



# Scale User manual

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# Preface

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 will tell you how to install, use and maintain your LINAK equipment.

We are sure that your LINAK system 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 on the basis 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

### Description of the various signs used in this manual.

#### 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 destroyed.

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## Safety instructions



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.

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 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.



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.



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



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



Young children should be supervised to ensure that they do not play with the appliance.



### Residual risk

Some of the products contains software based components. LINAK has made various possible efforts to assure that the software is free of errors and that the software has been developed according to the rules of IEC 60601-1-4 (software in Medical products). That involves Risk Analysis which shows a small residual risk for unwanted/unintended movement of actuators under specific conditions.

According to the above rules it must be informed and if necessary considered in the Risk Analysis of the final application - More details to residual risk can be provided by LINAK, if necessary.

**Warning!**

The plastic parts in the system cannot tolerate cutting oil.

**Warning!**

LINAK's actuators and electronics are not constructed for use within the following fields:

- Planes and other aircrafts
- Explosive environments
- Nuclear power generation

**Warning!**

If faults are observed, the products must be replaced.

**Warning!**

Never spray directly on the products with a high-pressure cleaner.

**Warning!**

The Scale must be placed readily accessible to the patient. Never let the Scale hang out of the bed.

**Warning!**

Always insure that the patient is accessible in case of emergency.

**Warning!**

Cables must be secured safely so that persons cannot get trapped in it.



The LINAK products cannot tolerate the influence of strong solvents, basic or alkaline liquids.



Do not use sharps devices to activate buttons on the Scale.

**Before installation, re-installation, or troubleshooting**

- Stop the application
- Switch off the power supply and pull out the mains plug.
- Relieve the application of any loads, which may be released during the work.

**Before start-up**

- Make sure that the system has been installed as instructed in the User Manual.
- Make sure that the voltage of the control box is correct before the system is connected to the mains.
- System connection. The individual parts must be connected before the control box is connected to the mains.

**During operation**

- Ensure that the cables are not damaged.
- Unplug the mains cable on mobile equipment before it is moved.

## Information on the Scale:

The scale system makes it easier to weigh patients in the bed. Weighing on a manual scale is hard, uncomfortable and takes time.

LINAK offers a panel (SCO – Scale Control OpenBus) to control and handle the input from the QLCI (Quad Load Cell Interface) that is connected to 4 load cells.

The load cells should be acquired from a 3<sup>rd</sup> party supplier (see separate document for info – LINAK's 3<sup>rd</sup> party concept) LINAK has tested and validated cells from Zemic.

Please note that it is the responsibility of the bed manufacturer to modify the bed frame to fit with the load cells. Support for the load cells is handled by the supplier of the load cells.

The Scale system is compatible with LINAK's OpenBus platform (CB6S Full, CB16, CB20).

## Specifications

		Scale system (SCO / QLCI)	
C.	Colour	SCO: Light grey (RAL 7035) QLCI: Top/bottom = RAL 7001 Base = RAL 7035	
	Control concept	OpenBus™	Via 6-pole cable
	Compatibility	CB16 OBL, CB6/CB16 OBF, CB20	
	Current Consumption	SCO: 8 V power request: 0,5 mA 40 V permanent supply: 38 mA QLCI: 8 V power request: < 10 mA 40 V permanent supply: < 19 mA	
M.	Measuring range	Max. 255 kg (562 lbs) or 460 kg (1014 lbs) load on application (Swl)	Load version 460 kg is Optional SWL = safe working load
W.	Weighing cells	4 Pcs. of load cells required (Type: 3mv/v); company Zemic LINAK item >> No.: TR-1081109 Name: H8C-C3-500KG-3BG-SC (Other alternatives exist)	MUST BE 'OIML' APPROVED FOR APPROVED SYSTEMS (OIML = International Organization Of Legal Metrology)

