



## LINAK DS1 Desk Sensor User Manual

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### LINAK DS1 Desk Sensor User Manual



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## Preface

### Dear User,

We are delighted that you have chosen a product from LINAK®.

LINAK systems are high-tech products based on many years of experience in the manufacture and development of actuators, electric control boxes, controls and chargers.

This User Manual does not address the end-user. It is intended as a source of information for the manufacturer of the equipment or system only, and it will tell you how to install, use and maintain your LINAK electronics. It is the responsibility of the manufacturer of the end-use product to provide a User Manual where relevant safety information from this manual is passed on to the end user.

We are sure that your LINAK product will give you many years of problem-free operation.

Before our products leave the factory they undergo full function and quality testing. Should you nevertheless experience problems with your systems, you are always welcome to contact your local dealer.

LINAK subsidiaries and some distributors situated all over the world have authorised service centres, which are always ready to help you.

LINAK provides a warranty on all its products. This warranty, however, is subject to correct use in accordance with the specifications, maintenance being done correctly and any repairs being carried out at a service centre, which is authorised to repair LINAK products.

Changes in installation and use of LINAK systems can affect their operation and durability. The products are not to be opened by unauthorised personnel.

The User Manual has been written based on of our present technical knowledge. We are constantly working on updating the information and we therefore reserve the right to carry out technical modifications.

## Important information

Important information on LINAK® products can be found under the following headings:



### Warning!

Failure to comply with these instructions may result in accidents involving serious personal injury.



Failing to follow these instructions can result in the product being damaged or being destroyed.

## Safety instruction

### General

Safe use of the system is possible only when the operating instructions are read completely and the instructions contained are strictly observed.

Failure to comply with instructions marked with the "NOTE" symbol may result in serious damage to the system or one of its components.



It is important for everyone who is to connect, install, or use the systems to have the necessary information and access to this User Manual. Follow the instructions for mounting – risk of injury if these instructions are not followed.



The appliance is not intended for use by young children or infirm persons without supervision.



If there is visible damage on the product it must not be installed.



Note that during construction of applications, in which the actuator is to be fitted, there must be no possibility of personal injury, for example the squeezing of fingers or arms.



Assure free space for movement of application in both directions to avoid blockade

### Only for EU markets



This appliance 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 given supervision or instruction concerning the use of the appliance in a safe way and understand the hazards involved.



Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

### Only for Non EU markets



Persons who do not have the necessary experience or knowledge of the product/ products must not use the product/products. Besides, persons with reduced physical, sensory or mental abilities must not use the product/products, unless they are under surveillance or they have been thoroughly instructed in the use of the apparatus by a person who is responsible for the safety of these persons.



Moreover, children must be under surveillance to ensure that they do not play with the product.

## Misuse

Do not overload the actuators – this can cause danger of personal injury and damage to the system.

Do not use the actuator system for lifting persons. Do not sit or stand on a table while operating – risk of personal injury.

Do not use the system in environments other than the intended indoor use.

## Installation



Ensure that the CBD6S and/or T-splitter are fixed securely to the tabletop for optimal DS1 performance.



The DS1 reacts to angle changes from its original position. Thus, the DS1 mounting direction is not important.



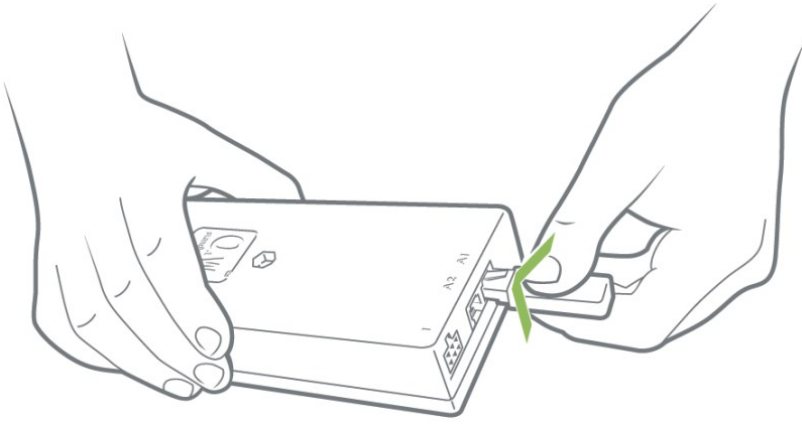
If the DS1 is removed from the system or is no longer mounted correctly, the desk panel will show error 94 at the first activation. At the next activation, however, the desk will drive as intended

