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**HIWIN**<sup>®</sup>  
Motion Control and System Technology



# Linear Actuator

Literature



TAIWAN EXCELLENCE  
GOLD AWARD 2005

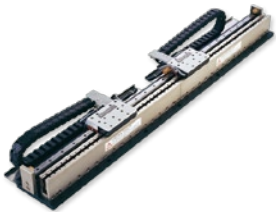
### Ballscrew

- For Heavy-Load Drive



TAIWAN EXCELLENCE  
2004

### Positioning Guideway



TAIWAN EXCELLENCE  
GOLD AWARD 2004

### Linear Synchronous Motor

- Coreless Type (LMC)
- Iron-core Type (LMS)



TAIWAN EXCELLENCE  
2002

### Linear Actuator

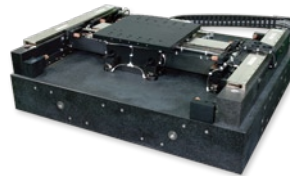
- LAN for Hospital
- LAM for Industrial
- LAS Compact Size
- LAK Controller



TAIWAN EXCELLENCE  
GOLD AWARD 2010, 2003

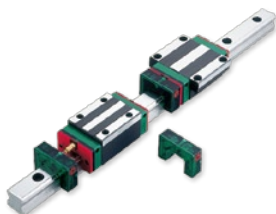
### Industrial Robot

- For Semiconductor & Electronic (KK Robot)
- For Automation (KS, KA Robot)



TAIWAN EXCELLENCE  
SILVER AWARD 2009

### Linear Motor Air Bearing Platform



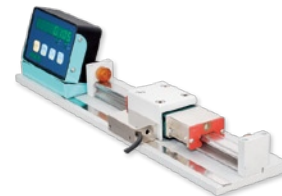
TAIWAN EXCELLENCE  
GOLD AWARD 2008



TAIWAN EXCELLENCE  
SILVER AWARD 2007, 2002

### Linear Guideway

- HG/EG/RG/MG Type
- Self-Lubricating (E2)
- Low Noise (Q1)
- Air Jet (A1)



### Positioning Measurement System



TAIWAN EXCELLENCE  
GOLD AWARD 2011, 2009, 2008



TAIWAN EXCELLENCE  
SILVER AWARD 2006, 2001, 1993

### Ballscrews

- Ground/Rolled
- High Speed (High Dm-N Value/Super S Series)
- Heavy Load (Cool type II)
- Self-Lubricating (E2)
- Rotating Nut (R1)



### Linear Motor X-Y Robot



TAIWAN EXCELLENCE  
SILVER AWARD 2006

### TMS Torque Motor Rotary Table



### Linear Motor Gantry

# ***HIWIN***<sup>®</sup>

## Linear Actuator

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\*\* The specifications in this catalog are subject to change without notification.

# 1.

## Sizing of a *HIWIN* Linear Actuator

### Step 1: Determine the load and speed

Consider the operating environment, compare the specifications of various types of Hiwin Linear Actuators and select the most appropriate model.

### Step 2: Stroke and retracted length sizing

Consider the dimensions of the operating area and select the appropriate actuator.

### Step 3: Duty cycle

Duty cycles should not exceed 10%. If the duty cycle exceeds 10%, the life of the actuator can be reduced. Users should make sure that no torsion or impact forces are acting upon the actuator.

### Step 4: Controller sizing

The controller selection should be made according to the power requirements of the actuator. Other considerations include the number of axes, type of limit switches and the series of keypad.

# 2.

## Installation of a *HIWIN* Linear Actuator

1. Please ensure that the extension tube is at the "lowest position". The term "lowest position" refers to the position where there is no further movement towards the DC motor while the actuator is powered on.
2. The front and end joints of the linear actuator should be mounted onto two fixed positions on the main chassis. Locations of these fixed positions should be chosen according to the stroke length of the linear actuator.
3. After the fixed positions have been selected, install the fixtures onto these selected positions of the main chassis. These fixtures are used to fix the front and end joints of the linear actuator.
4. Assemble the front and end joints of the linear actuator onto the two fixtures using fixture bolts. Please ensure that the fixture bolts rotate freely when this step is completed. Also, please ensure that the fixture bolts do not become "loose" and fall off during operation.
5. The chassis of the linear actuator should be mounted in the horizontal direction if it is going to be operated in this direction and likewise for vertical operation. Damages could occur to the actuator if these instructions are not followed.
6. Make sure that:
  - The travel distance of the actuator matches the design requirements.
  - The upper and lower limit switches are functioning.
  - The motor stops when the extension tube reaches the upper and lower limit switches.

\* If the actuator does not operate as described above, please repeat steps 2 thru 4 to make sure that the installation is correct.

\*\* All *HIWIN* linear actuators and control boxes have to be grounded.

# 3.

## Regulations to Safely Operate *HIWIN* Linear Actuators

1. A no-load operation may damage the actuator, especially if the actuator has external limit switches installed.
2. Please make sure that the actuators are not installed where the motor or any mechanical parts can be damaged due to dangerous environments.
3. Make sure the DC voltage supplied to the actuator matches the specifications on the actuator. The power supply should supply enough power under maximum load.
4. Under extreme load situations, the motor will try to draw more than the rated current. It is the operator's duty to ensure that the power supply does not provide more current than specified on the actuator. Excessive current will cause wiring damage and possible failure of the actuator. Unless otherwise specified, our actuators have a duty cycle rating of 10%. The duty cycle is defined as two minutes of continuous operation, followed by 18 minutes of non-operation. If the duty cycle exceeds 10%, please consider over-current protection measures. Install protection devices such as fuses or an over-current detection between the power supply and the actuator input end. Detection signals are to be used for operation interruption or shut down.
5. Thermal protection is included on some Hiwin linear actuator models. This will shut down the motor when over-heated.
6. If the actuator was purchased without limit switches, please install appropriate limit switches that comply with the power supply and over-current protection devices that are used.
7. The actuator's motors are DC driven. When the motor is not in operation, please short the ends of the power input to provide additional locking power. Make sure the controller power is shut off prior to shorting the motor inputs. The movement of the extension tube can be reversed by changing the polarity of the voltage supplied.
8. Make sure the actuator operates within its stroke length if it is not supplied with limit switches or an over load protection device.
9. The actuator should operate within the rated load specifications.
10. Please make sure the actuator is operating within the IP rating for dust and water.
11. For applications requiring high accuracy and tight speed requirements, please inquire about Hiwin's KK-series linear stages.
12. Electrical self locking should be implemented if the Hiwin controller is not being used. This will increase the actuator's locking force.

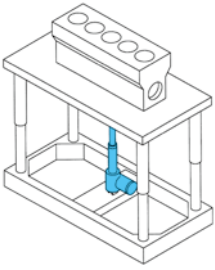
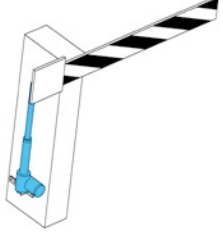
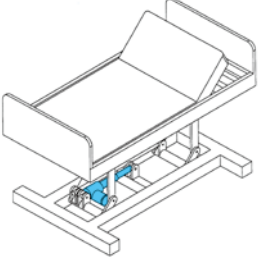
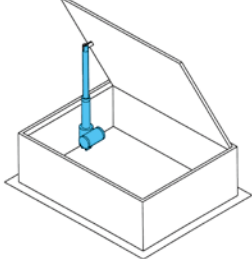
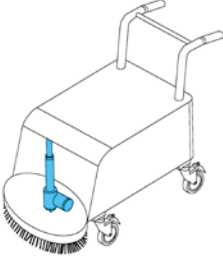
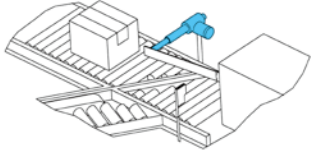

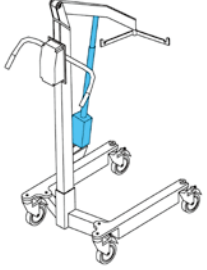
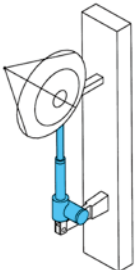
# 4.

## Features & Applications

### 4-1 Features of a Linear Actuator

- |                                       |                      |
|---------------------------------------|----------------------|
| 1. Light weight and compact structure | 4. Low noise         |
| 2. User friendly                      | 5. High rigidity     |
| 3. Simple installation                | 6. Competitive price |

### 4-2 Applications

		
		<ul style="list-style-type: none"> <li>● Automation equipment</li> <li>● Automatic windows and doors</li> <li>● Automatic cupboards</li> <li>● Automatic satellite antennas</li> <li>● Automatic wheel chairs</li> <li>● Automatic hospital beds</li> <li>● Entertainment facilities</li> <li>● Household appliances</li> <li>● Automatic drawing tables</li> <li>● Home care facilities</li> <li>● Patient lifters</li> <li>● Massage chairs</li> <li>● Traffic facilities</li> <li>● Office automation</li> <li>● Automatic PC desks</li> <li>● Hospitals and rehabilitation centers</li> <li>● Nursing homes</li> </ul>
		
		

# 5.

## HIWIN LAM Series (1)

**LAM**

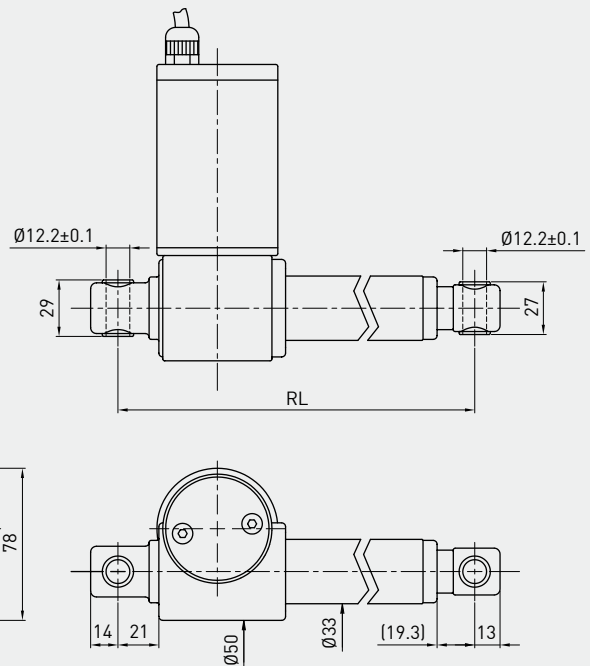
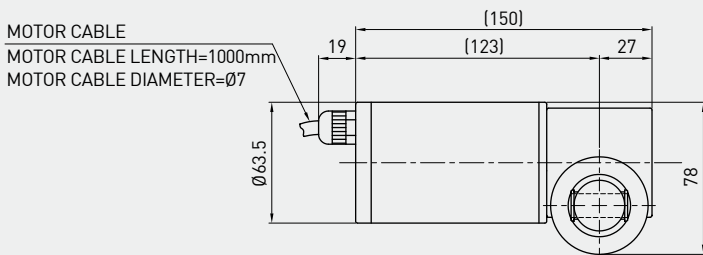


Screw type	Ballscrew/ACME
Weight*	2.31kg
Protection	IP54
Compatible controller	LAK2/LAK2LR/LAK2D/LAK2BN LAK2J/LAK4N/LAK6B
Working temp.	+5°C~40°C

\* Stroke length 100mm

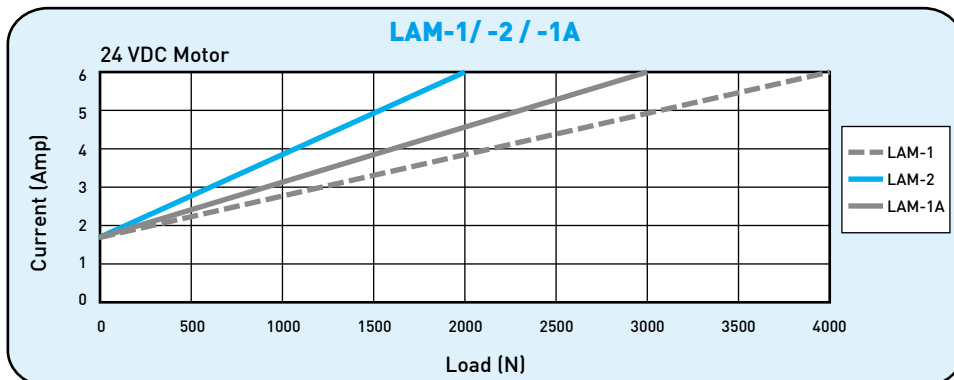
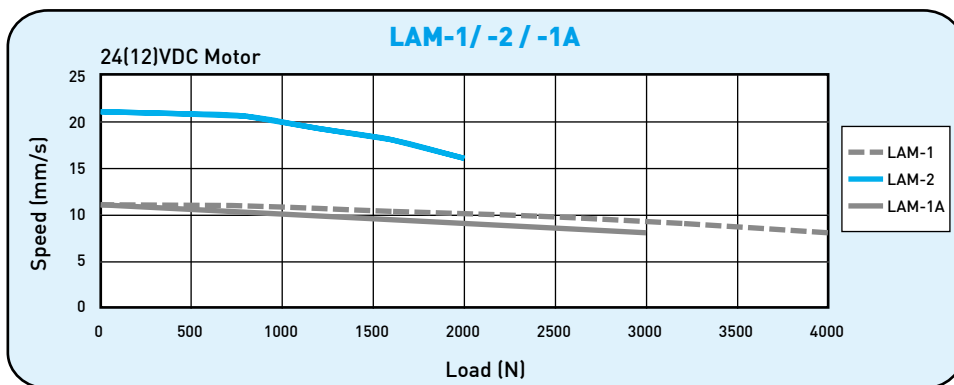
- \* Option: (1) IP65  
 (2) Gear box material: Steel (Standard:Zn(85%)-AL(15%))  
 (3) Gear box housing turned 90°  
 (4) 36VDC motor  
 (5) UL version only 24VDC motor specifications ((Only 24VDC certified by UL))

- LAM-1/-2  
 RL=S+153  
 Stroke≤400  
 RL=S+203  
 Stroke>400  
 RL:Retracted length  
 S:Stroke length
- LAM-1A  
 RL=S+162  
 Stroke≤400  
 RL=S+212  
 Stroke>400

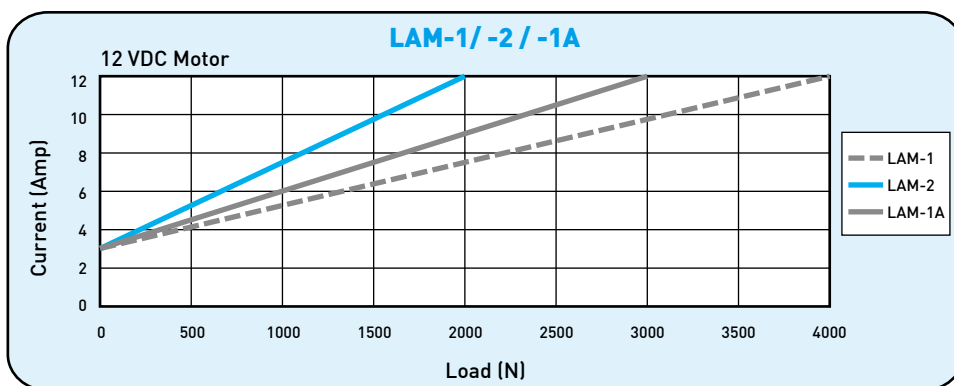


## • LAM Specifications

Model	Screw type	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S							Duty cycle %	Current max. (A)	
					Load=Max./Load=0		100	150	200	250	300	350	400		12VDC	24VDC
LAM-1	Ball screw	4000	3000	4000	8	11	100	150	200	250	300	350	400	10	12	6
LAM-2	Ball screw	2000	2000	1200	16	21	100	150	200	250	300	350	400	10	12	6
LAM-1A	ACME	3000	3000	3000	8	11	100	150	200	250	300	350	400	10	12	6

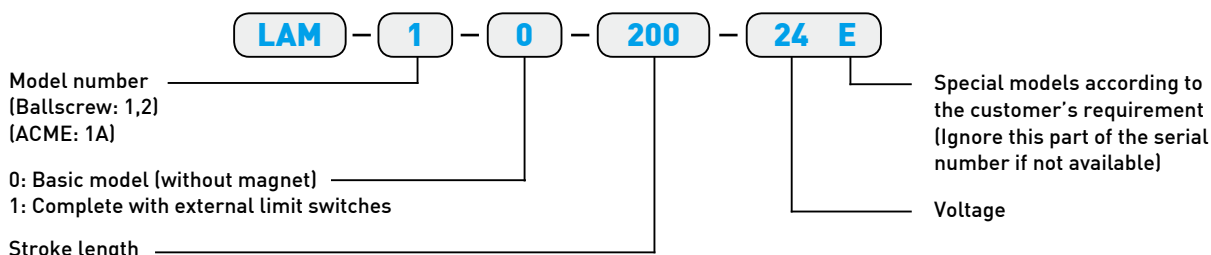


\*\*Note: The test results are obtained by using the 24VDC power supply.



\*\*Note: The test results are obtained by using the 12VDC power supply.

## • Ordering Information





# 5. **HIWIN LAM Series (2)**

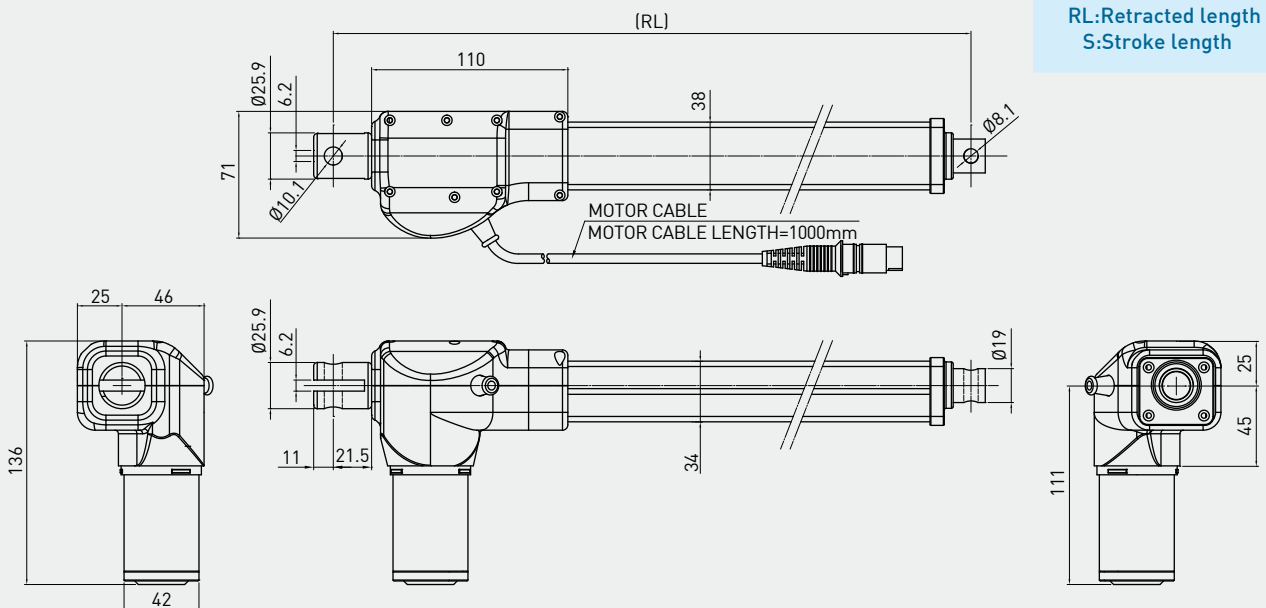
## LAM2



Screw type	ACME
Weight*	1.9kg
Protection	IP54
Compatible controller	Compatible with all controllers (*Notice the type of connector: Audio/DIN 4pin)
Working temp.	+5°C~40°C

