UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_4 Current: ER0_R	0,000A±0,225A	0,052 A	
	O_5 Current: UPD0	**0,000A±0,225A**	**0,012 A**	
	O_6 Current: SPD0_N	0,000A±0,225A	0,021 A	
	O_7 Current: TPD5	0,000A±0,225A	0,039 A	
	O_8 Current: TTPD_N	0,00A±0,45A	-0,031 A	
	Temperature	-40°C<T<80C°	27,83°C	
	Analog Ref. 3.0V	3,000V±250mV	3,037V	
3A-4-A.15	Measure with multimeter the voltage on this ESEM 3-A loads:			
	O_1: JPD_R	28,00V±1,00V	28,17V	
	O_2: ER1_R	0,00V<V<1,00V	0,00V	
	O_3: SPD1_R	0,00V<V<1,00V	0,00V	
	O_4: ER0_R	0,00V<V<1,00V	0,00V	
	O_5: UPD0	0,00V<V<1,00V	0,04V	
	O_6: SPD0_N	0,00V<V<1,00V	0,00V	
	O_7: TPD5	0,00V<V<1,00V	0,00V	
	O_8: TTPD_N	0,00V<V<1,00V	0,00V	
3A-4-A.16	Set "OFF" in the window "O_1: JPD_R" and push the relative "W" command	OK	OK	
3A-4-A.17	Measure with multimeter the voltage on O_1: JPD_R	0,00V<V<1,00V	0,02V	
3A-4-A.18	Click on Read All in Digital readout column and verify O_1 CMD: JPD_R	OFF	OFF	
3A-4-A.19	Set ON in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.20	Measure with multimeter the voltage on this ESEM 3-A loads:			
	O_1: JPD_R	28,00V±1,00V	28,17V	
	O_2: ER1_R	28,00V±1,00V	28,12V	
	O_3: SPD1_R	28,00V±1,00V	28,17V	
	O_4: ER0_R	28,00V±1,00V	28,11V	
	O_5: UPD0	28,00V±1,00V	28,18V	
	O_6: SPD0_N	28,00V±1,00V	28,18V	
	O_7: TPD5	28,00V±1,00V	28,17V	
	O_8: TTPD_N	28,00V±1,00V	28,18V	
3A-4-A.21	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.22	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	From O_1 CMD: JPD_R to O_8 CMD: TTPD_N	ON	ON	
	From O_1 Status: JPD_R to O_8 Status: TTPD_N	ON	ON	
3A-4-A.23	Set Off in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.24	Click on Raed all to in Digital readout column	OK	OK	
3A-4-A.25	Verify from digital readout column that all outlets are OFF	OK	OK	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.1.5.10.1 ESEM 3A-4 OUT 1 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.26	Disconnect outlet cables	OK	OK	
3A-4-A.27	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-4-A.28	Set short circuit simulator to 3ms	OK	OK	
3A-4-A.29	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.30	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.31	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.32	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-4-A.33	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.34	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-4-A.35	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-4-A.36	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.37	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_25 in the end of document
3A-4-A.38	Measure in the previous picture the current limitation value	6,50A±10%	6,15A	
3A-4-A.39	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,20ms	
3A-4-A.40	Verify with multimeter the absence of output voltage across load 1	0,00V±1,00V	0,00V	
3A-4-A.41	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.42	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK OFF ON ON ON ON ON ON ON	 NOK OK OFF ON ON ON ON ON ON ON	
3A-4-A.43	Set the CAN BUS board address to 31	31	31	
3A-4-A.44	Select "CAN BUS I/F Side" to B	B	B	
3A-4-A.45	Click on Read All command in Digital Readout column	OK	OK	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.46	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK OFF ON ON ON ON ON ON ON	 NOK OK OFF ON ON ON ON ON ON ON	
3A-4-A.47	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-4-A.48	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-4-A.49	Disconnect current probe	OK	OK	
3A-4-A.50	Connect outlet cables to active load	OK	OK	
3A-4-A.51	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.52	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	
3A-4-A.53	Set the CAN BUS board address to 30	30	30	In order to verify that CAN BUS 30 is able to reset a protection
3A-4-A.54	Select "CAN BUS I/F Side" to A	A	A	
3A-4-A.55	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.56	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.57	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF	 OK OK OFF	
3A-4-A.58	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.59	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.60	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	
3A-4-A.61	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

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10.3.1.5.10.2 ESEM 3A-4 OUT 2 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.62	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.63	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: : JPD_R to O_8 CMD: TTPD_N From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF OFF	 OK OK OFF OFF	
3A-4-A.64	Disconnect outlet cables	OK	OK	
3A-4-A.65	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-4-A.66	Set short circuit simulator to 3ms	OK	OK	
3A-4-A.67	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.68	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.69	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.70	Verify the status of the following flags: BOARD STATUS	 OK	 OK	
3A-4-A.71	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.72	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-4-A.73	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-4-A.74	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.75	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_ 26 in the end of document
3A-4-A.76	Measure in the previous picture the current limitation value	6,50A±10%	6,19A	
3A-4-A.77	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,23ms	
3A-4-A.78	Verify with multimeter the absence of output voltage across load 2	0,00V±1,00V	0,00V	
3A-4-A.79	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.80	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N	 NOK OK ON OFF ON ON ON ON	 NOK OK ON OFF ON ON ON ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_7 Status: TPD5 O_8 Status: TTPD_N	ON ON	ON ON	
3A-4-A.81	Set the CAN BUS board address to 31	31	31	
3A-4-A.82	Select "CAN BUS I/F Side" to B	B	B	
3A-4-A.83	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.84	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK ON OFF ON ON ON ON ON ON	 NOK OK ON OFF ON ON ON ON ON ON	
3A-4-A.85	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-4-A.86	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-4-A.87	Disconnect current probe	OK	OK	
3A-4-A.88	Connect outlet cables to active load	OK	OK	
3A-4-A.89	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.90	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	
3A-4-A.91	Set the CAN BUS board address to 30	30	30	In order to verify that CAN BUS 30 is able to reset a protection
3A-4-A.92	Select "CAN BUS I/F Side" to A	A	A	
3A-4-A.93	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.94	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.95	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF	 OK OK OFF	
3A-4-A.96	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.97	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.98	Verify the status of the following flags:			

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK ON	OK OK ON	
3A-4-A.99	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.1.5.10.3 ESEM 3A-4 OUT 3 CURRENT LIMITERS

3A-4-A.100	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.101	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: : JPD_R to O_8 CMD: TTPD_N From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF OFF	 OK OK OFF OFF	
3A-4-A.102	Disconnect outlet cables	OK	OK	
3A-4-A.103	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-4-A.104	Set short circuit simulator to 3ms	OK	OK	
3A-4-A.105	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.106	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.107	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.108	Verify the status of the following flags: BOARD STATUS	 OK	 OK	
3A-4-A.109	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.110	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-4-A.111	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-4-A.112	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.113	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_27 in the end of document
3A-4-A.114	Measure in the previous picture the current limitation value	6,50A±10%	6,27A	
3A-4-A.115	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,31ms	
3A-4-A.116	Verify with multimeter the absence of output voltage across load 3	0,00V±1,00V	0,00V	
3A-4-A.117	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.118	Verify the status of the following flags: BOARD STATUS OVT Alarm	 NOK OK	 NOK OK	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_1 Status: JPD_R	ON	ON	
	O_2 Status: ER1_R	ON	ON	
	O_3 Status: SPD1_R	OFF	OFF	
	O_4 Status: ER0_R	ON	ON	
	O_5 Status: UPD0	ON	ON	
	O_6 Status: SPD0_N	ON	ON	
	O_7 Status: TPD5	ON	ON	
	O_8 Status: TTPD_N	ON	ON	
3A-4-A.119	Set the CAN BUS board address to 31	31	31	
3A-4-A.120	Select "CAN BUS I/F Side" to B	B	B	
3A-4-A.121	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.122	Verify the status of the following flags:			
	BOARD STATUS	NOK	NOK	
	OVT Alarm	OK	OK	
	O_1 Status: JPD_R	ON	ON	
	O_2 Status: ER1_R	ON	ON	
	O_3 Status: SPD1_R	OFF	OFF	
	O_4 Status: ER0_R	ON	ON	
	O_5 Status: UPD0	ON	ON	
	O_6 Status: SPD0_N	ON	ON	
	O_7 Status: TPD5	ON	ON	
	O_8 Status: TTPD_N	ON	ON	
3A-4-A.123	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-4-A.124	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-4-A.125	Disconnect current probe	OK	OK	
3A-4-A.126	Connect outlet cables to active load	OK	OK	
3A-4-A.127	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.128	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	From O_1 Status: JPD_R to O_8 Status: TTPD_N	ON	ON	
3A-4-A.129	Set the CAN BUS board address to 30	30	30	In order to verify that CAN BUS 30 is able to reset a protection
3A-4-A.130	Select "CAN BUS I/F Side" to A	A	A	
3A-4-A.131	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.132	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.133	Verify the status of the following flags:			

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK OFF	OK OK OFF	
3A-4-A.134	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.135	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.136	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK ON	OK OK ON	
3A-4-A.137	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.1.5.10.4 ESEM 3A-4 OUT 4 CURRENT LIMITERS

3A-4-A.138	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.139	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: : JPD_R to O_8 CMD: TTPD_N From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK OFF OFF	OK OK OFF OFF	
3A-4-A.140	Disconnect outlet cables	OK	OK	
3A-4-A.141	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-4-A.142	Set short circuit simulator to 3ms	OK	OK	
3A-4-A.143	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.144	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.145	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.146	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-4-A.147	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.148	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-4-A.149	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-4-A.150	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.151	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_28 in the end of document
3A-4-A.152	Measure in the previous picture the current limitation value	6,50A±10%	6,35A	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.153	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,14ms	
3A-4-A.154	Verify with multimeter the absence of output voltage across load 4	0,00V±1,00V	0,00V	
3A-4-A.155	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.156	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK ON ON ON OFF ON ON ON ON	 NOK OK ON ON ON OFF ON ON ON ON	
3A-4-A.157	Set the CAN BUS board address to 31	31	31	
3A-4-A.158	Select "CAN BUS I/F Side" to B	B	B	
3A-4-A.159	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.160	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK ON ON ON OFF ON ON ON ON	 NOK OK ON ON ON OFF ON ON ON ON	
3A-4-A.161	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-4-A.162	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-4-A.163	Disconnect current probe	OK	OK	
3A-4-A.164	Connect outlet cables to active load	OK	OK	
3A-4-A.165	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.166	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.167	Set the CAN BUS board address to 30	30	30	In order to verify that CAN BUS 30 is able to reset a protection
3A-4-A.168	Select "CAN BUS I/F Side" to A	A	A	
3A-4-A.169	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.170	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.171	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF	 OK OK OFF	
3A-4-A.172	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.173	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.174	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	
3A-4-A.175	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.1.5.10.5 ESEM 3A-4 OUT 5 CURRENT LIMITERS

3A-4-A.176	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.177	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: : JPD_R to O_8 CMD: TTPD_N From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF OFF	 OK OK OFF OFF	
3A-4-A.178	Disconnect outlet cables	OK	OK	
3A-4-A.179	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-4-A.180	Set short circuit simulator to 3ms	OK	OK	
3A-4-A.181	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.182	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.183	Create short circuit pressing start button on short circuit simulator			
3A-4-A.184	Verify the status of the following flags: BOARD STATUS	 OK	 OK	
3A-4-A.185	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.186	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-4-A.187	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-4-A.188	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.189	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_29 in the end of document
3A-4-A.190	Measure in the previous picture the current limitation value	6,50A±10%	6,39A	
3A-4-A.191	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,14ms	
3A-4-A.192	Verify with multimeter the absence of output voltage across load 5	0,00V±1,00V	0,00V	
3A-4-A.193	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.194	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK ON ON ON ON OFF ON ON ON	 NOK OK ON ON ON ON OFF ON ON ON	
3A-4-A.195	Set the CAN BUS board address to 31	31	31	
3A-4-A.196	Select "CAN BUS I/F Side" to B	B	B	
3A-4-A.197	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.198	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK ON ON ON ON OFF ON ON ON	 NOK OK ON ON ON ON OFF ON ON ON	
3A-4-A.199	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-4-A.200	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-4-A.201	Disconnect current probe	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.202	Connect outlet cables to active load	OK	OK	
3A-4-A.203	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.204	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	
3A-4-A.205	Set the CAN BUS board address to 30	30	30	In order to verify that CAN BUS 30 is able to reset a protection
3A-4-A.206	Select "CAN BUS I/F Side" to A	A	A	
3A-4-A.207	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.208	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.209	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF	 OK OK OFF	
3A-4-A.210	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.211	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.212	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	
3A-4-A.213	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

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10.3.1.5.10.6 ESEM 3A-4 OUT 6 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.214	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.215	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: : JPD_R to O_8 CMD: TTPD_N From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF OFF	 OK OK OFF OFF	
3A-4-A.216	Disconnect outlet cables	OK	OK	
3A-4-A.217	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-4-A.218	Set short circuit simulator to 3ms	OK	OK	
3A-4-A.219	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.220	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.221	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.222	Verify the status of the following flags: BOARD STATUS	 OK	 OK	
3A-4-A.223	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.224	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-4-A.225	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-4-A.226	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.227	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_30 in the end of document
3A-4-A.228	Measure in the previous picture the current limitation value	6,50A±10%	6,43A	
3A-4-A.229	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,10ms	
3A-4-A.230	Verify with multimeter the absence of output voltage across load 6	0,00V±1,00V	0,00V	
3A-4-A.231	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.232	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N	 NOK OK ON ON ON ON ON OFF	 NOK OK ON ON ON ON ON OFF	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_7 Status: TPD5 O_8 Status: TTPD_N	ON ON	ON ON	
3A-4-A.233	Set the CAN BUS board address to 31	31	31	
3A-4-A.234	Select "CAN BUS I/F Side" to B	B	B	
3A-4-A.235	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.236	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK ON ON ON ON ON OFF ON ON	 NOK OK ON ON ON ON ON OFF ON ON	
3A-4-A.237	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-4-A.238	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-4-A.239	Disconnect current probe	OK	OK	
3A-4-A.240	Connect outlet cables to active load	OK	OK	
3A-4-A.241	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.242	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	
3A-4-A.243	Set the CAN BUS board address to 30	30	30	In order to verify that CAN BUS 30 is able to reset a protection
3A-4-A.244	Select "CAN BUS I/F Side" to A	A	A	
3A-4-A.245	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.246	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.247	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF	 OK OK OFF	
3A-4-A.248	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.249	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.250	Verify the status of the following flags:			

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK ON	OK OK ON	
3A-4-A.251	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.1.5.10.7 ESEM 3A-4 OUT 7 CURRENT LIMITERS

3A-4-A.252	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.253	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: : JPD_R to O_8 CMD: TTPD_N From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK OFF OFF	OK OK OFF OFF	
3A-4-A.254	Disconnect outlet cables	OK	OK	
3A-4-A.255	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-4-A.256	Set short circuit simulator to 3ms	OK	OK	
3A-4-A.257	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.258	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.259	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.260	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-4-A.261	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.262	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-4-A.263	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-4-A.264	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.265	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_31 in the end of document
3A-4-A.266	Measure in the previous picture the current limitation value	6,50A±10%	6,41A	
3A-4-A.267	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,16ms	
3A-4-A.268	Verify with multimeter the absence of output voltage across load 7	0,00V±1,00V	0,00V	
3A-4-A.269	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.270	Verify the status of the following flags: BOARD STATUS OVT Alarm	NOK OK	NOK OK	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_1 Status: JPD_R	ON	ON	
	O_2 Status: ER1_R	ON	ON	
	O_3 Status: SPD1_R	ON	ON	
	O_4 Status: ER0_R	ON	ON	
	O_5 Status: UPD0	ON	ON	
	O_6 Status: SPD0_N	ON	ON	
	O_7 Status: TPD5	OFF	OFF	
	O_8 Status: TTPD_N	ON	ON	
3A-4-A.271	Set the CAN BUS board address to 31	31	31	
3A-4-A.272	Select "CAN BUS I/F Side" to B	B	B	
3A-4-A.273	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.274	Verify the status of the following flags:			
	BOARD STATUS	NOK	NOK	
	OVT Alarm	OK	OK	
	O_1 Status: JPD_R	ON	ON	
	O_2 Status: ER1_R	ON	ON	
	O_3 Status: SPD1_R	ON	ON	
	O_4 Status: ER0_R	ON	ON	
	O_5 Status: UPD0	ON	ON	
	O_6 Status: SPD0_N	ON	ON	
	O_7 Status: TPD5	OFF	OFF	
	O_8 Status: TTPD_N	ON	ON	
3A-4-A.275	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-4-A.276	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-4-A.277	Disconnect current probe	OK	OK	
3A-4-A.278	Connect outlet cables to active load	OK	OK	
3A-4-A.279	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.280	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	From O_1 Status: JPD_R to O_8 Status: TTPD_N	ON	ON	
3A-4-A.281	Set the CAN BUS board address to 30	30	30	In order to verify that CAN BUS 30 is able to reset a protection
3A-4-A.282	Select "CAN BUS I/F Side" to A	A	A	
3A-4-A.283	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.284	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.285	Verify the status of the following flags:			

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK OFF	OK OK OFF	
3A-4-A.286	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.287	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.288	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK ON	OK OK ON	
3A-4-A.289	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.1.5.10.8 ESEM 3A-4 OUT 8 CURRENT LIMITERS

3A-4-A.290	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.291	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: : JPD_R to O_8 CMD: TTPD_N From O_1 Status: JPD_R to O_8 Status: TTPD_N	OK OK OFF OFF	OK OK OFF OFF	
3A-4-A.292	Disconnect outlet cables	OK	OK	
3A-4-A.293	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-4-A.294	Set short circuit simulator to 3ms	OK	OK	
3A-4-A.295	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.296	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.297	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.298	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-4-A.299	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-4-A.300	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-4-A.301	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-4-A.302	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-4-A.303	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_32 in the end of document
3A-4-A.304	Measure in the previous picture the current limitation value	13,00A±10%	12,40A	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.305	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,14ms	
3A-4-A.306	Verify with multimeter the absence of output voltage across load 8	0,00V±1,00V	0,00V	
3A-4-A.307	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.308	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK ON ON ON ON ON ON ON OFF	 NOK OK ON ON ON ON ON ON ON OFF	
3A-4-A.309	Set the CAN BUS board address to 31	31	31	
3A-4-A.310	Select "CAN BUS I/F Side" to B	B	B	
3A-4-A.311	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.312	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: JPD_R O_2 Status: ER1_R O_3 Status: SPD1_R O_4 Status: ER0_R O_5 Status: UPD0 O_6 Status: SPD0_N O_7 Status: TPD5 O_8 Status: TTPD_N	 NOK OK ON ON ON ON ON ON ON OFF	 NOK OK ON ON ON ON ON ON ON OFF	
3A-4-A.313	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-4-A.314	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-4-A.315	Disconnect current probe	OK	OK	
3A-4-A.316	Connect outlet cables to active load	OK	OK	
3A-4-A.317	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.318	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-4-A.319	Set the CAN BUS board address to 30	30	30	In order to verify that CAN BUS 30 is able to reset a protection
3A-4-A.320	Select "CAN BUS I/F Side" to A	A	A	
3A-4-A.321	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.322	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.323	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK OFF	 OK OK OFF	
3A-4-A.324	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-4-A.325	Click on Read All command in Digital Readout column	OK	OK	
3A-4-A.326	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: JPD_R to O_8 Status: TTPD_N	 OK OK ON	 OK OK ON	
3A-4-A.327	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-4-A.328	Switch OFF the "power switch "of "power switch box"	Switch OFF	Switch OFF	
3A-4-A.329	Switch OFF main power bus	Switch OFF	Switch OFF	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.1.5.11 ESEM 3-B SIDE A

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3B-A.1	Connect all the loads. The following column resumes the currents (with Main bus equal to 120V):	OK	OK	There is no need to check the current absorption of the loads. CCS load not connected

OUTLET	CURRENT [A] SET
1	1,200±100mA
2	3,200±100mA
3	1,200±100mA
4	1,200±100mA
5	2,400±100mA
6	1,200±100mA
7	1,200±100mA
8	1,200±100mA
9	1,200±100mA
10	1,200±100mA
11	1,200±100mA
12	3,520±100mA