## Features

- Equipped with a display for weight information and error indication - max 255 kg. (562lbs).
- 2-hand control - safety via Enable button plus Function button
- Accuracy adjustment of the measured weight with 100 or 500 grams accuracy (0.2205 or 1.102 pounds/lbs).  
As default the setting is 500 g (1.102 pounds/lbs) accuracy.  
This setting will be the approved setting according to EN60601-1 / 45501.  
According to the standards the 100 gram setting is not an approved setting but serves only as guidance.
- Auto compensation of the patient weight. E.g. this feature enables the staff to add or remove items from the bed, e.g. a pillow - without affecting the weight of the patient. Max. auto compensation with +/- 100kg. The auto compensation is reset by unplugging the mains supply or zeroing the bed. If a battery is present, the system can be "woken-up" by activation of a handset or similar.
- Reset/Zero adjustment of the weight of the bed to omit the weight of a mattress.  
Use of the function must be made before the patient enters the bed and before the patient weight is measured. Max. adjustment level is 50 kg.
- Out of bed detection is possible. With this function enabled a signal is given when the patient leaves the bed. The alarm will be activated when leaving the bed (corresponding to 50% loss of the patient weight). The volume setting is indicated via 3 LEDs, one for each volume level.
- Weight Unit selection. Two versions are available - one for kg and one for Lbs.  
The reason is that two measurement units in one device cannot be approved according to EN45501. E.g. 'lbs' as a measurement unit is not allowed in EU because of standards and legal restrictions.
- Compatible with CB16 OBL, CB6/16 OBF and CB20 (not CB6 OBL)
- Two standard front covers are available
- Ergonomically shaped and easy to operate. The same housing platform as for the ACO is used for the SCO display.
- High-strength plastic housing protects the electronics.
- Cleaning is made fast and easy because of the rounded contours and assembly of the cover onto a low edged surface
- Protection class, SCO: IPX6.  
Protection class, QLCI: IPX4 (IPX6 is a future option).
- Colour of the panel: Grey RAL 7035.
- Connection to CB or MJB via a 6-wire "modular jack" cable

## Options:

- Version for heavy-weight applications, 460 kg (1014 lbs); this version has a lower resolution than the 255 kg version.

# Description of the LINAK Scale system:

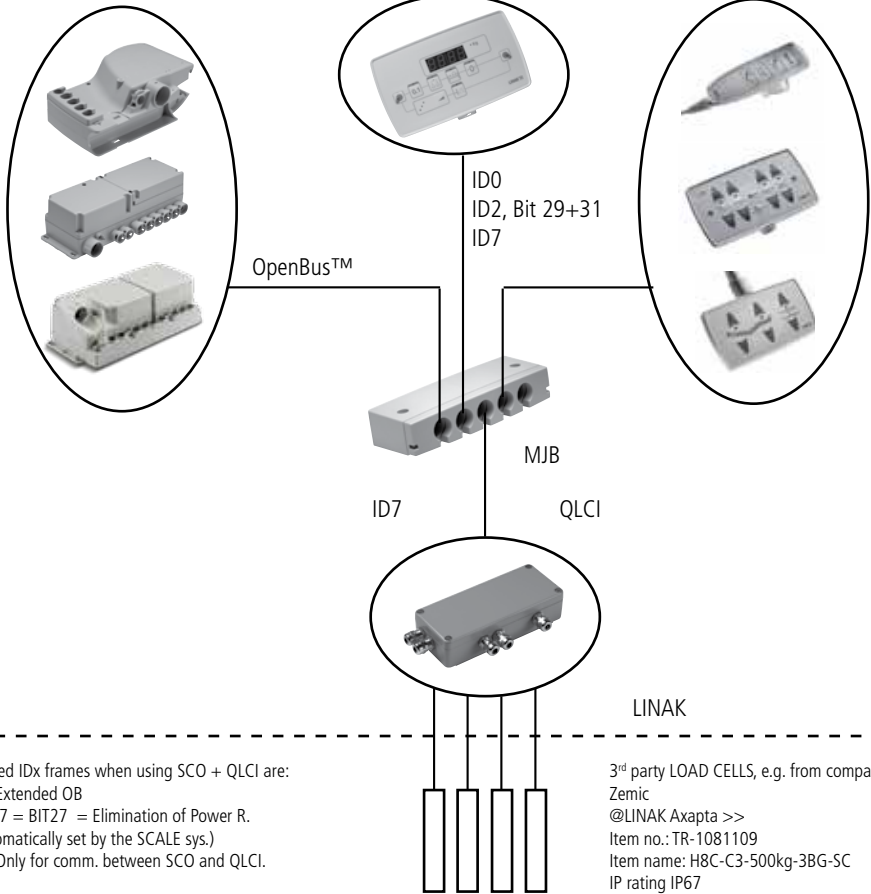
## How to connect the Scale:

OpenBus™

(CB16OBL, CB6/16OBF, CB20)

SCO

Handset / ACx



Occupied IDx frames when using SCO + QLCI are:

ID0 = Extended OB

ID1(H27 = BIT27 = Elimination of Power R.

(Is automatically set by the SCALE sys.)

ID7 = Only for comm. between SCO and QLCI.

3<sup>rd</sup> party LOAD CELLS, e.g. from company  
Zemic  
@LINAK Axapta >>  
Item no.: TR-1081109  
Item name: H8C-C3-500kg-3BG-SC  
IP rating IP67



## Functionality buttons on the SCO display



### [Enable] button:

To activate and navigate the panel and all its functions, push the enable button and a selected function button simultaneously. This is a safety feature to avoid unintended usage.



### [Accuracy] button:

By default the system is set to 500g accuracy, but by activating this button the accuracy changes to 100g. The approval covers 500g as default. 100g only serves as a guidance (not approved according to EN45501). The LED above the button will light when 100g accuracy is chosen by pressing the button. The 0.1 status automatically times out and changes to 500g default indication after 5 sec. (the timeout setting is required by the test house!).  
Toggling the accuracy to 0.1 (100g) guiding measure can only take place when a stable load is present (when the display is no longer flashing).



