LOGICDATA
MOTION FOR YOUR LIFE

SMART

Firmware-Version 1.11
Document Version 1.0
English

User Manual

Control unit for
an electronically
height-adjustable
desk

LOGIC
office

Contents

1 Preface

Dear Customer,

Thank you for choosing a **SMART** control unit for electric height-adjustable desks from **LOGICDATA Electronic & Software Entwicklungs GmbH**. You are now in possession of a state-of-the-art product that complies with all the relevant safety requirements.

1.1 Intended Use

SMART control units may only be used for the intended purpose, i.e. to control electric height-adjustable desks. Only motors that meet LOGICDATA specifications (e.g. duty cycle, current consumption) may be used to drive the lifting devices. The control units must be installed, put into operation and their function checked by qualified personnel. Using them to control other motors or installing them in products other than electric height-adjustable desks is only permissible with the prior written consent of LOGICDATA. Their basic function is upward and downward adjustment of the desktop, which can be controlled with all the handsets available.

1.2 SMART control unit functionality

The SMART control units incorporate the following features (the availability of some of the features depends on the handset used):

- High efficient switch mode power supply (SMPS)
- Low standby power consumption, low field emission
- Control units with US and EU input voltage available
- Table height display with configurable offset
- Up to 6 memory positions (depending on handset)
- ISP (Intelligent System Protection)
- Enhanced Drive Comfort
- Safety area
- Low speed area
- Plug detection and automatic detection of the number of connected drives (depending on connected motors)
- Automatic recognition of SLIMdrive actuator type and selection of the appropriate parameters (for LOGICDATA SLIMdrive actuators only)
- Configurable reset conditions
- Configurable stop conditions (overtemperature, overcurrent, timeout, limit switches)
- InBox Diagnosis
- LogicConnector DATA for sensors and cascading
- Additional functions are available, depending on the handset model used (e.g. saving desktop positions, adjusting the desktop to saved positions, etc.)
- A wide selection of LOGICDATA handsets is available for the control units

1.3 Target group and previous knowledge

This user manual addresses the following people:
- Technicians who assemble and put electric height-adjustable desks into operation (by installing motors and control units, configuring control units, etc.)
- Furniture assembly, service and maintenance personnel who put electric height-adjustable desks into operation in showrooms or at the customer's

The following is required for installing, operating and configuring electric height-adjustable desks with SMART control units:

- Basic mechanical and electrical skills (with suitable qualifications)
- Reading the user manual

1.4 Symbols used in safety instructions

This user manual contains safety instructions with symbols drawing your attention to possible dangers and residual risks. They indicate the following:

Danger: this warning symbol advises you of imminent danger to people's lives and health.

Failure to observe this warning may result in health problems, serious injuries and damage to property.

Caution: this warning advises you of **possible dangers from electric current**.

Failure to observe this warning may cause injuries and damage to property.

Note: this symbol advises you of important information that must be noted for operating the SMART control unit safely.

Danger: this warning advises you of a possible risk of body parts being trapped or pinched in exceptional cases.

Failure to observe this warning may result in health problems, serious injuries and damage to property.

For indoor use only!

Note: You must read the user manual.

1.5   Package contents

The SMART control unit is supplied together with the following components as standard:

Figure 1: Package contents

①   SMART control unit

> ℹ️ **Note:** Power cords can be ordered separately.

1.6   Unpacking

The SMART control unit comes packed in a cardboard box. Some components are also sealed in plastic film. To unpack, proceed as follows:

1.   Remove the cardboard and plastic film from the control unit components.
2.   Check the package contents.
3.   Dispose of the packaging materials.
4.   Keep the user manual at hand for the operators.

> ℹ️ **Note:** Ensure eco-friendly disposal of the packaging materials (separate the plastic parts and cardboard for collection).

1.7   Safety instructions

This user manual contains safety instructions that draw your attention to any possible risks, thus enabling safe operation of the SMART control unit. Please observe these warnings and instructions at all times.

In this section, you will find general safety instructions that do not refer to any particular steps or procedures. You will find the work-specific safety instructions in the relevant section of the manual. Additional warnings are given on the SMART control unit itself.

1.7.1   General safety instructions

> ℹ️ **Note:** You must read the user manual carefully before installing or operating the SMART control unit.

> ⚠️ **Caution:** Do not open the SMART control unit under any circumstances. There is a danger of electric shock.

Caution: The SMART control unit is not designed for continuous operation. Changing the desktop position without interruption must not exceed the duty cycle indicated on the nameplate.

Caution: The SMART control unit may only be operated with mains voltage as specified on the type label.

SMART control units are also available for the mains voltages used in other countries. Detailed information is provided in the corresponding datasheet!

Caution: Only use the power cord supplied with the control unit. Check that it is not damaged. Do not ever operate the SMART control unit if the power cord is damaged.

Danger: It is not allowed to connect self-constructed products to LOGICDATA motor controls. To prevent damage of the unit, use only components suitable for LOGICDATA motor controls.

Caution: Before connecting and disconnecting handsets, you must unplug the power cord.

Danger: In the event of a malfunction (e.g. if the control unit keeps adjusting the desk because a movement key has jammed), please unplug the unit immediately.

Danger: Do not expose the SMART control unit to moisture, drips or splashes.

Danger: You have to replace the Clip-On Handset SmartTOUCH-OD-2-LD when exposed to liquids (e.g. lemonade).

Danger: When changing the desktop position, there is a risk of pinching. You must therefore ensure that no people or objects are located in the hazardous area or can reach into it.

Danger: Do not modify or make any changes to the control unit, the controls themselves or handsets.

Danger: Do not operate the SMART control unit in a potentially explosive atmosphere.

Danger: Intelligent system protection (ISP) is not enabled during all resets (see chapter 4.2.4). Please note that there is a higher risk of pinching in this case.

Danger: This control unit can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the control unit in a safe way and understand the hazards involved.

⚠️ **Danger:** Children shall not play with the appliance.

