



Desk Sensor™ 1 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. You can review the full terms of the LINAK warranty on the LINAK website www.linak.com/warranty.

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.

LINAK A/S

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.

Informations importantes

Les informations importantes sur les produits LINAK® peuvent être trouvées dans les rubriques suivantes:



Attention!

Le non respect de ces instructions peut entraîner des accidents impliquant des blessures graves.



Ne pas suivre ces instructions peut entraîner l'endommagement ou destruction du produit.

Consignes de sécurité



Général

Le non respect de ces instructions peut entraîner des accidents impliquant des blessures graves.

Ne pas suivre ces instructions peut entraîner l'endommagement ou destruction du produit.

L'utilisation en toute sécurité du système n'est possible que si l'intégralité des instructions ont été lues et ont été strictement suivies.



Le non respect de se conformer aux instructions marquées du symbole "note" peut entraîner de graves dommages au système ou à un de ses composants.

Il est important pour tout individu qui connecte, installe, ou utilise le système d'avoir les informations nécessaires et l'accès à ce manuel d'utilisation.

Suivez les instructions pour le montage – risque de blessure si ces instructions ne sont pas suivies.



L'appareil n'est pas destiné à être utilisé par des enfants ou des personnes handicapées sans surveillance.



S'il y a des dommages visibles sur le produit, l'installation ne doit pas être effectuée.



Prendre en compte lors de la construction du matériel, dans lequel l'actionneur est incorporé, qu'il ne doit y avoir aucune possibilité de blessures corporelles, telles que la compression des doigts ou des bras.



Assurez un espace libre autour du matériel pour éviter tout blocage.

Seulement pour les marchés au sein de l'UE:



Cet appareil peut-être utilisé par des enfants âgés de 8 ans et plus, ainsi que les personnes dont les capacités physiques, sensorielles ou mentales sont réduites ou ayant un manque d'expérience et de connaissance si elles ont bénéficié d'une surveillance ou d'instructions concernant l'utilisation de l'appareil en toute sécurité et compris les risques encourus.



Les enfants ne doivent pas jouer avec l'appareil. Le nettoyage et l'entretien ne doivent pas être réalisés par des enfants sans surveillance.

Seulement pour les marchés hors UE:



Les personnes qui n'ont pas l'expérience ou les connaissances nécessaires sur le ou les produit(s) ne doivent pas le ou les utiliser. Par ailleurs, les personnes ayant des capacités physiques, sensorielles ou mentales réduites ne doivent pas utiliser le ou les produit(s), sauf si elles sont sous surveillance ou ont suivi une formation approfondie de l'utilisation de l'appareil par l'individu responsable de la sécurité de ces personnes.



De plus, les enfants doivent-être sous surveillance afin de s'assurer qu'ils ne jouent pas avec le produit.

Utilisation abusive:



Ne surchargez pas les actionneurs – cela peut engendrer un risque de blessures corporelles et endommager le système.



Ne pas utiliser les actionneurs pour soulever des personnes. Ne pas s'asseoir ou se tenir debout sur une table en fonctionnement – risque de blessures.



Ne pas utiliser le système dans des environnements autres que l'utilisation intérieure prévue.

Repairs

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

Further information on DESKLINE warranty can be found on the LINAK website www.linak.com/warranty.



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.

Manufacturer's declaration

DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

LINAK A/S
Smedevænget 8
DK - 6430 Nordborg

Herewith declares that LINAK DESKLINE® products as characterized by the following models and types:

Control Boxes	CBD6S
Linear Actuators	DB5, DB6, DB14, LA23, LA31
Lifting Columns	DL1A, DL2, DL4S, DL5, DL5IC, DL6, DL6IC, DL7, DL8, DL8IC, DL9, DL9IC, DL10, DL10IC, DL11, DL11IC, DL12, DL14, DL15, DL16, DL16IC, DL17, DL19, DL19IC, BASE1
Desk Panels	DPA, DPB, DPH, DPF, DPG, DPT, DP, DP1CS
RF Controls	HB10RF, HB20RF, RFRL
Accessories	BA001, BLE2LIN, DS1, DF2, Kick & Click, SLS, SMPS001, SMPS002, SMPS006

comply with the following parts of the Machinery Directive 2006/42/EC, ANNEX I, *Essential health and safety requirements relating to the design and construction of machinery*.

