



ELEVATE™ - LC3 IC User Manual

Contents

Preface	3
Terms of use	4
Safety information	5
Warnings	5
Recommendations	6
Features and options.....	7
Usage	7
Speed, load and current curves	8
Installation	9
Stop time	9
Bending	10
Built-in dimensions.....	12
LC3 IC mounting guidelines	12
Accessories	14
Electrical installation.....	17
Connection diagram ELEVATE Easy.....	18
I/O Specifications Elevate Easy	19
Connection diagram ELEVATE Pro	21
Connection diagram ELEVATE Pro	23
Connection diagram ELEVATE Modbus TCP/IP	25
Mounting of tools on the side of an LC3 IC.....	29
Maintenance	30
Repair	30
Main groups of disposal	30
Warranty	30
Declaration of conformity	31
Declaration of conformity of partly completed machinery	32

Preface

Dear User,

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

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

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

We are convinced that your LINAK product/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 product/system, you are always welcome to contact your supplier.

LINAK subsidiaries and some distributors situated all over the world have authorised service centres, which are always ready to help you. Locate your local contact information on the back page.

LINAK provides a warranty on all products. (See warranty section).

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 may only be opened by authorised personnel.

This User Manual has been written based on the present technical knowledge. LINAK reserves the right to carry out technical modifications and keeps the associated information updated.

LINAK A/S

Terms of use

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

Due to continual development, LINAK products are subject to frequent modifications and changes. LINAK reserves the rights to conduct modifications, updates, and changes without any prior notice. For the same reason, LINAK cannot guarantee the correctness and actual status of imprinted information on its products.

LINAK uses its best efforts to fulfil orders. However, for the reasons mentioned above, LINAK cannot guarantee availability of any particular product at any given time. LINAK reserves the right to discontinue the sale of any product displayed on its website or listed in its catalogues or in other written material created and produced by LINAK, LINAK subsidiaries, or LINAK affiliates.

All sales are subject to the 'Standard Terms of Sale and Delivery for LINAK A/S' available on LINAK websites.

LINAK and the LINAK logotype are registered trademarks of LINAK A/S. All rights reserved.

Safety information

Please read this safety information carefully:

Be aware of the following three symbols throughout the user manual:



Warning!

Failing to follow these instructions can cause accidents resulting in serious personal injury.



Recommendations

Failing to follow these instructions can result in the product suffering damage or being ruined.



Additional information

Usage tips or additional information that is important in connection with the use of the product.

Warnings

•	Not to be used horizontal
•	The product is NOT to be opened by unauthorised personnel
•	Always check correct assembly after mounting and service to ensure that the cable locks are mounted
•	Ensure that the cable cannot be squeezed, pulled or subjected to any other stress or damages
•	LC3 IC is heavy (more than 20 kg). To avoid personal injury and product damage, DO NOT DROP!
•	Take special precautions concerning 3rd party interfacing. If needed, please contact LINAK for further information
•	Do not adjust anything during movement or while connected to mains, it can cause personal injury.
•	To avoid cable interruption and column defects make a proper cable installation and inspect regularly for wear, damage and jarring sound. Defective parts must be replaced
•	After service inspection, the application must be tested for correct functionality before it is put into operation. If used in parallel applications, misalignment between two or more columns must be avoided
•	Do not loosen any screws on the LC3 IC, this can cause collapse of the column!
•	All cables must remain plugged in during cleaning to prevent the ingress of water.
•	The lifting column can become functional safety systems compliant with EN ISO10218-2. To integrate the LC3 IC into a functional safety chain, external safety devices such as Safety contactors/relays have to be implemented

Recommendations

•	Please follow the important LC3 IC mounting guidelines.
•	LC3 IC is for use in both push and pull applications, cable outlet from smallest profile (top). See top and bottom plate dimensions. The Lifting Column can be mounted upside down.
•	It is recommend to make a functional test of the application with all accessories connected before putting it into operation
•	Intended for indoor use only
•	Not intended for use in harsh environments like e.g. pool environment, marine environment and agriculture buildings with ammonia vapors
•	Do not place the column in very dusty environments, since this effects the sliders
•	Listen for unusual sounds and watch out for uneven running during operation. Stop the Lifting column immediately if anything unusual is observed.

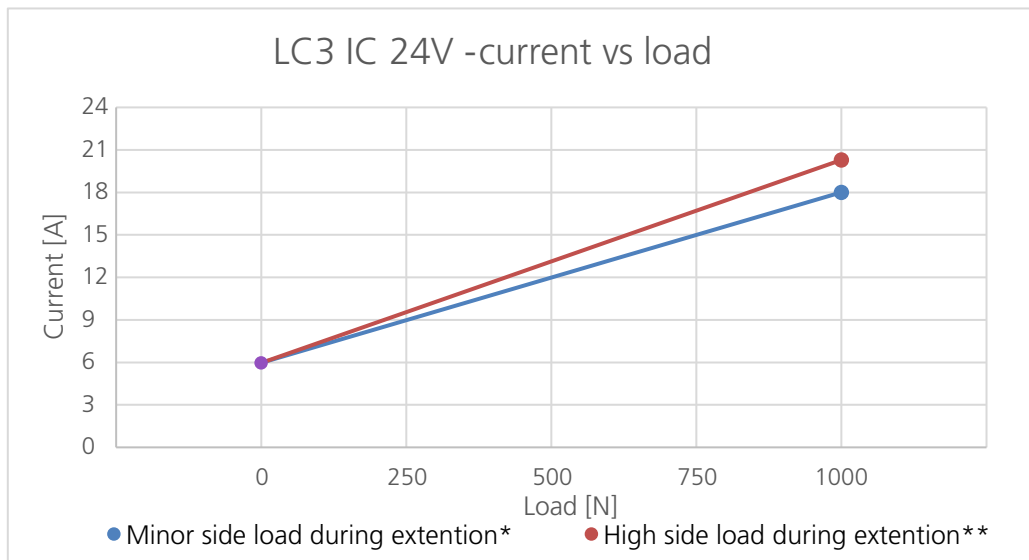
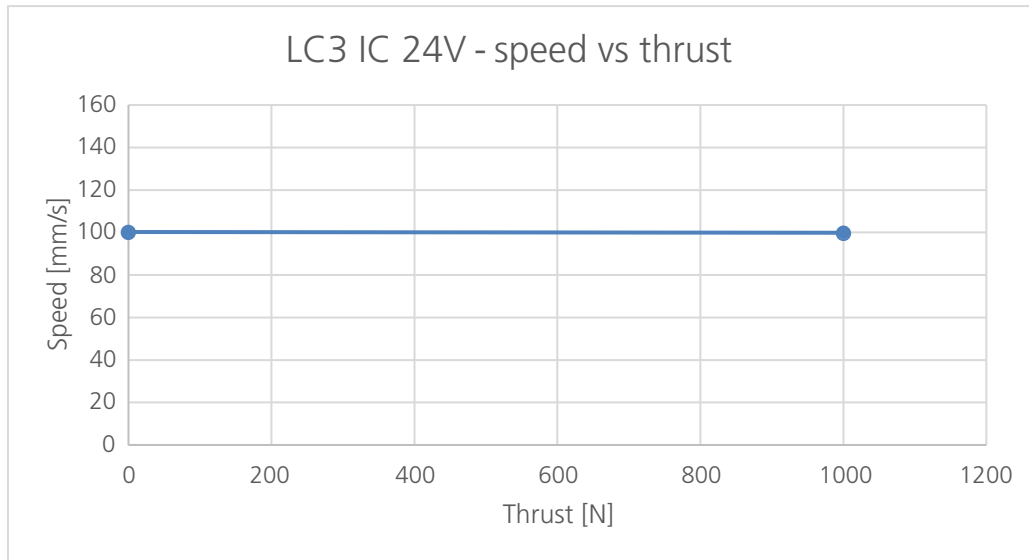
Features and options

Load in push and pull	1,000 N
Max speed	100 mm pr. second (adjustable and independent of load)
Stroke length	In steps of 100 mm between 400 mm and 900 mm
Position accuracy	+/- 1.5 mm
Profile colour	Anodised aluminium
Top and bottom plate colour	Zink grey bottom plate / aluminium grey top plate
Protection class	IP44
Motor	24 V DC Brushless
Built-in dimensions	Stroke/2 + 280 mm - minimum BID is 400/2 + 280 = 480 mm
Noise level	53 dB (A)
Weight	29 kg with 900 mm stroke
Dynamic bending moment	Up to 1,400 Nm (allowed bending moment between cobot and column, while the column is running in or out)
Static bending moment	Up to 3,000 Nm (allowed bending moment between cobot and column, while the column is not moving)
Mounting directions	The column can be mounted vertically with a top plate upright or upside down
Cobot compatibility	Mounting plates and URcap for Universal Robots e-Series / Mounting plates for Doosan, Omron, Techman. -For other options please contact TECHLINE® sales @ LINAK® A/S
IC interfaces:	I/O Modbus TCP/IP

Usage

Duty cycle	10 % at Full Load (2 minutes use, 18 minutes not in use) 20 % at Half load (4 minutes use, 16 minutes not in use)
Current consumption	6-20 A
Operation temperature	+5 °C to + 40 °C
Storage temperature	-40 °C to + 70 °C
Relative humidity	20 % to 80 % - non-condensing
Atmospheric pressure	700 to 1060 hPa
Meters above sea level	Max. 3000 meters
Approvals	EN 55016-2-3:2017+A1, EN 55016-2-1:2014 EN 61000-4-2:2009, EN IEC 61000-4-3:2020, EN 61000-4-4:2012 EN 61000-4-5:2014+A1, EN 61000-4-6:2014, EN 61000-4-8:2010 EN IEC 63000:2018 EN 61000-6-2:2019 – Part 6-2 EN 61000-6-4:2019 – Part 6-4 BS EN 55016-2-3:2017+A1, BS EN 55016-2-1:2014 BS EN 61000-4-2:2009, BS EN IEC 61000-4-3:2020, BS EN 61000-4-4:2012 BS EN 61000-4-5:2014+A1, BS EN 61000-4-6:2014, BS EN 61000-4-8:2010 BS EN IEC 63000:2018 BS EN 61000-6-2:2019 – Part 6-2 BS EN 61000-6-4:2019 – Part 6-4

Speed, load and current curves



* The cobot and the load is positioned around the center of the column during extension.

