

Connection device sample of Lexium Cobot via

GP-Pro EX Version

TVDA-#21-SchneiderCobot-EN_1.0

Revision History

No.	Date	Descriptions
Rev1.0	January 30, 2026	New

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As part of a group of responsible, inclusive companies, we are updating our communications that contain non-inclusive terminology. Until we complete this process, however, our content may still contain standardized industry terms that may be deemed inappropriate by our customers

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Safety Information

Important Information

NOTICE

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a "Danger" or "Warning" safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material. A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation and has received safety training to recognize and avoid the hazards involved.

About the Book



At a Glance

Document Scope

This manual describes how to use this product.

Validity Note

This documentation is valid for this product.

The technical characteristics of the device(s) described in this manual also appear online at

<http://www.proface.com>

The characteristics presented in the present document should be the same as those that appear online. In line with our policy of constant improvement we may revise content over time to improve clarity and accuracy. In the event that you see a difference between the document and online information, use the online information as your reference. Registered Trademarks Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Product names used in this manual may be the registered trademarks owned by the respective proprietors.

Related Documents

You can download the manuals related to this product, such as the software manual, from our support site at

<https://www.proface.com/en/download/search>

Product Related Information

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both this product and the power supply prior to installing or removing the product.
- Always use a properly rated voltage sensing device to confirm power is off where and when indicated.
- Replace and secure all covers or elements of the system before applying power to this product.
- Use only the specified voltage when operating this product.

Failure to follow these instructions will result in death or serious injury.

Critical alarm indicators and system functions require independent and redundant protection hardware and/or mechanical interlocks. When you cycle power, wait at least 10 seconds after it has been turned off. If this product is restarted too quickly, it may not operate correctly. In the event the screen cannot be properly read, for example, if the backlight is not functioning, it may be difficult or impossible to identify a function. Functions that may present a hazard if not immediately executed, such as a fuel shut-off, must be provided independently of this product. The machine's control system design must take into account the possibility of the backlight no longer functioning and the operator being unable to control the machine or making mistakes in the control of the machine.

WARNING

LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop, power outage and restart.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.
- Observe all accident prevention regulations and local safety guidelines.
- Each implementation of this product must be individually and thoroughly tested for proper operation before being placed into service.
- The machine control system design must take into account the possibility of the backlight no longer functioning and the operator being unable to control the machine or making errors in the control of the machine.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

For additional information, refer to NEMA ICS 1.1 (latest edition), "Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control" and to NEMA ICS 7.1 (latest edition), "Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable-Speed Drive Systems" or their equivalent governing your particular location.

WARNING

UNINTENDED EQUIPMENT OPERATION

- The application of this product requires expertise in the design and programming of control systems. Only persons with such expertise should be allowed to program, install, alter, and apply this product.
- Follow all local and national safety standards.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

WARNING

UNINTENDED EQUIPMENT OPERATION

- Do not use this product as the only means of control for critical system functions such as motor start/stop or power control.
- Do not use this equipment as the only notification device for critical alarms, such as device overheating or overcurrent.
- Use only the software provided with this product. If you use another software, please confirm the operation and safety before use.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Cybersecurity Best Practices

To help keep your Pro-face products secure and protected, we recommend that you implement the cybersecurity best practices.

Following the recommendations may help significantly reduce your company's cybersecurity risk.

For the recommendations, refer to the following URL.

<https://www.pro-face.com/trans/en/manual/1087.html>

Notes on safe operation

1. Build a secure network to prevent unauthorized access

- Build a communication environment using encrypted communication. (For example: VPN)
- Make sure your network is secure before establishing communication and transferring data over Ethernet.
- Select a transfer option that is not based on Ethernet communication. (For example: USB cable or external storage)
- Open the data communication port only when using a communication service.
- Protect your computer with a firewall and use the computer on a trusted network.

2. Prevent unauthorized operations from third parties

- Use Windows security features such as password settings, automatic logout, and so on.
- If you use a Windows administrator account, define secure passwords and security settings.
- Use the display unit's security feature.
 - Use the automatic logout feature.
 - Provide the security level to unlock to a limited number of users only.
 - To prevent unauthorized communication between the display unit and PC, set up a connection key.
- IPC Series, PC/AT
 - Operate the run time on trusted computers only.
 - Use Windows security features such as password settings, automatic logout, and so on.
 - Set secure passwords and security for your projects.

3. Protect against information tampering

- To protect your computer and enhance security settings, use the following guidelines which are based on cybersecurity best practices (including antivirus software, operating system updates, strong password policies, and application whitelisting software).

<https://www.pro-face.com/trans/en/manual/1087.html>

-
- Manage your own data carefully.
 - Apply a password to your project for protection.
 - When using USB cable or Ethernet transfer options, from [Send/Receive Project File] enable [Password].
 - Use trusted computers only.
 - In a local network (LAN) environment, prepare a secure communication environment to prevent third party intervention.
 - As password setting data includes security information, store in a secure environment.

Conditions of use

The intellectual property rights for the files provided by our company belong to us.

Downloaded files and the data extracted from those files are not guarantees of our product and system specifications. Please be aware of this fact. Use this system at the responsibility of the customer.

In any case, this not intended as a warranty for any work for a system that makes use of the data on these screens. Any modifications made to this service by a customer are entirely at the responsibility of the customer. We are not responsible for damage caused by using this system including modification and diversion, loss of opportunity for customers due to failure of our product, lost profit, damage caused by special circumstances with or without our forecast, any secondary damage, accident compensation, damage to our products, and guarantees for other work.

Please be aware that we cannot respond to any inquiries for the purpose of modifying these data.

The contents and information in the data on these screens and materials are subject to change without prior notification.

If there are any differences between the project file and the materials, the preference is for the project file to be used ahead of the materials. For support and warranty of products from 3rd party, please contact the manufacturer / distributor of the product.

We are neither responsible nor guarantee for failure of product, lost profit and damage caused by products of 3rd party and guarantees for other work.

Overview

Lexium Cobot is the collaborative robot offered by Schneider Electric. To program the robot, EcoStruxure Cobot Expert App is necessary. The Cobot controller offer several communication protocols (Modbus TCP, EtherNet/IP, PROFINET, ...) to exchange data with different equipment (PLC, HMI,).

