

# **Operation Manual**

PRODUCT NAME

## Electric Actuator/Slider type (AC servo motor)

MODEL / Series / Product Number

# **LEJ/LET** series

-Software (URCap) edition -

**SMC** Corporation

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# Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "**Caution**," "**Warning**" or "**Danger**." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)<sup>\*</sup>, and other safety regulations.

- \*1) ISO 4414: Pneumatic fluid power General rules and safety requirements for systems and their components
- ISO 4413: Hydraulic fluid power General rules and safety requirements for systems and their components
  - IEC 60204-1: Safety of machinery Electrical equipment of machines Part 1: General requirements
  - ISO 10218-1: Robots and robotic devices Safety requirements for industrial robots Part 1:Robots

Danger

Warning

Caution

**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

## Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

- 2. Only personnel with appropriate training should operate machinery and equipment. The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
- 3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
  - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
  - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
  - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.
  - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
  - 2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogs and operation manuals.
  - Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.





# **Safety Instructions**

#### **∧** Caution

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries.

Use in non-manufacturing industries is not covered.

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the Measurement Act.

The new Measurement Act prohibits use of any unit other than SI units in Japan.

#### Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".

Read and accept them before using the product.

#### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.\*2)

Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.

- For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.
  - \*2) Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty

#### **Compliance Requirements**

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.



#### Function and specification

#### 1.1 Introduction

Download the UR plug-in software (.urcap) from SMC website.

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

File name: SMC\_LECSN-1.00.urcap

#### <u>Note</u>

- Read the contents of this manual carefully before using SMC LECSN URCap.
- •The images and photos shown in this manual are representative.
- •SMC is not responsible for any damage caused by incorrect use of this system.
- Perform a thorough risk assessment regarding the installation, programming, and control of the robot, and do so at your own risk.

#### 1.2 Overview and specification

The plug-in software SMC LECSN URCap can control electric actuators connected to the AC servo driver LECSN-T via the Universal Robot interface.

Compatible hardware

- Electric actuator (LEJS40, LEJS63, LEJS100-X400, LET100-X11)
- •AC servo driver LECSN2-T□-9 (EtherNet/IP)

UR PolyScope® Support

•Version 5.11 or higher

#### Reference document

- · Electric actuator LEJ series instruction manual (Document No. LEJ-OM00211)
- ·Electric actuator LEJS100-X400 instruction manual (Document No. LEJ\*-OMZ0012)
- · Electric actuator LET-X11 instruction manual (Document No. DOC1046323)
- •AC servo driver LECSN-T Instruction manual (Document No. LEC\*-OMY0102)
- AC servo driver LECSN-T Instruction manual (simple version) (Document No. DOC1020530)



#### **1.3 System configuration example**

An example system configuration is shown below.

Please connect the equipment referring to the diagram below.



• Fo th • TI • TI • TI • TI • TI • TI • TI • TI	or details on electric actuator and LECSN2-T wiring, please refer to he respective instruction manuals. he customer must prepare the bracket that connects the electric ctuator and robot. his system configuration does not meet safety standards for ollaborative robots. In order to ensure safety, please conduct a horough risk assessment and configure the software at your own esponsibility.
--	--



#### 2 Instration

#### 2.1 URCap installation

The following section shows instructions on how to install the SMC LECSN URCap on a Universal Robot.

1. Click on the triple bar icon [I] at the top right of the robot screen.



2. Select Settings.





3. Select URCap in the system menu, and press "+".

	Set	ttings	
Preferences     Active URCap     Password     System		Remote TCP	
URCaps Robot Registration			
Remote Control			
Network URCap Inform	ition		
Update			
Exit + -			Restart

4. Select SMC LECSN URCap and press "Open".

	Select URCap to install	
🗗 🗙 🗏 🖻 🏛 🗹		G2
New Cut Copy Paste Delete Rename		Racky
π		
SMC_LECSN-1.00.urcap		
٢		>
Filename:	Filter:	>
K Filename:	Filter: URCap Files	>
< Filename:	Filter: URCap Files	>
<b>C</b> Filename:	Filter: URCap Files	> Open Cancel
<b>≮</b> Filename:	Fiker: URCap Files	> Open Cancel



