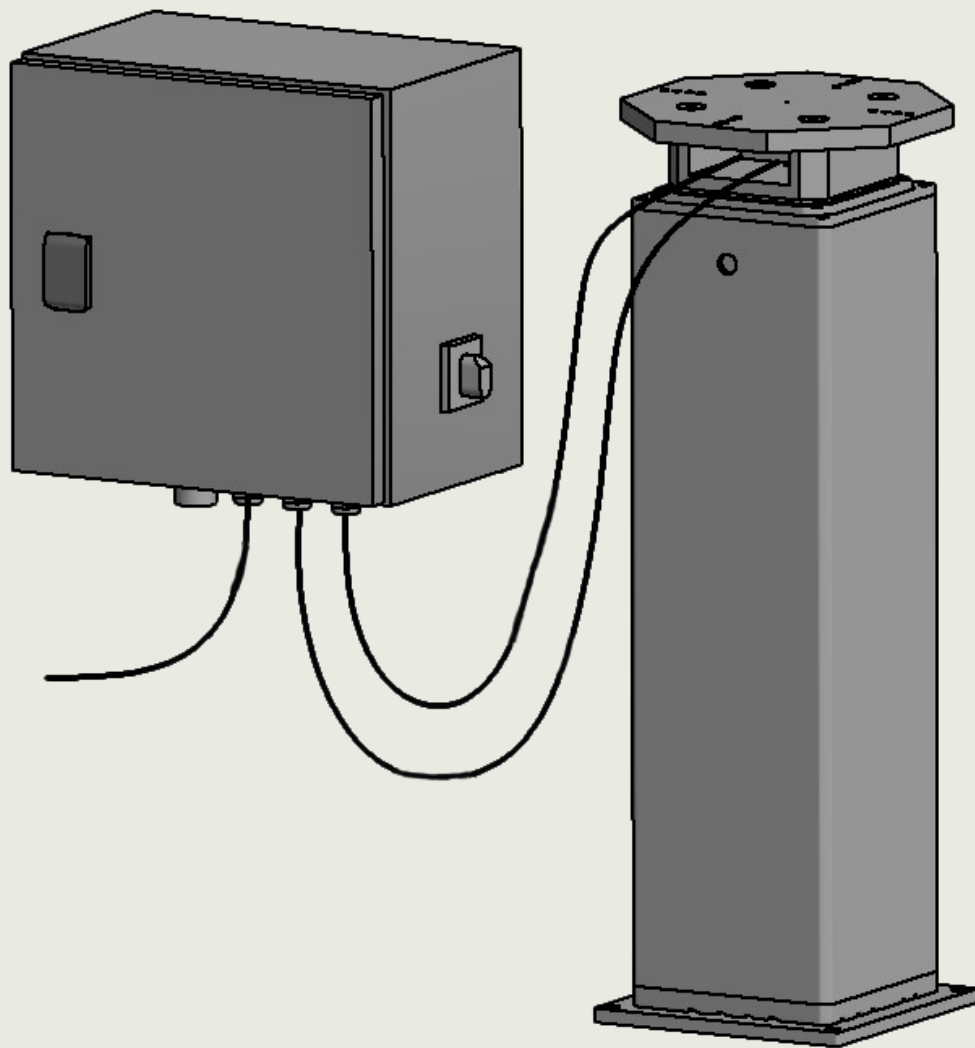


ELEVATE™ Power Supply for cobot-palletizers

User Manual



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Preface

Thank you for choosing an actuator system from LINAK®. LINAK systems consist of hi-tech products that are based on many years of experience with the production and development of actuators, electronic control boxes, control units and chargers.

ELEVATE™ Power Supply for cobot-palletizers are composed of a LINAK, LC3-ELEVATE lifting column and a power supply unit developed and produced by third party manufacturers. The function and operational reliability of ELEVATE™ Power Supply have been tried and tested in a wide range of different situations. In addition, we continuously improve our products and systems to accommodate customer requirements.

This instruction manual describes how to install and maintain your ELEVATE™ Power Supply. We are sure that your ELEVATE™ Power Supply will provide you with many years of problem-free operation.

Before our products leave our factory, they always undergo comprehensive quality and function tests. In the unlikely event that you should experience any problems with your systems, please contact.

LINAK Danmark A/S on +45 8680 3611.

LINAK provides a warranty on all its products and systems. However, this warranty is provided on condition that the product is used in accordance with the applicable specifications, that maintenance is performed correctly, and that any repairs are carried out at a workshop that is authorized to repair LINAK products.

Any changes to the installation and use of LINAK systems may affect their operation and durability. The products must never be opened by non-authorized persons.

LINAK Danmark A/S
Mønstedsvvej 9
DK-8600 Silkeborg

Important information

Important information about LINAK products is presented under the following headers:



Warning! Failure to comply with these instructions may result in accidents leading to serious personal injury.



