SMC

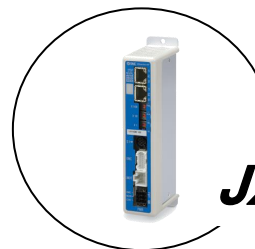# Operation Manual

PRODUCT NAME

Electric Rotary Table
/Battery-less Absolute Encoder Type

MODEL / Series / Product Number

LER50E Series

Controller
JXC□1 Series

#This manual describes the dedicated terms for "LER50E".
  Refer to the manual of LER series about other details.
#Refer to the manual relevant to the controller being used for full operating instructions.

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Contents

LER50E Series / Electric Rotary Table 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)*1) , and other safety regulations.
*1) ISO 4414: Pneumatic fluid power -- General rules relating to systems.
    ISO 4413: Hydraulic fluid power -- General rules relating to systems.
    IEC 60204-1: Safety of machinery -- Electrical equipment of machines .(Part 1: General requirements)
    ISO 10218: Manipulating industrial robots -Safety.
    etc.

⚠ **Caution**	**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
⚠ **Warning**	**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Danger**	**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious 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. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

LER50E Series / Electric Rotary Table
Safety Instructions

⚠ **Caution**

The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

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.
2. **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.
3. **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 regulation 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.**

⚠ **Caution**

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.

Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

1. Specification

Model			LER*50EK	LER*50EJ	LER* 50EK-2	LER* 50EK-3	LER* 50EJ-2	LER* 50EJ-3
Rotation angle[°]			320		180	90	180	90
Lead[°]			7.5	12	7.5		12	
Range of external stopper[°]			-		±2			
Max. Rotation Torque[N·m]			10	6.6	10		6.6	
Max. Pushing Torque[N·m]			5	3.3	5		3.3	
Max.Moment of Inertia[kg·m^2]			0.13	0.05	0.13		0.05	
Angular Speed[°/sec]			20 to 280	30 to 420	20 to 280		30 to 420	
Pushing speed[°/sec]			20	30	20		30	
Max. angular acceleration/deceleration[°/sec^2]			3000					
Backlash[°]	Basic type		±0.2					
	High precision type		±0.1					
Positioning repeatability[°]	Basic type		±0.05					
	High precision type		±0.03					
Repeatability at the end[°]			±0.01					
Lost motion[°]	Basic type		0.3 or less					
	High precision type		0.2 or less					
Impact/Vibration resistance[m/sec^2]			150/30					
Actuation type			Special worm gear + Belt drive					
Table allowable load	Radial load [N]	Basic type	314					
		High precision type	378					
	Thrust load /Push[N]	Basic type	398					
		High precision type	517					
	Thrust load /Pull[N]	Basic type	296					
		High precision type						
	Moment [N·m]	Basic type	9.7					
		High precision type	12					
Max. Operating frequency[c.p.m]			60					
Operating temperature range[℃]			5 to 40					
Operating humidity range[% RH]			90 or less (No condensation)					
Weight[kg]	Basic type		2.2	2.5	2.6	2.5	2.6	
	High precision type		2.4	2.7	2.8	2.7	2.8	
Motor size			□42					
Motor type			Step motor (Servo 24VDC)					
Encoder			Battery-less absolute (4096 pulse/rotation)					
Power supply[V]			24 VDC ± 10%					
Power consumption[W]/ Standby power consumption when operating[W]			34 / 13					
Max. instantaneous power consumption[W]			57					

Note1) Please refer to the catalog for the detail and note.

2．How to order

LER ＊ 50 E ＊ － ＊ ＊ － ＊ ＊ C ＊ 1 ＊ ＊
(1) (2) (3) (4)　　(5) (6)　(7)　　　(8)

(1) Table accuracy

Nil	Basic type
H	High precision type

(2) Size

50

(3) Motor type

E	Step motor with Battery-less Absolute Encoder (Servo / 24VDC)

(4) Max.rotating torque[N・m]

K	High torque	10
J	Basic	6.6

(5) Rotation angle[°]

Nil	320
2	External stopper：180
3	External stopper：90

(6) Motor cable entry

Nil	Basic（entry on the right side）
L	Entry on the left side

(7) Actuator cable type / length[m]

Nil	Without cable	
R1		1.5m
R3		3m
R5	Robotic cable (Flexible cable)	5m
R8		8m ※1
RA		10m ※1
RB		15m ※1
RC		20m ※1

※1　Produced upon receipt of order (Robotic cable only)

(8) Controller / Driver
　　Refer to the catalog for Controller / Driver

⚠Caution

The actuator and controller are sold as a package.
　Confirm that the combination of the controller and actuator is correct.

＜**Check the following before use.**＞
　*1 Check the actuator label for the model number.
　　This number should match that of the controller.

*1

LER50EJ-2

3．Specific product precautions

About precautions for installation of actuator, refer to [Specific precautions for Battery-less absolute encoder] that is described in the manual of used controller.

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