



Troubleshooting guide

for LINAK® office desk systems

Troubleshooting

This troubleshooting guide is for the following LINAK® DESKLINE® products:

DESKLIFT™ (DL) columns

The lifting columns, typically with powder-coated steel profiles, responsible for lifting the working load of the application.

Control box (CBD6S)

Both the computer and power supply of the system.

Desk panels (DP)

The user interface. Depending on the model, it is used to activate the application, set memory positions, display the height, display error codes, connect to mobile apps, and give reminders to the user.

Motor cable

Transmits low voltage power (18 to 39 V DC) from the control box to the columns, and also transmits PIEZO™ signals when available from the column.

Mains cable

Transmits high voltage power (230 V AC or 120 V AC) to the control box.

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Standard troubleshooting procedures

Procedure 1 (P1) - Initialise the control box (reset)

This procedure resets all columns to the fully retracted position so that the control box knows where they are.

Note: This is the common solution for when a desk will move down but not up.

When a control box requires initialisation, this is how the system is programmed to behave.

1. Hold DOWN button on desk panel to ensure the columns are retracted to their lower limit (whether it is the fully retracted hard stop or a configured lower limit).
2. Briefly release DOWN.
3. Press and hold DOWN for 5 seconds, wait until all desk movement has stopped, then release.
 - 3.1. If initialisation is successful, columns will do a slight up/down “handshake” movement.
 - 3.2. If you have a desk panel with display, E01 is displayed during this part of the procedure.

Procedure 2 (P2) - Check all cable connections

1. Mains cable, connected to both the control box and power outlet.
2. All motor cables, connected to both the control box and column.
 - 2.1. Assuming a standard control box configuration, these must be connected in channels 1 and 2, or channels 1, 2 and 3 for a 3-legged table.

They cannot be connected in channels 1 and 3 or 2 and 3 unless there is a configuration on the control box specifying this arrangement.
3. Desk panel cable, connected to the control box in either port A1 or port A2.

Procedure 3 (P3) - Check for obstructions

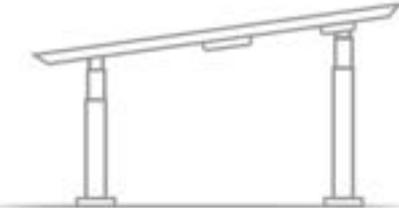
1. Check under, above and on the sides of the desk for any obstructions that could prevent movement in either direction.

Procedures 4 and 5 are for a two-legged desk system. The same concepts can be used for a 3-legged system using Channel 3 and so forth.

Procedure 4 (P4) - Check for faulty component(s) WITH error codes

(digital display on desk panel, or on app via Bluetooth®)

Note: Check the Error codes list for assistance. The code should read E##. Some error codes are channel-specific, which can help pinpoint the problem.

Symptom	Corrective measures
System will move down but not up.	1. Initialise (see Procedure 1 (P1)).
System unresponsive (no power to display when any button is pressed). If any of these steps activate the digital display, initialise the system (see Procedure 1 (P1)).	<ol style="list-style-type: none"> 1. Check mains cable connection. 2. Test power outlet using another device (lamp, phone charger, etc.). 3. Plug in a new switch and test. 4. Connect all existing cables to a new control box and test.
System is powered, but will not initialise.	<ol style="list-style-type: none"> 1. Try pressing and releasing the DOWN button a few times before pressing and holding for 5 seconds. 2. Also, be aware of whether the control box has a special configuration: If the desk is programmed with a lower stroke limit, so as to avoid a collision with something like a file cabinet, it is possible that it also has a custom, longer Forced Initialisation Time. This is the time required to hold DOWN before initialisation begins. Sometimes this is 10 seconds or longer. 3. If you have a standard control box without a special configuration (i.e. with standard configuration), try to initialise each column in Channel 1 by itself, with nothing else plugged into the motor channels on the control box. Also, swap the motor cables so that a different motor cable is used to initialise Channel 1 by itself. The problem could be a faulty column or a faulty motor cable.
Channel-specific error E.g. E41 – Channel 1 overload <i>(Everything except PIEZO errors E59-E63)</i>	<ol style="list-style-type: none"> 1. Swap the motor cable connections at the control box (motor cable #1 from channel 1 to 2, motor cable #2 from channel 2 to 1). If it remains E41, there could be a problem with the application (load or obstruction on one side) or a defective control box. If the error changes to E42, go to step 2. 2. Swap the motor cable connections at the columns, so that the column that was originally connected to Channel 1 is back in Channel 1, but with the motor cable that was originally connected to Channel 2. If it remains E42, it is most likely a defective motor cable, now connected to Channel 2. If it goes back to E41, it is most likely a defective column, now connected to Channel 1.
Desk is uneven 	<ol style="list-style-type: none"> 1. Initialise the desk. If both columns begin to run down, complete the initialisation. If only one column moves, stop and go to Step 2. 2. Check motor cable connections. Check to ensure motor cables are not pulled during movement. With a standard control box, it is possible that only one column is connected, and connected to Channel 1. In this case, it will initialise and run Channel 1 only. If there is only one column but it is connected to Channel 2, it will not initialise. 3. If a motor cable was disconnected, reconnect the cable and try initialising again. 4. If unsuccessful, connect the column from Channel 2 into Channel 1, with nothing in Channel 2, and initialise. 5. Try initialising the same column that is in Channel 1, but with a different motor cable. If it still will not initialise, replace the column.

