



Operation Manual

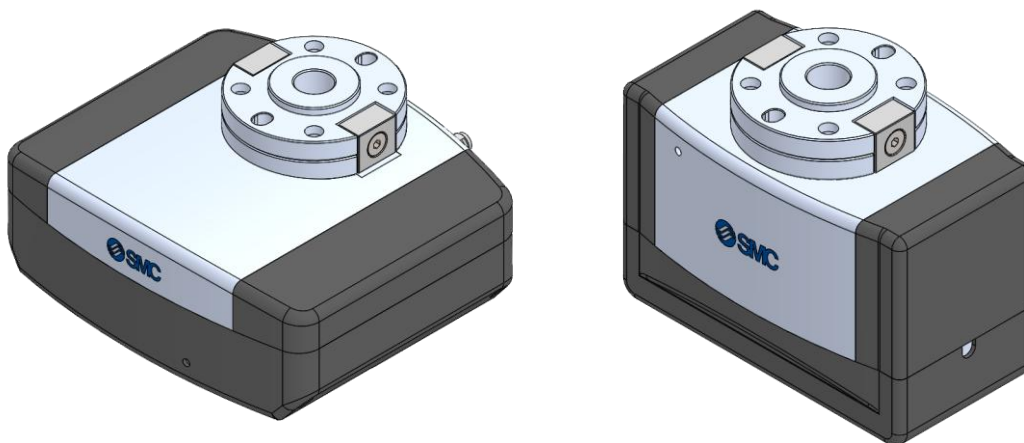
PRODUCT NAME

Electric Gripper for Collaborative Robots

MODEL / Series / Product Number

LEHR Series

—CRX Plug-in Software—



SMC Corporation

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Software (CRX Plug-in Software)

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1 How to Download the Software

Please download the software (CRX Plug-in Software) from the SMC website
(URL: <https://www.smcworld.com>) and save it in a USB memory device.

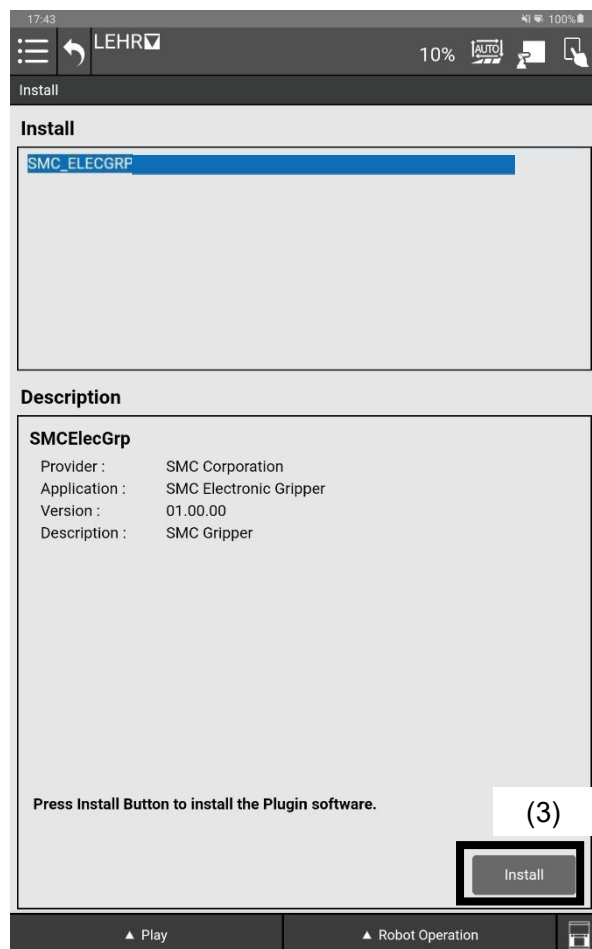
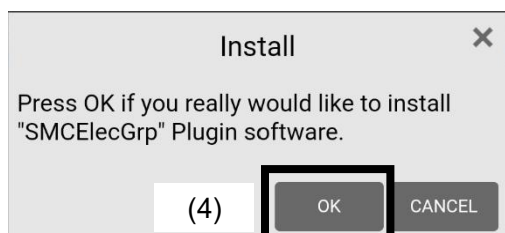
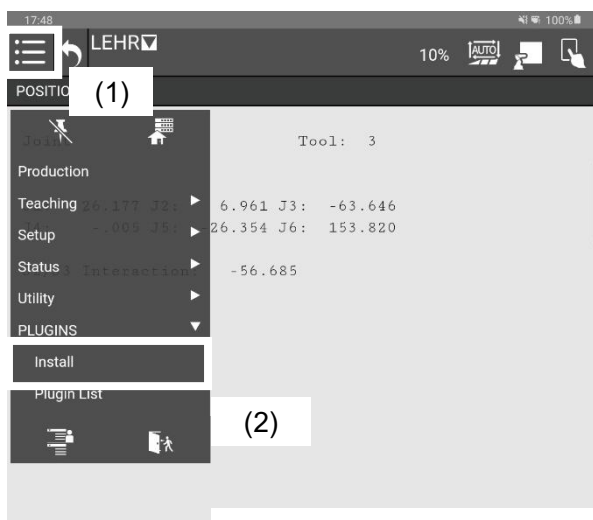
2 Install CRX Plug-in Software