⚡ **Caution:** If the control unit's power cord is damaged, it must be replaced by the manufacturer or customer service or similarly qualified person in order to prevent any risks.

⚡ **Caution:** Only clean the SMART control unit with a dry, soft cloth. Before cleaning, you must always unplug the power cord.

⚠️ **Danger:** Cleaning and user maintenance shall not be done by children.

1.7.2 Important notes for OEMs

What we mean by OEMs are companies that purchase SMART control units from LOGICDATA and install them in their own products (e.g. electric height-adjustable desks). For reasons of EU conformity and product safety, we advise you to provide users of your products with a manual in the relevant EU language. When you ship your finished products, enclose a user manual containing all the safety instructions that consumers need to handle your product safely. The user manual for your finished product must contain the following note: you must read the user manual before you operate the product (electric height-adjustable desk). Advise your customers that the user manual must be kept at hand in close proximity to the product (electric height-adjustable desk). Conduct a risk analysis of your product (electric height-adjustable desk) so that you can respond to any potential residual risks (e.g. by changing design features or adding notes to the user manual and/or placing warnings on your product). Ensure that no unauthorized individuals (e.g. small children, people under the influence of drugs, etc.) can tamper with your product or the control unit.

1.7.3 Important note for service

Only use original accessories. Parts may only be replaced by qualified service technicians, otherwise the warranty/guarantee shall be null and void. In the event of a fault, please contact customer service immediately. Only original spare parts may be used for repairing the control units. Parts may only be replaced by qualified service technicians, otherwise the warranty/guarantee shall be null and void.

2   SMART installation instructions

Mount the SMART control unit on the underside of the desktop. You will need the following tools for mounting:

- Phillipps screwdriver
- Pencil
- Drill (for drilling holes)

⚠️ **Caution:** The power cord must be unplugged while the SMART control unit is being mounted.

⚠️ **Caution:** When installing the SMART and putting it into operation, be sure that the SMART is acclimatized to the temperature and humidity values for operation, shown in the datasheet!

To mount the SMART control unit, proceed as follows:

ℹ️ **Note:** We recommend using the drill template to help with mounting. You will find the template in section 6.4. If you do not wish to use it, please follow the mounting instructions carefully.

1. Position the control unit where you want it under the desktop. When using the SMARTtouch handset place the control unit underneath the desktop near the front edge as shown below.
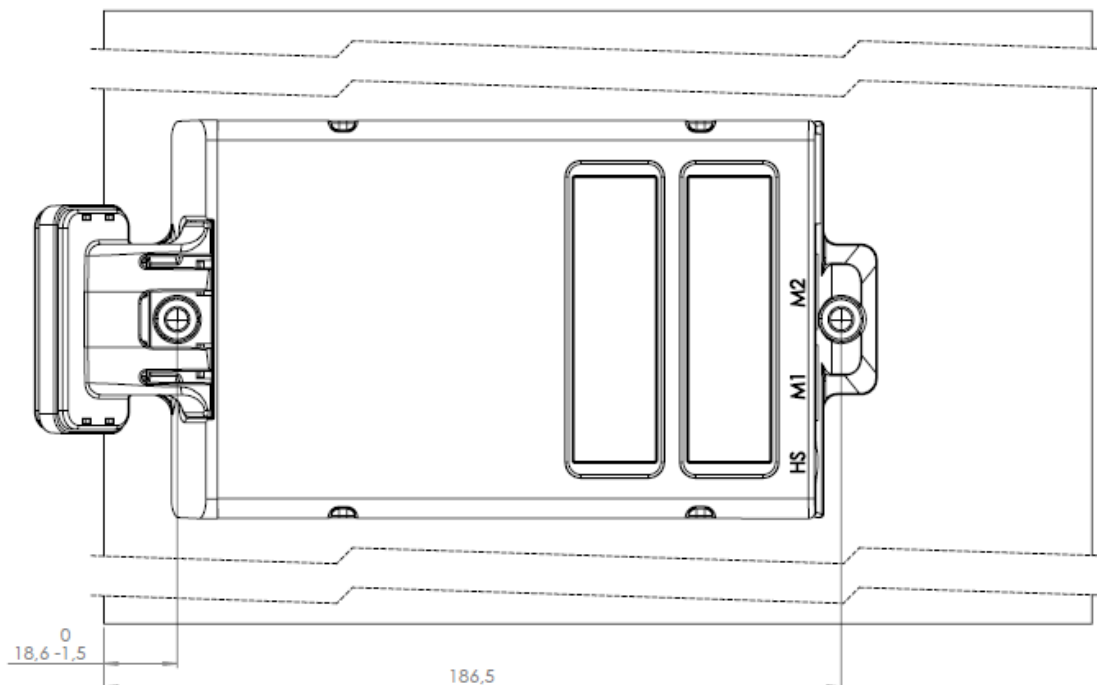

Figure 2: Position of SMART including SMARTtouch handset relative to the desktop front edge

ℹ️ **Note:** Please make sure that the top of SMARTtouch is optional and do not press against the bottom edge of the tabletop. The SMARTtouch and SMART control unit can be damaged if the system was not mounted properly.

2. Mark the drill holes with a pencil.

Figure 3: Installation step 2

3. Pre-drill these two holes.
4. Attach the control unit with 2 screws by using these two holes.
5. Tighten both screws properly.

Note: LOGICDATA recommends lens head screws DIN 7981C 4,8 × L with a lens head diameter of 9,5 mm. The length L of the screw should fit to the used desktop. The tightening torque depends on the wood, but 2 Nm shall not be exceeded.

3 Commissioning

Commissioning involves the procedures required to ensure that the height of an electric height-adjustable desk can be adjusted with the SMART control unit. Requirements for commissioning:

- The SMART control unit must be mounted (as described in section 0)
- The table legs for adjusting the desktop must be mounted

⚠️ **Danger:** Only qualified technicians may commission the control unit. Qualified technicians have the necessary electrical engineering training and are familiar with this user manual.

