

<b>Specifications for 42 V battery connections</b>			
	<b>Item</b>	<b>Comments</b>	<b>Status</b>
	<b>SYSTEM ISSUES</b>		
1	Electrical shorts between poles must not be possible using simple metal tools (screwdrivers, wrenches) (The positive battery terminal must not be exposed)	Agreement reached	Closed 11-19-99
2	Battery connections must be designed to prevent the connection of alligator type jumper cables	Agreement reached Separate jump start connection will be provided	Closed 11-19-99
3	Battery connections must be designed to prevent electrical access when connected. (terminals should be inaccessible when mated)	Agreement reached. Electrical access must be limited. If diagnostic information is needed, probe access at the battery may be requested	Closed 3-23-00
4	Battery connections must be designed to prevent connection to the wrong voltage bus (must be indexed to not interchange 12 – 36 V battery connections)	Agreement reached	Closed 11-19-99
5	Battery connections must be designed to prevent reverse polarity	Agreement reached	Closed 11-19-99
6	Will a family of battery connections be needed based on battery current/time profiles?	# will not be specified. Decision will be based on recommendations from the connection suppliers.	Closed 3-23-00
7	Should centerline distance between battery connections be standardized for various battery capacity ranges?	Don't care – centerline spacing is not an issue in specifying connection system	Closed 12-9-99
8	Should the connections be on the top, side or bottom of the battery?	Common location may be desirable but will not be resolved by this committee	Closed 11-19-99
9	Should we allow pigtail connections on the battery?	Pigtail connections will not be specified in the proposal request.	Closed 3-23-00
10	Battery connections should be connected and disconnected without tools for fast mounting?	Tool-less connection is desirable. If a tool is used, it must not be able to make a conductive path to ground	Closed 3-23-00
11	Should allow for connection of an electrical module between the battery & wiring harness?	Desirable – not a requirement. Connection system proposals will be asked to address the possibility	Closed 3-23-00
12	Should the battery terminals be male or female?	Decision will be based on recommendations from the connection suppliers.	Closed 3-23-00
13	Separate connections for + & - or one connection for both?	Separate connections for + & - will be specified	Closed 12-9-99
14	Is connector indexing desired to differentiate battery technology?	Yes	Closed 12-9-99
15	Do we need to specify the space required to install the connection in the vehicle?	Not in initial requirements. Connection system proposals must specify space needed during design review.	Closed 3-23-00
16	What is the impact on a dual voltage battery?	Above conditions can be met with a dual voltage battery	Closed 3-23-00

#	Item	Comments	Status
	<b>TERMINAL MECHANICAL</b>		
30	Terminal-terminal engage/disengage force	50 mate and unmate cycles will be specified	Closed 3-23-00
31	Terminal bend resistance	Not specified at this time	Closed 3-23-00
	<b>TERMINAL ELECTRICAL</b>		
40	Dry circuit resistance	Not needed	Closed
41	Nominal current resistance	< 0.5 milliohm	Closed 3-23-00
42	Maximum current capability	Will be customer specific. A common current cycle will be specified for the design testing	Closed 3-23-00
43	1008 hour current cycling	Not needed for design testing	Closed
44	Maximum current allowed when disconnecting	Open issue – connection suppliers to provide guidance on capability	
	<b>CONNECTION SYSTEM MECHANICAL</b>		
50	Terminal-connector insertion/extraction force	Not specified for design testing	Closed
51	Connection system mating/unmating force (Battery case to harness connector)	Hand mated connections must have < 75 Newtons of engage force. Mechanically assisted connections may be used to keep engage force < 75 Newtons. # of cycles?	Closed 3-23-00
52	Misc. component engage/disengage force	For TPA, CPA, PLR, etc. Not specified for design testing	Closed
53	Vibration/Mechanical shock	Not specified for design testing	Closed
	<b>CONNECTION SYSTEM ELECTRICAL</b>		
60	Isolation resistance		
61	Connector system maximum current capability	Customer specific - A common current cycle will be specified for the design testing	Closed 3-23-00
62	Connector system 504 hour current cycling	Not specified for design testing	Closed
	<b>CONNECTION SYSTEM ENVIRONMENTAL</b>	Ambient temperature -40 <sup>0</sup> C to +80 <sup>0</sup> C Degree of sealing needed will not be specified. Connection must meet vehicle underhood requirements for battery locations.	Closed 3-23-00
70	Thermal shock	Not specified for design testing	Closed
71	Temperature/humidity cycling	Not specified for design testing	Closed
72	High temperature exposure	Not specified for design testing	Closed
73	Fluid resistance	Not specified for design testing	Closed
74	Submersion	Not specified for design testing	Closed
75	Pressure/vacuum leak	Not specified for design testing	Closed