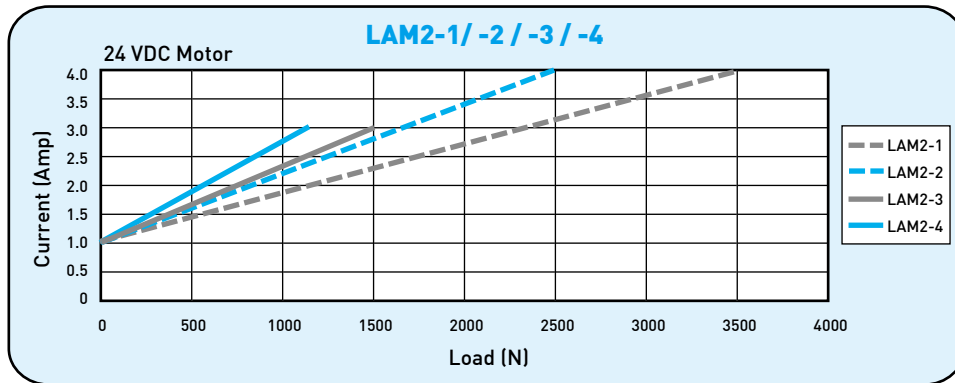
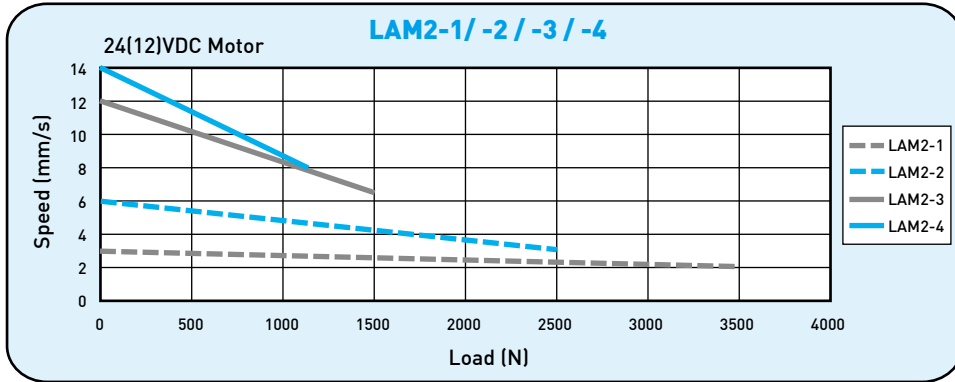
- \* Stroke length 200mm
- \* Option: (1) External reed switch.  
(2) Mechanical Spline(Push only)  
(3) MR Sensor(Position feedback)  
(4) Back fixture turned 90°  
(5) IP66

• RL=S+157  
Stroke≤300  
RL=S+207  
Stroke>300  
RL:Retracted length  
S:Stroke length

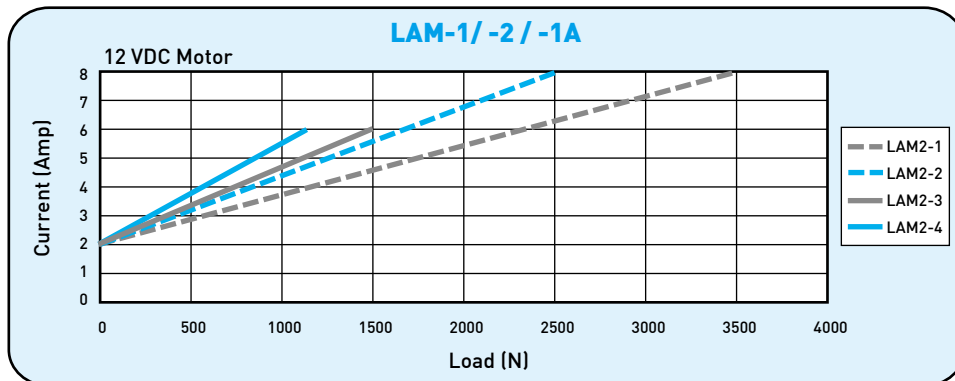


## • LAM2 Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A)		MR Sensor Resolution (mm/pulse)
				Load=Max./Load=0		100	150	200	250	300		24VDC	12VDC	
LAM2-1	3500	3500	3000	2	3.5	100	150	200	250	300	10	4	8	0.1
LAM2-2	2500	2500	2000	3	6	100	150	200	250	300	10	4	8	0.16
LAM2-3	1500	1500	1500	6.5	12	100	150	200	250	300	10	3	6	0.32
LAM2-4	1200	1200	800	8	14	100	1500	200	250	300	10	3	6	0.4

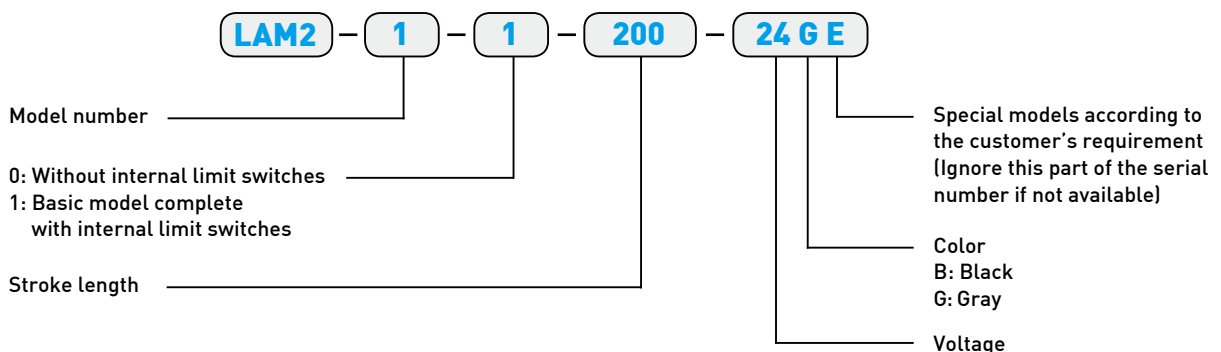


\*\*Note: The test results are obtained by using the 24VDC power supply.



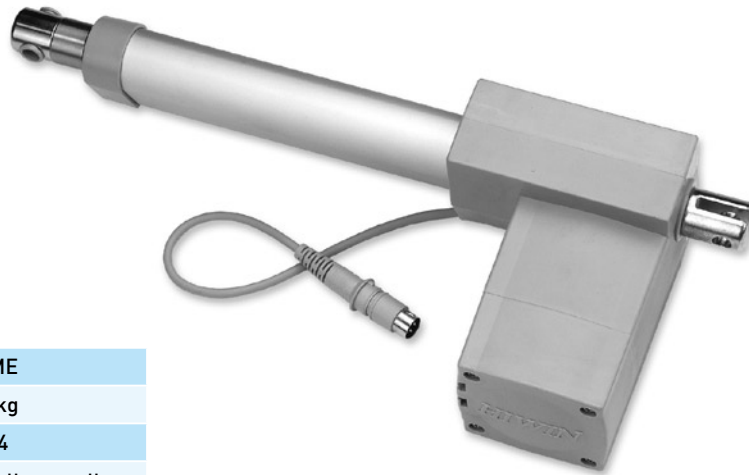
\*\*Note: The test results are obtained by using the 12VDC power supply.

## • Ordering Information



# 5. *HIWIN* LAM Series (2)

## LAM3

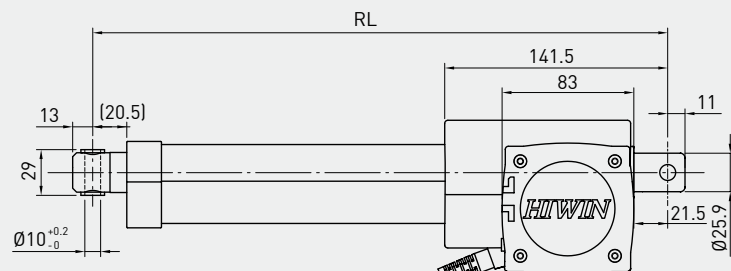
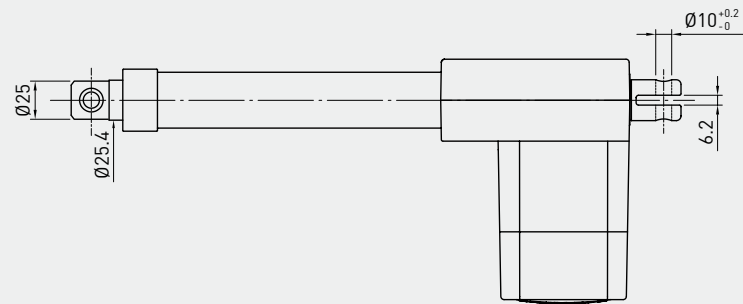
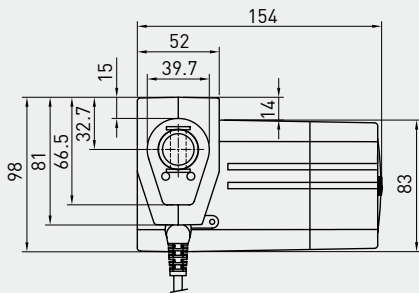


Screw type	ACME
Weight*	2.95kg
Protection	IP54
Compatible controller	Compatible with all controllers [*Notice the type of connector: Audio/DIN 4pin]
Working temp.	+5°C~40°C

\* Stroke length 200mm

- \* Option: (1) IP66  
 (2) Safety Nut (RL=S+183, S≤300/RL=S+233, S>300)  
 (3) Back fixture turned 90°

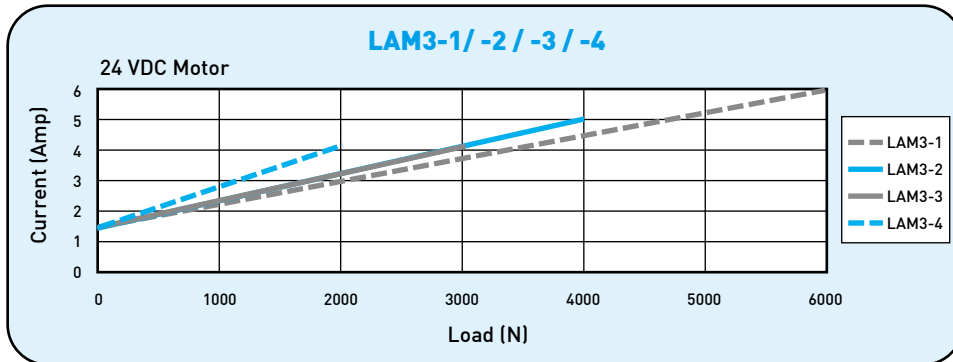
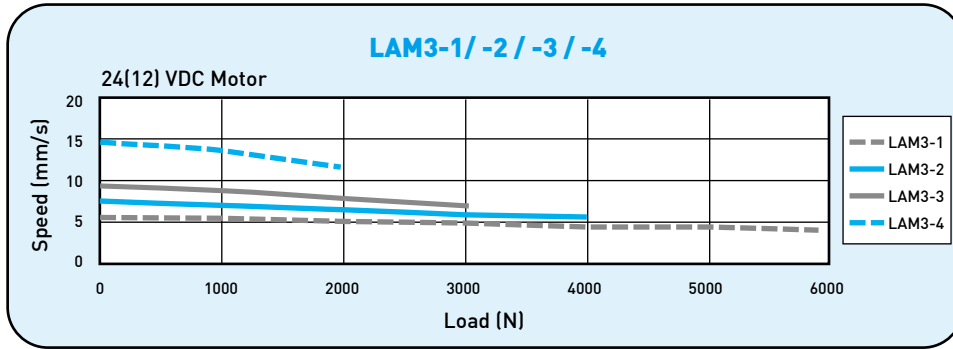
- RL=S+171  
Stroke≤300
- RL=S+221  
Stroke>300
- RL:Retracted length  
S:Stroke length



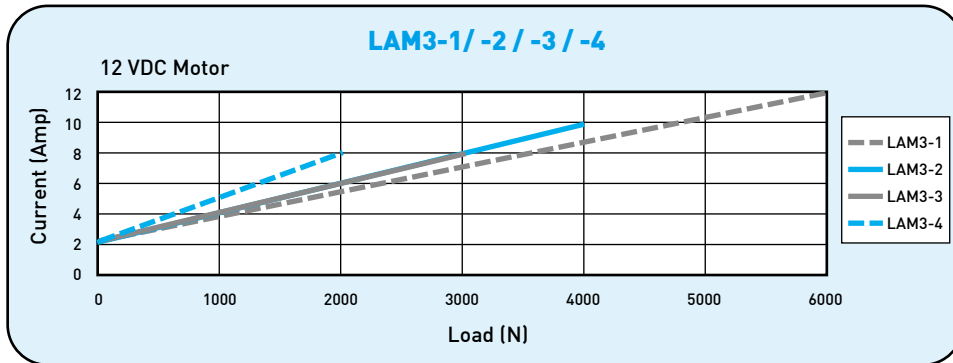
MOTOR CABLE  
 MOTOR CABLE LENGTH=200mm  
 MOTOR CABLE DIAMETER=Ø5.5

## • LAM3 Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S							Duty cycle %	Current max. (A)	
				Load=Max./	Load=0	100	150	200	250	300	350	400		12VDC	24VDC
LAM3-1	6000	5000	5000	4	5.5	100	150	200	250	300	350	400	10	12	6
LAM3-2	4000	4000	4000	5.5	7.5	100	150	200	250	300	350	400	10	10	5
LAM3-3	3000	3000	3000	7	9	100	150	200	250	300	350	400	10	8	4
LAM3-4	2000	2000	1500	11.5	14.5	100	150	200	250	300	350	400	10	8	4

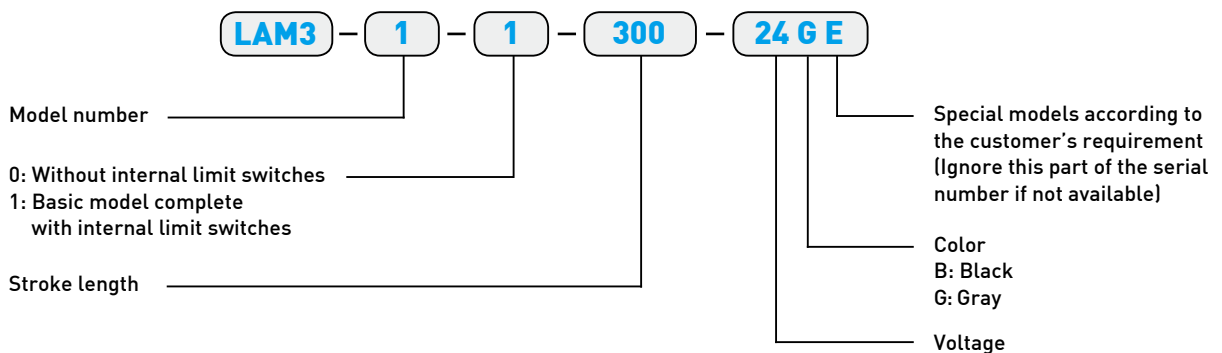


\*\*Note: The test results are obtained by using the 24VDC power supply.



\*\*Note: The test results are obtained by using the 12VDC power supply.

## • Ordering Information



# 6.

## HIWIN LAI Series (1)

### LAI

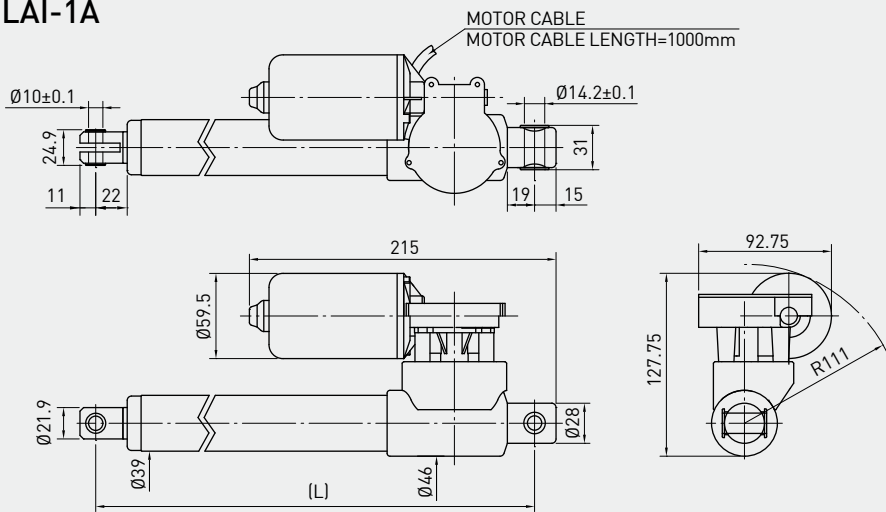


Screw type	Ballscrew/ACME
Weight*	2.4kg
Protection	IP20
Compatible controller	LAK2/LAK2LR/LAK2BN/LAK4N LAK2B/LAK2J/LAK2D/LAK6B
Working temp.	+5°C~40°C

\* Stroke length 200mm

\* Option: (1) IP66  
(2) Hall sensor

#### • LAI-1A



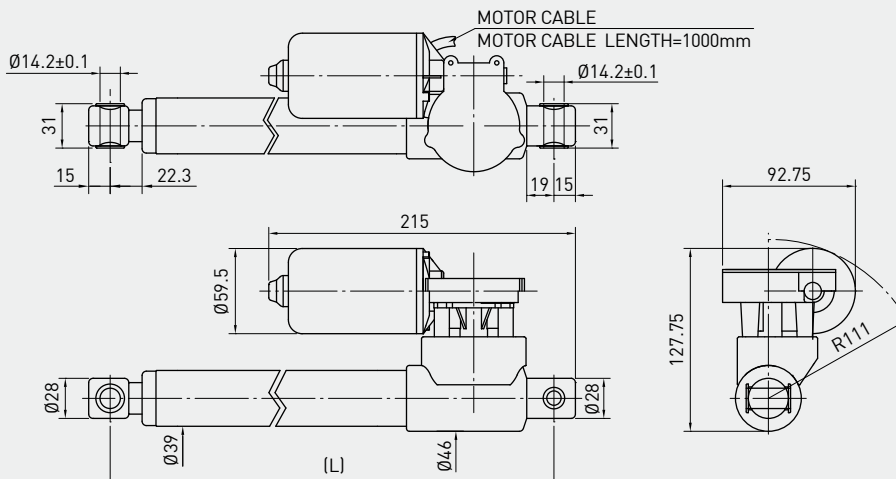
#### • LAI-1A

RL=S+190  
Stroke≤300

RL=S+240  
Stroke>300

RL:Retracted length  
S:Stroke length

#### • LAI-1



#### • LAI-1

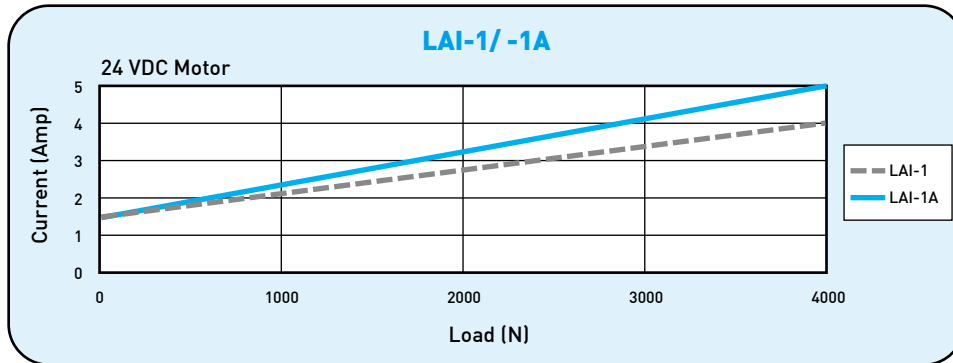
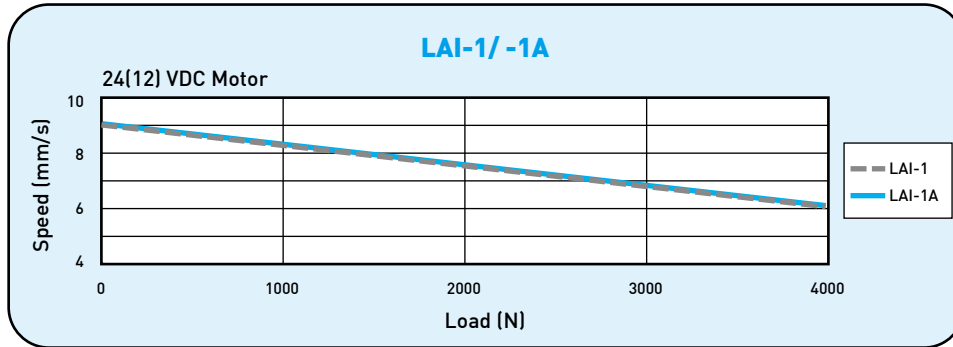
RL=S+170  
Stroke≤300

RL=S+220  
Stroke>300

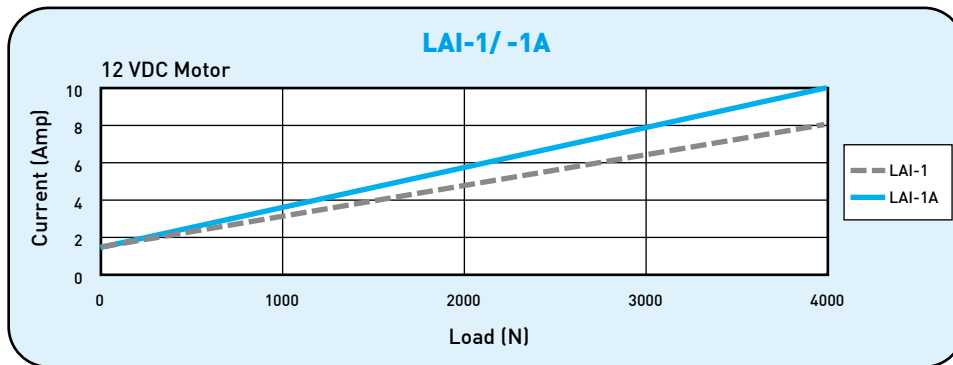
RL:Retracted length  
S:Stroke length

## • LAI Specifications

Model	Screw type	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A)	
					Load=Max./Load=0	Load=0/Load=Max.	100	150	200	250	300		12VDC	24VDC
LAI-1	Ballscrew	4000	4000	1200	6	9	100	150	200	250	300	10	8	4
LAI-1A	ACME	4000	4000	3000	6	9	100	150	200	250	300	10	10	5

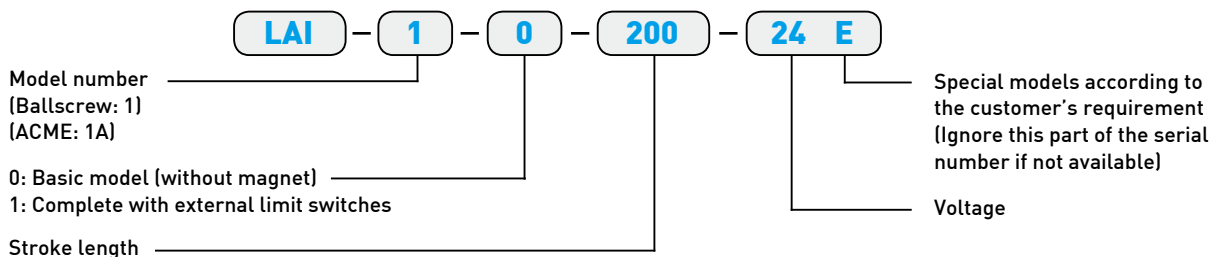


\*\*Note: The test results are obtained by using the 24VDC power supply.



