

1. Considerations before UCM test

1.1. Relevant staff should take necessary measures for the safety of the passengers as well as himself of all transactions at risk.

- Prevent the elevator run by someone else,
- Be sure that there is nobody in the elevator hoist way,
- Be sure that all elevator doors are closed

1.2. When power is switched on at door zone, ARL-500 controller does not activate door bridging function after one correct travel. After a travel, controller checks ML1-ML2 zone enable signals. If there is no fault and no short circuit at ML1-ML2 door zone signals then door bridging is activated.

1.3. With the firmware version V20R134 or later, a test function for UCM safety valve is provided in ARL-500 menu. This test function shall be used during the test operation.

1.3.1. To be able to use the UCM test function, the door pre-opening option shall be enabled as shown below:

- Menu > Door Timing Settings > Door preopening: Maximum

1.3.2. To enable the UCM test function, do the followings:

- Go to "Debug tools" screen by pressing the up button while the ARL-500 is in the main screen
- Set "UCM Test" parameter. It has 3 options:
 - Off: Disables the UCM Test function
 - Slow (V0): Enables the UCM Test function with slow test speed
 - Fast (V3): Enables the UCM Test function with high test speed. This option shall be selected

This setting is not stored in the memory. After the power is switched off or "Reset system !" is activated, it turns to "Off".

1.3.3. When the UCM test function is set to "Fast (V3)", ARL-500 does the followings:

- Closes the doors
- Disables landing calls and car commands
- Activates door bridging circuit (doors are bypassed)
- Works in "inspection mode only". In this mode, lift can be moved by pressing the direction buttons (Up or Down) on the emergency electrical operation hand terminal in the control cabinet
- When down/up direction button is pressed lift moves with high speed in the down/up direction

1.3.4. The UCM test shall be done with doors closed for safety purposes. But in order to simulate an open door, the door safety circuit needs to be interrupted manually after door circuits are bridged (after UCM test function is enabled). To do this, remove the wire from terminal 130 on the KBK-9 board to open the door safety circuit.

1.3.5. In case of UCM, ARL-500 gives "UCM detected" error. The lift is kept out of service, even if the main power is switched off and on. To reset this error:

- Go to "Debug tools" screen by pressing the up button while the ARL-500 is in the main screen
- Activate "Reset system !" option

1.4. The UCM test shall be made by moving:

- the empty car in up direction in the upper part of the well (from top-1 to top floor) and
- the fully loaded car in down direction in the lower part of the well (from bottom+1 floor to bottom floor) to simulate the worst case load.

2. UCM test procedure (with door bridging option)

2.1. UCM test in up direction

- a) Move the car to the top-1 floor by giving a call
- b) Empty the car
- c) Enable the UCM test function (see 1.3.2)
- d) Remove the wire from terminal 130 on the KBK-9 board (see 1.3.4)
- e) Press the up direction button on the emergency electrical operation hand terminal. Drive accelerates to pre-defined speed in up direction (see 1.3.3)
- f) After leaving the door zone, because door bridging is interrupted, the power of the machine brakes is also cut off. An emergency stop (UCM fall) occurs. ARL-500 gives "UCM detected" error.
- g) Measure the stopping distance. Test is successful if the stopping distance is lower than the limit value.
- h) Reset the UCM error (see 1.3.5)

2.2. UCM test in down direction

- a) Move the car to the bottom+1 floor by giving a call
- b) Load the car with the rated load
- c) Enable the UCM test function (see 1.3.2)
- d) Remove the wire from terminal 130 on the KBK-9 board (see 1.3.4)
- e) Press the down direction button on the emergency electrical operation hand terminal. Drive accelerates to pre-defined speed in down direction (see 1.3.3)
- f) After leaving the door zone, because door bridging is interrupted, the power of the machine brakes is also cut off. An emergency stop (UCM fall) occurs. ARL-500 gives "UCM detected" error.
- g) Measure the stopping distance. Test is successful if the stopping distance is lower than the limit value.
- h) Reset the UCM error (see 1.3.5)