3B-A.2	Set all the loads of the other boards to 0A	OK	OK	
3B-A.3	Set power supply voltage to 120V	120V ± 0.2V	120V	
3B-A.4	Set power supply current limitation to 27.5A	27.5A±0.5A	27,5A	
3B-A.5	Switch ON the **"power switch "of "power switch box"**	OK	OK	
3B-A.6	Take note of input current	7,9A±0,5A	7,8 A	
3B-A.7	Select PDS controller software	program open	program open	
3B-A.8	Set the CAN BUS board address to 30	30	30	
3B-A.9	Select JMDC = 0	0	0	
3B-A.10	Select TX = A	A	A	
3B-A.11	Select RX = A	A	A	
3B-A.12	Select "CAN BUS I/F Side" to A	A	A	
3B-A.13	Select "PDS Side" to A	A	A	
3B-A.14	Click on Run flash command	OK	OK	
3B-A.15	Click on ESEM3-B button	OK	OK	Button located on left side of PDS controller software window
3B-A.16	Set Digital I/F Test logic value = 1 in "Commanding" column	1	1	
3B-A.17	Click on letter "W" on the right of the "1" value	OK	OK	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3B-A.18	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.19	Verify that in the column Digital Readout under the voice Digital I/F Test appears "1"	1	1	
3B-A.20	Set Digital I/F Test logic value = 0 in "Commanding" column	0	0	
3B-A.21	Click on letter "W" on the right of the "0" value	OK	OK	
3B-A.22	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.23	Verify that in the column Digital Readout under the voice Digital I/F Test appears "0"	0	0	
3B-A.24	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	O__1 CMD: AH_OUT1	ON	ON	
	O__2 CMD: AH_OUT2	ON	ON	
	O__3 CMD: AH_OUT3	ON	ON	
	O__4 CMD: AH_OUT4	OFF	OFF	
	O__5 CMD: AH_OUT5	OFF	OFF	
	O__6 CMD: AH_OUT6	ON	ON	
	O__7 CMD: AH_OUT7	OFF	OFF	
	O__8 CMD: AH_OUT8	OFF	OFF	
	O__9 CMD: AH_OUT9	OFF	OFF	
	O_10 CMD: AH_OUT10	OFF	OFF	
	O_11 CMD: AH_OUT11	OFF	OFF	
	O_12 CMD: AO_CCEB	OFF	OFF	
	O__1 Status: AH_OUT1	ON	ON	
	O__2 Status: AH_OUT2	ON	ON	
	O__3 Status: AH_OUT3	ON	ON	
	O__4 Status: AH_OUT4	OFF	OFF	
	O__5 Status : AH_OUT5	OFF	OFF	
	O__6 Status: AH_OUT6	ON	ON	
	O__7 Status: AH_OUT7	OFF	OFF	
	O__8 Status: AH_OUT8	OFF	OFF	
	O__9 Status: AH_OUT9	OFF	OFF	
	O_10 Status: AH_OUT10	OFF	OFF	
	O_11 Status: AH_OUT11	OFF	OFF	
	O_12 Status: AO_CCEB	OFF	OFF	
	O_12 Trip: AO_CCEB	OK	OK	
3B-A.25	Push on Read All button in Analog Readout column	OK	OK	
3B-A.26	Take note of the following values in "Analog readout" column:			
	Temperature	-40°C<T<80C°	28,70°C	
	O_12 Current: AO_CCEB	0,00A±0,45A	0,112 A	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	Analog Ref. 2.5V	2,500V±150mV	2,449V	
3B-A.27	Set the CAN BUS board address to 31	31	31	
3B-A.28	Select "CAN BUS I/F Side" to B	B	B	
3B-A.29	Click on Run flash button	OK	OK	
3B-A.30	Click on Read All command in Digital Readout column	OK	OK	
3B-A.31	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	O__1 CMD: AH_OUT1	ON	ON	
	O__2 CMD: AH_OUT2	ON	ON	
	O__3 CMD: AH_OUT3	ON	ON	
	O__4 CMD: AH_OUT4	OFF	OFF	
	O__5 CMD: AH_OUT5	OFF	OFF	
	O__6 CMD: AH_OUT6	ON	ON	
	O__7 CMD: AH_OUT7	OFF	OFF	
	O__8 CMD: AH_OUT8	OFF	OFF	
	O__9 CMD: AH_OUT9	OFF	OFF	
	O_10 CMD: AH_OUT10	OFF	OFF	
	O_11 CMD: AH_OUT11	OFF	OFF	
	O_12 CMD: AO_CCEB	OFF	OFF	
	O__1 Status: AH_OUT1	ON	ON	
	O__2 Status: AH_OUT2	ON	ON	
	O__3 Status: AH_OUT3	ON	ON	
	O__4 Status: AH_OUT4	OFF	OFF	
	O__5 Status : AH_OUT5	OFF	OFF	
	O__6 Status: AH_OUT6	ON	ON	
	O__7 Status: AH_OUT7	OFF	OFF	
	O__8 Status: AH_OUT8	OFF	OFF	
	O__9 Status: AH_OUT9	OFF	OFF	
	O_10 Status: AH_OUT10	OFF	OFF	
	O_11 Status: AH_OUT11	OFF	OFF	
	O_12 Status: AO_CCEB	OFF	OFF	
	O_12 Trip: AO_CCEB	OK	OK	
3B-A.32	Push on Read All button in Analog Readout column	OK	OK	
3B-A.33	Take note of the following values in "Analog readout" column:			
	Temperature	-40°C<T<80C°	29,46°C	
	O_12 Current: AO_CCEB	0,00A±0,45A	0,12A	
	Analog Ref. 2.5V	2,500V±150mV	2,49V	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3B-A.34	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3B-A.35	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.36	Verify the status of the following flags: BOARD STATUS OVT Alarm From O__1 CMD: AH_OUT1 to O_11 CMD: AH_OUT11 O_12 CMD: AO_CCEB From O__1 Status: AH_OUT1 to O_11 Status: AH_OUT11 O_12 Status: AO_CCEB O_12 Trip: AO_CCEB	 OK OK OFF OFF OFF OFF OK	 OK OK OFF OFF OFF OFF OK	
3B-A.37	Set the CAN BUS board address to 30	30	30	
3B-A.38	Select "CAN BUS I/F Side" to A	A	A	
3B-A.39	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.40	Verify the status of the following flags: BOARD STATUS OVT Alarm From O__1 CMD: AH_OUT1 to O_11 CMD: AH_OUT11 O_12 CMD: AO_CCEB From O__1 Status: AH_OUT1 to O_11 Status: AH_OUT11 O_12 Status: AO_CCEB O_12 Trip: AO_CCEB	 OK OK OFF OFF OFF OFF OK	 OK OK OFF OFF OFF OFF OK	
3B-A.41	Verify with a multimeter the voltage of the outlets: AH_OUT1 AH_OUT2 AH_OUT3 AH_OUT4 AH_OUT5 AH_OUT6 AH_OUT7 AH_OUT8 AH_OUT9 AH_OUT10 AH_OUT11 AO_CCEB	 V<5,00V V<5,00V V<5,00V V<5,00V V<5,00V V<5,00V V<5,00V V<5,00V V<5,00V V<5,00V V<5,00V V<5,00V	 0,00V 0,00V 0,00V 0,00V 0,00V 0,00V 0,00V 0,00V 0,00V 0,00V 0,00V 0,00V	
3B-A.42	Set ON in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3B-A.43	Take note of input current	21A±1A	20,4 A	
3B-A.44	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.45	Verify the status of the following flags:			

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	From O__1 CMD: AH_OUT1 to O_11 CMD: AH_OUT11	ON	ON	
	O_12 CMD: AO_CCEB	ON	ON	
	From O__1 Status: AH_OUT1 to O_11 Status: AH_OUT11	ON	ON	
	O_12 Status: AO_CCEB	ON	ON	
	O_12 Trip: AO_CCEB	OK	OK	
3B-A.46	Set the CAN BUS board address to 31	31	31	
3B-A.47	Select "CAN BUS I/F Side" to B	B	B	
3B-A.48	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.49	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	From O__1 CMD: AH_OUT1 to O_11 CMD: AH_OUT11	ON	ON	
	O_12 CMD: AO_CCEB	ON	ON	
	From O__1 Status: AH_OUT1 to O_11 Status: AH_OUT11	ON	ON	
	O_12 Status: AO_CCEB	ON	ON	
	O_12 Trip: AO_CCEB	OK	OK	
3B-A.50	Set the CAN BUS board address to 30	30	30	
3B-A.51	Select "CAN BUS I/F Side" to A	A	A	
3B-A.52	Connect on the J300 test box the multimeter	OK	OK	
3B-A.53	Set the power supply voltage in order to have 120V on PDS input (measure on test box)	120,00V±0,20V	120V	
3B-A.54	Verify with a multimeter the voltage of the outlets:			
	AH_OUT1	117,00V<V<120,00V	117,9V	
	AH_OUT2	117,00V<V<120,00V	118,0V	
	AH_OUT3	117,00V<V<120,00V	117,9V	
	AH_OUT4	117,00V<V<120,00V	118,0V	
	AH_OUT5	117,00V<V<120,00V	117,9V	
	AH_OUT6	117,00V<V<120,00V	117,9V	Measurement on the load
	AH_OUT7	117,00V<V<120,00V	117,9V	
	AH_OUT8	117,00V<V<120,00V	117,9V	
	AH_OUT9	117,00V<V<120,00V	118,0V	
	AH_OUT10	117,00V<V<120,00V	117,9V	
	AH_OUT11	117,00V<V<120,00V	117,9V	
	AO_CCEB	117,00V<V<120,00V	118,5V	
3B-A.55	Set OFF the command All Outlets ON/OFF in commanding column and click on relative "W"	OK	OK	
3B-A.56	Insert an amperometer in series with outlet 12	OK	OK	
3B-A.57	Set "ON" in the window "O_12:AO_CCEB" and push the relative "W" command	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3B-A.58	Verify from amperometer outlet 12 current absorption	3.55A±0,20A	3,54A	Iout12
3B-A.59	Push on Read All button in Analog Readout column	OK	OK	
3B-A.60	Take note of the following values in "Analog readout" column: O_12 Current: AO_CCEB	Iout12±0,45A	3,42A	CAN BUS_30
3B-A.61	Set the CAN BUS board address to 31	31	31	
3B-A.62	Select "CAN BUS I/F Side" to B	B	B	
3B-A.63	Push on Read All button in Analog Readout column	OK	OK	
3B-A.64	Take note of the following values in "Analog readout" column: O_12 Current: AO_CCEB	Iout12±0,45A	3.43A	CAN BUS_31
3B-A.65	Set "OFF" in the window "O_12:AO_CCEB" and push the relative "W" command	OK	OK	
3B-A.66	Disconnect out 2 cables	OK	OK	
3B-A.67	Connect load 2 in parallel to outlet 12	OK	OK	
3B-A.68	Set "ON" in the window "O_12:AO_CCEB" and push the relative "W" command	OK	OK	
3B-A.69	Verify from amperometer outlet 12 current absorption	6.75A±0,20A	6,73 A	Iout12
3B-A.70	Push on Read All button in Analog Readout column	OK	OK	
3B-A.71	Take note of the following values in "Analog readout" column: O_12 Current: AO_CCEB	Iout12±0,45A	6,75A	CAN BUS_31
3B-A.72	Set the CAN BUS board address to 30	30	30	
3B-A.73	Select "CAN BUS I/F Side" to A	A	A	
3B-A.74	Push on Read All button in Analog Readout column	OK	OK	
3B-A.75	Take note of the following values in "Analog readout" column: O_12 Current: AO_CCEB	Iout12±0,45A	6,71 A	CAN BUS_30
3B-A.76	Set "OFF" in the window "O_12:AO_CCEB" and push the relative "W" command	OK	OK	
3B-A.77	Disconnect outlet 5 cables	OK	OK	
3B-A.78	Connect load 5 in parallel to outlet 12 and 2	OK	OK	
3B-A.79	Set "ON" in the window "O_12:AO_CCEB" and push the relative "W" command	OK	OK	
3B-A.80	Verify from amperometer outlet 12 current absorption	9.05A±0,20A	9,04A	Iout12
3B-A.81	Push on Read All button in Analog Readout column	OK	OK	
3B-A.82	Take note of the following values in "Analog readout" column: O_12 Current: AO_CCEB	Iout12±0,45A	9,00A	CAN BUS_30
3B-A.83	Set the CAN BUS board address to 31	31	31	
3B-A.84	Select "CAN BUS I/F Side" to B	B	B	
3B-A.85	Push on Read All button in Analog Readout column	OK	OK	
3B-A.86	Take note of the following values in "Analog readout" column: O_12 Current: AO_CCEB	Iout12±0,45A	9,05A	CAN BUS_31
3B-A.87	Set "OFF" in the window "O_12:AO_CCEB" and push the relative "W" command	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3B-A.88	Set the CAN BUS board address to 30	30	30	
3B-A.89	Select "CAN BUS I/F Side" to A	A	A	
3B-A.90	Disconnect out 12 from out 2 and 5	OK	OK	
3B-A.91	Connect outlet 2 cables	OK	OK	
3B-A.92	Connect out 5 cales	OK	OK	
3B-A.93	Disconnect the amperometer	OK	OK	
3B-A.94	Connect the short circuit simulator in parallel to outlet 12	OK	OK	
3B-A.95	Set the short circuit simulator to 3ms short circuit duration	OK	OK	
3B-A.96	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 120V of a different outlet of Esem3B under test (Ch2 of oscilloscope)	OK	OK	
3B-A.97	Set ON the command All Outlets ON/OFF in commanding column and click on relative "W"	OK	OK	
3B-A.98	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.99	Verify the status of the following flags: BOARD STATUS	OK	OK	
3B-A.100	Create the short circuit	OK	OK	
3B-A.101	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.102	Verify the status of the following flags: BOARD STATUS	OK	OK	
3B-A.103	Set the short circuit simulator to 15ms short circuit duration	OK	OK	
3B-A.104	Create the short circuit	OK	OK	
3B-A.105	Make an hardcopy of oscilloscope monitor	OK	OK	Add Annex_33 in the end of document
3B-A.106	Measure in the previous figure the current limitation value	13,00A±10%	13,16A	
3B-A.107	Measure in the previous figure the current limitation time	5ms<T<10ms	6,75ms	
3B-A.108	Verify with multimeter the absence of voltage on outlet 12	0,00V<V<5,00V	0,00V	
3B-A.109	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.110	Verify the status of the following flags: BOARD STATUS OVT Alarm From O__1 Status: AH_OUT1 to O_11 Status: AH_OUT11 O_12 Status: AO_CCEB O_12 Trip: AO_CCEB	NOK OK ON ON OFF TRIP	NOK OK ON ON OFF TRIP	
3B-A.111	Set the CAN BUS board address to 31	31	31	
3B-A.112	Select "CAN BUS I/F Side" to B	B	B	
3B-A.113	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.114	Verify the status of the following flags: BOARD STATUS OVT Alarm	NOK OK ON	NOK OK ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	From O__1 Status: AH_OUT1 to O_11 Status: AH_OUT11 O_12 Status: AO_CCEB O_12 Trip: AO_CCEB	ON OFF TRIP	ON OFF TRIP	
3B-A.115	Set the CAN BUS board address to 30	30	30	
3B-A.116	Select "CAN BUS I/F Side" to A	A	A	
3B-A.117	Disconnect short circuit simulator	OK	OK	
3B-A.118	Set OFF the command O_12:AO_CCEB in commanding column and click on relative "W"	OK	OK	Protection reset
3B-A.119	Set ON the command O_12:AO_CCEB in commanding column and click on relative "W"	OK	OK	
3B-A.120	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.121	Verify the status of the following flags: BOARD STATUS O_12 Status: AO_CCEB O_12 Trip: AO_CCEB	 OK ON OK	 OK ON OK	
3B-A.122	Set the CAN BUS board address to 31	31	31	
3B-A.123	Select "CAN BUS I/F Side" to B	B	B	
3B-A.124	Click on the command READ ALL under the column Digital Readout	OK	OK	
3B-A.125	Verify the status of the following flags: BOARD STATUS O_12 Status: AO_CCEB O_12 Trip: AO_CCEB	 OK ON OK	 OK ON OK	
3B-A.126	Set the CAN BUS board address to 30	30	30	
3B-A.127	Select "CAN BUS I/F Side" to A	A	A	
3B-A.128	Set OFF the command All Outlets ON/OFF in commanding column and click on relative "W"	OK	OK	
3B-A.129	Switch OFF main power bus	OK	OK	
3B-A.130	Disconnect current probe	OK	OK	
3B-A.131	Switch OFF the "power switch "of "power switch box"	Switch OFF	Switch OFF	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS

10.3.1.5.11.1 CCS LOAD VERIFICATION

CCS.1	Connect AI_120V and AI_120V_RTN power supply signals	OK	OK	CCS load is connected only to A bus. During this test the unit is supplied from Main bus.
CCS.2	Set all the loads to 0A current absorption (external heaters included)	0A absorbtion set	0A absorbtion set	
CCS.3	Set power supply voltage to 120V	120V ± 0.2V	120V	
CCS.4	Set power supply current limitation to 27.5A	27.5A±0.5A	27,5A	
CCS.5	Insert an amperometer in serie to CCS load	OK	OK	
CCS.6	Switch ON the "power switch "of "power switch box"	OK	OK	
CCS.7	Take note of input current	1,1A±0,5A	1,1A	
CCS.8	Select PDS controller software	program open	Program open	
CCS.9	Set the CAN BUS board address to 30	30	30	
CCS.10	Select JMDC = 0	0	0	
CCS.11	Select TX = A	A	A	
CCS.12	Select RX = A	A	A	
CCS.13	Select "CAN BUS I/F Side" to A	A	A	
CCS.14	Select "PDS Side" to A	A	A	
CCS.15	Click on Run flash command	OK	OK	
CCS.16	Click on **ESEM3-B** icon	OK	OK	
CCS.17	Set OFF in All Outlets ON/OFF window and send the command	OFF	OFF	
CCS.18	Click on **ESEM3-A 1** icon	OK	OK	
CCS.19	Using the telemetry regulate the current of ESEM3-A 1 outlet 3	1,80A±100mA	1,80 A	Default ON load
CCS.20	Command ON the outlet 5 (UGPD_N)	ON	ON	
CCS.21	Using the telemetry regulate the current of ESEM3-A 1 outlet 5	1,20A ±100mA	1,20A	
CCS.22	Click on **PB2-2** icon	OK	OK	
CCS.23	Set ON to DCDC OFF/ON command and send the command	ON	ON	
CCS.24	Click on **ESEM3-A-2** icon	OK	OK	
CCS.25	Command ON the outlet 5 (MPD_N)	1,80A ±100mA	1,80A	
CCS.26	Command ON the outlet 8 (CAB_R)	0,70A±100mA	0,7A	
CCS.27	Click on **PB2-3** icon	OK	OK	
CCS.28	Set ON to DCDC OFF/ON command and send the command	ON	ON	
CCS.29	Click on **ESEM3-A-3** icon	OK	OK	
CCS.30	Command ON the outlet 8 (O_8:CAB_N)	2,50A±100mA	2,50A	
CCS.31	Click on **ESEM3-A-4** icon	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
CCS.32	Command ON the outlet 1 (JPD_R)	1,80A ±100mA	1,80A	
CCS.33	Take note of input current	3,70A±0,50A	3,70A	
CCS.34	Set ON the CCS load switch	ON	ON	
CCS.35	Take note of CCS current reading by amperometer	5,00A±0,50A	4,68A	
CCS.36	Take note of input current from main bus	8,40A±0,50A	8,40A	
CCS.37	Set OFF the CCS load switch	OFF	OFF	
CCS.38	Switch OFF the "power switch "of "power switch box"	Switch OFF	Switch OFF	
CCS.39	Disconnect amperometer	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS

10.3.1.6 SIDE A TELEMETRY VERIFICATION

10.3.1.6.1 ESEM3A CURRENT MONITORS

CM-A.1	Set all ESEM 3-A loads to 0A current absorption	OK	OK	
CM-A.2	Connect AI_120V and AI_120V_RTN power supply signals	OK	OK	
CM-A.3	Verify that all the cables of the section are connected	OK	OK	
CM-A.4	Launch the PDS controller software	Program open	Program open	
CM-A.5	Set to "FM" the window Model	OK	OK	
CM-A.6	set the CAN BUS board address to 30	30	30	
CM-A.7	select JMDC = 0	0	0	
CM-A.8	select TX = A	A	A	
CM-A.9	select RX = A	A	A	
CM-A.10	Select "CAN BUS I/F Side" to A	A	A	
CM-A.11	Select "PDS Side" to A	A	A	
CM-A.12	Set input bus voltage to 120V	120V±1V	120V	
CM-A.13	Set input bus current limitation to 27,5 A	27,5 A±1A	27,5A	
CM-A.14	Enable power supply output	enabled	enabled	
CM-A.15	Verify that green led of "power switch box" is lighted	Green led ligthed	Green led ligthed	
CM-A.16	Switch ON the "power switch "of "power switch box"	Switch ON	Switch ON	
CM-A.17	Verify that red led of "power switch box" is lighted	Red led ligthed	Red led ligthed	
CM-A.18	Take note of power supply output current	1,1A±0,5A	1,1A	
CM-A.19	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
CM-A.20	Set the CAN BUS board address to 31	31	31	
CM-A.21	Select "CAN BUS I/F Side" to B	B	B	
CM-A.22	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
CM-A.23	Click on PB2-1 button	OK	OK	Button located on left side of software window
CM-A.24	Verify that PB2-1 is ON	OK	OK	If PB2-1 is off switch it ON by remote
CM-A.25	**ESEM 3A-1 verification**			
CM-A.26	Click on ESEM3A-1 button	OK	OK	Button located on left side of software window
CM-A.27	Verify that loads are set to 0A current absorption	OK	OK	

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UUT DATA : **Model** **PFM** **Item** **AMS02 POWER DISTRIBUTION SYSTEM** **C.I.** **PDS 18** **S/N** **FM01**

