

# Operations Manual

## Ratio Electric Height Adjustable Desk - Controls

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## 1 Preface

Dear Customer:

We are pleased that you have decided to purchase this product. This operating manual explains how this table controller is to be installed, used and maintained. All the table controllers are put through a function test and quality inspection before they leave our factory.

It is essential that the table control unit is installed in accordance with these instructions. Changes to the table frame, table control or accessories and improper use can have a negative effect on safety, function and service life.

This operating manual has been written for the table controller STAND.CONTROL C1.

## 2 Explanation of terms and index of abbreviations

| <b>Abb./Term</b> | <b>Meaning</b>                                                                   |
|------------------|----------------------------------------------------------------------------------|
| Controller       | Table controller STAND.CONTROL C1                                                |
| Reset position   | Lowermost mechanical end position of the table                                   |
| HM               | Herman Miller                                                                    |
| Minimal position | Lowermost software end position of the table                                     |
| Safety stop      | Stop position from which onwards a safety zone up to the minimal position starts |

## 3 Safety

This operating manual is to be preserved for future use. If a new copy nonetheless becomes necessary, it is available to download from Herman Miller's intranet site OMNI. Operating manuals of products that are currently being sold can be downloaded from the website of the manufacturer. The manufacturer's operating manual takes precedence and must be followed without fail.

### 3.1 Use as intended

This table controller – hereinafter referred to as the controller – has been developed for use on office desks in professional environments. Alterations to the table controller, or home use, are not permissible. Contravention will render the warranty null and void and void the liability of the manufacturer.

The controller must be assembled, put into operation and functionally checked by skilled and authorised personnel.

Special ambient conditions for using the table controller can be found in Section 14.

### 3.2 Target group

These operating instructions are aimed at the following group of persons:

- The commissioning staff who assemble and commission the sit/stand desks.
- Furniture installers, maintenance staff who commission the sit/stand desk in sales rooms or at the final customer.

The following knowledge is considered a precondition for the commissioning and installation of the table controller STAND.CONTROL C1:



- Mechanical and electrical basic knowledge (corresponding illustration)
- Reading the instructions

### 3.3 Symbols used in the safety instructions

|                |                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>Danger</b>  | Stands for an immediate, threatening danger. If it is not avoided, death or extremely serious injuries will result.        |
| <b>Warning</b> | Stands for a possibly threatening danger. If it is not avoided, death or extremely serious injuries may result.            |
| <b>Caution</b> | Stands for a possibly threatening danger. If it is not avoided, slight or minor injuries may be caused.                    |
| <b>Note</b>    | Designates a possibly harmful situation. If it is not avoided, the plant or something in its surroundings can get damaged. |



Warning of a source of danger.

*Not heeding these instructions can result in harm to health, life-threatening injuries and damage to property!*



Warning of electrical voltage.

*Non-compliance with these warnings can result in injuries and property damage.*

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Warning of injuries caused by crushing.

*Not heeding these instructions can result in harm to health, life-threatening injuries and damage to property!*



Warning of damage from electrostatic discharge (ESD).



Points to important information that must be heeded for safe operation of the described product.



Note on the obligation to read the operating instructions.



Note to pull the power cord before the next action.

## 3.4 Safety Instructions

This operating manual contains safety instructions that inform you about potential hazards and thus facilitate safe operation of the STAND.CONTROL C1. Please be sure you comply with these safety instructions without fail!

This section provides you with general safety instructions that do not refer to any specific work step. You can find the job-specific safety instructions in the respective section of the operating instructions.

### 3.4.1 General safety instructions



**Note:** Please read and take note of, without fail, the operating manual before assembly/commissioning of the table controller STAND.CONTROL C1.



**Danger:** Never open the motor control unit STAND.CONTROL C1 under any circumstances. There is a danger of an electric shock.



**Danger:** The table controller STAND.CONTROL C1 is not designed for continuous operation. The desktop height can be adjusted without interruption for no longer than the powering-on time indicated on the type plate.



**Warning:** The STAND.CONTROL C1 motor controller must only be operated with the mains voltage specified on the rating plate!

Before commissioning, ascertain whether the mains voltage is within the acceptable range as given on the rating plate of the motor controller.



**Danger:** This unit can be used by children aged 8 years and above and by persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge, if they are supervised or instructed in the safe use of the device and understand the resulting risks.

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**Danger:** Children must not be allowed to play with the unit.



**Danger:** Cleaning and user maintenance must not be carried out by unsupervised children.



**Caution:** You must use the supplied power supply cable! Make sure that the power supply cable is not damaged. Operating the STAND.CONTROL C1 with a damaged electrical cord is prohibited.



**Danger:** Before connecting and disconnecting drives, manual switches, or other accessories to the motor control unit, be sure to disconnect the power cable from the mains without fail.



**Caution:** Only use original accessories.  
The use of components and parts from third parties is prohibited! If unsuitable accessories are used, damage or destruction of the table frame or the electronic components can occur.



**Warning:** If there is a malfunction (for example, unwanted movement of the table top if, for example, a button of the hand switch gets stuck), please immediately unplug the power cord.



**Danger:** Protect all electrical components on the table frame from moisture and dripping or splashing water.



**Danger:** There is a danger of being crushed when the desktop position is changed! Therefore, make sure there are no objects or persons present in the danger zone and do not reach into the danger zone.



**Danger:** Modifications to the table controller are prohibited.



**Danger:** The STAND.CONTROL C1 must not be operated in explosive atmospheres.



**Danger:** If a malfunction occurs, the desktop might move slightly with every start, before the safety shutoff comes into action. Pay attention to a possible danger of crushing.



**Danger:** The collision protection described is not active during any reset process (see Section 8.4).



**Danger:** If the product is visibly damaged, it may neither be assembled nor used.



**Note:** When unpacking, ensure ESD-compliant handling of the electronic components.

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**Danger:** Under no circumstances may the connecting cable, the power cord or parts of the controller or other electronic components be immersed in liquids. Please keep the connecting cable away from heated surfaces.



**Note:** For reasons of EU conformity and product safety, we recommend that the users provide their products with operating instructions in the respective official EU language.



**Warning:** Be sure to enclose operating instructions in your finished product that include all safety instructions required by the consumer for the safe handling of your product.



**Note:** The operating instructions for your finished product must include the following warning: You must read these operating instructions before you start using the product. Point out to your consumer that the operating instructions must be kept near the product.



**Danger:** It is mandatory that you put your product through a risk analysis so that you can react to any possible residual hazards (e.g. through structural measures or warnings in the operating instructions and/or safety instructions on your product).



**Warning:** Make sure that no unauthorised persons (small children, persons under the influence of medication, etc.) handle your product or the STAND.CONTROL C1.

## 3.5 Repairs



**Attention:** In the interest of preventing malfunctions, only authorised service personnel are permitted to make any repairs.