1.5.1 Electricity supply

The relevant technical documentation is compiled in accordance with part B of Annex VII and that this documentation or part hereof will be transmitted by post or electronically to a reasoned request by the national authorities.

This partly completed machinery must not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the Machinery Directive 2006/42/EC where appropriate.

Nordborg, 2019-05-27

LINAK A/S
John Kling, B.Sc.E.E.
Certification and Regulatory Affairs
Authorized to compile the relevant technical documentation



DECLARATION OF CONFORMITY

LINAK A/S
Smedevænget 8
DK - 6430 Nordborg

hereby declares that LINAK Actuator System composed of:

Control Box(s) CBD6SP00020A-009
 CBD6S*000*0A-709

(The "*" in the product description can either be a character or a number, thereby defining the variation of the product)

And
Linear Actuator(s) DB4, DB5, DB6, DB7, DB9, DB12, DB14, DB16, LA23, LA31 series and / or
Lifting Column(s) DL1A, DL2, DL4, DL5, DL6, DL7, DL8, DL9, DL10, DL11, DL12, DL12W, DL14,
 DL15, DL16, DL17, DL19, BASE1 series

And
Desk Panel(s) DP*(C,K,L,U,V), WDPL1

(The "*" in the product description can either be 1, 2, 3, A, B, H, T; thereby defining the variation of the product)

complies with EMC Directive: 2014/30/EU according to following standards:
EN 61000-6-1:2007, EN 61000-6-3:2007+A1:2011+AC:2012

complies with Low Voltage Directive 2014/35/EU according to the standard:
EN 60335-1:2012+A11:2014

complies with RoHS2 Directive 2011/65/EU according to the standard:
EN 50581:2012

Additional information:

The system does also comply with the standard: EN 13849-1:2015 SRP/CS Cat. B, PL = b and SRESW PL = b
Note 1: Exempted CBD6S with SW03003007 printed on the label.

Nordborg, 2019-06-07

LINAK A/S
John Kling, B.Sc.E.E.
Certification and Regulatory Affairs
Authorized to compile the relevant technical documentation

Original Declaration

Misc. on the DESKLINE® system

Warranty

This DESKLINE product is subject to warranty pursuant to the terms of LINAK DESKLINE Warranty Paper, available on the LINAK website www.linak.com/warranty.

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).

Valid for:

This User manual is valid for the following product:

Desk Sensor™ 1



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.



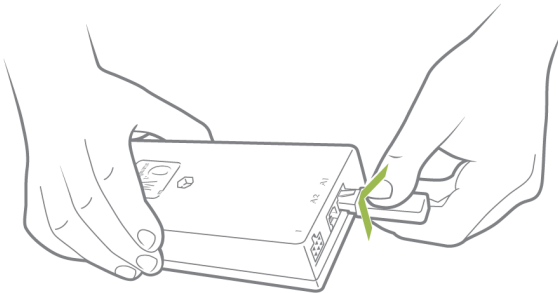
If the DS1 is removed from the system or is no longer mounted correctly, the desk panel will show error 94 at the first activation. At the next activation, however, the desk will drive as intended.

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 the DS1 into port A1 on the CBD6S.



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

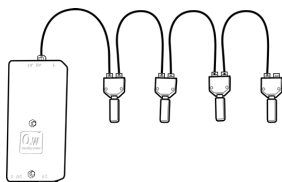
Daisy chain

If the DS1 is to be used on large desks, it can be connected in daisy chain with up to four DS1 devices. The up to four DS1 devices can be randomly connected to up to four Control Boxes CBD6S (software SW03003051 version 1.00) and positioned at optimal places.

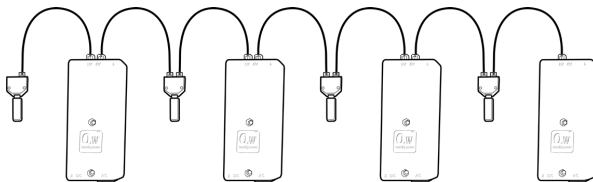


A maximum of four DS1 devices can be connected in one system.