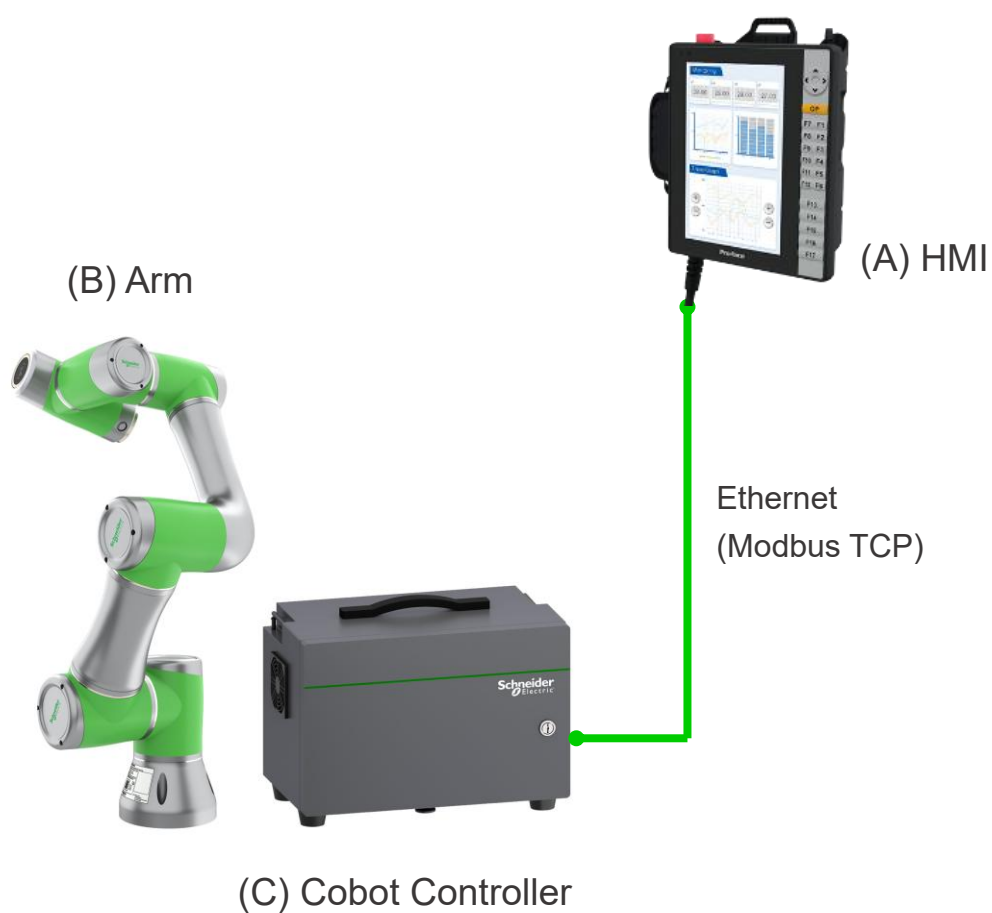
This TVDA is designed to connect Lexium Cobot with GPH6000 series. It provides guidance on how to use predefined Cobot Expert programs and HMI applications developed for interfacing with Lexium Cobot. Both the programs and applications are designed as customizable templates that can be adapted to specific Cobot use cases.

What is provided

What is provided in this system is shown below.

- GP-Pro EX project file
 - Connection sample of Lexium Cobot with GPH6400.prx
 - Connection sample of Lexium Cobot with GPH6500.prx
- Lexium Cobot configuration files
 - lxmcsettings.tar.gz (Configuration file)
 - Cobot_connect_v1.zip (Program file)
- Document (this document)

Connection Configuration



Device

sym	Device	Manufacturer /Supplier	Model	Note
A	HMI (*1)	Schneider Electric Japan Holdings	PFXGPH6400WAD or PFXGPH6500WCD	USE GP-Pro EX Ver.5.01 or later
B	Lexium Cobot Arm	Schneider Electric	LXMRLxxS0000	
C	Lexium Cobot Cobot Controller	Schneider Electric	LXMRLxxC1000 or LXMRLxxC2000	

(*1) When using other HMIs, it is necessary to adjust the screen by converting the resolution according to the resolution.

Software

sym	Software	Manufacturer/Supplier	Model	Note
A	Screen-creation software	Schneider Electric	GP-Pro EX	V 5.01.000 or later

NOTE

Web site of the device to be used.

•GP-Pro EX

https://www.proface.com/en/hmi_design_studio/gpproex/page/installer

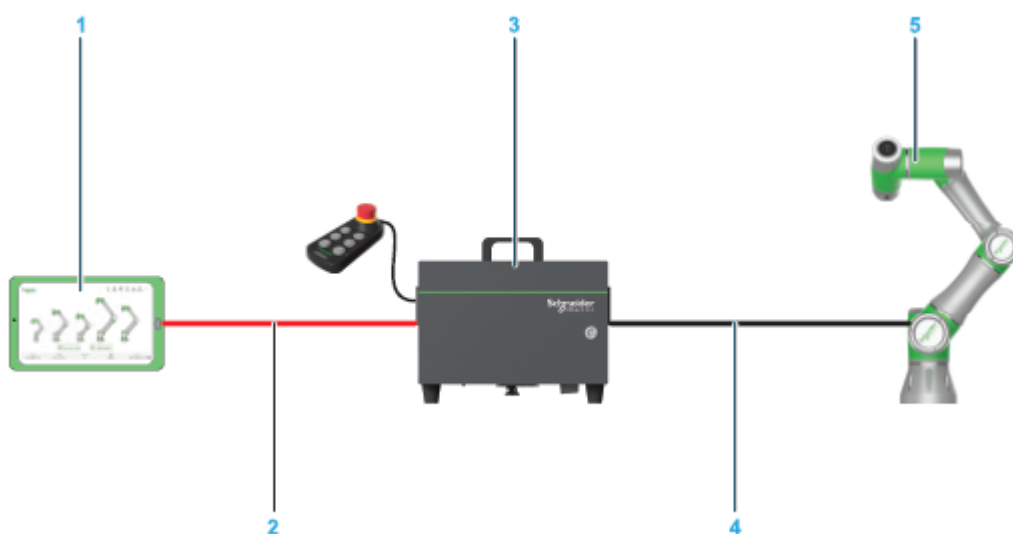
•GPH6000 Series

<https://www.proface.com/en/product/hmi/gph6000/top>

•Lexium Cobot

<https://www.se.com/us/en/product-range/131604407-lexium-cobot/#overview>

Specifications of connected devices



System Requirements

Number	Device name	Device type
1	Operator terminal (not included)	–
2	WiFi connection or direct connection by Ethernet network cable (not included)	–
3	Lexium Cobot Controller and Control Stick	LXMRL03C1000
4	Connection Cable	included in Lexium Cobot Arm
5	Lexium Cobot Arm	LXMRL03S0000

Mechanical and Electrical Data of the Lexium Cobot Controller

Category	Parameter	Unit	LXMRL03C1000
General Data	Communication	–	TCP/IP, Modbus TCP, Modbus RTU
	Size (W x H x D)	mm (in)	410 x 308 x 235 (16.14 x 12.13 x 9.25)
Electrical data	I/O ports	–	Digital inputs: 16 Digital outputs: 16 Analog inputs/outputs: 2
	I/O power	V	24
	Power consumption for a typical pick & place cycle with 3 kg (6.6 lb)	kW (hp)	0.15 (0.201)
	Power at 50/60 Hz	V ac	100 ... 240
	Pre-fuse mains power	A	10
Mechanical data	Ingress of protection	–	IP44
Weight	–	kg (lb)	13 (28.7)
Material	External casing	–	Sheet steel

Key features and user Interface

The proposed solution is a customizable template designed to streamline interaction with the Lexium Cobot. It offers a range of built-in features that can be tailored to specific operational needs, including:

- Power management: turn the Lexium Cobot on/off and enable/disable it.
- Modbus I/O control: manage analog (INT and FLOAT) and digital inputs/outputs.
- Program execution: run, stop, pause, and resume Cobot programs.
- Real-time monitoring: access live data such as joint positions, speeds, voltages, currents, and TCP (Tool Center Point) position and speed.
- Manual control: perform joint and cartesian movements manually, reach predefined positions.