NB! Failure to comply with these instructions may result in damage to or destruction of the product.

Warranty

The LINAK warranty covers manufacturing faults and defects in the products as calculated from the date of manufacture. Please contact LINAK Danmark A/S for additional information about the warranty period. The warranty is limited to the value of the LINAK product.

The LINAK warranty shall only apply if the system has been used correctly and has not been opened. The control box and control unit must not be exposed to violent use. Failure to comply with this requirement will void the warranty.

Safety instructions

Please read the following safety information carefully. It is essential that everyone who is to connect, install or use the system receives the necessary information and have access to this instruction manual.

Before installation, removal or troubleshooting:

- Stop the lifting column.
- Disconnect the power supply and remove the mains plug from the socket.
- Free the lifting column from any load that may be released during the work.

Before starting:

- Make sure that the system has been assembled as described in this instruction manual.
- Make sure that the current to the power supply is correct before connecting the lifting column to it.
- System connection. The individual parts must be connected before the power supply is connected to mains power.

During operation:

- If the power supply emits unusual sounds or smells, disconnect the mains current and any external batteries.
- Make sure that the cables are not damaged.
- Disconnect the mains cable from mobile equipment before moving same.
- The products can be used both indoors and outdoors.

The equipment is **not** suitable for use in the immediate vicinity of a flammable, anesthetic mixture involving air, oxygen or laughing gas (nitrous oxide).

Environmental conditions:

Operating:	
Temperature	+5°C to +40°C
Relative humidity	20% to 90% @ 30°C – not condensing.
Atmospheric pressure	700 to 1060 hPa
Storage:	
Temperature	-40°C to +70°C
Relative humidity	20% to 90% @ 30°C – not condensing.
Atmospheric pressure	700 to 1060 hPa

**Warning!**

The following applies if the lifting column is used for traction in an application that involves a risk of personal injury:

It is the manufacturer of the application who is responsible for implementing appropriate safety measures designed to prevent personal injury if the actuator/lifting column should fail under operation.

**Warning!**

Please note that any application in which the actuator is involved must not feature any risk of personal injury, e.g. a risk of crushed fingers.

**Warning!**

The plastic components in the system cannot withstand cutting oil.

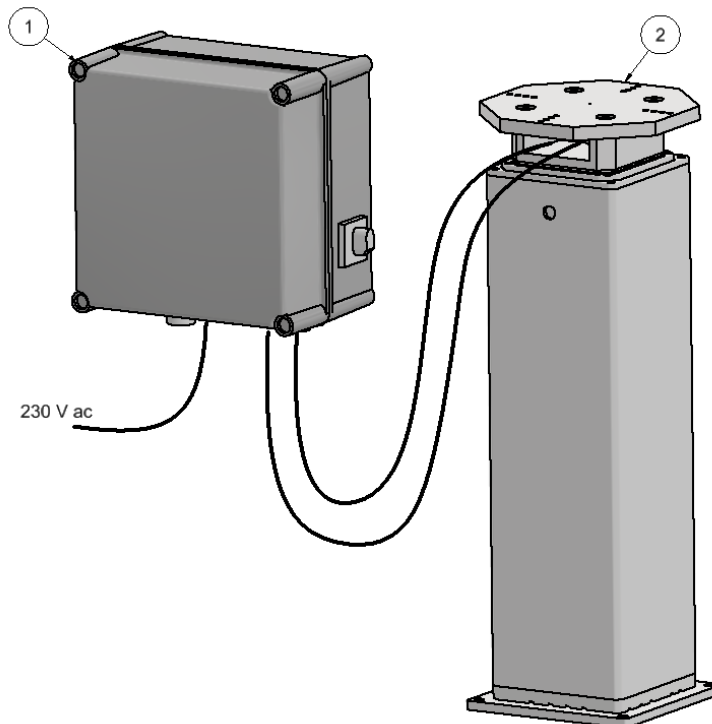
Technical data

Description of the system

The ELEVATE Power system consists of a power supply unit (pos. 1) and one LC3-ELEVATE lifting column (pos. 2). The Power supply unit comes in either an ABS-enclosure or a steel-enclosure and is compatible with 3 types of LC3-ELEVATE columns; Easy and Modbus.