#### 5. Press the "Restart" button.

		Se	ettings	
>	Preferences	Active URCaps	Inactive URCaps	
5	Password	O SMC_LECSN	Remote TCP & Toolpath	
$\overline{\mathbf{v}}$	System			
٦	System Backup			
	URCaps			
	Robot Registration			
	Remote	URCap Information		
- 1	Control	URCap name: SMC_LECSN Version: 1.00.0		
- 1	Network	Developen CFZ Cobots Contact Info: C/ Jose María Castaño Martínez 44 C.	P.: 03202. Elche (Alicante)	
	Update	Copyright: Copyright notice (C) License Type: License License END-USER LICENSE AGREEMENT YOU SHOULD CAREFULLY READ THE FOLLOWING defined). Using the Software indicates your acceptan	G AGREEMENT BEFORE USING THE SOPTWARE (as this term is hereinafter ice of the acreement. If you do not acree with it, you are not authorized to use	the
	Exit	+ -	Re	start



#### 2.2 LECSN driver configuration

The following section shows how to configure the LECSN driver.

#### 2.2.1 Wiring

- 1. Connect the electric actuator to be used to the LECSN-T driver (refer to the manual for each actuator).
- 2. Connect Ethernet cable between LECSN controller and UR robot.

#### 2.2.2 IP Configuration

Set an IP address using the IPconfig or AnybusIPconfig tool offered by HMS Industrial Networks, and configure the same IP physically using the rotary selection switches (SW2/SW3) on the front of the driver. (LECSN-T manual section 19.1.4.2 Startup section (3) IP address setting)





#### 2.2.3 LECSN driver configuration

Setup software (MR Configurator2<sup>™</sup>: part number LEC-MRC2□) is required for settings on the LECSN - T driver side.

1. Setting recommended parameter values for actuators.

Set recommended parameters for each actuator to ensure safe and correct operation of the electric actuator.

To do this, start MR Configurator2<sup>TM</sup> and open "Parameters"  $\rightarrow$  "List display", and set the parameters for the actuator you want to use.



Recommended parameters for each electric actuator are shown below.

The type of return to origin in the recommended parameter list here is for stopper type return to origin. For other home return types, please refer to the LECSN-T manual.



#### Recommended Parameter Values [LEJ]

	LEJS40			LEJS63					
Series	Lead s	symbol	Н	A	В	Н	A	В	
	Lead		24	16	8	30	20	10	
Parameter *1,*2	Para. No	Initial value		Recommended value					
★Electronic gear numerator	PA06	1			419	4304			
★Electronic gear denominator.	PA07	1			10	000			
Feel length multiplication (STM) (Multiplier)	PT03	0000	0000 (<1000 stroke)/0001 (>1000 stroke)						
Home position return method *3	PT45	37			-	4			
Home position return speed (rpm)	PT05	100	75	113	225	60	90	180	
Stopper type home position return stopper time (msec)	PT10	100	200						
Stopper type home position return torque limit value (%)	PT11	15			8	34			
Home position return acceleration time constant (msec)	PT56	0	1200	800	400	1500	1000	500	
Regenerative option	PA02	0000	0000 (Non)/0002 (LEC-MR-RE		B-032)/0003 (	LEC-MR-RB-	12)		
Rotation direction selection	PA14	0			(+ : Counter	1 motors side	)		
Load to motor inertia moment ratio	PB06	7	7						
Function selection E-3	PE41	0000		0000					

			LEJS100-X400			
Series	Lead s	Lead symbol		Α	В	
	Lead		50	25	10	
Parameter *1, *2	Para. No	Initial value		Recommended value		
★Electronic gear numerator	PA06	1		41	94304	
★Electronic gear denominator	PA07	1	50000	25000	10000	
Feel length multiplication (STM) (Multiplier)	PT03	0000	0000 ((<1000 stroke)/0001 (>1000 stroke)			
Home position return method *3	PT45	37			-4	
Home position return Speed (rpm)	PT05	100	36	72	180	
Stopper type home position return stopper time (msec)	PT10	100	200			
Stopper type home position return torque limit value (%)	PT11	15			84	
Home position return acceleration time constant (msec)	PT56	0	2500	1250	500	
Regenerative option	PA02	0000	000	0 (Non)/0002 (LEC-MR-	RB-032)/0003 (LEC-MR-RB-12)	
Rotation direction selection	PA14	0		1 (+ : Count	ter motors side)	
Load to motor inertia moment ratio	PB06	7	7			
Function selection E-3	PE41	0000		0001(Robus	st filter enabled)	