Standard troubleshooting procedures

Procedure 5 (P5) - Check for faulty component(s) WITHOUT error codes

(no digital display on desk panel, no Bluetooth®)

Symptom	Corrective measures
System will move down but not up	1. Initialise (see Procedure 1 (P1)).
System will not initialise. OR System will not complete the full range of motion. After each of these steps, attempt to initialise (see Procedure 1 (P1)).	<ol style="list-style-type: none">1. Check mains cable connection.2. Test power outlet using another device (lamp, phone charger, etc.).3. Plug in a new switch and test.4. Connect all existing cables to a new control box and test.5. Try pressing and releasing the DOWN button a few times before pressing and holding for 5 seconds.6. Also, be aware of whether the control box has a special configuration: If the desk is programmed with a lower stroke limit, so as to avoid a collision with something like a file cabinet, it is possible that it also has a custom, longer Forced Initialisation Time. This is the time required to hold DOWN before initialisation begins. Sometimes this is 10 seconds or longer.7. If you have a standard control box without a special configuration (i.e. with standard configuration), try to initialise each column in Channel 1 by itself, with nothing else plugged into the motor channels on the control box. Also, swap the motor cables so that a different motor cable is used to initialise Channel 1 by itself. The problem could be a faulty column or a faulty motor cable.
Desk is uneven	1. See "Desk is uneven" (Procedure 4 (P4)).

Appendix

How does the control box function?

Many clever procedures, checks and measurements are performed in the control box. Here is a brief description of what the control box is trying to accomplish while it is activating an application:

• Safe activation of the application

- * Parallel, even movement of all columns in the application is critical.
 - The control box does not directly know the position of each column. Instead, the position of each column is constantly calculated via Hall pulses from each motor.
 - Motor cable disconnections are also detected as errors.
- * If PIEZO technology is present in the column, the control box monitors for PIEZO “collision” signals from each channel. When a PIEZO signal is sensed, movement is immediately stopped and, if there is room, the system is run in the opposite direction for a short distance.
- * Anytime the control sees an incomplete signal, or more than one signal (multiple keys pressed, multiple desk panels activated at the same time), an error is determined and no movement is allowed at that moment. This is to prevent an action of movement that is not intended by the user.

• Protection from equipment damage

- * Internal temperature of the control box is monitored.
- * Maximum current draw for each motor channel, as well as the system as a whole, is measured. When the current exceeds an allowable limit, an error is presented.

Error codes

Error code	Name	Description	Potential cause	Corrective measures
E01	Position Lost	The desk has an unknown position and needs to be initialised	<ul style="list-style-type: none"> • Position error • New column added 	- Initialise the system (P1)
E02	General Overload Up	Overload in upward direction has occurred	<ul style="list-style-type: none"> • Obstruction • Defective column or motor cable 	<ul style="list-style-type: none"> - Check all cable connections, (P2) initialise the system (P1) - Troubleshoot components by initialising 1 at a time (only possible with standard configuration) (P4)
E03	General Overload Down	Overload in downward direction has occurred	<ul style="list-style-type: none"> • Obstruction • Defective column or motor cable 	<ul style="list-style-type: none"> - Check all cable connections, (P2) initialise the system (P1) - Troubleshoot components by initialising 1 at a time (only possible with standard configuration) (P4)
		Indicate that software failed to kickstart watchdog	<ul style="list-style-type: none"> • Program fault 	<ul style="list-style-type: none"> - Unplug mains cable for 15 seconds - Initialise the system (P1) - Replace control box
E09	LIN collision	Collisions detected on the LINbus	<ul style="list-style-type: none"> • Key pressed on two or more connected handsets simultaneously • Multiple LIN bus devices activated 	<ul style="list-style-type: none"> - Check if another desk panel is connected and being activated - Unplug all but one desk panel and test system
E10	Power fail	Power failure happened, or power regulator adjusted below 10 %	<ul style="list-style-type: none"> • Mains cable pulled during driving • Internal fault • Only 1 battery for a 3- or 4-channel system • Voltage on power supply drops below a certain limit 	<ul style="list-style-type: none"> - Check mains cable is not caught, and is allowed to freely travel - Use strain-relief loop built into control box - Use a second battery; charge batteries