\*\*Note: The test results are obtained by using the 12VDC power supply.

## • Ordering Information



# 6.

## HIWIN LAI Series (2)

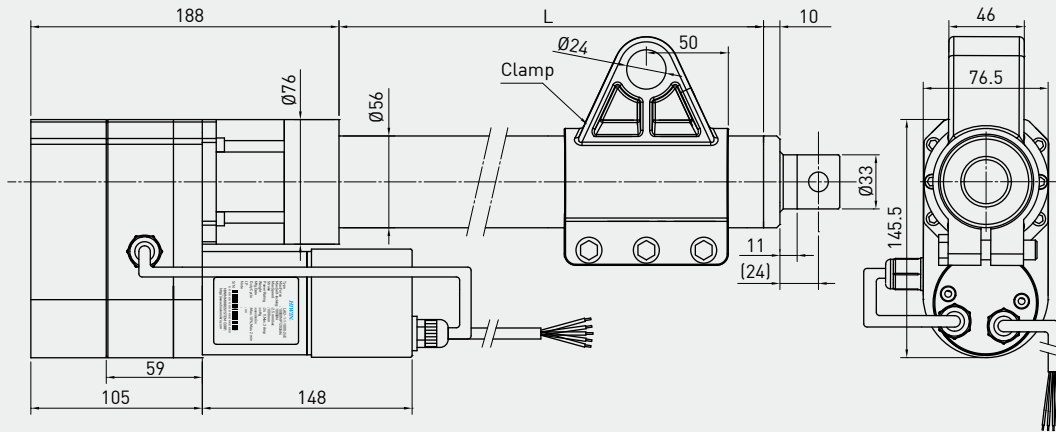
**LAI2**



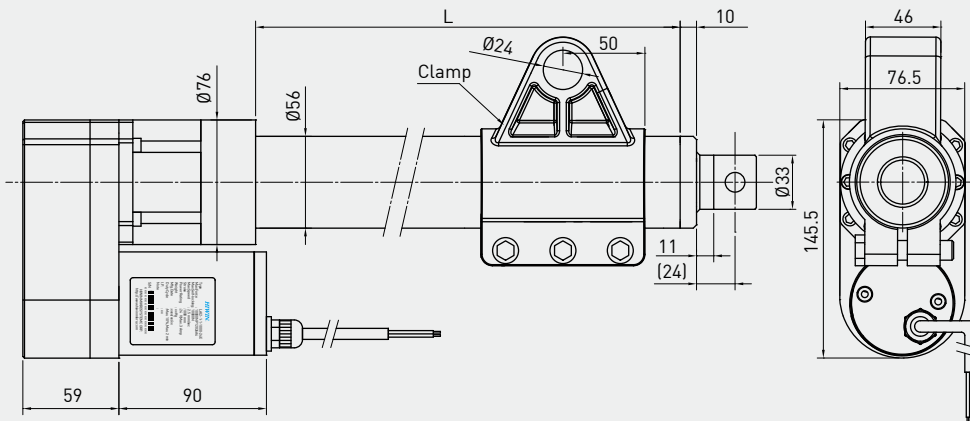
Screw type	Ballscrew
Weight*	8kg
Protection	IP54
Compatible controller	Compatible with all controllers [*Notice the type of connector: Audio/DIN 4pin
Working temp.	+5°C~40°C

- \* Stroke length 300mm
- \* Option: (1) IP66
- (2) Hall sensor
- (3) Overload clutch
- (4) Limit switch
- (5) Clamp installed
- (6) Installation back fixture

• With limit switch and with hall sensor drawing:



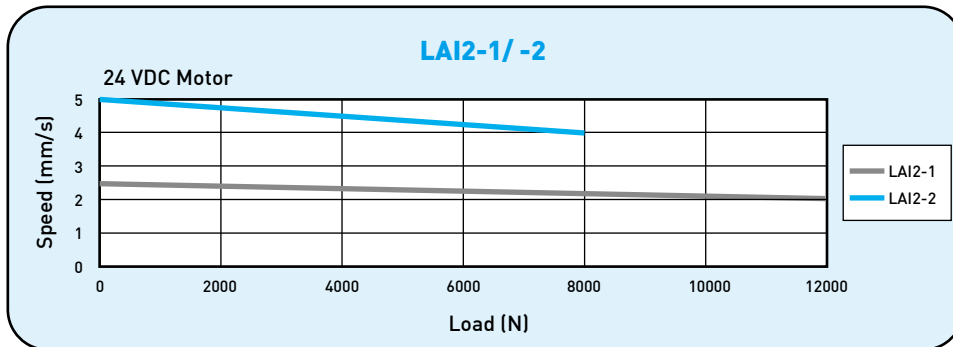
• Without limit switch and without hall sensor drawing:



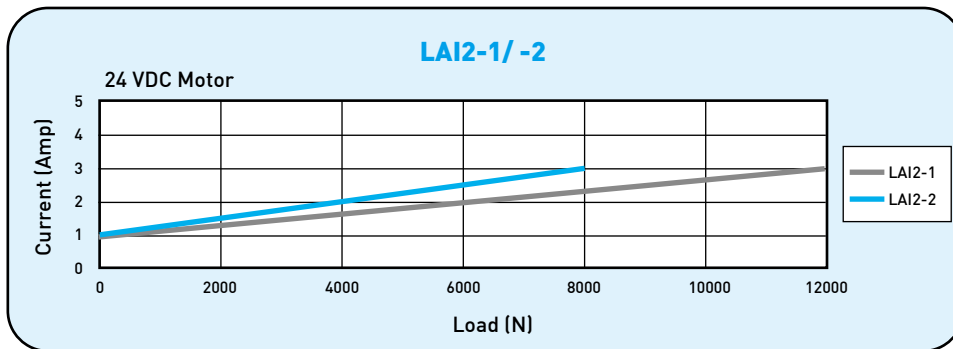
- L=S+78  
Stroke≤300
- L=S+128  
Stroke≤700
- L=S+178  
Stroke≤1000
- S:Stroke length

## • LAI2 Specifications

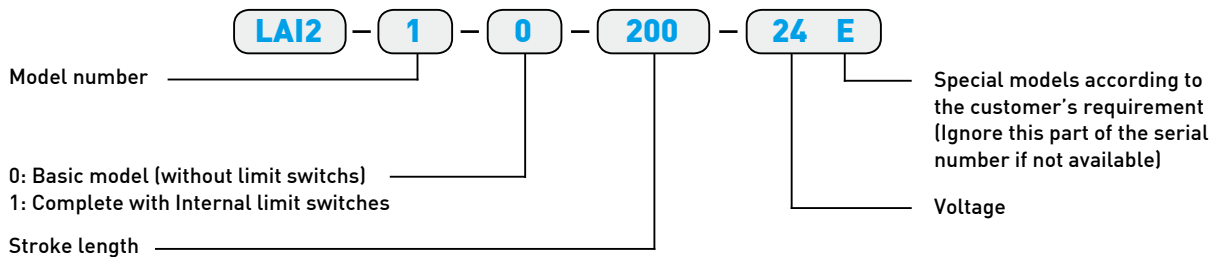
Model	Screw type	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Static Load	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A) 24VDC	Hall Sensor Resolution (mm/pulse)
						Load=Max./Load=0		100	150	200	250	300			
LAI2-1	Ballscrew	12000	10000	12000	50000	2	2.5	100	150	200	250	300	10	3	1.26
LAI2-2	Ballscrew	8000	8000	8000	50000	4	5	100	150	200	250	300	10	3	2.54



\*\*Note: The test results are obtained by using the 24VDC power supply.



## • Ordering Information





# 7.

## HIWIN LAS Series (1)

**LAS**

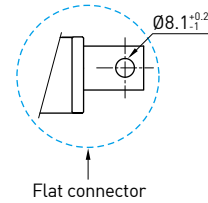


Screw type	ACME
Weight*	1.04kg
Protection	IP54
Compatible controller	Compatible with all controllers (*Notice the type of connector: Audio/DIN 4pin)
Working temp.	+5°C~40°C

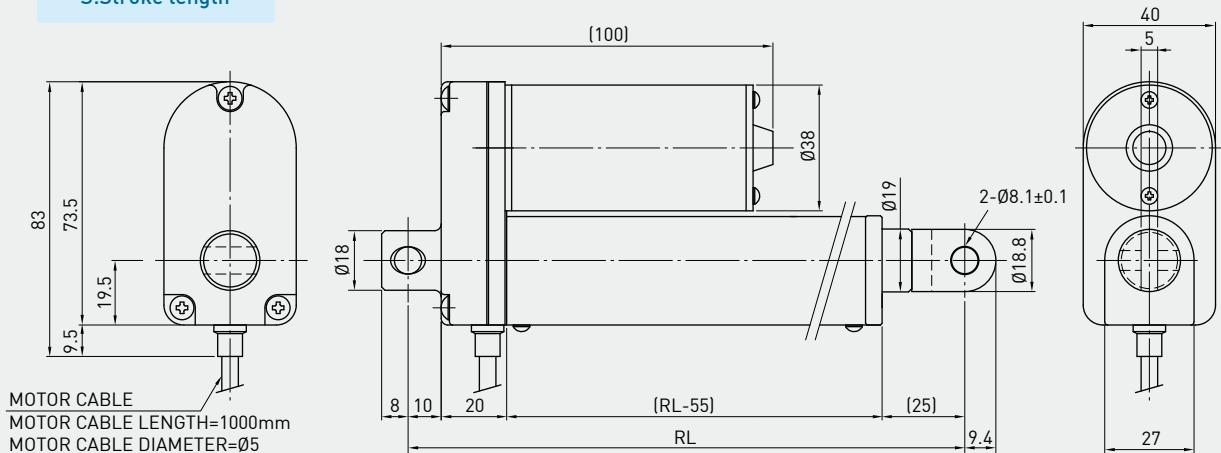
\* Stroke length 200mm

\* Option: (1) IP65

- (2) Back fixture turned 90
- (3) Rod end with flat connector (RL=S+110, S≤250/RL=S+160, S>250)
- (4) 36VDC motor
- (5) External reed switches
- (6) Plastic gear (Max. load: 800N)

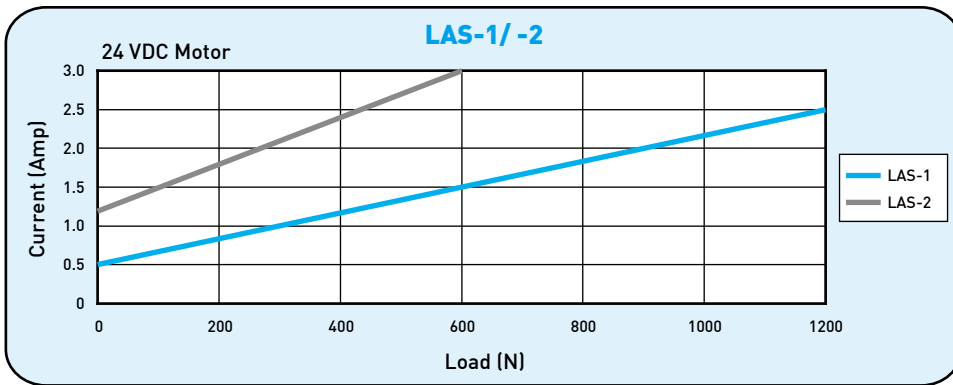
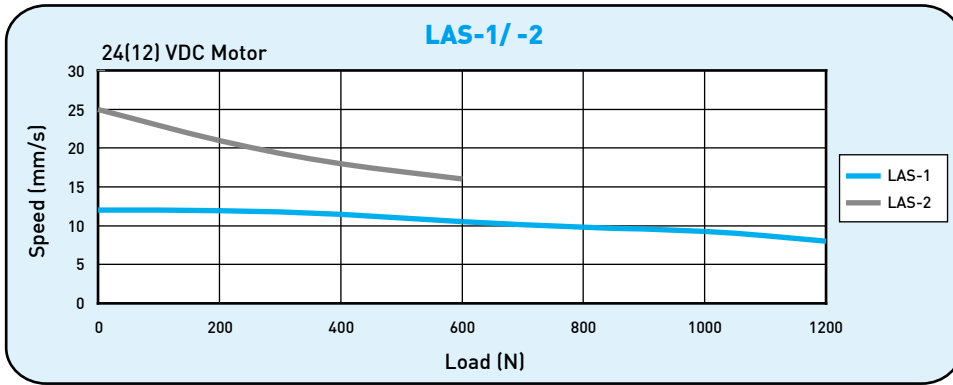


- RL=S+119  
Stroke≤250
- RL=S+169  
Stroke>250
- RL:Retracted length
- S:Stroke length

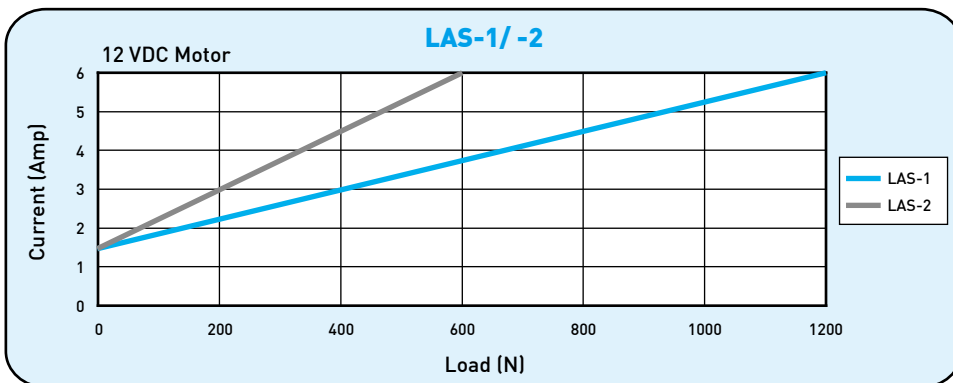


## • LAS Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s) Load=Max./Load=0		Standard stroke (mm) : S					Duty cycle %	Current max. (A)	
				8	12	50	100	150	200	250		12VDC	24VDC
LAS-1	1200	1200	800	8	12	50	100	150	200	250	10	6	2.5
LAS-2	600	600	300	16	25	50	100	150	200	250	10	6	3

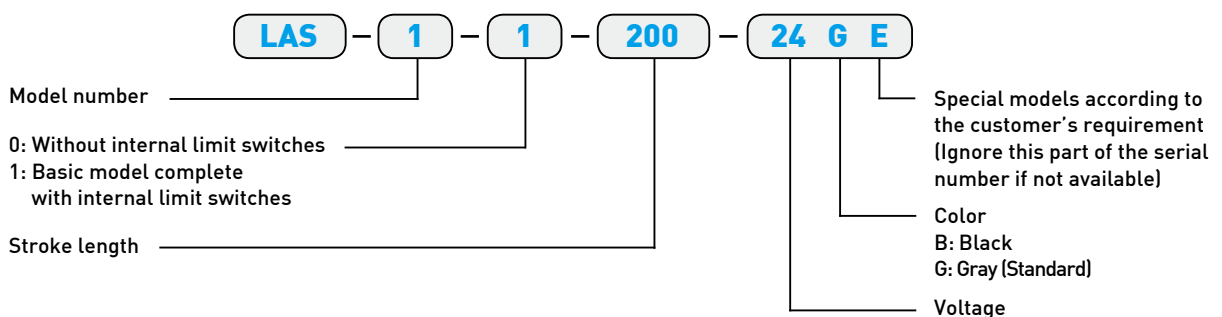


\*\*Note: The test results are obtained by using the 24VDC power supply.



\*\*Note: The test results are obtained by using the 12VDC power supply.

## • Ordering Information



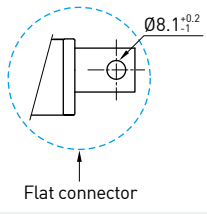
# 7. **HIWIN LAS Series (2)**

## LAS2



Screw type	ACME	Position feedback specifications (Optical Sensor)			
Weight*	1.3kg	Supply voltage	24VDC	12VDC	5VDC
Protection	IP54	Output	High level 24VDC Low level 0.2V/40mA PNP* PS. Open collector	High level 12VDC Low level 0.2V/40mA PNP* PS. Open collector	TTL
Compatible controller	Compatible with all controllers (*Notice the type of connector: Audio/DIN 4pin)				
Working temp.	+5°C~40°C				

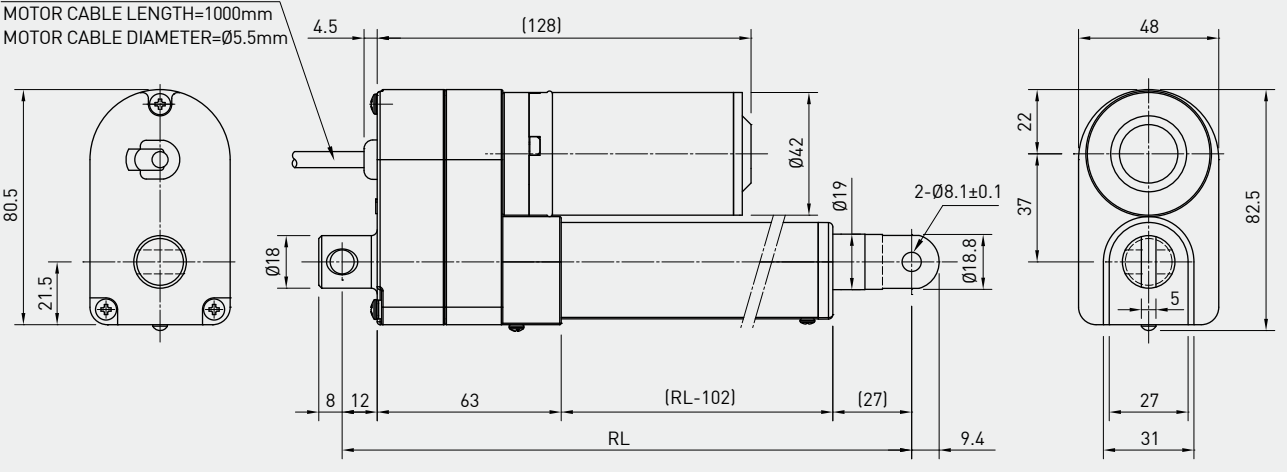
- \* Stroke length 200mm
- \* Option: (1) IP65
- (2) Position feedback
- 1: Potentiometer 10k ohm (RL=S+154, S≤250/RL=S+204, S>250)
- 2: Optical sensor: PNP (standard), NPN. TTL
- (3) 36VDC motor
- (4) Back fixture turned 90°
- (5) Rod end with flat connector (RL=S+133, S≤250/RL=S+183, S>250)



\* Low noise

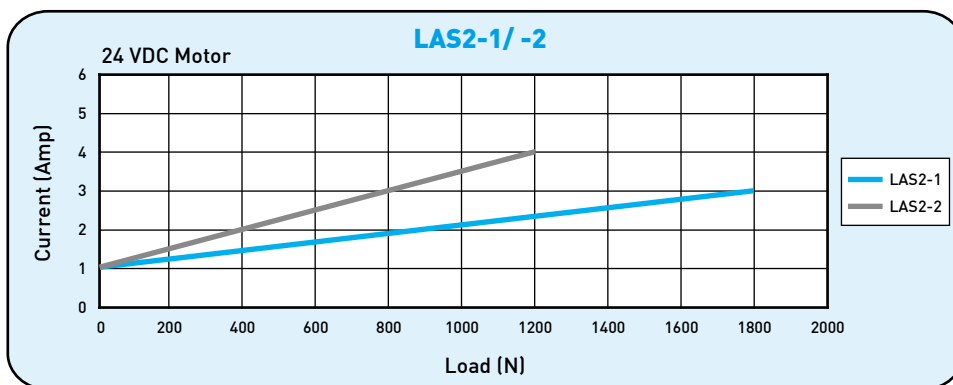
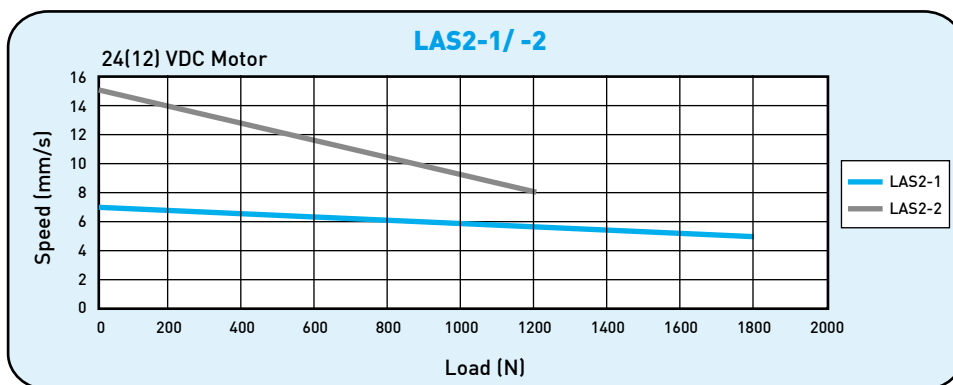
- RL=S+146  
Stroke≤250
- RL=S+196  
Stroke>250
- RL:Retracted length  
S:Stroke length