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
CM-A.28	Press button "READ" to verify all board status	Command execute OK	Command execute OK	
CM-A.29	Verify the status of the flags indicated on "Sta" column. All flags must be "OK"	OK	OK	Click on READ command under Sta column This column resumes the status of al the boards
CM-A.30	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
CM-A.31	Fill the table at the end of paragraph using a multimeter in series to relevant load to set the load	OK	OK	
CM-A.32	To read telemetries change from CAN BUS 30 to CAN BUS 31 using the following parameters: *CAN BUS 30 verification* Set the CAN BUS board address to 30 Select "CAN BUS I/F Side" to A *CAN BUS 31 verification* Set the CAN BUS board address to 31 Select "CAN BUS I/F Side" to B	OK	OK	
CM-A.33	Updating the relevant table at the end of paragraph verify that Iload-Itlm is lower than 0,225A	OK (Itlm±0,225 A)	OK	Verify that all telemetries are in line with tolerance
CM-A.34	Set outlet 1 to 0A current absorption	OK	OK	
CM-A.35	Disconnect the amperometer	OK	OK	
CM-A.36	Reconnect load	OK	OK	Load remains set to 0A current absorption
CM-A.37	Repeat the last 6 steps for outlet 2 , 3 , 4 , 5, 6, 7, 8	OK	OK	For outlet 8 current setting are different (see table)
CM-A.38	Click on PB2-2 button	OK	OK	Button located on left side of software window
CM-A.39	Set ON on DCDC OFF/ON command window and send the command	OK	OK	Power cell ON
CM-A.40	**ESEM 3A-2 verification**			
CM-A.41	Click on ESEM3A-2 button	OK	OK	Button located on left side of software window
CM-A.42	Verify that loads are set to 0A current absorption	OK	OK	
CM-A.43	Press button "READ" to verify all board status	Command execute OK	Command execute OK	
CM-A.44	Verify the status of the flags indicated on "Sta" column. All flags must be "OK"	OK	OK	Click on READ command under Sta column This column resumes the status of al the boards
CM-A.45	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
CM-A.46	Fill the table at the end of paragraph using a multimeter in series to relevant load to set the load	OK	OK	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
CM-A.47	To read telemetries change from CAN BUS 30 to CAN BUS 31 using the following parameters: *CAN BUS 30 verification* Set the CAN BUS board address to 30 Select "CAN BUS I/F Side" to A *CAN BUS 31 verification* Set the CAN BUS board address to 31 Select "CAN BUS I/F Side" to B	OK	OK	
CM-A.48	Using the table at the end of paragraph verify that Iload-Itlm is lower than 0,225A	OK (Itlm±0,225 A)	OK	Verify that all telemetries are in line with tolerance
CM-A.49	Set outlet 1 to 0A current absorption	OK	OK	
CM-A.50	Disconnect the amperometer	OK	OK	
CM-A.51	Reconnect load	OK	OK	Load remains set to 0A current absorption
CM-A.52	Repeat the last 6 steps for outlet 2 , 3 , 4 , 5, 6, 7, 8	OK	OK	For outlet 8 current setting are different (see table)
CM-A.53	Click on PB2-3 button	OK	OK	Button located on left side of software window
CM-A.54	Set 0 on DCDC OFF/ON command window and send the command	OK	OK	Power cell ON
CM-A.55	**ESEM 3A-3 verification**			
CM-A.56	Click on ESEM3A-3 button	OK	OK	Button located on left side of software window
CM-A.57	Verify that loads are set to 0A current absorption	OK	OK	
CM-A.58	Press button "READ" to verify all board status	Command execute OK	Command execute OK	
CM-A.59	Verify the status of the flags indicated on "Sta" column. All flags must be "OK"	OK	OK	Click on READ command under Sta column This column resumes the status of al the boards
CM-A.60	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
CM-A.61	Fill the table at the end of paragraph using a multimeter in series to relevant load to set the load	OK	OK	
CM-A.62	To read telemetries change from CAN BUS 30 to CAN BUS 31 using the following parameters: *CAN BUS 30 verification* Set the CAN BUS board address to 30 Select "CAN BUS I/F Side" to A *CAN BUS 31 verification* Set the CAN BUS board address to 31 Select "CAN BUS I/F Side" to B	OK	OK	
CM-A.63	Using the table at the end of paragraph verify that Iload-Itlm is lower than 0,225A	OK (Itlm±0,225 A)	OK	Verify that all telemetries are in line with tolerance

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
CM-A.64	Set outlet 1 to 0A current absorption	OK	OK	
CM-A.65	Disconnect the amperometer	OK	OK	
CM-A.66	Reconnect load	OK	OK	Load remains set to 0A current absorption
CM-A.67	Repeat the last 6 steps for outlet 2 , 3 , 4 , 5, 6, 7, 8	OK	OK	For outlet 8 current setting are different (see table)
CM-A.68	Click on PB2-4 button	OK	OK	Button located on left side of software window
CM-A.69	Verify that PB2-4 is ON	OK	OK	If PB2-4 is off switch it ON by remote
CM-A.70	**ESEM 3A-4 verification**			
CM-A.71	Click on ESEM3A-4 button	OK	OK	Button located on left side of software window
CM-A.72	Verify that loads are set to 0A current absorption	OK	OK	
CM-A.73	Press button "READ" to verify all board status	Command execute OK	Command execute OK	
CM-A.74	Verify the status of the flags indicated on "Sta" column. All flags must be "OK"	OK	OK	Click on READ command under Sta column This column resumes the status of al the boards
CM-A.75	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
CM-A.76	Fill the table at the end of paragraph using a multimeter in series to relevant load to set the load	OK	OK	
CM-A.77	To read telemetries change from CAN BUS 30 to CAN BUS 31 using the following parameters: *CAN BUS 30 verification* Set the CAN BUS board address to 30 Select "CAN BUS I/F Side" to A *CAN BUS 31 verification* Set the CAN BUS board address to 31 Select "CAN BUS I/F Side" to B	OK	OK	
CM-A.78	Using the table at the end of paragraph verify that Iload-Itlm is lower than 0,225A	OK (Itlm±0,225 A)	OK	Verify that all telemetries are in line with tolerance
CM-A.79	Set outlet 1 to 0A current absorption	OK	OK	
CM-A.80	Disconnect the amperometer	OK	OK	
CM-A.81	Reconnect load	OK	OK	Load remains set to 0A current absorption
CM-A.82	Repeat the last 6 steps for outlet 2 , 3 , 4 , 5, 6, 7, 8	OK	OK	For outlet 8 current setting are different (see table)
CM-A.83	Switch OFF the "power switch "of "power switch box"	Switch OFF	Switch OFF	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS

Side A ESEM 3-A-1 current monitors

	OUT 1		OUT 2		OUT 3		OUT 4		OUT 5		OUT 6		OUT 7		OUT 8	
	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31
Iload 0A [A]	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Itel 0A [A]	-0,025	-0,01	-0,016	-0,020	-0,005	-0,001	0,000	0,000	-0,005	0,000	-0,003	-0,010	0,002	-0,004	0,030	-0,020
Iload 0A - Itel 0A < ±0,225A (OK / NOT OK)	0,025	0,010	0,016	0,020	0,005	0,001	0,000	0,000	0,005	0,000	0,003	0,010	-0,002	0,004	-0,030	0,020
Iload 3A [A] Iload 5A [A] for outlet8	2,998	3,000	3,000	3,042	3,003	3,022	3,005	3,010	3,001	2,999	2,999	3,003	3,000	3,005	5,002	5,002
Itel 3A [A] Itel 5A [A] for outlet8	2,994	2,990	3,004	3,040	3,018	3,010	3,002	2,990	2,989	2,980	3,002	2,996	2,980	2,994	4,980	4,990
Iload 3A - Itel 3A < ±0,225A (OK / NOT OK) Iload 5A - Itel 5A < ±0,225A (OK / NOT OK) for outlet 8	0,004	0,010	-0,004	0,002	-0,015	0,012	0,003	0,020	0,012	0,019	-0,003	0,007	0,020	0,011	0,022	0,012
Iload 5A [A] Iload 10A [A] for outlet8	5,000	5,020	5,001	5,003	5,002	5,000	4,998	5,018	5,000	5,005	5,000	5,016	5,002	5,006	10,002	10,01
Itel 5A [A] Iload 10A [A] for outlet8	4,980	4,980	5,012	4,990	5,010	4,990	4,980	5,010	4,998	4,990	5,020	5,011	4,992	5,015	10,03	9,99
Iload 5A - Itel 5A < ±0,225A (OK / NOT OK) Iload 10A - Itel 10A < ±0,225A (OK / NOT OK) for outlet 8	0,020	0,040	-0,011	0,013	-0,008	0,010	0,018	0,008	0,002	0,015	-0,020	0,005	0,010	-0,009	-0,028	0,020

Tab. 4: Side A ESEM 3-A-1 current monitors

DATE: 16.06.09	TEST CONDUCTOR	QA	CUSTOMER

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS

Side A ESEM 3-A-2 current monitors

	OUT 1		OUT 2		OUT 3		OUT 4		OUT 5		OUT 6		OUT 7		OUT 8	
	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31
Iload 0A [A]	0,000	0,000	0,000	0,000	0,000	0,000	0,039	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Itel 0A [A]	0,002	0,020	0,020	0,006	0,010	0,000	0,037	-0,010	0,014	-0,011	-0,060	0,023	0,010	0,022	0,035	0,030
Iload 0A - Itel 0A < ±0,225A (OK / NOT OK)	-0,002	-0,020	-0,020	-0,006	-0,010	0,000	0,002	0,010	-0,014	0,011	0,060	-0,023	-0,010	-0,022	-0,035	-0,030
Iload 3A [A] Iload 5A [A] for outlet8	3,002	3,020	3,004	3,000	3,001	3,001	3,000	3,000	3,004	2,999	3,002	3,020	2,996	3,006	5,002	5,010
Itel 3A [A] Itel 5A [A] for outlet8	2,994	3,022	2,997	2,990	3,030	2,999	3,027	3,010	2,987	3,000	3,015	3,030	2,990	3,012	5,030	5,050
Iload 3A - Itel 3A < ±0,225A (OK / NOT OK) Iload 5A - Itel 5A < ±0,225A (OK / NOT OK) for outlet 8	0,008	-0,002	0,007	0,010	-0,029	0,002	-0,027	-0,010	0,017	-0,001	-0,013	-0,010	0,006	-0,006	-0,028	-0,040
Iload 5A [A] Iload 10A [A] for outlet8	5,000	5,006	5,000	5,009	5,003	5,000	5,002	5,005	5,000	5,004	5,000	5,000	5,000	5,018	9,990	10,00
Itel 5A [A] Iload 10A [A] for outlet8	5,020	5,002	4,997	4,980	5,025	4,987	5,035	5,015	4,998	5,000	5,030	5,030	4,985	5,020	10,000	9,99
Iload 5A - Itel 5A < ±0,225A (OK / NOT OK) Iload 10A - Itel 10A < ±0,225A (OK / NOT OK) for outlet 8	-0,020	0,004	0,003	0,029	-0,022	0,013	-0,033	-0,010	0,002	0,004	-0,030	-0,030	0,015	-0,002	-0,010	0,010

Tab. 5: Side A ESEM 3-A-2 current monitors

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS

Side A ESEM 3-A-3 current monitors

	OUT 1		OUT 2		OUT 3		OUT 4		OUT 5		OUT 6		OUT 7		OUT 8	
	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31
Iload 0A [A]	0,000	0,000	0,000	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,007	0,000	0,000	0,000
Itel 0A [A]	0,085	0,030	0,070	0,010	0,060	0,022	-0,020	0,010	-0,005	0,003	0,086	0,010	-0,012	-0,010	0,020	-0,020
Iload 0A - Itel 0A < ±0,225A (OK / NOT OK)	-0,085	-0,030	-0,070	-0,010	-0,059	-0,022	0,020	-0,010	0,005	-0,003	-0,086	-0,010	0,019	0,010	-0,020	0,020
Iload 3A [A] Iload 5A [A] for outlet8	3,000	3,010	3,002	3,005	2,999	3,003	3,003	3,000	3,001	2,999	3,005	2,995	2,994	3,007	5,006	5,003
Itel 3A [A] Itel 5A [A] for outlet8	3,050	2,995	3,010	3,015	3,080	2,998	3,070	3,010	2,995	3,003	3,050	3,020	3,020	2,993	4,999	4,985
Iload 3A - Itel 3A < ±0,225A (OK / NOT OK) Iload 5A - Itel 5A < ±0,225A (OK / NOT OK) for outlet 8	-0,050	0,015	-0,008	-0,010	-0,081	0,005	-0,067	-0,010	0,006	-0,004	-0,045	-0,025	-0,026	0,014	0,007	0,018
Iload 5A [A] Iload 10A [A] for outlet8	5,002	5,000	4,999	4,996	4,999	5,004	4,998	5,003	5,002	4,996	4,999	5,011	5,005	5,064	9,990	9,998
Itel 5A [A] Iload 10A [A] for outlet8	4,987	4,997	5,020	5,010	4,990	4,987	5,034	5,020	4,990	5,015	5,058	5,020	5,030	5,073	10,000	10,00
Iload 5A - Itel 5A < ±0,225A (OK / NOT OK) Iload 10A - Itel 10A < ±0,225A (OK / NOT OK) for outlet 8	0,015	0,003	-0,021	-0,014	0,009	0,017	-0,036	-0,017	0,012	-0,019	-0,059	-0,009	-0,025	-0,009	-0,010	-0,002

Tab. 6: Side A ESEM 3-A-3 current monitors

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS

Side A ESEM 3-A-4 current monitors

	OUT 1		OUT 2		OUT 3		OUT 4		OUT 5		OUT 6		OUT 7		OUT 8	
	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31
Iload 0A [A]	0,000	0,000	0,000	0,000	0,016	0,000	0,005	0,000	0,001	0,000	0,000	0,000	0,000	0,000	0,001	0,000
Itel 0A [A]	0,040	0,020	-0,027	0,050	0,042	0,030	0,049	0,010	0,080	0,020	0,050	0,021	0,070	0,020	-0,088	0,030
Iload 0A - Itel 0A < ±0,225A (OK / NOT OK)	-0,040	-0,020	0,027	-0,050	-0,026	-0,030	-0,044	-0,010	-0,079	-0,020	-0,050	-0,021	-0,070	-0,020	0,089	-0,030
Iload 3A [A] Iload 5A [A] for outlet8	3,000	3,004	3,002	3,005	3,002	3,006	3,001	3,012	3,002	3,010	3,001	3,019	2,999	3,002	5,006	5,010
Itel 3A [A] Itel 5A [A] for outlet8	3,043	2,990	3,076	2,990	3,013	2,995	3,113	2,980	3,139	3,017	2,990	3,030	3,050	2,997	4,990	5,000
Iload 3A - Itel 3A < ±0,225A (OK / NOT OK) Iload 5A - Itel 5A < ±0,225A (OK / NOT OK) for outlet 8	-0,043	0,014	-0,074	0,015	-0,011	0,011	-0,112	0,032	-0,137	-0,007	0,011	-0,011	-0,051	0,005	0,016	0,010
Iload 5A [A] Iload 10A [A] for outlet8	5,001	5,005	5,001	5,006	5,005	5,007	5,000	5,006	5,000	5,001	5,007	4,998	4,999	5,010	10,01	10,00
Itel 5A [A] Iload 10A [A] for outlet8	5,021	4,997	5,097	4,980	4,946	5,010	5,029	4,997	5,020	5,025	4,990	5,020	5,107	5,010	10,05	9,98
Iload 5A - Itel 5A < ±0,225A (OK / NOT OK) Iload 10A - Itel 10A < ±0,225A (OK / NOT OK) for outlet 8	-0,020	0,008	-0,096	0,026	0,059	-0,003	-0,029	0,009	-0,020	-0,024	0,017	-0,022	-0,108	0,000	-0,040	0,020

Tab. 7: Side A ESEM 3-A-4 current monitors

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.1.6.2 INPUT STAGE CURRENT MONITOR

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
IBUS-A.1	Connect all the ESEM3B loads. The following column resumes the currents (with Main bus equal to 120V):	OK	OK	There is no need to check the current absorption of the loads. CCS load not connected
IBUS-A.2	Set all the loads of the other boards to 0A	OK	OK	
IBUS-A.3	Set power supply voltage to 120V	120V ± 0.2V	120V	
IBUS-A.4	Set power supply current limitation to 27.5A	27.5A±0.5A	27,5 A	
IBUS-A.5	Switch ON the **"power switch "of "power switch box"**	OK	OK	
IBUS-A.6	Take note of input current	7,9A±0,5A	7,94 A	
IBUS-A.7	Select PDS controller software	program open	program open	
IBUS-A.8	Set the CAN BUS board address to 30	30	30	
IBUS-A.9	Select JMDC = 0	0	0	
IBUS-A.10	Select TX = A	A	A	
IBUS-A.11	Select RX = A	A	A	
IBUS-A.12	Select "CAN BUS I/F Side" to A	A	A	
IBUS-A.13	Select "PDS Side" to A	A	A	
IBUS-A.14	Click on Run flash command	OK	OK	
IBUS-A.15	Set the CAN BUS board address to 31	31	31	
IBUS-A.16	Select "CAN BUS I/F Side" to B	B	B	
IBUS-A.17	Click on Run flash command	OK	OK	
IBUS-A.18	Set the CAN BUS board address to 30	30	30	

OUTLET	CURRENT [A] SET
1	1,200±100mA
2	3,200±100mA
3	1,200±100mA
4	1,200±100mA
5	2,400±100mA
6	1,200±100mA
7	1,200±100mA
8	1,200±100mA
9	1,200±100mA
10	1,200±100mA
11	1,200±100mA
12	3,520±100mA

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 19 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
IBUS-A.19	Select "CAN BUS I/F Side" to A	A	A	
IBUS-A.20	Click on ESEM3-B button	OK	OK	Button located on left side of PDS controller software window
IBUS-A.21	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	O__1 CMD: AH_OUT1	ON	ON	
	O__2 CMD: AH_OUT2	ON	ON	
	O__3 CMD: AH_OUT3	ON	ON	
	O__4 CMD: AH_OUT4	OFF	OFF	
	O__5 CMD: AH_OUT5	OFF	OFF	
	O__6 CMD: AH_OUT6	ON	ON	
	O__7 CMD: AH_OUT7	OFF	OFF	
	O__8 CMD: AH_OUT8	OFF	OFF	
	O__9 CMD: AH_OUT9	OFF	OFF	
	O_10 CMD: AH_OUT10	OFF	OFF	
	O_11 CMD: AH_OUT11	OFF	OFF	
	O_12 CMD: AO_CCEB	OFF	OFF	
	O__1 Status: AH_OUT1	ON	ON	
	O__2 Status: AH_OUT2	ON	ON	
	O__3 Status: AH_OUT3	ON	ON	
	O__4 Status: AH_OUT4	OFF	OFF	
	O__5 Status : AH_OUT5	OFF	OFF	
	O__6 Status: AH_OUT6	ON	ON	
	O__7 Status: AH_OUT7	OFF	OFF	
	O__8 Status: AH_OUT8	OFF	OFF	
	O__9 Status: AH_OUT9	OFF	OFF	
	O_10 Status: AH_OUT10	OFF	OFF	
	O_11 Status: AH_OUT11	OFF	OFF	
	O_12 Status: AO_CCEB	OFF	OFF	
	O_12 Trip: AO_CCEB	OK	OK	
IBUS-A.22	Push on Read All button in Analog Readout column	OK	OK	
IBUS-A.23	Take note of the following values in "Analog readout" column:			
	Temperature	-40°C<T<80C°	32,37°C	
	O_12 Current: AO_CCEB	0,00A±0,45A	0,112 A	
	Analog Ref. 2.5V	2,500V±150mV	2,497V	
IBUS-A.24	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
IBUS-A.25	Take note of input current	1.1A±0.2A	1,1 A	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
IBUS-A.26	Click on the command READ ALL under the column Digital Readout	OK	OK	
IBUS-A.27	Verify the status of the following flags: BOARD STATUS OVT Alarm From O__1 CMD: AH_OUT1 to O_11 CMD: AH_OUT11 O_12 CMD: AO_CCEB From O__1 Status: AH_OUT1 to O_11 Status: AH_OUT11 O_12 Status: AO_CCEB O_12 Trip: AO_CCEB	 OK OK OFF OFF OFF OFF OK	 OK OK OFF OFF OFF OFF OK	
IBUS-A.28	Fill the table at the end of paragraph	OK	OK	
IBUS-A.29	To switch ON the loads Set "ON" in the window "O_x: AH_OUTx" and push the relative "W" command	OK	OK	
IBUS-A.30	To read telemetries change from CAN BUS 30 to CAN BUS 31 using the following parameters: *CAN BUS 30 verification* Set the CAN BUS board address to 30 Select "CAN BUS I/F Side" to A *CAN BUS 31 verification* Set the CAN BUS board address to 31 Select "CAN BUS I/F Side" to B	OK	OK	
IBUS-A.31	Using the table at the end of paragraph verify that Iload-Itlm is lower than 7,6A	OK	OK	Verify that all telemetries are in line with tolerance 20% F.S. see RFW PDS-WV-CGS-002
IBUS-A.32	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
IBUS-A.33	Switch OFF the "power switch "of "power switch box"	Switch OFF	OFF	
IBUS-A.34	Disconnect all Loads	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS

Side A Input Stage - current monitors

	INPUT STAGE	
	CAN BUS 30	CAN BUS 31
Iload ~1,1A [A] – Loads OFF	1,35	1,35
Itlm ~1,1A [A] – Loads OFF	0,38	0,68
Itlm - Iload < 7,6A	-0,970	-0,670
Iload ~4,7A [A] – Switch ON out 1, 5	4,77	4,77
Itlm ~4,7A [A] – Switch ON out 1, 5	4,45	4,90
Itlm - Iload < 7,6A	-0,320	0,130
Iload ~10,3A [A] – Switch ON out 2, 3 ,4	10,07	10,07
Itlm ~10,3A [A] – Switch ON out 2, 3, 4	10,2	10,8
Itlm - Iload < 7,6A	0,130	0,730
Iload ~15,1A [A] – Switch ON out 6, 7, 8 ,9	14,6	14,6
Itlm ~15,1A [A] – Switch ON out 6, 7, 8 ,9	14,80	15,6
Itlm - Iload < 7,6A	0,200	1,000
Iload ~21,1A [A] – Switch ON out 10, 11, 12	20,17	20,17
Itlm ~21,1A [A] – Switch ON out 10, 11, 12	20,2	21,1
Itlm - Iload < 7,6A	0,030	0,930

Tab. 8: Side A Input Stage current monitors

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10.3.1.6.3 INPUT STAGE – ESEM1A TELEMETRY

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
VBUS-A.1	Connect main power supply between AI_120V (positive) and AI_120V_RTN (negative)	J100 connected	OK	
VBUS-A.2	Set Power supply alim to 120V	120,00V±1,00V	120V	
VBUS-A.3	Set output current limitation to 3A	3A±0,5A	3 A	
VBUS-A.4	Enable power supply output	enabled	Enable	
VBUS-A.5	Verify that green led of **"power switch box"** is lighted	Green led ligthed	Green	
VBUS-A.6	Switch ON the **"power switch "of "power switch box"**	Switch ON	ON	
VBUS-A.7	Verify that red led of **"power switch box"** is lighted	Red led ligthed	Red	
VBUS-A.8	Verify the current absorption from Main Bus	1,10A±0,20A	1,1 A	Note: this current can be read from power supply display or amperometer. In case of power supply reading, verify the correctness of measurements.
VBUS-A.9	Select PDS controller software	program open	program open	
VBUS-A.10	Set the CAN BUS board address to 30	30	30	
VBUS-A.11	Select JMDC = 0	0	0	
VBUS-A.12	Select TX = A	A	A	
VBUS-A.13	Select RX = A	A	A	
VBUS-A.14	Select "CAN BUS I/F Side" to A	A	A	
VBUS-A.15	Select "PDS Side" to A	A	A	
VBUS-A.16	Click on Run flash command	OK	OK	
VBUS-A.17	Set the CAN BUS board address to 31	31	31	
VBUS-A.18	Select "CAN BUS I/F Side" to B	B	B	
VBUS-A.19	Click on Run flash command	OK	OK	
VBUS-A.20	Set the CAN BUS board address to 30	30	30	
VBUS-A.21	Select "CAN BUS I/F Side" to A	A	A	
VBUS-A.22	Fill the table at the end of paragraph	OK	OK	
VBUS-A.23	Connect a multimeter between PIN "bypass thermal interlock" (positive) and "PRI_GND"(negative) on side A of the J300 test box	OK	OK	
VBUS-A.24	To set the Voltage value use the multimeter connected on J300 test box	OK	OK	
VBUS-A.25	To read the telemetry of the ESEM1A board *Click on ESEM1A button and Press button "READ"*	OK	OK	Button located on left side of software window
VBUS-A.26	To read the telemetry of the INPUT STAGE *Click on button "READ" relevant to INPUT STAGE*	OK	OK	Button located on left side of software window