⚠️ **Caution:** When installing the SMART and putting it into operation, be sure that the SMART is acclimatized to the temperature and humidity values for operation, shown in the datasheet!

3.1 SMART sockets

The SMART control unit has the following sockets:
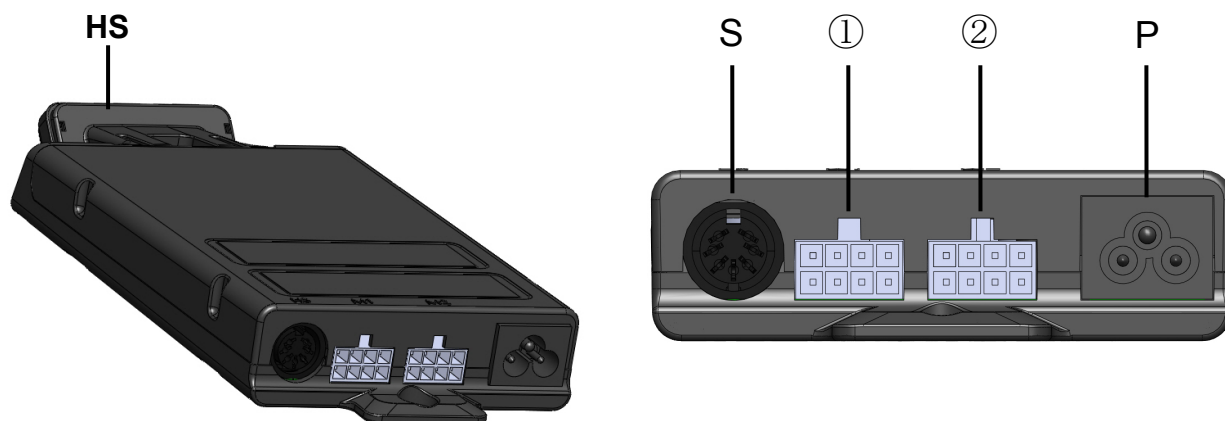
Figure 4: Sockets

①   Motor socket 1 (M1)
②   Motor socket 2 (M2)
S   Handset socket (HS)
P   Mains socket
HS   Clip-On Handset (optional)

ℹ️ **Note:** If your motors are equipped with connectors of the type DIN 41524 (8-pin with 262° angled pin alignment) and if your control box has MOLEX motor sockets, you need for each motor the adapter cable LOG-CBL-ADAP-DIN-MOLEX (shown with the letter A in Figure 4)

⚠️ **Caution:** Use 3-pole mains cables only!

ℹ️ **Note:** The clamp next to the mains socket is used as a connector for a functional earth. This clamp is used for example to deflect electrostatic charge from the electric height-adjustable desk. The connector cannot carry out the function of a protective conductor!

This clamp is also marked with the symbol ⏚ on top of the housing.

3.2 Commissioning procedure

Caution: The power cord must be unplugged while the SMART control unit is being commissioned.

To commission a SMART control unit, proceed as follows.

3.2.1 Connect drives

Plug the motor cables into the relevant 8-pin motor sockets (M1, M2).

Note: When connecting the motor cables, you must strictly adhere to the sequence M1 and M2.

Danger: During commissioning a system with single-end-limit switches (connection of upper and lower signal limit switches in series) or when changing a motor on such a system, the motors must not be extended to their highest position. (upper limit switch active)

3.2.2 Connect handset

Plug the handset into the 7-pin socket (HS). Choose from a wide range of LOGICDATA handsets for the SMART control unit. Information about available handsets can be found in the latest product catalogue and on the website *www.logicdata.net*.

3.2.3 Connect Clip-On Handset SmartTOUCH-OD-2-LD

Connect the Clip-On Handset SmartTOUCH-OD-2-LD to the control unit (as shown below).
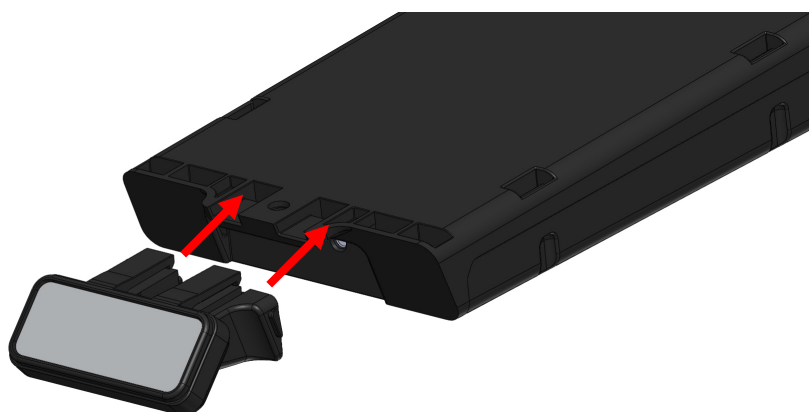
Figure 5: Connect Clip-On Handset

3.2.4 Connect mains supply

Caution: Before you plug in the power cord, check the following again:

- The mains supply voltage must be as specified on the type label
- All the components must be plugged into the right sockets

When the power cord is plugged in, the SMART control unit is operational.

Note: Depending on the parameters of the SMART a reset or calibration might be necessary after plugging in the power cord for the first time.

