3.1.9	Data Panel						
3.1.10	Battery Voltage on Inputs During Cnfg	TC010	3.1.10	Data Panel						
3.1.11	Frequency and Counter Operation	TC011	3.1.11	Data Panel						
3.1.12	Benchmark for Dropped CAN Messages	TC012	3.1.12	Data Panel						
3.1.13	Output Control At Startup	TC013	3.1.13	Data Panel						
3.1.14	Output Control Long Term Dropout	TC014	3.1.14	Data Panel						
3.1.15	Max Current Max Inrush Faults	TC015	3.1.15	Data Panel						
3.1.16	Bus Transmission Quality	TC016	3.1.16	Data Panel	P	P	P	P	P	
3.1.17	Loss of VBAT P1-P4 or GND-EXT	TC017	3.1.17	Data Panel						
3.1.18	34044-5 (Hella LED Light Flicker Test)	TC018	3.1.18	Data Panel	P	P	P	P	P	
3.1.19	Port Swap CAN to IO	TC019	3.1.19	Data Panel	P	P	P	P	P	
3.1.20	Input Digital Signals long term monitor	TC020	3.1.20	Data Panel						
3.1.21	Exothermic Temp of 117-131	TCO20	3.1.21	Data Panel	X		X	X		
3.1.22										

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