**Attention:** Opening any components of this desk base produces risks for the following malfunctions.



**Danger:** If the controller is opened, danger of an electrical shock exists for an extended period of time, even after disconnection from the power supply.

In case of a technical defect in the STAND.CONTROL C1, please refer in the first instance to: Solutions for easy-to-rectify malfunctions are provided in Section 12.

## 4 Warranty

Herman Miller provides a warranty for a period of 5 years for the STAND.CONTROL C1 Ratio Controller. The warranty covers all material and production errors and takes effect from the date of delivery. The warranty is only valid on the condition that the controller is assembled and used in an appropriate and technically correct manner within the framework of the parameters described, maintenance is carried out correctly, and repairs are only carried out by authorised service personnel.

The STAND.CONTROL C1 must not be improperly handled or used and no changes may be made to the controller. Otherwise the warranty becomes invalid.

Legal warranty or guarantee obligations remain unaffected by these regulations.

## 5 Overview

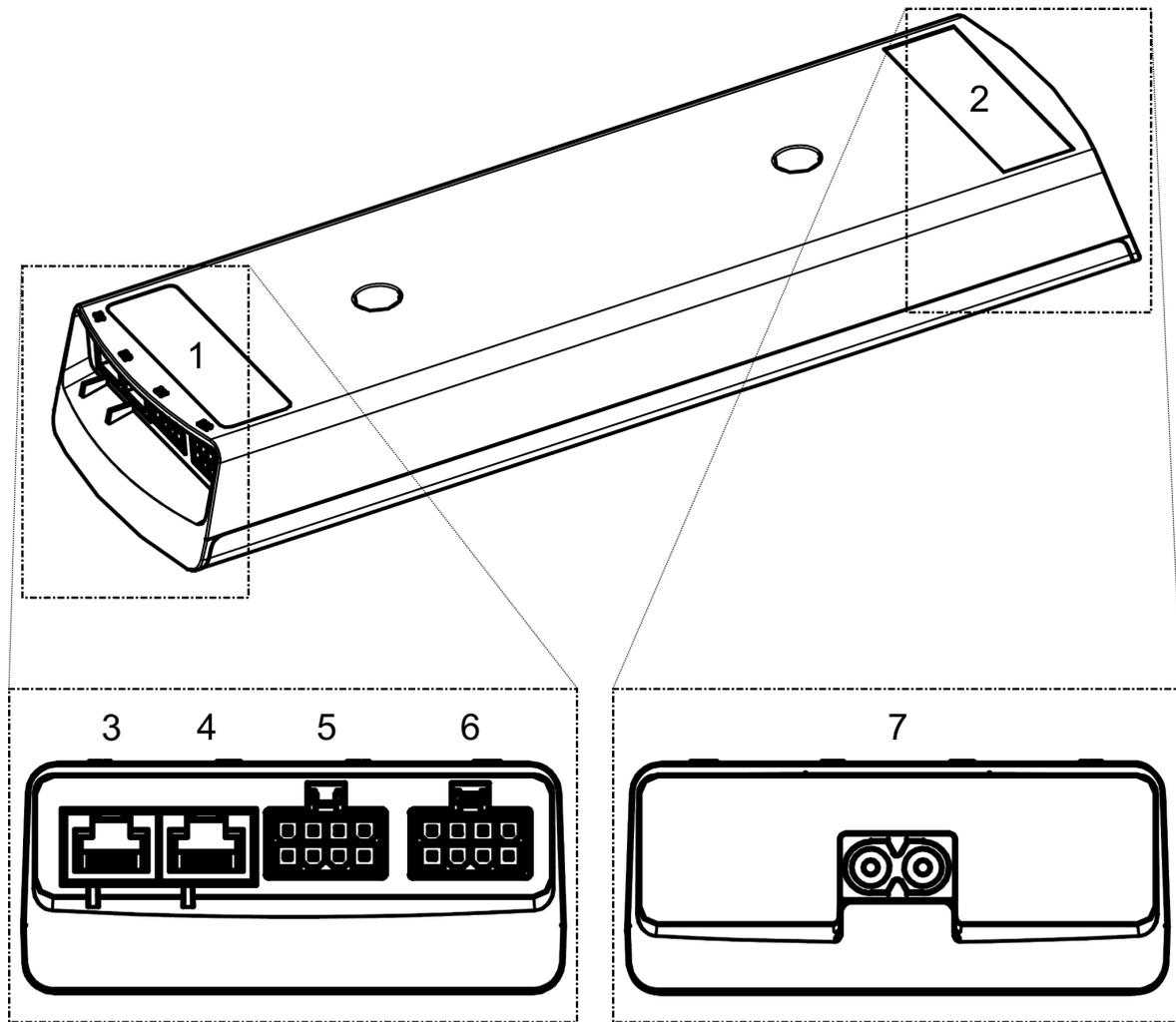


Figure 1: Depiction of the controller and its connections.

- 1 Surface for type rating plate
- 2 Surface for company logo
- 3 RJ45 socket D1 for hand switch, cascading or other accessories
- 4 RJ45 socket D2 for hand switch, cascading or other accessories
- 5 Motor connection M1
- 6 Motor connection M2
- 7 Power supply

## 6 Scope of supply and necessary as well as optional accessories



**Note:** Only listed accessories, approved by HM, may be used.



**Caution:** Connecting unapproved components/accessories can result in damage or malfunctions.

### 6.1 Delivery scope

The delivery scope contains:

- STAND.CONTROL C1

Other accessories required for operation can be obtained from HM.

### 6.2 Necessary accessories

The following accessories are required

- CEE power cable with C8-plug (optionally also PVC/halogen-free)
- Simple hand switch with 2 buttons: STAND.MOVE Mx.0
- Legs with electric drive
- Motor cable in the same number as the table legs to be connected (length dependent on the table frame): STAND.CONNECT motor cable (optionally also PVC/halogen-free)
- Screws for fitting on the desktop (see Section 7.2.1) and

Basically, this operating manual assumes a two-motor table with a connected simple hand switch of the STAND.MOVE M1.0 model. All the descriptions can be carried out with other correctly connected accessories or any other hand switch at will.

If a description in the operating manual requires another configuration that is explicitly indicated accordingly.

For large tables with more than two table legs (for example: conference tables), the following are additionally required:

- Additional STAND.CONTROL C1
- connecting cables: STAND.CONNECT connecting cables

### 6.3 Optional accessories

For more comfort, additional accessories are available to our customers.