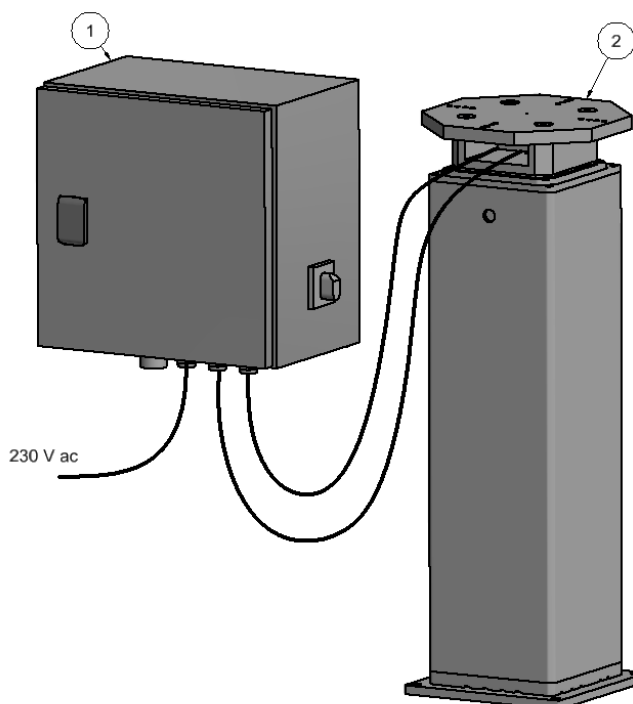
PSU in an ABS-enclosure:

Item no. BOKS0114DK



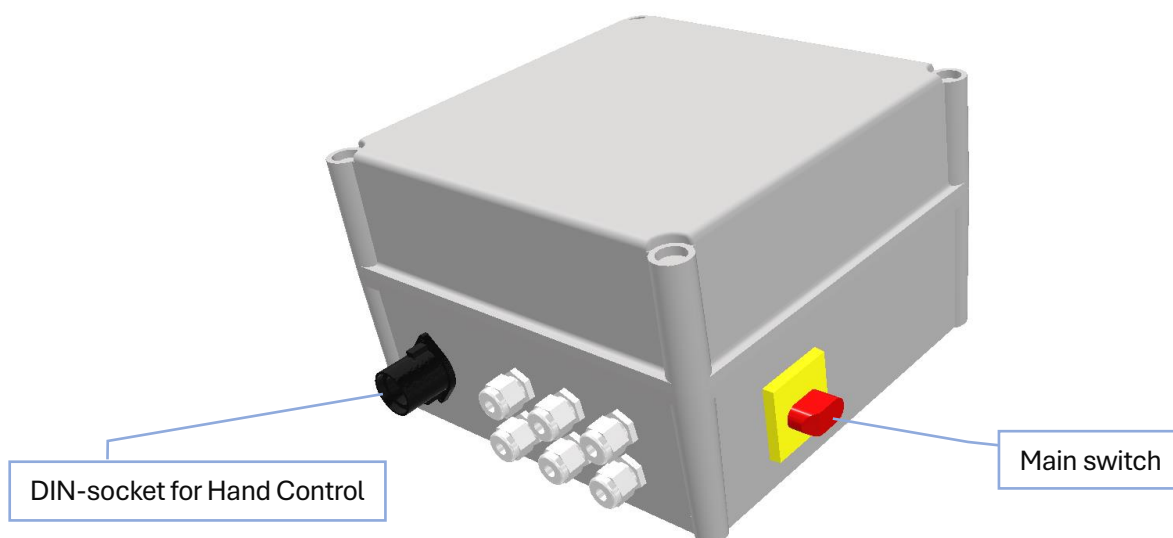
PSU in a Steel-enclosure:

Item no. BOKS0118DK



Power supply unit (pos.1)

Type designation:	PSU-ELEVATE
Connection:	1 pcs. LC3 ELEVATE lifting column.
Input:	
Voltage range:	Single-phase, 85 to 264 VAC.
Frequency:	50/60 Hz.
Output:	
Rated output current:	20 A
Rated output electric power:	480 W
Overload protection:	130%
Order no. PSU in an ABS-enclosure:	Item no. BOKS0114DK
Order no. PSU in a Steel-enclosure:	Item no. BOKS0118DK

**Lifting column (pos.2)**

The system is compatible with the following LINAK LC3 ELEVATE Items:

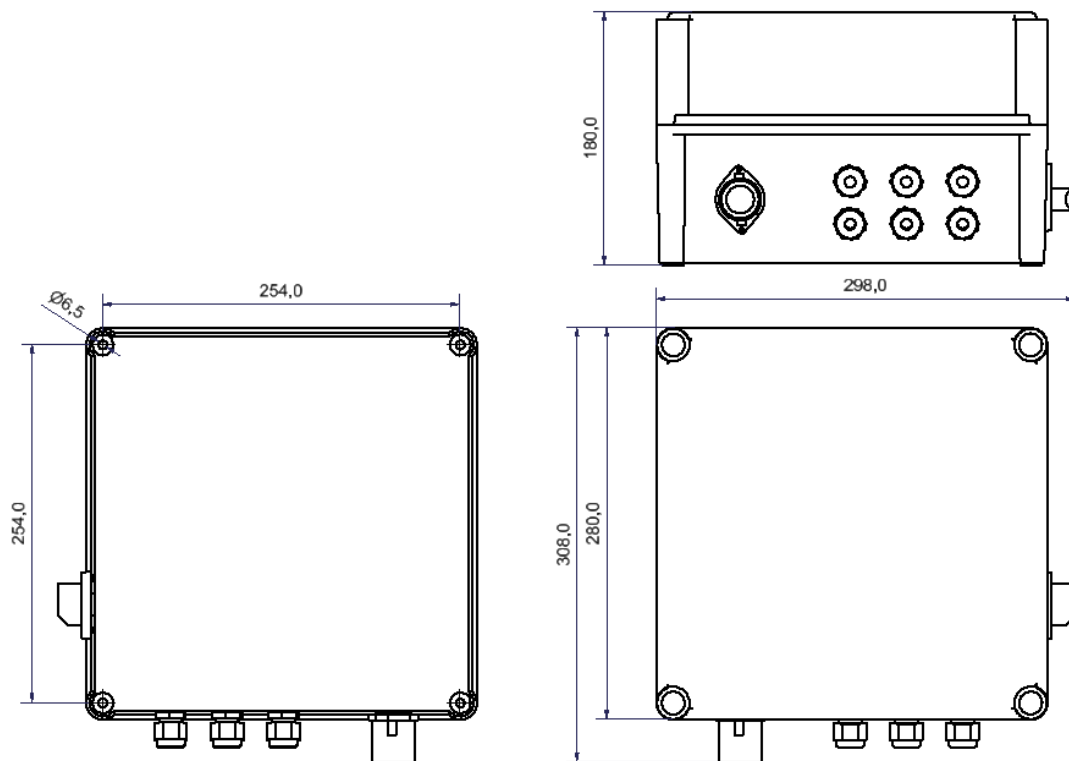
• LC3 ELEVATE, Easy incl. UR mounting kit:	Item no.: LC3E0001DK
• LC3 ELEVATE, Easy incl. Doosan/Omron™ mounting kit:	Item no.: LC3E0002DK
• LC3 ELEVATE, Easy incl. cable kit:	Item no.: LC3E0003DK
• LC3 ELEVATE, PRO incl. UR mounting kit:	Item no.: LC3E0004DK
• LC3 ELEVATE, PRO incl. Doosan/Omron™ mounting kit:	Item no.: LC3E0005DK
• LC3 ELEVATE, PRO incl. cable kit:	Item no.: LC3E0006DK
• LC3 ELEVATE, Modbus incl. UR mounting kit:	Item no.: LC3E0007DK
• LC3 ELEVATE, Modbus incl. Doosan/Omron™ mount. kit:	Item no.: LC3E0008DK
• LC3 ELEVATE, Modbus incl. cable kit:	Item no.: LC3E0009DK

Including safety relay unit G9SE-221-T05 DC24 for secure operation

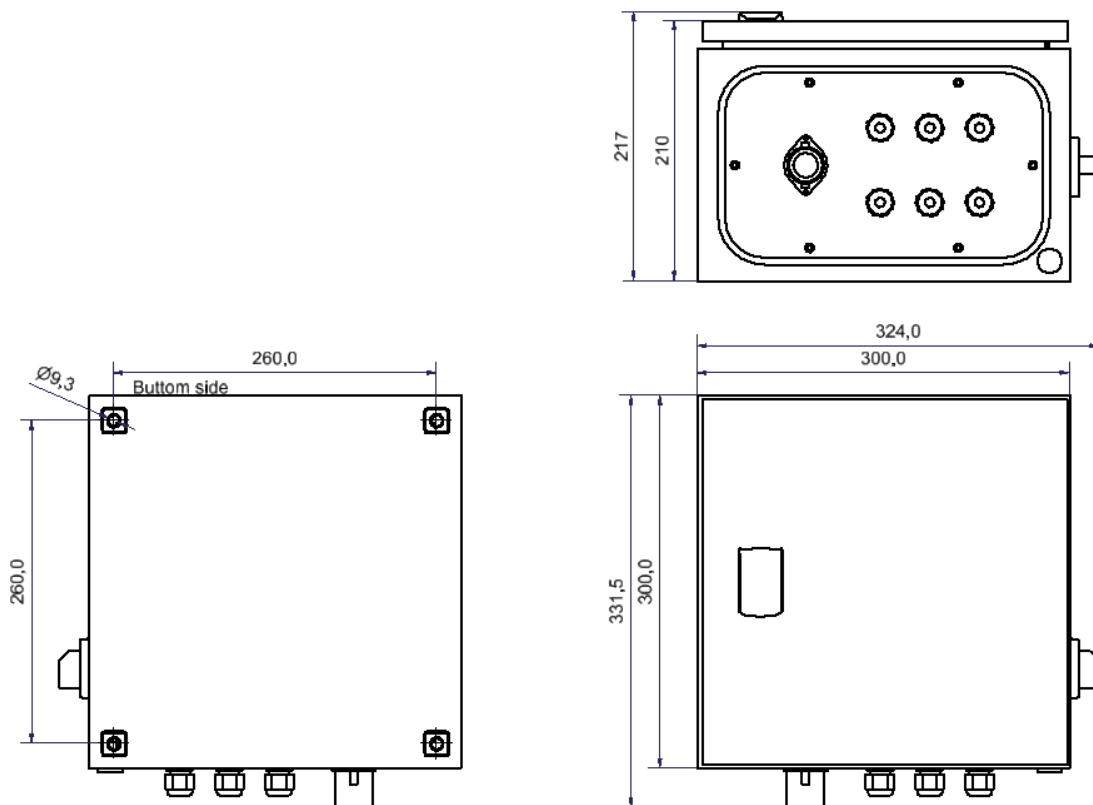
See the appropriate product data sheets for additional information at www.linak.com