### [Scale] button:

To measure the weight push the enable button and the scale button simultaneously. Max. measurement area 0 - 255 kg.

The scale system calculates the maximum weight according to the formula:

Weight max = SWL - Auto Compensation - Zeroing = Actual weight of the patient on the display.

- SWL = 255 kg (optional 460 kg)
- Auto Compensation range = 0 - 100 kg
- Zeroing range = 0 - 50 kg

Example of display indication:

Max. patient weight = 255 kg - 100 - 40 = 115 kg.

I.e. Max. 115 kg can be measured

The LED above the button will illuminate when button is activated..



### [Auto] button (Auto-compensation):

With the patient already in the bed, this feature enables the staff to add or remove items from the bed - e.g. a pillow - without any influence on the weight of the patient.

Max. auto compensate range is +/- 100 kg.

Auto-compensation can be reset by unplugging the mains (back to default) or zeroing the bed.

Compensation procedure:

1. At first activation of buttons "Enable + Auto-Compensation" the current weight is saved. The display says "AUTO" - and the LED for the button 'Auto Compensation' flashes. When the LED stops flashing, the weight is stable and the objective to compensate for can be added or removed.
2. Repeating the activation of the buttons will compensate for the added/removed load. When the LED is no longer flashing the procedure is finished and the display is empty. By renewed activation of the "Enable + Scale" buttons the display will show the weight measured before the compensation was done - which equals the weight of the patient. If 'AUTO' compensation is enabled the "AUTO" LED will light when making a measurement via the "Enable + Scale" button.

**To benefit from auto-compensation it is important that this button is activated each time weight is added or removed from the bed.**



### Reset/Zero button - MUST be carried out before patient enters the bed:

To reset the scale, push this button. I.e. if a mattress is put in the bed, but you do not want to measure its weight, you can reset the scale after the mattress has been put into the bed. Limit of zeroing is 50 kg. See example at "SCALE" button above.

If "AUTO" compensation is enabled, it will be cancelled after a reset has been carried out.



### [Out of bed alarm] button (only active if connected to mains):

By default this feature is disabled. This feature becomes active by activating the button with the patient in the bed. If the patient leaves the bed afterwards you get a constant buzzer alarm - as long as the volume level is set to at least level 1, and the button LED changes from green to red. The alarm is activated by 50% loss of weight on the load cells. Note that the signal can be transferred to a hospital network via a gateway unit.

**[Out of bed volume adjustment] button:**

Adjust the volume of the buzzer in 3 levels by pushing the volume button. The levels will be shown by the LEDs.

**[Unit] button - kg/Lbs:**

The measure can be set in kilo/kg or in pounds/lbs

For EU customers the front cover that includes this button should not be ordered since it is prohibited to use pounds / lbs units in Europe.

**Display:**

To show the weight and info of the system, the display shows the data. The LED will light up for the chosen unit. Error codes can also be shown in the display (see other pages for error codes)

**NOTE re. all buttons on the SCO:**

- When calculation or adjustment of weight is on-going the display indication will be flashing until e.g. the weight calculation is stable. Approx. 20 sec. after the display shows a stable value it will turnoff.
- The LED above a button will light when the chosen button is activated.
- Activation of any button on the SCO will result in a beep, if the CB previously had a fatal error.  
The beep sound has no influence on the measuring result, i.e. the SCALE system is independent of fatal errors on the control box.

**NOTE re. use of Enable + SCALE buttons during manufacturing:**

+



If pressing the Enable + Scale buttons simultaneously for 10 sec., the SCO display will constantly display the weight.

This may be a useful feature during the manufacturing and test process - because otherwise the SCO display will time out after approx. 20 sec. during normal operation.

The function can only be reset by unplugging the mainspower.

**TEST DEVICE**

In case the SCALE system does not perform as expected due to a failure, a test device will be available. The device is able to simulate an output similar to the load cell output thereby providing a well-defined input to the SCO/QLCI device. If you get the expected output from SCO/QLCI it shows that it is working satisfactorily and the problem should instead be found in the load cell parts. If not, it indicates there might be a problem with the SCO/QLCI. i.e. it provides information about which supplier to contact in case of a failure.



Regarding calibration, please contact LINAK for further information.