Screen Transition Diagram

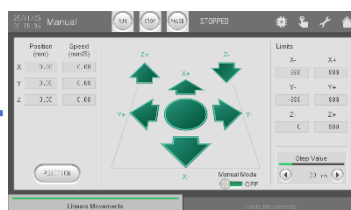
(Home)



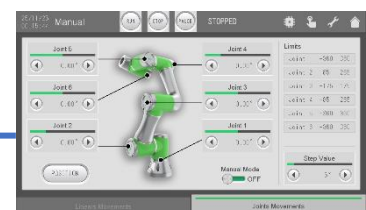
(Program)



(Manual - Linears)



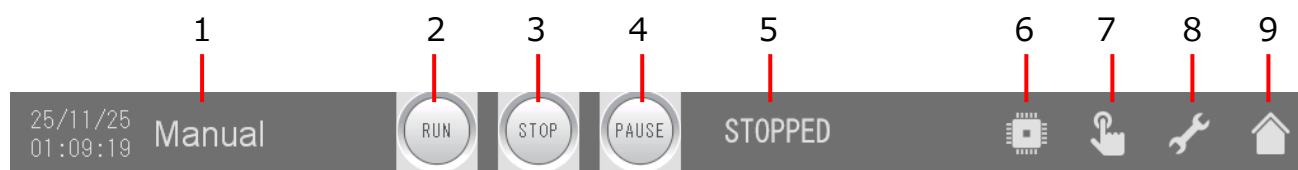
(Manual - Joints)



(Maintenance)

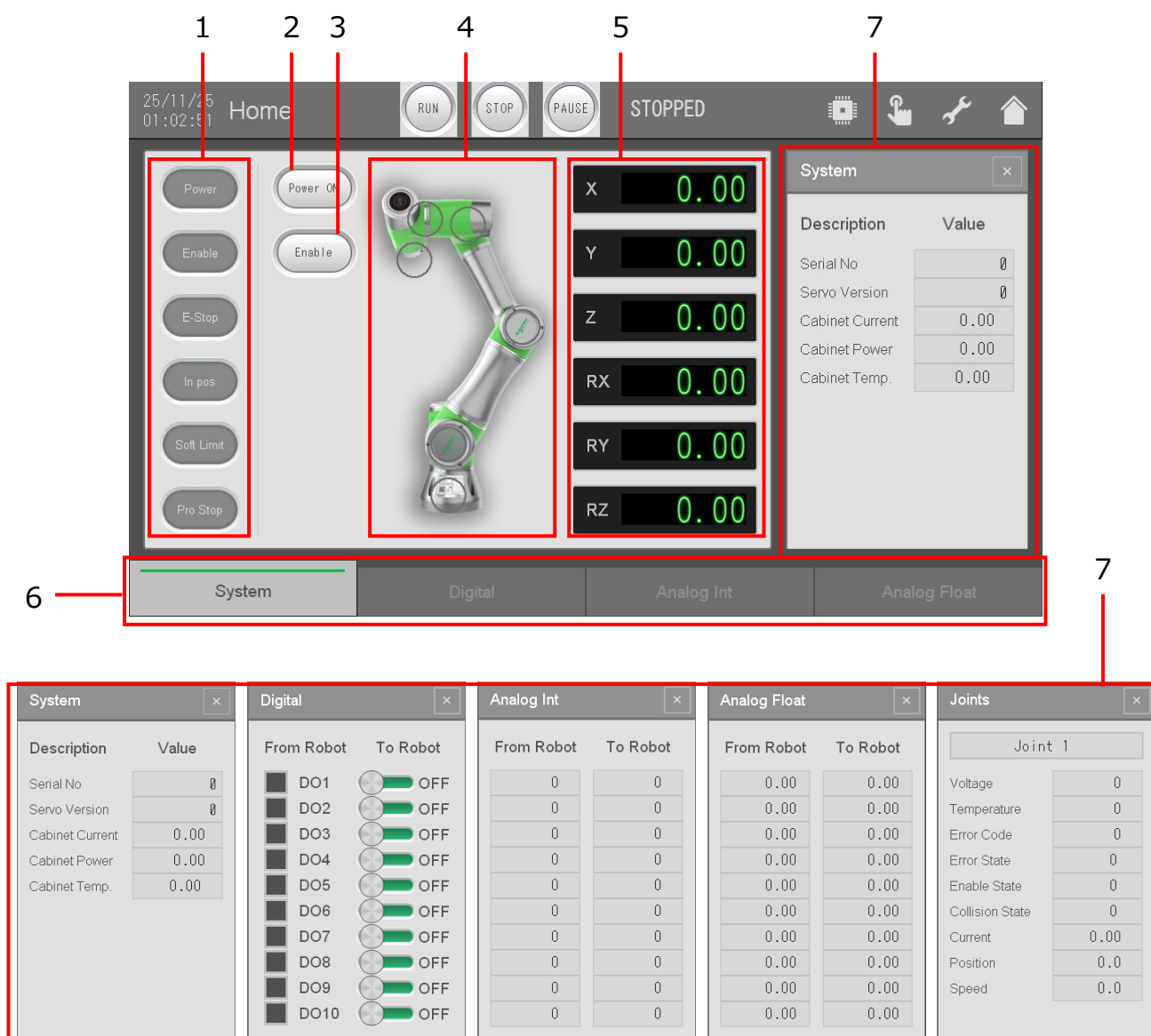


B0190 Header



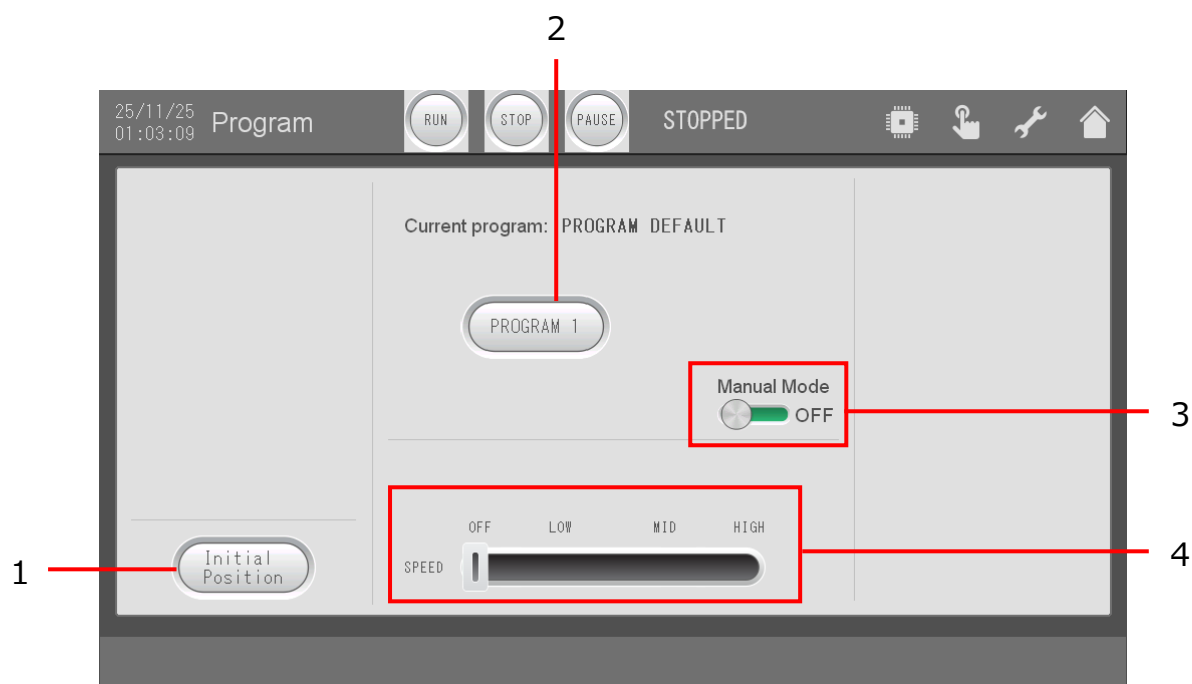
Number	Description	Function
1	Screen name	Displays the screen name.
2	Run	Launches the default program on the Lexium Cobot controller.
3	Stop	Stops the currently running program.
4	Pause / Resume	Pauses or resumes the current program.
5	Program State	Displays the current state of the program: <ul style="list-style-type: none">• Stopped: Program is loaded but not running• Running: Program is actively running• Error: An error occurred during execution
6	Program	Switch to the program screen.
7	Manual	Switch to the Manual screen.
8	Maintenance	Switch to the Maintenance screen.
9	Home	Switch to the Home screen.