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
VBUS-A.27	To read telemetries change from CAN BUS 30 to CAN BUS 31 using the following parameters: *CAN BUS 30 verification* Set the CAN BUS board address to 30 Select "CAN BUS I/F Side" to A *CAN BUS 31 verification* Set the CAN BUS board address to 31 Select "CAN BUS I/F Side" to B	OK	OK	
VBUS-A.28	Using the table at the end of paragraph verify that Iload-Itlm is lower than 9.5V	OK	OK	Verify that all telemetries are in line with tolerance 5% F.S.
VBUS-A.29	Set Power supply alim to 120V	120,00V±1,00V	120V	
VBUS-A.30	Switch OFF the "power switch "of "power switch box"	Switch OFF	OFF	
VBUS-A.31	Switch OFF main power bus	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS

Side A Input Stage – Esem1A telemetry

	INPUT STAGE		ESEM1A	
	CAN BUS 30	CAN BUS 31	CAN BUS 30	CAN BUS 31
Vbus 90V [V]	89,9	89,9	89,9	89,9
Vtel 90 [V]	91,50	95,50	88,5	89,0
Vtlm - Vbus < 9,5V	1,600	5,600	-1,400	-0,900
Vbus 110V [V]	110,3	110,3	110,3	110,3
Vtel 110 [V]	110,8	115,4	109,8	110,5
Vtlm - Vbus < 9,5V	0,500	5,100	-0,500	0,200
Vbus 120V [V]	120,4	120,4	120,4	120,4
Vtel 120 [V]	120,4	124,6	120,3	121,0
Vtlm - Vbus < 9,5V	0,000	4,200	-0,100	0,600
Vbus 130V [V]	130,5	130,5	130,5	130,5
Vtel 130 [V]	130,5	134,6	133,3	129,0
Vtlm - Vbus < 9,5V	0,000	4,100	2,800	-1,500
Vbus 145V [V]	145,6	145,6	145,6	145,6
Vtel 145 [V]	145,7	145,4	145,5	145,5
Vtlm - Vbus < 9,5V	0,100	-0,200	-0,100	-0,100

Tab. 9: Side A Input Stage - ESEM 1-A telemetry

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10.3.1.7 POWER VIDEO GRAPPLE FIXTURE 1 POWER CONSUMPTION VERIFICATION (1P)

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
PVGF-A.1	Connect main power supply between 1P_120V (positive) and 1P_120V_RTN (negative)	Connected	Connected	
PVGF-A.2	Connect a Current Probe to the hot input power cable	Connected	Connected	
PVGF-A.3	Connect all the 7 PDS heaters lines: PDS HEATERS A Name / Ohm Heater_1 124,3 Heater_2 124,9 Heater_3 124,6 Heater_4 124,8 Heater_5 124,7 Heater_6 124,5 Heater_7 124,7	Connected	connected	The Heaters 1,2,3,6 are built in the relevant rack
PVGF-A.4	Connect the ESEM3B-1 output lines as follow: ESEM3B-1 Name / Status / Ohm Out 1 AH_(CRYO2) / ON / 100,90 Out 2 (AH_RAMMAIN) / ON / 37,50 Out 3 (AH_TRD) / ON / 101,20 Out 6 (AH_ZEN1) / ON / 100,90	Connected	Connected	The Heaters 1,2,3,6 are built in the relevant rack
PVGF-A.5	Connect an external passive load set to 184,0 Ohm in parallel to Out 2 line.	Connected	Connected 186,4 ohm	On Out 2 is mounted a Fuse of 7,5A
PVGF-A.6	Set Power supply alim to 126V	126,00V±1,00V	126V	
PVGF-A.7	Set output current limitation to 17.5A	17,5±0,5V	17,5 A	
PVGF-A.8	Select PDS controller software	OPEN	OPEN	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
PVGF-A.9	Set to "FM" the window Model	FM	FM	
PVGF-A.10	Set the CAN BUS board address to 30	30	30	
PVGF-A.11	Select "CAN BUS I/F Side" to A	A	A	
PVGF-A.12	Select "PDS Side" to A	A	A	
PVGF-A.13	select JMDC = 0	0	0	
PVGF-A.14	select TX = A	A	A	
PVGF-A.15	select RX = A	A	A	
PVGF-A.16	Enable power supply output	Enabled	Enable	
PVGF-A.17	Verify that green led of **"power switch box"** is lighted	Green led ligthed	Green	
PVGF-A.18	Switch ON the **"power switch "of "power switch box"**	Switch ON	ON	
PVGF-A.19	Verify that red led of **"power switch box"** is lighted	Red led ligthed	red	
PVGF-A.20	Measure the input current with current probe	15,5 ±0,5V	15V	
PVGF-A.21	Press button "RUN Flash" and verify on the command status window	Command execute OK	Ok	
PVGF-A.22	Press button "READ" to verify all board status	Command execute OK	Ok	
PVGF-A.23	Set the following loads: **PB2-1 +ESEM3A - 1** JPD_N ON 1,8A **PB2-4 +ESEM3A - 4** JPD_R ON 1,8A	1,8A ±0,1V 1,8A ±0,1V	1,8 A 1,8 A	
PVGF-A.24	Measure the PDS input voltage: connect a multimeter between PIN "bypass thermal interlock" (positive) and "PRI_GND" (negative) on side A of the J300 test box	124V±1,00V	123,3 V	Power bus display = 126,1V

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
PVGF-A.25	Measure (using a multimeter) the voltage at load level	Depending on cable lenght	123,0V 123,0V 123,0V 123,0V 123,0V 123,0V 123,0V 121,8V 121,7V 121,8V 121,8V 27,43V 27,56V	
PVGF-A.26	Verify the current absorption from Main Bus reading the current probe	Ibus ≤ 17,5 A	16,24 A	
PVGF-A.27	Switch OFF all ESEM3-B outlets	OK	OK	
PVGF-A.28	Switch OFF main power bus	OK	OK	
PVGF-A.29	Disconnect all the Heaters	OK	OK	
PVGF-A.30	Disconnect ESEM3-B loads	OK	OK	

PDS HEATERS A	
Name	Ohm
Heater_1	124,3
Heater_2	124,9
Heater_3	124,6
Heater_4	124,8
Heater_5	124,7
Heater_6	124,5
Heater_7	124,7

ESEM3B-1		
Name	Status	Ohm
Out 1 AH_(CRYO2)	ON	100,90
Out 2 (AH_RAMMAIN)	ON	37,50
Out 3 (AH_TRD)	ON	101,20
Out 6 (AH_ZEN1)	ON	100,90

PB2-1 +ESEM3A - 1		
JPD_N	ON	1,8A
PB2-4 +ESEM3A - 4		
JPD_R	ON	1,8A

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10.3.1.8 DISSIPATION MEASUREMENT

10.3.1.8.1 AMS02-PDS DISSIPATION 120V

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.1	Connect AI_120V and AI_120V_RTN power supply signals	OK	OK	
DISS-A.2	Verify that all the cables of the section are connected with the exception of all 120V loads	OK	OK	
DISS-A.3	Launch the PDS controller software	Program open	Program open	
DISS-A.4	Set to "FM" the window Model	OK	OK	
DISS-A.5	Select "PDS Side" to A	A	A	
DISS-A.6	Set the CAN BUS board address to 30	30	30	
DISS-A.7	Select JMDC = 0	0	0	
DISS-A.8	Select TX = A	A	A	
DISS-A.9	Select RX = A	A	A	
DISS-A.10	Select "CAN BUS I/F Side" to A	A	A	
DISS-A.11	Set input bus voltage to 122,5V	122,5V±0,2V	122,5V	In order to have 120V at nominal configuration
DISS-A.12	Set input bus current limitation to 27,5A	27,5A±1A	27,5A	For this measure all loads will be connected to nominal value
DISS-A.13	Enable power supply output	enabled	enabled	
DISS-A.14	Verify that green led of "power switch box" is lighted	Green led ligthed	Green led ligthed	
DISS-A.15	Switch ON the "power switch "of "power switch box"	Switch ON	Switch ON	
DISS-A.16	Verify that red led of "power switch box" is lighted	Red led ligthed	Red led ligthed	
DISS-A.17	Take note of power supply output current	1,1A±0,5A	1,1A	
DISS-A.18	Click on Run flash button	OK	OK	
DISS-A.19	Click ON **PB2-1** icon	OK	OK	
DISS-A.20	Set ON in DCDC OFF/ON window and send the command	OK	OK	
DISS-A.21	Click ON **ESEM3-A-1** icon	OK	OK	
DISS-A.22	Command ON the following outlets: OUT1 OUT2 OUT3 OUT4 OUT5 OUT7	ON	ON	
DISS-A.23	Using board telemetries regulate the current of following outputs:			Set active loads to constant current mode.

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	Iout1-1 Iout2-1 Iout3-1 Iout4-1 Iout5-1 Iout7-1	2,90A±100mA 2,90A±100mA 1,80A±100mA 1,50A±100mA 1,20A±100mA 2,90A±100mA	2,90A 2,95A 1,85A 1,53A 1,22A 2,92A	Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.24	Click ON **PB2-2** icon	OK	OK	
DISS-A.25	Set ON in DCDC OFF/ON window and send the command	OK	OK	
DISS-A.26	Click ON **ESEM3-A-2** icon	OK	OK	
DISS-A.27	Command ON the following outlets: OUT1 OUT2 OUT3 OUT4 OUT5 OUT6 OUT7 OUT8	ON	ON	
DISS-A.28	Using board telemetries regulate the current of following outputs: Iout1-2 Iout2-2 Iout3-2 Iout4-2 Iout5-2 Iout6-2 Iout7-2 Iout8-2	3,40A±100mA 2,90A±100mA 2,90A±100mA 1,50A±100mA 1,80A±100mA 1,60A±100mA 1,50A±100mA 0,70A±100mA	3,45A 2,99A 2,99A 1,54A 1,70A 1,60A 1,60A 0,80A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.29	Click ON **PB2-3** icon	OK	OK	
DISS-A.30	Set ON in DCDC OFF/ON window and send the command	OK	OK	
DISS-A.31	Click ON **ESEM3-A-3** icon	OK	OK	
DISS-A.32	Command ON the following outlets: OUT1 OUT2 OUT3 OUT8	ON	ON	
DISS-A.33	Using board telemetries regulate the current of following outputs: Iout1-3 Iout2-3	2,9A±100mA 2,9A±100mA 3,4A±100mA	2,95A 2,99A 3,49A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	Iout3-3 Iout8-3	2,6 A±100mA	2,69A	correct.
DISS-A.34	Click ON **PB2-4** icon	OK	OK	
DISS-A.35	Set ON in DCDC OFF/ON window and send the command	OK	OK	
DISS-A.36	Click ON **ESEM3-A-4** icon	OK	OK	
DISS-A.37	Command ON the following outlets: OUT5 OUT6 OUT7 OUT8	ON	ON	
DISS-A.38	Using board telemetries regulate the current of following outputs: Iout5-4 Iout6-4 Iout7-4 Iout8-4	1,6A±100mA 1,5A±100mA 2,9A±100mA 4,8A±100mA	1,65A 1,6A 2,98A 4,86A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.39	Click ON **ESEM 3-B** icon	OK	OK	
DISS-A.40	Insert an Amperometer in series to outlet 12	OK	OK	
DISS-A.41	Command ON the following outlets: OUT12	ON	ON	
DISS-A.42	Using board telemetries regulate the current of following outputs: Iout12	3,40A±100mA	3,47A	Iout12 - Nominal value 3,80A @ 120V
DISS-A.43	Using a multimeter measure the output voltage of **ESEM3-B**: OUT12	117<Vout12<120V	119,80V	
DISS-A.44	Calculate ESEM3-B output power: Pout_E3B = (Vout12* Iout12)	Pout_E3B	415,71W	
DISS-A.45	Push the command "Read input" located in the bottom left of the software window	OK	OK	
DISS-A.46	Take note of the value "I" indicated in Input Stage A window	16,00A<Iin<20,00A	17,75A	
DISS-A.47	Measure the input current using current probe	16,00A<Iin<20,00A	17,50A	Iin
DISS-A.48	Measure the Input voltage between PIN "bypass thermal interlock" (positive) and "PRI_GND"(negative) on side A of the J300 test box	120,0V±0,5V	120,4V	Vin
DISS-A.49	Calculate Pin=Vin*Iin	2100W±50W	2107,35W	Pin

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.50	Calculate ESEM3-A-1 output power filling the table below:	Pout_3A_1 [W]	365,52W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-1	2,90	26,86	0,140	27,27	79,08
OUT2-1	2,95	26,86	0,140	27,27	80,45
OUT3-1	1,85	27,16	0,140	27,42	50,73
OUT4-1	1,53	27,26	0,129	27,46	42,01
OUT5-1	1,22	27,43	0,062	27,51	33,56
OUT7-1	2,92	27,00	0,098	27,29	79,69
Pout_3A_1					365,52

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.51	Calculate ESEM3-A-2 output power filling the table below:	Pout_3A_2 [W]	455,30W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-2	3,45	26,70	0,140	27,18	93,77
OUT2-2	2,99	26,82	0,140	27,24	81,45
OUT3-2	2,99	26,82	0,140	27,24	81,45
OUT4-2	1,54	27,22	0,129	27,42	42,23
OUT5-2	1,70	27,18	0,140	27,42	46,61
OUT6-2	1,60	27,22	0,129	27,43	43,89
OUT7-2	1,60	27,27	0,093	27,42	43,87
OUT8-2	0,80	27,52	0,026	27,54	22,03
Pout_3A_2					455,30

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.52	Calculate ESEM3-A-3 output power filling the table below::	Pout_3A_3 [W]	330,5W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-3	2,95	27,11	0,062	27,29	80,51
OUT2-1	2,99	27,12	0,062	27,31	81,66
OUT3-1	3,49	27,00	0,062	27,22	95,00
OUT8-1	2,69	27,19	0,026	27,26	73,33
Pout_3A_3					330,50

DATE: 16.06.09	TEST CONDUCTOR	QA	CUSTOMER

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.53	Calculate ESEM3-A-4 output power filling the table below::	Pout_3A_4 [W]	302,65W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained; -

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT5-3	1,65	27,33	0,129	27,54	45,44
OUT6-1	1,62	27,35	0,129	27,56	44,65
OUT7-1	2,98	27,08	0,093	27,36	81,53
OUT8-1	4,86	26,77	0,039	26,96	131,03
Pout_3A_4					302,65

DISS-A.54	Calculate the total ouput power updating the following table: Pout= Pout_E3B + Pout_3A_1 + Pout_3A_2 + Pout_3A_3 + Pout_3A_4	Pout [W]	1869,68W	

Pout_E3B	415,71
Pout_3A_1	365,52
Pout_3A_2	455,30
Pout_3A_3	330,5
Pout_3A_4	302,65
Pout	1869,68

DISS-A.55	Calculate the total power dissipation: Pdiss=Pin-Pout	Pdiss<333W	237,67W	

Pin	2107,35
Pout	1869,68
Pds	237,67

DATE: 16.06.09	TEST CONDUCTOR	QA	CUSTOMER

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.1.8.2 AMS02-PDS DISSIPATION 113V

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.56	Set input bus voltage to 115,5V	115,5V±0,2V	115,5V	In order to have 113V at nominal configuration
DISS-A.57	Click ON ESEM3-A-1 icon	OK	OK	
DISS-A.58	Using board telemetries regulate the current of following outputs: Iout1-1 Iout2-1 Iout3-1 Iout4-1 Iout5-1 Iout7-1	 2,90A±100mA 2,90A±100mA 1,80A±100mA 1,50A±100mA 1,20A±100mA 2,90A±100mA	 2,90 A 2,95 A 1,85 A 1,55 A 1,23 A 2,90 A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.59	Click ON ESEM3-A-2 icon	OK	OK	
DISS-A.60	Using board telemetries regulate the current of following outputs: Iout1-2 Iout2-2 Iout3-2 Iout4-2 Iout5-2 Iout6-2 Iout7-2 Iout8-2	 3,40A±100mA 2,90A±100mA 2,90A±100mA 1,50A±100mA 1,80A±100mA 1,60A±100mA 1,50A±100mA 0,70A±100mA	 3,47 A 2,99 A 2,99 A 1,56 A 1,74 A 1,60 A 1,60 A 0,8 A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.61	Click ON ESEM3-A-3 icon	OK	OK	
DISS-A.62	Using board telemetries regulate the current of following outputs: Iout1-3 Iout2-3 Iout3-3 Iout8-3	 2,9A±100mA 2,9A±100mA 3,4A±100mA 2,6 A±100mA	 2,97 A 2,99 A 3,50 A 2,70 A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.63	Click ON ESEM3-A-4 icon	OK	OK	
DISS-A.64	Using board telemetries regulate the current of following outputs: Iout5-4 Iout6-4 Iout7-4 Iout8-4	 1,6A±100mA 1,5A±100mA 2,9A±100mA 4,8A±100mA	 1,70 A 1,60 A 2,99 A 4,85 A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.65	Click ON ESEM 3-B icon	OK	OK	
DISS-A.66	Insert an Amperometer in series to outlet 12	OK	OK	
DISS-A.67	Using board telemetries regulate the current of following outputs: Iout12	 3,20A±100mA	 3,27 A	Iout12 - Nominal value 3,80A @ 120V

DATE: 16.06.09	TEST CONDUCTOR	QA	CUSTOMER

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.68	Using a multimeter measure the output voltage of **ESEM3-B**: OUT12	112<Vout12<115V	112,4V	
DISS-A.69	Calculate ESEM3-B output power: Pout_E3B = (Vout12* Iout12)	Pout_E3B	367,55 W	
DISS-A.70	Push the command "Read input" located in the bottom left of the software window	OK	OK	
DISS-A.71	Take note of the value "I" indicated in Input Stage A window	16,00A<Iin<20,00A	18,60 A	
DISS-A.72	Measure the input current using current probe	16,00A<Iin<20,00A	18,56 A	Iin
DISS-A.73	Measure the Input voltage between PIN "bypass thermal interlock" (positive) and "PRI_GND"(negative) on side A of the J300 test box	113,0V±0,5V	113,1V	Vin
DISS-A.74	Calculate Pin=Vin*Iin	2100W±50W	2099,14 W	Pin
DISS-A.75	Calculate ESEM3-A-1 output power filling the table below:	Pout_3A_1 [W]	365,38 W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically oblained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-1	2,90	26,83	0,140	27,24	79,00
OUT2-1	2,95	26,83	0,140	27,24	80,36
OUT3-1	1,85	27,13	0,140	27,39	50,67
OUT4-1	1,55	27,23	0,129	27,43	42,52
OUT5-1	1,23	27,40	0,062	27,48	33,80
OUT7-1	2,90	26,97	0,098	27,25	79,03
Pout_3A_1					365,38

DATE: 16.06.09	TEST CONDUCTOR	QA	CUSTOMER

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.76	Calculate ESEM3-A-2 output power filling the table below:	Pout_3A_2 [W]	457,62 W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-2	3,47	26,67	0,140	27,16	94,25
OUT2-2	2,99	26,80	0,140	27,22	81,39
OUT3-2	2,99	26,80	0,140	27,22	81,39
OUT4-2	1,56	27,19	0,129	27,39	42,73
OUT5-2	1,74	27,14	0,140	27,38	47,64
OUT6-2	1,60	27,19	0,129	27,40	43,84
OUT7-2	1,60	27,24	0,093	27,39	43,82
OUT8-2	0,82	27,49	0,026	27,51	22,56
Pout_3A_2					457,62

DISS-A.77	Calculate ESEM3-A-3 output power filling the table below::	Pout_3A_3 [W]	331,25 W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-3	2,97	27,09	0,062	27,27	80,99
OUT2-1	2,99	27,09	0,062	27,28	81,57
OUT3-1	3,50	26,97	0,062	27,19	95,17
OUT8-1	2,70	27,16	0,026	27,23	73,52
Pout_3A_3					331,25

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.78	Calculate ESEM3-A-4 oulput power filling the table below::	Pout_3A_4 [W]	303,20 W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT5-3	1,70	27,30	0,129	27,52	46,78
OUT6-1	1,60	27,33	0,129	27,54	44,06
OUT7-1	2,99	27,06	0,093	27,34	81,75
OUT8-1	4,85	26,74	0,039	26,93	130,61
Pout_3A_4					303,20

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.79	Calculate the total ouput power updating the following table: Pout= Pout_E3B + Pout_3A_1 + Pout_3A_2 + Pout_3A_3 + Pout_3A_4	Pout [W]	1825,00 W	

Pout_E3B	367,55
Pout_3A_1	365,38
Pout_3A_2	457,62
Pout_3A_3	331,25
Pout_3A_4	303,20
Pout	1825,00

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.80	Calculate the total power dissipation: Pdiss=Pin-Pout	Pdiss<365W	274,14 W	

Pin	2099,14
Pout	1825,00
Pds	274,14

DATE: 16.06.09	TEST CONDUCTOR	QA	CUSTOMER

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.1.8.3 AMS02-PDS DISSIPATION 126V