** The cobot and load can be freely positioned placed or moved during extension.

Installation

Before mounting/dismounting the lifting column ensure that the following points are observed:

- The lifting column is not in operation.
- The lifting column is free from loads that could be released during this work.

Before the lifting column is been put into operation, check the following:

- The lifting column is correctly mounted as indicated in the relevant user instructions.
- The equipment can be freely moved over the lifting column's whole working area.
- The lifting column is connected to a mains electricity supply/transformer with the correct voltage, and which is dimensioned and adapted to the lifting column in question.
- Ensure that the voltage applied matches to the voltage specified on the lifting column label.
- Ensure that the connection screws are secured safely.

Stop time

When the speed of the column is reduced, or the motor power is removed the brake will engage and stop the column and self-lock it. The following table shows the stop time when a stop signal is sent, or the motor power is removed.

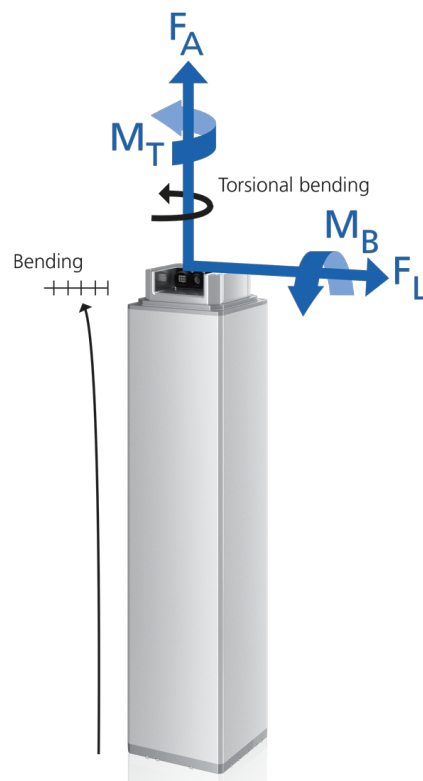
Interface	Soft stop, when stop signal is sent	Stop time by power loss
ELEVATE Easy	1500 ms	500 ms
ELEVATE Pro	500 ms	500 ms
ELEVATE Modbus	1500 ms	500 ms

Bending

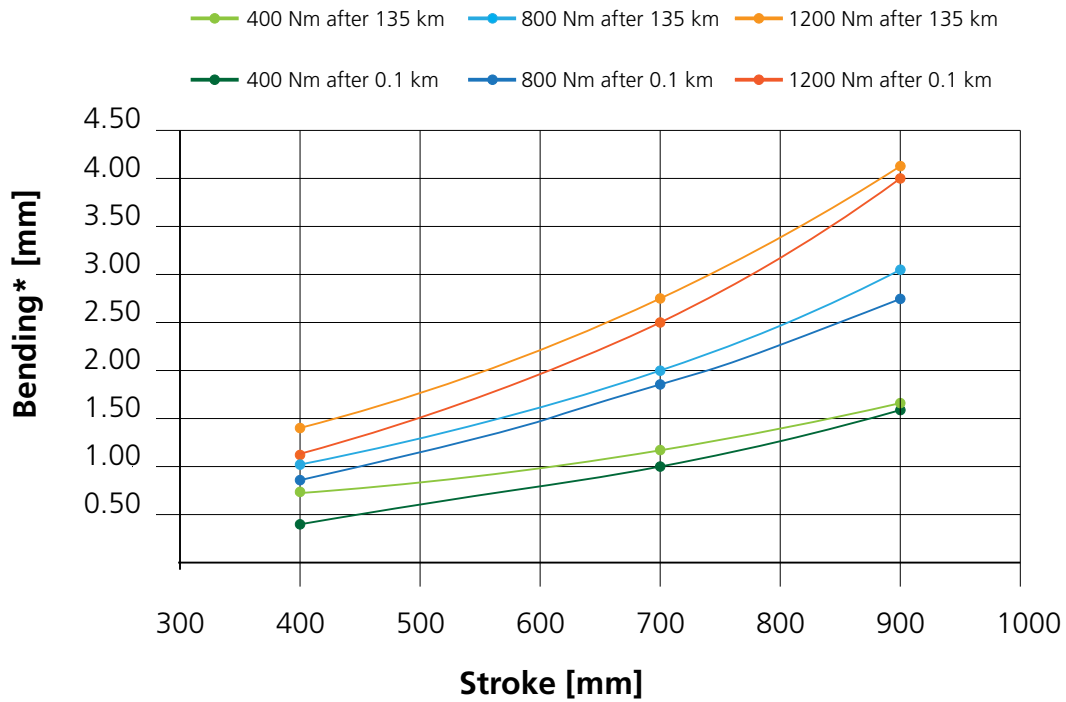
Bending moment - Static

The maximal bending moment for static column use is 3000 Nm. Static column use is when the column is not moving and e.g. the cobot creates a bending moment.

High off-center loads apply bending moments onto the lifting column and cause bending of the column. The following graph shows the expected bending for different bending moments (M_B , M_T) and strokes. The data is representative for columns with 900mm stroke. Runtime has an impact on the bending of the column. The graphics show the bending for a new column (0.1 km runtime) and representative values for a used column (135 km runtime). The used column ran 135km with a constant off-center of 100kg and a bending moment of 350Nm.

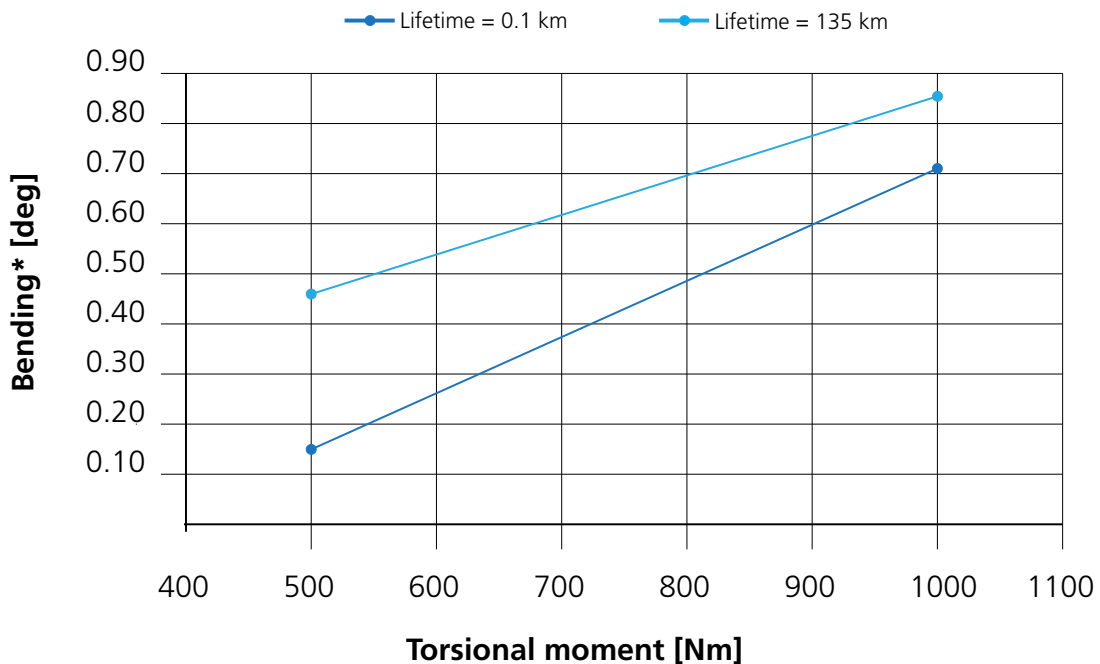


Bending with bending moment M_B



*The bending is measured at the top of the column in horizontal direction.