B0100 Home



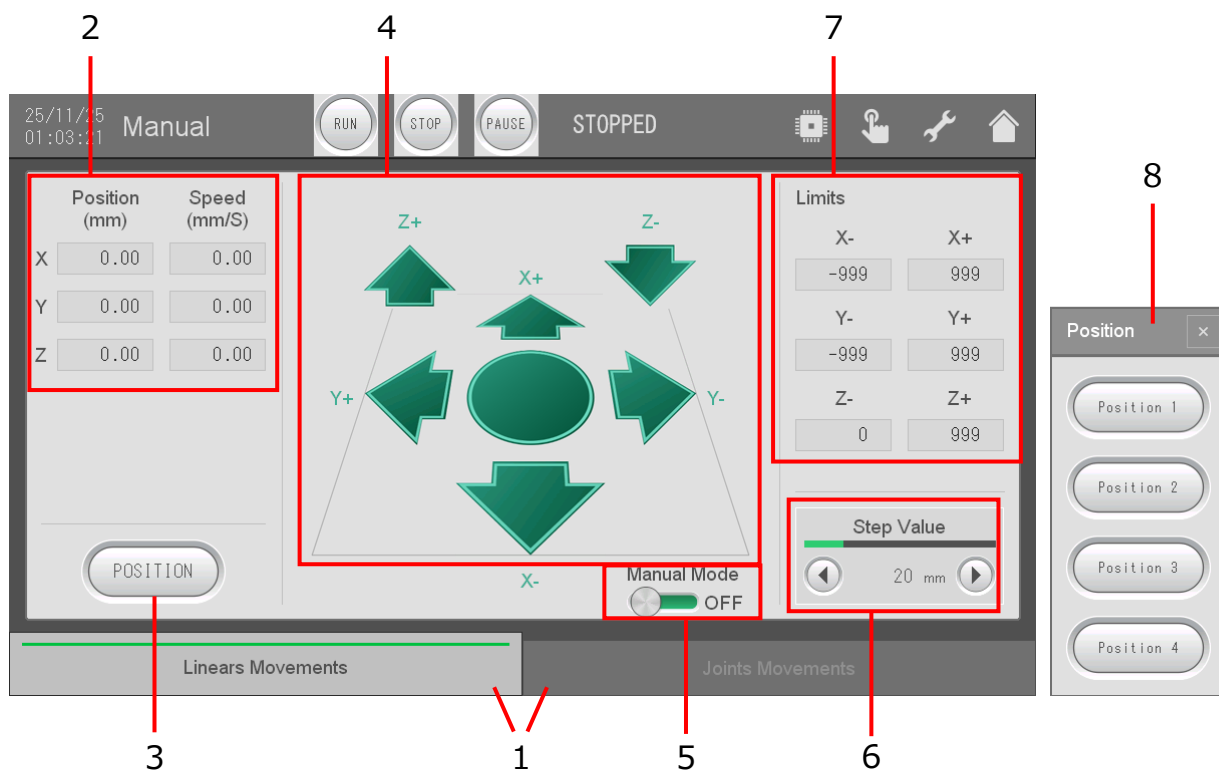
Number	Description	Function
1	Cobot State	Displays the current state of the Lexium Cobot arm.
2	Power ON / Power OFF	Powers the Lexium Cobot arm ON or OFF.
3	Enable / Disable	Enables or disables the Lexium Cobot arm.
4	Cobot information	Displays detailed information for each joint.
5	TCP position	Shows the current TCP position in the selected tool coordinate system.
6	Modbus TCP IO	Manage Modbus TCP I/O (digital and analog).
7	Data Display	Displays the System, Digital, Analog Int, Analog Float, and Joints values.

B0110 Program



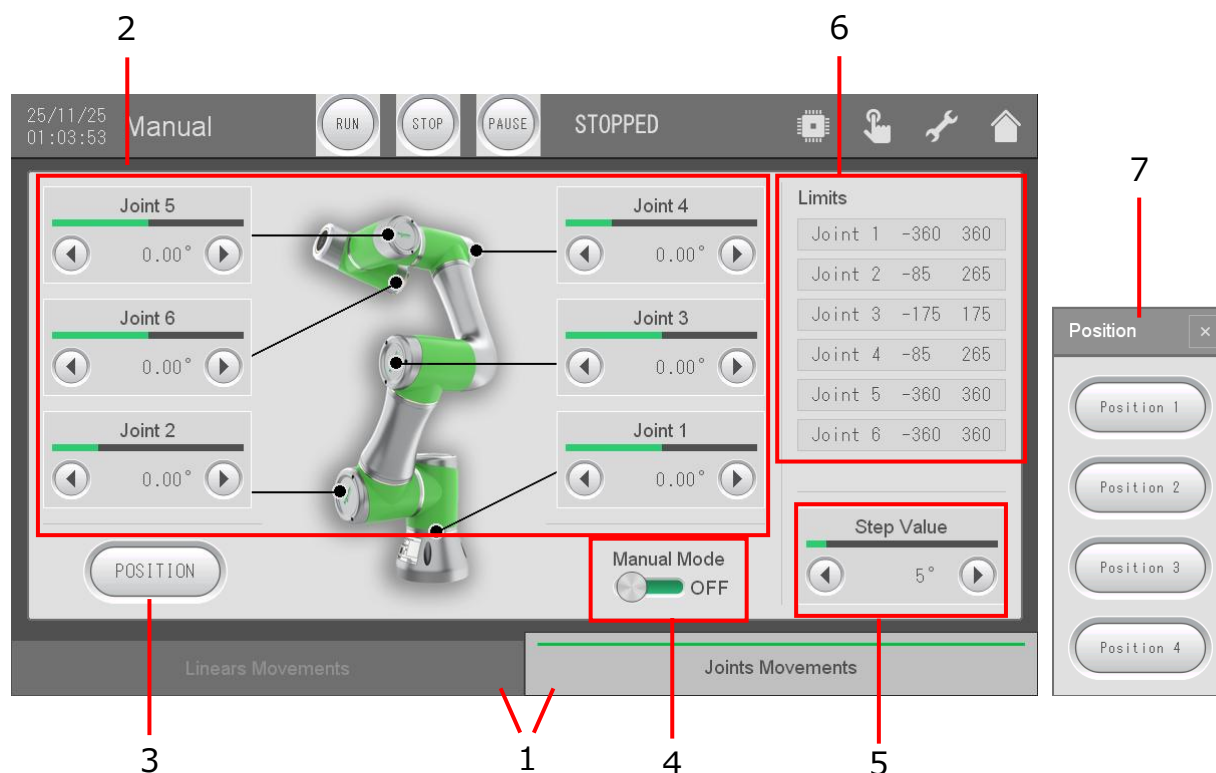
Number	Description	Function
1	Initial position	Sends the Lexium Cobot Arm to its initial position. Note: The program must be in a stopped state to use this feature.
2	PROGRAM 1	Select Program 1 of the Lexium Cobot.
3	Manual Mode	Activates or deactivates manual control mode. Note: The program must be in a running state to enable this feature.
4	SPEED	Change the speed level: Low, Medium or High