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.81	Set input bus voltage to 128,5V	128,5V±0,2V	128,5V	In order to have 126V at nominal configuration
DISS-A.82	Click ON **ESEM3-A-1** icon	OK	OK	
DISS-A.83	Using board telemetries regulate the current of following outputs: Iout1-1 Iout2-1 Iout3-1 Iout4-1 Iout5-1 Iout7-1	 2,90A±100mA 2,90A±100mA 1,80A±100mA 1,50A±100mA 1,20A±100mA 2,90A±100mA	 2,91 A 2,96 A 1,84 A 1,52 A 1,20 A 2,91 A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.84	Click ON **ESEM3-A-2** icon	OK	OK	
DISS-A.85	Using board telemetries regulate the current of following outputs: Iout1-2 Iout2-2 Iout3-2 Iout4-2 Iout5-2 Iout6-2 Iout7-2 Iout8-2	 3,40A±100mA 2,90A±100mA 2,90A±100mA 1,50A±100mA 1,80A±100mA 1,60A±100mA 1,50A±100mA 0,70A±100mA	 3,45 A 2,99 A 2,98 A 1,52 A 1,73 A 1,63 A 1,6 A 0,80 A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.86	Click ON **ESEM3-A-3** icon	OK	OK	
DISS-A.87	Using board telemetries regulate the current of following outputs: Iout1-3 Iout2-3 Iout3-3 Iout8-3	 2,9A±100mA 2,9A±100mA 3,4A±100mA 2,6 A±100mA	 2,98 A 2,99 A 3,45 A 2,70 A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.88	Click ON **ESEM3-A-4** icon	OK	OK	
DISS-A.89	Using board telemetries regulate the current of following outputs: Iout5-4 Iout6-4 Iout7-4 Iout8-4	 1,6A±100mA 1,5A±100mA 2,9A±100mA 4,8A±100mA	 1,68 A 1,59 A 2,98 A 4,90 A	Set active loads to constant current mode. Set current on display with 100mA above the desired value with the exception of out8 that is correct.
DISS-A.90	Click ON **ESEM 3-B** icon	OK	OK	
DISS-A.91	Insert an Amperometer in series to outlet 12	OK	OK	
DISS-A.92	Using board telemetries regulate the current of following outputs: Iout12	 3,60A±100mA	 3,66 A	Iout12 - Nominal value 3,80A @ 120V

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.93	Using a multimeter measure the output voltage of ESEM3-B: OUT12	124<Vout12<126V	125,7 V	
DISS-A.94	Calculate ESEM3-B output power: Pout_E3B = (Vout12* Iout12)	Pout_E3B	460,1 W	
DISS-A.95	Push the command "Read input" located in the bottom left of the software window	OK	OK	
DISS-A.96	Take note of the value "I" indicated in Input Stage A window	16,00A<Iin<20,00A	17,10 A	
DISS-A.97	Measure the input current using current probe	16,00A<Iin<20,00A	17,00 A	Iin
DISS-A.98	Measure the Input voltage between PIN "bypass thermal interlock" (positive) and "PRI_GND"(negative) on side A of the J300 test box	126,0V±0,5V	126,34 V	Vin
DISS-A.99	Calculate Pin=Vin*Iin	2100W±50W	2147,8 W	Pin
DISS-A.100	Calculate ESEM3-A-1 output power filling the table below:	Pout_3A_1 [W]	365,02 W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-1	2,91	26,89	0,140	27,30	79,44
OUT2-1	2,96	26,88	0,140	27,29	80,78
OUT3-1	1,84	27,19	0,140	27,45	50,51
OUT4-1	1,52	27,29	0,129	27,49	41,78
OUT5-1	1,20	27,46	0,062	27,53	33,04
OUT7-1	2,91	27,02	0,098	27,31	79,47
Pout_3A_1					365,02

DATE: 16.06.09	TEST CONDUCTOR	QA	CUSTOMER

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.101	Calculate ESEM3-A-2 output power filling the table below:	Pout_3A_2 [W]	456,73 W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-2	3,45	26,72	0,140	27,20	93,84
OUT2-2	2,99	26,84	0,140	27,26	81,51
OUT3-2	2,98	26,84	0,140	27,26	81,23
OUT4-2	1,52	27,24	0,129	27,44	41,71
OUT5-2	1,73	27,20	0,140	27,44	47,47
OUT6-2	1,63	27,24	0,129	27,45	44,74
OUT7-2	1,61	27,29	0,093	27,44	44,18
OUT8-2	0,80	27,54	0,026	27,56	22,05
Pout_3A_2					456,73

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.102	Calculate ESEM3-A-3 output power filling the table below::	Pout_3A_3 [W]	330,56 W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT1-3	2,98	27,14	0,062	27,32	81,41
OUT2-1	2,99	27,14	0,062	27,33	81,72
OUT3-1	3,45	27,02	0,062	27,23	93,94
OUT8-1	2,70	27,21	0,026	27,28	73,66
Pout_3A_3					330,73

DATE: 16.06.09	TEST CONDUCTOR	QA	CUSTOMER

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.103	Calculate ESEM3-A-4 output power filling the table below::	Pout_3A_4 [W]	303,94 W	Filling the table note that: - Iload is reported above in the regulation step; - Vload is measured using a multimeter in parallel to the relevant load; - Cable impedance is prefilled; - Vbox is automatically obtained and represent the value of Vout at the unit connector recovering the cable-impedence losses; - P is automatically obtained;

Load	Iload [I]	Vload [V]	Cable impedance [Ω]	Vbox [V]	P [W]
OUT5-3	1,68	27,35	0,129	27,57	46,32
OUT6-1	1,59	27,37	0,129	27,58	43,85
OUT7-1	2,98	27,11	0,093	27,39	81,62
OUT8-1	4,90	26,78	0,039	26,97	132,15
Pout_3A_4					303,94

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.104	Calculate the total ouput power updating the following table: Pout= Pout_E3B + Pout_3A_1 + Pout_3A_2 + Pout_3A_3 + Pout_3A_4	Pout [W]	1916,35 W	

Pout_E3B	460,1
Pout_3A_1	365,02
Pout_3A_2	456,73
Pout_3A_3	330,56
Pout_3A_4	303,94
Pout	1916,35

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.105	Calculate the total power dissipation: Pdiss=Pin-Pout	Pdiss<333W	231,45W	

Pin	2147,8
Pout	1916,35
Pds	231,45

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
DISS-A.106	Set OFF in DCDC OFF/ON window and send the command for all PB2 boards	OK	OK	
DISS-A.107	Command OFF the outlets OUT12 of ESEM3-B board	OFF	OFF	
DISS-A.108	Switch OFF the "power switch "of "power switch box"	Switch OFF	OFF	
DISS-A.109	Switch OFF main power bus	OFF	OFF	

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10.3.2 B SECTION

10.3.2.1 SETUP

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.1.1	Verify that the **"power switch box"** is connected between power supply alim and PDS cables	Connected	Connected	
3.2.1.2	Verify that the **"power switch"** of the **"power switch box"** is set in OFF position	OFF	OFF	
3.2.1.3	Verify that all load are connected except for external heaters	Connected	Connected	
3.2.1.4	Set all the loads to 0A current absorption (external heaters included)	0A absorbtion set	0A absorbtion set	
3.2.1.5	Launch the PDS controller software and select FM in the Model window	Program open	Program open	
3.2.1.6	Launch the USCM controller software: Open the file **"USCM"**	File open	File open	

10.3.2.2 POWER ON WITH ISS MAIN BUS

3.2.2.1	Connect main power supply between BI_120V (positive) and BI_120V_RTN (negative)	J100 connected	OK	
3.2.2.2	Set Power supply to 120V	120,00V±1,00V	120V	
3.2.2.3	Set output current limitation to 3A	3A±0,5V	3A	
3.2.2.4	Enable power supply output	enabled	OK	
3.2.2.5	Verify that green led of **"power switch box"** is lighted	Green led ligthed	OK	
3.2.2.6	Switch ON the **"power switch "of "power switch box"**	Switch ON	OK	
3.2.2.7	Verify that red led of **"power switch box"** is lighted	Red led ligthed	OK	
3.2.2.8	Verify the current absorption from Main Bus	1,10A±0,20A	1,1A	Note: this current can be read from power supply display or amperometer. In case of power supply reading, verify the correctness of measurements.
3.2.2.9	**Unmated connectors verfication**			
3.2.2.10	Measure with multimeter the voltage between 2P_120V (positive) and 2P_120V_RTN (negative)	<5V	0V	Power bus isolation verification
3.2.2.11	Measure with multimeter the voltage between AP_120V (positive) and AP_120V_RTN (negative)	<5V	0V	Power bus isolation verification

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10.3.2.2.1 CAN BUS COMMUNICATION LINE CHECK BOARD 30

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.12	Obgective: to verify the external CAN BUS lines communication			
3.2.2.13	Select USCM controller software	USCM selcted	USCM selcted	
3.2.2.14	set the CAN BUS board address to 30 in the command widow	30	30	
3.2.2.15	Select JMDC = 0	0	0	
3.2.2.16	Select TX = A	A	A	
3.2.2.17	Select RX = A	A	A	
3.2.2.18	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.19	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.20	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.21	Verify History window	POWER ON 0	POWER ON 0	
3.2.2.22	select Select TX = B	B	B	
3.2.2.23	Select RX = B	B	B	
3.2.2.24	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.25	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.26	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.27	Verify History	POWER ON 0	POWER ON 0	

10.3.2.2.2 CAN BUS COMMUNICATION LINE CHECK BOARD 31

3.2.2.28	Obgective: To verify the external CAN BUS lines communication			
3.2.2.29	Set the CAN BUS board address to 31 in the command widow	31	31	
3.2.2.30	Select JMDC = 0	0	0	
3.2.2.31	Select TX = A	A	A	
3.2.2.32	Select RX = A	A	A	
3.2.2.33	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.34	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.35	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.36	Verify History window	POWER ON 0	POWER ON 0	
3.2.2.37	select Select TX = B	B	B	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.38	Select RX = B	B	B	
3.2.2.39	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.40	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.41	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.42	Verify History	POWER ON 0	POWER ON 0	

10.3.2.2.3 PDS INTERNAL SERIAL COMMUNICATION CHECK BOARD 30

3.2.2.43	**Objective: To verify the internal communication of the CAN BUS boards 30 with the PDS B side boards**			
3.2.2.44	set the CAN BUS board address to 30	30	30	
3.2.2.45	select JMDC = 0	0	0	
3.2.2.46	select TX = A	A	A	
3.2.2.47	select RX = A	A	A	
3.2.2.48	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.49	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.50	Verify MODE window	PDS_FLASH	PDS_FLASH	
3.2.2.51	Verify Version window	26-Jan-09 17:07	26-Jan-09 17:07	
3.2.2.52	Verify History	PROM 3	PROM 3	
3.2.2.53	Select PDS controller software	program open	program open	
3.2.2.54	set the CAN BUS board address to 30	30	30	
3.2.2.55	select JMDC = 0	0	0	
3.2.2.56	select TX = A	A	A	
3.2.2.57	select RX = A	A	A	
3.2.2.58	Select "CAN BUS I/F Side" to A	A	A	
3.2.2.59	Select "PDS Side" to B	B	B	
3.2.2.60	Press button "READ INPUT" button and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.61	Verify Input Stage B Voltage (V)monitor	120V ± 9.5V	119,8V	
3.2.2.62	Verify Input stage B Current (A) monitor	1,1A ± 20%	1,035A	
3.2.2.63	Press button "READ" to verify all board status			
3.2.2.64	Verify "Sta" column values	All boards OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.65	Verify "OVT" column values	All boards OK	OK	With the exception of ESEM1-A board: OVT flag not present
3.2.2.66	Verify "Temp" column values	-20°C to +80°C	OK	No full scale values must be present All temperatures must be inside unit temp limits
3.2.2.67	Verify "Ref" colum values	2,5V ± 0,25V 2,0V ± 0,25V 3,0V ± 0,25V 2,0V ± 0,25V 3,0V ± 0,25V 2,0V ± 0,25V 3,0V ± 0,25V 2,0V ± 0,25V 3,0V ± 0,25V 4,0V ± 0,25V	2,5V 2,2V 2,96V 2,25V 2,95V 2,18V 3,01V 2,2V 2,98V 4,05V	All

10.3.2.2.4 PDS INTERNAL SERIAL COMMUNICATION CHECK BOARD 31

3.2.2.68	Select USCM controller software	USCM selcted	USCM selcted	
3.2.2.69	Set the CAN BUS board address to 31	31	31	
3.2.2.70	select JMDC = 0	0	0	
3.2.2.71	select TX = A	A	A	
3.2.2.72	select RX = A	A	A	
3.2.2.73	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.74	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.75	Verify MODE window	PDS_FLASH	PDS_FLASH	
3.2.2.76	Verify Version window	26-Jan-09 17:07	26-Jan-09 17:07	
3.2.2.77	Verify History	PROM 3	PROM 3	
3.2.2.78	Select PDS controller software	program open	program open	
3.2.2.79	Set the CAN BUS board address to 31	31	31	
3.2.2.80	select JMDC = 0	0	0	
3.2.2.81	select TX = A	A	A	
3.2.2.82	select RX = A	A	A	
3.2.2.83	Select "CAN BUS I/F Side" to B	B	B	
3.2.2.84	Select "PDS Side" to B	B	B	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.85	Click on Run flash button	OK	OK	
3.2.2.86	Press button "READ INPUT" button and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.87	Verify "Input Stage B" Voltage (V)monitor	120V ± 9.5V	119,1A	
3.2.2.88	Verify "Input stage B" Current (A) monitor	1,1A ± 20%	0,709A	20% Full Scale value
3.2.2.89	Press button "READ" to verify all board status	Command execute OK	OK	
3.2.2.90	Verify "Sta" column values	All boards OK	OK	
3.2.2.91	Verify "OVT" column values	All boards OK	OK	With the exception of ESEM1-A board: OVT flag not present
3.2.2.92	Verify "Temp" column values	-20°C to +80°C	OK	No full scale values must be present All temperatures must be inside unit temp limits Some difference can be present due to different board power dissipation
3.2.2.93	Verify "Ref" colum values	2,5V ± 0,25V 2,0V ± 0,25V 3,0V ± 0,25V 2,0V ± 0,25V 3,0V ± 0,25V 2,0V ± 0,25V 3,0V ± 0,25V 2,0V ± 0,25V 3,0V ± 0,25V 4,0V ± 0,25V	2.50V 2.21V 2.98V 2.17V 2.95V 2.18V 3.00V 2.22V 2.93V 3.96V	
3.2.2.94	Switch OFF 120V main bus			

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10.3.2.2.5 CAN BUS BOARDS CROSS CMD OFF/ON AND SIUCIDE TEST

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.95	Objective: to verify the possibility to command OFF and ON one board from the other			
3.2.2.96	Verify that the **"power switch box"** is connected between power supply alim and PDS cables	Connected	Connected	
3.2.2.97	Verify that the **"power switch"** of the **"power switch box"** is set in OFF position	OFF	OFF	
3.2.2.98	Lunch the PDS controller software	Program open	Program open	
3.2.2.99	Launch the USCM controller software	File open	File open	
3.2.2.100	Set to "FM" the window Model	FM	FM	
3.2.2.101	Connect "J300 test box" to the unit J300 connector	OK	OK	
3.2.2.102	Connect main power supply between BI_120V (positive) and BI_120V_RTN (negative)	J200 connected	J200 connected	
3.2.2.103	Set Power supply alim to 120V	120,00V±1,00V	120,00V	V1
3.2.2.104	Set output current limitation to 3A	3A±0,5A	3A	
3.2.2.105	Enable power supply output	enabled	enabled	
3.2.2.106	Verify that green led of **"power switch box"** is lighted	Green led ligthed	Green led ligthed	
3.2.2.107	Switch ON the **"power switch "of "power switch box"**	Switch ON	Switch ON	
3.2.2.108	Verify that red led of **"power switch box"** is lighted	Red led ligthed	Red led ligthed	
3.2.2.109	Verify the current absorption from Main Bus	1,10A±0,20A	1.1A	Note: this current can be read from power supply display or amperometer. In case of power supply reading, verify the correctness of measurements.
3.2.2.110	Select USCM controller software	USCM selcted	USCM selcted	
3.2.2.111	set the CAN BUS board address to 30 in the command window	30	30	
3.2.2.112	Select JMDC = 0	0	0	
3.2.2.113	Select TX = A	A	A	
3.2.2.114	Select RX = A	A	A	
3.2.2.115	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.116	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.117	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.118	Verify History window	POWER ON 0	POWER ON 0	
3.2.2.119	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side A of the J300 test box	5.3V ± 0.1V	5.3V	
3.2.2.120	Set the CAN BUS board address to 31 in the command window	31	31	
3.2.2.121	Select JMDC = 0	0	0	
3.2.2.122	Select TX = A	A	A	
3.2.2.123	Select RX = A	A	A	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.124	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.125	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.126	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.127	Verify History window	POWER ON 0	POWER ON 0	
3.2.2.128	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side B of the J300 test box	5.30 ± 0.1V	5.29V	
3.2.2.129	set the CAN BUS board address to 30 in the command window	30	30	
3.2.2.130	press button SOFF and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.131	Set the CAN BUS board address to 31 in the command window	31	31	
3.2.2.132	press button READ and verify on the command status window	Command execute failed	Command execute failed	
3.2.2.133	Measure the CAN BUS 31 internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side B of the J300 test box	0.50 ± 0.1V	0.52V	
3.2.2.134	Measure the CAN BUS 30 internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side A of the J300 test box	5.30 ± 0.1V	5.31V	
3.2.2.135	set the CAN BUS board address to 30 in the command window	30	30	
3.2.2.136	press button SON and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.137	Set the CAN BUS board address to 31 in the command window	31	31	
3.2.2.138	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.139	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side B of the J300 test box	5.3V ± 0.1V	5.29V	
3.2.2.140	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.141	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.142	Verify History window	POWER ON 0	POWER ON 0	
3.2.2.143	Set the CAN BUS board address to 31 in the command window	31	31	
3.2.2.144	press button SOFF and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.145	set the CAN BUS board address to 30 in the command window	30	30	
3.2.2.146	press button READ and verify on the command status window	Command execute failed	Command execute failed	
3.2.2.147	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side A of the J300 test box	0,5V ± 0.1V	0.52V	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.148	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side B of the J300 test box	5.3V ± 0.1V	5.29V	
3.2.2.149	Set the CAN BUS board address to 31 in the command window	31	31	
3.2.2.150	press button SON and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.151	set the CAN BUS board address to 30 in the command window	30	30	
3.2.2.152	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.153	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side B of the J300 test box	5.3V ± 0.1V	5.31V	
3.2.2.154	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.155	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.156	Verify History window	POWER ON 0	POWER ON 0	
3.2.2.157	**SUICIDE BOARD 30 COMMAND TEST**			
3.2.2.158	set the CAN BUS board address to 30 in the command window	30	30	
3.2.2.159	press button SUIC and verify on the command status window	Command execute failed	Command execute failed	
3.2.2.160	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side A of the J300 test box	0.50 ± 0.1V	0.52V	
3.2.2.161	press button READ and verify on the command status window	Command execute failed	Command execute failed	
3.2.2.162	Set the CAN BUS board address to 31 in the command window	31	31	
3.2.2.163	press button SON and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.164	set the CAN BUS board address to 30 in the command window	30	30	
3.2.2.165	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.166	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side 30 of the J300 test box	5.3V ± 0.1V	5.31V	
3.2.2.167	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.168	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.169	Verify History window	POWER ON 0	POWER ON 0	
3.2.2.170	**SUICIDE BOARD 31 COMMAND TEST**			
3.2.2.171	Set the CAN BUS board address to 31 in the command window	31	31	
3.2.2.172	press button SUIC and verify on the command status window	Command execute failed	Command execute failed	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.173	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side B of the J300 test box	0.5V ± 0.1V	0.51V	
3.2.2.174	press button READ and verify on the command status window	Command execute failed	Command execute failed	
3.2.2.175	set the CAN BUS board address to 30 in the command window	30	30	
3.2.2.176	press button SON and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.177	Set the CAN BUS board address to 31 in the command window	31	31	
3.2.2.178	press button READ and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.179	Measure the CAN BUS internal power supply: connect a multimeter between PIN Vcc (positive) and SEC_GND (negative) on side B of the J300 test box	5.30V ± 0.1V	5.28V	
3.2.2.180	Verify MODE window	PDS_PROM	PDS_PROM	
3.2.2.181	Verify Version window	26-Jan-09 17:06	26-Jan-09 17:06	
3.2.2.182	Verify History window	POWER ON 0	POWER ON 0	
3.2.2.183	Switch OFF the "power switch "of "power switch box"	OFF	OFF	
3.2.2.184	Disable power supply output	Disable	Disable	

10.3.2.3 POWER VIDEO GRAPPLE FIXTURE 2 POWER SUPPLY VERIFICATION (2P)

3.2.2.185	Connect main power supply between 2P_120V (positive) and 2P_120V_RTN (negative)	CONNECTED	CONNECTED	
3.2.2.186	Connect ESEM 3-B outlet 1 to default load	CONNECTED	CONNECTED	Default current absorption equal to 1,200A±100mA
3.2.2.187	Set Power supply alim to 120V	120,00V±1,00V	120,00V	
3.2.2.188	Set output current limitation to 5A	5A±0,5A	5,0A	
3.2.2.189	Enable power supply output	Enabled	Enabled	
3.2.2.190	Verify that green led of **"power switch box"** is lighted	Green led ligthed	Green led ligthed	
3.2.2.191	Switch ON the **"power switch "of "power switch box"**	Switch ON	Switch ON	
3.2.2.192	Verify that red led of **"power switch box"** is lighted	Red led ligthed	Red led ligthed	
3.2.2.193	Verify the current absorption from Main Bus	2,30A±0,20A	2,30A	Note: this current can be read from power supply display or amperometer. In case of power supply reading, verify the correctness of measurements.
3.2.2.194	Launch the PDS controller software	OPEN	OPEN	
3.2.2.195	Set to "FM" the window Model	FM	FM	
3.2.2.196	Set the CAN BUS board address to 31	31	31	
3.2.2.197	select JMDC = 0	0	0	
3.2.2.198	select TX = A	A	A	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.199	select RX = A	A	A	
3.2.2.200	Select "CAN BUS I/F Side" to B	B	B	
3.2.2.201	Select "PDS Side" to B	B	B	
3.2.2.202	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.203	Press button "READ" to verify all board status	Command execute OK	Command execute OK	
3.2.2.204	Verify the status of the flags indicated on "Sta" column. All flags must be "OK"	OK	OK	Click on READ command under Sta column This column resumes the status of al the boards
3.2.2.205	Set the CAN BUS board address to 31	30	30	
3.2.2.206	Set to "B" the window PDS Side	B	B	
3.2.2.207	Set the window CAN BUS I/F Side to "A" configuration	A	A	
3.2.2.208	Click on Run flash button			Command located on up-left
3.2.2.209	Press button "READ" to verify all board status	Command execute OK	Command execute OK	
3.2.2.210	Verify the status of the flags indicated on "Sta" column. All flags must be "OK"	OK	OK	Click on READ command under Sta column This column resumes the status of al the boards
3.2.2.211	Measure with multimeter the voltage on ESEM 3-B outlet 1	117,00V<V<120,00V	118,6V	This test is used to verify that input diode located in input stage board is not damaged
3.2.2.212	Switch OFF main power bus	OK	OK	
3.2.2.213	Disconnect ESEM 3-B outlet 1 to default load	OK	OK	