3.2.5 System configuration (example)

The figure below shows the socket assignment for a configuration example. This configuration consists of:
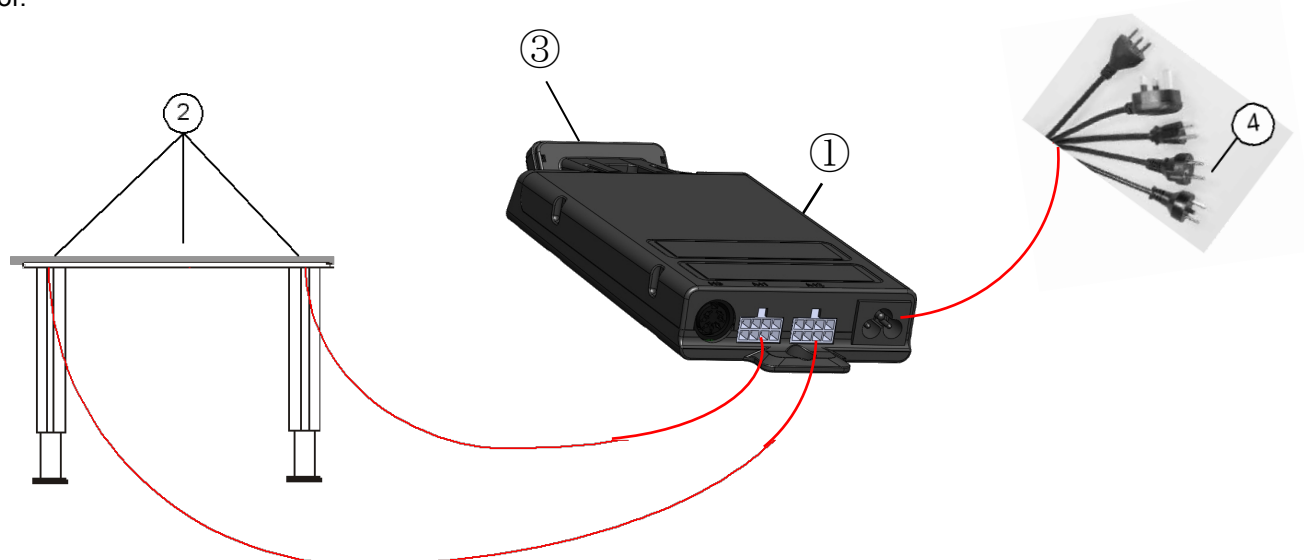
Figure 6: Configuration example

①   1 SMART control unit
②   2 motors (hidden in the table legs)
③   1 Clip-On handset: SmartTOUCH-OD-2-LD
④   1 mains cable 3-pole

3.2.6   Disconnect Clip-On Handset SmartTOUCH-OD-2-LD

To disconnect the Clip-On Handset proceed as follows:
1.   Unlock both locking hooks at the top side.
2.   Unlock both locking hooks at the side.
3.   Remove the Clip-On Handset forward.

Locking hooks at the top side

Locking hook at the side

Locking hook at the side
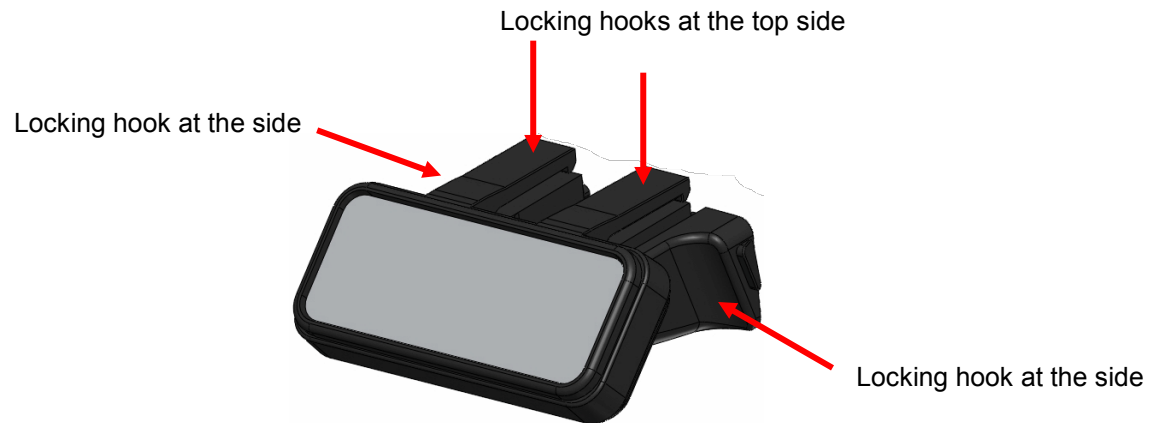
Note: It is not necessary to remove the control unit SMART for disconnecting the Clip-On Handset SmartTOUCH-OD-2-LD.

Danger: Incorrect removal can cause damages of the Control unit SMART and the Handset SmartTOUCH-OD-2-LD.

4 Operating the SMART control unit

To ensure safe operation of the SMART control unit, please observe the following safety instructions:

Caution: Unplug the power cord during a thunderstorm or if you do not intend to use the desk for a longer period. The control unit might otherwise be damaged by power surges.

4.1 Basic functions

Note: The SMART control unit offers an extensive range of functions. The availability of some functions depends however on the handset used.

This section describes the basic functions available with every handset designed for use with SMART control units.

4.1.1 Upward desktop movement

This function enables you to adjust the desktop upwards. To change its position, proceed as follows:

Press the **desktop up** key.

Keep pressing the key until the required desktop height is reached.

Note: The desktop will continue moving upwards until you release the key or the maximum height is reached.

4.1.2 Downward desktop movement

This function enables you to adjust the desktop downwards. To change its position, proceed as follows:

Press the **desktop down** key.

Keep pressing the key until the required desktop height is reached.

Note: The desktop will continue moving downwards until you release the key or the minimum height is reached.

4.2 Advanced functions

Note: You can only use the following functions of the SMART control unit if you have a handset with memory position keys and a memory key.

4.2.1 Saving a desktop position

This function allows you to save a defined desktop height. One desktop height can be saved per memory position key. To save a position, proceed as follows:

> **Note:** When you are switching on the SMART control unit for the first time, all the saved positions are set to the lowest desktop height (minimum desktop position).

1. △   Adjust the desktop to the position you want to save.

    073   The display will show the desktop height (e.g. 73cm).

2. S   Press the **memory key**.

    5 –   The display will read **S –**.

3. 2   Press the required **memory position key** (e.g. 2).

    5 2   The display will read **S 2**.

4.   The set desktop position will now be saved tot he selected memory position key.

    073   You will hear an audible double click and after about 2 seconds the saved desktop position will be displayed.

> **Note:** Using saved desktop positions is only available for handsets with memory keys. The design of the memory position keys varies, depending on the handset model used.