2.1 Robot control device software version

If the software for the robot control device is V9.40P / 37 version or earlier, update to the latest version V9.40P / 38 version or later before installing the plug-in software.

2.2 Install

1. Insert the USB memory device in which the CRX Plug-in Software is stored into the robot control unit.
2. Select the menu icon and select [install] under [PLUGINS] (1) (2).
3. The file name of the CRX Plug-in Software installation package file on the inserted USB memory device and a detailed description of the CRX Plug-in Software will be displayed. Select the "Install" button at the bottom right of the screen (3).
4. A screen will appear to confirm the installation. Click the "OK" button to start the installation process of the CRX Plug-in Software (4).
5. When the installation process is complete, a screen will appear guiding you to restart the robot.
Turn the robot off and on and the installation operation is complete.



3 Basic settings for electric grippers

Here, communication connections for electric grippers and the status signal output settings are made.

1. Select the menu icon and select [SMC LEHR] under [PLUGINS]. (1) (2)

2. Grip failure setting. (3)

☒: In the event of a grasping failure, an alarm is generated and the program is stopped.

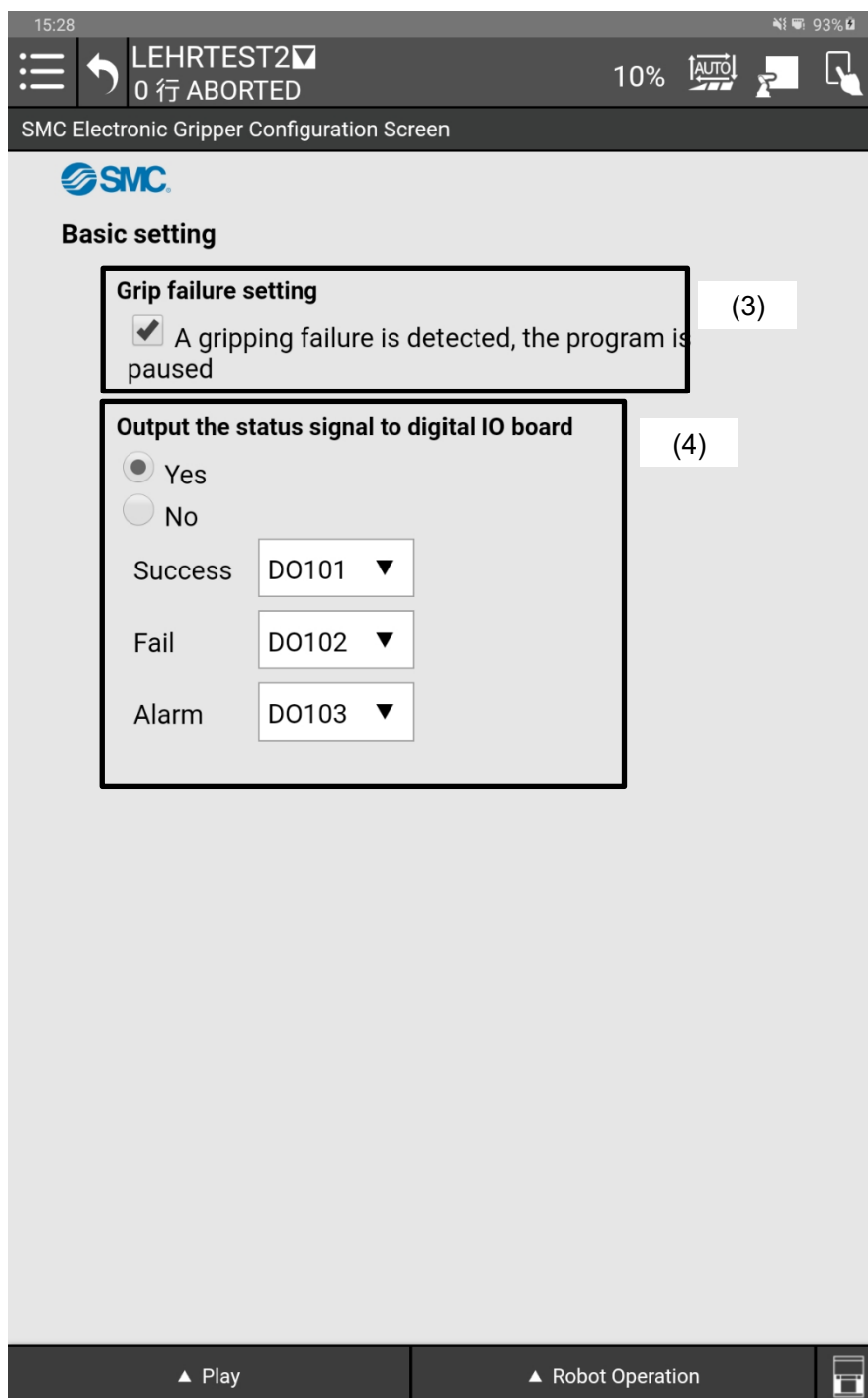
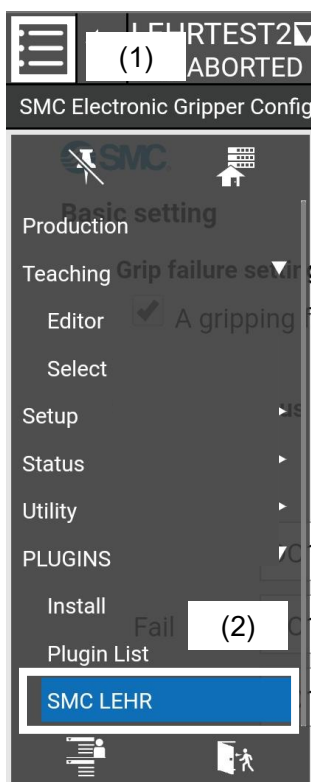
☐: The program continues even if the grip fails. However, a warning message occurs.

3. When "grip success", "grip failure", or "alarm" is detected, a status signal can be output to the digital output port (DO).

Yes: "Grip Success", "Grip Failure", and "Alarm" status signals are output to the digital output port.

Select the output destination for each status in the range of DO[101]~[107].

No: It does not output to the digital output port.



4 Dedicated Instruction

The CRX Plug-in Software has two dedicated instruction (LEHR Activate , LEHR Motion).