Examples:

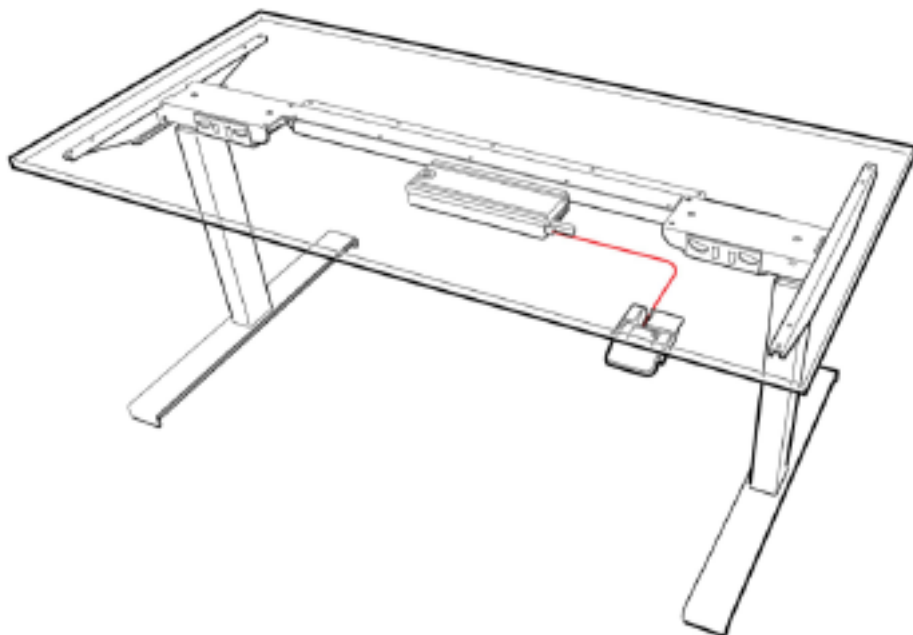


Four DS1 connected to one CBD6S

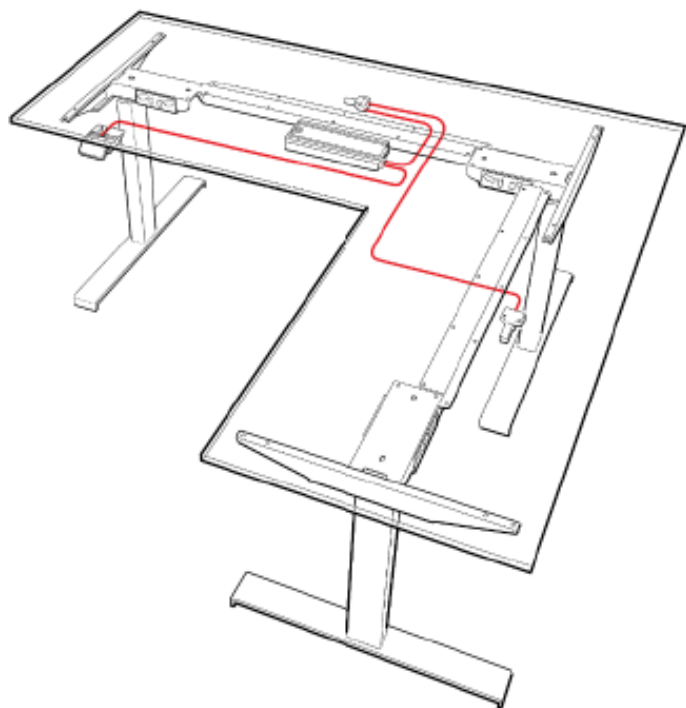


Four DS1 connected to four CBD6S

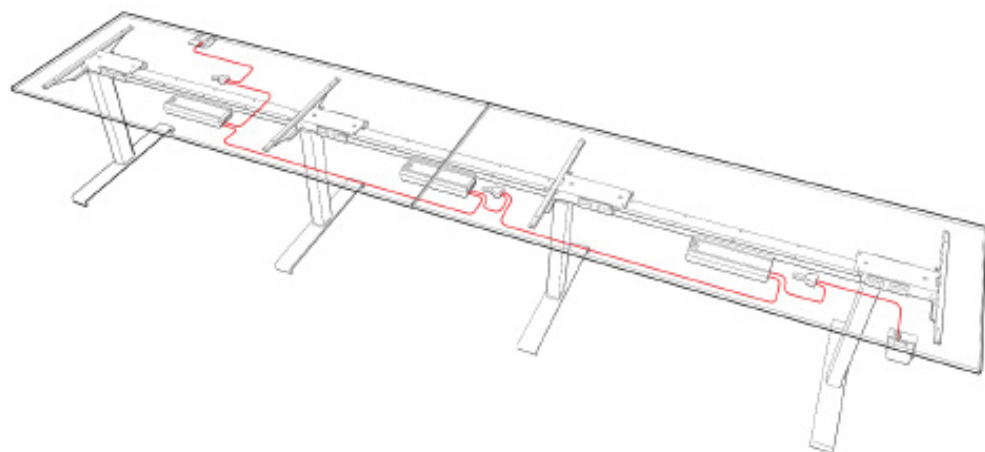
Application examples



Standard application



Three-legged desk (daisy chain)



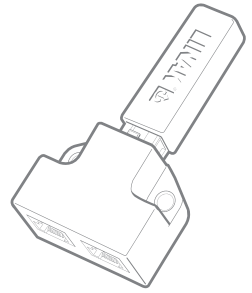
Large conference desk (daisy chain)

System with IC columns

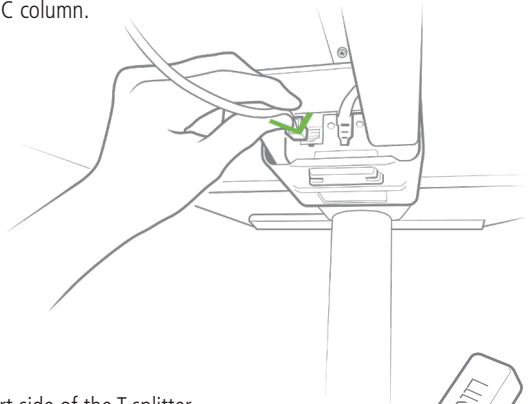
1. Mount the T-splitter on the tabletop using two M4.5 x 25 screws.
2. Plug the DS1 into the port on the single-port side of the T-splitter.



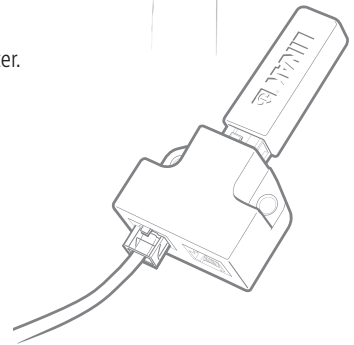
Always use the port on the single-port side of the T-splitter for the DS1 to ensure that the DS1 is not undesirably triggered by movement of the serial cable or the cable for the desk panel.



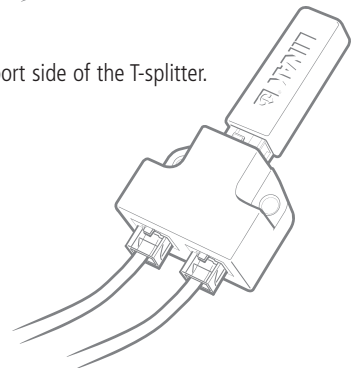
3. Plug the serial cable into the RJ45 socket on the IC column.



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



5. Plug the cable for the desk panel into the other port on the double-port side of the 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° 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, by adjusting the screws under the feet correctly, that the desk is stable and cannot tilt back and forth.
- 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.