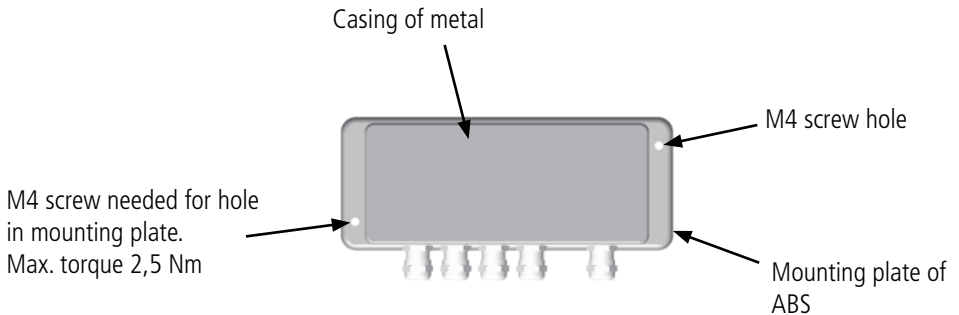
## Illustration of mounting instruction, QLCI:



Recommended placement



Not recommended (plugs facing upwards)



There must be no contact from application or metal to aluminum box.

A minimum distance of 2 mm between metal parts **MUST** be kept!

The base plate of ABS is prepared for this requirement with countersunk screw holes. Any screw used must therefore fit into the hole, i.e. the head of the screw must not be too large.

## Mounting instructions for weighing cells

Remove the rubber band and remove the lid.

See instruction for mounting of cable for weigh cells and calibration inside the lid.



## Installation steps

1. Mount heat shrink on shield wires
2. Mount bootlace ferrules 0,5 white on wires



3. Insert shield wires in screw near J1-J4.  
Torque 2 Nm



4. Mount wires in plug as illustrated according to colour coding as shown on the inside of the QLCI lid.  
Torque of screws 0.5 Nm

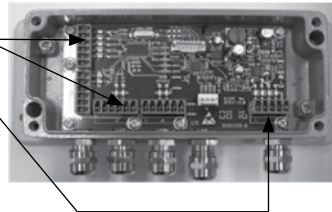
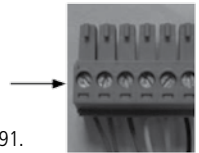
Connection to load cells takes place via a 6-pole plug (article no. 1016391).

4 pcs. of the plugs are pre-mounted in the QLCI box.

The 5-pole plug for OpenBus™ comes pre-wired from the factory.

Pictures to the right:  
Observe the placing of plug 1016391.

Article no.1016391.



5. Colour coding: See instructions in QLCI top cover (lid).

The colour code J1-J4 refers to Zemic weigh cell H8C-C3-500KG-3B6-SC only.



6. Torque all PG 4.2 couplings – 5 Nm  
Cable dia. 5 – 5.5 mm

7. Torque all LID screws 2.5 - 3 Nm





The QLCl must be handled according to guidelines for electronic sensitive devices. See caution on the inside and outside of the QLCl top cover.

Opening box: Take precautions regarding ESD  
 Protection against water ingress can only be avoided if torques mentioned are respected:  
 - Torque on all PG 4,2 - 5 Nm. Cable diameter 5 - 5,5 mm  
 - Torque on all LJD screws 2,5 - 3 Nm



The QLCl device is rated as IPX4 and must be mounted accordingly - see recommended mounting instructions.

### Approvals:

LINAK and UL International DEMKO A/S are currently in the process of certifying the SCO/QLCl articles. We are applying for two approvals.

**A.** As the SCALE system is an optional part of a LINAK actuator system we are applying to have it tested and approved according to the "General Medical Equipment" standard EN/IEC60601-1 (with CB16 OBL, CB6/16 OBF and CB20) - this is pending at the moment.

**B.** A part approval according to EN45501 (the European Standard for non-automatic weighing instruments).

The part approval will cover the SCO and QLCl devices only - LOAD CELLS ARE NOT INCLUDED IN THE LINAK APPROVAL.

This approval is applied for in order to support customers in obtaining their approval.

Provided the OEM customer's manufacturing procedure and quality system describes how to handle a first time verification of parts used in 'non-automatic weighing' systems (see explanation below) they receive a fully approved EN45501 system when 'first-time' calibrating LINAK SCO & QLCl devices in combination with OIML (International Organization Of Legal Metrology) approved load cells as e.g. the Zemic types.

If they use load cells which are not OIML approved they must apply for an approval of a 'non-automatic weighing instrument' device consisting of the SCO, QLCl and load cells. The EN45501 has been received.

### An OEM application approval acc. to EN45501

Typically the SCALE will be classified as a "non-automatic weigh" system.

If a LINAK SCALE system is applied to a bed AND classified as such, the SCALE system MUST be "First-Time" verified and sealed.

The verification and sealing is typically carried out in one of two ways:

#### 1. Verification by the Bed manufacturer himself.

It prescribes that the manufacturer is certified to carry out the verification.

The certification can be obtained through a Notified Body that performs auditing and approval of the procedures and the quality system in the manufacturing company.

An example from Denmark:

'DS Certificering' is the only Notified Body in Denmark, certified to carry out approvals of quality systems for manufacturing and calibration of 'non-automatic weighing' systems. Within Europe it is however possible to use any other Notified Body from one of the EU member states.