- LEHR Activate

"LEHR start" is a dedicated instruction required when starting the electric gripper.

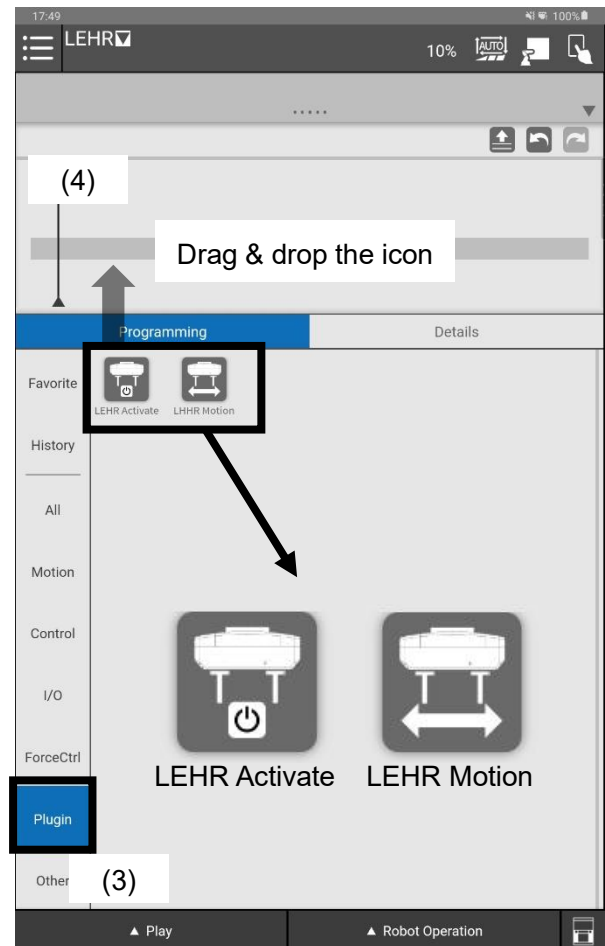
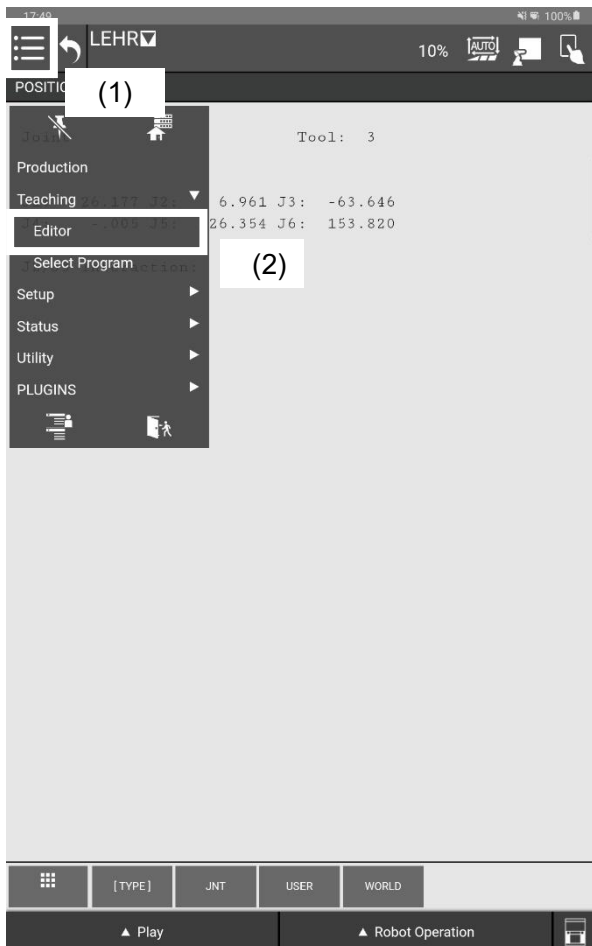
- LEHR Motion

"LEHR actuation" is a dedicated instruction that instructs the operation of the electric gripper.