MOTOR CABLE  
MOTOR CABLE LENGTH=1000mm  
MOTOR CABLE DIAMETER=Ø5.5mm

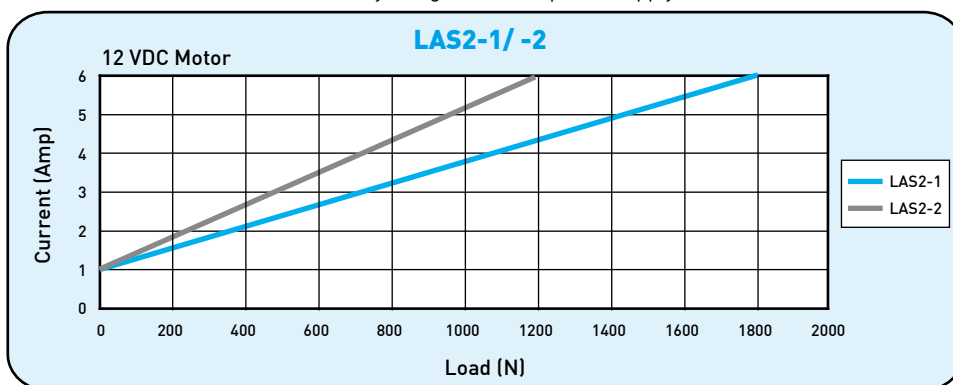


## • LAS2 Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A)		Optical Sensor Resolution (mm/pulse)	Potentiometer Resolution (Ohm/mm)
				Load=Max./Load=0		50	100	150	200	250		12VDC	24VDC		
LAS2-1	1800	1200	1800	4.5	7	50	100	150	200	250	10	6	3	0.3175	21
LAS2-2	1200	1200	1000	8	15	50	100	150	200	250	10	6	4	0.635	10.5

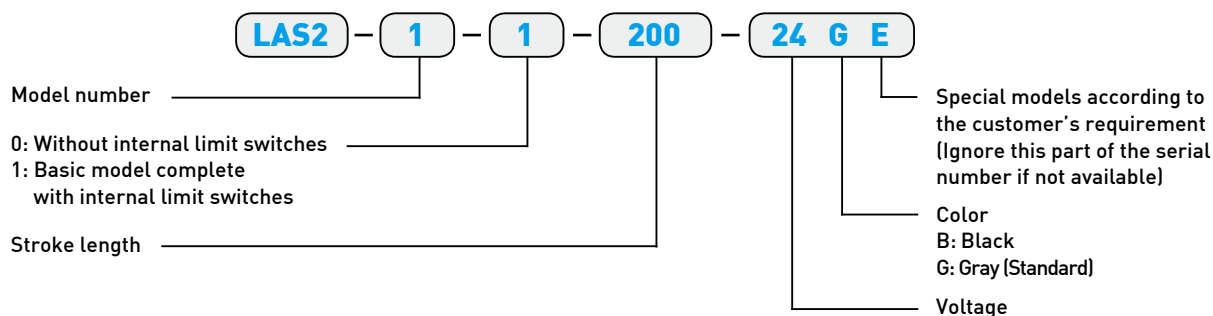


\*\*Note: The test results are obtained by using the 24VDC power supply.



\*\*Note: The test results are obtained by using the 12VDC power supply.

## • Ordering Information



# 7.

## HIWIN LAS Series (3)

**LAS3**



Screw type	ACME	Position feedback specifications (Optical Sensor)			
Weight*	1.27kg	Supply voltage	24VDC	12VDC	5VDC
Protection	IP54	Output	High level 24VDC Low level 0.2V/40mA PNP* PS. Open collector	High level 12VDC Low level 0.2V/40mA PNP* PS. Open collector	TTL
Compatible controller	Compatible with all controllers [*Notice the type of connector: Audio/DIN 4pin]				
Working temp.	+5°C~40°C				

\* Stroke length 200mm

\* Option: (1) IP65

(2) Position feedback

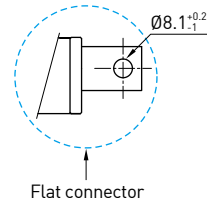
1: Potentiometer 10k ohm (RL=S+154, S≤250/RL=S+204, S>250)

2: Optical sensor: PNP (standard), NPN, TTL

(3) 36VDC motor

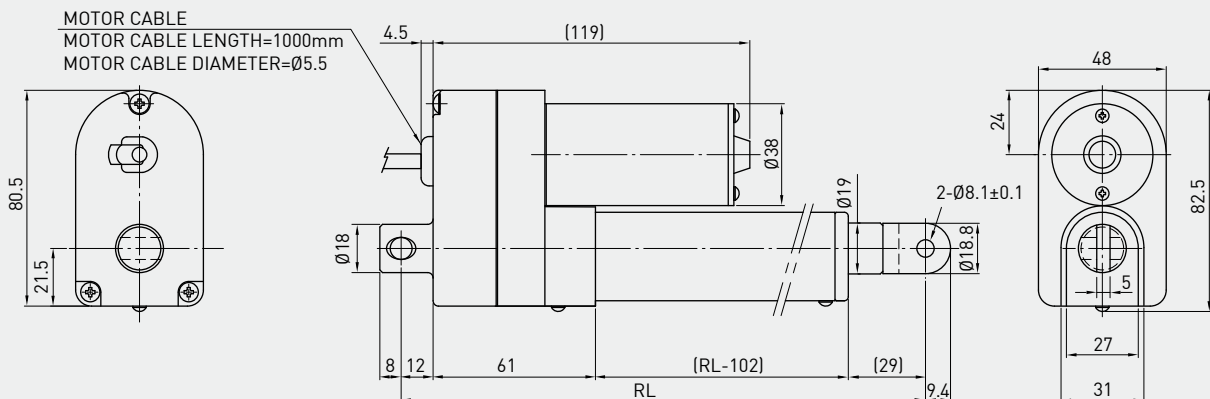
(4) Back fixture turned 90°

(5) Rod end with flat connector (RL=S+133, S≤250/RL=S+183, S>250)



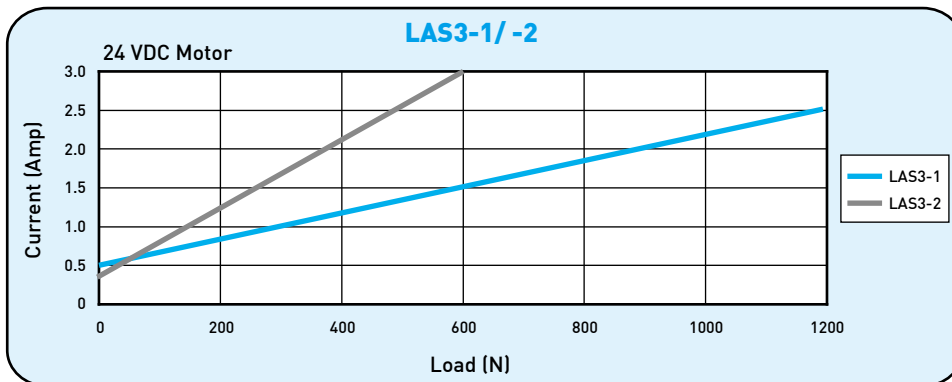
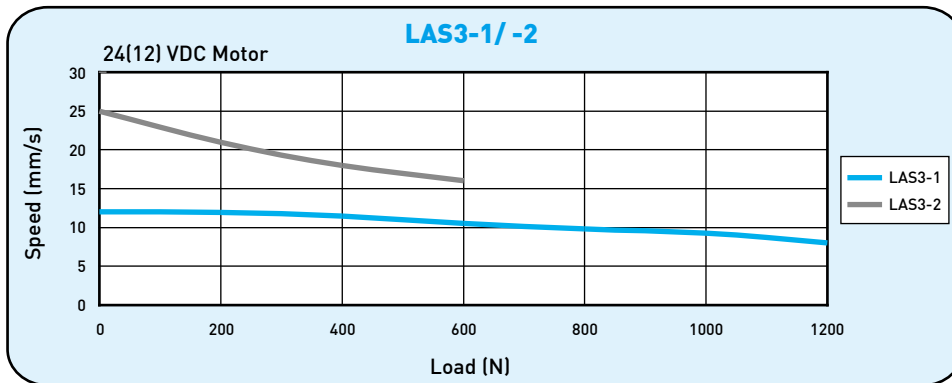
Flat connector

- RL=S+146  
Stroke≤250
- RL=S+196  
Stroke>250
- RL:Retracted length
- S:Stroke length

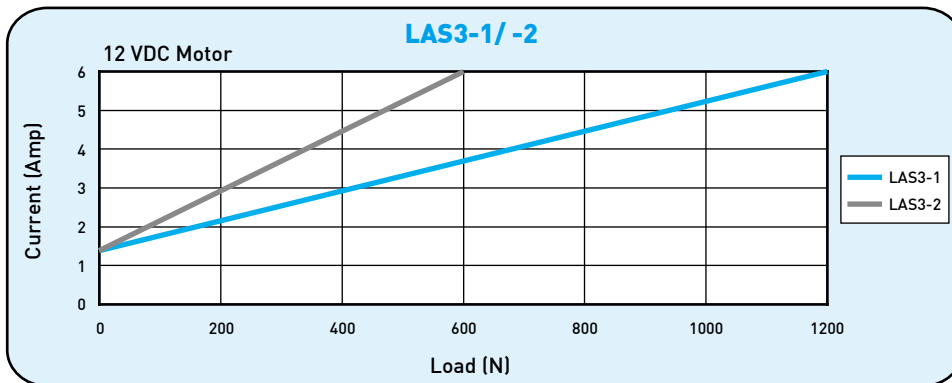


### • LAS3 Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S				Duty cycle %	Current max. (A)		Optical Sensor Resolution (mm/pulse)	Potentiometer Resolution (Ohm/mm)	
				Load=Max./Load=0		50	100	150	200		250	12VDC			24VDC
LAS3-1	1200	1200	800	8	12	50	100	150	200	250	10	6	2.5	0.3175	21
LAS3-2	600	600	300	16	25	50	100	150	200	250	10	6	3	0.635	10.5

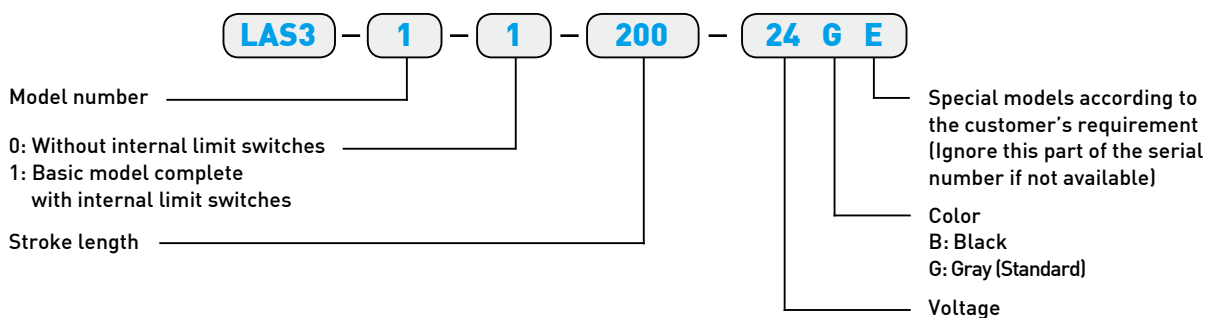


\*\*Note: The test results are obtained by using the 24VDC power supply.



\*\*Note: The test results are obtained by using the 12VDC power supply.

### • Ordering Information



# 7. **HIWIN LAS Series (4)**

**LAS4**



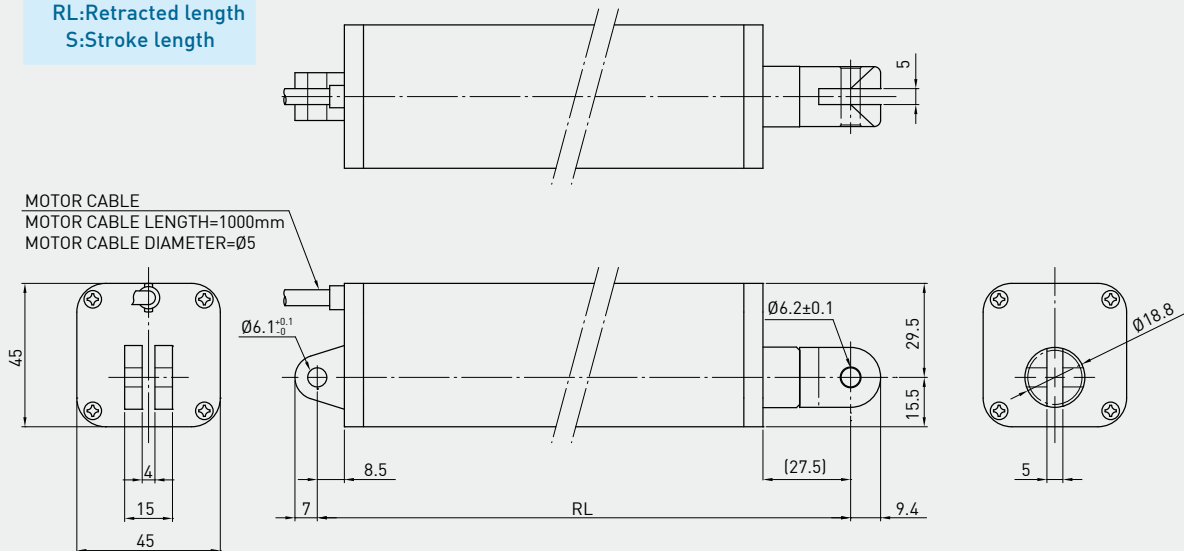
Screw type	ACME	Position feedback specifications (Hall Sensor)			
Weight*	1.36kg	Supply voltage	24VDC	12VDC	5VDC
Protection	IP54	Output	High level 24VDC Low level 0.2V/10mA sink (NPN)	High level 12VDC Low level 0.2V/10mA sink (NPN)	TTL
Compatible controller	Compatible with all controllers (*Notice the type of connector: Audio/DIN 4pin)				
Working temp.	+5°C~40°C				

\* Stroke length 200mm

\* Option: (1) IP65

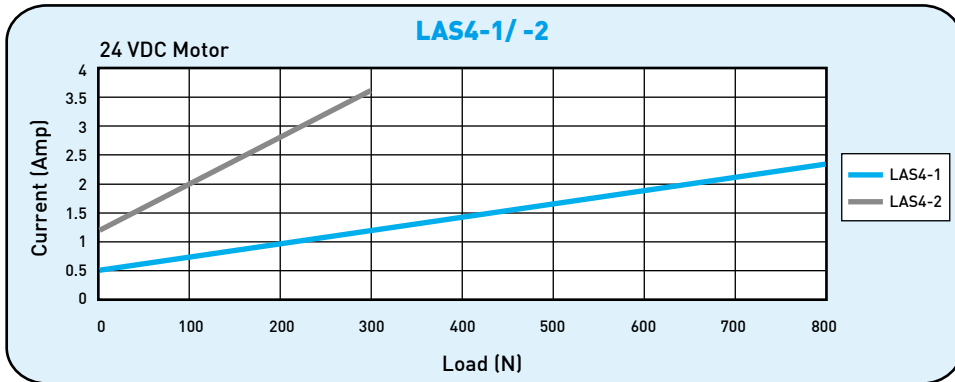
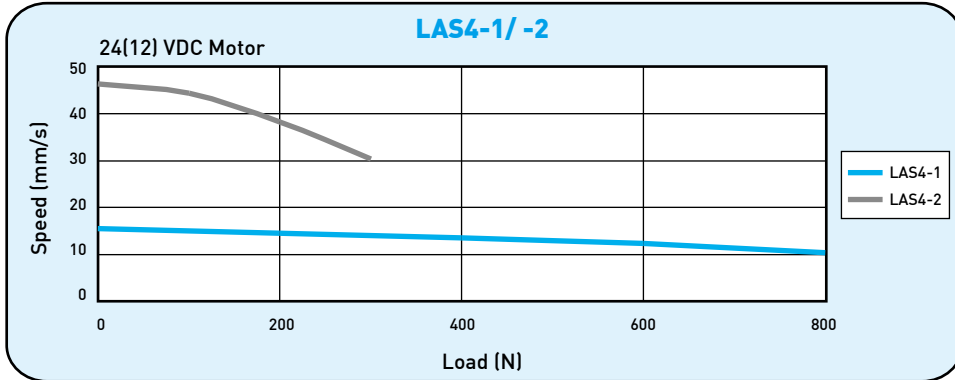
(2) Hall sensor (RL=S+226, S≤300/RL=S+276, S>300)

- RL=S+222.5  
Stroke≤300
- RL=S+272.5  
Stroke>300
- RL:Retracted length  
S:Stroke length

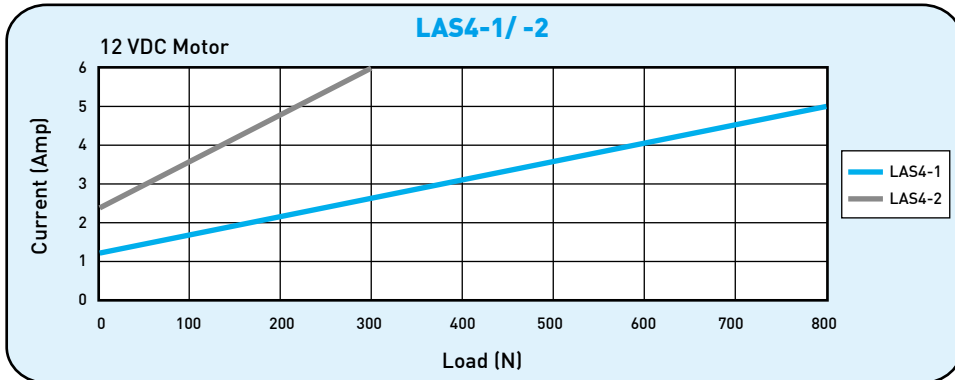


## • LAS4 Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A)		Hall Sensor Resolution (mm/pulse)
				Load=Max./Load=0		100	150	200	250	300		12VDC	24VDC	
LAS4-1	800	800	600	10	15	100	150	200	250	300	10	5	2.3	0.0085
LAS4-2	300	300	200	30	46	100	150	200	250	300	10	6	3.6	0.02

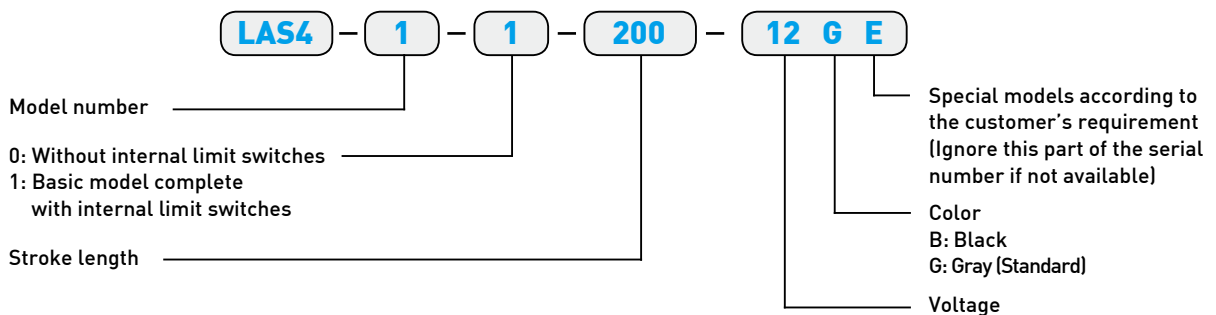


\*\*Note: The test results are obtained by using the 24VDC power supply.



\*\*Note: The test results are obtained by using the 12VDC power supply.