When certified the Bed manufacturer obtains a type approval certificate to prove they are certified to manufacture and calibrate their own "non-automatic weight" system

## **2. Verification by "First-Time" verification bodies.**

In Denmark there are three Notified Bodies available for the verification and sealing of the application:

Force Technology, Dansk Kalibreringsteknik and Trescal. Again any other Notified Body from an EU member state can be used.

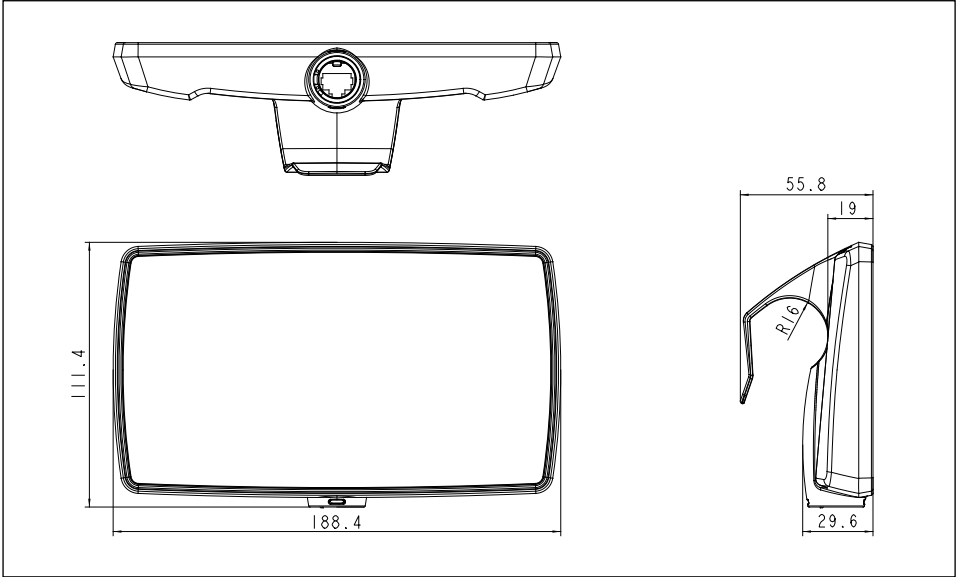
"First-Time" verification can take place at either the manufacturer or at the destination of use.

### **Requirements in both situations:**

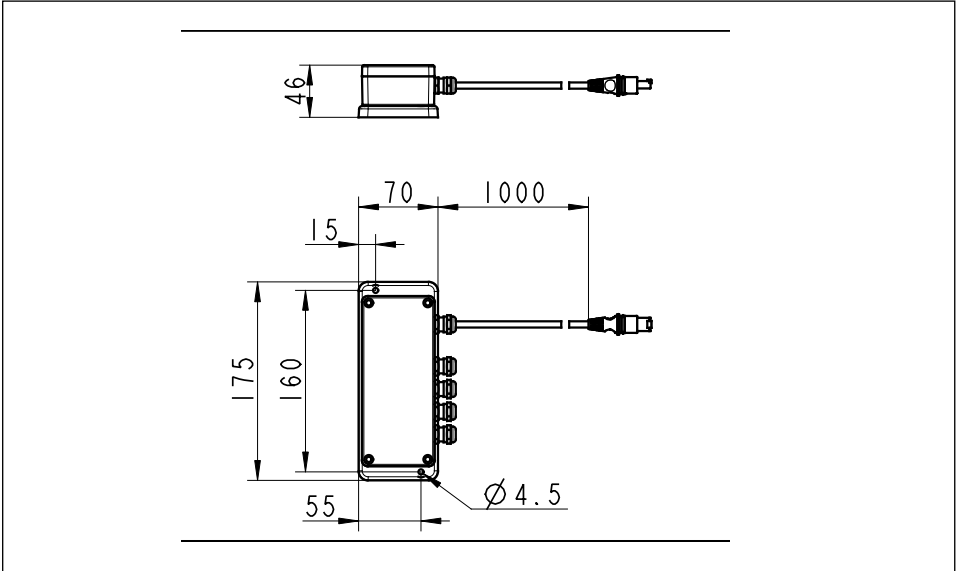
- The Type Approval Certificate number **MUST** be marked on the label on the weight unit.
- The Type Approval Certificate must be issued according to and including reference to the Directive for "non-automatic weights" 2009/23/EC (new non-modified version of 90/384/EEC).

**DRAWING APPENDIX**

SCO



QLCI



## Codes/Messages

Error codes description - and what to do:

If an Error occurs an Exxx code will be shown in the display.