Error code	Name	Description	Potential cause	Corrective measures
E11	Channel mismatch	Change in number of actuators since initialisation	<ul style="list-style-type: none"> • Disconnection • Column added 	<ul style="list-style-type: none"> - Check motor cable connections and Integrity (P2) - Replace motor cable or column - Initialise the system (P1)
E12	Position error	One channel has a position different from the others	<ul style="list-style-type: none"> • Too much back-drive occurred 	<ul style="list-style-type: none"> - Move table to fully retracted position - Initialise system (P1)
E13	Short circuit	Short circuit detected during operation	<ul style="list-style-type: none"> • Squeezed motor cable • Short in motor 	<ul style="list-style-type: none"> - Check motor cable connections (P2) - Isolate and replace motor cable (P4) - Isolate and replace column (P4)
E15	Power limit	System has reached its power limitation Power regulator has adjusted speed down on actuators without any significant current draw (usually caused by power supply dropping)	<ul style="list-style-type: none"> • Mains cable pulled during driving • Internal fault <p>This is frequently seen alongside E10.</p>	<ul style="list-style-type: none"> - Check mains cable is not caught, and is allowed to freely travel - Use strain-relief loop built into control box
E16	Key Error	Illegal keys pressed (handled internally in DP1C)	<ul style="list-style-type: none"> • Hitting multiple buttons simultaneously 	<ul style="list-style-type: none"> - Check desk panel
E17	Safety missing	LIN bus unit does not support safety feature	<ul style="list-style-type: none"> • DP1C/DPF1C does not have up-to-date software 	<ul style="list-style-type: none"> - Try DP with more recent software version (printed on label)
E18	Missing Initialisation plug	A special service tool is required to change number of channels to the system	<p>[BASELIFT Only]</p> <ul style="list-style-type: none"> • Service tool missing from BASELIFT system when initialising 	<ul style="list-style-type: none"> - Add service tool

Error code	Name	Description	Potential cause	Corrective measures
E23	Ch1 missing	Channel 1 is detected missing	<ul style="list-style-type: none"> • Disconnection • Faulty motor cable • Faulty motor in column 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace motor cable or column - Initialise the system (P1)
E24	Ch2 missing	Channel 2 is detected missing	<ul style="list-style-type: none"> • Disconnection • Faulty motor cable • Faulty motor in column 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace motor cable or column - Initialise the system (P1)
E25	Ch3 missing	Channel 3 is detected missing	<ul style="list-style-type: none"> • Disconnection • Faulty motor cable • Faulty motor in column 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace motor cable or column - Initialise the system (P1)
E26	Ch4 missing	Channel 4 is detected missing	<ul style="list-style-type: none"> • Disconnection • Faulty motor cable • Faulty motor in column 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace motor cable or column - Initialise the system (P1)
E29	Ch1 type	Channel 1 is not same type as when initialised	<ul style="list-style-type: none"> • Change in column type • Loose wire inside motor 	<ul style="list-style-type: none"> - Check column type - Replace column - Initialise the system (P1)
E30	Ch2 type	Channel 2 is not same type as when initialised or not same type as channel 1	<ul style="list-style-type: none"> • Change in column type • Loose wire inside motor 	<ul style="list-style-type: none"> - Check column type - Replace column - Initialise the system (P1)
E31	Ch3 type	Channel 3 is not same type as when initialised or not same type as channel 1	<ul style="list-style-type: none"> • Change in column type • Loose wire inside motor 	<ul style="list-style-type: none"> - Check column type - Replace column - Initialise the system (P1)
E32	Ch4 type	Channel 4 is not same type as when initialised or not same type as channel 1	<ul style="list-style-type: none"> • Change in column type • Loose wire inside motor 	<ul style="list-style-type: none"> - Check column type - Replace column - Initialise the system (P1)