## • Ordering Information





# 8.

## HIWIN LAN Series (1)

**LAN1**



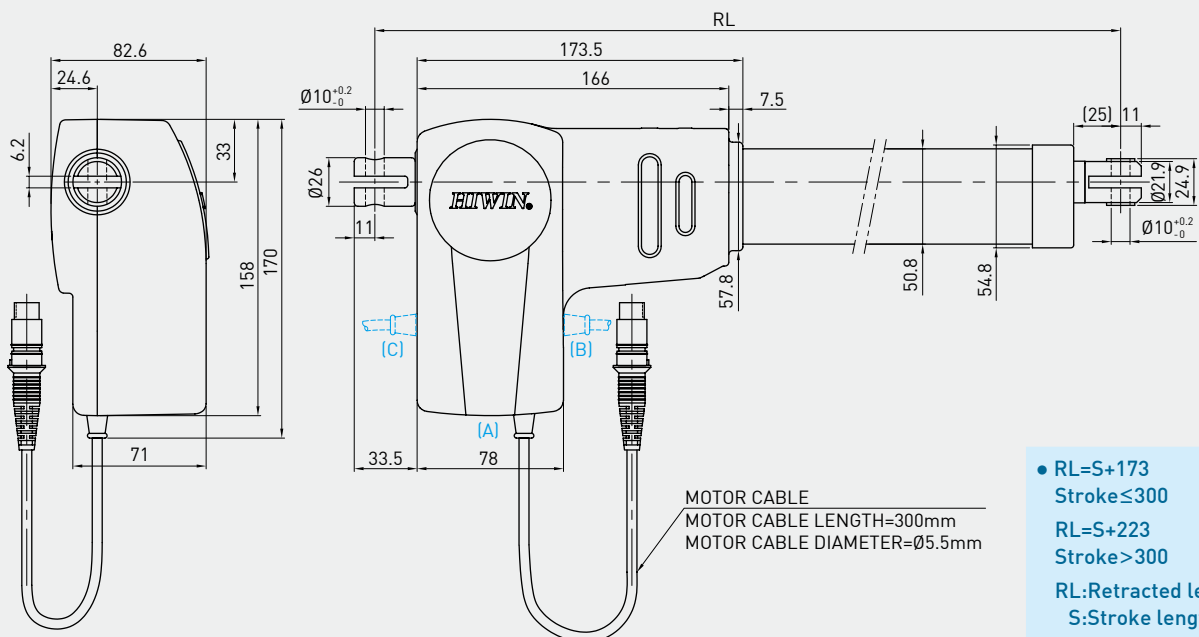
Screw type	ACME
Weight*	2.6kg
Protection	IP54
Compatible controller	Compatible with all controllers (*Notice the type of connector: Audio/DIN 4pin)
Working temp.	+5°C~40°C

Position feedback specifications (Hall Sensor)			
Supply voltage	24VDC	12VDC	5VDC
Output	High level 24VDC Low level 0.2V/10mA sink (NPN)	High level 12VDC Low level 0.2V/10mA sink (NPN)	TTL

\* Stroke length 200mm

\* Option: (1) IP66

- (2) Position feedback
- (3) Safety Nut (RL=S+185, S≤300/RL=S+235, S>300)
- (4) Mechanical Spline (push only)(RL=S+223, S≤300/RL=S+273, S>300)
- (5) Back fixture turned 90°
- (6) Mechanical quick release (RL=S+230), Only for LAN1-4
- (7) Motor cable outlet: (A)Standard (B)Front (C)Back.
- (8) 36VDC motor
- (9) UL version



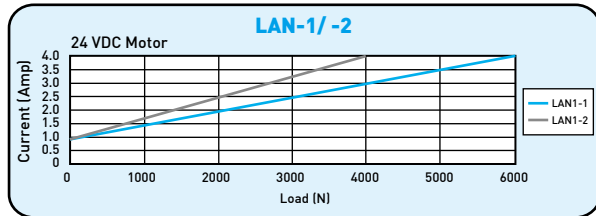
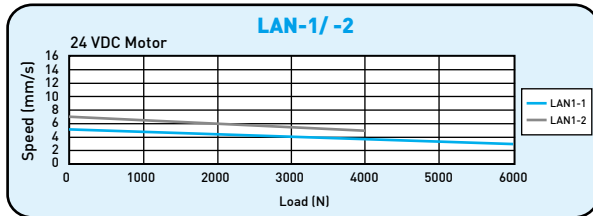
- RL=S+173  
Stroke≤300
- RL=S+223  
Stroke>300
- RL:Retracted length  
S:Stroke length

## • LAN1 Specifications

### Standard Motor

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A) 24VDC	Hall Sensor Resolution (mm/pulse)
				Load=Max./	Load=0	100	150	200	250	300			
LAN1-1	6000	5000	5000	2.7	5	100	150	200	250	300	10	4	0.3
LAN1-2	4000	4000	4000	5	7	100	150	200	250	300	10	4	0.5

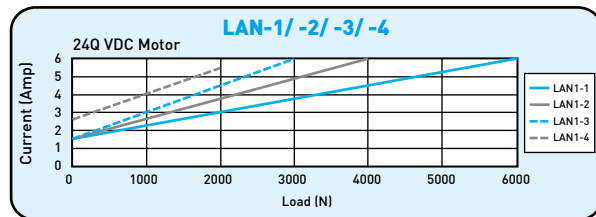
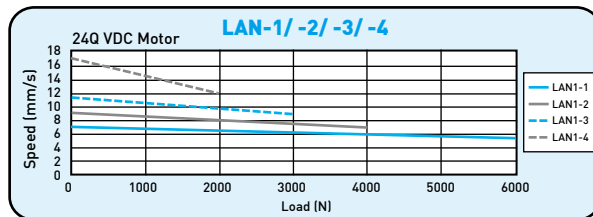
\*\*Note: The test results are obtained by using the 24VDC power supply and holding by motor short-circuited.



### Fast Motor 24Q

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A) 24VDC	Hall Sensor Resolution (mm/pulse)
				Load=Max./	Load=0	100	150	200	250	300			
LAN1-1	6000	5000	5000	5	7	100	150	200	250	300	10	6	0.3
LAN1-2	4000	4000	4000	7	9	100	150	200	250	300	10	6	0.4
LAN1-3	3000	3000	3000	9	11.5	100	150	200	250	300	10	6	0.5
LAN1-4	2000	2000	2000	12	17	100	150	200	250	300	10	5.5	0.8

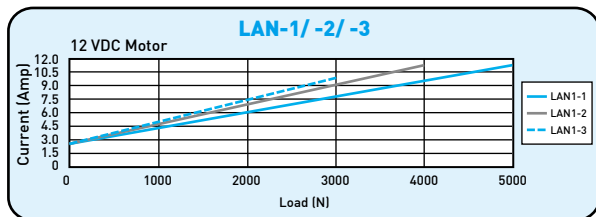
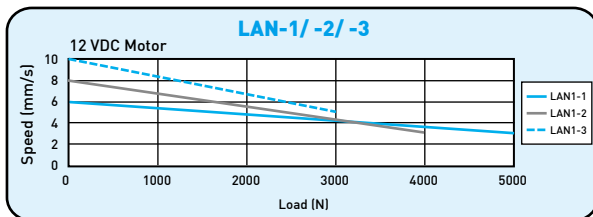
\*\*Note: The test results are obtained by using the 24VDC power supply and holding by motor short-circuited.



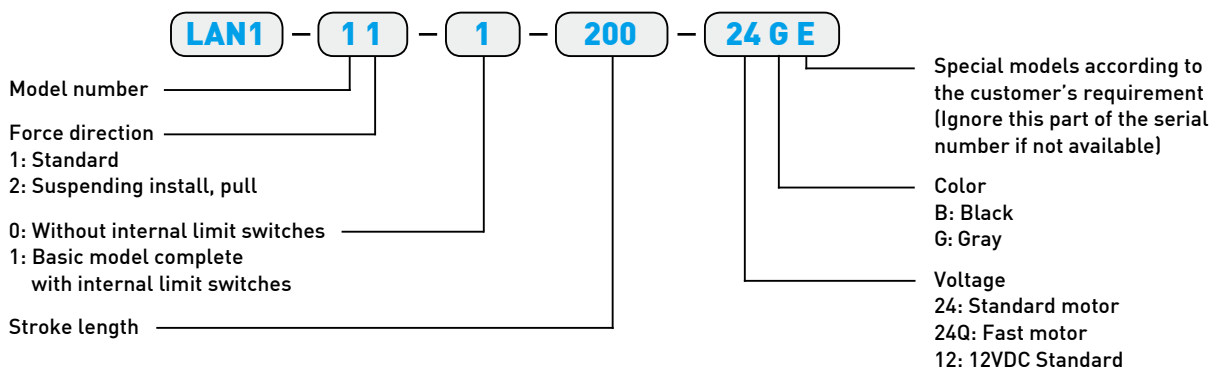
### 12VDC Motor

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A) 12VDC	Hall Sensor Resolution (mm/pulse)
				Load=Max./	Load=0	100	150	200	250	300			
LAN1-1	5000	5000	5000	3	6	100	150	200	250	300	10	11	0.3
LAN1-2	4000	4000	4000	4	8	100	150	200	250	300	10	11	0.4
LAN1-3	3000	3000	3000	5	10	100	150	200	250	300	10	10	0.5

\*\*Note: The test results are obtained by using the 12VDC power supply and holding by motor short-circuited.



## • Ordering Information



# 8.

## HIWIN LAN Series (2)

### LAN2

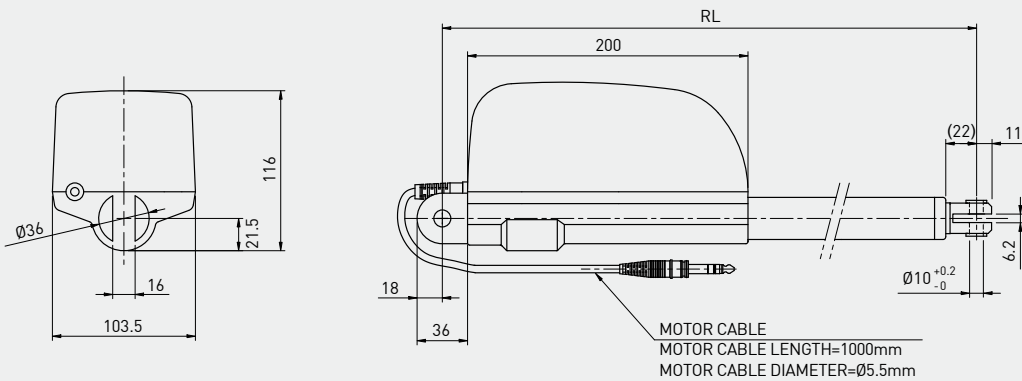


Screw type	ACME
Weight*	3.29kg
Protection	IP54
Compatible controller	LAK2/LAK2LR/LAK2D LAK2BN/LAK2J/LAK4N/LAK6B
Working temp.	+5°C~40°C

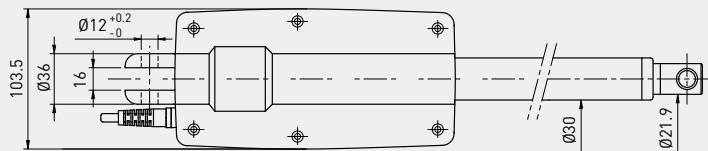
Position feedback specifications (Hall Sensor)		
Supply voltage	24VDC	5VDC
Output	High level 24VDC Low level 0.2V/10mA sink (NPN)	TTL

\* Stroke length 300mm

- \* Option: (1) IP66  
 (2) Position feedback  
 (3) Safety nut: RL=S+211, S≤400/RL=S+261, S>400  
 (4) Spline (push only): RL=S+237, S≤400/RL=S+287, S>400  
 (5) Mono jack-plug (Standard is stereo)  
 (6) With down internal limit switch RL=S+202



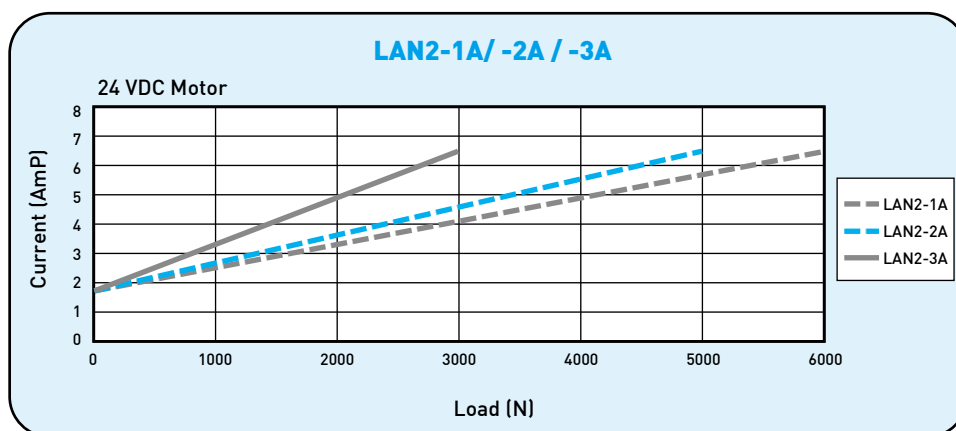
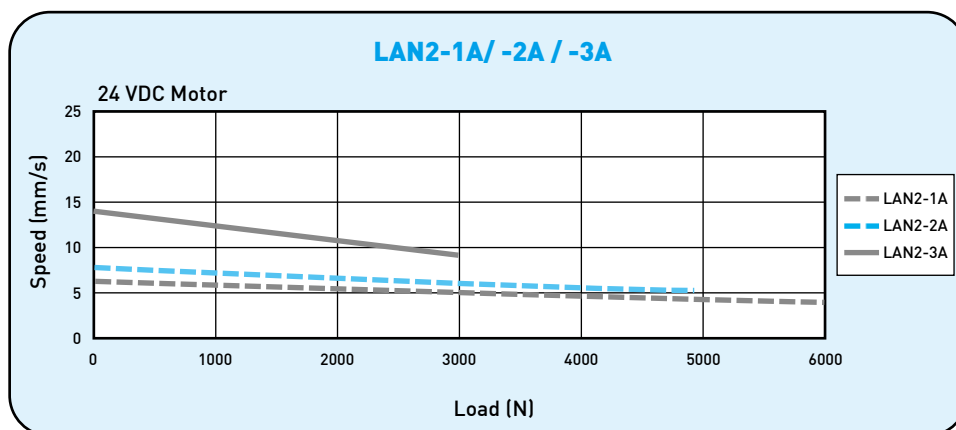
- RL=S+198  
Stroke≤400
- RL=S+248  
Stroke>400
- RL:Retracted length  
S:Stroke length



## • LAN2 Specifications

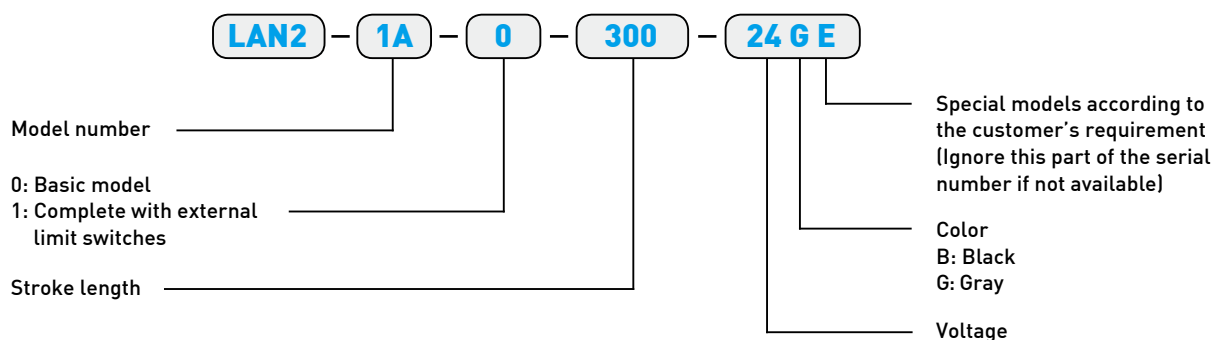
Model	Screw type	Thrust max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S							Duty cycle %	Current max. (A) 24VDC	Hall Sensor Resolution (mm/pulse)
				Load=Max./Load=0		100	150	200	250	300	350	400			
LAN2-1A	ACME	6000	5000	4	6	100	150	200	250	300	350	400	10	6.5	0.3
LAN2-2A	ACME	5000	5000	5	7.5	100	150	200	250	300	350	400	10	6.5	0.4
*LAN2-3A	ACME	3000	3000	9	14	100	150	200	250	300	350	400	10	6.5	0.8

\* LAN2-3A Holding Force (Push direction only).



\*\*Note: The test results are obtained by using the 24VDC power supply.

## • Ordering Information



# 8.

## HIWIN LAN Series (3)

### LAN3



Screw type	ACME
Weight*	5.31kg
Protection	IP54
Compatible controller	LAK4N/LAK6B/LAK2J
Working temp.	+5°C~40°C

\* Stroke length 200mm

\* Option: (1) IP66

(2) Potentiometer 10K ohm (RL=S+221, S<200mm / RL= S+271, S:200~500mm)

\* The max. stroke lengths with potentiometer: LAN3-1 Max.250mm, LAN3-2 Max.330mm, LAN3-3 Max.420mm

(3) Mechanical Spline (RL=S+252, S<200mm / RL= S+302, S:200~500mm)

(4) Safety Nut (RL=S+222, S<200mm / RL= S+272, S:200~500mm);

Safety Nut+Mechanical Spline (RL=S+259, S<200mm / RL=S+309, S=200~500mm)

(5) Mechanical quick release

(6) Back fixture turned 90°

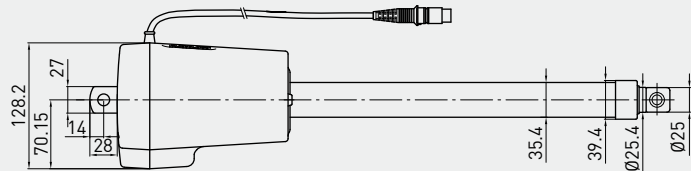
(7) Fast motor 24Q

(8) 36VDC motor

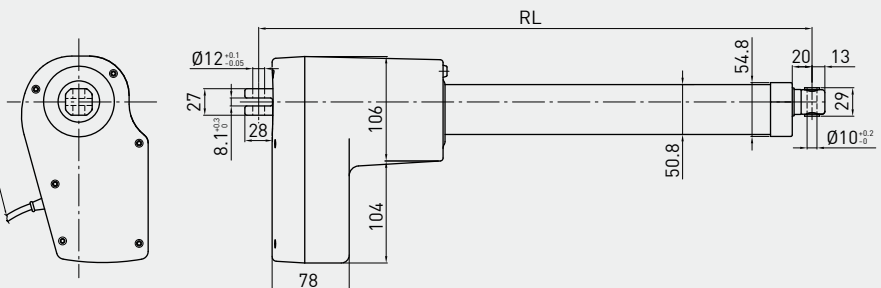
(9) External reed switches (RL=S+290, S<200mm / RL=S+340, S=200~500mm)

(10) MR Sensor feedback

- RL=S+210  
Stroke<200
- RL=S+260  
(Stroke:200~500mm)
- RL:Retracted length
- S:Stroke length



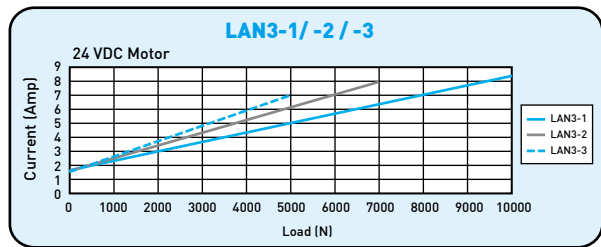
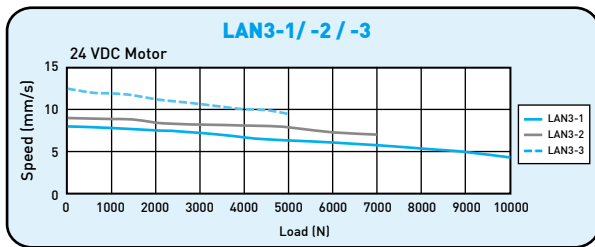
MOTOR CABLE  
MOTOR CABLE LENGTH=1000mm  
MOTOR CABLE DIAMETER=Ø5.5mm



## • LAN3 Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S								Duty cycle %	Current max. (A) 24VDC	Potentiometer Resolution (Ohm/mm)	MR Sensor Resolution (mm/pulse)	
				Load=Max./	Load=0	100	150	200	250	300	350	400	450					500
LAN3-1	10000	6000	10000	4.5	8	100	150	200	250	300	350	400	-	-	10	8.3	37.5	0.16
LAN3-2	7000	6000	7000	7	9	100	150	200	250	300	350	400	450	500	10	8	28	0.22
LAN3-3	5000	5000	5000	9.5	12.5	100	150	200	250	300	350	400	450	500	10	7	22.5	0.27

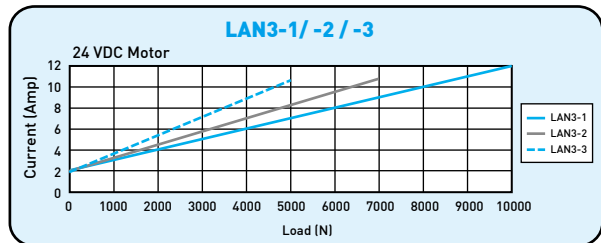
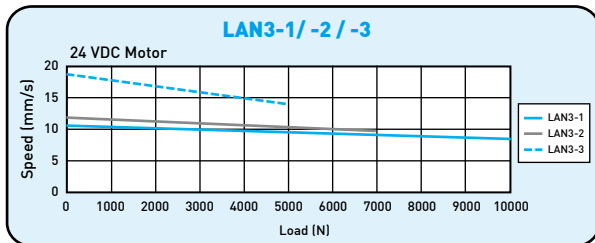
\* Stroke over 200mm (included), RL=S+260



\*\*Note: The test results are obtained by using the 24VDC power supply and holding by motor short-circuited.

