



ELEVATE™
Quick start guide for OMRON TM cobots

This quick start guide does not replace the user manuals of the included products.

1. Get your ELEVATE™ Modbus with an LC3 IC lifting column and accessory kit for OMRON

You will receive the following parts:



- Lifting column LC3 IC
- Mounting plate for Omron TM12/ TM14 cobots incl. screws to mount to the lifting column
- Base plate with screws to mount to the lifting column
- 5 m power cable
- 5 m signal cable
- Cable relief with screws for power and signal cable

2. Attach the Omron mounting plate and the base to the column with the included screws

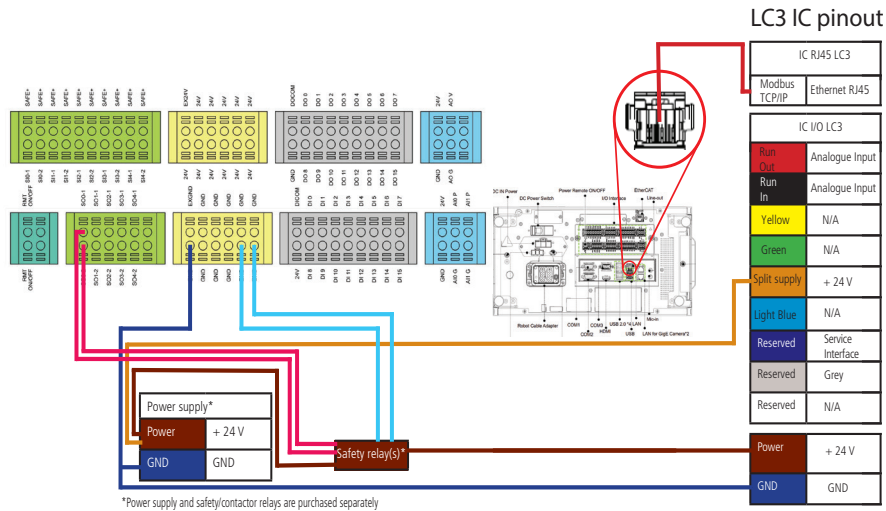
Make sure that the base of the column is proper mounted to the ground so the column will not tip over. It is important to use a solid ground since deflections on the ground influence the precision of the whole system.

3. Connect the column to the OMRON

Be aware that **ELEVATE Modbus** works with the ELEVATE components for TMflow. The wiring diagram only displays one possible way to integrate ELEVATE into a safe torque off system - a risk assessment for the whole system is required.

Remember to place common ground between the power supply, safety relay and the OMRON controller. ELEVATE is by default delivered without safety relay/contactors and power supply.

Omron wiring diagram for *ELEVATE Modbus**



*Ethernet cable is not included in the accessory kit.

4. Download the ELEVATE components for TMFlow from linak.com and install it on your TM cobot

Unzip the folder and past the folder on a USB stick. Make sure that the USB stick is named "TMROBOT". Import and activate the components on your cobot.

5. Set up the OMRON TM cobot

ELEVATE Modbus is delivered with the following default network setting:

IP address: 191.168.1.10

Port number: 502








Subnet mask: 255.255.255.0

Gateway: 192.168.1.1

Make sure that the cobot is set to the same network settings but with different IP address. Power cycle the lifting column in case you cannot find the column in your network. The network setting can be changes with Actuator Connect.

6. Get started with ELEVATE™

When all prior steps are successfully completed, you can start using the 7 ELEVATE components. In case you have changed the column's network settings, please update the networks setting for each component. Below you find an overview about the ELEVATE components for TMFlow:

	<p>Initialization: The column will completely run out and in.</p>	<p>This procedure is recommended to use after a restart of the whole system. The column will calibrate itself.</p>
	<p>Move Up: The column extends upwards to the endstop position and provides feedback when it is in position.</p>	<p>Speed, acceleration and deceleration of this movement can be adjusted at the setting of this component. Speed can be adjusted with the variable Lift_LINAK_Elevate_V001_MoveXX1_var_speed and the integer represents the speed in percent. Acceleration and deceleration can be change with the string variable (Lift_LINAK_Elevate_V001_MoveXX1_var_Acceleration/Deceleration). You have 3 options "fast" = 750ms; "normal" = 1500ms or "slow" = 2000ms.</p>
	<p>Move Down: The column retracts downwards to the endstop position and provides feedback when it is in position.</p>	
	<p>Move Target Position: The column moves to the desired position and provides feedback when it is in position.</p>	<p>Speed, acceleration and deceleration can be adjusted like the Move Up/Down components. The target position can be inserted over the 4th variable of the component (Lift_LINAK_Elevate_V001_MoveTargetPos1_var_Position). The integer value is equal to 0.1mm (e.g. 750 = 75mm)</p>
	<p>Get Position: The column returns its current position.</p>	<p>The component comes already with the variable Lift_LINAK_Elevate_V001_GetPosition1_var_ActualPosition. The value of this variable is equal to 0.1mm (e.g. 750 = 75mm). You can also use other variables with this component.</p>
	<p>Get Status: The column returns its current status.</p>	<p>The different status of the column can be: EOS_In (endstop inwards), EOS_Out, Overcurrent, Running_In, Running_Out; Hearbeat_Needed. For more information see MODBUS TCP/IP user manual.</p>
	<p>Get Error: The column returns its last error.</p>	<p>More information about the error codes can be found in the MODBUS TCP/IP user manual.</p>

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