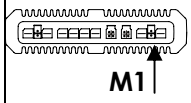
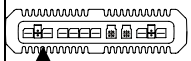
9.6 Flash codes

If a fault condition exists, the System Status Led on the Master Remote displays a Flash Code. A flash code is a specific number of short flashes, followed by a pause.

Flash Code	Fault source	Meaning
1	DX Module	An Auto Download (see 7.3) has occurred. • Turn off the DX System, then turn it on again. The DX System is not programmed correctly. • Reprogram the DX System. The DX BUS connection of a DX Module is faulty • Check the DX BUS cables and the DX BUS connections. • Replace the cables when necessary. If the Status LED on another Module is flashing too, there may be an internal fault in that Module. • Reprogram the faulty Module. • If reprogramming does not help, replace the faulty Module. An expected critical module is not detected (for example the DX Lighting Module, see also 6.6.1.2 or 6.6.2.3). • Check that the 'is critical'-parameters have the correct value • Check the DX BUS connections and (if applicable) the power connections of the critical module • Replace the critical module
2	DX Accessory	A DX Module with a Slow/Stop input (for example a CLAMB) is set to slow or stop. This may not be a fault, it is probably caused by the seat position being extended. Flash Code 2 is shown to indicate that the chair may go slower than expected. • Move the seat back to the neutral position. There is a fault in an accessory device attached to a DX Module (excluding the Power Module). For example: -a disengaged clutch -a light bulb is short circuit or open circuit -an actuator terminal is shorted to Battery '+'. • Check all accessory devices connected to your DX System.

Flash Code	Fault source	Meaning
3 4	Motor 1 / L  M1 Motor 2 / R  M2	The motor is not connected to the Power Module, or there is a short-circuit in the motor connection. • Check that the motor cables are not loose or damaged • Disconnect the motor plug from the Power Module and o Check with a multi meter that there is no connection between the motor pins and the parkbrake pins. o Measure the resistance between the motor pins. This should roughly be the motor + cable resistance (neither open-circuit nor short-circuit). • The motor brushes may be worn or too stiff o Turn the wheels to reconnect o Replace the motor brushes or the motor
5 6	Parkbrake 1 (M1/Left) Parkbrake 2 (M2/Right)	Parkbrake 1 fault: A single parkbrake is connected to M2 instead of M1. • Connect the single parkbrake to M1. Parkbrake 2 fault: The Park Brake parameter (4.3.3.1) has the value 'Dual' when a single parkbrake is used. • Set the Park Brake parameter to 'Single' with the Wizard. Parkbrake 1 or Parkbrake 2 Fault (if the above does not apply): The parkbrake is not connected to the Power Module, or there is a short-circuit in the parkbrake connection. • Disconnect the Motor/Parkbrake plug from the Power Module and o Check with a multi meter that there is no connection between the motor pins and the parkbrake pins o Check with a multi meter that there is no open-circuit between the parkbrake pins. **Note:** a mechanical parkbrake release can also cause a parkbrake fault, see section 2.4.4: Mechanical parkbrake release

Note: these faults are not affected by the **Left/Right Motor Swap** (4.3.2.7) setting. Flash code 3 or 5 always means the motor or parkbrake that is connected to the M1 connector.

When a Motor Fault or a Parkbrake Fault occurs:

- Swap the motor/parkbrake connectors, if they are not keyed.
  - If the chair has two parkbrakes, you can simply swap the motor connectors on the Power Module, if the motor connectors are not keyed.
  - If the chair has only one parkbrake, this method can not be used. Swapping the connectors will result in a M1 Parkbrake Fault with only one parkbrake, because a single parkbrake must always be connected to M1.
- When after swapping the fault moves from Motor 1/Parkbrake 1 to Motor 2/Parkbrake 2 or vice versa, the fault is caused by the motor/parkbrake or by the cables. Only when the fault does not move after swapping, the Power Module itself can be faulty.

Flash Code	Fault source	Meaning
7	Low Battery	The battery voltage is too low: it has fallen below 17V. The most probable cause of this fault is a loose battery terminal. • Check the batteries, the battery terminals, the cables, the fuses and the thermal circuit breakers • Batteries may be empty: charge the batteries • Batteries may be damaged or too small: replace the batteries
8	Over Voltage	The battery voltage has exceeded 32V. • The batteries may be overcharged. • If driving downhill, slow down and turn on the lights (if fitted). • Enable High Voltage Rollback (see also 2.2.4.3). If this fault occurs during battery charging, the battery charger is defective or not adjusted correctly. • Check that the open circuit voltage of the battery charger is in accordance with the limits of the battery manufacturer, and is less than 32V. If this fault occurs during regenerative braking (when stopping or travelling down a slope) and the batteries are not full, the battery connector may make intermittent contact. During a lost connection the braking energy can not be routed towards the battery, therefore the system voltage becomes too high. • Check the battery cables and connectors.
9 10	DX BUS cable fault: CANL wire CANH wire	An invalid voltage has been detected on the DX BUS CANH or CANL line. This fault condition results in Limp Mode (see 9.1) • Check the DX BUS cables for damage. • Check that there is no short-circuit between the pins of the DX BUS cable. An open-circuit or short-circuit on another DX Module can cause this fault. If the Hazard Lights were already switched on when the DX System was turned on, sometimes Flash Code 10 occurs. • Turn off the Hazard Lights, turn off the DX System then turn the DX System on again.
11	Stall Timeout	The motor current has been at, or close to, current limit for longer than the Stall Timeout parameter value. • The motors may not be strong enough for the chosen route (the route is too steep). o Turn off the DX System, let it cool down, then turn it back on again and choose another route. • The wheels may be rubbing on the frame. o Make sure that the wheels can turn freely. • The motors may be faulty. o Have the motor(s) checked by a service technician.
12	Module Mismatch	The data in the DX System for a DX Module is corrupt or incompatible with that module. • Reprogram the DX System. There is a compatibility problem between two or more DX Modules in the DX System. The powerchair will be disabled. • Consult your Dynamic Service Centre.