The DS1 can be installed in any direction as tilting is detected in three planes.

| X-axis | Y-axis | Z-axis |
|--------|--------|--------|
|        |        |        |

## System with Control Box CBD6S

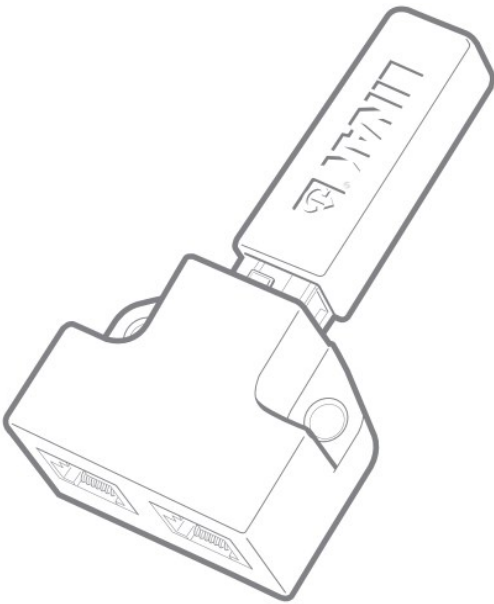
1. Plug DS1 into port A1 on CBD6S.



Ensure that the cable mounted in port A2 is fastened thoroughly and cannot touch the DS1 while the desk is running.

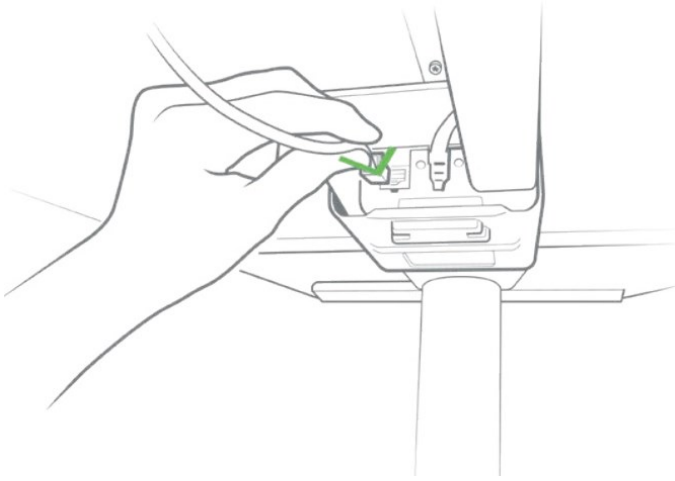
### System with IC columns

1. Mount T-splitter on tabletop using two M4.5 x 25 screws.
2. Plug DS1 into port on single-port side of T-splitter.

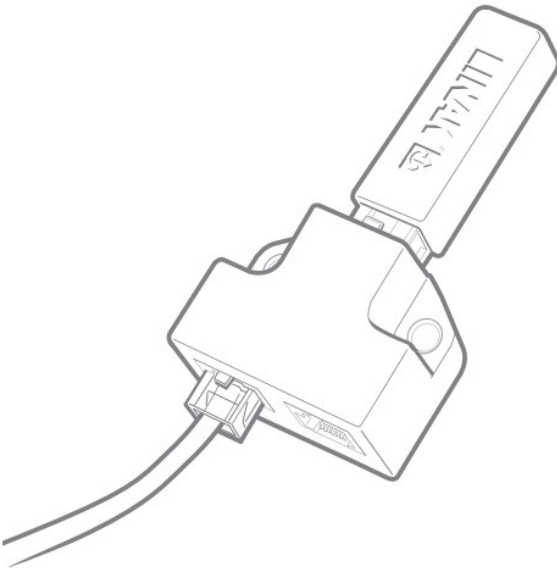


Always use the port on the single-port side of the T-splitter for the DS1 to ensure that the DS1 is not undesirably triggered by movement of the serial cable or the cable for the desk panel.