Bending with torsional moment M_T

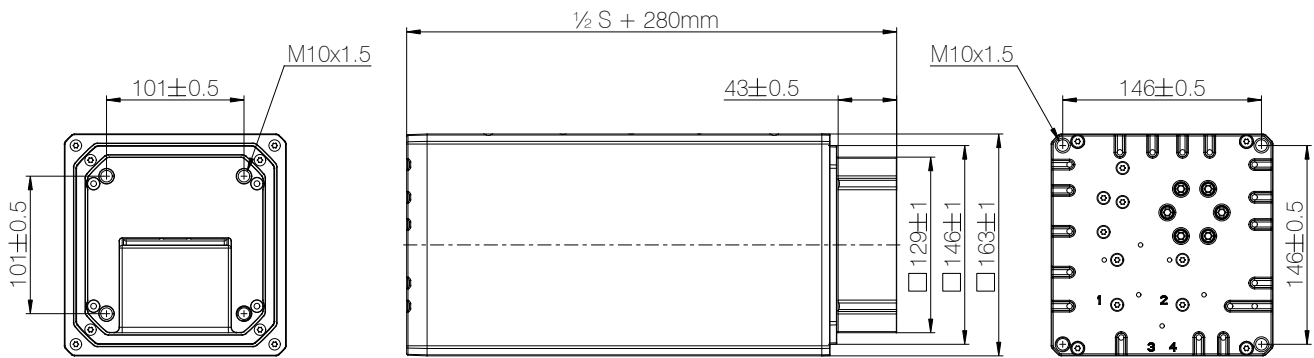


*The torsional bending is measured with a lifting column extended to 900 mm stroke.

Bending moment - Dynamic

The maximal bending moment for dynamic column use is 1400Nm. This value must not be exceeded while the column is running in or out. When the centre of load gravity is located more than 400 mm from the centre of the column, stick-slip can occur. Stick-slip can be avoided by increasing the centre load or by moving the load closer to the centre of the column.

Built-in dimensions



The minimum built-in dimension (BID) is 480 mm due to the design of the lifting column.
The tolerance for BID is +/- 1.5 mm

LC3 IC mounting guidelines

LC3 IC is for use in push applications and can be mounted in both directions – largest profile down or largest profile up. The column can only be used for vertical movement -not for horizontal.

Top plate up

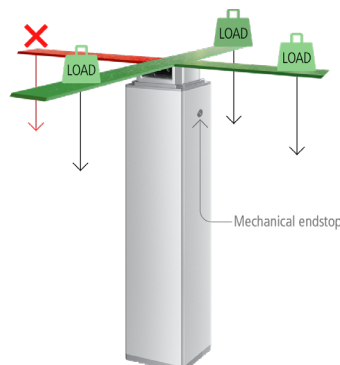


Top plate down



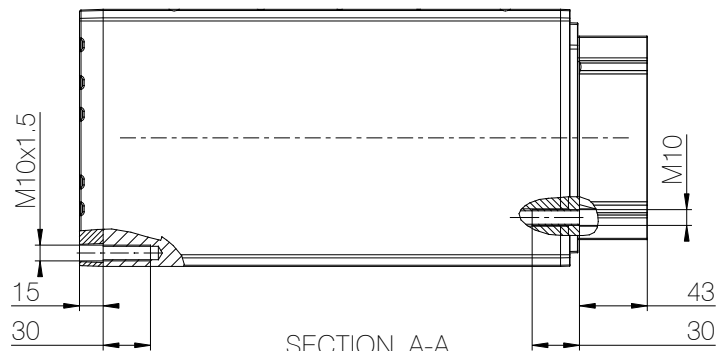
Note: The cable outlet for motor connection is positioned at the top (smallest profile)
Mount the LC3 IC in the application using the 4x M10 mounting holes in both endplates.

If the column is to be used with a constant high off-center load, we recommend to install the constant weight in one of the 3 ways illustrated by the green symbols. It is not recommended to install the weight on the opposite side of the mechanical endstop as illustrated with the red symbol. This installation can create an uneven movement and noise when the lifting column reaches the endstop position.



Use 4 pcs. M10 8.8 bolts at each end of the column for mounting to the application.
The screw depth must be min. 20 mm and max. 30 mm in the aluminum profile.

Screw torque: 35 Nm.

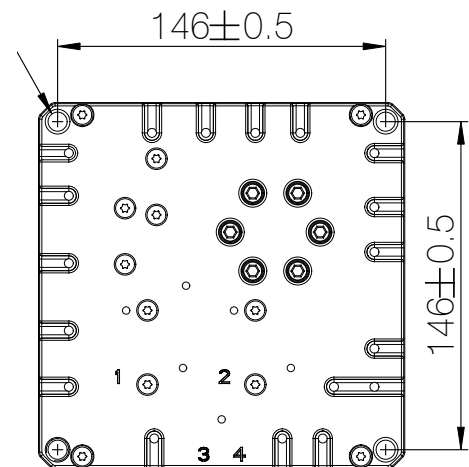
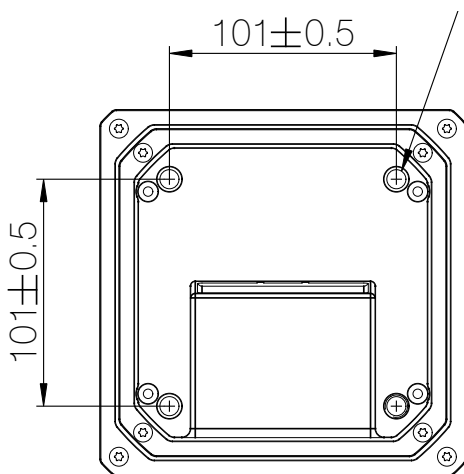


15 mm distance to thread

Bolt depth min. 20 mm

43 mm distance to thread

Mounting holes



- It is recommended to use bolts with thread-lock adhesive
- Bolts of high quality steel 8.8 or 10.9 must be used to secure safe mounting of the LC3 IC to the application.

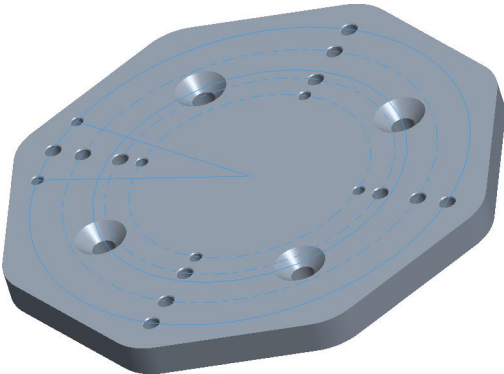
Accessories

ELEVATE

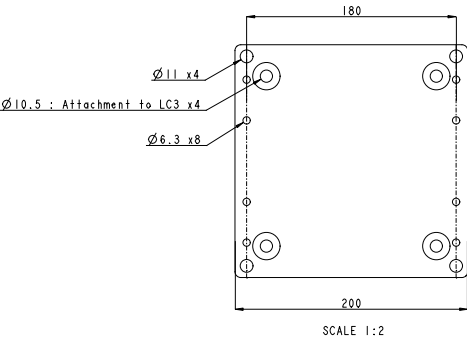
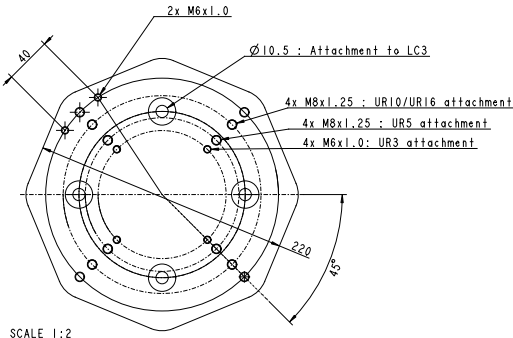
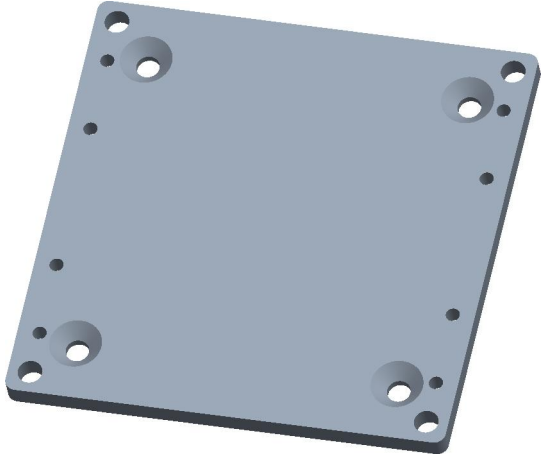


ELEVATE is the cobot application for LC3 IC. It comes with different accessory options.

