

HVR Series Standards List

Automotive Standards

	HVR1000CS	HVR2000CS	HVR2000RG	HVR1200RG
BMW - GS 95023 (2009-12)				
9.2.1 - Range of unlimited operating capability	✓	✓		
9.2.2 - Range of upper limited operating capability	✓	✓		
9.2.3 - Range of lower limited operating capability	✓	✓		
9.2.4 - Range of highly limited operating capability	✓	✓		
9.2.5 - Voltage dynamics	✓	✓		
9.2.6 - Voltage ripple	✓	✓	✓	✓
9.2.7 - Overvoltage	✓	✓		
9.2.8 - Overvoltage above the limit voltage	✓	✓		
9.2.9 - Undervoltage	✓	✓		
9.2.12 - Voltage offset	✓	✓		
9.2.13 - Interactions between LV and HV system	✓	✓		
9.3.4 - Overcurrent protection (electrical energy storage)	✓	✓		
9.3.5 - Short circuit	✓	✓		
9.3.7 - Isolation resistance	✓	✓		
9.3.10 - Active discharge	✓	✓		
9.3.11 - Passive discharge	✓	✓		
9.3.15 - HV interlock	✓	✓		
9.3.18 - Diagnosis of the HV voltage	✓	✓		
9.3.19 - Failure of LV supply voltage	✓	✓		
9.4.1 - Isolation monitoring	✓	✓		
9.4.3 - Service disconnect	✓	✓		
9.4.5 - Detection of open HV cables	✓	✓		
9.4.6 - Requirements for HV battery	✓	✓		
9.4.7 - Requirements for DC/DC converter HV/LV	✓	✓		
ISO - 21498-2 (2021 & 2024)				
6.2 - DC supply voltage variation within operational range.svg	✓	✓		
6.5 - Generated voltage ripple.svg	✓	✓		
6.6 - Immunity to voltage ripple.svg	✓	✓	✓	✓
6.7 - Overvoltage.svg	✓	✓		
6.8 - Undervoltage.svg	✓	✓		
6.9 - Voltage offset.svg	✓	✓		
6.11 - Immunity to load dump voltage.svg	✓	✓		
6.12 - Short circuit.svg	✓	✓		
MAN CVS43:2021-01				
3.3.7 - Test of excessive EB conductor current	✓	✓		
4.1.1 - Operating Voltage	✓	✓		
4.1.2 - Steady-state Overvoltage	✓	✓		
4.1.3 - Dynamic Overvoltage	✓	✓		
4.1.4 - Dynamic Undervoltage	✓	✓		
4.1.7 Immunity – Single pole insulation fault	✓	✓		
4.1.9 Active discharge	✓	✓		
4.1.10 Passive discharge	✓	✓		
4.2.2 Voltage ripple along VCB supply lines – Vehicle – Measurement	✓	✓		
MBN LV123 (2014)				
10.4.1 - Range of unlimited operating capability	✓	✓		
10.4.2 - Range of upper limited operating capability	✓	✓		
10.4.3 - Range of lower limited operating capability	✓	✓		
10.4.4 - Range of highly limited operating capability	✓	✓		
10.4.5 - Voltage dynamics	✓	✓		
10.4.7 - Overvoltage	✓	✓		
10.4.8 - Undervoltage	✓	✓		
10.5.4 - Overcurrent protection	✓	✓		
10.5.6 - Isolation resistance	✓	✓		
10.5.8 - Residual voltage	✓	✓		
10.5.17 - Behavior in the event of a crash	✓	✓		
10.5.18 - Measuring the HV voltage	✓	✓		
10.5.19 - Failure of LV supply voltage	✓	✓		
10.6.1 - Isolation monitoring	✓	✓		
10.6.2 - Service disconnect function	✓	✓		
10.6.3 - Pre-charge circuit	✓	✓		

10.6.4 - Detection of open HV cables	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
10.6.5 - Additional requirements for HV battery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
10.6.5.1 - Switching equipment HV battery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
10.6.5.2 - Overcurrent protection HV battery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
10.6.6 - Additional requirements for DC/DC converter HV/LV	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
10.6.7 - Additional requirements for inverters	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Stellantis - CS.00245 HV EE Components				
5.2.2 C_ET_01_HV_V: Resistance to Usual and Operating Voltage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5.2.3 C_ET_02_HV_V: Resistance to Ripple On High Voltage Network	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5.2.4 C_ET_03_HV_V: Measurement of Generated Voltage Ripple	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5.2.5 C_ET_04_HV_V: Resistance to Transient Overvoltage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5.2.6 C_ET_05_HV_V: Resistance to Transient Undervoltage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5.2.7 C_ET_06_HV_V: Resistance to Load Dump Pulse	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
VW - VW 80300 (2016)				
HVPT-1 - HV voltage cycle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
HVPT-2 - HV pre-charging	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
HVPT-3 - Passive discharge	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
HVPT-4 - Active discharge	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
HVPT-5 - HV insulation resistance to LV	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-01 - Operation within the regular HV operating voltage range	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-02 - Operation within the HV overvoltage range	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-03 - Operation within the HV undervoltage range	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-04 - Pre-charging	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-05 - Generated HV voltage dynamics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-06 - System HV voltage dynamics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-07 - HV voltage dynamics of energy storage devices	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-12 - HV overcurrent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
VW - VW 80300 (2021)				
HVPT-1 - HV voltage cycle	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
HVPT-2 - HV pre-charging	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
HVPT-3 - Passive discharge	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
HVPT-4 - Active discharge	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
HVPT-5 - HV insulation resistance to LV	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-01 - Operation within the regular HV operating voltage range	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-02 - Operation within the HV overvoltage range	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-03 - Operation within the HV undervoltage range	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-04 - Pre-charging	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-05 - Generated HV voltage dynamics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-06 - System HV voltage dynamics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-07 - HV voltage dynamics of energy storage devices	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-09 - System HV voltage ripple	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EHV-12 - HV overcurrent	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-13 - HV service life (additional)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-14 - On/off durability testing for HV components	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
EHV-15 - Functionality of HV interlock, maintenance connector, and crash signaling	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		