B0120 Manual - Linears



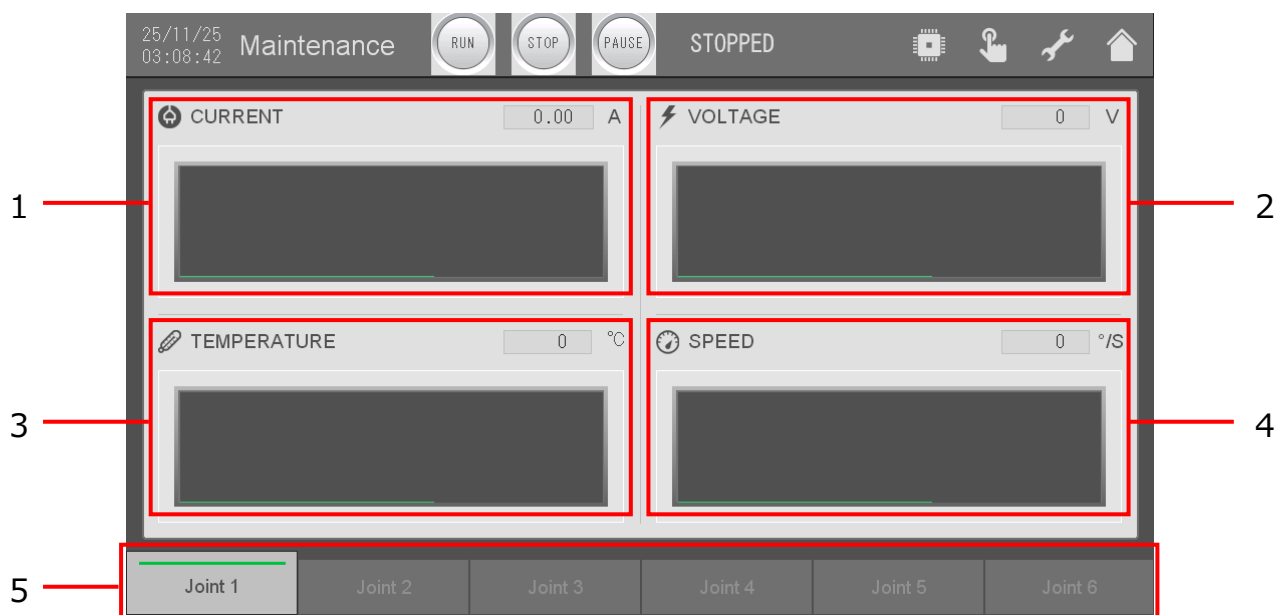
Number	Description	Function
1	Manual movement	Toggle between linear (Cartesian) and joint-based manual movement modes.
2	TCP position and speeds	Displays the current Tool Center Point (TCP) position and speed by axis in the selected tool coordinate system.
3	POSITION	Display the POSITION switch dialog.
4	TCP movements	Move the TCP along individual axes. Note: Set the movement step value first (see item 6).
5	Manual Mode	Activates or deactivates manual control mode. Note: The program must be in a running state to enable this feature.
6	Linear step	Defines the step size for TCP movements in linear mode.
7	TCP limits	Movements limits for TCP in linear manual movements.
8	Predefined positions	Move the cobot to predefined positions configured in the app (Ecostruxure Cobot Expert).

B0121 Manual - Joints



Number	Description	Function
1	Manual movement	Toggle between linear (Cartesian) and joint-based manual movement modes.
2	Joints movements	Perform manual movements joint by joint. Note: Set the movement step value first (see item 4).
3	POSITION	Display the POSITION switch dialog.
4	Manual Mode	Activates or deactivates manual control mode. Note: The program must be in a running state to enable this feature.
5	Joint step	Defines the step size for joint movements in manual mode.
6	Joints limits	Displays the minimum and maximum allowed positions for each joint.
7	Predefined positions	Move the cobot to predefined positions configured in the app (Ecostruxure Cobot Expert).

B0130 Maintenance



Number	Description	Function
1	CURRENT	Display a graph of the selected joint's CURRENT over the last 30 seconds and show the current value of that joint's CURRENT.
2	VOLTAGE	Display a graph of the selected joint's VOLTAGE over the last 30 seconds and show the current value of that joint's VOLTAGE.
3	TEMPERATURE	Display a graph of the selected joint's TEMPERATURE over the last 30 seconds and show the current value of that joint's TEMPERATURE.
4	SPEED	Display a graph of the selected joint's SPEED over the last 30 seconds and show the current value of that joint's SPEED.
5	Change the joint displayed	Update the graph to show the selected joint's current for the last 30 seconds and refresh the display to show its current value.

Importing program and configuration files in EcoStruxure

Cobot Expert

1 . Importing configuration files

Before importing the configuration file, it is strongly recommended to first create a backup of the controller by exporting its current profile. This ensures that you can restore the original settings if needed.

Exporting Profiles

Step	Action
1	In Settings > System Setting > System Backup > Export profiles , select the profiles to be exported
2	Click Export File .
3	In the Open dialog box, choose a location for the file. NOTE: Already existing profile archives are overwritten.
4	Click Confirm . Result: The export is finished. The filename of your exported profile archive is <i>lxmcsettings.tar.gz</i> .

Once the backup is complete, you can proceed with importing the configuration file (lxmcsettings.tar.gz) by following these steps:

Importing Profiles

Importing configuration files for different Lexium Cobot Controller versions can cause controller errors. When you import configuration files, you must keep the versions of the controllers consistent with the configuration files.