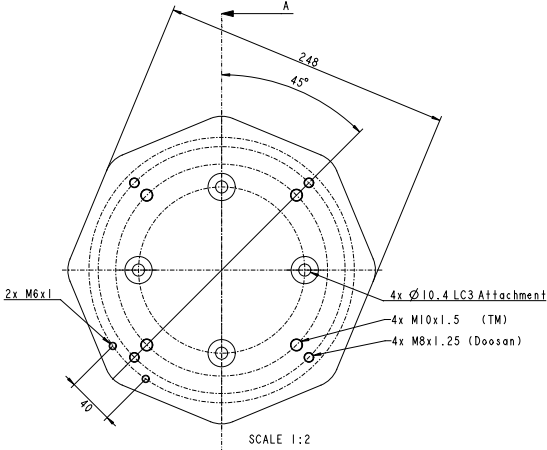
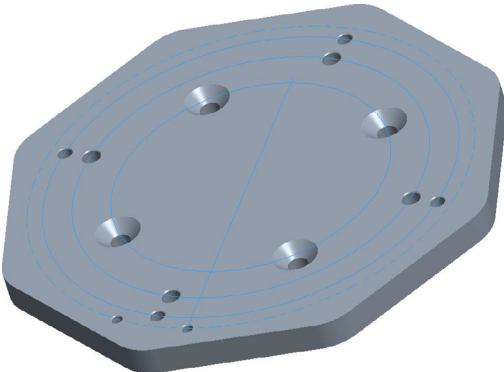
UR top mounting plate



Bottom mounting plate



Doosan / Omron TM top mounting plate



Accessories

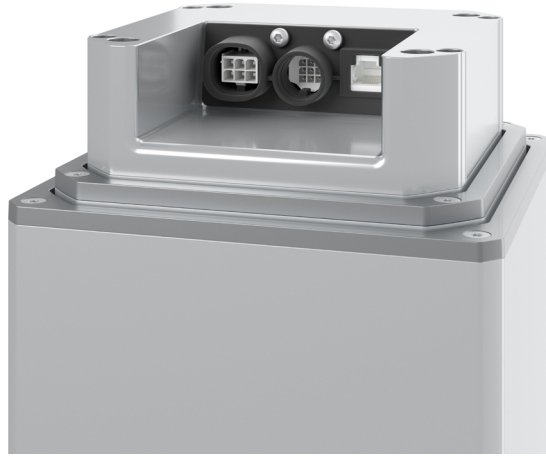
LC3 IC comes along with accessory kits to make the integration easy. The kits focus on cobot applications.

Article Number	Description	Content
1002W8163	All you need to get started with a Universal Robot cobot. The mounting plate works with UR3e, UR5e, UR10e, UR16e. The ELEVATE URcap can be downloaded from LINAK.com	ELEVATE Kit UR includes: <ul style="list-style-type: none"> - Power cable, 2-pole, 5m (CAB0367046-5000) - Signal cable, 9-pole, 5m (CAB0368539-5000) - Cable relief + screw - UR mounting plate with 4 screws M10 x 80mm 8.8 - Base mounting plate with 4 screws M10 x 40mm 8.8
1002W8164	All you need to get started with other cobots: The mounting plate works with: Doosan H-, M- and A-Series Omron TM: TM12, TM14 and TM16	ELEVATE Kit Doosan / Omron TM includes: <ul style="list-style-type: none"> - Power cable, 2-pole, 5m (CAB0367046-5000) - Signal cable, 9-pole, 5m(CAB0368539-5000) - Cable relief + screw - Doosan/ Omron TM mounting plate with 4 pcs. M10 x 80mm 8.8 - Base mounting plate with 4 pcs. M10 x 40mm 8.8
1002W8165		Cable Kit includes: <ul style="list-style-type: none"> - Power cable, 2-pole, 5m (CAB0367046-5000) - Signal cable, 9-pole, 5m (CAB0368539-5000) - Cable relief + screw

The internal bending radius of the cables must be bigger than 3 times the outer dimension of the cable. For instance if the outer cable dimension is Ø7, the internal radius of the maximum cable bending is 21 mm.

Electrical installation

When using soft stop on a DC motor, a short peak of high voltage will be sent back towards the power supply. When selecting the power supply, it is important to ensure that it does not turn off the output, when this backwards load dump occurs.



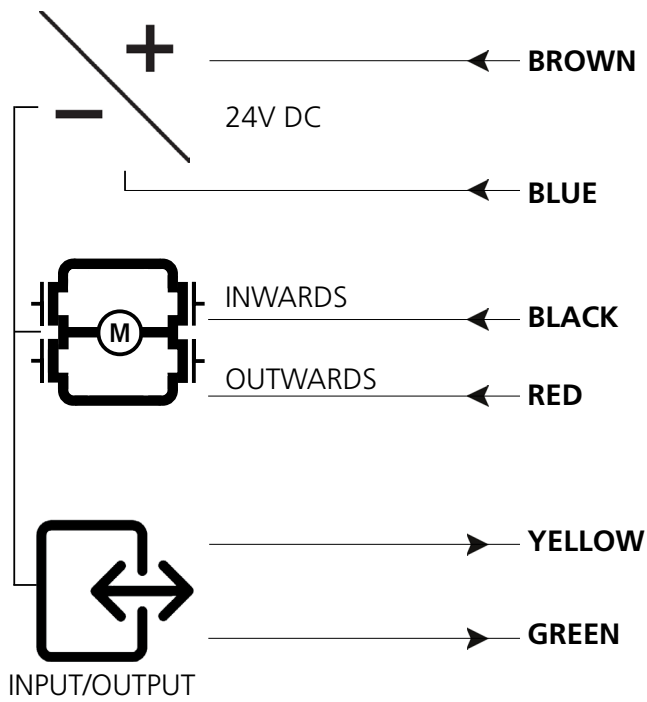
Depending of option there can be three different connectors on the LC3 IC Lifting Column:

- The most left is the power connector for a 24 V DC power supply, a cab0367046-xxxx cable fits the connector
- In the middle there is a 9-pin signal connector for controlling the LC3 IC and gathering information regarding position and end stop signals. The cab0368543-xxxx cable that fits the connector should be connected to a PLC or cobot controller.
- The connector to the most right is a 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 LINA K

The signal connector offers access to Actuator Connect.

Connection diagram ELEVATE Easy

LC3 XXX XXX F600 00 XXXX 6 2 3 1 4 - 1 F 0 (ELEVATE Easy)



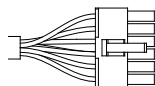
Power Cable

Flying Leads



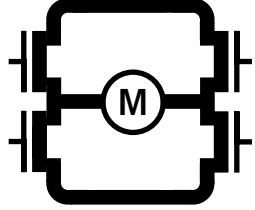
Signal Cable

Flying Leads
(Molex mini-fit 12-pin)



Please be aware that if the power supply is not properly connected, you might damage the column!

I/O Specifications Elevate Easy

Input/Output	Specification	Comments
Description	Easy to use interface with integrated power electronics (H-bridge).	 <p>H-Bridge</p>
Brown	24 VDC + (VCC) Connect Brown to positive 24 V \pm 10 % 24 V, max. 20 A - current cut off @20 A	Note: Do not change the power supply polarity on the brown and blue wires! Power supply GND (-) is electrically connected to the housing
Blue	24 VDC - (GND) Connect Blue to negative	
Red	Extends the column	The signal becomes active at: > 67% of V_{IN}
Black	Retracts the column	The signal becomes inactive at: < 33% of V_{IN} Input current: 10 mA The column comes with a 1500 ms soft stop and start
Yellow	Endstop signal In	Output voltage min. $V_{IN} - 2$ V Source current max. 100 mA
Green	Endstop signal Out	Endstop signals are NOT potential free. Endstop positions can be configured to any needed position with Actuator Connect(R). See virtual endstop.



Current cut-offs should not be used as stop function! This might damage the column.
Current cut-offs should only be used in emergencies!

Current cut-off limits are not proportional with the load curves of the column. This means that the current cut-offs cannot be used as load indicator.

There are tolerances on the spindle, nut, gear wheels etc. and these tolerances will have an influence on the current consumption for the specific column.

Wiring example ELEVATE Easy

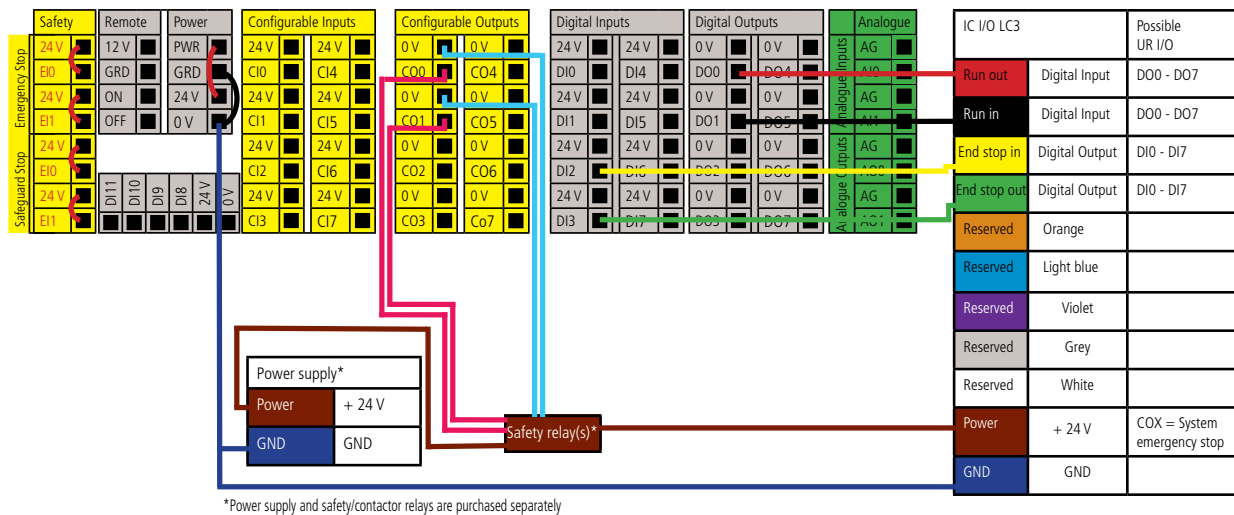
UR e-Series with ELEVATE™ Easy – Wiring example

ELEVATE Easy can be directly used with an UR e-Series cobot due to the ELEVATE URCap. ELEVATE Easy is recommended when the column should only run to its endstop positions. Connect the column to the UR control box as shown in the wiring diagram. You can choose the port number during the setup of the URCap on the teach pendant. ELEVATE does not come with safety relay/contactors nor power supply. The wiring diagram only shows a suggestion to integrate ELEVATE into a safe torque off system.