4.2.2   Adjusting the desktop to a saved position

You can use this function to adjust the desktop to a saved height. To change to a saved position, proceed as follows:

Note: Availability of the double click function depends on the software configuration of the control unit.

Option A (without double click function)

1. `2` Press the required **memory position key** (e.g. 2) and hold it down.

    The desktop will move until it reaches the saved position. If you release the key before the saved position is reached, the desktop will stop and the saved desktop position will not be reached.

2. The desktop has reached the saved position. Now release the memory position key.
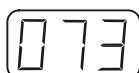
    `073` The display will read the current (saved) desktop position.

Option B (with double click function)

1. `2` Double click the required **memory position key** (e.g. 2).

2. After the double click, the desktop will automatically adjust to the saved position.
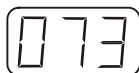
    `073` The display will show the current (saved) desktop position.

Danger: When you change the desktop position automatically, there is a higher risk of pinching. You must therefore ensure that no people or objects are located in the hazardous area or reach into it.
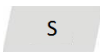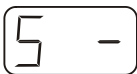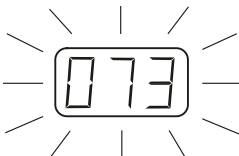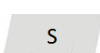
Note: If you press another key while the desktop is changing automatically to a saved position, it will stop immediately. You then have to reactivate automatic desktop adjustment to a preset position.

4.2.3   Changing the desktop height displayed

This function enables you to change the height shown on the display, but not the actual position of the desktop. This function is only available for handsets with integrated display.

Proceed as follows:

1. | S | Press the **memory key**.

The display will read **S –**.

2. | ▽ | Press the **desktop down key** (down arrow) for approx. 5 seconds.

The display will start flashing.

3. | ▽ | △ | Adjust the height displayed by pressing the **desktop down key** (down arrow) or **desktop up key** (up arrow).

4. | S | Press the **memory key**.

The height display is now set to the new desktop position entered.

> **Note:** This procedure does not alter the actual position of the desktop. It only changes the height displayed.

4.2.4   Manual reset

When the actual desktop position no longer corresponds to the height displayed or you wish to use a configured control unit on another identical electric height-adjustable desk, you have to reset the lowest desktop position to the minimum height.

1. | ▽ | Press the **desktop down key**.

Keep pressing it until the desktop has reached the lowest position (programmed desktop position).

2. | ▽ | Press the **desktop down key** again and keep pressing it.

After about 5 seconds, the desktop will slowly move further down until it reaches the absolutely lowest desktop position possible.

3. Release the **desktop down key**. The electric height-adjustable desk can now be used again normally.

> **Danger:** intelligent system protection (ISP) is not enabled during all resets and limit position calibration.

4.2.5 Enabling limit position calibration

The service technician enables limit position calibration during the commissioning procedure.

Note: availability of the S 7 function depends on the parameters set for the control unit. A handset with display and memory keys is necessary.

1. [1] [2] [△] Press the keys **memory position 1, 2** and the **desktop up key** at the same time. Keep the key combination pressed for about 10 seconds. Then release the keys.

    [5 5] The display will show **S and a number**, e.g. **S 5**.

2. [△] Press the **desktop up key** until the display reads S 7.
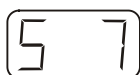
    [5 7] The display will show **S 7**.

3. [S] Press the **memory key**.

Note: the menu timeout is 5 seconds, this means that the menu will close automatically without storing new settings if the user does not press a key for 5 seconds.

Note: after starting the menu, the display will read **S and any number**, for instance **S 5**. The number depends on the parameters of the control unit.

4.2.6 Limit position calibration

The limit positions must be calibrated during commissioning after the control unit has been installed.
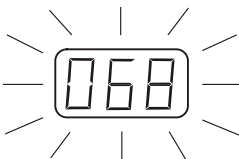
Note: there is the option of having all the settings required for commissioning carried out at the factory.

Note: a handset with display and memory keys is necessary.

To calibrate the limit positions, proceed as follows:

1. **068** flashes on the display.

   Note:

   068 is shown if the handset display is set up to show the height in centimeters.

   If the display is set up to show the height in inch, the display shows **027** in this step!

2. Press the **desktop down key** until the desktop reaches the lowest position.

3. Set the current desktop height on the display.

    Press **memory position key 1** to increase the desktop position displayed (movement locked in every direction)

   Press **memory position key 2** to decrease the desktop position displayed (movement locked in every direction)

4. Press the **memory key**.

   088 flashes on the display.

    Note:

   088 is shown if the handset display is set up to show the height in centimeters.

   If the display is set up to show the height in inch, the display shows **035** in this step!

5. Press the **desktop up key** until the desktop reaches the highest position.

6. Set the current desktop height on the display.

    Press **memory position key 1** to increase the desktop position displayed (movement locked in every direction)

    Press **memory position key 2** to decrease the desktop position displayed (movement locked in every direction)

7. Press the **memory key**.

Danger: intelligent system protection (ISP) is not enabled during all resets and limit position calibration. Please note that there is a potential risk of pinching in this case.

4.3 Software dependent functions

> **Note:** prior to shipping, the SMART control unit is parameterized with the software. The following functions are only available if the control unit has been configured accordingly.

4.3.1 Slow speed ranges

This function (low speed area) automatically slows down the desktop during adjustment before it reaches the following positions:

- Highest and lowest desktop positions
- All saved positions (for example: memory-positions, container-stop-position)

4.3.2 Safety area

This function triggers a safety stop at a defined desktop position (configured with the software). The safety stop functions as follows:

1. ▽   Press the **desktop down key** (and hold it down). The desktop will move to the start of the safety area.

2.   The desktop movement will stop just before the safety area.

3. ▽   Press the **desktop down key** again. The desktop will then move to the lowest position.

> **Note:** you cannot save desktop positions in safety areas.

