

# KONE Internal Maintenance Manual – HMI Display Panel Fault

## 1. General Information

Device ID: ELEV-HK101-000472 Site Location: Mannerheimintie 15, Helsinki, Finland Warranty Period: 2022-11-17 - 2025-11-17 Service Contract: Standard Preventive Maintenance (Warranty Covered) Maintenance Cycle: Monthly Field Technician: Juha Makinen Assigned Engineer: Mika Rautio

## 2. Safety Instructions

- Disconnect elevator from main power using lock-out procedure (KONE SOP-EL-110). - Wear ESD protection when handling display units and internal connectors. - Ensure cabin is immobilized on maintenance floor and "Out of Service" tag is placed. - Use insulated tools and wear gloves when accessing electronic panels.

## 3. Problem Statement

Cabin display panel reboots intermittently during upward movement. Voice announcement fails during reboot events. Occurs primarily between 2nd to 6th floors. Observed over past 10 days; increasing frequency.

## 4. Fault Diagnostics Procedure

Step 1: Run HMI self-diagnostics via Service Tool. Step 2: Inspect 24V DC supply rail to HMI board. Step 3: Read event log via elevator controller. Step 4: Inspect harness for damage or loose connection. Step 5: Cross-test panel on test rig. Step 6: Check firmware version. Result Summary: Voltage drops detected, firmware is up-to-date, panel fails stress test.

## 5. Tools and Spare Parts Required

- HMI Display Panel (7"): KONE-H23-TFT-7 - Cable harness: KONE-CAB-H23-V2 - KONE Service Tool: KST-2024 - ESD Gloves: PPE-ESD-K1 - Screwdriver (Torx T10): TOOL-T10

## 6. Repair Procedure

1. Preparation: Enter Maintenance Mode, disconnect power, remove casing. 2. HMI Panel Removal: Disconnect cables, unscrew module, remove panel. 3. Install New Panel: Align and connect new display, secure mount. 4. Post-Replacement: Power on, calibrate, test audio, perform travel tests.

## 7. Final Testing Protocol

Test boot stability, floor indicator, audio output, log check, visual quality. All tests must pass before returning to service.

## 8. Customer Communication

Inform customer about completed panel replacement, successful testing, and return to service. Provide contact for follow-up.

## 9. Documentation and Archiving

Update SAP records, archive logs, attach manual to ticket, store printed version at office.