- A mounting plate (if required, see Section 7.2.3), alternatively
- Two controller brackets (not possible with all desktops, see Section 7.2.2)
- Various controller brackets (depending on the desktop)
- Motor cable extension (optionally, also PVC/halogen-free)
- Different comfort hand switches: for example, STAND.MOVE M1.1, STAND.MOVE M1.2
- Collision sensor: STAND.GUARD G1

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- RJ45 multi-plugs for expanding the number of device connections: STAND.CONNECT hub
- connecting cables: STAND.CONNECT connecting cables
- PC software: CON.STAND (only for service engineers), LIVE.STAND
- USB connecting cables for connection with the workplace computer: STAND.CONNECT CC

## 7 Installation

### 7.1 Unpacking



**Note:** When unpacking, ensure ESD-compliant handling of the electronic components.

**Caution:** Herman Miller does not provide any warranty for faults and damage to the device that are the result of electrostatic discharge.

For unpacking electronic devices, please proceed as follows:

1. Remove the packaging material.
2. Check the contents of the package for completeness.
3. Dispose of the packaging material in an environment-friendly manner, in accordance with the applicable national regulations in your country. Recycle reusable packaging.

### 7.2 Installation

Assemble the table controller STAND.CONTROL C1 on the underside of your table. The table controller is normally fitted with screws below the desktop.

#### 7.2.1 Assembly with tools

You may need the following materials and tools for the assembly:

- 2 screws (from hardware pack)



**Note:** Before assembly, the controller must be electrically de-energised.



**Note:** The screws are not included in the scope of delivery since they have to be selected depending on the material and the thickness of the desktop.

Ø 6.3 mm holes are provided on the controller for this purpose. Use fillister-head or cheese-head screws.

The tightening torque depends on the desktop material, but should not exceed 2 Nm.

For assembly, please refer to the Herman Miller Ratio Installation Guide (on OMNI).

## 8 Commissioning



**Note:** Before commissioning, the controller must be electrically de-energised.

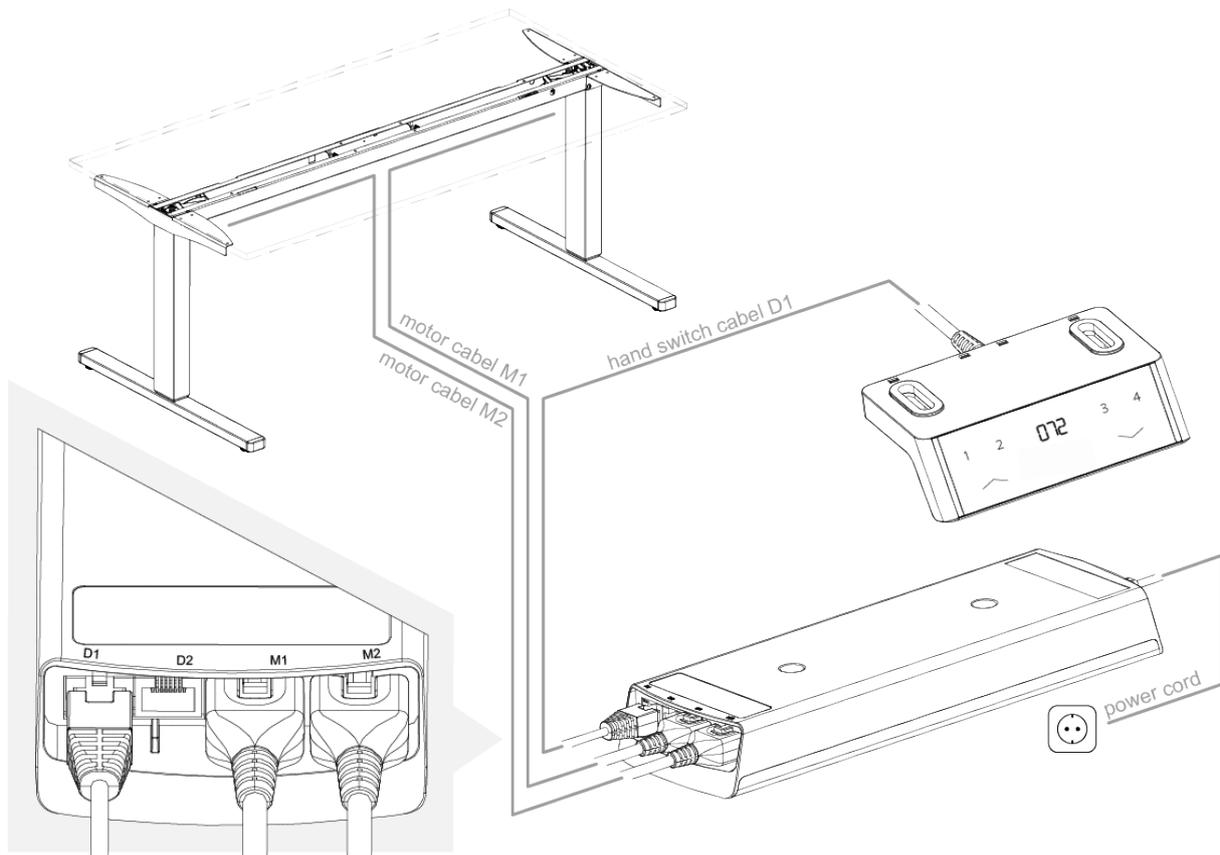


Figure 6: Example configuration for a table.

### 8.1 Connecting the drives

If you receive a pre-assembled table-top support frame, in which the columns and the controller are already connected to one another, continue with the instructions in Section 8.2.

Connect the motor cables to the columns. This step is only required for fitted columns without an integrated motor cable. In this case, you can skip to the next step.

Connect the free end of the motor cable of the left-hand column with one of the motor terminals (M1 or M2). Connect the free end of the motor cable of the right-hand column with the free motor terminal (M1 or M2). Make sure that the motor cables snap audibly into place in all the plug connections. If required, verify correct fitting by pulling on the cable using only slight force.

### 8.2 Connecting the hand switch and accessories

Connect the hand switch with one of the RJ45 ports (D1 or D2). Ensure that the RJ45 connector snaps into place audibly when it is connected. If required, verify correct fitting by pulling on the cable using only slight force.

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Other accessories - such as the collision sensor - can be connected to the free RJ45 port. If there are more accessories components to be connected to the controller than the number of free sockets, first, the STAND.CONNECT hub must be connected using the STAND.CONNECT connecting cable to one of the free RJ45 ports.

Several different or similar hand switches can be connected in parallel.



**Caution:** After commissioning, accessory components may not be separated from the controller during movement. This can result in the table's unpredictable behaviour and is a danger to the user.



**Note:** It is recommended that the table controller be isolated from the mains supply before every enhancement or replacement of accessories.

## 8.3 Connecting the mains cable



**Danger:** Ensure that the mains voltage and frequency prevalent in your country are the same as the data given on the rating plate. Ensure that all the components are plugged into the correct ports.



**Note:** When the mains supply is connected for the first time, an initialisation of the table is necessary. It is described in Section 8.4.