10.3.2.4 APCU POWER SUPPLY TEST

3.2.2.214	Connect main power supply between AP_120V (positive) and AP_120V_RTN (negative)	CONNECTED	CONNECTED	
3.2.2.215	Connect ESEM 3-B outlet 1 to default load	CONNECTED	CONNECTED	Default current absorption equal to 1,200A±100mA
3.2.2.216	Set Power supply alim to 120V	120,00V±1,00V	120,00V	
3.2.2.217	Set output current limitation to 5A	5A±0,5A	5,0A	
3.2.2.218	Enable power supply output	Enabled	Enabled	
3.2.2.219	Verify that green led of **"power switch box"** is lighted	Green led ligthed	Green led ligthed	
3.2.2.220	Switch ON the **"power switch "of "power switch box"**	Switch ON	Switch ON	
3.2.2.221	Verify that red led of **"power switch box"** is lighted	Red led ligthed	Red led ligthed	
3.2.2.222	Verify the current absorption from Main Bus	2,30A±0,20A	2,30A	Note: this current can be read from power supply display or amperometer. In case of power supply reading, verify the correctness of measurements.
3.2.2.223	Launch the PDS controller software	OPEN	OPEN	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.2.224	Set to "FM" the window Model	FM	FM	
3.2.2.225	Set the CAN BUS board address to 31	31	31	
3.2.2.226	select JMDC = 0	0	0	
3.2.2.227	select TX = A	A	A	
3.2.2.228	select RX = A	A	A	
3.2.2.229	Select "CAN BUS I/F Side" to B	B	B	
3.2.2.230	Select "PDS Side" to B	B	B	
3.2.2.231	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
3.2.2.232	Press button "READ" to verify all board status	Command execute OK	Command execute OK	
3.2.2.233	Verify the status of the flags indicated on "Sta" column. All flags must be "OK"	OK	OK	Click on READ command under Sta column This column resumes the status of al the boards
3.2.2.234	Set the CAN BUS board address to 31	30	30	
3.2.2.235	Set to "B" the window PDS Side	B	B	
3.2.2.236	Set the window CAN BUS I/F Side to "A" configuration	A	A	
3.2.2.237	Click on Run flash button			Command located on up-left
3.2.2.238	Press button "READ" to verify all board status	Command execute OK	Command execute OK	
3.2.2.239	Verify the status of the flags indicated on "Sta" column. All flags must be "OK"	OK	OK	Click on READ command under Sta column This column resumes the status of al the boards
3.2.2.240	Measure with multimeter the voltage on ESEM 3-B outlet 1	117,00V<V<120,00V	118,6V	This test is used to verify that input diode located in input stage board is not damaged
3.2.2.241	Switch OFF main power bus	OK	OK	
3.2.2.242	Disconnect ESEM 3-B outlet 1 to default load	OK	OK	

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10.3.2.5 UNIT CHECK

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.5.1	Connect BI_120V and BI_120V_RTN power supply signals	OK	OK	
3.2.5.2	Verify that all the cables of the section are connected	OK	OK	
3.2.5.3	Launch the PDS controller software	Program open	Program open	
3.2.5.4	Set to "FM" the window Model	OK	OK	
3.2.5.5	Set the CAN BUS board address to 31	31	31	
3.2.5.6	select JMDC = 0	0	0	
3.2.5.7	select TX = A	A	A	
3.2.5.8	select RX = A	A	A	
3.2.5.9	Select "CAN BUS I/F Side" to B	B	B	
3.2.5.10	Select "PDS Side" to B	B	B	
3.2.5.11	Set input bus voltage to 120V	120V±1V	120,0V	V1
3.2.5.12	Set input bus current limitation to 27,5 A	27,5 A±1A	27,5 A	
3.2.5.13	Enable power supply output	Enabled	Enabled	
3.2.5.14	Verify that green led of "power switch box" is lighted	Green led ligthed	Green led ligthed	
3.2.5.15	Switch ON the "power switch "of "power switch box"	Switch ON	Switch ON	
3.2.5.16	Verify that red led of "power switch box" is lighted	Red led ligthed	Red led ligthed	
3.2.5.17	Take note of power supply output current	1,1A±0,5A	1,1A	I1
3.2.5.18	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	

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10.3.2.5.1 INPUT STAGE B VERIFICATION

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3.2.5.19	Push the command "Read input" located in the bottom left of the software window	OK	OK	
3.2.5.20	Take note of the value "V" indicated in Input Stage B window	V1±9,50V	118,9V	
3.2.5.21	Take note of the value "I" indicated in Input Stage B window	I1±1,65A	0,675A	
3.2.5.22	Set the CAN BUS board address to 30	30	30	
3.2.5.23	Select "CAN BUS I/F Side" to A	A	A	
3.2.5.24	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
3.2.5.25	Push the command "Read input" located in the bottom left of the software window	OK	OK	
3.2.5.26	Take note of the value "V" indicated in Input Stage B window	V1±9,50V	120,0V	
3.2.5.27	Take note of the value "I" indicated in Input Stage B window	I1±1,65A	0,992A	
3.2.5.28	Switch OFF main power bus	OFF	OFF	
3.2.5.29	Connect external heaters	Connected	Connected	
3.2.5.30	Switch ON main bus	ON	ON	
3.2.5.31	Verify the current absorption from Main Bus	7,80A±0,50A	7,80A	verify that heater lines are working
3.2.5.32	Switch OFF main power bus	OFF	OFF	
3.2.5.33	Disconnect external heaters	Disconnected	Disconnected	

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10.3.2.5.2 ESEM 1-A SIDE B

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
1A-B.1	Set input bus voltage to 120V	120V±1V	120,0V	V1
1A-B.2	Set input bus current limitation to 27,5 A	27,5A	27,5A	
1A-B.3	Switch ON main bus	ON	ON	
1A-B.4	Take note of power supply output current	1,1A±0,5A	1,1A	I1
1A-B.5	Set the CAN BUS board address to 31	31	31	
1A-B.6	Select "CAN BUS I/F Side" to B	B	B	
1A-B.7	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
1A-B.8	Click on ESEM 1-A button	OK	OK	
1A-B.9	Set Digital I/F Test logic value = 1 in "Commanding" column	1	1	
1A-B.10	Click on letter "W" on the right of the "1" value	OK	OK	
1A-B.11	Click on the command READ ALL under the column Digital Readout	OK	OK	
1A-B.12	Verify that in the column Digital Readout under the voice Digital I/F Test appears "1"	1	1	
1A-B.13	Set Digital I/F Test logic value = 0 in "Commanding" column	0	0	
1A-B.14	Click on letter "W" on the right of the "0" value	OK	OK	
1A-B.15	Click on the command READ ALL under the column Digital Readout	OK	OK	
1A-B.16	Verify that in the column Digital Readout under the voice Digital I/F Test appears "0"	0	0	
1A-B.17	Verify the status of the following flags: BOARD STATUS DCDC 1 OVC DCDC 2 OVC DCDC 1 STATUS DCDC 2 STATUS MAIN POWER STATUS	 OK OK OK ON ON ON	 OK OK OK ON ON ON	Flags located in Digital readout column
1A-B.18	Click on PB2-1 button	OK	OK	
1A-B.19	Set to "ON" the line "DCDC OFF/ON CMD" in the "commanding" column"	ON	ON	
1A-B.20	Press "W" button" in the line "DCDC OFF/ON CMD" in the "commanding" column	Command execute OK	Command execute OK	
1A-B.21	Verify that in the column Digital Readout under the voice DCDC ON/OFF appears "ON"	ON	ON	
1A-B.22	Click on PB2-2 button	OK	OK	
1A-B.23	Set to "ON" the line "DCDC OFF/ON CMD" in the "commanding" column"	ON	ON	
1A-B.24	Press "W" button" in the line "DCDC OFF/ON CMD" in the "commanding" column	Command execute OK	Command execute OK	
1A-B.25	Verify that in the column Digital Readout under the voice DCDC ON/OFF appears "ON"	ON	ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
1A-B.26	Click on PB2-3 button	OK	OK	
1A-B.27	Set to "ON" the line "DCDC OFF/ON CMD" in the "commanding" column"	ON	ON	
1A-B.28	Press "W" button" in the line "DCDC OFF/ON CMD" in the "commanding" column	Command execute OK	Command execute OK	
1A-B.29	Verify that in the column Digital Readout under the voice DCDC ON/OFF appears "ON"	ON	ON	
1A-B.30	Click on PB2-4 button	OK	OK	
1A-B.31	Set to "ON" the line "DCDC OFF/ON CMD" in the "commanding" column"	ON	ON	
1A-B.32	Press "W" button" in the line "DCDC OFF/ON CMD" in the "commanding" column	Command execute OK	Command execute OK	
1A-B.33	Verify that in the column Digital Readout under the voice DCDC ON/OFF appears "ON"	ON	ON	
1A-B.34	Take note of power supply output current	1,6A±0,5A	1,6A	All the PB2 DC/DC are ON

10.3.2.5.2.1 ESEM 1-A SIDE B UNDER VOLTAGE TEST

1A-B.35	Click on ESEM 1-A button	OK	OK	
1A-B.36	Press "READ ALL" button in the column "ANALOG READOUT"	Command execute OK	OK	
1A-B.37	Verify the "Analog ref. 4.0V" telemetry	4,0V ± 0,15V	4,04V	
1A-B.38	Measure the input voltage with a multimeter	120V ± 0.2V	120,2V	
1A-B.39	In the column "ANALOG READOUT" press R Button near Main Power Volt.	120V ± 4.5V	119,1V	
1A-B.40	Decrease the input voltage to 113V	113V ± 0.2V	113,0V	
1A-B.41	In the column "ANALOG READOUT" press R Button near Main Power Volt.	113V ± 4.5V	112,0V	
1A-B.42	Decrease the input voltage to 85V (below threshold and accuracy)	85V ± 0,2V	85V	Threshold = 88V ± 2V
1A-B.43	Verify current absorption from Main Bus	0,000A±200mA	0,100A	
1A-B.44	In the column "ANALOG READOUT" press R Button near Main Power Volt.	Command execute Failed	Command execute Failed	
1A-B.45	Set the CAN BUS board address to 30	30	30	
1A-B.46	Select "CAN BUS I/F Side" to A	A	A	
1A-B.47	In the column "ANALOG READOUT" press R Button near Main Power Volt.	Command execute Failed	Command execute Failed	
1A-B.48	Increase the input voltage to 113V	113V ± 0.2V	113V	
1A-B.49	Take note of power supply output current	1,3A±0,5A	1,3A	
1A-B.50	Set power supply to 120V	120V ± 0.2V	120,2V	
1A-B.51	Take note of power supply output current	1,1A±0,5A	1,1A	
1A-B.52	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
1A-B.53	Set the CAN BUS board address to 31	31	31	
1A-B.54	Select "CAN BUS I/F Side" to B	B	B	
1A-B.55	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
1A-B.56	Click on ESEM1-A button	OK	OK	
1A-B.57	Press "READ ALL" button in the column "DIGITAL READOUT"	Command execute OK	Command execute OK	
1A-B.58	Verify the following parameter: Board status DCDC 1 OVC DCDC 2 OVC DCDC 1 STATUS DCDC 2 STATUS MAIN POWER STATUS	 0 (OK) 0 (OK) 0 (OK) 1 (ON) 1 (ON) 1 (ON)	 0 0 0 1 1 1	
1A-B.59	Click on Read All command in the column Analog Readout	OK	OK	
1A-B.60	Verify the value of the following telemetries: Temperature Main Power Volt. Analog Ref. 4.0V	 -40°C<T<80C° 120,00V±7,50V 4,000V±150mV	 27,25°C 118,8V 4,00V	

10.3.2.5.2.2 ESEM 1-A SIDE B OVER VOLTAGE TEST

1A-B.61	Click on PB2-1 button	OK	OK	
1A-B.62	Set to "ON" the line "DCDC OFF/ON CMD" in the "commanding" column"	ON	ON	
1A-B.63	Press "W" button" in the line "DCDC OFF/ON CMD" in the "commanding" column	W	W	
1A-B.64	Verify that in the column Digital Readout under the voice DCDC ON/OFF appears "ON"	ON	ON	
1A-B.65	Click on PB2-2 button	OK	OK	
1A-B.66	Set to "ON" the line "DCDC OFF/ON CMD" in the "commanding" column"	ON	ON	
1A-B.67	Press "W" button" in the line "DCDC OFF/ON CMD" in the "commanding" column	W	W	
1A-B.68	Verify that in the column Digital Readout under the voice DCDC ON/OFF appears "ON"	ON	ON	
1A-B.69	Click on PB2-3 button	OK	OK	
1A-B.70	Set to "ON" the line "DCDC OFF/ON CMD" in the "commanding" column"	ON	ON	
1A-B.71	Press "W" button" in the line "DCDC OFF/ON CMD" in the "commanding" column	W	W	
1A-B.72	Verify that in the column Digital Readout under the voice DCDC ON/OFF appears "ON"	ON	ON	
1A-B.73	Click on PB2-4 button	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
1A-B.74	Set to "ON" the line "DCDC OFF/ON CMD" in the "commanding" column"	ON	ON	
1A-B.75	Press "W" button" in the line "DCDC OFF/ON CMD" in the "commanding" column	W	W	
1A-B.76	Verify that in the column Digital Readout under the voice DCDC ON/OFF appears "ON"	ON	ON	
1A-B.77	Take note of power supply output current	1,6A±0,5A	1,6A	All the PB2 DC/DC are ON
1A-B.78	Increase the input voltage to 126V	126V ± 0.2V	126V	
1A-B.79	Click on ESEM1-A button	OK	OK	
1A-B.80	In the column "ANALOG READOUT" press R Button near Main Power Volt	126V ± 4.5V	124V	
1A-B.81	Increase the input voltage to 130V	130V ± 0.2V	130V	
1A-B.82	In the column "ANALOG READOUT" press R Button near Main Power Volt.	130V ± 4.5V	128V	
1A-B.83	Set the input voltage to 153V (up the threshold and accuracy)	153V ± 0,2V	153V	Threshold = 150V ± 2V
1A-B.84	Verify current absorption from Main Bus	0,000A±200mA	0,2A	
1A-B.85	In the column "ANALOG READOUT" press R Button near Main Power Volt.	Command execute Failed	Command execute Failed	
1A-B.86	Set the CAN BUS board address to 30	30	30	
1A-B.87	Select "CAN BUS I/F Side" to A	A	A	
1A-B.88	In the column "ANALOG READOUT" press R Button near Main Power Volt.	Command execute Failed	Command execute Failed	
1A-B.89	Set the input voltage to 126V	126V ± 0.2V	126V	
1A-B.90	Take note of power supply output current	1,0A±0,5A	1,0A	
1A-B.91	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
1A-B.92	Set power supply to 120V	120V ± 0.2V	120V	
1A-B.93	Take note of power supply output current	1,1A±0,5A	1,1A	
1A-B.94	Set the CAN BUS board address to 31	31	31	
1A-B.95	Select "CAN BUS I/F Side" to B	B	B	
1A-B.96	Press button "RUN Flash" and verify on the command status window	Command execute OK	Command execute OK	
1A-B.97	Click on ESEM1-A button	OK	OK	
1A-B.98	Press "READ ALL" button in the column "DIGITAL READOUT"	OK	OK	
1A-B.99	Verify the following parameter:			
1A-B.100	Board status	0 (OK)	0	
1A-B.101	DCDC 1 OVC	0 (OK)	0	
1A-B.102	DCDC 2 OVC	0 (OK)	0	
1A-B.103	DCDC 1 STATUS	1 (ON)	1	
1A-B.104	DCDC 2 STATUS	1 (ON)	1	
1A-B.105	MAIN POWER STATUS	1 (ON)	1	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
1A-B.106	Verify the value of the following telemetries: Temperature Main Power Volt. Analog Ref. 4.0V	-40°C<T<80C° 120,00V±7,50V 4,000V±150mV	27,25°C 119,8V 4,00V	

10.3.2.5.2.3 ESEM 1-A SIDE B GLOBAL ON/OFF TEST

1A-B.107	Set OFF in the Global ON/OFF window and click on relative "W" command	OFF	OFF	
1A-B.108	Verify current absorption from Main Bus	0,000A±200mA	0,000A	
1A-B.109	Press "READ ALL" button in the column "DIGITAL READOUT"	OK	OK	
1A-B.110	Verify that appears the message "Command execution failed!"	Command execution failed!	Command execution failed!	
1A-B.111	Perform a power cycle OFF/ON on the main bus	OK	OK	
1A-B.112	Click on Run flash button	OK	OK	
1A-B.113	Click on Read all command under Digital Readout column and verify that appears the message "Command executed O.K."	Command executed OK	Command executed OK	
1A-B.114	Verify that the value of Board status in Digital Readout column in "OK"	OK	OK	
1A-B.115	Set the CAN BUS board address to 30	30	30	
1A-B.116	Select "CAN BUS I/F Side" to A	A	A	
1A-B.117	Click on Run flash button	OK	OK	
1A-B.118	Click on Read all command under Digital Readout column and verify that appears the message "Command executed O.K."	Command executed OK	Command executed OK	
1A-B.119	Verify that the value of Board status in Digital Readout column in "OK"	OK	OK	
1A-B.120	Set OFF in the Global ON/OFF window and click on relative "W" command	OK	OK	
1A-B.121	Verify current absorption from Main Bus	0,000A±200mA	0,000A	
1A-B.122	Press "READ ALL" button in the column "DIGITAL READOUT"	OK	OK	
1A-B.123	Verify that appears the message "Command execution failed!"	Command execution failed!	Command execution failed!	
1A-B.124	Perform a power cycle OFF/ON on the main bus	OK	OK	
1A-B.125	Set the CAN BUS board address to 31	31	31	
1A-B.126	Select "CAN BUS I/F Side" to B	B	B	
1A-B.127	Click on Run flash button	OK	OK	
1A-B.128	Click on Read all command under Digital Readout column and verify that appears the message "Command executed O.K."	Command executed OK	Command executed OK	
1A-B.129	Verify that the value of Board status in Digital Readout column in "OK"	OK	OK	
1A-B.130	Switch OFF main power bus	OFF	OFF	