Error code	Name	Description	Potential cause	Corrective measures
E35	Ch1 pulse fail	Channel 1 had too many pulse errors	<ul style="list-style-type: none"> • Loose/faulty cable • Hall sensor PCB 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace column - Initialise the system (P1)
E36	Ch2 pulse fail	Channel 2 had too many pulse errors	<ul style="list-style-type: none"> • Loose/faulty cable • Hall sensor PCB 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace column - Initialise the system (P1)
E37	Ch3 pulse fail	Channel 3 had too many pulse errors	<ul style="list-style-type: none"> • Loose/faulty cable • Hall sensor PCB 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace column - Initialise the system (P1)
E38	Ch4 pulse fail	Channel 4 had too many pulse errors	<ul style="list-style-type: none"> • Loose/faulty cable • Hall sensor PCB 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace column - Initialise the system (P1)
E41	Ch1 overload up	Overload up occurred on channel 1	<ul style="list-style-type: none"> • Column is overloaded • Hit obstruction • Reached end stop (before initialisation at upper end stop occurs) 	<ul style="list-style-type: none"> - Remove load - Remove obstruction (P3) - Initialise if necessary (P1)
E42	Ch2 overload up	Overload up occurred on channel 2	<ul style="list-style-type: none"> • Column is overloaded • Hit obstruction • Reached end stop (before initialisation at upper end stop occurs) 	<ul style="list-style-type: none"> - Remove load - Remove obstruction (P3) - Initialise if necessary (P1)
E43	Ch3 overload up	Overload up occurred on channel 3	<ul style="list-style-type: none"> • Column is overloaded • Hit obstruction • Reached end stop (before initialisation at upper end stop occurs) 	<ul style="list-style-type: none"> - Remove load - Remove obstruction (P3) - Initialise if necessary (P1)
E44	Ch4 overload up	Overload up occurred on channel 4	<ul style="list-style-type: none"> • Column is overloaded • Hit obstruction • Reached end stop (before initialisation at upper end stop occurs) 	<ul style="list-style-type: none"> - Remove load - Remove obstruction (P3) - Initialise if necessary (P1)

Error code	Name	Description	Potential cause	Corrective measures
E47	Ch1 overload down	Overload down occurred on channel 1	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E48	Ch2 overload down	Overload down occurred on channel 2	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E49	Ch3 overload down	Overload down occurred on channel 3	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E50	Ch4 overload down	Overload down occurred on channel 4	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E53	Ch1 anti-col	Anti-collision triggered on channel 1	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E54	Ch2 anti-col	Anti-collision triggered on channel 2	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E55	Ch3 anti-col	Anti-collision triggered on channel 3	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E56	Ch4 anti-col	Anti-collision triggered on channel 4	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E59	Ch1 SLS/PIEZO	Safety limit switch activated on channel 1	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E60	Ch2 SLS/PIEZO	Safety limit switch activated on channel 2	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E61	Ch3 SLS/PIEZO	Safety limit switch activated on channel 3	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E62	Ch4 SLS/PIEZO	Safety limit switch activated on channel 4	• Hit obstruction	- Remove obstruction (P3) - Initialise if necessary (P1)
E65	Ch1 pulse dir	Pulses counted wrong direction in channel 1	• Motor poles are crossed • Hall sensor cables are crossed	- Check motor cable connections and integrity (P2) - Replace column - Initialise the system (P1)
E66	Ch2 pulse dir	Pulses counted wrong direction in channel 2	• Motor poles are crossed • Hall sensor cables are crossed	- Check motor cable connections and integrity (P2) - Replace column - Initialise the system (P1)