**Caution:** Use only the 2-pole mains cables provided. If other mains cables are used, the controller could be damaged.



**Figure 7: Cable strain relief for the mains cable.**

Connect the power cable with the controller and then to the mains supply. When doing so, please place the mains cable as shown above in the cable strain relief. This prevents the plug from getting pulled out when there is any traction on the mains cable, and the transition from cable to plug is protected.

## 8.4 Initialisation / Reset



**Caution:** During the initialisation movement, the safety mechanisms are disabled. The table moves with reduced speed. Collisions are not detected.



**Danger:** The optionally available anti - collision mode is **not activated** during any reset process. During this process, always watch out for the possible danger of being crushed.



**Warning:** With an initialisation movement prompted by the controller, the reset position is always approached directly. Any container stop or safety stop that is present is ignored. First, remove all hindrances below the table (for example, roll containers) and pay heed to the increased risk of injury.



**Note:** If you end the initialisation movement too early by mistake, the controller is not yet ready to operate again. Please repeat the process.

After the installation, or if there is a fault at the table, or after disconnecting the connection between the drives and the controller, the controller of the table has to be initialised.

If the controller is expecting an initialisation, the table can only move downward. For this purpose press the -key. Press the key until the table has reached its lowermost end position (reset position) and indicates this with a single “click-clack” sound. With hand-switch models with a display,  is displayed during the initialisation movement. During the entire initialisation movement, the table moves at reduced speed.

The user can also request an initialisation at any time. To do so, move the table down as far as possible. If the table stops at a position (container-stop, safety stop or minimal position) release the key and press it again. Press and hold the -button for at least six seconds. The table now moves with reduced speed downward. Keep the key pressed until the table has reached its lowermost end position (reset position) and indicates this with a single “click-clack” sound.

After the initialisation movement, the controller moves the desktop to the height of the minimal position. Then move the table to your desired working height. It must necessarily be higher than an existing container stop (see Section 9.2).

## 9 Control



**Caution:** The upper end position of the desktop is pre-set in the controller. For this reason, only those controllers that have been supplied as being suitable for the respective desk base may be used.

For the operation, a simple hand switch (for example, STAND.MOVE Mx.0) is the minimum requirement. All the instructions described can also be carried out with a comfort hand switch (for example, STAND.MOVE 1.2).

### 9.1 Height-adjustment



**Note:** When adjusting the height of the table, please ensure that no children or other persons are underneath the table. There is a risk of injury.

Press the -button to lower the desktop. Keep the button pressed until the desktop has reached the desired height. The table stops automatically as soon as the lower end position is reached (container-stop, safety stop or minimal position).

Press the -button to raise the desktop. Keep the button pressed until the desktop has reached the desired height. When the table reaches the upper end position or the pre-set stop, the movement is ended.

### 9.2 Set shelf and container stop



**Warning:** Only trained personnel should carry out setting and deletion of "lower" & "upper" stops. There is a danger of injury from wrong setting or removal of the Stop positions, and a danger of the table getting destroyed.



**Note:** This function is configuration-dependent and is not available with every controller.



**Note:** With the additional stops, the safety of the table system can be increased, in that the possible movement path is restricted.

"lower" & "upper" stops are safety positions that cannot be over-run during normal operation. These are in place so as a known, permanent range of movement can be determined, aiding prevention of collisions with objects such as pedestals. The "lower stop" limits the range of movement downwards (past the set min. height). The "upper stop" limits the range of movement up (past the set max. height) of the table.

Setting the "lower" stop is only possible in the lower half of the movement path of the table and only below the "upper" stop position.

Setting the "upper" stop is only possible in the upper half of the movement path of the table and only above the "lower" stop position.

The procedure for setting the respective stop is identical. Proceed as follows:

1. Move the table, using the arrow keys (⏪ and ⏩), to the desired position.
2. Press both the arrow keys (⏪ and ⏩) at the same time.
3. The controller confirms with one “click-clack” sound. (The absence of this signal means that setting is possibly not permitted.)

To delete the container stop, proceed as follows:

1. Keep the arrow key down (⏩) pressed.
2. The table stops automatically upon reaching the container stop.
3. Press both the arrow keys (⏪ and ⏩) at the same time.
4. The controller confirms with a single “click-clack” sound.

Follow a similar procedure for deleting the shelf-stop.

1. Keep the arrow key up (⏪) pressed.
2. Steps 2 to 4 are identical to those for deleting the container stop.

If an attempt is made to set the container stop or shelf stop too close to the middle, the controller signals this with 6 “click-clack” sounds.

With a comfort hand switch, you have the option of setting and deleting the container stop and the shelf stop from the menu. Instructions for doing so are given in sections 10.1.7 and 10.1.8.



**Warning:** With an initialisation movement prompted by the controller, the reset position is always approached directly. Any container stop or safety stop that is present is ignored.

First, remove all hindrances below the table (for example, Rollcontainer) and pay heed to the increased risk of injury.

## 9.3 Collision detection



**Warning:** Collision detection is a feature for system protection. When the desktop is being moved, there is a danger of crushing.



**Note:** Remove the hindrance after a collision.

Every controller has a simple internal collision detection. This can be supplemented with the more sensitive external sensor STAND.GUARD G1 (see section 10.2).

Collision detection is triggered when the desktop hits a rigid hindrance. This works both upward and downward. Owing to the physical properties of the desk (desk base and desktop), the collision detection reacts with a different degree of sensitivity upon hitting hindrances at different places of the desktop. Even with different loads and load distributions on the table, the collision detection reacts with different degrees of sensitivity.

If the collision protection detects a collision, the controller stops the current movement and moves about 25 mm in the opposite direction. This is intended to prevent distortion and a slanted position of the table.

Remove the hindrance before the next movement.

After the collision and removal of the hindrance, the controller is ready for operation again immediately.

## 9.4 Safety-Stop / Safety zone

The safety stop is an additional stop above the minimal position. At this position, the table stops automatically when the -button is pressed. To further reduce the table height, first release the button and then press it again.

Below the safety-stop, the controller moves with reduced speed until it reaches the minimal position. The safety stop is unchangeably stored in the controller.



**Note:** No positions can be saved below the safety stop. The table moves with reduced speed downward only.

## 10 Configuration-dependent functions

### 10.1 Comfort hand switch

The functions that have been described can be executed with the help of the model STAND.MOVE M1.1.

There is a detailed description of the hand switch functions in the relevant operating manual of the respective manual switch.



Figure 8: Hand switch STAND.MOVE M1.1.

This manual switch is additionally equipped with a display for showing the current desk height in centimetres (CM) or inches (Inch). Data on the status of the table and error messages are shown in the display. If the hand switch is not operated for a prolonged period, the display goes off provided there is no error being shown currently. Pressing any button switches the display on again.

With the arrow keys (↙ and ↘), the table can be moved similarly to the simple hand switch (see section 9.1).