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10.3.2.5.3 PB2-1 SIDE B

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
PB2-1-B.1	Connect BI_120V and BI_120V_RTN power supply signals	OK	OK	
PB2-1-B.2	Verify that all the cables of the section are connected	OK	OK	
PB2-1-B.3	Launch the PDS controller software	Program open	Program open	
PB2-1-B.4	Set to "FM" the window Model	OK	OK	
PB2-1-B.5	Set the CAN BUS board address to 31	31	31	
PB2-1-B.6	select JMDC = 0	0	0	
PB2-1-B.7	select TX = A	A	A	
PB2-1-B.8	select RX = A	A	A	
PB2-1-B.9	Select "CAN BUS I/F Side" to B	B	B	
PB2-1-B.10	Select "PDS Side" to B	B	B	
PB2-1-B.11	Set input bus voltage to 120V	120V±1V	120V	
PB2-1-B.12	Set input bus current limitation to 27,5 A	27,5 A±1A	27.5A	
PB2-1-B.13	Enable power supply output	enabled	enabled	
PB2-1-B.14	Verify that green led of "power switch box" is lighted	Green led ligthed	Green led ligthed	
PB2-1-B.15	Switch ON the "power switch "of "power switch box"	Switch ON	Switch ON	
PB2-1-B.16	Verify that red led of "power switch box" is lighted	Red led ligthed	Red led ligthed	
PB2-1-B.17	Take note of power supply output current	1,1A±0,5A	1,1A	
PB2-1-B.18	Click on Run flash button	OK	OK	
PB2-1-B.19	Set the CAN BUS board address to 30	30	30	
PB2-1-B.20	Select "CAN BUS I/F Side" to A	A	A	
PB2-1-B.21	Click on Run flash button	OK	OK	
PB2-1-B.22	Set the CAN BUS board address to 31	31	31	
PB2-1-B.23	Select "CAN BUS I/F Side" to B	B	B	
PB2-1-B.24	Click on PB2-4 button	OK	OK	This board is default ON
PB2-1-B.25	Set Digital I/F Test logic value = 1 in "Commanding" column	1	1	Button located on left side of software window
PB2-1-B.26	Click on letter "W" on the right of the "1" value	OK	OK	
PB2-1-B.27	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-1-B.28	Verify that in the column Digital Readout under the voice Digital I/F Test appears "1"	1	1	
PB2-1-B.29	Set Digital I/F Test logic value = 0 in "Commanding" column	0	0	
PB2-1-B.30	Click on letter "W" on the right of the "0" value	OK	OK	
PB2-1-B.31	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-1-B.32	Verify that in the column Digital Readout under the voice Digital I/F Test appears "0"	0	0	
PB2-1-B.33	Verify the status of the following flags: BOARD STATUS	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	OVT ALARM Input OVC Alarm DCDC ON/OFF 27V UV 29V Trip DCDC OFF/ON CMD	OK OK ON OK OK ON	OK OK ON OK OK ON	
PB2-1-B.34	Measure with multimeter the voltage on ESEM 3A-1 out 3 (Check that load is not connected)	28,00V±1,00V	28,1V	V1
PB2-1-B.35	Verify the value of the following telemetry: Output Voltage	V1±1.092V	28,2V	Click on relative Rbutton
PB2-1-B.36	Set OFF on DCDC ON /OFF command window and send the command	OK	OK	Power cell OFF
PB2-1-B.37	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-1-B.38	Verify the status of the following flags: BOARD STATUS OVT ALARM Input OVC Alarm DCDC ON/OFF 27V UNV 29V Trip DCDC OFF/ON CMD	OK OK OK OFF OK OK OFF	OK OK OK OFF OK OK OFF	
PB2-1-B.39	Click on the command READ ALL under the column Analog Readout	OK	OK	
PB2-1-B.40	Verify the value of the following telemetries: Temperature Analog Ref. 2.0V	-40°C<T<80C° 2,000V±150mV	36,44°C 2,15mV	
PB2-1-B.41	Verify the following analog monitor: Output Voltage	0,00V±1.092V	0,03V	
PB2-1-B.42	Measure with multimeter the voltage on ESEM 3-A 1 out 3 (Check that load is not connected)	0,00V±0,10V	0,0V	
PB2-1-B.43	Set the CAN BUS board address to 30	30	30	
PB2-1-B.44	Select "CAN BUS I/F Side" to A	A	A	
PB2-1-B.45	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-1-B.46	Verify the status of the following flags: BOARD STATUS OVT ALARM Input OVC Alarm DCDC ON/OFF 27V UNV 29V Trip DCDC OFF/ON CMD	OK OK OK OFF OK OK OFF	OK OK OK OFF OK OK OFF	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
PB2-1-B.47	Set ON on DCDC OFF/ON command window and send the command	OK	OK	Power cell ON
PB2-1-B.48	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-1-B.49	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT ALARM	OK	OK	
	Input OVC Alarm	OK	OK	
	DCDC ON/OFF	ON	ON	
	27V UNV	OK	OK	
	29V Trip	OK	OK	
	DCDC OFF/ON CMD	ON	ON	
PB2-1-B.50	Measure with multimeter the voltage on ESEM 3-A 1 out 3 (Check that load is not connected)	28,00V±1,00V	28,00V	
PB2-1-B.51	Set the CAN BUS board address to 31	31	31	
PB2-1-B.52	Select "CAN BUS I/F Side" to B	B	B	
PB2-1-B.53	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-1-B.54	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT ALARM	OK	OK	
	Input OVC Alarm	OK	OK	
	DCDC ON/OFF	ON	ON	
	27V UNV	OK	OK	
	29V Trip	OK	OK	
	DCDC OFF/ON CMD	ON	ON	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.2.5.4 ESEM 3A-1 SIDE B

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.1	Click on ESEM 3A-1 button	OK	OK	Button located on left side of software window
3A-1-B.2	Connect to active loads outlet 1, 2, 3, 4, 5, 6, 7 and 8.	OK	OK	
3A-1-B.3	Verify that loads are set to 0A current absorption	OK	OK	
3A-1-B.4	Set Digital I/F Test logic value = 1 in "Commanding" column	1	1	
3A-1-B.5	Click on letter "W" on the right of the "1" value	OK	OK	
3A-1-B.6	Click on the command READ ALL under the column Digital Readout	OK	OK	
3A-1-B.7	Verify that in the column Digital Readout under the voice Digital I/F Test appears "1"	1	1	
3A-1-B.8	Set Digital I/F Test logic value = 0 in "Commanding" column	0	0	
3A-1-B.9	Click on letter "W" on the right of the "0" value	OK	OK	
3A-1-B.10	Click on the command READ ALL under the column Digital Readout	OK	OK	
3A-1-B.11	Verify that in the column Digital Readout under the voice Digital I/F Test appears "0"	0	0	
3A-1-B.12	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 CMD: TPD3 O_2 CMD: TPD7 O_3 CMD: JPD_N O_4 CMD: SPD1_N O_5 CMD: UGPD_N O_6 CMD: SPD0_R O_7 CMD: TPD1 O_8 CMD: TTPD_R O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 OK OK OFF OFF ON OFF OFF OFF OFF OFF OFF OFF ON OFF OFF OFF OFF OFF	 OK OK OFF OFF ON OFF OFF OFF OFF OFF OFF OFF ON OFF OFF OFF OFF OFF	
3A-1-B.13	Push on Read All button in Analog Readout column	OK	OK	
3A-1-B.14	Verify the current telemetries: O_1 Current: TPD3 O_2 Current: TPD3 O_3 Current: JPD_N	 0,000A±0,225A 0,000A±0,225A 0,000A±0,225A	 0,010A 0,040A 0,020A	Current monitor check

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_4 Current: SPD1_N	0,000A±0,225A	0,030A	
	O_5 Current: UGPD_N	0,000A±0,225A	0,010A	
	O_6 Current: SPD0_R	0,000A±0,225A	0,020A	
	O_7 Current: TPD1	0,000A±0,225A	0,050A	
	O_8 Current: TTPD_R	0,00A±0,45A	0,020A	
	Temperature	-40°C<T<80C°	26,3°C	
	Analog Ref. 3.0V	3,000V±250mV	3,000V	
3A-1-B.15	Measure with multimeter the voltage on this ESEM 3-A loads:			
	O_1: TPD3	0,00V<V<1,00V	0,01V	
	O_2: TPD7	0,00V<V<1,00V	0,01V	
	O_3: JPD_N	28,00V±1,00V	28,1V	
	O_4: SPD1_N	0,00V<V<1,00V	0,01V	
	O_5: UGPD_N	0,00V<V<1,00V	0,01V	
	O_6:SPD0_R	0,00V<V<1,00V	0,01V	
	O_7: TPD1	0,00V<V<1,00V	0,01V	
	O_8:TTPD_R	0,00V<V<1,00V	0,01V	
3A-1-B.16	Set "OFF" in the window "O_3: JPD_N" and push the relative "W" command	OK	OK	
3A-1-B.17	Measure with multimeter the voltage on O_3: JPD_N	0,00V<V<1,00V	0,01V	
3A-1-B.18	Click on Read All in Digital readout column and verify O_3 CMD:JPD_N	OFF	OFF	
3A-1-B.19	Set ON in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.20	Measure with multimeter the voltage on this ESEM 3-A loads:			
	O_1: TPD3	28,00V±1,00V	28,10V	
	O_2: TPD7	28,00V±1,00V	28,10V	
	O_3: JPD_N	28,00V±1,00V	28,10V	
	O_4: SPD1_N	28,00V±1,00V	28,10V	
	O_5: UGPD_N	28,00V±1,00V	28,10V	
	O_6:SPD0_R	28,00V±1,00V	28,10V	
	O_7: TPD1	28,00V±1,00V	28,10V	
	O_8:TTPD_R	28,00V±1,00V	28,10V	
3A-1-B.21	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.22	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT Alarm	OK	OK	
	From O_1 CMD: TPD3 to O_8 CMD: TTPD_R	ON	ON	
	From O_1 Status: TPD3 to O_8 Status: TTPD_R	ON	ON	
3A-1-B.23	Set Off in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.24	Click on Raed all to in Digital readout column	OK	OK	
3A-1-B.25	Verify from digital readout column that all outlets are OFF	OK	OK	

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10.3.2.5.4.1 ESEM 3A-1 OUT 1 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.26	Disconnect outlet cables	OK	OK	
3A-1-B.27	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-1-B.28	Set short circuit simulator to 3ms	OK	OK	
3A-1-B.29	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.30	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.31	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.32	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-1-B.33	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.34	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-1-B.35	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-1-B.36	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.37	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_34 in the end of document
3A-1-B.38	Measure in the previous picture the current limitation value	6,50A±10%	6,31A	
3A-1-B.39	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,10ms	
3A-1-B.40	Verify with multimeter the absence of output voltage across load 1	0,00V±1,00V	0,09V	
3A-1-B.41	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.42	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 NOK OK OFF ON ON ON ON ON ON ON	 NOK OK OFF ON ON ON ON ON ON ON	
3A-1-B.43	Set the CAN BUS board address to 30	30	30	
3A-1-B.44	Select "CAN BUS I/F Side" to A	A	A	
3A-1-B.45	Click on Read All command in Digital Readout column	OK	OK	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.46	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 NOK OK OFF ON ON ON ON ON ON ON	 NOK OK OFF ON ON ON ON ON ON ON	
3A-1-B.47	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-1-B.48	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-1-B.49	Disconnect current probe	OK	OK	
3A-1-B.50	Connect outlet cables to active load	OK	OK	
3A-1-B.51	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.52	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK ON	 OK OK ON	
3A-1-B.53	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-1-B.54	Select "CAN BUS I/F Side" to B	B	B	
3A-1-B.55	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.56	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.57	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK OFF	 OK OK OFF	
3A-1-B.58	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.59	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.60	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK ON	 OK OK ON	
3A-1-B.61	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.2.5.4.2 ESEM 3A-1 OUT 2 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.62	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.63	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: TPD3 to O_8 CMD: TTPD_R From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK OFF OFF	 OK OK OFF OFF	
3A-1-B.64	Disconnect outlet cables	OK	OK	
3A-1-B.65	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-1-B.66	Set short circuit simulator to 3ms	OK	OK	
3A-1-B.67	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.68	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.69	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.70	Verify the status of the following flags: BOARD STATUS	 OK	 OK	
3A-1-B.71	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.72	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-1-B.73	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-1-B.74	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.75	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_35 in the end of document
3A-1-B.76	Measure in the previous picture the current limitation value	6,50A±10%	6,34A	
3A-1-B.77	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,08A	
3A-1-B.78	Verify with multimeter the absence of output voltage across load 2	0,00V±1,00V	0,01V	
3A-1-B.79	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.80	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R	 NOK OK ON OFF ON ON ON ON	 NOK OK ON OFF ON ON ON ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_7 Status: TPD1 O_8 Status: TTPD_R	ON ON	ON ON	
3A-1-B.81	Set the CAN BUS board address to 30	30	30	
3A-1-B.82	Select "CAN BUS I/F Side" to A	A	A	
3A-1-B.83	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.84	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 NOK OK ON OFF ON ON ON ON ON ON	 NOK OK ON OFF ON ON ON ON ON ON	
3A-1-B.85	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-1-B.86	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-1-B.87	Disconnect current probe	OK	OK	
3A-1-B.88	Connect outlet cables to active load	OK	OK	
3A-1-B.89	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.90	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK ON	 OK OK ON	
3A-1-B.91	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-1-B.92	Select "CAN BUS I/F Side" to B	B	B	
3A-1-B.93	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.94	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.95	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK OFF	 OK OK OFF	
3A-1-B.96	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.97	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.98	Verify the status of the following flags:			

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.99	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.2.5.4.3 ESEM 3A-1 OUT 3 CURRENT LIMITERS

3A-1-B.100	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.101	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: TPD3 to O_8 CMD: TTPD_R From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF OFF	OK OK OFF OFF	
3A-1-B.102	Disconnect outlet cables	OK	OK	
3A-1-B.103	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-1-B.104	Set short circuit simulator to 3ms	OK	OK	
3A-1-B.105	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.106	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.107	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.108	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-1-B.109	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.110	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-1-B.111	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-1-B.112	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.113	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_36 in the end of document
3A-1-B.114	Measure in the previous picture the current limitation value	6,50A±10%	6,39A	
3A-1-B.115	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,25ms	
3A-1-B.116	Verify with multimeter the absence of output voltage across load 3	0,00V±1,00V	0,01V	
3A-1-B.117	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.118	Verify the status of the following flags: BOARD STATUS OVT Alarm	NOK OK	NOK OK	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	ON ON OFF ON ON ON ON ON	ON ON OFF ON ON ON ON ON	
3A-1-B.119	Set the CAN BUS board address to 30	30	30	
3A-1-B.120	Select "CAN BUS I/F Side" to A	A	A	
3A-1-B.121	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.122	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	NOK OK ON ON OFF ON ON ON ON ON	NOK OK ON ON OFF ON ON ON ON ON	
3A-1-B.123	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-1-B.124	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-1-B.125	Disconnect current probe	OK	OK	
3A-1-B.126	Connect outlet cables to active load	OK	OK	
3A-1-B.127	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.128	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.129	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-1-B.130	Select "CAN BUS I/F Side" to B	B	B	
3A-1-B.131	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.132	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.133	Verify the status of the following flags:			

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UUT DATA :	Model PFM	Item AMS02 POWER DISTRIBUTION SYSTEM	C.I. PDS 18	S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF	OK OK OFF	
3A-1-B.134	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.135	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.136	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.137	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.2.5.4.4 ESEM 3A-1 OUT 4 CURRENT LIMITERS

3A-1-B.138	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.139	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: TPD3 to O_8 CMD: TTPD_R From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF OFF	OK OK OFF OFF	
3A-1-B.140	Disconnect outlet cables	OK	OK	
3A-1-B.141	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-1-B.142	Set short circuit simulator to 3ms	OK	OK	
3A-1-B.143	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.144	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.145	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.146	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-1-B.147	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.148	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-1-B.149	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-1-B.150	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.151	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_ 37 in the end of document
3A-1-B.152	Measure in the previous picture the current limitation value	6,50A±10%	6,47A	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.153	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,14ms	
3A-1-B.154	Verify with multimeter the absence of output voltage across load 4	0,00V±1,00V	0,00V	
3A-1-B.155	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.156	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 NOK OK ON ON ON OFF ON ON ON ON	 NOK OK ON ON ON OFF ON ON ON ON	
3A-1-B.157	Set the CAN BUS board address to 30	30	30	
3A-1-B.158	Select "CAN BUS I/F Side" to A	A	A	
3A-1-B.159	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.160	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 NOK OK ON ON ON OFF ON ON ON ON	 NOK OK ON ON ON OFF ON ON ON ON	
3A-1-B.161	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-1-B.162	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-1-B.163	Disconnect current probe	OK	OK	
3A-1-B.164	Connect outlet cables to active load	OK	OK	
3A-1-B.165	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.166	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK ON	 OK OK ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.167	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-1-B.168	Select "CAN BUS I/F Side" to B	B	B	
3A-1-B.169	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.170	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.171	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK OFF	 OK OK OFF	
3A-1-B.172	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.173	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.174	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK ON	 OK OK ON	
3A-1-B.175	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.2.5.4.5 ESEM 3A-1 OUT 5 CURRENT LIMITERS

3A-1-B.176	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.177	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: TPD3 to O_8 CMD: TTPD_R From O_1 Status: TPD3 to O_8 Status: TTPD_R	 OK OK OFF OFF	 OK OK OFF OFF	
3A-1-B.178	Disconnect outlet cables	OK	OK	
3A-1-B.179	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-1-B.180	Set short circuit simulator to 3ms	OK	OK	
3A-1-B.181	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.182	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.183	Create short circuit pressing start button on short circuit simulator			
3A-1-B.184	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-1-B.185	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.186	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-1-B.187	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-1-B.188	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.189	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_38 in the end of document
3A-1-B.190	Measure in the previous picture the current limitation value	6,50A±10%	6,48A	
3A-1-B.191	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,24ms	
3A-1-B.192	Verify with multimeter the absence of output voltage across load 5	0,00V±1,00V	0,00V	
3A-1-B.193	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.194	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 **NOK** OK ON ON ON ON **OFF** ON ON ON	 **NOK** OK ON ON ON ON **OFF** ON ON ON	
3A-1-B.195	Set the CAN BUS board address to 30	30	30	
3A-1-B.196	Select "CAN BUS I/F Side" to A	A	A	
3A-1-B.197	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.198	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 **NOK** OK ON ON ON ON **OFF** ON ON ON	 **NOK** OK ON ON ON ON **OFF** ON ON ON	
3A-1-B.199	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-1-B.200	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-1-B.201	Disconnect current probe	OK	OK	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.202	Connect outlet cables to active load	OK	OK	
3A-1-B.203	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.204	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.205	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-1-B.206	Select "CAN BUS I/F Side" to B	B	B	
3A-1-B.207	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.208	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.209	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF	OK OK OFF	
3A-1-B.210	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.211	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.212	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.213	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.2.5.4.6 ESEM 3A-1 OUT 6 CURRENT LIMITERS

3A-1-B.214	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.215	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: TPD3 to O_8 CMD: TTPD_R From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF OFF	OK OK OFF OFF	
3A-1-B.216	Disconnect outlet cables	OK	OK	
3A-1-B.217	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-1-B.218	Set short circuit simulator to 3ms	OK	OK	
3A-1-B.219	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.220	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column	OK	OK	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	that all outlets are on			
3A-1-B.221	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.222	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-1-B.223	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.224	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-1-B.225	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-1-B.226	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.227	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_ 39 in the end of document
3A-1-B.228	Measure in the previous picture the current limitation value	6,50A±10%	6,50A	
3A-1-B.229	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,14ms	
3A-1-B.230	Verify with multimeter the absence of output voltage across load 6	0,00V±1,00V	0,00V	
3A-1-B.231	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.232	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	 NOK OK ON ON ON ON ON OFF ON ON	 NOK OK ON ON ON ON ON OFF ON ON	
3A-1-B.233	Set the CAN BUS board address to 30	30	30	
3A-1-B.234	Select "CAN BUS I/F Side" to A	A	A	
3A-1-B.235	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.236	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N	 NOK OK ON ON ON ON ON	 NOK OK ON ON ON ON ON	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	OFF ON ON	OFF ON ON	
3A-1-B.237	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-1-B.238	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-1-B.239	Disconnect current probe	OK	OK	
3A-1-B.240	Connect outlet cables to active load	OK	OK	
3A-1-B.241	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.242	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.243	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-1-B.244	Select "CAN BUS I/F Side" to B	B	B	
3A-1-B.245	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.246	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.247	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF	OK OK OFF	
3A-1-B.248	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.249	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.250	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.251	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.2.5.4.7 ESEM 3A-1 OUT 7 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-1-B.252	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.253	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: TPD3 to O_8 CMD: TTPD_R From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF OFF	OK OK OFF OFF	
3A-1-B.254	Disconnect outlet cables	OK	OK	
3A-1-B.255	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-1-B.256	Set short circuit simulator to 3ms	OK	OK	
3A-1-B.257	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.258	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.259	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.260	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-1-B.261	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.262	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-1-B.263	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-1-B.264	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.265	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_ 40 In the end of document
3A-1-B.266	Measure in the previous picture the current limitation value	6,50A±10%	6,53A	
3A-1-B.267	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,19ms	
3A-1-B.268	Verify with mullimeter the absence of output voltage across load 7	0,00V±1,00V	0,00V	
3A-1-B.269	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.270	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R	NOK OK ON ON ON ON ON ON	NOK OK ON ON ON ON ON ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_7 Status: TPD1 O_8 Status: TTPD_R	OFF ON	OFF ON	
3A-1-B.271	Set the CAN BUS board address to 30	30	30	
3A-1-B.272	Select "CAN BUS I/F Side" to A	A	A	
3A-1-B.273	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.274	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	NOK OK ON ON ON ON ON ON OFF ON	NOK OK ON ON ON ON ON ON OFF ON	
3A-1-B.275	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-1-B.276	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-1-B.277	Disconnect current probe	OK	OK	
3A-1-B.278	Connect outlet cables to active load	OK	OK	
3A-1-B.279	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.280	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.281	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-1-B.282	Select "CAN BUS I/F Side" to B	B	B	
3A-1-B.283	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.284	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.285	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF	OK OK OFF	
3A-1-B.286	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.287	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.288	Verify the status of the following flags:			

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.289	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.2.5.4.8 ESEM 3A-1 OUT 8 CURRENT LIMITERS

3A-1-B.290	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.291	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: TPD3 to O_8 CMD: TTPD_R From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF OFF	OK OK OFF OFF	
3A-1-B.292	Disconnect outlet cables	OK	OK	
3A-1-B.293	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-1-B.294	Set short circuit simulator to 3ms	OK	OK	
3A-1-B.295	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.296	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.297	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.298	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-1-B.299	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-1-B.300	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-1-B.301	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-1-B.302	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-1-B.303	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_41 in the end of document
3A-1-B.304	Measure in the previous picture the current limitation value	13,00A±10%	12,67A	
3A-1-B.305	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,15ms	
3A-1-B.306	Verify with multimeter the absence of output voltage across load 8	0,00V±1,00V	0,00V	
3A-1-B.307	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.308	Verify the status of the following flags: BOARD STATUS OVT Alarm	NOK OK	NOK OK	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	ON ON ON ON ON ON ON OFF	ON ON ON ON ON ON ON OFF	
3A-1-B.309	Set the CAN BUS board address to 30	30	30	
3A-1-B.310	Select "CAN BUS I/F Side" to A	A	A	
3A-1-B.311	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.312	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: TPD3 O_2 Status: TPD7 O_3 Status: JPD_N O_4 Status: SPD1_N O_5 Status: UGPD_N O_6 Status: SPD0_R O_7 Status: TPD1 O_8 Status: TTPD_R	NOK OK ON ON ON ON ON ON OFF ON	NOK OK ON ON ON ON ON ON OFF ON	
3A-1-B.313	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-1-B.314	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-1-B.315	Disconnect current probe	OK	OK	
3A-1-B.316	Connect outlet cables to active load	OK	OK	
3A-1-B.317	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.318	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.319	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-1-B.320	Select "CAN BUS I/F Side" to B	B	B	
3A-1-B.321	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.322	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.323	Verify the status of the following flags:			

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK OFF	OK OK OFF	
3A-1-B.324	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-1-B.325	Click on Read All command in Digital Readout column	OK	OK	
3A-1-B.326	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: TPD3 to O_8 Status: TTPD_R	OK OK ON	OK OK ON	
3A-1-B.327	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-1-B.328	Switch OFF main power bus	OFF	OFF	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