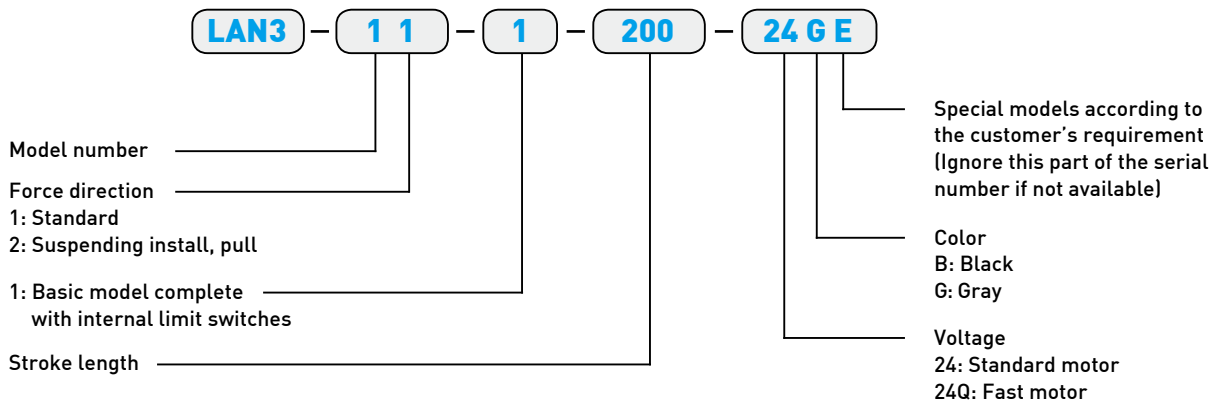
## Fast Motor 24Q

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S								Duty cycle %	Current max. (A) 24VDC	Potentiometer Resolution (Ohm/mm)	MR Sensor Resolution (mm/pulse)	
				Load=Max./	Load=0	100	150	200	250	300	350	400	450					500
LAN3-1	10000	6000	10000	7	11	100	150	200	250	300	350	400	-	-	10	12	37.5	0.16
LAN3-2	7000	6000	7000	9	13	100	150	200	250	300	350	400	450	500	10	11	28	0.22
LAN3-3	5000	5000	5000	13	18	100	150	200	250	300	350	400	450	500	10	11	22.5	0.27



\*\*Note: The test results are obtained by using the 24VDC power supply and holding by motor short-circuited.

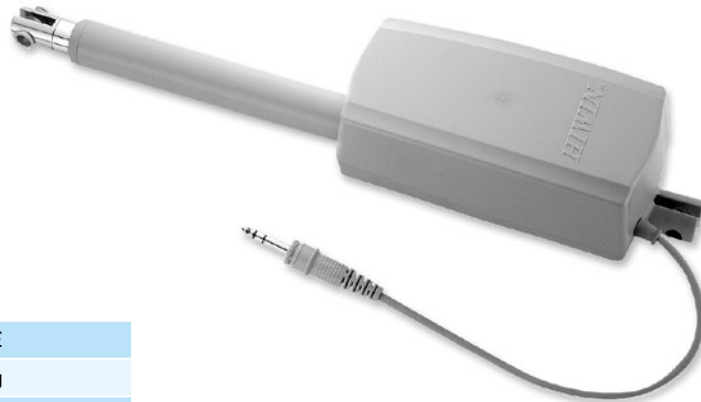
## • Ordering Information



# 8.

## HIWIN LAN Series (4)

### LAN4



Screw type	ACME
Weight*	2.33kg
Protection	IP54
Compatible controller	LAK2/LAK2LR/LAK2D/LAK2BN LAK2J/LAK4N/LAK6B
Working temp.	+5°C~40°C

\* Stroke length 200mm

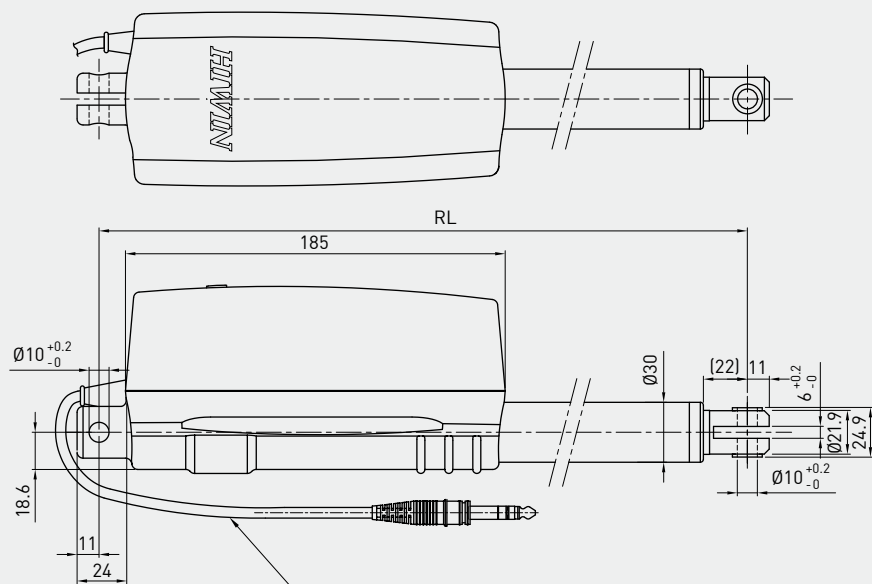
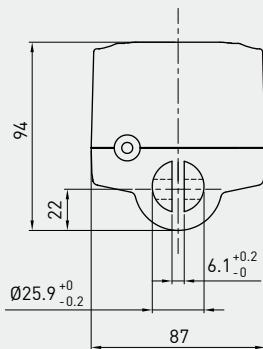
\* Option: (1) IP66

(2) Safety Nut RL=S+174, S≤400/RL=S+224, S>400

(3) Mono jack-plug (Standard is stereo)

(4) Mechanical spline (push only) RL=S+200, S≤400/RL=S+250, S>400

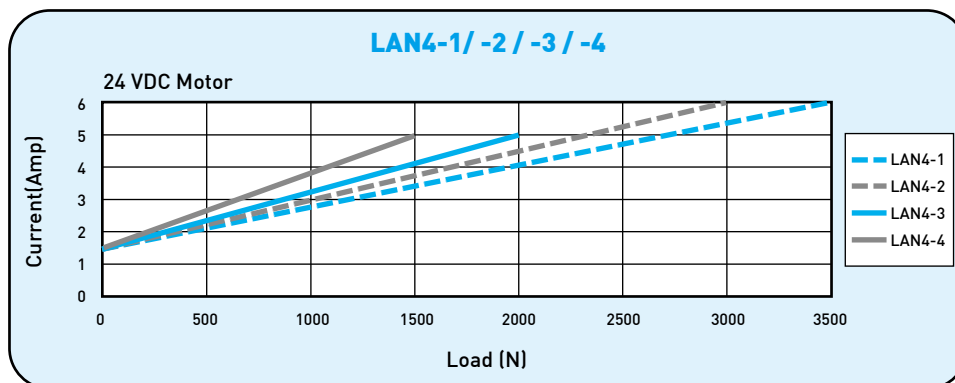
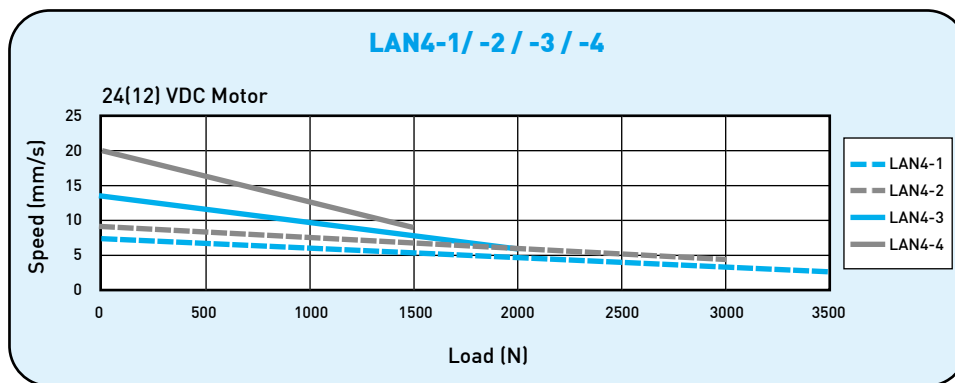
- RL=S+160  
Stroke≤400
- RL=S+210  
Stroke>400
- RL: Retracted length
- S: Stroke length



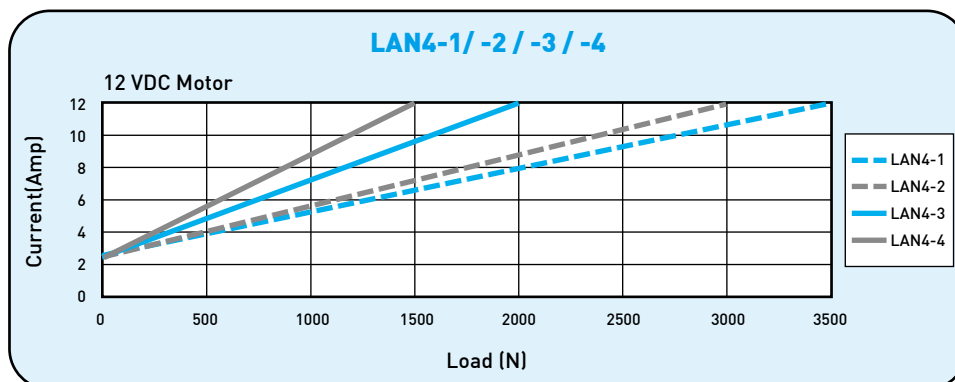
MOTOR CABLE  
MOTOR CABLE LENGTH=1000mm  
MOTOR CABLE DIAMETER=Ø5.5mm

## • LAN4 Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed(mm/s)		Standard stroke (mm) : S							Duty cycle %	Current max. (A)	
				Load=Max./Load=0		100	150	200	250	300	350	400		24VDC	12VDC
LAN4-1	3500	3500	3500	3.5	7	100	150	200	250	300	350	400	10	6	12
LAN4-2	3000	3000	3000	4.2	9	100	150	200	250	300	350	400	10	6	12
LAN4-3	2000	2000	2000	6	13	100	150	200	250	300	350	400	10	5	12
LAN4-4	1500	1500	1500	8.5	20	100	150	200	250	300	350	400	10	5	12

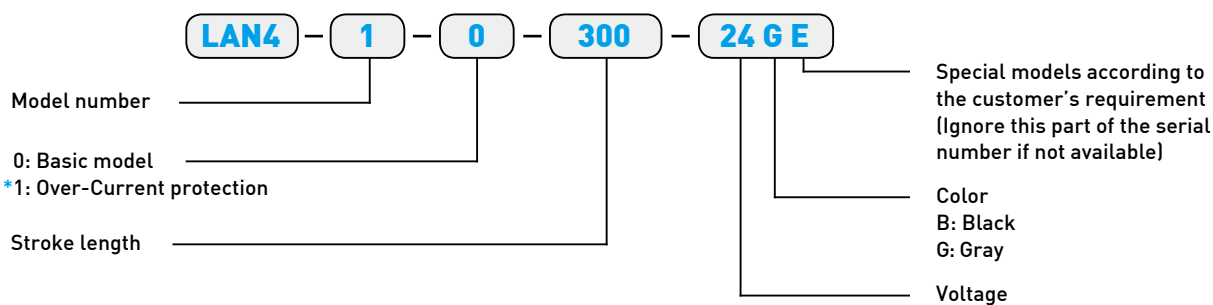


\*\*Note: The test results are obtained by using the 24VDC power supply.



\*\*Note: The test results are obtained by using the 12VDC power supply.

## • Ordering Information



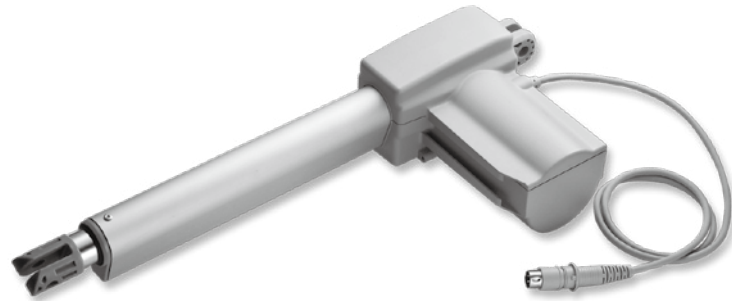
\*Remark: The over-current protection is for over load protection, do not use for limit stop.  
Suggestion: To add external limit switch as limit positions stop.



# 8.

## HIWIN LAN Series (5)

### LAN5



Screw type	ACME	Position feedback specifications (Hall Sensor)			
Weight*	1.96kg	Supply voltage	24VDC	12VDC	5VDC
Protection	IP54	Output	High level 24VDC Low level 0.2V/10mA sink (NPN)	High level 12VDC Low level 0.2V/10mA sink (NPN)	TTL
Compatible controller	Compatible with all kinds of controller [*Notice the type of connector: Audio/DIN 4PIN]				
Working temp.	+5°C~40°C				

\* Stroke length 200mm

\* Option: (1) Hall Sensor

(3) Mechanical Spline (push only)

(5) IP65; IP66

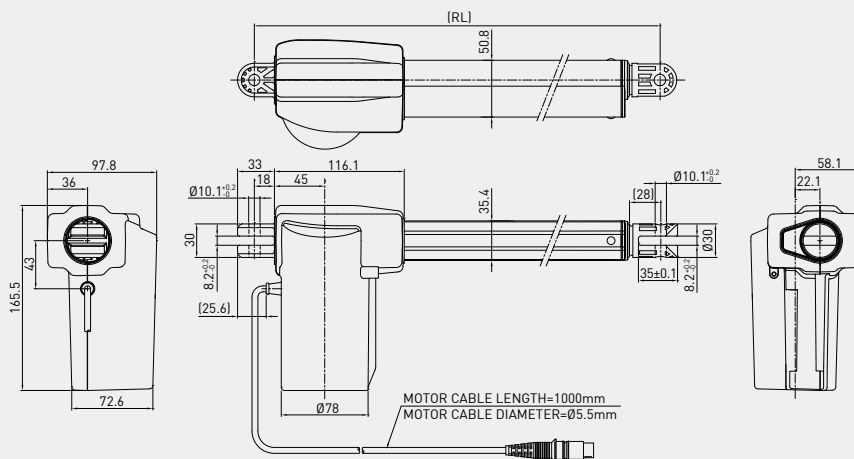
(7) Quick release (For LAN5-3, LAN5-4 only)

(2) Safety nut

(4) Back fixture turned 0°, 45°, 90°, 135°

(6) Back fixture and rodeye hole Ø12.1mm

(8) UL version

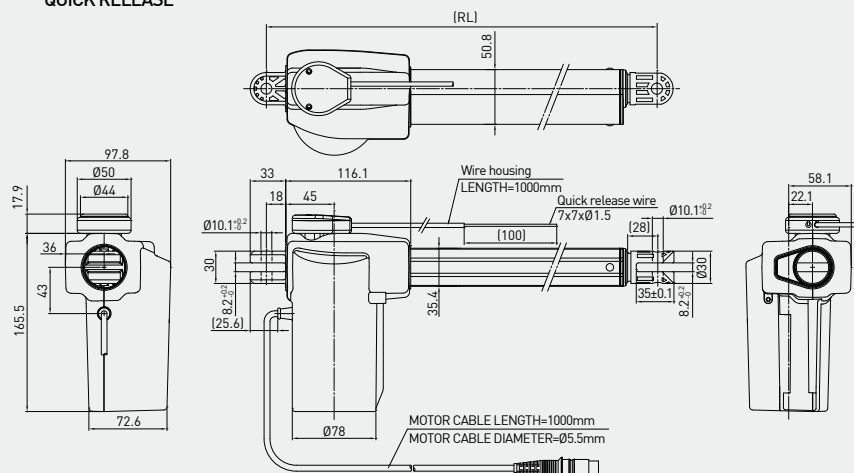


- RL=S+163  
Stroke≤300

- RL=S+213  
Stroke>300

RL:Retracted length  
S:Stroke length

#### QUICK RELEASE



Quick release function:

- (1) The quick release cable can be pulled while the load on actuator under 100N.
- (2) When the quick release is activated, the actuator must have a load over 700N to ensure the actuator runs inwards.
- (3) After quick release activated, it may be necessary to run the actuator inwards.

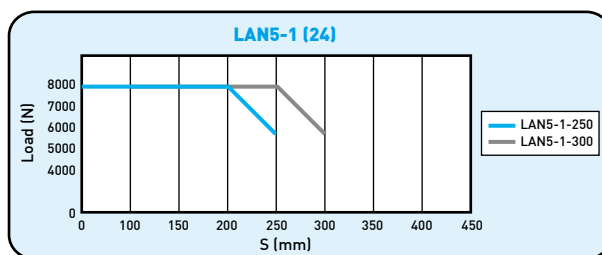
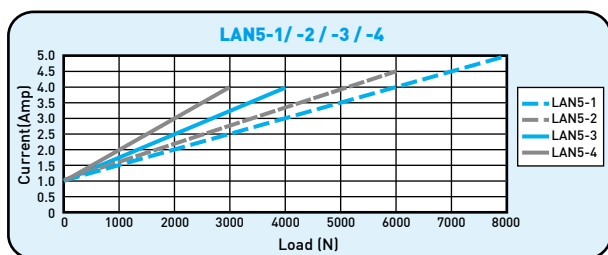
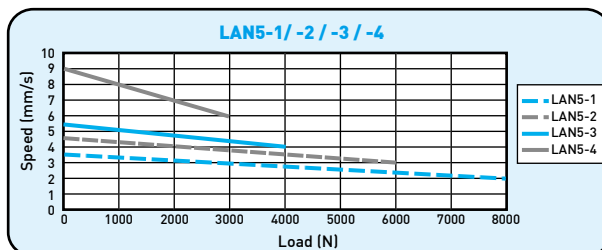
## • LAN5(24V) Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A) 24VDC	Hall Sensor Resolution (mm/pulse)
				Load=Max./Load=0		100	150	200	250	300			
LAN5-1	8000	4000	6000	2	3.5	100	150	200	250	300	10	5	0.08
LAN5-2	6000	4000	5000	3	4.5	100	150	200	250	300	10	4.5	0.10
LAN5-3	4000	3000	4000	4	5.5	100	150	200	250	300	10	4	0.14
LAN5-4	3000	2000	1500	6	9	100	150	200	250	300	10	4	0.22

\*When the stroke of LAN5-1 is between 250mm and 300mm, refer to the diagram on the right for max. load.

\*LAN5-3 24V Quick release Holding max. 3000N

\*LAN5-4 24V Quick release Holding max. 1000N



\*\*Note: The test results are obtained by using the 24VDC power supply.

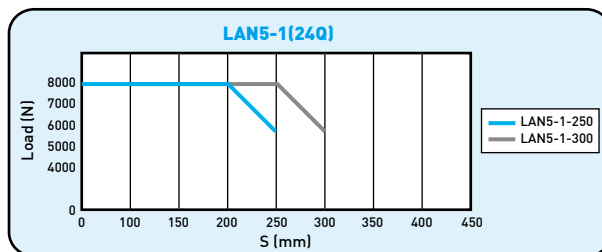
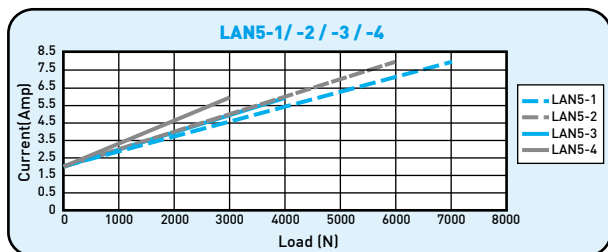
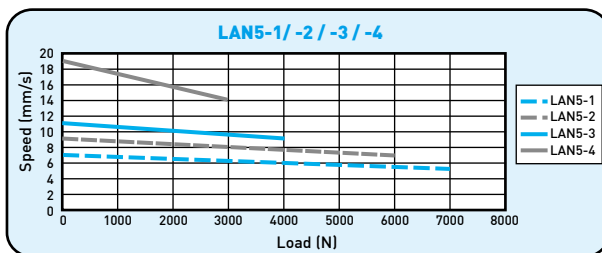
## • LAN5(24Q) Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s)		Standard stroke (mm) : S					Duty cycle %	Current max. (A) 24VDC	Hall Sensor Resolution (mm/pulse)
				Load=Max./Load=0		100	150	200	250	300			
LAN5-1	7000	4000	6000	5	7	100	150	200	250	300	10	8	0.08
LAN5-2	6000	4000	5000	7	9	100	150	200	250	300	10	8	0.10
LAN5-3	4000	3000	4000	9	11	100	150	200	250	300	10	6	0.14
LAN5-4	3000	2000	1500	14	19	100	150	200	250	300	10	6	0.22

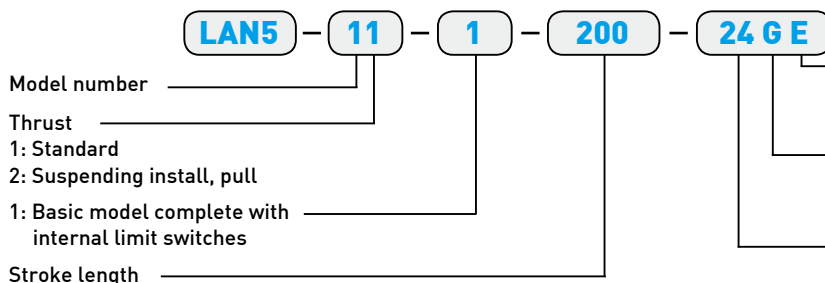
\*When the stroke of LAN5-1 is between 250mm and 300mm, refer to the diagram on the right for max. load.