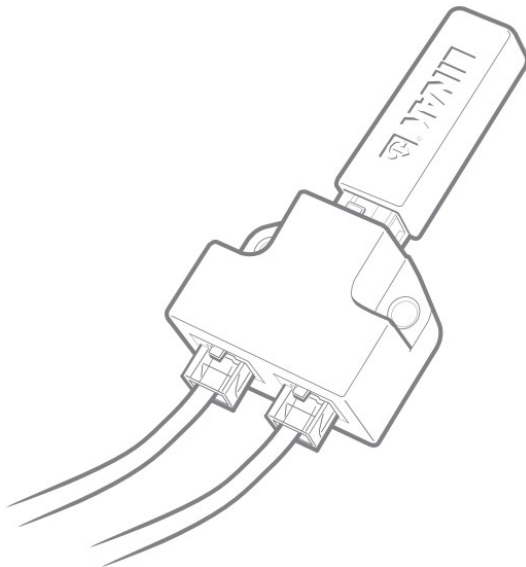
3. Plug serial cable into RJ45 socket on IC column.



4. Plug serial cable into a port on double-port side of T-splitter



5. Plug cable for desk panel into the other port on double-port side of T-splitter.



## Method of operation

The DS1 operates on the gyroscope principle detecting tilting of the desk. If the desk starts tilting while driving up or down, the DS1 reacts to an angle change. If the angle change is larger than  $0.7^{\circ}$  per second, the DS1 immediately stops the desk and drives it in the opposite direction. This return drive automatically continues for maximum 4 seconds (approximately 40 mm). The return drive is independent of the user's interaction with the control but will never run farther than the run causing the collision.

The original angle of the DS1 is updated each time the desk is operated after the control has been in sleep mode (approximately 10 seconds after operation). The gyroscope will allow a slight change in angle (below 0.7° per second), for example if a heavy load is placed on one side of the desk forcing the desk to lean slightly, but if the absolute tilt exceeds 10° compared to the original angle of the DS1, the desk will stop and drive in the opposite direction.

The desk construction may influence the DS1 function:

- On a desk with a very fixed frame, the force required for the desk to tilt is bigger, thus collision (e.g. with soft objects) may not cause the desk to tilt at all.
- On a desk with a very loose frame, the tabletop may tilt easily and cause undesired triggering, even when no collision is actually happening.

The Anti-Collision function is not activated if the collision happens:

- during the initialisation procedure
- within the first 0.8 seconds of desk panel activation (ramp-up time)

The DS1 is very sensitive and may cause false triggering if not mounted correctly. To achieve the best possible performance of the DS1, install the DS1 on the tabletop via either a CBD6S or a T-splitter.

In case of false triggering, please check this list:

- Make sure that the control box or T-splitter is fixed securely to the table.
- Make sure the cables connected next to the DS1 in the control box or T-splitter are fastened thoroughly and cannot touch the DS1.
- If the desk is unstable, it may result in false triggering. Make sure the desk is stable and cannot tilt back and forth by adjusting the screws under the feet correctly.
- Make sure that no objects such as cables or furniture under the desk can stop the driving up or down of the desk.
- If none of the above helps:
  - unplug the DS1
  - wait 10 seconds
  - plug the DS1 back in

## **Disposal of LINAK products**

As our customers often ask us how our products can be disposed of or scrapped we have prepared this guidance that enables a classification to different waste fractions for recycling or combustion.

### **Guidance**

We recommend that our products be disassembled as much as possible and divided into different waste groups for recycling or combustion.

For example, waste can be sorted into metals, plastics, cable scrap, combustible material and recoverable resources.

Some of these main groups can be further divided into subgroups; e.g. metal can be divided into steel/ aluminium/copper and plastic can be divided into ABS/PA/PE/PP.