Error code	Name	Description	Potential cause	Corrective measures
E67	Ch3 pulse dir	Pulses counted wrong direction in channel 3	<ul style="list-style-type: none"> • Motor poles are crossed • Hall sensor cables are crossed 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace column - Initialise the system (P1)
E68	Ch4 pulse dir	Pulses counted wrong direction in channel 4	<ul style="list-style-type: none"> • Motor poles are crossed • Hall sensor cables are crossed 	<ul style="list-style-type: none"> - Check motor cable connections and integrity (P2) - Replace column - Initialise the system (P1)
E71	Ch1A short	Short-circuit on channel 1 [If T-splitter is used, short-circuit on 1A]	<ul style="list-style-type: none"> • Damage to motor cable • Damage to cable exiting column (if applicable) 	<ul style="list-style-type: none"> - Inspect motor cable for damage, replace if damaged - Inspect cable exiting column (if applicable), replace if damaged.
E72	Ch1B short	Short-circuit on channel 1 [If T-splitter is used, short-circuit on 1B]	<ul style="list-style-type: none"> • Damage to motor cable • Damage to cable exiting column (if applicable) 	<ul style="list-style-type: none"> - Inspect motor cable for damage, replace if damaged - Inspect cable exiting column (if applicable), replace if damaged.
E73	Ch2A short	Short-circuit on channel 2 [If T-splitter is used, short-circuit on 2A]	<ul style="list-style-type: none"> • Damage to motor cable • Damage to cable exiting column (if applicable) 	<ul style="list-style-type: none"> - Inspect motor cable for damage, replace if damaged - Inspect cable exiting column (if applicable), replace if damaged.
E74	Ch2B short	Short-circuit on channel 2 [If T-splitter is used, short-circuit on 2B]	<ul style="list-style-type: none"> • Damage to motor cable • Damage to cable exiting column (if applicable) 	<ul style="list-style-type: none"> - Inspect motor cable for damage, replace if damaged - Inspect cable exiting column (if applicable), replace if damaged.
E75	Ch3A short	Short-circuit on channel 3 [If T-splitter is used, short-circuit on 3A]	<ul style="list-style-type: none"> • Damage to motor cable • Damage to cable exiting column (if applicable) 	<ul style="list-style-type: none"> - Inspect motor cable for damage, replace if damaged - Inspect cable exiting column (if applicable), replace if damaged.
E76	Ch3B short	Short-circuit on channel 3 [If T-splitter is used, short-circuit on 3A]	<ul style="list-style-type: none"> • Damage to motor cable • Damage to cable exiting column (if applicable) 	<ul style="list-style-type: none"> - Inspect motor cable for damage, replace if damaged - Inspect cable exiting column (if applicable), replace if damaged.
E77	Ch4A short	Short-circuit on channel 4 [If T-splitter is used, short-circuit on 4A]	<ul style="list-style-type: none"> • Damage to motor cable • Damage to cable exiting column (if applicable) 	<ul style="list-style-type: none"> - Inspect motor cable for damage, replace if damaged - Inspect cable exiting column (if applicable), replace if damaged.

Error code	Name	Description	Potential cause	Corrective measures
E78	Ch4B short	Short-circuit on channel 4 [If T-splitter is used, short-circuit on 4B]	<ul style="list-style-type: none"> • Damage to motor cable • Damage to cable exiting column (if applicable) 	<ul style="list-style-type: none"> - Inspect motor cable for damage, replace if damaged - Inspect cable exiting column (if applicable), replace if damaged.
E86	Master	Connection to master lost OR the following messages are from master	<p>[Only used in multi-parallel system]</p> <ul style="list-style-type: none"> • Poor cable connection to master box • If followed by another error code, then codes being communicated from master box 	<ul style="list-style-type: none"> - Check connection to master box, check cable integrity - If communicating other error codes, see above
E87	Slave 1	Connection to first slave lost OR the following messages are from first slave	<p>[Only used in multi-parallel system]</p> <ul style="list-style-type: none"> • Poor cable connection to first slave box • If followed by another error code, then codes being communicated from first slave box 	<ul style="list-style-type: none"> - Check connection to first slave box, check cable integrity - If communicating other error codes, see above
E88	Slave 2	Connection to second slave lost OR the following messages are from second slave	<p>[Only used in multi-parallel system]</p> <ul style="list-style-type: none"> • Poor cable connection to second slave box • If followed by another error code, then codes being communicated from second slave box 	<ul style="list-style-type: none"> - Check connection to second slave box, check cable integrity - If communicating other error codes, see above
E89	Slave 3	Connection to third slave lost OR the following messages are from third slave	<p>[Only used in multi-parallel system]</p> <ul style="list-style-type: none"> • Poor cable connection to third slave box • If followed by another error code, then codes being communicated from third slave box 	<ul style="list-style-type: none"> - Check connection to third slave box, check cable integrity - If communicating other error codes, see above
E93	Desk Sensor 1 – Activation	Detected trigger from LIN bus safety limit switch, e.g. DS1	<ul style="list-style-type: none"> • DS1 was triggered 	<ul style="list-style-type: none"> - Remove any obstacles causing the desk drive to stop and adjust the height again
E94	Desk Sensor 1 – Not Responding	LIN SLS unit (e.g. DS1) no longer responding	<ul style="list-style-type: none"> • DS1 can no longer be detected 	<ul style="list-style-type: none"> - Check that the DS1 is correctly mounted - Remove the DS1 and reinsert it





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