Download the ELEVATE URCap from LINAK.com and get more information.

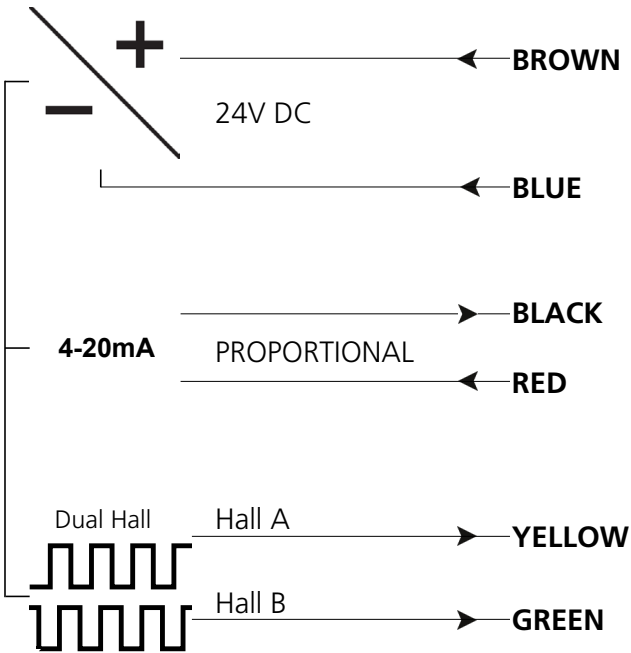
URCap wiring diagram for ELEVATE Easy

LC3 IC pinout



Connection diagram ELEVATE Pro

LC3 XXX XXX F600 1H XXXX 6 2 3 1 4 - 1 G 0 (ELEVATE Pro)



Power Cable

Flying Leads



Signal Cable

Flying Leads (Molex mini-fit 12-pin)

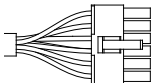
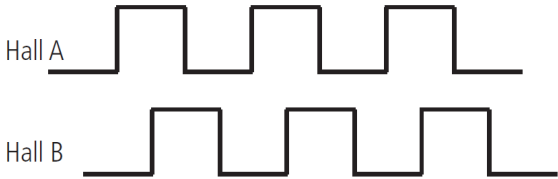
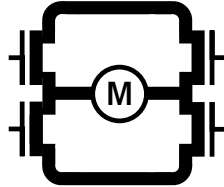
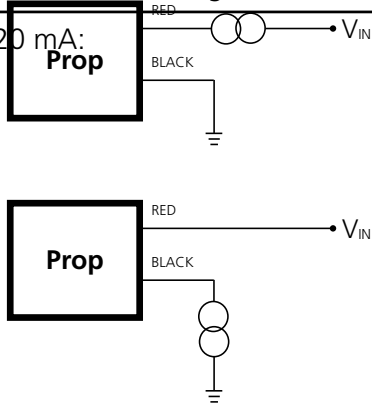
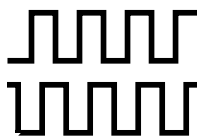


Diagram of dual Hall:



Please be aware that if the power supply is not properly connected, you might damage the column!

I/O Specifications Elevate Pro

Input/Output	Specification	Comments
Description	<p>Easy to use interface with integrated power electronics (H-bridge).</p> <p>The column is speed controlled by means of a 4-20 mA signal.</p> <p>Proportional provides a wide range of possibilities for customisation.</p>	 <p>H-Bridge</p>
Brown	<p>24 VDC + (VCC) Connect Brown to positive</p> <p>24 V \pm 10 %</p> <p>24 V, max. 20 A - current limit @ 20 A</p>	<p>Note: Do not change the power supply polarity on the brown and blue wires!</p> <p>Power supply GND (-) is electrically connected to the housing</p>
Blue	<p>24 VDC - (GND) Connect Blue to negative</p>	
Black	<p>4-20 mA:</p> 	<p>Sinking current with reference to power GND (blue)</p> <p>Common mode voltage: GND to V supply</p> <p>Equivalent input resistance \approx 135 ohm</p> <p>Overcurrent protected, reverse voltage protected</p> <p>The column comes with a 0 ms soft stop</p> <p>See paragraph Proportional (speed) control for more details</p>
Red		
Yellow	<p>Hall A</p> <p>Movement per each Hall pulse: 20 mm Pitch -> 0.303 mm/count</p> <p>Hall output (PNP)</p>	 <p>Dual Hall</p>
Green	<p>Hall B</p> <p>Movement per each Hall pulse 20 mm Pitch -> 0.303 mm/count</p>	<p>The Hall sensor signals are generated by the turning of the column gearing. These signals can be fed into a PLC (Programmable Logic Controller). In the PLC the quadrature signals can be used to register the direction and position. Output voltage min. $V_{IN} - 2$ V Current output 12 mA Overvoltage on the motor can result in shorter pulses.</p>



Current cut-offs should not be used as stop function! This might damage the column.
Current cut-offs should only be used in emergencies!

Current cut-off limits are not proportional with the load curves of the column. This means that the current cut-offs cannot be used as load indicator.

There are tolerances on the spindle, nut, gear wheels etc. and these tolerances will have an influence on the current consumption for the specific column.

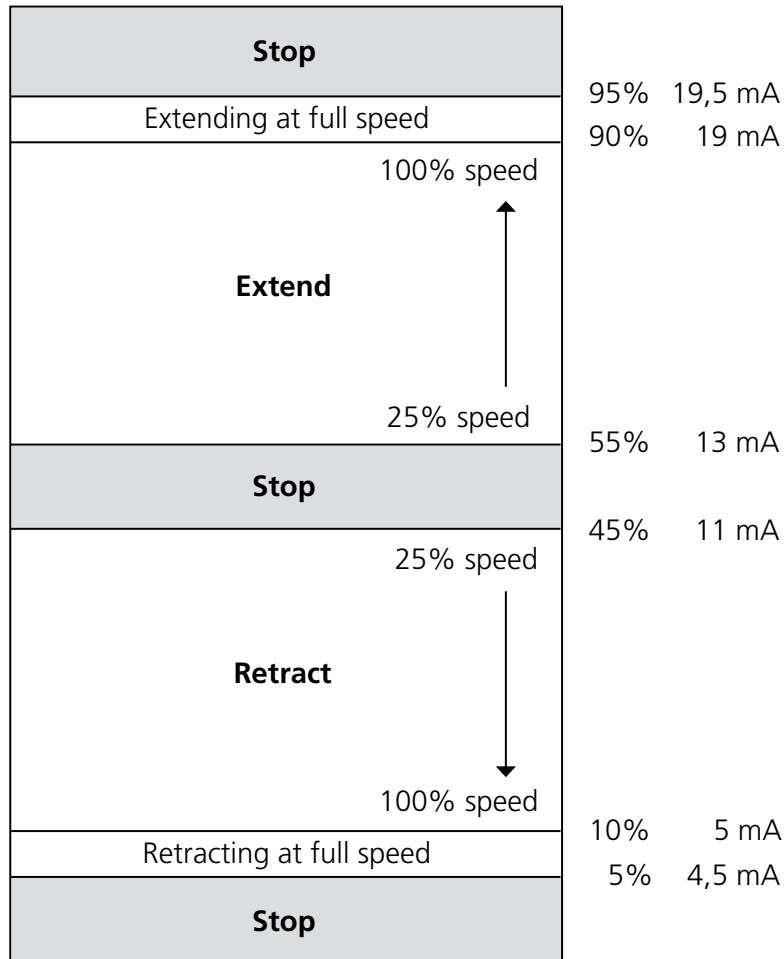
Connection diagram ELEVATE Pro

The speed control over the analogue 4-20 mA is started when the signal is set between 11-13 mA for 100 ms.

After this initialization the full signal width can be used to control the speed (see graphic below).

In case the analogue signal exceeds 19,5 mA or the signal falls below 4,5 mA, the column will stop and go into an error mode.

This error can be cleared by repeating the initialization sequence, meaning the signal must be set between 11-13 mA for 100 ms.