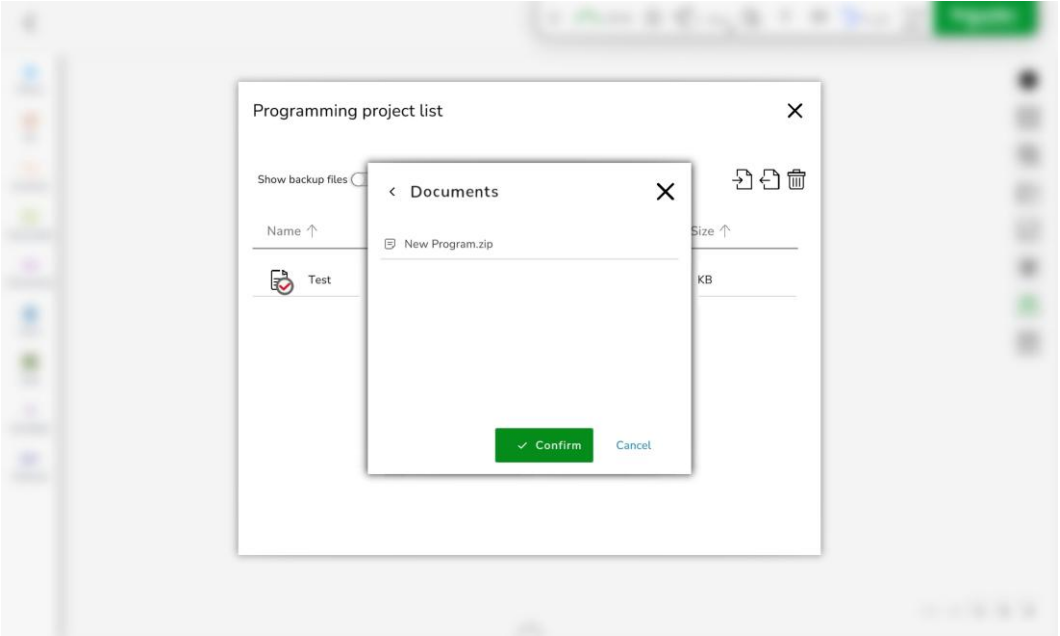
Step	Action
1	In Settings > System Setting > System Backup , click Import File . Result: The File Selection dialog box is displayed.
2	Select the profile to be imported.
3	Click Confirm . Result: The Import File prompt is displayed. If you proceed, the existing profile will be overwritten with the imported one.
4	Click Confirm . Result: The profile is imported.
5	Restart the Lexium Cobot Controller. Result: The import is finished.

2. Importing program files

Import the file `cobot_connect_vxx.zip` by following the steps below to import the program files:

Importing a Program

To import an exported program to the connected Lexium Cobot Controller, perform the following steps:

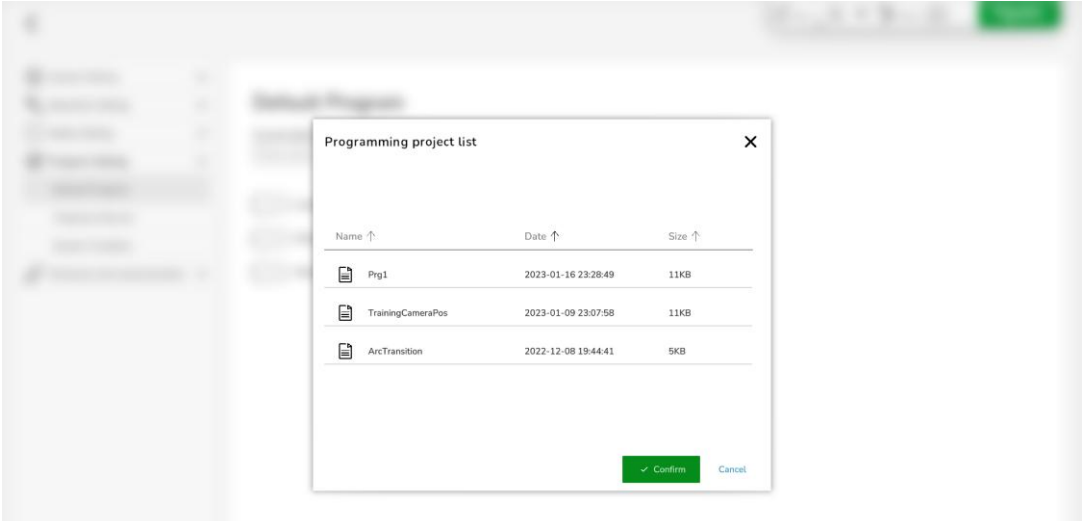
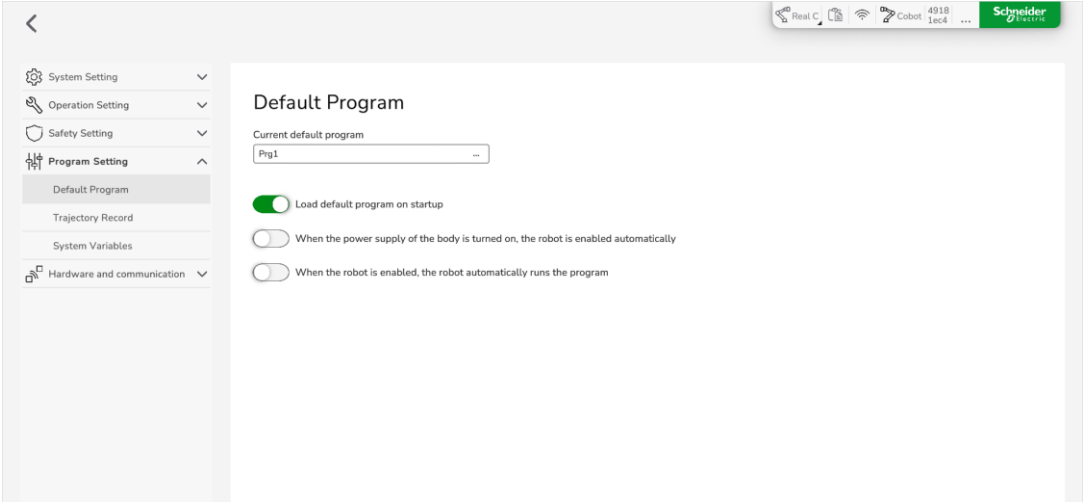
Step	Action
1	<p>In the feature bar, select Programming Control. Then, click the Open icon on the right of the editing area.</p> <p>Result: The programs saved in the Lexium Cobot Controller are displayed.</p>
2	<p>In the Programming project list dialog box, click the Import icon:</p>  <p>Result: The file manager dialog box is displayed.</p> 
3	<p>Select the program to be imported.</p>
4	<p>Click Confirm.</p> <p>Result: The program is imported to the Lexium Cobot Controller and is added to the Programming project list.</p>

3. Designate default program

Designate the program `cobot_connect` as default and choose option Load default program on startup.

Designating a Default Program

To designate a default program, perform the following steps:

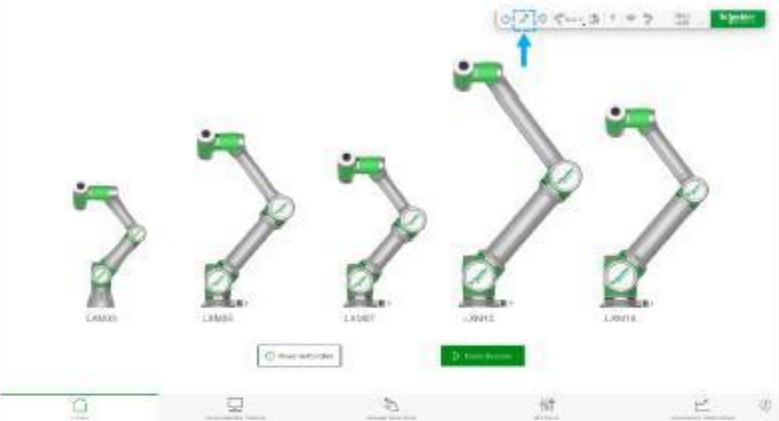
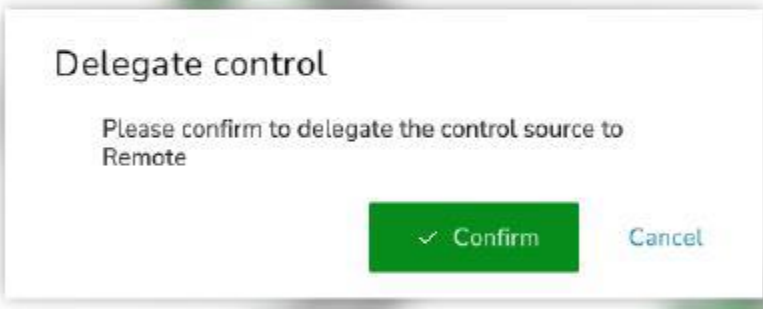