Error code	Interpretation	Troubleshooting
8888	"A _ _ _ " <b>"AUTO COMPENSATION"</b> Indicated when "Auto Compensation" is out of range.	
	<b>Failure</b> • Too much weight added as compensation	<b>How to correct failure</b> • Add weight only from 0 - 100 kg
8888	"A _ _ _ " <b>"AUTO COMPENSATION"</b> Indicated when "Auto Compensation" is out of range	
	<b>Failure</b> • Too much weight removed as compensation	<b>How to correct failure</b> • Remove weight only from 0 - 100 kg
8888	" _ _ _ _ " <b>"ZEROING RANGE"</b> Indicated when the accepted setting for zeroing is out of range (> 50 kg) ! The error message will be displayed until the error has been corrected, but will time out after 2 sec.	
	<b>Failure</b> • "Zeroing Range" 0 - 50 kg not kept	<b>How to correct failure</b> • Only add max. 50 kg on bed
8888	" _ _ _ _ " <b>SWL = "Safe Working Load"</b> Indicated if total weight of bed is exceeded	
	<b>Failure</b> • If measure of patient is compensated with 100 kg the SCO display area is narrowed to max. weight measure - 100 kg. Ex.: 255 kg - 100 kg = 155 kg. If the weight of the patient is > 155 kg, the display will indicate the shown fault.	<b>How to correct failure</b> • Remove weight from the bed and make new "Auto compensation"
8888	" _ _ _ _ " <b>"BELOW CALIBRATED ZERO"</b> Indicated if a weight measure goes below zero	
	<b>Failure</b> • If the weight of the bed is approx. zero and the bed hits an obstruction when running inwards the weight may become lower than zero.	<b>How to correct failure</b> • Remove bed from obstruction or remove obstruction.



**Error codes description - and troubleshooting.**  
**If an Error occurs an Exxx code will be shown in the display.**

Error code	Interpretation	Troubleshooting
E100	<b>THE QLCl IS NOT CONNECTED</b>	
	<b>Failure</b> <ul style="list-style-type: none"> <li>• QLCl disconnected</li> </ul>	<b>How to correct failure</b> <ul style="list-style-type: none"> <li>• Check is the QLCl connected correctly to the bus system</li> <li>• Correct the failure if possible or then call a service technician</li> </ul>
E101	<b>CALIBRATION HAS NOR BEEN CARRIED OUT OR HANDLED CORRECTLY.</b>	
	<b>Failure</b> <ul style="list-style-type: none"> <li>• QLCl not calibrated</li> </ul>	<b>How to correct failure</b> <ul style="list-style-type: none"> <li>• Call a service technician</li> </ul>
E202	<b>QLCl NOT CALIBRATED OR INCORRECTLY CALIBRATED</b>	
	<b>Failure</b> <ul style="list-style-type: none"> <li>• QLCl not calibrated or incorrectly calibrated</li> </ul>	<b>How to correct failure</b> <ul style="list-style-type: none"> <li>• Call a service technician</li> </ul>
E205	<b>OAD CELL 1 DISCONNECTED - IS ONLY PERFORMED WHEN QLCl IS POWERED UP</b>	
	<b>Failure</b> <ul style="list-style-type: none"> <li>• Load cell 1 disconnected or destroyed</li> </ul>	<b>How to correct failure</b> <ul style="list-style-type: none"> <li>• Unplug mains for re-powering and check if the failure is removed</li> <li>• If not call a service technician</li> </ul>
E206	<b>REFERENCE SIGNAL FOR LOAD CELL 1 IS MISSING</b>	
	<b>Failure</b> <ul style="list-style-type: none"> <li>• Reference signal for load cell 1 is missing (only load cell 1 carries a reference signal to which the other weighing cells refer)</li> </ul>	<b>How to correct failure</b> <ul style="list-style-type: none"> <li>• Unplug mains for re-powering and check if the failure is removed</li> <li>• If not call a service technician</li> </ul>
E209	<b>LOAD CELL 2 DISCONNECTED - IS ONLY PERFORMED WHEN QLCl IS POWERED UP</b>	
	<b>Failure</b> <ul style="list-style-type: none"> <li>• Load cell 2 disconnected or destroyed</li> </ul>	<b>How to correct failure</b> <ul style="list-style-type: none"> <li>• Unplug mains for re-powering and check if the failure is removed</li> <li>• If not call a service technician</li> </ul>
E213	<b>LOAD CELL 3 DISCONNECTED - IS ONLY PERFORMED WHEN QLCl IS POWERED UP</b>	
	<b>Failure</b> <ul style="list-style-type: none"> <li>• Load cell 3 disconnected or destroyed</li> </ul>	<b>How to correct failure</b> <ul style="list-style-type: none"> <li>• Unplug mains for re-powering and check if the failure is removed</li> <li>• If not call a service technician</li> </ul>
E217	<b>LOAD CELL 4 DISCONNECTED - IS ONLY PERFORMED WHEN QLCl IS POWERED UP</b>	
	<b>Failure</b> <ul style="list-style-type: none"> <li>• Load cell 4 disconnected or destroyed</li> </ul>	<b>How to correct failure</b> <ul style="list-style-type: none"> <li>• Unplug mains for re-powering and check if the failure is removed</li> <li>• If not call a service technician</li> </ul>

\* Error codes 2xx are only updated / cancelled by unplugging mains or carrying out a reset of the SCALE system.