10.3.2.5.5 PB2-2 SIDE B

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
PB2-2-B.1	Connect BI_120V and BI_120V_RTN power supply signals	OK	OK	
PB2-2-B.2	Verify that all the cables of the section are connected	OK	OK	
PB2-2-B.3	Launch the PDS controller software	Program open	Program open	
PB2-2-B.4	Set to "FM" the window Model	OK	OK	
PB2-2-B.5	Set the CAN BUS board address to 31	31	31	
PB2-2-B.6	select JMDC = 0	0	0	
PB2-2-B.7	select TX = A	A	A	
PB2-2-B.8	select RX = A	A	A	
PB2-2-B.9	Select "CAN BUS I/F Side" to B	B	B	
PB2-2-B.10	Select "PDS Side" to B	B	B	
PB2-2-B.11	Set input bus voltage to 120V	120V±1V	120V	?
PB2-2-B.12	Set input bus current limitation to 27,5 A	27,5 A±1A	15	
PB2-2-B.13	Enable power supply output	enabled	enabled	
PB2-2-B.14	Verify that green led of "power switch box" is lighted	Green led ligthed	Green led ligthed	
PB2-2-B.15	Switch ON the "power switch "of "power switch box"	Switch ON	Switch ON	
PB2-2-B.16	Verify that red led of "power switch box" is lighted	Red led ligthed	Red led ligthed	
PB2-2-B.17	Take note of power supply output current	1,1A±0,5A	1,1A	
PB2-2-B.18	Click on Run flash button	OK	OK	
PB2-2-B.19	Set the CAN BUS board address to 30	30	30	
PB2-2-B.20	Select "CAN BUS I/F Side" to A	A	A	
PB2-2-B.21	Click on Run flash button	OK	OK	
PB2-2-B.22	Set the CAN BUS board address to 31	31	31	
PB2-2-B.23	Select "CAN BUS I/F Side" to B	B	B	
PB2-2-B.24	Click on PB2-2 button	OK	OK	This board is default OFF
PB2-2-B.25	Set Digital I/F Test logic value = 1 in "Commanding" column	1	1	Button located on left side of software window
PB2-2-B.26	Click on letter "W" on the right of the "1" value	OK	OK	
PB2-2-B.27	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-2-B.28	Verify that in the column Digital Readout under the voice Digital I/F Test appears "1"	1	1	
PB2-2-B.29	Set Digital I/F Test logic value = 0 in "Commanding" column	0	0	
PB2-2-B.30	Click on letter "W" on the right of the "0" value	OK	OK	
PB2-2-B.31	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-2-B.32	Verify that in the column Digital Readout under the voice Digital I/F Test appears "0"	0	0	
PB2-2-B.33	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-2-B.34	Verify the status of the following flags:			

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS	OK	OK	
	OVT ALARM	OK	OK	
	Input OVC Alarm	OK	OK	
	DCDC ON/OFF	OFF	OFF	
	27V UV	OK	OK	
	29V Trip	OK	OK	
	DCDC OFF/ON CMD	OFF	OFF	
PB2-2-B.35	Click on the command READ ALL under the column Analog Readout	OK	OK	
PB2-2-B.36	Verify the value of the following telemetries:			
	Temperature	-40°C<T<80C°	30°C	
	Output Voltage	0,00V ±1,00V	0,004V	
	Analog Ref. 2.0V	2,000V±150mV	2,070V	
PB2-2-B.37	Set the CAN BUS board address to 30	30	30	
PB2-2-B.38	Select "CAN BUS I/F Side" to A	A	A	
PB2-2-B.39	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-2-B.40	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT ALARM	OK	OK	
	Input OVC Alarm	OK	OK	
	DCDC ON/OFF	OFF	OFF	
	27V UNV	OK	OK	
	29V Trip	OK	OK	
	DCDC OFF/ON CMD	OFF	OFF	
PB2-2-B.41	Set ON on DCDC OFF/ON command window and send the command	OK	OK	Power cell ON
PB2-2-B.42	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-2-B.43	Verify the status of the following flags:			
	BOARD STATUS	OK	OK	
	OVT ALARM	OK	OK	
	Input OVC Alarm	OK	OK	
	DCDC ON/OFF	ON	ON	
	27V UNV	OK	OK	
	29V Trip	OK	OK	
	DCDC OFF/ON CMD	ON	ON	
PB2-2-B.44	Click on ESEM 3A-2 button	OK	OK	
PB2-2-B.45	Set ON in the window "O_1: ER1_N" and push the relative "W" command	OK	OK	
PB2-2-B.46	Measure with multimeter the voltage on ESEM 3A 2 out 1 (Check that load is not connected)	28,00V±1,00V	28,10V	V1
PB2-2-B.47	Click on PB2-2 button	OK	OK	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
PB2-2-B.48	Click on the command READ ALL under the column Analog Readout	OK	OK	
PB2-2-B.49	Verify the value of the following telemetry: Output Voltage	V1±1.092V	27,93V	Click on relative Rbutton
PB2-2-B.50	Click on ESEM 3A-2 button	OK	OK	
PB2-2-B.51	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
PB2-2-B.52	Set the CAN BUS board address to 31	31	31	
PB2-2-B.53	Select "CAN BUS I/F Side" to B	B	B	
PB2-2-B.54	Click on PB2-2 button	OK	OK	
PB2-2-B.55	Click on the command READ ALL under the column Digital Readout	OK	OK	
PB2-2-B.56	Verify the status of the following flags: BOARD STATUS OVT ALARM Input OVC Alarm DCDC ON/OFF 27V UNV 29V Trip DCDC OFF/ON CMD	 OK OK OK ON OK OK ON	 OK OK OK ON OK OK ON	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.2.5.6 ESEM 3A-2 SIDE B

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-2-B.1	Click on ESEM3-A-2 button	OK	OK	Button located on left side of software window
3A-2-B.2	Connect to active loads outlet 1, 2, 3, 4, 5, 6, 7 and 8.	OK	OK	
3A-2-B.3	Verify that loads are set to 0A current absorption	OK	OK	
3A-2-B.4	Set Digital I/F Test logic value = 1 in "Commanding" column	1	1	
3A-2-B.5	Click on letter "W" on the right of the "1" value	OK	OK	
3A-2-B.6	Click on the command READ ALL under the column Digital Readout	OK	OK	
3A-2-B.7	Verify that in the column Digital Readout under the voice Digital I/F Test appears "1"	1	1	
3A-2-B.8	Set Digital I/F Test logic value = 0 in "Commanding" column	0	0	
3A-2-B.9	Click on letter "W" on the right of the "0" value	OK	OK	
3A-2-B.10	Click on the command READ ALL under the column Digital Readout	OK	OK	
3A-2-B.11	Verify that in the column Digital Readout under the voice Digital I/F Test appears "0"	0	0	
3A-2-B.12	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: ER1_N to O_8 CMD: CAB_R From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK OFF OFF	 OK OK OFF OFF	
3A-2-B.13	Push on Read All button in Analog Readout column	OK	OK	
3A-2-B.14	Verify the current telemetries: O_1 Current: ER1_N O_2 Current: TPD2 O_3 Current: TPD6 O_4 Current: SPD3_N O_5 Current: MPD_N O_6 Current: UPD1 O_7 Current: SPD2_N O_8 Current: CAB_R Temperature Analog Ref. 3.0V	 0,000A±0,225A 0,000A±0,225A 0,000A±0,225A 0,000A±0,225A 0,000A±0,225A 0,000A±0,225A 0,000A±0,225A 0,00A±0,45A -40°C<T<80C° 3,000V±250mV	 0,020A 0,010A 0,010A 0,020A 0,040A 0,010A 0,030A 0,010A 28,3°C 3,000V	Current monitor check
3A-2-B.15	Measure with multimeter the voltage on this ESEM 3-A loads: O_1: ER1_N O_2: TPD2 O_3: TPD6 O_4: SPD3_N O_5: MPD_N O_6: UPD1	 0,00V<V<1,00V 0,00V<V<1,00V 0,00V<V<1,00V 0,00V<V<1,00V 0,00V<V<1,00V 0,00V<V<1,00V	 0,01V 0,01V 0,01V 0,01V 0,01V 0,01V	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_7: SPD2_N O_8: CAB_R	0,00V<V<1,00V 0,00V<V<1,00V	0,01V 0,01V	
3A-2-B.16	Set ON in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-2-B.17	Measure with multimeter the voltage on this ESEM 3-A loads: O_1: ER1_N O_2: TPD2 O_3: TPD6 O_4: SPD3_N O_5: MPD_N O_6: UPD1 O_7: SPD2_N O_8: CAB_R	 28,00V±1,00V 28,00V±1,00V 28,00V±1,00V 28,00V±1,00V 28,00V±1,00V 28,00V±1,00V 28,00V±1,00V 28,00V±1,00V	 28,10V 28,10V 28,10V 28,10V 28,10V 28,10V 28,10V 28,10V	
3A-2-B.18	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.19	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: ER1_N to O_8 CMD: CAB_R From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK ON ON ON	 OK OK ON ON ON	
3A-2-B.20	Set Off in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.21	Click on Raed all to in Digital readout column	OK	OK	
3A-2-B.22	Verify from digital readout column that all outlets are OFF	OK	OK	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.2.5.6.1 ESEM 3A-2 OUT 1 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-2-B.23	Disconnect outlet cables	OK	OK	
3A-2-B.24	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-2-B.25	Set short circuit simulator to 3ms	OK	OK	
3A-2-B.26	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.27	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.28	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.29	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-2-B.30	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.31	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-2-B.32	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-2-B.33	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.34	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_42 in the end of document
3A-2-B.35	Measure in the previous picture the current limitation value	6,50A±10%	6,33A	
3A-2-B.36	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,14ms	
3A-2-B.37	Verify with multimeter the absence of output voltage across load 1	0,00V±1,00V	0,00V	
3A-2-B.38	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.39	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: ER1_N O_2 Status: TPD2 O_3 Status: TPD6 O_4 Status: SPD3_N O_5 Status: MPD_N O_6 Status: UPD1 O_7 Status: SPD2_N O_8 Status: CAB_R	 NOK OK OFF ON ON ON ON ON ON ON	 NOK OK OFF ON ON ON ON ON ON ON	
3A-2-B.40	Set the CAN BUS board address to 30	30	30	
3A-2-B.41	Select "CAN BUS I/F Side" to A	A	A	
3A-2-B.42	Click on Read All command in Digital Readout column	OK	OK	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-2-B.43	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: ER1_N O_2 Status: TPD2 O_3 Status: TPD6 O_4 Status: SPD3_N O_5 Status: MPD_N O_6 Status: UPD1 O_7 Status: SPD2_N O_8 Status: CAB_R	 NOK OK OFF ON ON ON ON ON ON ON	 NOK OK OFF ON ON ON ON ON ON ON	
3A-2-B.44	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-2-B.45	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-2-B.46	Disconnect current probe	OK	OK	
3A-2-B.47	Connect outlet cables to active load	OK	OK	
3A-2-B.48	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.49	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK ON	 OK OK ON	
3A-2-B.50	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-2-B.51	Select "CAN BUS I/F Side" to B	B	B	
3A-2-B.52	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-2-B.53	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.54	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK OFF	 OK OK OFF	
3A-2-B.55	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.56	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.57	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK ON	 OK OK ON	
3A-2-B.58	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.2.5.6.2 ESEM 3A-2 OUT 2 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-2-B.59	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.60	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: ER1_N to O_8 CMD: CAB_R From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK OFF OFF	 OK OK OFF OFF	
3A-2-B.61	Disconnect outlet cables	OK	OK	
3A-2-B.62	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-2-B.63	Set short circuit simulator to 3ms	OK	OK	
3A-2-B.64	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.65	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.66	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.67	Verify the status of the following flags: BOARD STATUS	 OK	 OK	
3A-2-B.68	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.69	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-2-B.70	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-2-B.71	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.72	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_ 43 in the end of document
3A-2-B.73	Measure in the previous picture the current limitation value	6,50A±10%	6,36A	
3A-2-B.74	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,36ms	
3A-2-B.75	Verify with multimeter the absence of output voltage across load 2	0,00V±1,00V	0,00V	
3A-2-B.76	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.77	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: ER1_N O_2 Status: TPD2 O_3 Status: TPD6 O_4 Status: SPD3_N O_5 Status: MPD_N O_6 Status: UPD1	 NOK OK ON OFF ON ON ON ON	 NOK OK ON OFF ON ON ON ON	

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STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_7 Status: SPD2_N O_8 Status: CAB_R	ON ON	ON ON	
3A-2-B.78	Set the CAN BUS board address to 30	30	30	
3A-2-B.79	Select "CAN BUS I/F Side" to A	A	A	
3A-2-B.80	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.81	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: ER1_N O_2 Status: TPD2 O_3 Status: TPD6 O_4 Status: SPD3_N O_5 Status: MPD_N O_6 Status: UPD1 O_7 Status: SPD2_N O_8 Status: CAB_R	 NOK OK ON OFF ON ON ON ON ON ON	 NOK OK ON OFF ON ON ON ON ON ON	
3A-2-B.82	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-2-B.83	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-2-B.84	Disconnect current probe	OK	OK	
3A-2-B.85	Connect outlet cables to active load	OK	OK	
3A-2-B.86	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.87	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK ON	 OK OK ON	
3A-2-B.88	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-2-B.89	Select "CAN BUS I/F Side" to B	B	B	
3A-2-B.90	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-2-B.91	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.92	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK OFF	 OK OK OFF	
3A-2-B.93	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.94	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.95	Verify the status of the following flags:			

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	OK OK ON	OK OK ON	
3A-2-B.96	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.2.5.6.3 ESEM 3A-2 OUT 3 CURRENT LIMITERS

3A-2-B.97	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.98	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: ER1_N to O_8 CMD: CAB_R From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK OFF OFF	 OK OK OFF OFF	
3A-2-B.99	Disconnect outlet cables	OK	OK	
3A-2-B.100	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-2-B.101	Set short circuit simulator to 3ms	OK	OK	
3A-2-B.102	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.103	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.104	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.105	Verify the status of the following flags: BOARD STATUS	OK	OK	
3A-2-B.106	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.107	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-2-B.108	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-2-B.109	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.110	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_ 44 in the end of document
3A-2-B.111	Measure in the previous picture the current limitation value	6,50A±10%	6,39A	
3A-2-B.112	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,17ms	
3A-2-B.113	Verify with multimeter the absence of output voltage across load 3	0,00V±1,00V	0,00V	
3A-2-B.114	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.115	Verify the status of the following flags: BOARD STATUS OVT Alarm	 NOK OK	 NOK OK	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_1 Status: ER1_N	ON	ON	
	O_2 Status: TPD2	ON	ON	
	O_3 Status: TPD6	OFF	OFF	
	O_4 Status: SPD3_N	ON	ON	
	O_5 Status: MPD_N	ON	ON	
	O_6 Status: UPD1	ON	ON	
	O_7 Status: SPD2_N	ON	ON	
	O_8 Status: CAB_R	ON	ON	
3A-2-B.116	Set the CAN BUS board address to 30	30	30	
3A-2-B.117	Select "CAN BUS I/F Side" to A	A	A	
3A-2-B.118	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.119	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: ER1_N O_2 Status: TPD2 O_3 Status: TPD6 O_4 Status: SPD3_N O_5 Status: MPD_N O_6 Status: UPD1 O_7 Status: SPD2_N O_8 Status: CAB_R	 NOK OK ON ON OFF ON ON ON ON ON	 NOK OK ON ON OFF ON ON ON ON ON	
3A-2-B.120	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-2-B.121	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-2-B.122	Disconnect current probe	OK	OK	
3A-2-B.123	Connect outlet cables to active load	OK	OK	
3A-2-B.124	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.125	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK ON	 OK OK ON	
3A-2-B.126	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-2-B.127	Select "CAN BUS I/F Side" to B	B	B	
3A-2-B.128	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-2-B.129	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.130	Verify the status of the following flags:			

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	OK OK OFF	OK OK OFF	
3A-2-B.131	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.132	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.133	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK ON	 OK OK ON	
3A-2-B.134	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

10.3.2.5.6.4 ESEM 3A-2 OUT 4 CURRENT LIMITERS

3A-2-B.135	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.136	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: ER1_N to O_8 CMD: CAB_R From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK OFF OFF	 OK OK OFF OFF	
3A-2-B.137	Disconnect outlet cables	OK	OK	
3A-2-B.138	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-2-B.139	Set short circuit simulator to 3ms	OK	OK	
3A-2-B.140	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.141	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.142	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.143	Verify the status of the following flags: BOARD STATUS	 OK	 OK	
3A-2-B.144	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.145	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-2-B.146	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-2-B.147	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.148	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_ 45 in the end of document
3A-2-B.149	Measure in the previous picture the current limitation value	6,50A±10%	6,48A	

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UUT DATA : Model PFM — Item AMS02 POWER DISTRIBUTION SYSTEM — C.I. PDS 18 — S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-2-B.150	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5,15ms	
3A-2-B.151	Verify with multimeter the absence of output voltage across load 4	0,00V±1,00V	0,00V	
3A-2-B.152	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.153	Verify the status of the following flags:			
	BOARD STATUS	NOK	NOK	
	OVT Alarm	OK	OK	
	O_1 Status: ER1_N	ON	ON	
	O_2 Status: TPD2	ON	ON	
	O_3 Status: TPD6	ON	ON	
	O_4 Status: SPD3_N	OFF	OFF	
	O_5 Status: MPD_N	ON	ON	
	O_6 Status: UPD1	ON	ON	
	O_7 Status: SPD2_N	ON	ON	
	O_8 Status: CAB_R	ON	ON	
3A-2-B.154	Set the CAN BUS board address to 30	30	30	
3A-2-B.155	Select "CAN BUS I/F Side" to A	A	A	
3A-2-B.156	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.157	Verify the status of the following flags:			
	BOARD STATUS	NOK	NOK	
	OVT Alarm	OK	OK	
	O_1 Status: ER1_N	ON	ON	
	O_2 Status: TPD2	ON	ON	
	O_3 Status: TPD6	ON	ON	
	O_4 Status: SPD3_N	OFF	OFF	
	O_5 Status: MPD_N	ON	ON	
	O_6 Status: UPD1	ON	ON	
	O_7 Status: SPD2_N	ON	ON	
	O_8 Status: CAB_R	ON	ON	
3A-2-B.158	Set the CAN BUS board address to 30	30	30	
3A-2-B.159	Select "CAN BUS I/F Side" to A	A	A	
3A-2-B.160	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.161	Verify the status of the following flags:			
	BOARD STATUS	NOK	NOK	
	OVT Alarm	OK	OK	
	O_1 Status: ER1_N	ON	ON	
	O_2 Status: TPD2	ON	ON	
	O_3 Status: TPD6	ON	ON	
	O_4 Status: SPD3_N	OFF	OFF	

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UUT DATA : Model PFM Item AMS02 POWER DISTRIBUTION SYSTEM C.I. PDS 18 S/N FM01

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
	O_5 Status: MPD_N O_6 Status: UPD1 O_7 Status: SPD2_N O_8 Status: CAB_R	ON ON ON ON	ON ON ON ON	
3A-2-B.162	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	Protection reset
3A-2-B.163	Disconnect the short circuit simulator from outlet cables	OK	OK	
3A-2-B.164	Disconnect current probe	OK	OK	
3A-2-B.165	Connect outlet cables to active load	OK	OK	
3A-2-B.166	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.167	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK ON	 OK OK ON	
3A-2-B.168	Set the CAN BUS board address to 31	31	31	In order to verify that CAN BUS 31 is able to reset a protection
3A-2-B.169	Select "CAN BUS I/F Side" to B	B	B	
3A-2-B.170	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	
3A-2-B.171	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.172	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK OFF	 OK OK OFF	
3A-2-B.173	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.174	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.175	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK ON	 OK OK ON	
3A-2-B.176	Set OFF in the window All Outlets ON/OFF and push the relative "W" command	OK	OK	

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UUT DATA :	Model	PFM	Item	AMS02 POWER DISTRIBUTION SYSTEM	C.I.	PDS 18	S/N	FM01

10.3.2.5.6.5 ESEM 3A-2 OUT 5 CURRENT LIMITERS

STEP n°	TEST SEQUENCE	EXPECTED VALUE	MEASURED VALUE	REMARKS
3A-2-B.177	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.178	Verify the status of the following flags: BOARD STATUS OVT Alarm From O_1 CMD: ER1_N to O_8 CMD: CAB_R From O_1 Status: ER1_N to O_8 Status: CAB_R	 OK OK OFF OFF	 OK OK OFF OFF	
3A-2-B.179	Disconnect outlet cables	OK	OK	
3A-2-B.180	Connect outlet cables to short circuit simulator without amperometer	OK	OK	
3A-2-B.181	Set short circuit simulator to 3ms	OK	OK	
3A-2-B.182	Set ON in All outlets ON/OFF command and push on the relative "W" command	OK	OK	
3A-2-B.183	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.184	Create short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.185	Verify the status of the following flags: BOARD STATUS	 OK	 OK	
3A-2-B.186	Click on Read all in Digital readout column and verify from outlet status located in Digital readout column that all outlets are on	OK	OK	
3A-2-B.187	Set short circuit simulator to 10ms short circuit duration	OK	OK	
3A-2-B.188	Monitor the short circuit current with a current probe (Ch1 of oscilloscope) Monitor the 28V of a different outlet of Esem3A under test (Ch2 of oscilloscope)	OK	OK	
3A-2-B.189	Create the short circuit pressing start button on short circuit simulator	OK	OK	
3A-2-B.190	Make an hardcopy of the oscilloscope measurements	OK	OK	Add Annex_46 in the end of document
3A-2-B.191	Measure in the previous picture the current limitation value	6,50A±10%	6,48A	
3A-2-B.192	Measure in previous picture the current limitation time	5ms<T_lim<6ms	5.01mS	
3A-2-B.193	Verify with multimeter the absence of output voltage across load 5	0,00V±1,00V	0,00V	
3A-2-B.194	Click on Read All command in Digital Readout column	OK	OK	
3A-2-B.195	Verify the status of the following flags: BOARD STATUS OVT Alarm O_1 Status: ER1_N O_2 Status: TPD2 O_3 Status: TPD6 O_4 Status: SPD3_N O_5 Status: MPD_N O_6 Status: UPD1	 NOK OK ON ON ON ON OFF ON	 NOK OK ON ON ON ON OFF ON	

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