: Differs to initial value

★ : Parameter change required

- \*1. Parameter is set to the recommended value. Please set parameter according to customer application.
- \*2. Mechanical resonance may occur depending on the shape or mounting orientation of the work piece. Please change this parameter during initial configuration.
  - (Parameter initial configuration  $\Rightarrow$  Set the recommended parameter value  $\Rightarrow$  Operation start)
- \*3. When the home position return direction is the motor side of the actuator and the home position return method is the stopper type.



When the stopper type home position return is used and the actuator end is set to the home position, please pay attention to the actuator movable range when commanding the position to prevent collision with both ends of the actuator due to overshoot.
 When the origin (0 mm) is set at the actuator end, the movable range of this actuator is from [+7mm] to [actuator stroke +7mm].

- 12 -SNC

#### Recommended Parameter Values [LET]

			LET100					
	Lead s	symbol	D	L	M	Ν		
Series	Lead		240(80)	240(48)	240(26.7)	240(16)		
	(Inclu pulley	uding ratio)	Pulley ratio 1/3	Pulley ratio 1/5	Pulley ratio 1/9	Pulley ratio 1/15		
Parameter *1,*2	Para. No	Initial value	Recommended Parameter Values					
★Electron gear number	PA06	1		1	96608			
★Electron gear denominator	PA07	1	3750	2250	1250	750		
Feel length multiplication (STM)(Multiplier)	PT03	0000		0000(<1000strok	e) / 0001(>1000str	oke)		
Home position return method *3	PT45	37		-4 : Motor an -36 : Motor ar	rangement RL,FR rangement RR,FL			
Home position return speed (rpm)	PT05	100	23	38	68	113		
Stopper type home position return stopper time (msec)	PT10	100			200			
Stopper type home position return torque limit value (%)	PT11	15	84	84	70	42		
Home position return acceleration time constant (msec)	PT56	0	4000	2400	1333	800		
Regenerative option	PA02	0000	0000(Non) / 0002(LEC-MR-RB-032) / 0003(LEC-MR-RB-12) / 0004(LEC-MR-RB-32)					
Rotation direction selection	PA14	0		1 : Motor arr 0: Motor arr	angement RL,FR angement RR,FL			
Auto-tuning Responsiveness *4	PA09	16	16					
★Load to motor inertia Moment ratio	PB06	7	50					
★Function selectionE-3	PE41	0000		0001(Rob	ust filter enabled)			

: Differs to initial value

★ : Parameter change required

\*1. Parameter is set to the recommended value. Please set parameter according to customer application.

\*2. Mechanical resonance may occur depending on the shape or mounting orientation of the work piece. Please change this parameter during initial configuration.

(Parameter initial configuration  $\Rightarrow$  Set the recommended parameter value  $\Rightarrow$  Operation start)

- \*3. When the home position return direction is the motor side of the actuator and the home position return method is the stopper type.
- \*4. Since the response of acceleration/deceleration may vary depending on the shape of the object to be conveyed and its installation condition, please make adjustments in the parameters.

If the response is set too high, oscillation may occur.





#### 3 How to use the software

#### 3.1 Installation menu

On the SMC LECSN URCap Installation menu, you can set the IP address, test run, and check the status of the LECSN driver. The electric actuator can be set to operate on up to 3 axes.

#### 3.1.1 Communication settings

1. First of all, we must activate the connected electric actuators, to do this, in each Tool tab we will activate the "Add Axe" check box.



2. The next step is to configure our electric actuator. In the "CONNECTION" menu we will configure the IP address of the LECSN driver.