NOTE: All user or error indications will time out after 20 sec. (except 'Zeroing range' error)

### Display explanation:

At self-check automatic error detection will be made. If an error is found it is possible to interpret it via the error / troubleshooting scheme on the previous page.

Below different messages are shown.

### Selfcheck at power up, SCO unit

(If mains is connected to the CB or button on the HB/SCO is activated).

The Scale panel obtains a constant weighing each time the panel starts up by using a function "Get Calibration weighing constant".

The QLCI has a delay after re-powering, so the Scale will startup after the display has indicated the following:

8888 " \_ " One segment (centre) illuminated, shown first.

8888 " \_ \_ " Two segments illuminated

8888 " \_ \_ \_ " Three segments illuminated

8888 " \_ \_ \_ \_ " Four segments illuminated

There is a one second delay between the indications.

### NOTE:

The SCALE measurement cannot go below 0 kg during normal operation. However if an obstruction occurs e.g. a bed frame collides against a window frame the bed starts pulling the bed frame down. This way the SCALE system observes reduced load since a part of the bed is still hanging against the window frame - theoretically therefore a weight below 0 kg is possible. If the SCALE system then observes measures lower than 0 kg, the indication shown above may occur - indicating an obstruction. Therefore, if this type of failure is observed please check the SCALE system for failures / obstructions.

## Environment, Symbols and Cables

### IP Protection degree:

All LINAK products can be cleaned as follows according to their IP protection, which is stated on the product label.

The IP code specifies the degrees of protection provided by the enclosures. Only the protection against ingress of water (second characteristic numeral) is specified, ingress of solid foreign objects (first characteristic numeral) is not specified and therefore replaced by the letter X in the code.

IP Protection	Cleaning instructions
IPX0	Clean with a damp cloth
IPX1	Clean with a damp cloth
IPX2	Clean with a damp cloth
IPX3	Clean with a damp cloth
IPX4	Clean with a damp cloth
IPX5	Wash with a brush and water, but not water under pressure
IPX6	X Wash with a brush and water. The water can be under pressure, but the system must not be hosed down directly with a high pressure cleaner. Max. 20°C
IPX6 Washable	Clean by the use of water tunnels

The materials are resistant to the majority of cleaners and disinfectants used in the hospital and nursing home sector.

Cleaning with a steam cleaner, for example, is not permitted, as it will not be possible to maintain a minimum distance of 300 mm from the electrical parts.

### The following directions regarding cleaners and disinfectants must be complied with:

- They must not be highly alkaline or acidic (pH value 6-8).
- They must not contain caustic agents.
- Their contents must not be able to change the structure of the surface or adhesion of the plastic.
- They must not break down grease.

### Practical information:

The foil is glued together with the housing of the SCO

### The following disinfectants/detergents are recommended:

- Neodischer Dekonta, dosage 1-3%, made by CHEMISCHE FABRIK Dr. WEIGERT
- CCOTRADE RW, dosage 0.5%, made by CCOTRADE GmbH.

**Warning!**

The systems must not be sprayed directly with a high-pressure cleaner.

**Warning!**

Interconnecting cables must remain plugged in during cleaning to prevent the ingress of water.

**Precaution!**

When cleaned, water must never be sprayed upwards from underneath the bed, because it may enter the cable outlet.















**Environmental conditions:**



































<b>Environmental conditions</b>	
Operating:	
Temperature	5°C to 40°C
Relative humidity	20% to 90% @ 30°C – not condensing
Atmospheric pressure	700 to 1060 hPa
Storage:	
Temperature	-10°C to +50°C
Relative humidity	20% to 90% @ 30°C – not condensing
Atmospheric pressure	700 to 1060 hPa

Valid where nothing otherwise is stated under the specific products in a later section.

## Key to symbols

The following symbols are used on the label on the LINAK products.