Dimensions

PSU, ABS enclosure



PSU, steel enclosure



Declaration of conformity**DECLARATION OF CONFORMITY****LINAK Danmark A/S**

Mønstedsvvej 9
DK - 8600 Silkeborg

hereby declares that Power Supply, type PSU-ELEVATE-ABS and PSU-ELEVATE-STE

complies with the EMC Directive: 2014/30/EU according to following standards:
EN 61000-6-3:2021, EN 61000-6-4:2019

complies with Low Voltage Directive 2014/35/EU according to the standard:
EN 61558-2-16:2009

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

Silkeborg, *7-12-23*

LINAK Danmark A/S

Thomas P. Skovbjerg
Technical chief

Authorized to compile the relevant technical documentation.

Original Declaration

Declaration of Incorporation



DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

LINAK Danmark A/S
Mønstedsvvej 9
DK - 8600 Silkeborg

Herewith declares that ELEVATE Power system products as characterized by the following models and types:

Lifting columns	LC3 ELEVATE
Power Supply	PSU-ELEVATE-ABS or PSU-ELEVATE-STE

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.

Silkeborg, 7-12-23

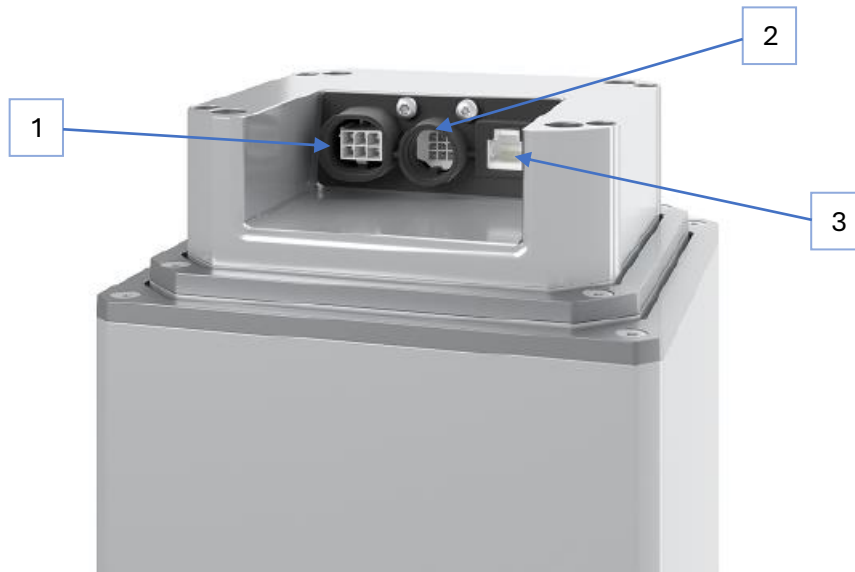
A handwritten signature in blue ink that reads "Thomas Skovbjerg".

LINAK Danmark A/S
Thomas P. Skovbjerg
Technical chief
Authorized to compile the relevant technical documentation

Original Declaration

Connection and installation

The Modbus version has different connectors. The Easy and PRO versions have two, as they do not have the RJ45 port.

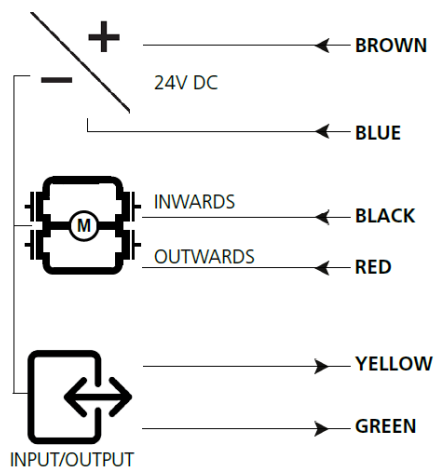


1. Power connector for the PSU-ELEVATE power supply, a **CAB0367046-5000** cable fits the connector.
2. 9-pin signal connector for controlling the LC3 IC and gathering information regarding position and end stop signals. The **CAB0368543-5000** cable that fits the connector should be connected to the PSU-ELEVATE.
3. RJ-45 for Modbus TCP/IP, a shielded (STP) cat 6 ethernet cable or a cable with a category according to the required transmission speed can be used with this connector.