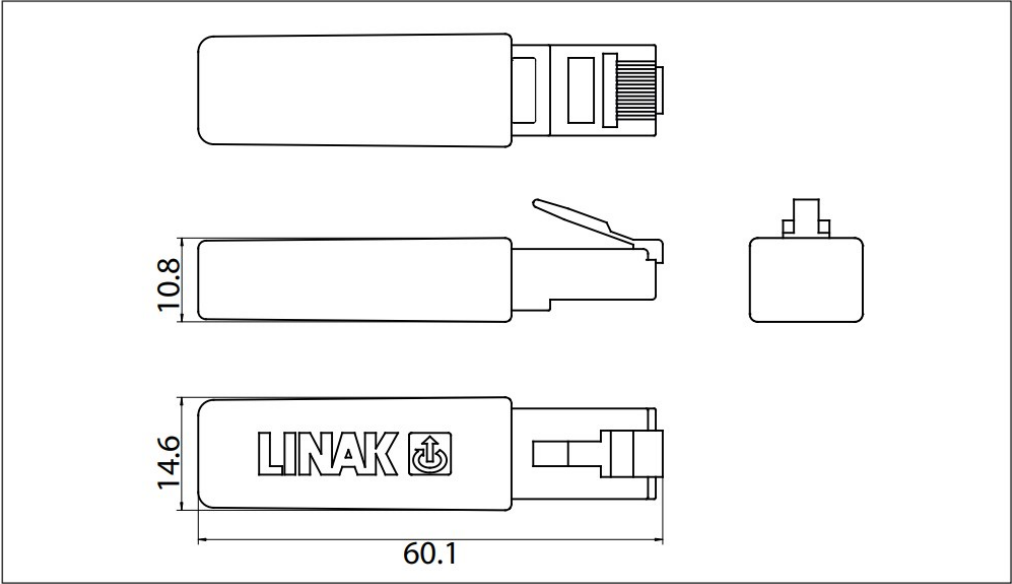
As an example, the table below breaks down the different components in LINAK products to various recycling groups:

**Main groups of disposal**

| Product maingroups | Metalscrap | Cablescrap | Electronicscrap | Plastic recyclingor combustion | Comments |
|--------------------|------------|------------|-----------------|--------------------------------|----------|
| Desk Sensor™ 1     |            |            | X               | X                              |          |
| T-splitter         |            |            | X               | X                              |          |
| Serial cable       |            | X          |                 |                                |          |