	Type B equipment, as per EN 60601-1		Lock function
	Protection against contact/foreign matter (first character) and water (second character) as per EN60529		Release function
	Class 2 equipment		Charge indicator
	For indoor use		Safety switch/enable button
	Double insulated transformer		
	Protective earth		
	Alternating Current		
	Direct current		
	Attention, consult accompanying documents		

	Demko approval	<b>File E97199</b>	UL file number
	Fimko approval	<b>File E175209</b>	UL file number
		<b>File E151104</b>	UL file number
			CSA
<b>APPROVAL V94265</b>	Australian approval mark		PSE-Mark
<b>APPROVAL NO.:97122</b>	Australian approval mark		Product with a thermofuse
	Recognised - Component Mark		For indoor use (House).
	Canadian Recognised - Component Mark		Safety isolating transformer.
	Recognised Component Mark for Canada and the United States		Electronics scrap
	T-Mark		Equipment Kl.2 (Double square)
	RW-TÜV approval		Patient part of type B (Mand)
	TÜV.Produkt Service		Patient part of type BF
	TÜVRheinland		Earth protection
		<b>KL.1</b>	Equipment class1.
			Earth
			CE Mark
	ETL		C-TICK
	C-ETL		
<b>CS95145V</b>			
<b>LGA</b> 	LGA		
	UL Listing Mark		
	C-UL Listing Mark		
	C-UL US Listing Mark		
	UL Listing Mark		

Label for SCO

**LINAK**® 

WE IMPROVE YOUR LIFE  
DESIGNED IN DENMARK  
Item : SCO900101 + 00000  
Date : 2009.11.16 IPX6 Washable S.O.7654321  
NOT TO BE OPENED BY UNAUTHORIZED PERSONNEL  
MADE BY LINAK A/S DENMARK



P.O.1234567 – 0001



N576

Label for QLCI



**LINAK**® 

WE IMPROVE YOUR LIFE  
DESIGNED IN DENMARK  
Item : QLCI000000A1121  
Date : 2009.11.16 IPX6  
NOT TO BE OPENED BY UNAUTHORIZED PERSONNEL   
MADE BY LINAK A/S DENMARK  
P.O.1234567 – 0001



N576

## Repairs

In order to avoid the risk of malfunction, all repairs must only be carried out by authorised LINAK workshops or repairers, as special tools must be used and special gaskets must be fitted. Products under warranty must also be returned to authorised LINAK workshops. Products from 3<sup>rd</sup> party suppliers have to be settled with 3<sup>rd</sup> supplier.



### Warning!

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

## Disposal of LINAK's products

LINAK's products may be disposed of, possibly by dividing them into different waste groups for recycling or combustion.

We recommend that our product is disassembled as much as possible at the disposal and that you try to recycle it. As an example of main groups within sorting of waste we can mention the following:

Metal, plastic, cable scrap, combustible material and collection for recoverable resources.

Some of these main groups can be sub-divided into groups e.g. metal can be divided into iron, stainless steel and aluminium and alloy steel. Plastic can e.g. be divided into ABS, PA, PE and PP.

The SCO and QICI can be disassembled and sorted into the following recycling groups:

Component	Recycling group
SCO & QLCI	Plastic housing – Plastic recycling or combustion
	Cable – Cable scrap or combustion
	PC-board – Electronics scrap

By now all our casted plastic units are provided with an interior code for plastic types and fibre contents, if any.



## Misc. on the Scale system

### Warranty and service life

The LINAK warranty covers manufacturing defects in the products supplied by LINAK, starting from the date of manufacture. There is 18 months' warranty for MEDLINE and CARELINE products. The warranty is limited to the value of the LINAK product.

LINAK's guarantee is only valid so far as the products have been used and maintained correctly and have not been tampered with. Furthermore, the products must not be exposed to violent treatment. In the event of this, the warranty will be ineffective / invalid. LINAK's warranty is only valid if the system is unopened and has been used correctly.

All LINAK products are designed to have an optimum service life as a matter of course, but the expected service life in a specific application is very dependent on how the products are used.

Warranty on products supplied by 3<sup>rd</sup> party suppliers must be settled with the 3<sup>rd</sup> party supplier.

### Maintenance

- The LINAK products must be cleaned at regular intervals to remove dust and dirt and inspected for mechanical damage, wear and breaks.
- The LINAK SCO & QLCI is a closed unit and requires no internal maintenance.
- The system is IPX6.
- Make sure that the plugs in the SCO are correctly fitted with O-rings before washing.
- O-rings: When individual parts are replaced in a LINAK IPX6 system, the O-rings in the SCO, must be replaced at the same time. On control boxes with a replaceable mains fuse, the O-ring in the fuse cover must be replaced every time the cover has been removed. The O-rings must be greased in waterfree vaseline when replacing them. Make sure that the counterpart - the socket - is clean and undamaged.
- Electronics must be inspected at attachment points, wires, cabinet, and plugs.
- Inspect the connections, cables, cabinet and plugs, and check for correct functioning.
- Protection class: SCO: IPX6, QLCI: IPX4 (X6 a future option).

### QLCI:

Remember to check regularly that the cable lock and the screws in the QLCI are tightened

## **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 Care and Health, Comfort 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.

It is also the responsibility of the LINAK customer to make and supply a comprehensive user manual of the application.

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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## Terms of use

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All sales are subject to the Standard Terms of Sale and Delivery for LINAK. For a copy hereof, please contact LINAK.



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