\*LAN5-3 24Q Quick release Holding max. 3000N

\*LAN5-4 24Q Quick release Holding max. 1000N



## • Ordering Information



Special models according to the customer's requirement (Ignore this part of the serial number if not available)

Color  
 B: Black  
 G: Gray

Voltage  
 24: Standard motor  
 24Q: Fast motor

# 9.

## HIWIN LAC3 Series

**LAC3**



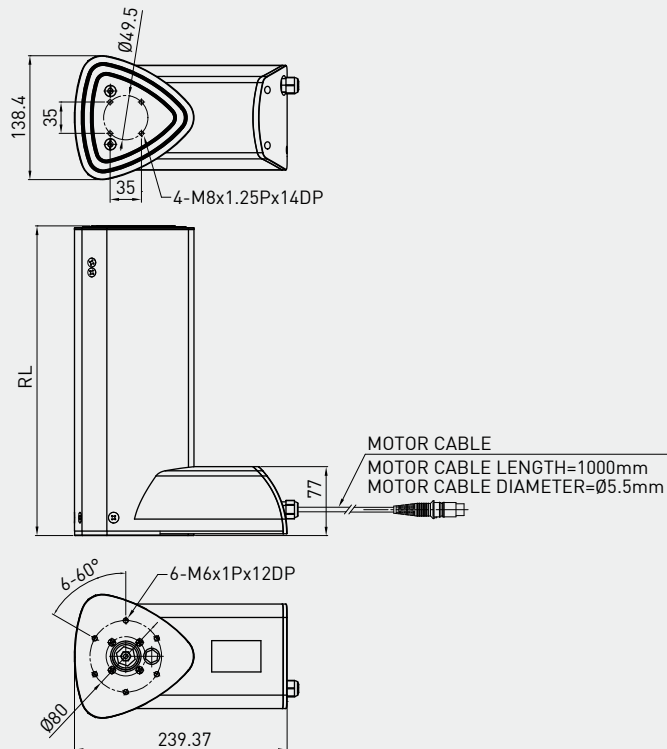
Screw type	ACME
Weight*	8.1kg
Protection	IP54
Compatible controller	Compatible with all controllers [*Notice the type of connector: Audio/DIN 4pin]
Working temp.	+5°C~40°C

\* Stroke length 400mm

\* Option: Position Feedback; Potentiometer; Hall sensor

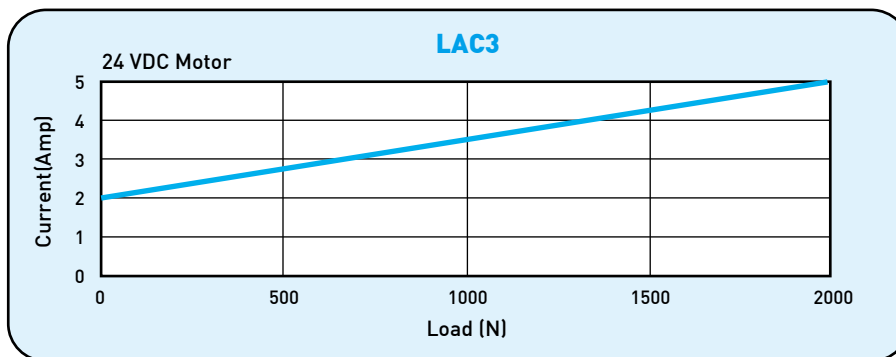
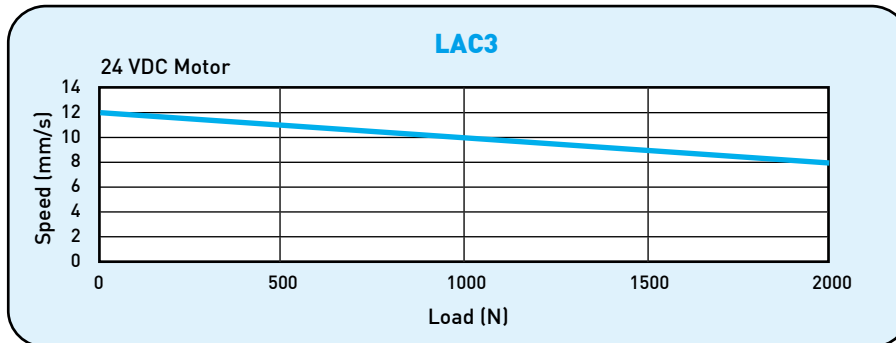


- $RL=171+S/2$   
RL: Retracted length  
S: Stroke length



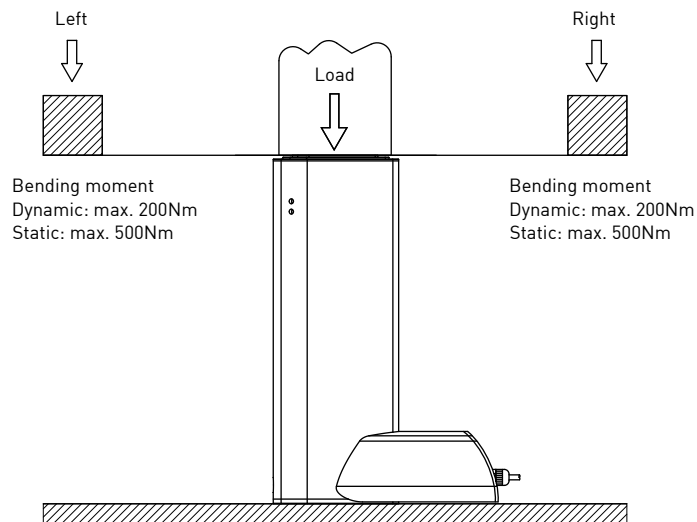
### LAC3 Specifications

Model	Thrust max. (N)	Pulling max. (N)	Holding max. (N)	Speed (mm/s) Load=Max./Load=0	Standard stroke (mm) : S	Duty cycle %	Current max. (A) 24VDC	Potentiometer Resolution (ohm/mm)	Hall Sensor Resolution (mm/pulse)
LAC3-1	2000	500	2000	8 12	300 400 500	10	5	6.67	1.0

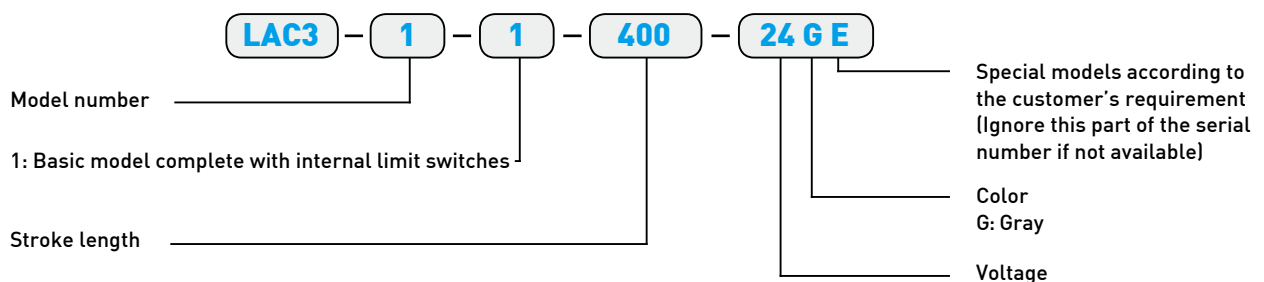


\*\*Note: The test results are obtained by using the 24VDC power supply.

### LAC3 Bending moment illustration



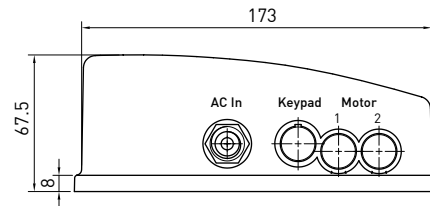
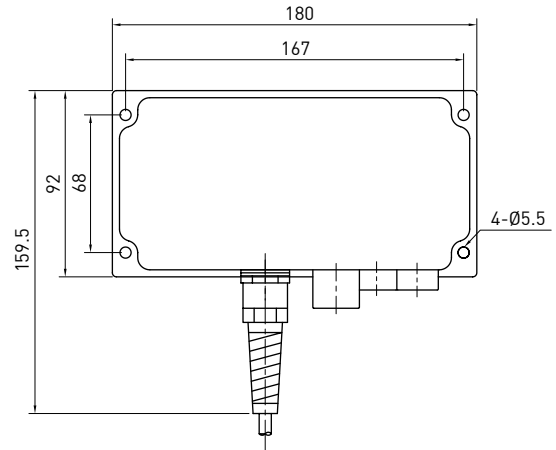
### Ordering Information



# 10.

## HIWIN 1-Axis Controller

### LAK2LR



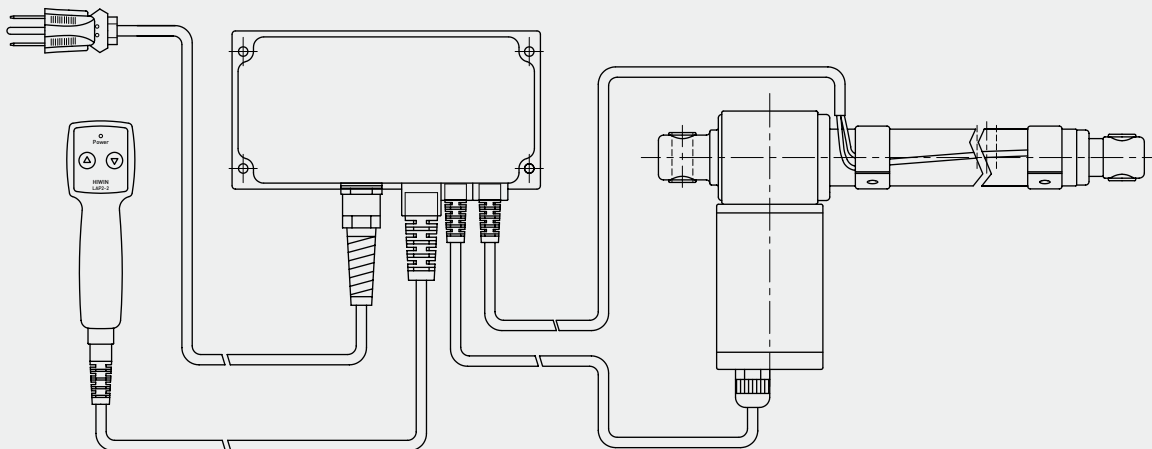
Input voltage	AC 100/110/220/230V
Output power	108VA(24VDC)max
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

\* Option: IP66

### • Features of the LAK2LR

- Controls 1 linear Actuator
- Controls 1 Actuator with external limit switches
- OLP (Over Load Protection)
- Standard cable length: 4M
- Electronic protection for the relays

• For Series LAM, LAN2 completed with external limit switches



• Ordering Information

**LAK2LR - G - 110 - B E**

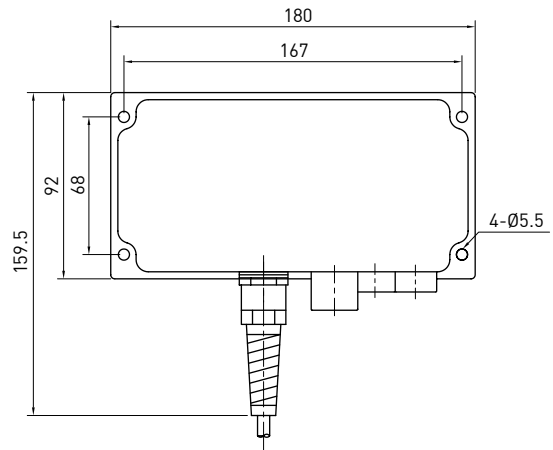
Special models according to Client's requirement	None E=Special requirement
Color	B: Black G: Gray
Input Voltage	100: AC100V; 110: AC110V 220: AC220V; 230: AC230V
Actuator No. 1	G: LAM-1/-2/-1A; LAN2

\* Check attached table for over current setting...see page 53.  
\* The keypad of the LAK2LR is not the same as LAK2L.

# 11.

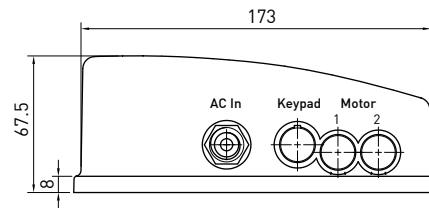
## HIWIN 2-Axis Controller

### LAK2



Input voltage	AC 100/110/220/230V
Output power	108VA(24VDC)max
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

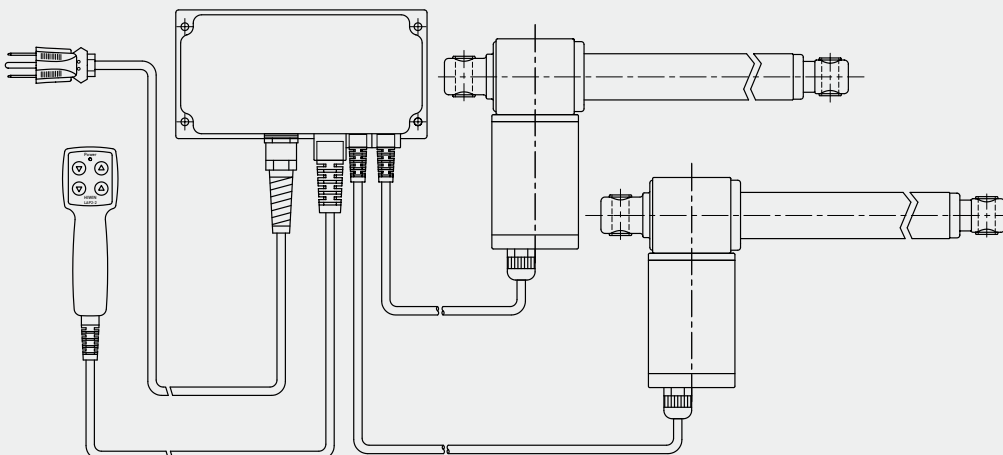
- \* Option: (1) IP66  
(2) DC 12V In & Out  
(3) DC 24V In & Out



### • Features of LAK2

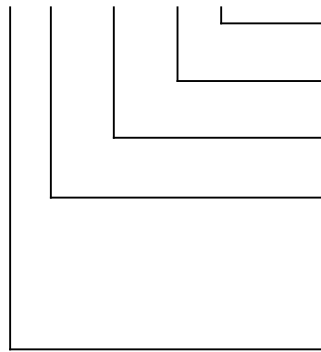
- Control 1 or 2 Linear Actuators
- Over load protection
- Standard cable length: AC:4M/DC:1M
- Electronic protection of the relays

### • For Series LAS, LAS3, LAS4, LAM, LAN1, LAN2



• **Ordering Information**

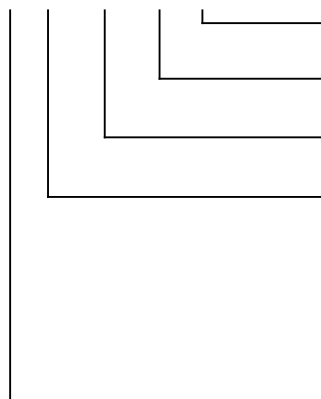
**LAK2 - B 0 - 110 - B E**



Special models according to Client's requirement	None E=Special requirement
Color	B: Black G: Gray
Input Voltage	100: AC100V; 110: AC110V 220: AC220V; 230: AC230V
Actuator No. 2	0: None A: LAS4-1 B: LAS-1; LAS3-1 C: LAS-2; LAS3-2; LAS4-2 E: LAN4-3/-4 F: LAN4-1/-2 G: LAM-1/-2/-1A; LAN2
Actuator No. 1	A: LAS4-1 B: LAS-1; LAS3-1 C: LAS-2; LAS3-2; LAS4-2 E: LAN4-3/-4 F: LAN4-1/-2 G: LAM-1/-2/-1A; LAN2

\* Check attached table for over current setting...see page 53.

**LAK2 - E 0 - 12 - B E**



Special models according to Client's requirement	None E=Special requirement
Color	B: Black G: Gray
Input Voltage	12: 12VDC 24: 24VDC
Actuator No. 2	0: None A: LAS4-1 B: LAS-1; LAS3-1 C: LAS-2; LAS3-2; LAS4-2 E: LAS-1(12V); LAS3-1(12V); LAS4-1(12V) F: LAS-2(12V); LAS3-2(12V) G: LAM-1/-2/-1A; LAN2 L: LAN1-1/-2/-3(12V); LAM-1/-2/-1A
Actuator No. 1	A: LAS4-1 B: LAS-1; LAS3-1 C: LAS-2; LAS3-2; LAS4-2 E: LAS-1(12V); LAS3-1(12V); LAS4-1(12V) F: LAS-2(12V); LAS3-2(12V) G: LAM-1/-2/-1A; LAN2 L: LAN1-1/-2/-3(12V); LAM-1/-2/-1A

\* Standard cable: 1M in length with 3 flying lead termination.

\* Check attached table for over current setting...see page 53.



# 11.

## HIWIN 2-Axis Controller

### LAK2BN



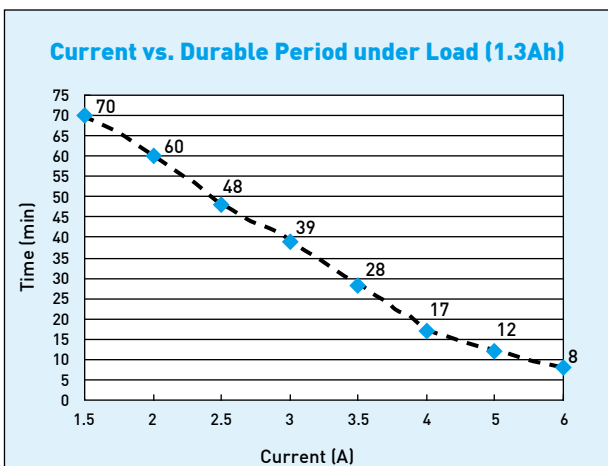
Input voltage	AC 100/110/220/230V
Output power	144VA(24VDC)max
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

- \* Option: (1) IP66  
 (2) Custom program  
 (3) Two axes move simultaneously  
 (4) Two axes move synchronously (Actuators must have feedback)

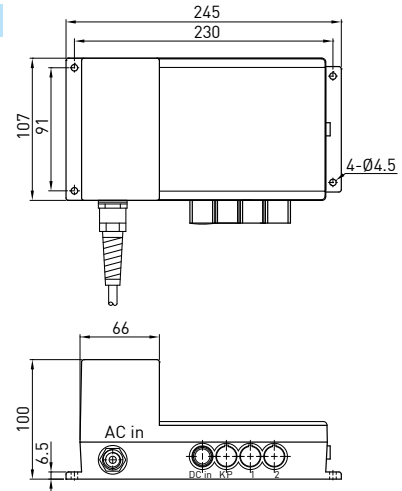
### • Features of LAK2BN

- Control 1 or 2 Linear Actuators
- Compact size
- Over load protection
- Soft - start / stop
- Standard cable length: 4M
- Rechargeable Battery
- Low battery indicator (alarm)
- Battery capacity: 1.3Ah (12VDCx2)  
 (Option: 2.9Ah, 12VDCx2)

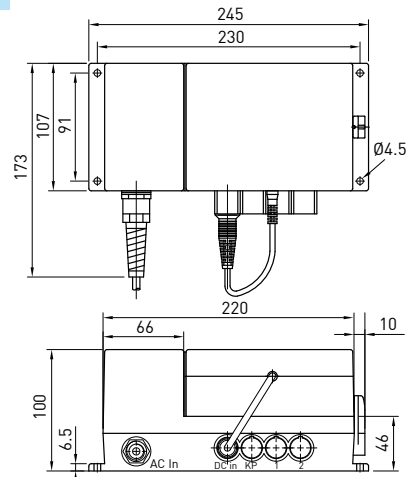
\*Note: Please charge battery for at least 8 hours before initial use.