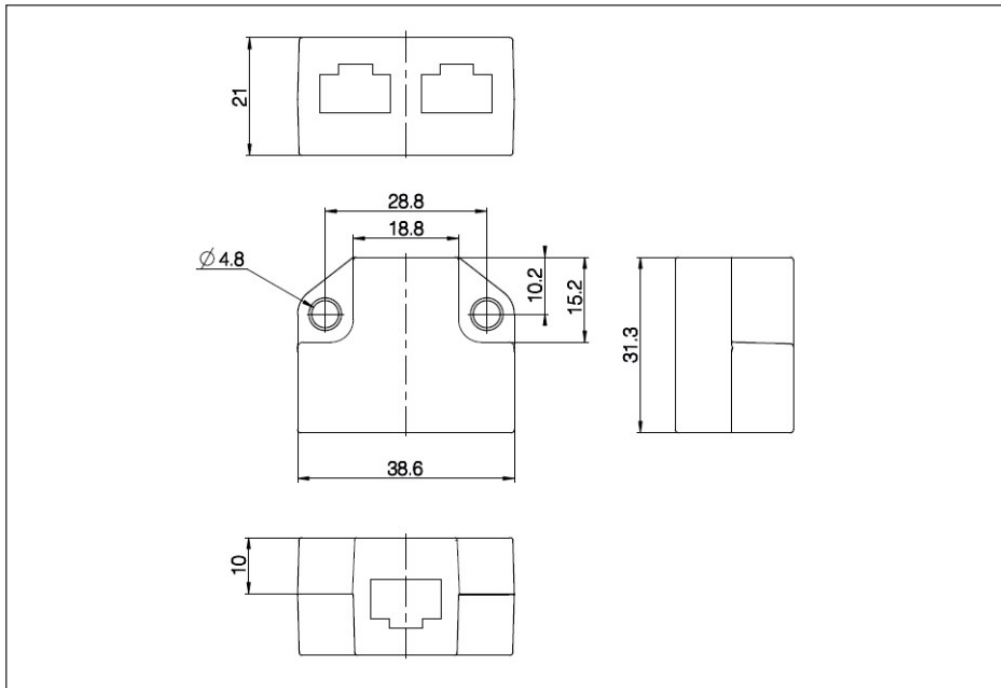
**DRAWING APPENDIX**

**Desk Sensor™ 1**



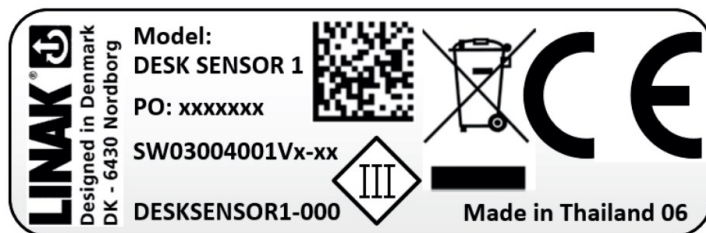
**T-splitter**





## Label

### Desk Sensor 1



### T-splitte



## Repairs

In order to avoid the risk of malfunction, all DESKLINE® repairs must only be carried out by authorised LINAK® workshops or repairers, as special tools must be used and special gaskets must be fitted. Lifting units under warranty must also be returned to authorised LINAK workshops.

### Warning!

If any of the DESKLINE® products are opened, there will be a risk of subsequent malfunction.

### Warning!

The DESKLINE® systems are not resistant to cutting oil.

## Misc. on the DESKLINE® system

### Warranty

60 months' warranty on the DESKLINE products when used in DESKLINE applications against manufacturing faults from the production date of the individual products. The LINAK warranty is only valid in so far as the equipment has been used and maintained correctly and has not been tampered with. Furthermore, the system must not be exposed to violent treatment. In the event of this, the warranty will be ineffective/invalid. For further details, please see standard terms of sale and delivery for LINAK A/S.

### Maintenance

Clean dust and dirt on the outside of the system at appropriate intervals and inspect for damage and breaks. Inspect the connections, cables, and plugs and check for correct functioning as well as fixing points.



The cleaners and disinfectants must not be highly alkaline or acidic (pH value 6-8)

### LINAK APPLICATION POLICY

The purpose of the application policy is to define areas of responsibilities in relation to applying a LINAK product defined as hardware, software, technical advice, etc. related to an existing or new customer application.

LINAK products as defined above are applicable for a wide range of applications within the Medical, Furniture, Desk and Industry areas. Yet, LINAK cannot know all the conditions under which LINAK products will be installed, used, and operated, as each individual application is unique.

The suitability and functionality of the LINAK product and its performance under varying conditions (application, vibration, load, humidity, temperature, frequency, etc.) can only be verified by testing, and shall ultimately be the responsibility of the LINAK customer using any LINAK product.

LINAK shall be responsible solely that the LINAK products comply with the specifications set out by LINAK and it shall be the responsibility of the LINAK customer to ensure that the specific LINAK product can be used for the application in question.

### Terms of use

The user is responsible for determining the suitability of LINAK products for specific application. LINAK takes great care in providing accurate and up-to-date information on its products.

However, due to continuous development in order to improve its products, LINAK products are subject to frequent modifications and changes without prior notice. Therefore, LINAK cannot guarantee the correct and actual status of said information on its products.

While LINAK uses its best efforts to fulfil orders, LINAK cannot, for the same reasons as mentioned above, guarantee the availability of any particular product. Therefore, LINAK reserves the right to discontinue the sale of any product displayed on its website or listed in its catalogues or other written material drawn up by LINAK. All sales are subject to the Standard Terms of Sale and Delivery for LINAK. For a copy hereof, please contact LINAK.



### Documents / Resources



## [LINAK DS1 Desk Sensor](#) [pdf] User Manual

Desk SensorTM 1, DS1, DS1 Desk Sensor, Desk Sensor, Sensor

## References

- [Д ДРАЙВ](#)
- [Actuator and lifting column systems for standing desks](#)
- [Register a .US.COM domain today!](#)
- [Мотор-редукторы Bonfiglioli, промышленная фурнитура Eles-Ganter и др. комплектующие](#)
- [LINAK – la technologie du vérin linéaire électrique au service du mouvement](#)
- [LINAK - electric linear actuator technology systems for movement](#)
- [LINAK – Elektrische Linearantriebssysteme, die für Bewegung sorgen](#)
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- [LINAK — systemy ruchu oparte na technologii elektrycznych siłowników liniowych](#)
- [LINAK – elektriska linjära ställdonssystem för rörelser](#)
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