Step	Action
1	<p>In Settings > Program Setting > Default Program, click the Current default program box.</p> <p>Result: The Programming project list is displayed:</p> 
2	Select a program and click Confirm .
3	<p>Optionally, select the following options by activating the respective toggles:</p> <ul style="list-style-type: none">• Load default program on startup• When the power supply of the body is turned on, the robot is enabled automatically• When the robot is enabled, the robot automatically runs the program <p>NOTE: Only if you activate the option Load default program on startup, the default program is loaded at startup.</p> <p>Result: The default program is set with the selected options.</p> 

4. Delegating the Control

You need to delegate the control Source to Remote Control to be able to drive the cobot with the HMI.

Delegating the Control Source to Remote Control

To delegate the control source to Remote Control, perform the following steps:

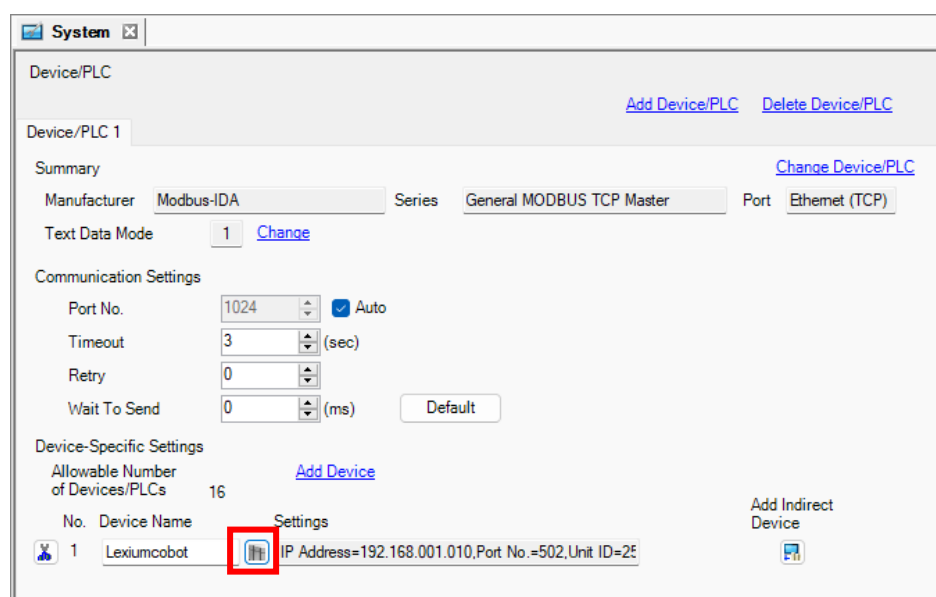
Step	Action
1	Verify that EcoStruxure Cobot Expert is connected to the Lexium Cobot Controller.
2	<p>Click the Remote Control button in the top menu.</p>  <p>Result: The confirmation dialog is displayed.</p> 
3	<p>Click Confirm.</p> <p>Result: The control source is delegated to remote and the Remote Control overlay is displayed.</p> 

Communication Settings of GP-Pro EX

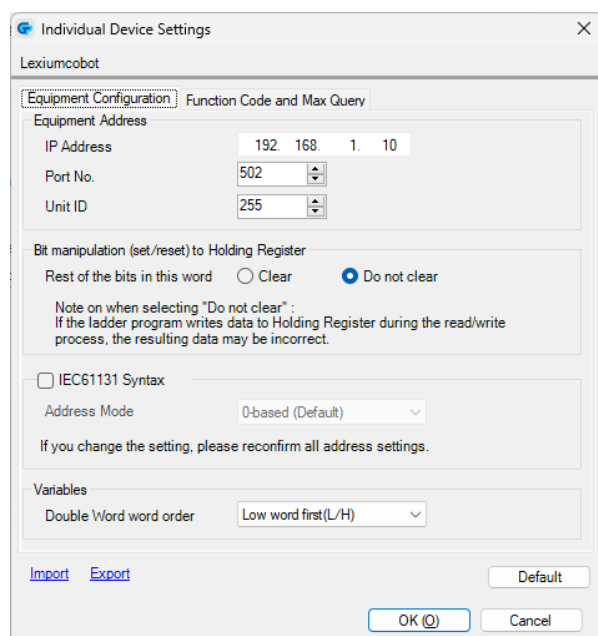
1) Set the Manufacturer, Series, and Port in the Device/PLC dialog as follows.

Item	Contents
Manufacturer	Modbus-IDA
Series	General MODBUS TCP Master
Port	Ethernet (TCP)

2) Click the switch to display the [Individual Device Settings] dialog box.



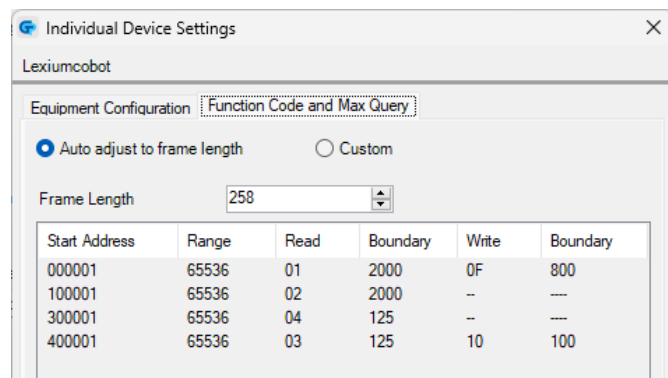
3) Set each item in the Equipment Configuration tab of the displayed Individual Device Settings window as follows.



Item	Contents
IP Address	192.168.1.10
Port No.	502
Unit ID	255
Bit manipulation to Holding Register	Do not clear
IEC61131 Syntax	Unchecked
Variables Double Word word order	Low word first (L/H)

4) Set each item in the Function Code and Max Query tab as follows.

The items in the Function Code and Max Query tab do not require any modification from their default settings.