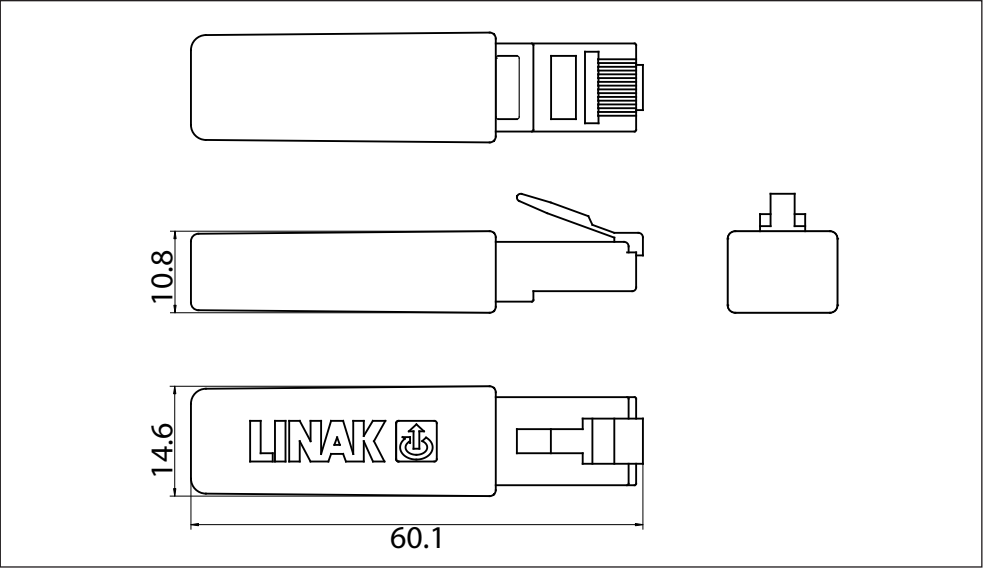
As an example, the table below breaks down the different components in LINAK products to various recycling groups:

Main groups of disposal

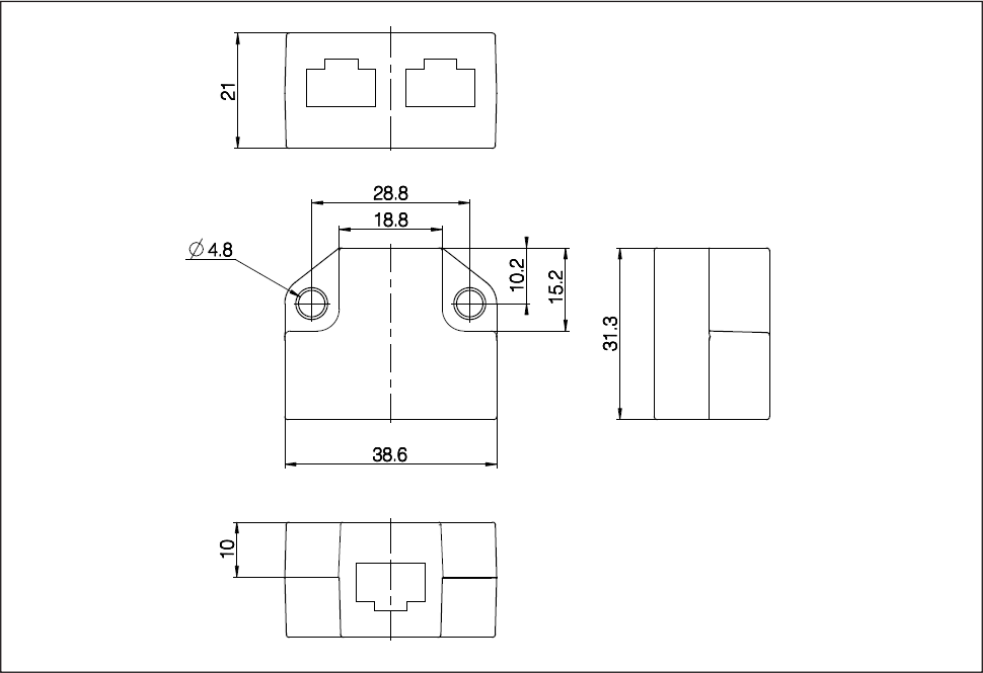
Product main groups	Metal scrap	Cable scrap	Electronics scrap	Plastic recycling or combustion	Comments
Desk Sensor™ 1			X	X	
T-splitter			X	X	
Serial cable		X			

DRAWING APPENDIX

Desk Sensor™ 1

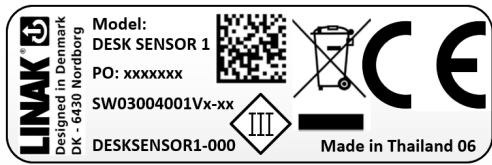


T-splitter



Labels

Desk Sensor 1



T-splitter



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.

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WE IMPROVE YOUR LIFE