5. Error codes for self-diagnosis

The unu Scooter will detect errors in its drivetrain and display them to the driver via the dashboard. In times of very short occurences, it may happen that the error is only reported to unu support via the Scooter Panel tool. This is relevant for those instances where the driver reports brief interruptions in the acceleration but was not able to see an error displayed.
Some errors can be fixed without replacing any part. Solutions are displayed in the following charts in column “Quick Solution”. For most errors it is best to contact unu support directly and ask for the latest insights into problem causes and solutions.

Errors can appear only for a single time and can be solved via a Hard Reboot. If the error is occurring repeatedly or permanent, follow the quick solution advices.

Info: Please insert the error code in a spare part order if you replace it with the help of this chapter.

5.1 ECU error codes

Error-Code / Blinks	Name	Explanation	Quick Solution for permanent error
FE01	**Voltage protection**	Error caused when battery voltage is higher than 70± 1V and the scooter enters in a protection mode.	Measure at ECU B+/B- if voltage is above 69 V If >69V: Replace Battery If <69V: Replace ECU
FE02	**Voltage protection**	Error caused when battery voltage is lower than 40± 1V and the scooter enters in protection mode.	Charge battery and try again.
FE03	**Motor short circuit**	Scooter self-protection from motor short circuit.	- Check the motor phase line for short circuit, including external short circuit and internal short circuit. - Inspection method: disconnect all connections between the motor phase line

			and the controller, and rotate the motor gently by hand to check whether there is resistance. If there is resistance, it means that the motor phase line is short circuited. - If there is no resistance, replace ECU - If there is resistance, replace Motor
FE04	**Acceleration stalling**	This error code may be generated when the motor finds physical resistance when accelerating. For example, slightly pulling the throtlle without allowing the scooter to move forward. Only when the error is persistent and the motor does not run anymore without any clear physical blockers, it needs inspection. In this case the problem is more likely to be related to the motor or the throttle	Release throttle and accelerate again. Replace Throttle. Replace ECU.
FE05	**Motor sensor issue**	The hall sensor is responsible for measuring the motor speed therefore the ECU won't let the scooter work in case there is a failure on this sensor.	See chapter 6.7
FE06	**ECU issue**	An internal component of the ECU failed during its self-check	Replace ECU
FE07	**Motor open-circuit**	ECU detected open connection with the motor	1. Check if the screws holding the motor wires are well tight - if not, tight the screws and try again. If still present problem go to the next step 2. Unscrew motor

			wires from ECU and measure them using a multimeter (Ohm). Measure all pair combination of the 3 wires. All of them should show very low resistance - If any pair shows high resistance or open circuit then replace the motor - If everything is fine go to next step 3. Use a spare ECU to test the scooter motor - If that fix the problem, replace the ECU - If not, replace the motor
FE10	**Self-check failed**	The current sensing detected an unexpected value when the ECU was powering up	Reconnect battery and try to drive again.
FE11	**ECU too hot**	The ECU is too hot (T>105°C) and the output is disabled, i.e.: motor won't work	Stop scooter and let it cool down.
FE12	**Abnormal throttle**	Error caused by a throttle abnormality.	Release throttle and try again.
FE14	**Acceleration blocked**	Error caused when throttle is being activated/pulled when scooter is turned on. To avoid triggering this error avoid accelerating when turning scooter on.	Release throttle and try again.
FE16	**ECU damage**	The ECU detected the malfunctioning of an internal component and has entered protection mode	Replace ECU

5.2 Battery error codes

Error-Code / Blinks	Name	Explanation	Possible Quick Solution
FB01	**Temperature issue**	This error occures when battery is too hot (above 60℃) while charging, i.e.: during recuperation (KERS)	Not to dermine - start with ECU and return scooter
FB02	**Battery temperature**	This error occures when battery is too cold (under 0℃) *while charging, i.e.: during recuperation (KERS)*	Not to dermine - start with ECU and return scooter
FB03	**Battery too hot**	This error occures when battery is too hot (above 65℃) while disacharging	Let battery cool down for 30 minutes. If error persists contact a partner garage for professional inspection.
FB04	**Battery too cold**	This error occures when battery is too hot (under -20℃) while discharging	Let battery warm up indoors.
FB05	**Battery damage**	Error is caused by a damaged battery.	Replace Main Battery
FB06	**Battery damage**	Error is caused by a damaged battery.	Replace Main Battery
FB08	**Battery too hot**	This error occures when battery is too hot (above 110℃) while charge or discharging.	Stop driving and let battery cool down for 30 minutes.
FB09	**Voltage too high**	The battery might be overcharged due to the charger or the KERS or it might be defective	Restart scooter and try again.
FB11	**Voltage too low**	The battery is overdischarged	Fully recharge battery.
FB12	**Battery issue**	Error caused when battery was charged with high current by the regeneration system (KERS)	Restart scooter.

FB13	**Battery issue**	Error caused when battery was drained with a high current	Disconnect battery for 5 minutes and try again.
FB14	**Battery protection**	Error caused when battery was drained with very high current	Disconnect battery for 5 minutes and try again.
FB32	**Battery not active**	Error caused due to the battery not responding to the scooter requests	1. Wait for 30 seconds for battery to recover 2. Remove battery and wait for 1 minute If error persists contact the unu Support team.
FB33	**Battery activation failed**	Error is caused when scooter is not able to activate battery.	1. Wait for additional 30 seconds to activate 2. Remove battery and turn by 180° degrees 3. If issue is intermittent, follow chapter 8.1 4. If issue is permanent, check battery
FB34	**NFC error**	Error caused probably due to a malfunctioning part. Possible faulty parts are: Battery NFC reader, wiring, or the battery itself	1. Unplugged NFC connector of battery 1 and use the reference sample NFC reader to test if it solves the problem - If so, replace the defective NFC reader by a new one - If not, try next step

			2. With the NFC reader disconnected, check continuity of all NRF wires using a multimeter. The wires should be tested from the NFC connector to the MDB pin headers - If a broken wire is detected, the harness need to be fixed - If not, try next step 3. With the NFC reader connected, use a reference sample MDB to test if it fix the problem - If so, replace the MDB"
FB35	**Connection issue**	Error caused probably due to a malfunctioning part. Possible faulty parts are: Battery NFC reader, wiring, or the battery itself	see FB34 solution