Individual Device Settings

Lexiumcobot

Equipment Configuration | **Function Code and Max Query**

☒ Auto adjust to frame length ☐ Custom

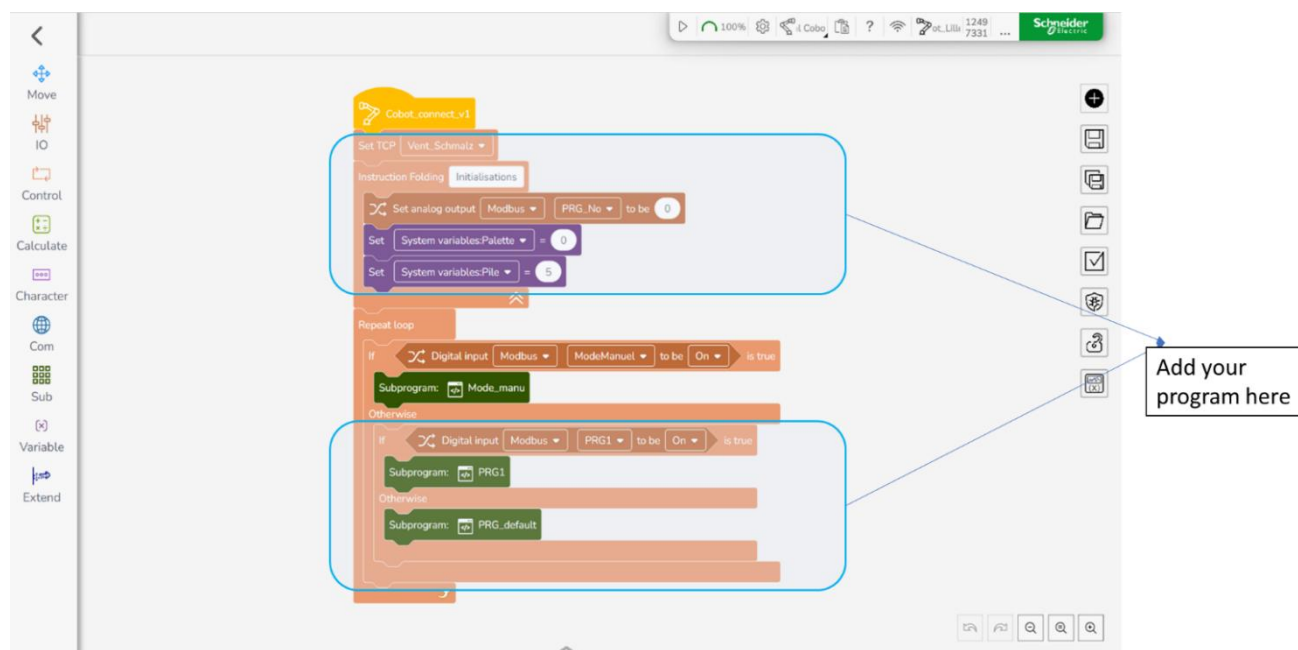
Frame Length: 258

Start Address	Range	Read	Boundary	Write	Boundary
000001	65536	01	2000	0F	800
100001	65536	02	2000	--	----
300001	65536	04	125	--	----
400001	65536	03	125	10	100

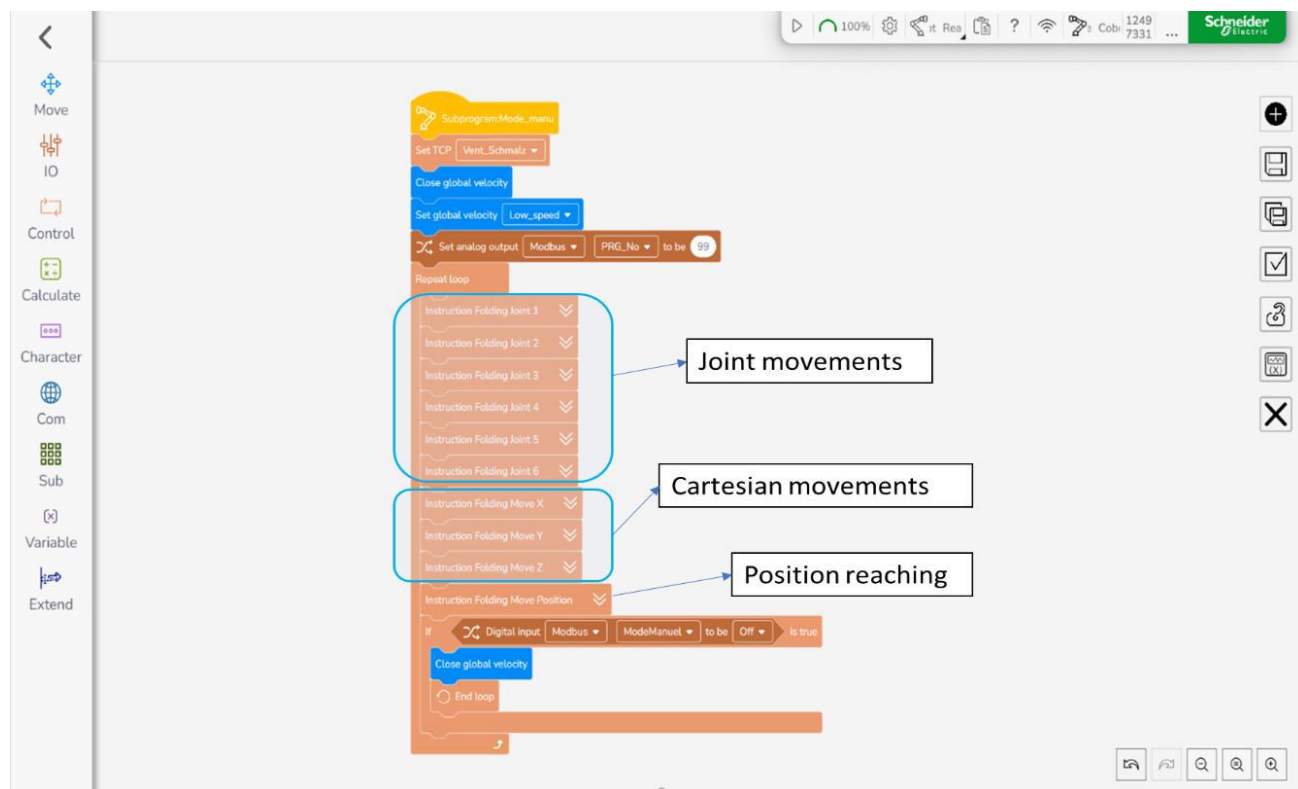
How to use the template

The Ecostruxure Cobot Expert program is designed to serve as a template. You can add your program to the template.

Main program



Manual program



How to use the project file

When using this project file (hereinafter referred to as “the file”), be sure to confirm the following details.

How to combine with other files

On GP-Pro EX, select [Project] → [Utilities] → [Copy from Another Project] to do it.

But there are some items to be aware of, such as overlapping screen numbers.

Screen numbers when combining

When there are duplicate screen numbers, overwriting might occur.

When combining the file with the currently created file, pay attention to the screen numbers.

Refer to the Screen List for the screen numbers used in the file.

When combining with use of [Copy from Another Project], it's possible to designate a copy destination screen number before starting to copy. Either designate a screen number at the time of copy or change the screen number before combining.

When changing the screen number, be sure to also change the screen numbers specified in the screen change switch and the script.

Note that unexpected operation may occur unless the screen number of screen change destination is corrected to the changed number.

Changing addresses

When the address of the connected device that is specified on the screen is changed, no proper operation is executed. Do not change it.

Alarm Settings when combining

The Alarm feature is not used in the file.

Sampling Settings when combining

The Sampling feature is used in the file.

Text Settings when combining

The Text feature is not used in the file.

Editor version for creating the file

The file was created with GP-Pro EX Ver5.01.000.