		PROGRAM <unnamed< th=""><th>&gt; 📑 🚞</th><th></th><th></th></unnamed<>	> 📑 🚞		
🔪 General	SMC_LECSN				
🔪 Safety	Axe 1 Axe 2 Axe 3				
> Features	🗹 Add Axe				
> Fieldbus	CONNECTION		s	TATUS	
V URCaps			-		
SMC_LECSN	IP: 192 166 0 1	Current Mode		Ready	
SMC Air		Current Pose	.00 mm	Enable	
Gripper	Lead H (24mm) 🔻	Current Speed	.00 mm,	's Voltage	
SMC Magnet Gripper	Stroke 0 mm	Current Torque	0.0 %	Acknowledge	
SMC Vacuum	Connect SVON SVOF	F		InPose	
Gripper				OnOff	
			SMC	QuickStop	
	Position U.U mm			Alarm	
	Speed 50.0 mm/s			Warning	
	Acceleration 1000 mm/s <sup>2</sup>				
	Deceleration 1000 mm/s <sup>2</sup>				
			- T - N		
	Set Home Reset	Jog	+	jog -	
	·				
Power off	Speed C	100%	D ()	Simula	tion

3. Select the electric actuator model number and set the lead and stroke. These values are listed on the product label of the electric actuator. (Example: For LEJS63H\*-600\*)

	trong vo Log PROGRAM <unnamed> L: trong voices voi</unnamed>
> General	SMC_LECSN
🔪 Safety	Axe 1 Axe 2 Axe 3
> Features	Add Axe
> Fieldbus	
V URCaps	IP: 192 168 1 16 🗙 Current Mode LEJS
SMC_LECSN	Product LEJS63  Cruent Pose
Gripper	Lead II (30mm)  Current Speed
SMC Magnet Gripper	Stroke 600 mm Current Torque 200
SMC Vacuum	Connect SVON SVOFF
Gripper	POSITION CONTROL
	Position 0.0 mm
	Speed 50.0 mm/s Warning
	Acceleration 1000 mm/s <sup>2</sup>
	Deceleration 1000 mm/s <sup>2</sup>
	ABS INC Stop
	Set Home Reset
Power off	Speed - 100% 🕞 🖸 🖸 Simulation

4. Click "Connect" and confirm that communication is possible correctly. If communication is established correctly, ♥ mark will be displayed.



			INS	PROGRAM <b><unnamed< b="">: TALLATION default*</unnamed<></b>	> <b>[]</b> New Op		R+	8 8 8 8	
> General	SMC_LECSN								
> Safety	Axe 1	Axe 2 Axe	з						
> Features	🗹 Add Axe								_
> Fieldbus		CONNECTION				STATU	5		
V URCaps	ID 192	168 1 16		Gurrant Mada	No mor		Beady		
SMC_LECSN	IF : 132			Current Mode	NO INO	1e	Ready		
SMC Air	Product	LEJS63		Current Pose	.00	mm	Enable		
Gripper	Lead	H (30mm) 🔻	·	Current Speed	.00	mm/s	Voltage		
SMC Magnet Gripper	Stroke	600	mm	Current Torque	0.0	%	Acknowledge		
SMC Vacuum	Connect	SVON	SVOFF				InPose		
Gripper							OnOff		
	PO	SITION CONTROL			CIM		QuickStop		
	Position	0.0	mm	2	SIVI		Alarm		
	Speed	50.0	mm/s				Warning		
	Acceleration	1000	mm/s²						
	Developmention	1000							
	Deceleration	1000	mm/s-						
	ABS	INC	Stop						
	Set H	ome R	leset					1	
				log	+		Jog -		
Power off		Speed		100%	D		Simul	ation 🤇	



5. Press "SVON" to turn on the servo of the electric actuator.



#### 3.1.2 Test drive

1. By pressing "Set Home" the electric actuator will carry out the homing process.

		PROGRAM <b><unnamed< b="">: INSTALLATION <b>default*</b></unnamed<></b>	> 📑 📑 冒	<b>₩ :: =</b>
🖒 General	SMC_LECSN			
🔪 Safety	Axe 1 Axe 2 Axe 3			
> Features	🗹 Add Axe			
> Fieldbus	CONNECTION		STATUS	
✔ URCaps	IP: 192 168 1 16 🗸	Current Mode	Speed mode	Ready
SMC_LECSN	Product LEJS63 💌	Current Pose	21.87 mm	Enable
Gripper	Lead H (30mm) 🔻	Current Speed	.01 mm/s	Voltage
SMC Magnet Gripper	Stroke 600 mm	Current Torque	-0.1 %	Acknowledge
SMC Vacuum	Disconnect SVON SVOF	E	0.1	InPose
Gripper				OnOff
			SMC	QuickStop
				Alarm
	Speed 50.0 mm/s			Warning
	Acceleration 1000 mm/s <sup>2</sup>			
	Deceleration 1000 mm/s <sup>2</sup>			
	ABS INC Stop			
	Set Home Reset	Jog	+	Jog -
Power off	Speed 🥌	100%		Simulation