4.1 How to add a dedicated instruction

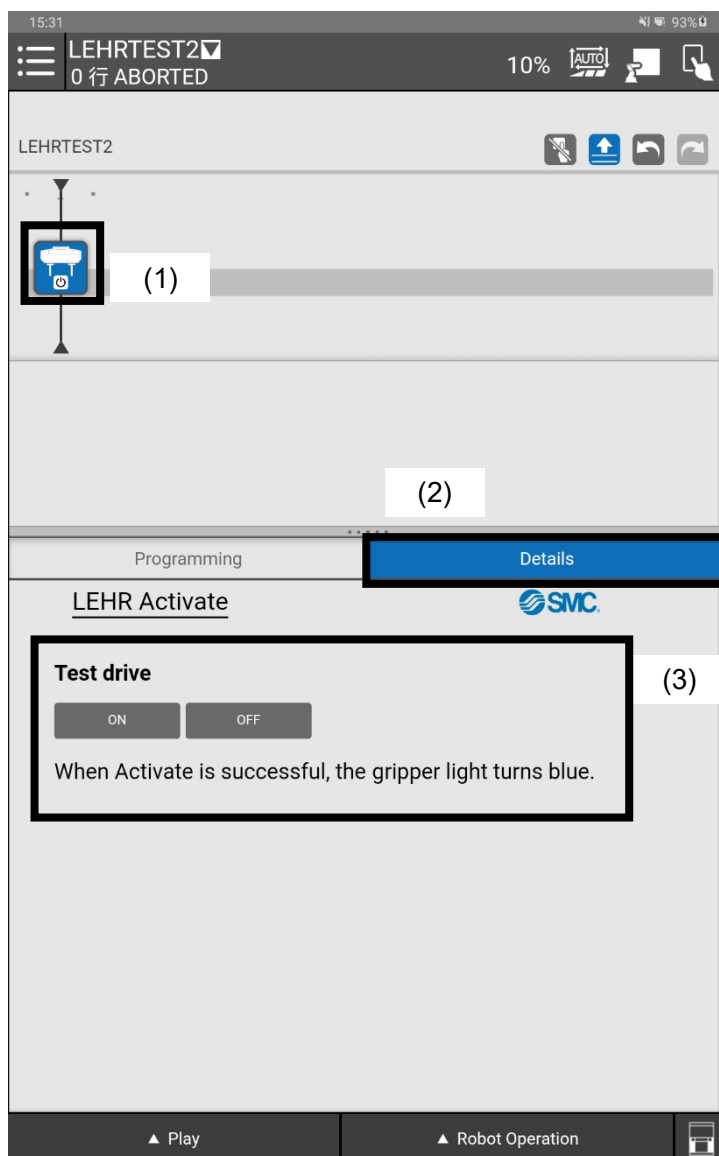
The following describes how to add a dedicated instruction to a robot program.

1. Select the menu icon and select [Editor] under [Teaching]. (1),(2)
2. Select the [Plugin] tab. The dedicated instruction icon will appear on the [Programming] tab. (3)
3. The dedicated instruction can be added to the robot program by drag and drop the icon over the robot program. (4)



4.2 LEHR Activate

"LEHR Activate" is a dedicated instruction required when starting the electric gripper. After installing the LEHR, execute this command only once at the beginning.



1. After adding the icon, press the "Details" button to display the details screen. (1) (2)
2. It is possible to carry out a commission run of this instruction. (3)
ON: Activates LEHR. After successful start-up, the LED light on the gripper will turn blue.
OFF: Stops LEHR. If the stop is successful, the LED light on the gripper will turn magenta.

4.3 LEHR Motion

"LEHR activation" is a dedicated instruction that instructs the operation of the electric gripper.

On the detail screen, set the driving selection (positioning or grasping) and the motion settings (position, speed, force).