4.3.3 Container- and Shelf-stop positions

These 2 features can be used to limit the movement area of the desktop (e.g. if a container is placed underneath the desktop). A container stop position can be defined in the lower half of the movement area, a shelf stop position in the upper half. If a container stop position is set, this position will be the lower limit position. If a shelf-stop-position is set, this position will be the new upper limit position. To **store** a container-stop-/ shelf-stop-position, go on as shown below:

1. ▽ or △   Move the desktop to the position where the container stop/ shelf stop position shall be stored. Do so by pressing the **desktop down** or **desktop up key** until you reach the desired position.

   Note:

   A container stop position can only be stored in the lower half of the movement area and a shelf stop in the upper half.

2. S   Press S for 10 seconds. The SMART will click **twice** when the container stop position is stored.

> **Note:** These steps have to be done for a container stop and a shelf stop position separately!

To **deactivate** the container stop/ shelf stop position go on as shown below:

1. ▽ or △

Move the desktop to any position in the lower half to deactivate the container stop. / Move the desktop to any position in the upper half to deactivate the shelf stop.

Do so by pressing the **desktop down** or **desktop up key** until you reach the desired position.

2. S

Press S for 10 seconds. The SMART will click **once** when the container stop position is deactivated.

> **Note:** These steps have to be done for a container stop and a shelf stop position separately!

4.3.4 Plug detection

The SMART control unit can detect whether a motor is plugged into the relevant motor socket. In addition, the control unit detects whether a motor has been replaced (the availability of this function depends on the type of the control and the used motors). If a motor is missing or if it is replaced, the SMART will click three times. Additionally, the corresponding error code will be displayed if the handset is equipped with a display (For the error code list, see chapter 0). To rectify the error, proceed as follows:

1. **Possible situations:**

   - A motor is disconnected from the SMART when the control box is connected to mains.

   E38

   The error code **E36, E37 or E38** is shown on the display, depending on the disconnected motor.

2. Disconnect the mains supply of the SMART and wait at least 5 seconds.

3. Re-connect the missing motor.

4. Connect the mains supply of the SMART again.

5. Make a **manual reset** (see chapter 4.2.4).

4.3.5 Auto Detect Number of Drives

The SMART is able to auto-detect the number of drives, this enables you to decide during the commissioning process of the electric height-adjustable desk if for instance 1 or 2 motors shall be controlled without changing the parameters. To operate the SMART after changing the motor group configuration again, proceed as follows:

1.   **Possible situations:**

- Commissioning/first usage of SMART
- After a reset to factory settings (S0 menu)

E70
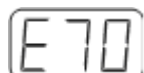
The error code **E70** is shown on the display.

2. Disconnect the mains supply of the SMART and wait at least 5 seconds.

3. Connect the desired number of motors to the SMART.

4. Connect the mains supply of the SMART again.

5. Make a **manual reset** (see chapter 4.2.4).

4.3.1 SLIMdrive-detection

SMART is able to auto-detect the type of the connected SLIMdrive-actuators. This enables you to decide during the commissioning process if the table will be moved by SLIMdrive-660, SLIMdrive-500 or SLIMdrive-660S.

To initialize the SMART with SLIMdrive actuators, proceed as follows:

1.   **Possible situations:**

- Commissioning/first usage of SMART
- After a reset to factory settings (S0 menu)
- Dissimilar actuators have been connected to the control box (such as a SLIMdrive-660 together with a SLIMdrive-660S)

E70

The error code **E70** is shown on the display.

2. Disconnect the mains supply of the SMART and wait at least 5 seconds.

3. Connect the desired number of similar SLIMdrive-actuators to the SMART.

4. Connect the mains supply of the SMART again.

5. Perform a **manual reset** (see chapter 4.2.4).

After swapping the actuator type connected to the SMART (e. g. SLIMdrive-660 to SLIMdrive-660S), reset the control box to factory settings and follow the procedure above.

> **Note:** The automatic detection of the actuator type is only available with LOGICDATA SLIMdrive actuators.

> **Note:** This function is only available for motor group 1.

> **Note:** The automatic detection of the SLIMdrive actuator type depends on the software parameter settings. Contact LOGICDAT for further information.

Note: Reset the control box to factory settings after changing the number of connected actuators.

4.3.2 Duty cycle monitoring

Duty cycle monitoring means that when the control unit has been operating for a defined period, it is switched off for a set time (e.g. after 2 minutes of continuous operation, the control unit is automatically disabled for the next 18 minutes).

4.3.3 Change the displayed desktop position (cm or inch)

With this function, it is possible to change the displayed desktop position from centimeters to inches or the other way around. The desktop position itself is not affected by this function.

1.   [1]   [2]   [△]   Press the keys **memory position 1, 2** and the **desktop up key** at the same time. Keep the key combination pressed for about 10 seconds. Then release the keys.
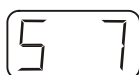
     | 5 7 | The display will show **S and a number**, e.g. **S 7**.

2.   [△]   Press the **desktop up key** until the display reads S 5.
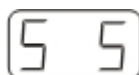
     | 5 5 | The display will show **S 5**.

3.   [S]   Press the **memory key**.

        If the display was set to centimeters, it will be changed to inches now.

        If the display was set to inches, it will be changed to centimeters now.

Note: The menu timeout is 5 seconds, this means that the menu will close automatically without storing new settings if the user does not press a key for 5 seconds.

Note: After starting the menu, the display will read **S and any number**, for instance **S 7**. The number depends on the parameters of the control unit.

4.3.4 Change number of drives

It is possible to adjust the number of drives which can be controlled by a SMART. A SMART can be controlled by one or two motors according to the chosen settings.

Note: Factory provided settings are 2 drives for SMART.
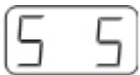
Danger: Only qualified technicians may use this function! An incorrect number of drives can cause damages of the table!
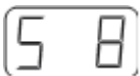
Note: A handset with display and memory keys is necessary.

To change the settings, proceed as follows:

1. Press the keys **memory position 1, 2** and the **desktop up key** at the same time. Keep the key combination pressed for about 10 seconds. Then release the keys.