2. With the JOG+ JOG- buttons we will carry out the movement as long as it is held down.

			INS	PROGRAM <b><unnamed< b=""> STALLATION <b>default*</b></unnamed<></b>	> <b>[]</b> New Op	en Save		≡
🔪 General	SMC_LECSN							
🔪 Safety	Axe 1	Axe 2 A	xe 3					
> Features	🗹 Add Axe							
> Fieldbus		CONNECTION				STATUS	3	
V URCaps	IP · 192	168 1	16	Current Mode	Speed m	ode	Beady	
SMC_LECSN	Product	LEIS63	V	Current Dage	21.07	ouc	Enable	
SMC Air Gripper	Lead	H (30mm)	▼	Current Pose	21.87		Voltage	
SMC Magnet	Stroke	600	mm	Current Speed	.01	mm/s	Acknowledge	
Gripper	Disconne	ct SVON	SVOFF	Current Torque	-0.1	%	InPose	
Gripper							OnOff	
	PO	SITION CONTR	IOL				QuickStop	
	Position	0.0	mm	2	SIVK		Alarm	
	Speed	50.0	mm/s				Warning	
	Acceleration	1000	mm/s²					
	Deceleration	1000	mm/s²					
	ABS	INC	Stop					
	Set H	ome	Reset	Jog	+		Jog -	
Power off		Spe	ed	100%	O		Simulation	

 By setting the moving position, speed, acceleration, and deceleration parameters and pressing "ABS" or "INC" on the position control menu, you can position the workpiece to an absolute or relative position.

			IN	PROGRAM <b><unnamed:< b=""> STALLATION <b>default*</b></unnamed:<></b>	> 🔒	pen. Save.	R+	8 8 8 8	≡
> General	SMC_LECSN								
🔪 Safety	Axe 1	Axe 2	Axe 3						
> Features	🗹 Add Axe								-
> Fieldbus		CONNECTIO	N			STATU	5		
V URCaps						JIAIO.	-		
SMC_LECSN	IP: 192	168 1	16	Current Mode	Speed m	node	Ready		
SMC Air	Product	LEJS63	•	Current Pose	21.87	mm	Enable		
Gripper	Lead	H (30mm)	•	Current Speed	.01	mm/s	Voltage		
SMC Magnet	Stroke	600	mm	Current Torque	-0.1	04	Acknowledge		
SMC Vacuum	Disconne	t SVO	N SVOFF	Carrent forque	-0.1	70	InPose		
Gripper							OnOff		
	PO	SITION CON	TROL				QuickStop		
	Position	0.0	mm	2	JAK		Alarm		
	Speed	50.0	D mm/s				Warning		
	Acceleration	100	0 mm/s²						
	receiciuni		-						
	Deceleration	100	U mm/s²						
	ABS	INC	Stop						
	Set H	ome	Reset		_			1 1	
				Jog -	+		Jog -	1	
Power off		Sr	beed Caracteria	100%	D	0 0	Simu	ation 🤇	



#### 3.1.3 Status panel

The "Status" Panel collects all the information on the status of the electric actuator.

It has a dynamic moving image of the electric actuator status, current mode, position values, speed, current torque, and status signals.



The status signals are:

Ready: The Actuator is ready to be turned on.

Enable: The actuator has carried out the homing process and has a zero reference.

- ·Voltage: Actuator is electrically powered.
- Knowledge: The order to be executed by the actuator has been recognized.
- InPose: The actuator has reached the position.
- ·OnOff: The actuator is servo on.
- ·QuickStop: The actuator is in emergency stop.
- Alarm: There are alarms in the driver.
- Warning: There are warnings in the driver.