#### 10.1.1 Saving positions

The STAND.CONTROL C1 controller provides the user the facility to save up to four heights. This function can only be used with a comfort hand switch. The positions are saved in the controller and are retained even when the hand switch is replaced.

To save a position, proceed as follows:

1. Move the table, using the arrow keys (↙ and ↘), to the desired height.
2. Press the button below the display.
3. A **P\_** will appear in the display.
4. Press the position key (keys **1** – **4**), to which you wish to save the position.
5. The selected position is shown in the display (for example **P1**).

The current height is now ready to be retrieved using this position button. After approx. 2 seconds, the display toggles automatically and once again displays the current height. In this manner, a height can be assigned to every position button.

The saved positions cannot be deleted.

A saved position can be overwritten.



**Note:** No positions can be saved below an existing container stop.

## 10.1.2 How to retrieve a saved position

Keep the desired memory setting pressed. The desk independently moves from the current position to the saved position.

The button has to be pressed until the position is reached; if you let go beforehand, the desk stops moving.



**Note:** Functions located and saved below a newly generated container stop and above a newly generated shelf stop are ignored. In this case, the table moves only up to the container stop or shelf stop.

## 10.1.3 Calling the menu

The Comfort hand switch provides various possibilities for settings, which can be carried out by the operator himself (**F4** and **F5** are not always available, depending on the configuration).

To do so, press the mid button for 6 seconds until the display changes to **F1**. You are now in the menu of the hand switch and can navigate through it with the arrow keys (**↵** and **⏪**).

Structure of the menu:

|           |                                                                  |                |
|-----------|------------------------------------------------------------------|----------------|
| <b>F1</b> | Change the height display (inches – cm)                          | Section 10.1.4 |
| <b>F2</b> | Adjust the height display                                        | Section 10.1.5 |
| <b>F3</b> | Factory reset                                                    | Section 10.1.6 |
| <b>F4</b> | Set shelf and container stop (depending on the configuration)    | Section 10.1.7 |
| <b>F5</b> | Delete shelf and container stop (depending on the configuration) | Section 10.1.8 |

In the absence of any selection or further actions, after approx. 6 seconds, the display automatically switches back to the height display.

## 10.1.4 Changing the unit of the height display (Inch – CM)

The height can be shown in centimetres or inches on the hand switch. The unit can be toggled in the menu. The height is displayed rounded to the nearest centimetres or in tenths of an inch with one decimal.

To change the unit, proceed as follows:

1. In accordance with the instructions in section 10.1.3 go to the menu of the hand switch.
2. If necessary, navigate with the arrow keys (**↵** and **⏪**) to menu option 1. The display must show **F1**.
3. Confirm the selection by once again pressing the mid button.
4. Now select:
  - a. Press **⏪** for inches. **I** appears in the display.
  - b. Press **↵** for CM. **C** appears in the display.

5. Confirm the selection by once again pressing the mid button.
6. The hand switch automatically toggles back to the height display.

The setting is permanently saved in the controller and is retained even when the hand switch is replaced.

In the absence of any selection or further actions, after approx. 6 seconds, the display automatically switches back to the height display.

### 10.1.5 Calibrating the height display

Sometimes, the comfort hand switch does not display the actual height of the desktop of your table. The reason for this can, for example, be the height-compensation using spacer discs below the table skids or the use of desktops of different thicknesses.

Retrospective settings can be made for this in the menu of the comfort hand switch.

To do this, proceed as follows:

1. Measure the correct current table height. Note the difference to the currently displayed table height.
2. In accordance with the instructions in section 10.1.3 go to the menu of the hand switch.
3. If necessary, navigate with the arrow keys (⏪ and ⏩) to menu option 2. The display must show **F2**.
4. Confirm the selection by once again pressing the mid button. The height of the minimal position is displayed. The lighting of the border flashes.
5. Adjust the displayed height with the arrow keys (⏪ and ⏩) by the noted difference, either up or down.
6. Confirm the input by once again pressing the “Logo” key.
7. You are once again in the main menu and can make further settings.

The setting is permanently saved in the controller and is retained even when the hand switch is replaced.

### 10.1.6 Factory reset



**Note:** All personal settings are deleted. The memory positions are also reset when a factory reset is carried out.

If you wish to reset the controller to the factory settings because you do not wish to retain the changed settings, or notice an error, please contact HM Customer Services or proceed as follows:

1. In accordance with the instructions in section 10.1.3 go to the menu of the hand switch.
2. If necessary, navigate with the arrow keys (⏪ and ⏩) to menu option 3. The display must show **F3**.
3. Confirm the selection by once again pressing the mid button.
4. The display shows **000**.

5. Confirm the input by once again pressing the mid button.
6. The menu is exited automatically and **F3B** is displayed. This code requests an initialization. Perform this according to the instructions in Section 8.4.

If no selection is made, after six seconds, the display will automatically return to the main menu.

## 10.1.7 Setting the range (depending on the configuration)



**Warning:** Only trained personnel should carry out the setting of stop positions. There is a danger of injury from wrong setting of the Start/stop positions, and a danger of the table getting destroyed.



**Warning:** With an initialisation movement prompted by the controller, the reset position is always taken up directly. Any lower stop position or safety stop that is present is ignored. First, remove all obstacles below the table and pay heed to the increased risk of injury.



**Note:** This menu option is not present in all controller configurations. If the menu option is missing, the user is not allowed to set the range of movement.



**Note:** With the additional stops, the safety of the table system can be increased, in that the possible movement path is restricted.

The lower starting position cannot be over-run during normal operation for safety purposes, preventing possible collisions with items such as pedestals positioned under the desk. The lower starting position limits the movement downwards (setting the minimum height) and can be used if there are limiting factors below the table, for example, a pedestal. The upper stop position limits the range of upward movement of the table upward and can be used if there are limiting factors above the table, such as a shelf or the incline of a roof.

To set the "lower" starting position or "upper" stop position, proceed as follows:

1. Use the arrow keys (⏪ and ⏩) to move to the desired position.
2. Go to the menu of the hand switch in accordance with the instructions.
3. If necessary, navigate with the arrow keys (⏪ and ⏩) to menu option 4. The display must show **F4**.
4. Confirm the selection by once again pressing the mid Button.
5. Now select:
  - a. Press ⏩, to set the upper stop.
  - b. Press ⏪, to set the lower stop.
6. Confirm the input by once again pressing the mid Button key. Alternatively, wait for approx. 6 seconds.
7. You are once again in the main menu and can make further settings.

The setting is permanently saved in the controller and is retained even when the hand switch is replaced.

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In the absence of any selection or further actions, after approx. 6 seconds, the display automatically switches back to the main menu.