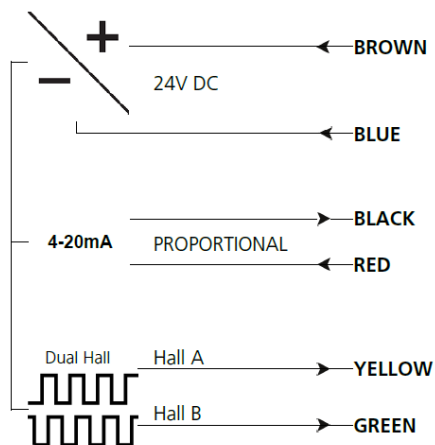
The ethernet cable is not supplied by LINAK.

Connection diagram for LINAk LC3-column

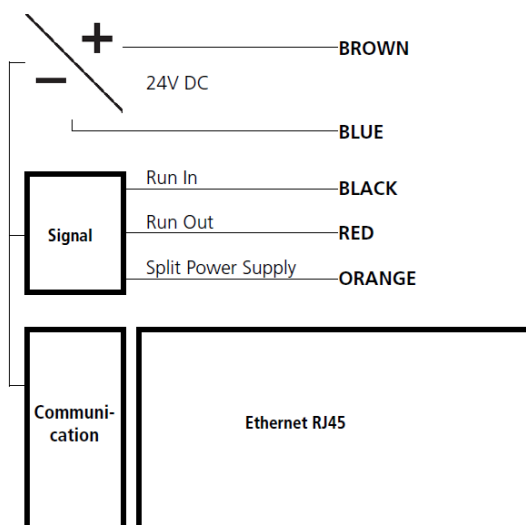
Connection diagram ELEVATE Easy



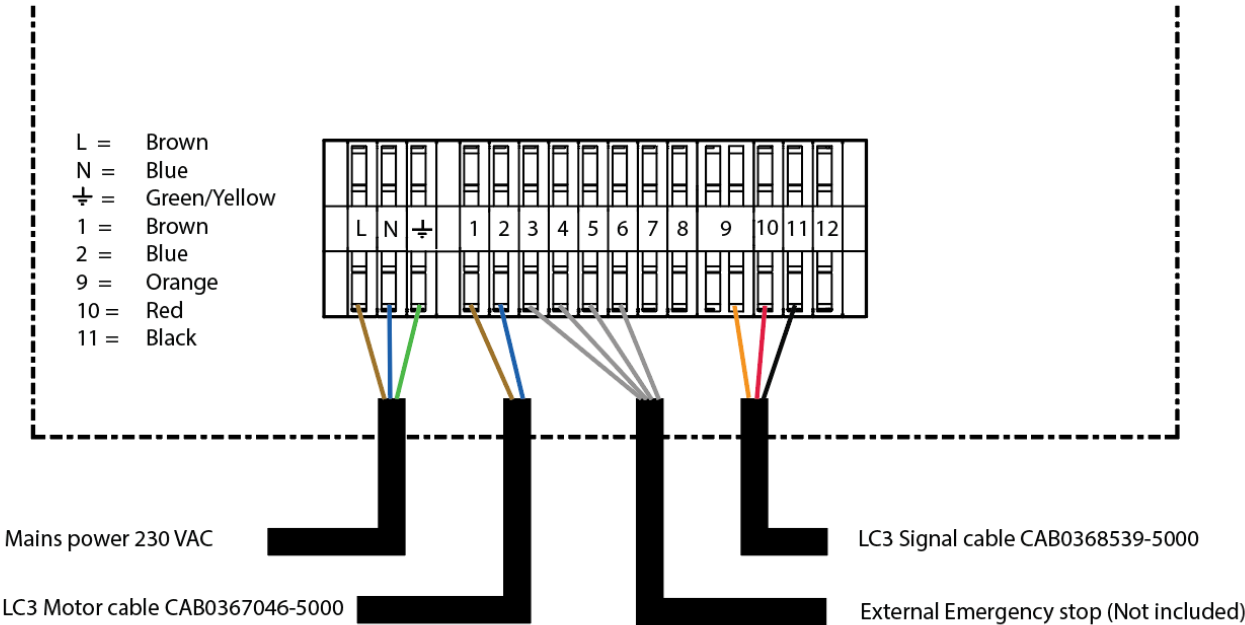
Connection diagram ELEVATE Pro



Connection diagram ELEVATE ModBus



Connection diagram for PSU-ELEVATE



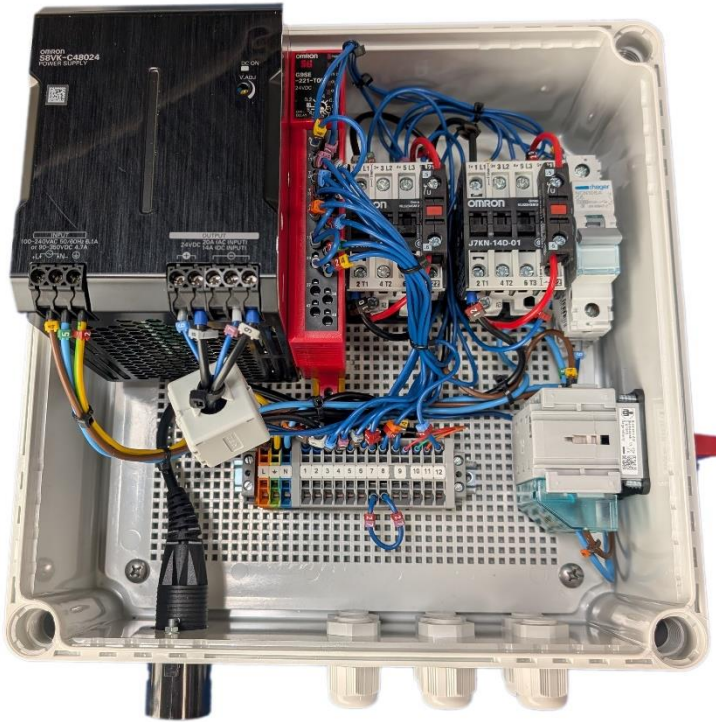
Manual control

Systems that use the two types; LC3 ELEVATE, **Easy** and LC3 ELEVATE, **Modbus**, can be manually controlled by connecting a LINAK HB71 hand control order no. **HB7160000-20500**
Not included. Please order separately.