   The display will show **S and a number**, e.g. **S 5**.

2. Press the **desktop up key** until the display reads S 8.

   The display will show **S 8**.

3. Press the **memory key**.

   The display will show the current number of drives (1 or 2)

4. Press the **desktop down key** to decrease the number of drives. The minimum number is 1 drive.

   Press the **desktop up key** to increase the number of drives. The maximum number is 2 drives.

   The display will show the chosen number of drives.

5.   S   Press the **memory key** to confirm the settings.

6.

000

068

If **000** flashes on the display, a reset is necessary. This procedure is explained in section 4.2.4.

If **068** flashes on the display, a calibration is necessary. This procedure is explained in section 4.2.6.

Note:

068 is shown if the handset display is set up to show the height in centimeters.

If the display is set up to show the height in inch, the display shows **027** in this step!

> **Note:** The menu timeout is 5 seconds, this means that the menu will close automatically without storing new settings if the user does not press a key for 5 seconds.

> **Note:** After starting the menu, the display will read **S and any number**, for instance **S 5**. The number depends on the parameters of the control unit.

4.3.5   Reset control unit to factory settings

With this function, you can reset the control unit to its factory settings.

1.   1   2   △   Press the keys **memory position 1, 2** and the **desktop up key** at the same time. Keep the key combination pressed for about 3 seconds. Then release the keys.

S 5   The display will show **S and a number**, e.g. **S 5**.

2.   △   Press the **desktop up key** until the display reads S 0.

S 0   The display will show **S 0**.

3.   S   Press the **memory key**.

The control unit will be reset to its factory settings. The control unit is now in the same state as it is when the commissioning is done.

Note: The menu timeout is 5 seconds, this means that the menu will close automatically without storing new settings if the user does not press a key for 5 seconds.
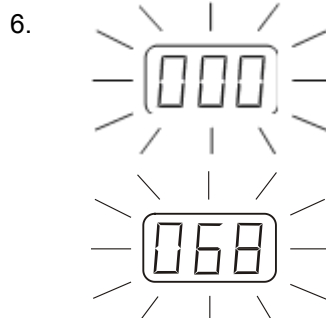
Note: After starting the menu, the display will read **S and any number**, for instance **S 5**. The number depends on the parameters of the control unit.

Danger: If one or more motors are changed in a system, the control box must be reset to factory settings and a manual reset has to be performed!

5 Collision protection

5.1 Intelligent System Protection (ISP)

ISP is an electronic state-of-the-art protection system developed by LOGICDATA. It also substantially reduces the damage to the system in case of a collission.

Note: The ISP-sensitivity and the ISP-cutoff value depend on the whole system (mechanical and electrical components). To evaluate the ISP-capability of a height adjustable table, please contact LOGICDATA!

Note: Please note the following for maximizing ISP functionality:

To ensure the best possible pinch protection, a **mechanical brake** must be fitted that is applied when the electric height-adjustable desk moves down.

Note: Without a mechanical brake, cut-out sensitivity may be reduced under load. However, if there is no load on the desktop, ISP will function properly even without a brake.

Note: As soon as ISP has stopped the electric height-adjustable desk from moving, you can then only adjust the desktop in the opposite direction (the safety feature initially prevents you from adjusting the desk in the same direction as triggered it).

Note: The ISP-cutoff can be adjusted by control unit parameters.

5.2 Drive back

Note: Drive back is only active if collision protection (**ISP**, external sensors) is activated by parameters.

After a safety function is triggered by ISP, the desktop automatically moves a defined distance in the opposite direction. This immediately prevents any possible risk of pinching.

6 Appendix

In this section, you will find detailed information on the following topics:

- Possible faults and remedies
- Error messages on the handset display
- Click codes
- Drill template

6.1 Possible faults and remedies

Drives not working

Possible cause	Remedy
Power cord is not connected	Plug the power cord into the control unit
Drives are not connected	Plug the motor cables into the control unit
Poor plug contact	Plug the motor cables, power cord and handset in properly
Control unit is defective	Contact customer service
Handset is defective	Replace the handset

Drives only operating in one direction

Possible cause	Remedy
Mains power breakdown or mains power is plugged off **during movement**	Manual Reset *)
Control unit is defective	Contact customer service
Handset is defective	Replace the handset
Drive is defective	Contact customer service

*) if movement is only possible downwards

Control unit or handset is not working

Possible cause	Remedy
Power cord is not connected	Plug the power cord into the control unit
Handset is not connected	Plug in the handset
Control unit is defective	Contact customer service
Power cord is defective	Contact customer service
Handset is defective	Replace the handset
Poor plug contact	Plug the motor cables, power cord and handset in properly
Exposed to liquids	Replace the handset

6.2 Error messages on the handset display

$$H\mathrm{D}T$$

The display reads **HOT**.

Cause	Remedy
The SMART control unit is fitted with overheating protection. Overheating has caused it to stop the control unit.	Wait until the control unit has cooled down and **HOT** is no longer displayed. The SMART control unit is then operational again.

$$E\mathrm{D}\mathrm{D}$$

The display reads **E** + an error code.

Cause	Remedy
There is an internal fault in the SMART control unit.	Proceed as indicated in the following list.

Code	Description	Remedy
00	Internal Error Channel 1	Unplug the power cord and contact the customer service.
01	Internal Error Channel 2	
12	Defect Channel 1	Unplug the control unit. Fix the external short circuit.
13	Defect Channel 2	Or Plug in the correct motor to the motor socket that shows the error. Start the control unit again.
24	Overcurrent Motor M1	Remove jammed objects from the driving area.
25	Overcurrent Motor M2	Desk might be overloaded → Remove load from desk.
48	Overcurrent Motor Group 1	
60	Collision protection	Contact customer service
62	Overcurrent Control Unit	
36	Plug detection in Motor socket M1	Plug in the correct motor to the motor socket that shows the error.
37	Plug detection in Motor socket M2	
61	Actuator changed	Reset all motors.
55	Synchronization lost motor group 1	Remove load from desktop. Reset all motors. If error occurs after reset again, contact customer service.
67	High voltage	Unplug the power cord and contact the customer service
70	Motor configuration changed	See chapter 4.3.5
81	Internal error	Make a manual reset Unplug the power cord and plug it in again after a few seconds. If this error occurs frequently, unplug the power cord and contact the customer service.