1. Select operation selection. (1), (2)

Positioning: It is mainly used for the release of workpieces.

It can operate at a higher speed than grip, but care must be taken not to interfere.

Grip : Used to grip the workpiece.

2. Set the wait setting for the operation to complete.(2)

* This setting is displayed only during Operation Selection: Positioning.

☒ : Wait for the operation to complete before moving on to the next program.

☐ : Do not wait for the operation to complete, but move on to the next program.

3. You can check the current position of the gripper and the alarm.(3)

Automatic updates are not performed, so please press the "Update" button at the timing you want to check. For details on alarms, refer to [5. Occurrence of Warnings and Alarms].

4. Set the gripper position, speed, and force. (4)

Please refer to the table below for the range that can be set. In addition, commissioning is possible with the "Test run" button.

Operation Selection	Positioning		Grip	
Parameter	Min.	Max.	Min.	Max.
Position [mm] ※1,2	1	50	0	50
Speed [mm/s]	5	100	5	30
Force [N]	-	-	60	140

*1 When positioning, set the fingers so that they do not collide with the workpiece.

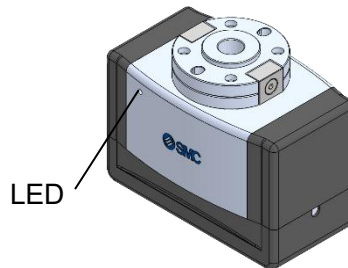
*2 When grasping, set the position 1 mm in front of the width of the workpiece.

5. JOG driving is possible. (5)

5 Alarm detection

The occurrence of warnings and alarms can be confirmed by the LED on the electric gripper main unit or on the plug-in software screen.

For the LED display pattern of the electric gripper body, refer to the instruction manual of "Electric gripper body for collaborative robot"



In this plug-in software, you can check the status column of the "LEHR operation" instruction. Please refer to the table below for screen alarms and warnings.

Alarm message	Content	Countermeasures
OverLoad alarm	This alarm is issued after a certain time has elapsed from the occurrence of an overload warning.	Eliminate the cause of the overload warning
OverCurrent alarm	This alarm is issued when a current exceeding the rated current flows.	Check whether there is any factor that prevents the operation of the Electric Gripper for Collaborative Robot or an external force is applied to the gripper fingers.
OverTemperature alarm	This alarm is issued when the internal temperature of the motor has exceeded 110°C.	Check whether the ambient temperature in the operating environment is exceeding 40°C.
OverVoltage alarm	This alarm is issued when the input voltage exceeds 30 V.	Check the power supply voltage for the collaborative robot.
UnderVoltage alarm	This alarm is issued when the input voltage falls below 18 V.	
OverFlow alarm	This alarm is issued when the location deviation inside the controller has exceeded a certain value.	Check whether there is any factor that prevents the operation of the Electric Gripper for Collaborative Robot or an external force is applied to the gripper fingers.
Gripper failed	This alarm is issued when gripping of the workpiece by the Grip has failed and nothing has been gripped.	Check whether the "Position" is correct.
Workpiece lost	This alarm is issued when the workpiece was lost in the time period from the execution of the Grip to the subsequent execution of the Positioning.	Check the gripping force, gripping position, and workpiece weight, and check whether an external force is applied to the gripper fingers.
OverLoad Warning	This alarm is issued when the motor torque exceeds the specified value.	Check whether there is any factor that prevents the operation of the Electric Gripper for Collaborative Robot or an external force is applied to the gripper fingers.
Temperature Warning	This alarm is issued when the internal temperature of the motor has exceeded 80°C.	Check whether the ambient temperature in the operating environment is exceeding 40°C.

Revision history
February 2024: Frist edition
March 2025: Revision for Software version 1.4.0
June 2026: Precaution for users added

SMC Corporation

URL <https://www.smcworld.com>

Note: Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

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