**Note:** Details of alarms and warnings can be confirmed using MR Configurator2<sup>™</sup>. For details, please refer to the LECSN-T instruction manual.



#### 3.2 Program Node "LECSN Init"

In the program node it will allow you to connect, turn on and perform a homing movement of an electric actuator from the robot program.



It is advisable to add this node in the "BeforeStart" program tree.

1. The first thing is to select the electric actuator that we want to initialize. If we have more than one electric actuator we must add an Init node for each electric actuator.





- 2. Activate the actions that we want the program node to perform:
- CONNECT: Make the Ethernet connection with the LECSN-T driver configured during installation.
- SVON: Servo on the actuator.
- SETUP: Perform the homing process.

**Note:** If the absolute position detection system is enabled in the LECSN-T driver, once the home return is performed, there is no need to perform the home return when the power is turned on. For details, refer to Chapter 12 of the LECSN-T instruction manual.



3. The node has a status panel where the status of each of these processes is shown.





#### 3.3 Program Node "LECSN Move"

The node will allow control of the electric actuator by the robot program to perform positioning.

Basic     Advanced		]	Command	Grap	ohics	Variable	es	Loca	
Templates     URCaps     LECSN Init     LECSN Move	1 V Robot Program 2 LECSN Move			Axe 1 Axe 1 Axe 2 Axe 3	<b>•</b> 21		JOG +	JOG -	0
1		•	Position Speed Acceleration Deceleration	5	.00 50.0 100	mm mm/s mm/s² mm/s²	Current Pose	0	mm
Power off	★ 북 ゥ ♂ ℃ 単 自 亩 = Speed		100%		0	0	5	Simul	ation

1. The first thing to do is to select the electric actuator that will control the program node.

2. Next, set the type of movement you want to perform: Absolute or Incremental, Position, Speed, and Acceleration/Deceleration.

		PROGRAM <u ISTALLATION de</u 	nnamed>* <b>[]</b> ault* <sub>New</sub>	pen Save			
> Basic	۵	Comma	nd Graphics	Variables			
<ul> <li>&gt; Advanced</li> <li>&gt; Templates</li> </ul>	1 V BeforeStart 2 LECSN Init	LECSN	l Move				
VURCaps	4 LECSN Move		SMC				
SMC Air Gripper		Axe	Axe 1   Move Configuration	ı jı	og + jog - 🦵	ז	
SMC Magnet Gripper SMC Vacuum	0	Type Position		.] ] mm			
Gripper		Speed	50.0	 mm/s		$\square$	
		Deceler	ation 1000	mm/s²			
				Curre	ent Pose 0 mi	m	
	<b>▲</b> ╄ ๖ ♂ X 빌 Ē ā ≣	3		]			
Normal	Speed Contraction		.00%	00	Simulation		
🕂 Caut	<ul> <li>Be sure to acceleration</li> <li>If the Accel time constant</li> </ul>	o use n, and o eration	the actua deceleratio and Decel	tor within n. leration va	the catalog	g specification too short, [F4.	is for speed, 6 acceleration
	setting rang	ge error	warning] r	nay occur	on the LECS	SN-T driver.	





We can perform a test of the configured movement by pressing

In the status panel, we can perform JOG + or JOG – movements by holding down the buttons. At all times we will have a dynamic image that shows us the status of the electric actuator as well as the current position information and status value "INP" (In position). These buttons will be disabled during program execution.

I nese buttons will be disabled during program execution.



4. We can configure the current position of the electric actuator as the movement position by pressing



These buttons will be disabled during program execution.

![](_page_23_Picture_8.jpeg)

#### 3.4 Script

The URCap has the following reading script functions.

![](_page_24_Picture_2.jpeg)

#### 3.4.1 GetPosition\_Axe $\Box$ ()

They provide the current axis position value. (integer value)

The axis number is entered in  $\Box$ .

#### 3.4.2 GetInPosition\_Axe ()

They indicate whether the axis has reached the destination position. (boolean value) The axis number is entered in  $\Box$ .

![](_page_24_Picture_8.jpeg)

Revision history
February 2024: First edition

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Note: Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.  $\circledcirc$  SMC Corporation All Rights Reserved

![](_page_25_Picture_5.jpeg)