## 10.1.8 Delete "lower" starting position or "upper" stop position, (depending on the configuration)



**Warning:** Only trained personnel should delete lower and upper start/stop positions. There is a danger of injury from removal of the Stop positions, and a danger of the table getting destroyed.



**Note:** This menu option is not present in all controller configurations. If the menu option is not present, the user is not permitted to delete lower and upper start/stop positions.



**Note:** With the additional stops, the safety of the table system can be increased, in that the possible movement path is restricted.

To delete a "lower" or "upper" start/stop position, proceed as follows:

1. Go to the menu of the hand switch in accordance with the instructions.
2. If necessary, using the arrow keys (⏪ and ⏩) navigate to menu option 5. The display must show **F5**.
3. Confirm the selection by once again pressing the mid Button.
4. Now select:
  - a. Press ⏩, to delete the upper stop.
  - b. Press ⏪, to delete the lower starting position.
5. Confirm the input by once again pressing the mid Button. Alternatively, wait for approx. 6 seconds.
6. You are once again in the main menu and can make further settings.

The setting is permanently saved in the controller and is retained even when the hand switch is replaced.

In the absence of any selection or further actions, after approx. 6 seconds, the display automatically switches back to the main menu.

## 10.1.9 Automatic movement



**Warning:** The automatic movement function is fundamentally disabled upon delivery. Activating the automatic movement invalidates the evaluation of the controller according to EN ISO 13849-1 PL b Category B.

If the controller is being used within the scope of this standard, you must carry out a new evaluation in accordance with the specifications of EN 60335-1 and EN ISO 13849. Generally, according to the specifications of the standard, automatic movement is not permitted.

Herman Miller does not accept liability for injuries or damage that could result from the use of the automatic movement.



**Warning:** Automatic movement of the table brings a greater danger of injury with it. Pay particular attention to the table and its surroundings while the desktop is moving.

If automatic movement is activated in the controller, positions such as described in section 10.1.2 can be invoked by briefly pressing the relevant position key. The key does not have to be kept pressed the entire time. All other functions are identical.

Automatic movement is interrupted by pressing any other key.

## 10.2 Collision detection STAND.GUARD G1

The STAND.GUARD G1 sensor can be used as a sensitive collision protection enhancement to the controller. A detailed description of its functions can be found in the relevant operating manual.

If you have decided to use the STAND.GUARD G1 sensor as collision detection, you can add it, as described in Section 8.2, to the controller system at any time in a free RJ45-port.

The controller system must be disconnected from the mains when the sensor is plugged in. The sensor is calibrated every time it is connected to the power supply. This is the case, for example, when the sensor is newly connected to an active controller, or a configured system including the sensor is connected to the mains supply. For the calibration, the sensor must not be moved for at least 10 seconds after the power is supplied. Otherwise, the calibration returns erroneous values and has to be repeated.

If the sensor is disconnected from the controller, the controller can continue to be used normally. An indication is provided to the user about the absence of the previously present sensor, by displaying the code **E40**. When the first attempt is made to move after disconnection of the previously present sensor, there is an audio warning to the user from the controller in the form of 3 “click-clack” sounds. Then, the controller moves off as usual and the displayed code is deleted.

Then, if a sensor is again connected to the controller system, and an attempt is made to move, the controller once again emits the audio signal of 3 “click-clack” sounds. This is to draw the attention of the user to the fact that once again, a sensor has been detected and activated. Then, the controller moves as usual using the inserted sensor.

## 10.3 Cascading



**Caution:** The upper end position of the desktop is pre-set in the controller. For this reason, only those controllers that have been supplied as being suitable for the respective desk base may be used.



**Caution:** Use only controllers with identical parameter sets for cascading, since otherwise, unforeseeable behaviour of the table could occur. The correct number of table legs must be stored in the parameter set.

2 drives maximum can be connected to one controller. To increase this number to 4, two controllers can be cascaded

For cascading the controllers, proceed as follows:

1. Connect the controllers with a STAND.CONNECT connecting cable.
2. Connect additional accessories as provided in Section 8.2 to the free RJ45 slots of the controllers.
3. Connect the controllers to the mains supply (see Section 8.3).
4. Ensure that all the controllers are connected to a power supply.
5. Carry out an initialisation procedure as specified in the instructions in section 8.4.
6. If all the table legs do not move during the initialisation movement, check once again whether all the controllers are connected to one another with the STAND.CONNECT connecting cable and whether all the controllers are connected to the mains supply. In addition, check whether the controllers have recognised one another. To do so, press the -button for at least 6 seconds. Then perform step 5 again.

## 11 Disassembly/Maintenance

### 11.1 Disassembly

1. Disconnect the controller from the mains.
2. Disconnect all connections between the controller and the accessories.
3. Disassemble the controller from the table.

### 11.2 Maintenance



**Warning:** Do not open the controller. Opening the controller will render all warranties null and void.



**Danger:** If the controller is opened, there is a danger of an electric shock. This danger continues to exist even for a few minutes after disconnection from the mains supply.



**Danger:** If you find defective cables, immediately isolate the controller from the mains. Pull the mains plug.

Check the plug-and-connector joints at the controller regularly for firm fitting. Check all the cables regularly for defects. If you find defective cables, plugs or loose plug-and-connector joints, replace the cables. If that is not possible, or does not bring about any improvement, contact customer service.

### 11.3 Cleaning and maintenance



**Warning:** Aggressive cleaning agents can cause damage or discolouration on the product. Therefore, only agents with a pH value of 6-8 may be used.

The STAND.CONTROL C1 can be wiped from the outside with a soft cloth. Coarse soiling may only be removed with a soft, damp cloth. Ensure that no moisture penetrates into the housing.

## 12 Easy to rectify faults



**Warning:** Before troubleshooting, especially on faulty cables, the controller must be isolated from the network.

If a fault cannot be rectified as described, isolate the product from the voltage supply, wait for at least 3 minutes and try again.

If the fault continues to occur, isolate the product from the voltage supply and contact our customer service.