Wiring example ELEVATE Pro

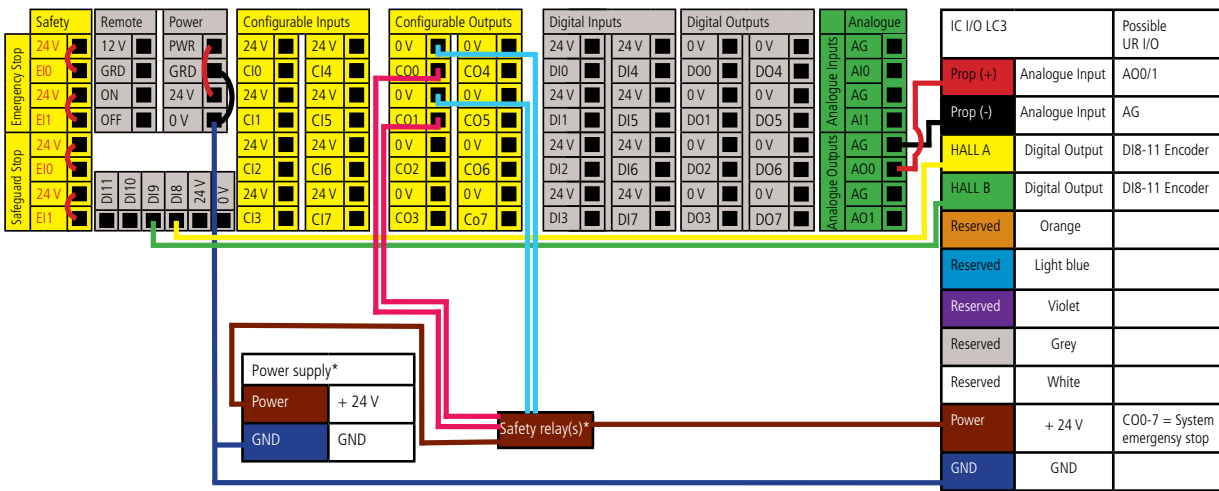
UR e-Series with ELEVATE™ Pro – example

ELEVATE Pro can be directly used with an UR e-Series cobot due to the ELEVATE URCap. ELEVATE Pro is recommended when the cobot needs to be positioned at several positions within the column's stroke. Connect the column to the UR control box as shown in the wiring diagram. You can choose the port number during the setup of the URCap on the teach pendant. ELEVATE does not come with safety relay/contactors nor power supply. The wiring diagram only shows a suggestion to integrate ELEVATE into a safe torque off system. For ELEVATE Pro, it is important to set a 500 ms delay to the system that cuts off the motor power supply in case of an emergency stop. This 500 ms delay is required to ensure that the column stops and sends the encoder signal to the UR controller before the power is gone. If a 500 ms delay is not implemented, a re-initialization in the program is recommended to keep the position accuracy

Download the ELEVATE URCap from LINAK.com and get more information.

URCap wiring diagram for ELEVATE Pro

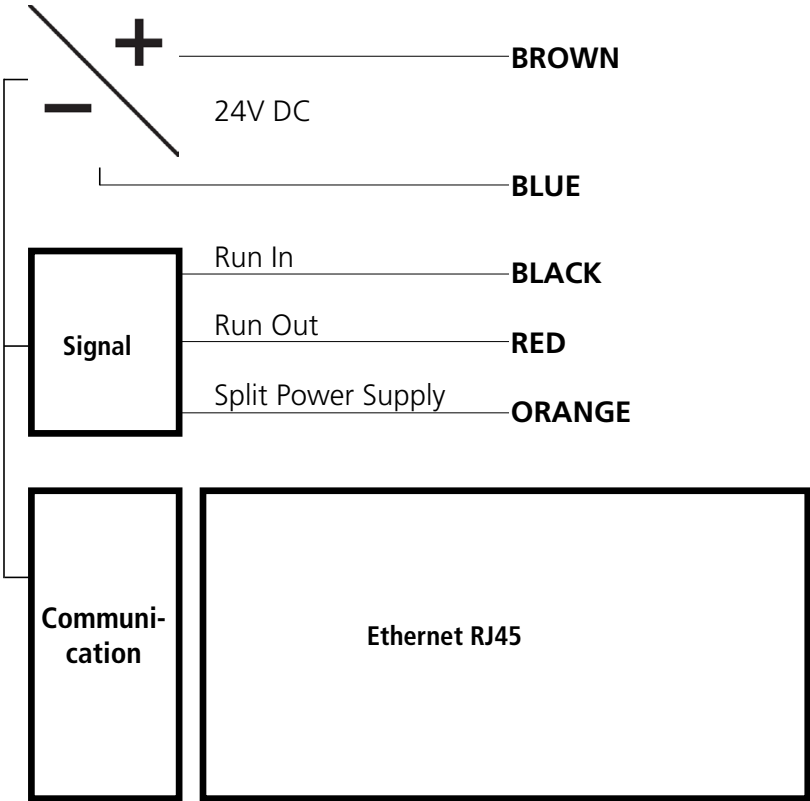
LC3 IC pinout



*Power supply and safety/contactor relays are purchased separately

Connection diagram ELEVATE Modbus TCP/IP

LC3 XXX XXX F700 00 XXXX X X 3 1 4 - X H 0 (ELEVATE Modbus)



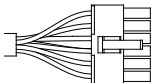
Power Cable

Flying Leads

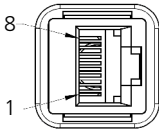


Signal Cable

Flying Leads (Molex mini-fit 12-pin)

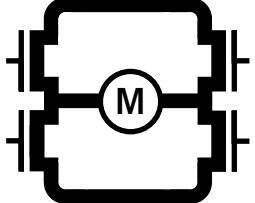


Ethernet



Please be aware that if the power supply is not properly connected, you might damage the column!

I/O Specifications Elevate Modbus TCP/IP

Input/Output	Specification	Comments
Description	<p>Easy to use interface with integrated power electronics (H-bridge).</p> <p>Uses Modbus TCP/IP messages to command movement, setting parameters and to deliver feedback form the lifting column</p>	 <p>H-Bridge</p>
Brown	<p>24 VDC + (VCC)</p> <p>Connect Brown to positive</p> <p>24 V \pm 10 %</p> <p>24 V, max. 20 A - current cut off @20A</p>	<p>Note:</p> <p>Do not change the power supply polarity on the brown and blue wires!</p> <p>Power supply GND (-) is electrically connected to the housing</p>
Blue	<p>24 VDC - (GND)</p> <p>Connect Blue to negative</p>	
Red	Extends the column	<p>The signal becomes active at:</p> <p>> 67% of V_{IN}</p>
Black	Retracts the column	<p>The signal becomes inactive at:</p> <p>< 33% of V_{IN}</p> <p>Input current: 10 mA</p> <p>The column comes with a 1500 ms soft stop and start</p>
Green	TX -	
Yellow	RX +	
Orange	<p>Split supply: 24VDC with \approx28mA current consumption. Connect to positive. The split supply uses the common GND from the power supply</p>	Split supply is for communication power of the controller only.
Light Blue	RX -	
Violet	Service interface	
White	TX +	
Grey	Service interface GND	

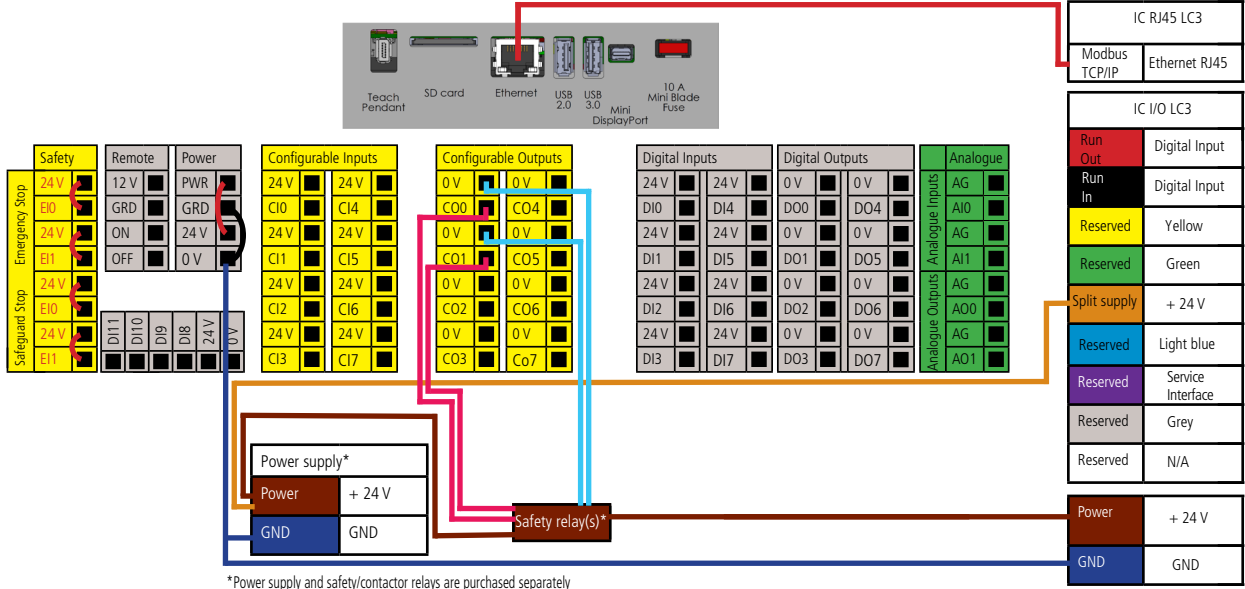
Wiring recommendation ELEVATE™ Modbus TCP/IP

UR e-Series with ELEVATE™ Modbus TCP/IP

ELEVATE Modbus TCP/IP can be directly used with an UR e-Series cobot due to the ELEVATE URcap. ELEVATE Modbus TCP/IP is recommended when the cobot needs to be positioned at several positions within the column’s stroke. Connect the column to the UR control box as shown in the wiring diagram. ELEVATE does not come with safety relay/ contactors nor power supply. The wiring diagram only shows a suggestion to integrate ELEVATE into a safe torque off system.