Note: The **PowerFail detection** identifies mains power breakdowns and saves all relevant data before the voltage falls below a critical threshold.

In some exceptional cases, this storage is not possible and the error **E81** is shown on the handset display (if available) and the SMART clicks three times.

To rectify this error, a **manual reset** is necessary (see chapter 4.2.4)

Note: If the mains power breaks down or is disconnected from the control unit during movement of the drives, a manual reset might be necessary.

6.3   Click codes

When the control unit is switched on the SMART uses its relays to inform the user acoustically about the system state and the reason why the control unit was switched off before. The table below shows which number of clicks corresponds to certain information.

Number of clicks	State information
2x	**Normal operation:** No problems detected
1x	**Emergency operation:** The system is in Safe-State, movement is not possible. Check LED indication and/or error codes on the display of the handset.
3x – 6x	**Last shutdown incomplete / forced reset:** Check LED indication and/or error codes on the display of the handset. If the control unit could not finish the last saving process, it will click 4 -5 times and switch to reset mode but without displaying the error code 81. Perform a reset.

6.4   Drilling template

Cut out the drilling template and mark the drill holes on the desktop.

Note: Place this drill template with the depicted side up on the position where the SMART shall be mounted!

HS   M1   M2
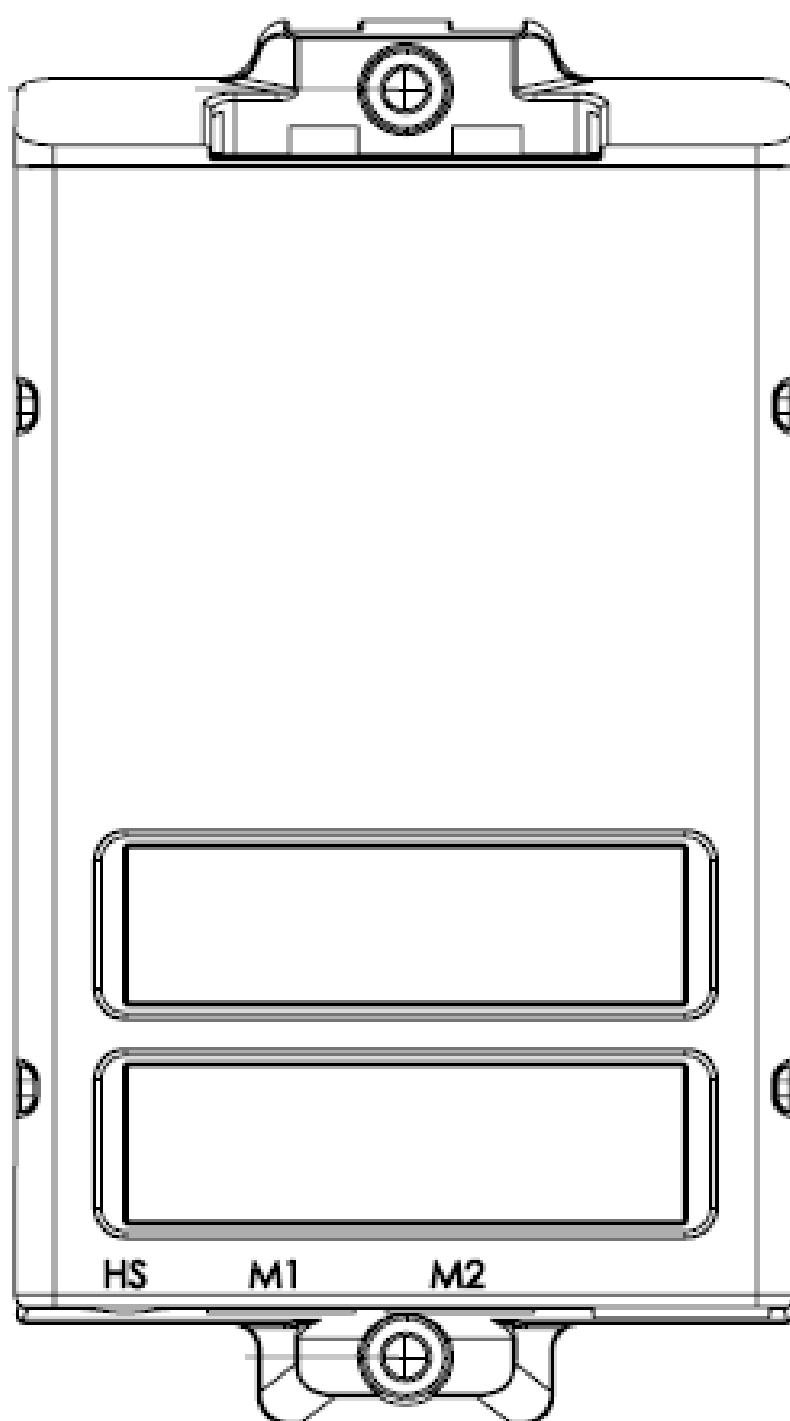
7 Further information

7.1 End of life disposal

SMART is electrical and electronic equipment. This symbol on products, packings and/or accompanying documents means, that electrical/electronic products should not be disposed of in normal household waste. These products must be disposed of according to the WEEE directive 2012/19/EU.

Before disposal of materials and components, consider which parts of them are suitable for recycling. Supply as many parts as possible for recycling in your local area. The items should be handed in for recycling in accordance with local environmental regulations and rules for waste disposal Make sure that the waste disposal verifiably minimizes any potential negative impact on human health and the environment.

7.2 Technical data

Find the technical data of your control unit in the datasheet.

7.3 Optional products

Information about available optional products can be found in the latest product catalogue and on the website **www.logicdata.net**

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