

Smart 453 Ph4 Electric Drive - HV battery is charged slowly

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Version	1
Design group	54.10 Battery, power supply, voltage converter
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Validity	smart (Ph4) electric drive
Reason for change	
Reason for block	

Complaint:

At extremely low outside temperatures and cold battery cells, the charging process of the HV battery can take a very long time.

Cause:

When the local environment in which the vehicle exists exhibits extremely low ambient temperatures, the Lithium-Ion HV system goes in to a "safe mode". Lithium battery construction naturally requires a higher charging current at low temperatures to increase the state of charge. The high charging current demanded by the HV battery during extreme cold can cause permanent damage to the HV system, so the charging current is limited to protect and prolong the life of the HV components in this vehicle. This feature is enabled to protect the battery cells by reducing the charging current to approximately 0 Amps, thus charging is virtually disabled.

Remedy:

Park the vehicle in a heated building so that HV battery can warm up.

Restart the charging process.

Symptoms
Overall vehicle / Power supply / High-voltage on-board electrical system / High-voltage battery / Nonfunctional
Overall vehicle / Power supply / High-voltage on-board electrical system / Charging / Domestic power outlet (Mode2/Level1) / Does not start
Overall vehicle / Power supply / High-voltage on-board electrical system / Charging / Wallbox (Mode3/Level2) / Does not start
Overall vehicle / Power supply / High-voltage on-board electrical system / Charging / Charging pillar (Mode3/Level2) / Does not start
Overall vehicle / Power supply / High-voltage on-board electrical system / Charging / smartCharging / Does not start