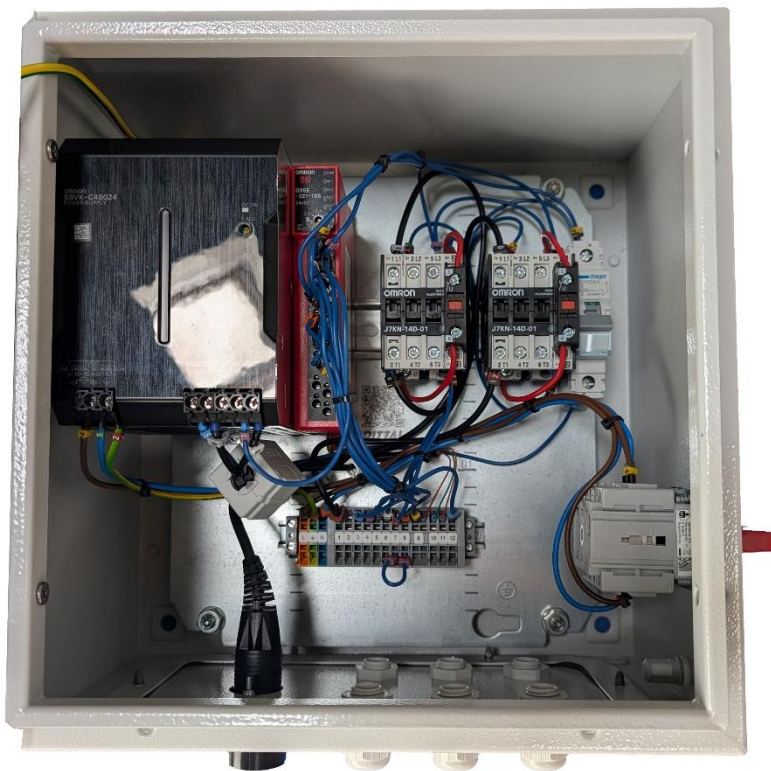


DIN-socket for Hand Control

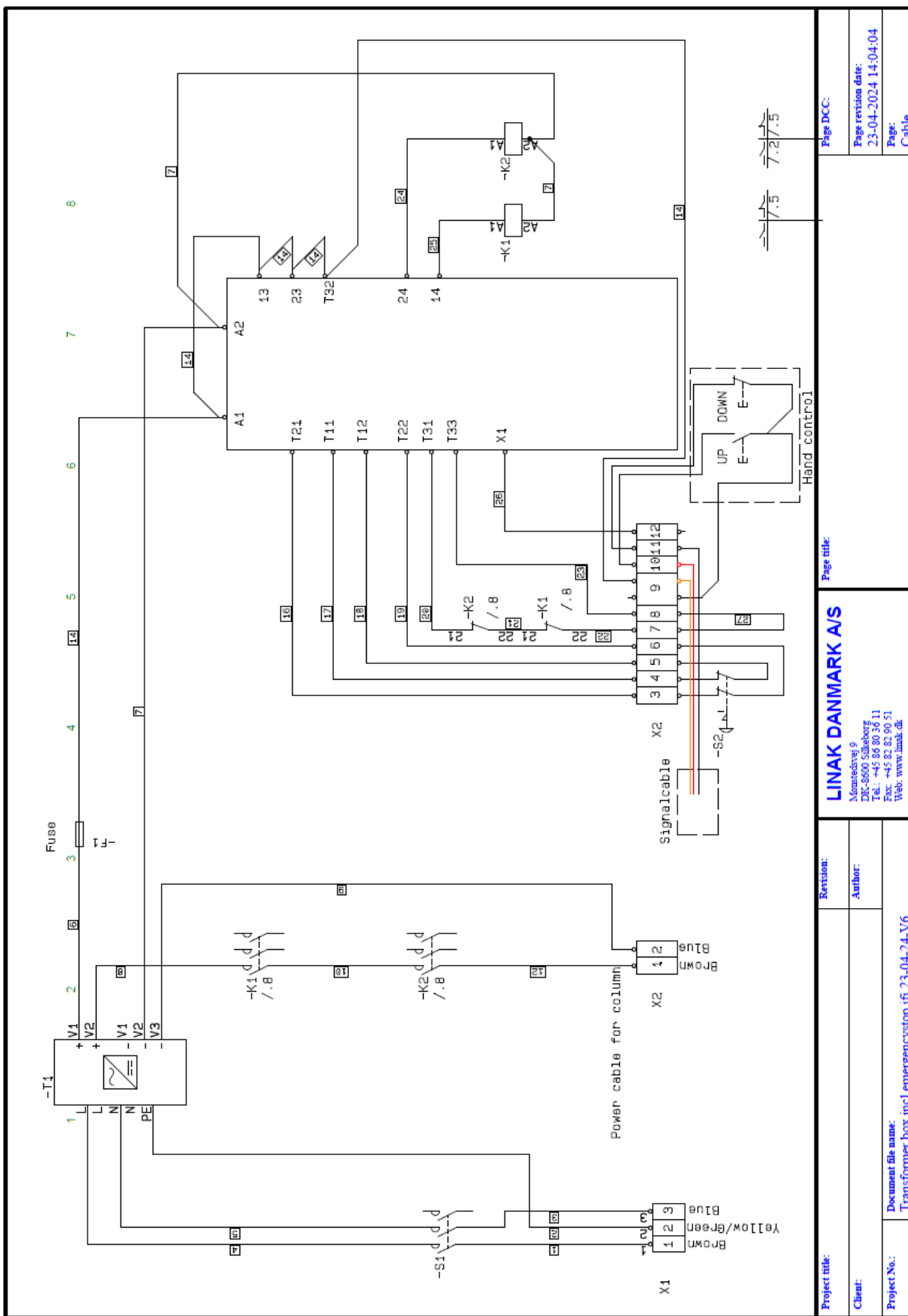
Inside ABS enclosure:



Inside steel enclosure:



PSU-ELEVATE diagram.



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Maintenance

- Clean the surface of the systems at appropriate intervals to remove dust and dirt, and check for signs of damage and breakage.
- Check all connections, cables, housing and connectors, and check that the system functions correctly.
- With the exception of motor control units with PCB or those prepared for mounting in an electrical panel, the control boxes are sealed and maintenance-free.
- Check all connections, cables, housing and contacts.
- For actuators with sealing class IPX6 rating and better: If cleaned using water, these units should only be washed when the piston rod (spindle) is fully extended.

Disposal of LINAK products

To dispose of LINAK products, start by sorting them into different categories for recycling or incineration. We recommend that you dismantle your product as fully as possible for disposal, and that you reuse the parts. Sorting categories may include:

metal, plastic, cables, combustible material and material for recycling. It is possible to subdivide within some of these categories. For example, “metal” can be subdivided into steel and aluminium, while “plastic” can be divided into ABS and PP. As an example of sorting, the table below illustrates the various categories under which the LINAK components are to be sorted.

Product	Component	Recycling group
Actuator:	Spindle and motor Plastic housing Cable	Metal scrap Plastic recycling or combustion Cable scrap or combustion
Control box:	PC-board Plastic housing Cable Transformer Batteries	Electronics scrap Plastic recycling or combustion Cable scrap or combustion Metal scrap Recoverable resources
Control:	Plastic housing Cable PC-board	Plastic recycling or combustion Cable scrap or combustion Electronics scrap