Table 1: Fault description of the faults that are easy to rectify.

| Fault description                                                | Troubleshooting                                                                                                           |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Table does not move                                              | Check whether the controller has power.                                                                                   |
|                                                                  | Check the connection between the drives and the controller(s). Restore the connections.                                   |
|                                                                  | Check the loading of the table. Reduce the weight on the table.                                                           |
|                                                                  | Powering-on duration exceeded. Wait until the table is ready for use again (approx. 3 min.).                              |
|                                                                  | Drive defective: Contact customer service.                                                                                |
|                                                                  | Controller defective: Contact customer service.                                                                           |
|                                                                  | Hand switch faulty: Replace the hand switch or contact customer service.                                                  |
|                                                                  | Carry out an initialisation movement.                                                                                     |
| Table is not moving, but moved earlier                           | Table is at a slant: Carry out an initialisation run.                                                                     |
|                                                                  | Table leg was separated: Check all the connections and carry out an initialisation movement.                              |
|                                                                  | Powering-on duration was exceeded: Wait until the table is ready for use again.                                           |
| Table stops abruptly                                             | The powering-on duration was exceeded: Wait until the table is ready for use again.                                       |
|                                                                  | Check the loading of the table. Reduce the weight on the table.                                                           |
| Table stops abruptly and moves back                              | Collision protection has been triggered: Remove the hindrance and try it again.                                           |
| Table moves slowly and downwards only                            | Table is in an initialisation movement: Continue it up to the end.                                                        |
| Table only moves briefly on one side and then remains stationary | Table is below the safety stop (downward movement slow; upward movement at normal speed): Move upwards, out of this zone. |
|                                                                  | Drive defective: Contact customer service.                                                                                |
| Table moves slowly                                               | Table is below the safety stop (downward movement slow; upward movement at normal speed): Move upwards, out of this zone. |

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| Fault description | Troubleshooting                                                    |
|-------------------|--------------------------------------------------------------------|
|                   | Check the loading of the table.<br>Reduce the weight on the table. |

## 13 Acoustic and visual codes

### 13.1 Acoustic codes

The controller, as soon as it is supplied electric power, can give the user information about the current system status by means of its integrated relay.

**Table 2: Acoustic codes of the controller.**

| Number of “click-clack” sounds | When                                                     | Status Information                                                                                                                                                                                   |
|--------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                              | Supply of electrical power (*dependent on configuration) | <b>Normal operation:</b> The system is functioning without any problems.<br><b>Faulty operation:</b> The controller does not have any firmware: Only 1 click sounds.                                 |
| 1                              | Up key pressed                                           | <b>Reset:</b> Initialisation movement is required.                                                                                                                                                   |
| 1                              | Lower blockade detected                                  | <b>Reset:</b> Table has reached the Reset position during the initialisation movement. The  -key can be released. |
| 1                              | Lower blockade detected                                  | <b>Reset:</b> Initialisation movement has ended;  key continues to be pressed. Release the key.                   |
| 2                              | Set container or shelf stop                              | <b>Confirmation:</b> The position was successfully saved.                                                                                                                                            |
| 3                              | First movement after sensor out                          | <b>Caution:</b> A previously detected sensor has been removed. Normal operation can continue.                                                                                                        |
| 3                              | First movement after sensor reinserted                   | <b>Note:</b> A sensor was reconnected after a previously detected sensor had been removed. Normal operation can continue.                                                                            |
| 4                              | Delete container or shelf stop                           | <b>Confirmation:</b> The position was successfully deleted.                                                                                                                                          |
| 6                              | Container stop or shelf stop too near in the middle      | <b>Warning:</b> An attempt is being made to set the container stop or shelf stop too near the middle.                                                                                                |
| 7                              | Motor cable pulled or missing                            | <b>Warning:</b> Motor cable absent when connecting to the mains, or has been disconnected during operation. Connect the missing motor cable with the controller.                                     |
| 7                              | Table moves at an angle                                  | <b>Warning:</b> Slanted position of the table internally has become too big. Carry out an initialisation movement.                                                                                   |

## 13.2 Visual codes

Visual codes can only be used when using hand-switch models with a display.

**Table 3: Visual codes of the controller**

| Display    | Description                                                                                                              | Remedy                                                                                                                                                                                                                           |
|------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>E01</b> | Short-circuit motor 1                                                                                                    | Pull the mains plug. Correct the external short-circuit, check the cables to the motors for damage or connect the correct motor to the relevant socket. Start the controller again. If required, carry out a reference movement. |
| <b>E02</b> | Short-circuit motor 2                                                                                                    |                                                                                                                                                                                                                                  |
| <b>E05</b> | Relay contact is sticking                                                                                                | Replace the controller.                                                                                                                                                                                                          |
| <b>E11</b> | Cable of motor 1 was pulled                                                                                              | Check the plug/cable connection to the motors and carry out a reference movement.                                                                                                                                                |
| <b>E12</b> | Cable of motor 2 was pulled                                                                                              |                                                                                                                                                                                                                                  |
| <b>E15</b> | No pulses measurable                                                                                                     | Pull the mains plug. Correct the external short-circuit, check the cables to the motors for damage or connect the correct motor to the relevant socket. Start the controller again. If required, carry out a reference movement. |
| <b>E34</b> | Overcurrent at motor 1                                                                                                   | Max. load exceeded; remove the load from the table.<br>If required, carry out a reference movement                                                                                                                               |
| <b>E35</b> | Overcurrent at motor 2                                                                                                   |                                                                                                                                                                                                                                  |
| <b>E38</b> | The motors have lost sync.                                                                                               | Motor positions too much at variance; if required, reduce the load on the table. Carry out a reference movement.                                                                                                                 |
| <b>E39</b> | The controllers are out of sync (cascading).                                                                             | Check whether the cascading cable between the controllers is correctly inserted and that there is a mains cable in both controllers.<br>Carry out a reference movement.                                                          |
| <b>E40</b> | Sensor module error                                                                                                      | Further movements are possible, but without anti-collision protection. Inspect the sensor module.                                                                                                                                |
| <b>E51</b> | Contradictory operations on two different controller devices.                                                            | Stop operation at all the available controller devices.                                                                                                                                                                          |
| <b>E52</b> | The  key on the hand switch is stuck. | Replace hand switch.                                                                                                                                                                                                             |
| <b>E53</b> | The  key on the hand switch is stuck. |                                                                                                                                                                                                                                  |
| <b>E81</b> | Voltage too small                                                                                                        | Pull the mains plug. Contact Customer Service.                                                                                                                                                                                   |
| <b>E82</b> | Voltage too high                                                                                                         |                                                                                                                                                                                                                                  |