Download the ELEVATE URcap from LINAK.com and get more information.

URcap wiring diagram for Elevate Modbus TCP/IP



*Power supply and safety/contacter relays are purchased separately

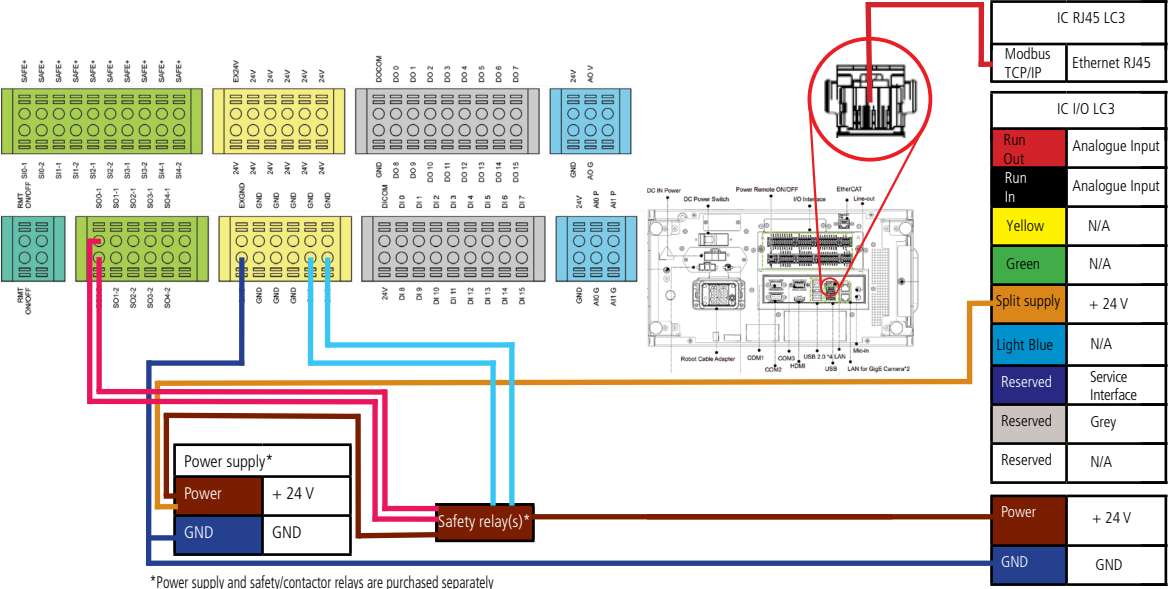
Wiring recommendation ELEVATE™ Modbus TCP/IP

OMRON TM cobots with ELEVATE™ Modbus TCP/IP

ELEVATE Modbus TCP/IP can be directly used with an OMRON TM cobot due to ELEVATE components for TMFlow. Connect the column to the TM control box as shown in the wiring diagram. ELEVATE does not come with safety relay/ contactors nor power supply. The wiring diagram only shows a suggestion to integrate ELEVATE into a safe torque off system.

Download the ELEVATE components for TMFlow from LINAK.com and get more information.

Omron wiring diagram for ELEVATE Modbus

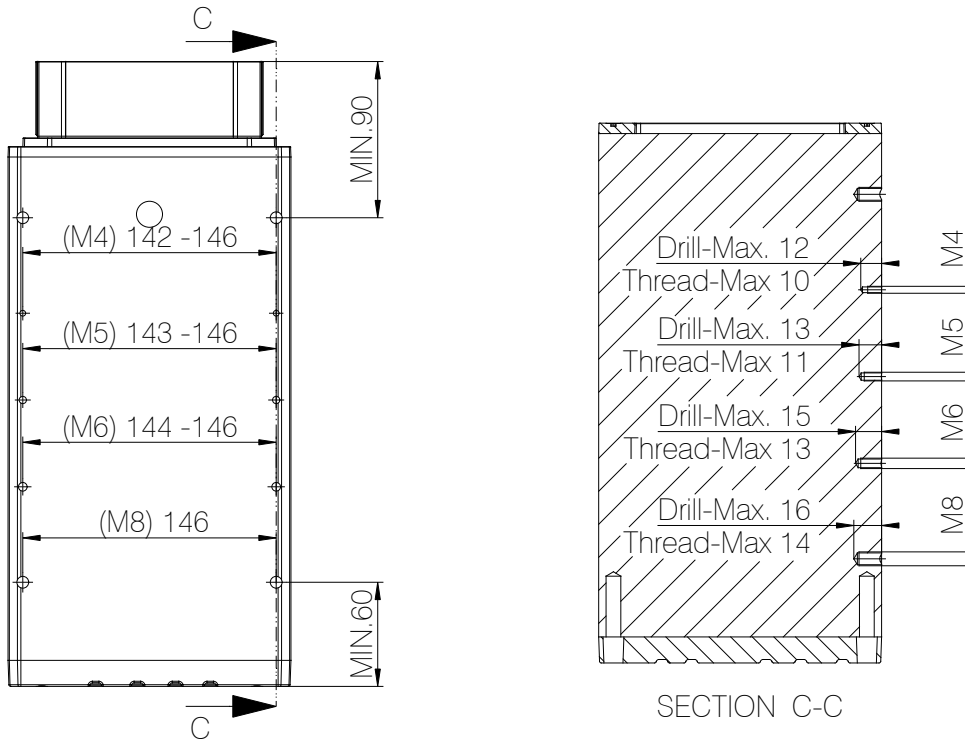


Mounting of tools on the side of an LC3 IC

It is possible to mount tools on all 4 sides of the LC3 IC at the same time. However, it requires that the holes for mounting are placed with different distances from the top and/or bottom plate. Otherwise the mounting screws will collide.

Minimum distance from the top and bottom plate must be observed.

3-stage



Screws used for mounting of a product on the side of the LC3 IC must be 8.8.

Screw type	M8	M6	M5	M4
Screw torque Nm	17	7	4	2

Note: There is no installed grounding cable connecting the top and bottom plate.

Maintenance

- The lifting column is a closed unit and therefore requires no internal maintenance
- To ensure that the pregreased inner and middle profile remains lubricated, the actuator must only be washed down when the lifting column is fully retracted
- Inspect attachment points, wires, sliders, cabinet, and plug, as well as check that the lifting column *functions correctly*

Repair

Only an authorised LINAK® service centre should repair LINAK actuator systems. Systems to be repaired under warranty must be sent to an authorised LINAK service centre.

In order to avoid the risk of malfunction, all actuator systems repairs must only be carried out by an authorised LINAK Service shop or repairer, as special tools and parts must be used.

If a system is opened by unauthorised personnel there is a risk that it may malfunction at a later date.

Main groups of disposal

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.

Product	Metal scrap	Cable scrap	Electronic scrap	Plastic recycling or combustion
LC3 IC	X	X	X	X

Warranty

There is an 18 months' warranty on TECHLINE products against manufacturing faults calculated from the production date of the

individual products (see label). LINAK's warranty is only valid in so far as the equipment has been used and maintained correctly and

has not been tampered with. Furthermore, the actuator 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.

Note:

Only an authorised LINAK® service centre should repair LINAK actuator systems. Systems to be repaired under warranty must be sent to an authorised LINAK service centre.

In order to avoid the risk of malfunction, all actuator repairs must only be carried out by an authorised LINAK Service shop or repairer, as special tools and parts must be used.

If a system is opened by unauthorised personnel there is a risk that it may malfunction at a later date.

The actuator is not to be opened by unauthorised personnel. In case the actuator is opened, the warranty will be invalid.

Declaration of conformity



DECLARATION OF CONFORMITY

LINA K A/S
Smedevænget 8
DK - 6430 Nordborg

Hereby declares that LINA K Lifting Column:

LC3*****F**2H*****C3**-000
 LC3*****F**3H*****C3**-000
 LC3*****F**4H*****C3**-000
 LC3*****F**5H*****C3**-000
 LC3*****F**6H*****C3**-000

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

complies with the EMC Directive 2014/30/EU according to following standards:

EN 55016-2-3:2017+A1, EN 55016-2-1:2014
 EN 61000-4-2:2009, EN IEC 61000-4-3:2020, EN 61000-4-4:2012
 EN 61000-4-5:2014+A1, EN 61000-4-6:2014, EN 61000-4-8:2010

complies with RoHS2 Directive 2011/65/EU according to the standard:
 EN IEC 63000:2018

Additional information:

The product does comply with the standard:

EN 61000-6-2:2019, Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments
 EN 61000-6-4:2019: Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments

DK-6430 Nordborg, 2022-12-13

LINA K A/S
 John Kling, B.Sc.E.E.
 Regulatory Affairs Manager
 Authorized to compile the relevant technical documentation

This declaration of conformity is issued under the sole responsibility of the manufacturer.
 Original Declaration

Declaration of conformity of partly completed machinery



DECLARATION OF CONFORMITY

Imported by
LINAk UK Limited
 Smethwick, B66 1RJ

Hereby declares that LINAk Lifting Column:

LC3*****F**2H*****C3**-000
 LC3*****F**3H*****C3**-000
 LC3*****F**4H*****C3**-000
 LC3*****F**5H*****C3**-000
 LC3*****F**6H*****C3**-000

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

complies with the EMC Directive 2014/30/EU according to following standards:

BS EN 55016-2-3:2017+A1, BS EN 55016-2-1:2014
 BS EN 61000-4-2:2009, BS EN IEC 61000-4-3:2020, BS EN 61000-4-4:2012
 BS EN 61000-4-5:2014+A1, BS EN 61000-4-6:2014, BS EN 61000-4-8:2010

complies with the Statutory Instrument 2012 No. 3032 Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 according to the standard:
 BS EN IEC 63000:2018

Additional information:

The product does comply with the standard:

BS EN 61000-6-2:2019, Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments
 BS EN 61000-6-4:2019: Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments

DK-6430 Nordborg, 2022-12-13

LINAk A/S

John Kling, B.Sc.E.E.
 Regulatory Affairs Manager, Group Headquarters
 Authorized to compile the relevant technical documentation

This declaration of conformity is issued under the sole responsibility of the manufacturer.
 Original Declaration

FACTORIES

DENMARK - HEADQUARTERS
 LINAK A/S
 PHONE: +45 73 15 15 15
 FAX: +45 74 45 80 48
 FAX (SALES): +45 73 15 16 13
 WWW.LINAK.COM

CHINA
 LINAK (SHENZHEN) ACTUATOR SYSTEMS, LTD.
 PHONE: +86 755 8610 6656
 PHONE: +86 755 8610 6990
 WWW.LINAK.CN

SLOVAKIA
 LINAK SLOVAKIA S.R.O.
 PHONE: +421 51 7563 444
 WWW.LINAK.SK

THAILAND
 LINAK APAC LTD.
 PHONE: +66 33 265 400
 WWW.LINAK.COM

USA
 LINAK U.S. INC.
 AMERICAS HEADQUARTERS
 PHONE: +1 502 253 5595
 FAX: +1 502 253 5596
 WWW.LINAK-US.COM
 WWW.LINAK-LATINAMERICA.COM

SUBSIDIARIES

Australia
 LINAK Australia Pty. Ltd
 Phone: +61 3 8796 9777
 Fax: +61 3 8796 9778
 E-mail: sales@linak.com.au
 www.linak.com.au

Austria
 LINAK Repräsentanz - Österreich (Wien)
 Phone: +43 (1) 890 7446
 Fax: +43 (1) 890 744615
 E-mail: info@linak.de
 www.linak.at - www.linak.hu

Belgium
 LINAK Actuator-Systems NV/SA
 (Belgium & Luxembourg)
 Phone: +32 (0)9 230 01 09
 E-mail: beinfo@linak.be
 www.linak.be - www.fr.linak.be

Brazil
 LINAK Do Brasil Comércio De Atuadores Ltda.
 Phone: +55 (11) 2832 7070
 Fax: +55 (11) 2832 7060
 E-mail: info@linak.com.br
 www.linak.com.br

Canada
 LINAK Canada Inc.
 Phone: +1 502 253 5595
 Fax: +1 416 255 7720
 E-mail: info@linak.ca
 www.linak-us.com

Czech Republic
 LINAK C&S s.r.o.
 Phone: +42 058 174 1814
 Fax: +42 058 170 2452
 E-mail: info@linak.cz
 www.linak.cz - www.linak.sk

Denmark - International
 LINAK International
 Phone: +45 73 15 15 15
 E-mail: info@linak.com
 www.linak.com

Denmark - Sales
 LINAK DANMARK A/S
 Phone: +45 86 80 36 11
 Fax: +45 86 82 90 51
 E-mail: linak@linak-silkeborg.dk
 www.linak.dk

Finland
 LINAK OY
 Phone: +358 10 841 8700
 E-mail: linak@linak.fi
 www.linak.fi

France
 LINAK FRANCE E.U.R.L
 Phone: +33 (0) 2 41 36 34 34
 Fax: +33 (0) 2 41 36 35 00
 E-mail: linak@linak.fr
 www.linak.fr

Germany
 LINAK GmbH
 Phone: +49 6043 9655 0
 Fax: +49 6043 9655 40
 E-mail: info@linak.de
 www.linak.de

India
 LINAK A/S India Liaison Office
 Phone: +91 120 4531797
 Fax: +91 120 4786428
 E-mail: info@linak.in
 www.linak.in

Ireland
 LINAK UK Limited (Ireland)
 Phone: +44 (0)121 544 2211
 Fax: +44 (0)121 544 2552
 +44 (0)796 855 1606 (UK Mobile)
 +35 387 634 6554

(Republic of Ireland Mobile)
 E-mail: sales@linak.co.uk
 www.linak.co.uk

Italy
 LINAK ITALIA S.r.l.
 Phone: +39 02 48 46 33 66
 Fax: +39 02 48 46 82 52
 E-mail: info@linak.it
 www.linak.it

Japan
 LINAK K.K.
 Phone: 81-45-533-0802
 Fax: 81-45-533-0803
 E-mail: linak@linak.jp
 www.linak.jp

Malaysia
 LINAK Actuators Sdn. Bhd.
 Phone: +60 4 210 6500
 Fax: +60 4 226 8901
 E-mail: info@linak-asia.com
 www.linak.my

Netherlands
 LINAK Actuator-Systems B.V.
 Phone: +31 76 5 42 44 40 /
 +31 76 200 11 10
 E-mail: info@linak.nl
 www.linak.nl

New Zealand
 LINAK New Zealand Ltd
 Phone: +64 9580 2071
 Fax: +64 9580 2072
 E-mail: nzsales@linak.com.au
 www.linak.com.au

Norway
 LINAK Norge AS
 Phone: +47 32 82 90 90
 E-mail: info@linak.no
 www.linak.no

Poland
 LINAK Polska
 LINAK Danmark A/S (Spółka Akcyjna)
 Phone: +48 22 295 09 70 /
 +48 22 295 09 71
 E-mail: info@linak.pl
 www.linak.pl

Republic of Korea
 LINAK Korea Ltd.
 Phone: +82 2 6231 1515
 Fax: +82 2 6231 1516
 E-mail: info@linak.kr
 www.linak.kr

Slovakia
 LINAK SLOVAKIA S.R.O.
 Phone: +421 51 7563 444
 www.linak.sk

Spain
 LINAK Actuadores, S.L.U
 Phone: +34 93 588 27 77
 Fax: +34 93 588 27 85
 E-mail: esma@linak.es
 www.linak.es

Sweden
 LINAK Scandinavia AB
 Phone: +46 8 732 20 00
 Fax: +46 8 732 20 50
 E-mail: info@linak.se
 www.linak.se

Switzerland
 LINAK AG
 Phone: +41 43 388 31 88
 Fax: +41 43 388 31 87
 E-mail: info@linak.ch
 www.linak.ch - www.fr.linak.ch
 www.it.linak.ch

Taiwan
 LINAK (Shenzhen) Actuator systems Ltd.
 Taiwan Representative office
 Phone: +886 2 272 90068
 Fax: +886 2 272 90096
 E-mail: sales@linak.com.tw
 www.linak.com.tw

Turkey
 LINAK İth. İhr. San. ve Tic. A.Ş.
 Phone: +90 312 4726338
 Fax: +90 312 4726635
 E-mail: info@linak.com.tr
 www.linak.com.tr

United Kingdom
 LINAK UK Limited
 Phone: +44 (0)121 544 2211
 Fax: +44 (0)121 544 2552
 E-mail: sales@linak.co.uk
 www.linak.co.uk

DISTRIBUTORS

Argentina
 NOVOTEC ARGENTINA SRL
 Phone: 011-4303-8989 / 8900
 Fax: 011-4032-0184
 E-mail: info@novotecargentina.com
 www.novotecargentina.com

Colombia
 MEM Ltda
 Phone: +[57] (1) 334-7666
 Fax: +[57] (1) 282-1684
 E-mail: servicioalcliente@memltda.com.co
 www.mem.net.co

India
 Mechatronics Control Equipments India Pvt Ltd
 Phone: +91-44-2858484, 85
 E-mail: bala@mechatronicscontrol.com
 www.mechatronicscontrol.com

Indonesia
 PT. HIMALAYA EVEREST JAYA
 Phone: +6 221 544 8956,
 +6 221 544 8965
 Fax: +6 221 619 1925
 Fax (Sales): +6 221 619 4658
 E-mail: hejplastic-div@centrin.net.id
 www.hej.co.id

Israel
 NetivTech LTD
 Phone: +972 55-2266-535
 Fax: +972 2-9900-560
 Email: info@NetivTech.com
 www.netivtech.com

Singapore
 Servo Dynamics Pte Ltd
 Phone: +65 6844 0288
 Fax: +65 6844 0070
 E-mail: servodynamics@servo.com.sg

South Africa
 Industrial Specialised Applications CC
 Phone: +27 011 466 0346
 E-mail: gartht@isagroup.co.za
 www.isaza.co.za

United Arab Emirates
 Mechatronics
 Phone: +971 4 267 4311
 Fax: +971 4 267 4312
 E-mail: mechtron@emirates.net.ae