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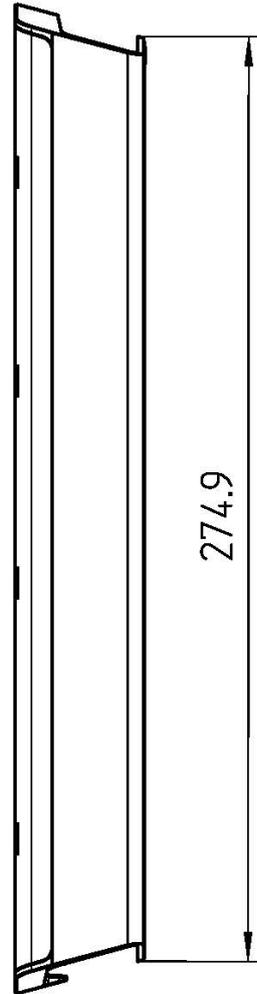
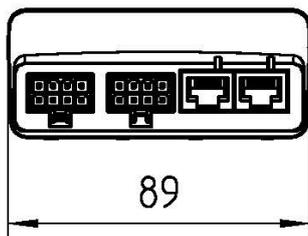
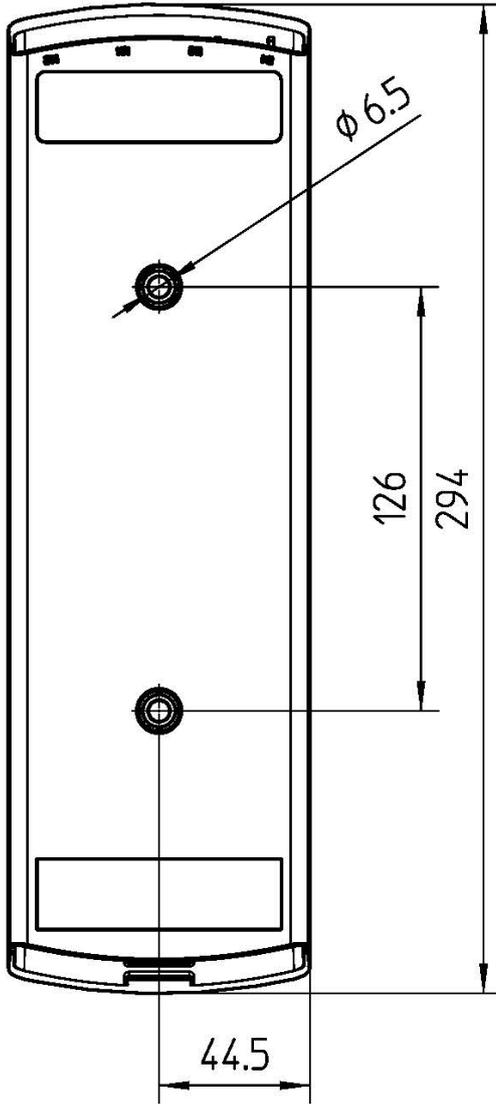
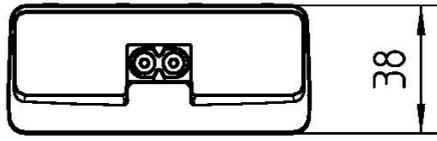
| Display         | Description                                                                              | Remedy                                                                                                                                                                                                                                                                                                                 |
|-----------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>EB3</b>      | Discrepancy in the parameters                                                            | The parameters in one controller do not match the number of legs or the parameters are not the same in the two controllers.<br>Contact Customer Service and have the parameter set of the table checked.                                                                                                               |
| <b>REF</b>      | Reference movement required or Initialisation movement is carried out.                   | Carry out a reference movement.                                                                                                                                                                                                                                                                                        |
| <b>SP</b>       | System protection / system pause<br>The powering-on duration of the system was exceeded. | Wait until the controller has cooled and the display <b>SP</b> turns off. Then, the movement duration of 17 seconds is cleared. Only after 18 min does the table move again for a full 2 min.<br><b>ATTENTION!</b> The calculation of the powering-on duration is performed even if there is no mains voltage present. |
| <b>COL</b>      | Collision detected                                                                       | Remove the hindrance.                                                                                                                                                                                                                                                                                                  |
| <b>00 1-999</b> | The table moves; height display                                                          |                                                                                                                                                                                                                                                                                                                        |

## 14 Technical data

The technical data of the STAND.CONTROL C1:

|                                                       |                                                                                                                                                                        |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated input voltage                                   | 100 - 240 V                                                                                                                                                            |
| Rated input frequency                                 | 50 – 60 Hz                                                                                                                                                             |
| Rated input current consumption                       | 2.5 A                                                                                                                                                                  |
| Rated input power                                     | 250W                                                                                                                                                                   |
| Standby power at nominal voltage, primary (typical)   | 0.3 W                                                                                                                                                                  |
| Rated output voltage                                  | 31 V                                                                                  |
| dimensions (L x B x H)                                | 294 x 89 x 38 mm<br>11.57" x 3.50" x 1.50"                                                                                                                             |
| weight                                                | 0.54 kg                                                                                                                                                                |
| Environmental conditions during transport and storage | -25 °C to +70 °C at 5 % to 90 % relative atmospheric humidity (non-condensing), with +38 °C max. dew point;<br>Temperatures from +55 °C to +70 °C only for maximum 24h |
| Environmental conditions in operation                 | +5 °C to +40 °C at 10 % to 85 % relative atmospheric humidity (non-condensing), with +27 °C max. dew point;                                                            |
| Protection class                                      | II                                                                                                                                                                     |
| IP class (protection class as per EN 60529)           | IP 20                                                                                                                                                                  |
| Max. duty cycle                                       | 2 min. ON / 18 min. OFF (after 2 min. OFF, there are 17 s ON available)                                                                                                |
| connections                                           | 2x RJ45-socket<br>2x 8-pole motor connection<br>1x non-heating connection for power supply                                                                             |

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## 15 Tests and certificates

The drive system is tested according to the following standards:

### Electromagnetic compatibility (EMV-Directive 2014/30/EU):

|                      |                                     |
|----------------------|-------------------------------------|
| EN 61000-6-2:2005    | Electromagnetic Compatibility (EMC) |
| EN 61000-6-3:2007+A1 | Electromagnetic Compatibility (EMC) |
| EN 61000-3-2:2014    | Electromagnetic Compatibility (EMC) |
| EN 61000-3-3:2013    | Electromagnetic Compatibility (EMC) |

### Electrical safety (low voltage directive 2014/35/EU):

|                     |                                                                          |
|---------------------|--------------------------------------------------------------------------|
| EN 62233:2008       | Safety of persons in electromagnetic fields                              |
| EN 60335-1:2012+A13 | Household and similar electrical appliances<br>Internal and similar uses |

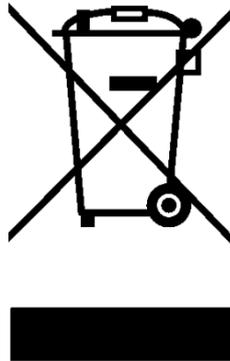
### Safety-related parts of controllers:

|                     |                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------|
| EN ISO 13849-1:2015 | Safety of machinery<br>Safety-related parts of control systems<br>Performance Level "b" |
|---------------------|-----------------------------------------------------------------------------------------|



## 16 Disposal

The ratio ebeam support frame by which the STAND.CONTROL C1 is fitted is an electrical and electronics device that must be disposed of separately from household waste, in accordance with the applicable WEEE-directive 2012/19/EU.



**Figure 9: Identification markings for products in accordance with WEEE Directive 2012/19/EU**

Dispose of the product and all other materials and parts in an environment-friendly manner, in accordance with the applicable national regulations in your country. Ensure that the disposal is sustainable for humans and nature.

Check for recyclability before disposal. As far as possible, take all the parts for recycling.