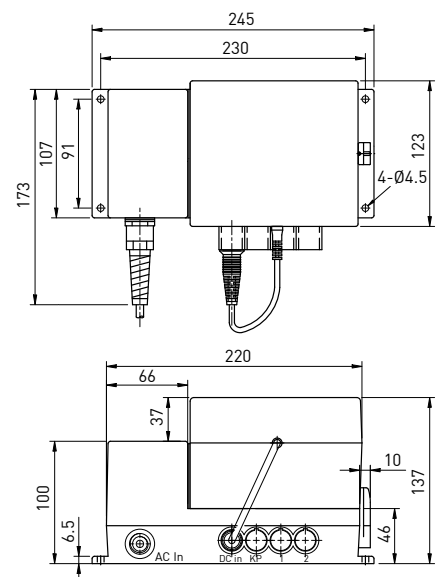
0 No Battery box



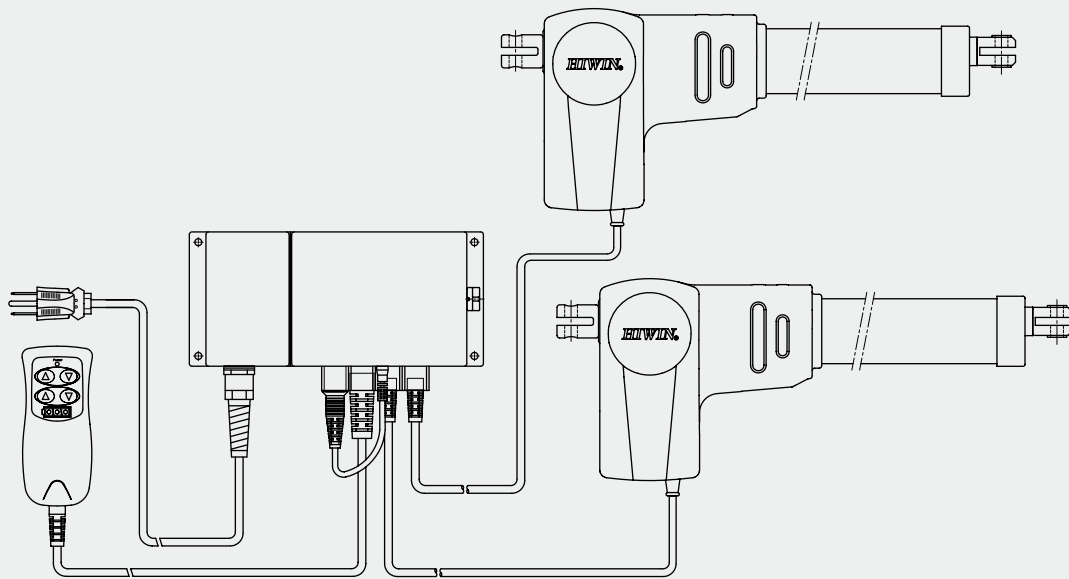
1 For 1.3Ah Battery



2 For 2.9Ah Battery



• For Series LAS4, LAN1 and LAM3



• Ordering Information (LAK2BN)

**LAK2BN - 1 - D 0 - 110 - B E**

Special models according to Client's requirement	None E=Special requirement
Color	B: Black G: Gray
Input Voltage	100: AC100V; 110: AC110V 220: AC220V; 230: AC230V
Actuator No. 2	0: None A: LAS4-1 B: LAS-1; LAS3-1 C: LAS-2; LAS3-2; LAS4-2 D: LAN1-1/-2; LAM3-3/-4; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAM3-1; LAN4-1/-2
Actuator No. 1	A: LAS4-1 B: LAS-1; LAS3-1 C: LAS-2; LAS3-2; LAS4-2 D: LAN1-1/-2; LAM3-3/-4; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAM3-1; LAN4-1/-2
Battery	0: None Battery box 1: 1.3Ah 2: 2.9Ah

\* Check attached table for over current setting...see page 53.

# 11.

## HIWIN 2-Axis Controller

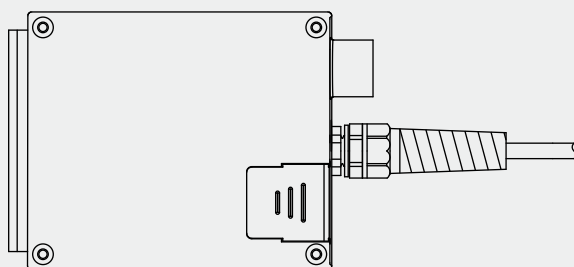
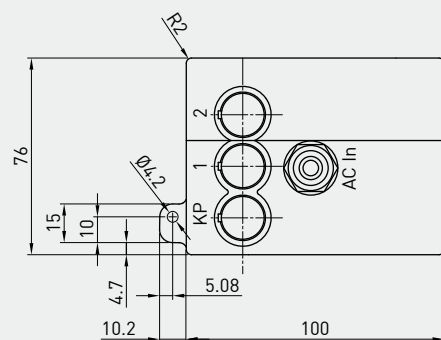
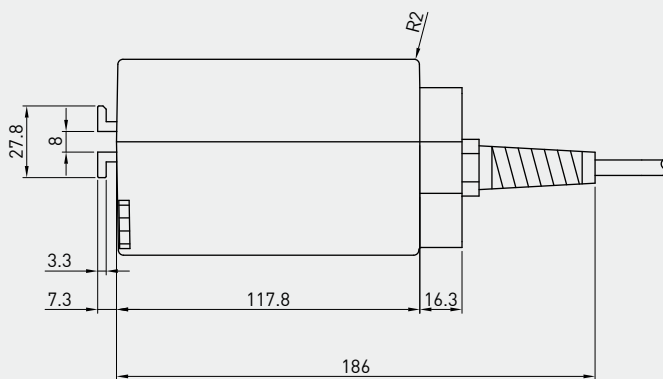
**LAK2D**

**CE**



Input voltage	AC 100/110/220/ 230V(50/60Hz)
Output power	108VA(24VDC)max
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

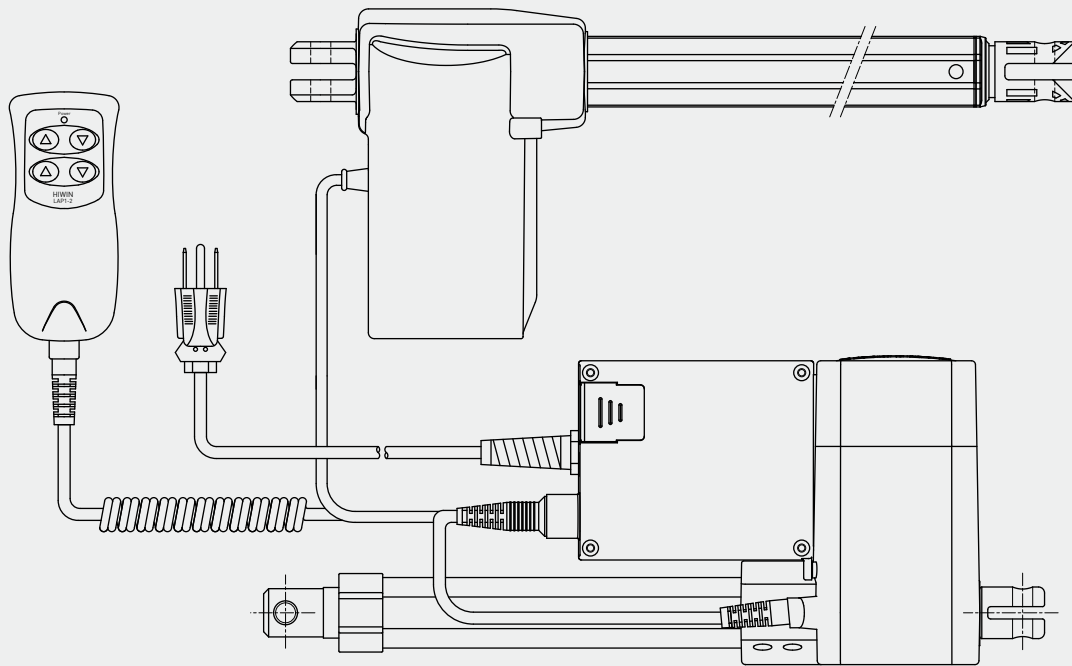
\* Option: IP66



## • Features of LAK2D

- Control 1 or 2 Linear Actuators
- Standard cable length: 4M
- Over load protection
- During an emergency power loss, please insert 2-9V alkaline batteries to lower the actuators. (Protection class is IP54 when LAK2D is operated with batteries)
- Can be mounted directly on the LAM3 or LAN5
- \* There is no battery charge function, the 9V batteries are used for emergencies only.

## • For Series LAS, LAS3, LAS4, LAM3, LAN1, LAN5, only the LAM3 and LAN5 can mounted directly onto the LAK2D



## • Ordering Information

**LAK2D - 1 - D 0 - 110 - G E**

Special models according to Client's requirement	None E=Special requirement
Color	W: White B: Black G: Gray
Input Voltage	100: AC100V; 110: AC110V 220: AC220V; 230: AC230V
Actuator No. 2	0: None B: LAS-1; LAS3-1 C: LAS-2; LAS3-2; LAS4-2 D: LAN1-1/-2; LAM3-3/-4; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAN1-1/-2/-3(24Q); LAN4-1/-2; LAM3-1
Actuator No. 1	B: LAS-1; LAS3-1 C: LAS-2; LAS3-2; LAS4-2 D: LAN1-1/-2; LAM3-3/-4; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAN1-1/-2/-3(24Q); LAN4-1/-2; LAM3-1
Battery	0: None 1: 9-volt alkaline battery

\* Check attached table for over current setting...see page 53.

\* LAK2D over current must be set to the same value.

# 11.

## HIWIN 2-Axis Controller

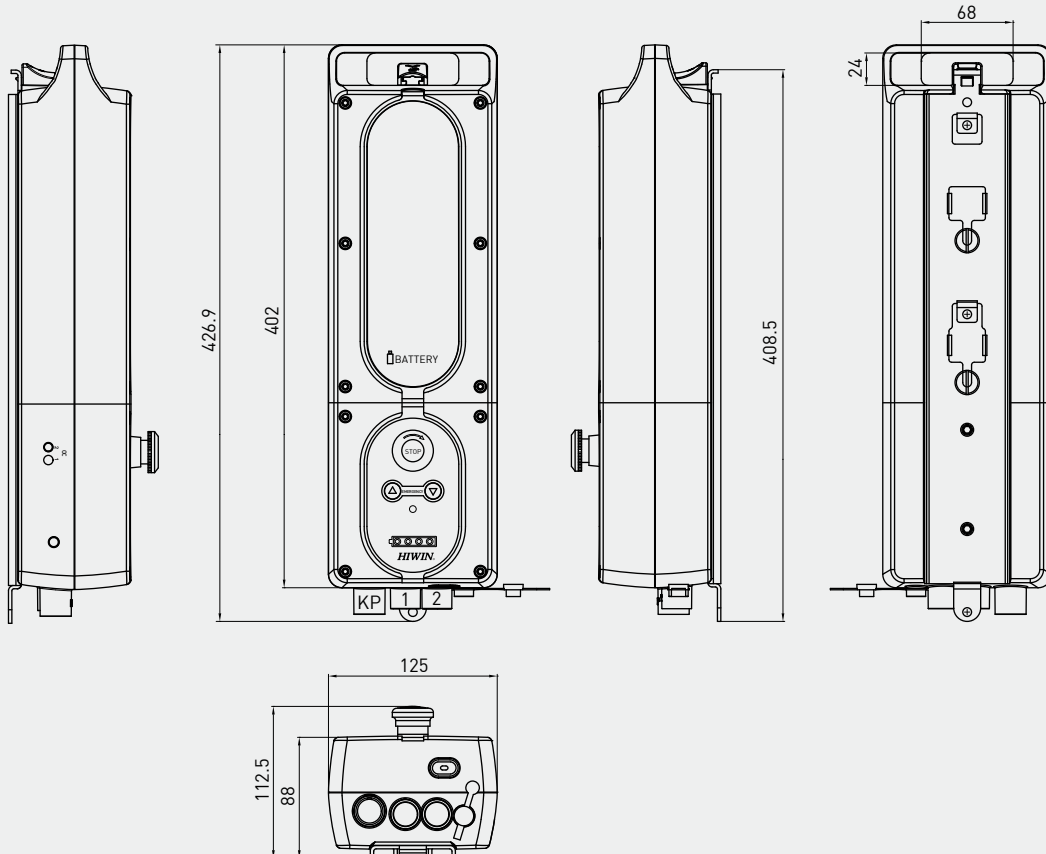
**LAK2J**

CE



Output power	DC 24V
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

\* Option: (1) IP65  
(2) Custom program

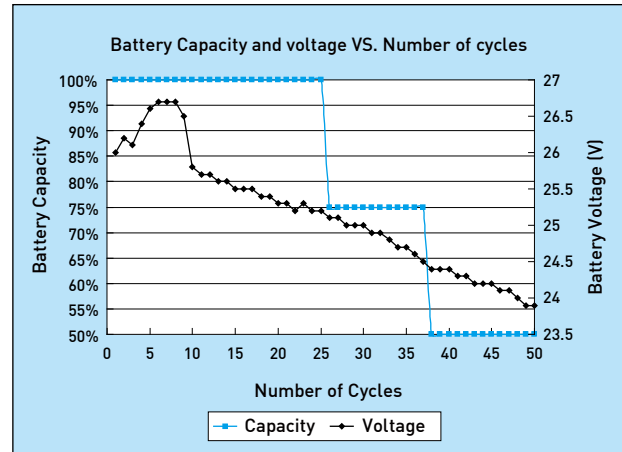


### • Features of LAK2J

- Portable design (operated by battery)
- Control 1 to 2 Linear Actuators
- Emergency stop button
- Emergency operation through front panel (only for axis 1)
- Over load protection
- Soft - start / stop
- Battery rechargeable via LAKCH charger
- Automatic alarm when the battery is low
- Automatic Energy Saving Mode
- Battery capacity 4.5Ah (12VDC\*2)
- LED for power indication

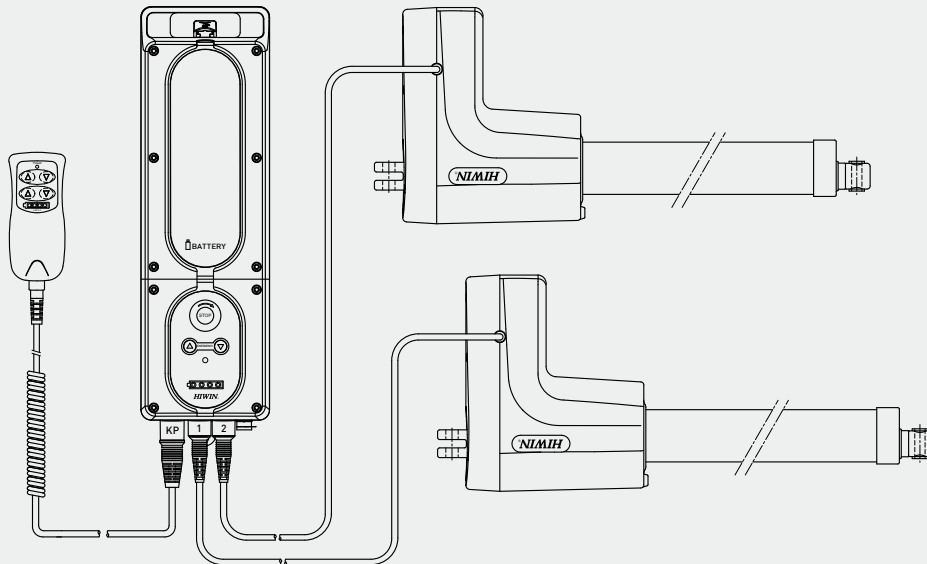
\*Note: Please charge the battery for at least 12 hours before the initial use

### • Battery Characteristics



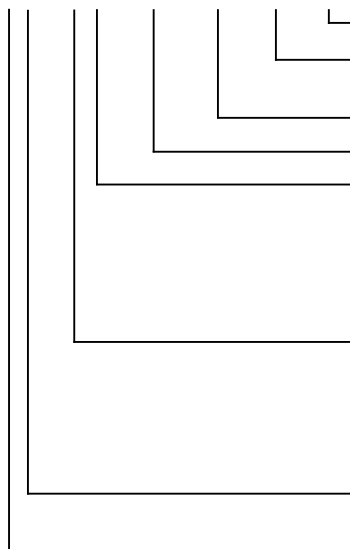
\*Test results are obtained under 5A load current

### • For series LAN3 and LAN1



### • Ordering Information

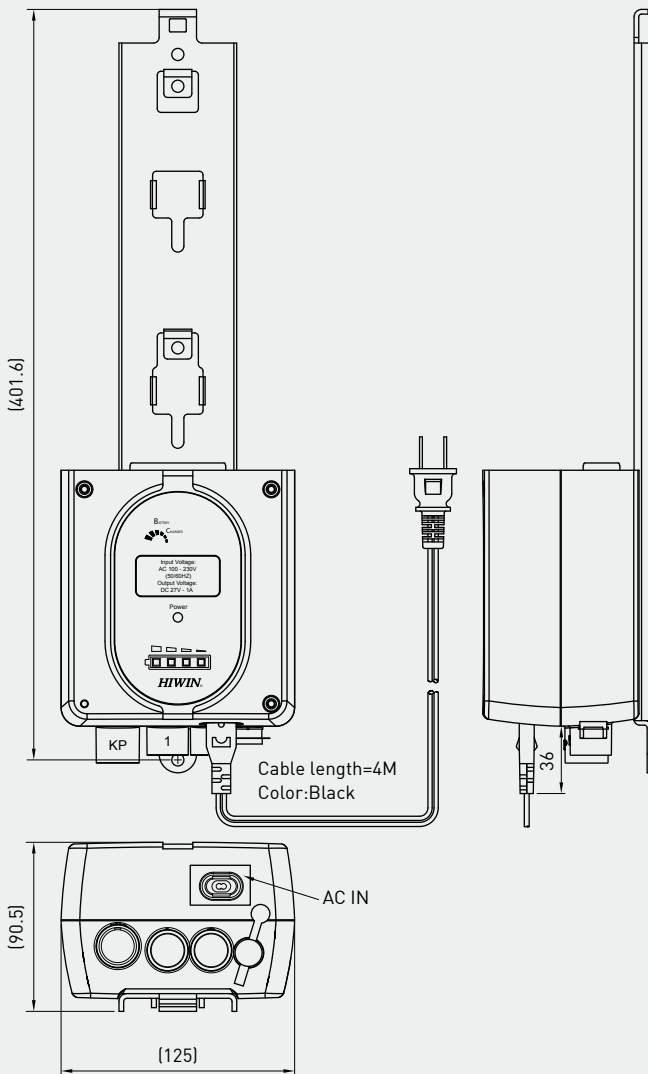
**LAK2J - 11 - HH - 01 - 24 - W - E**



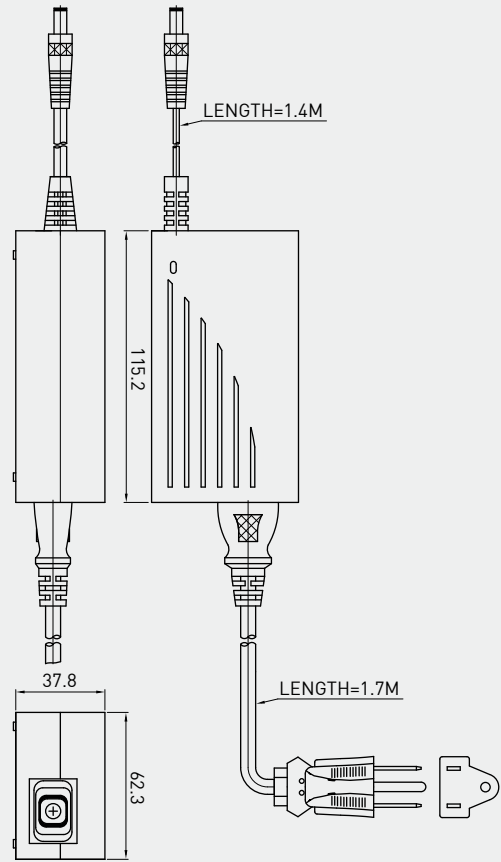
Special models according to Client's requirement	None E=Special requirement
Color	W: White G: Gray
Output power	DC: 24V
Software function	01: Standard
Actuator No.2	C: LAI-1 D: LAM3-3/-4; LAN1-1/-2; LAI-1A; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAM3-1; LAN1-1/-2/-3/-4(24Q); LAN4-1/-2 G: LAN2; LAM-1/-2/-1A H: LAN3
Actuator No.1	C: LAI-1 D: LAM3-3/-4; LAN1-1/-2; LAI-1A; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAM3-1; LAN1-1/-2/-3/-4(24Q); LAN4-1/-2 G: LAN2; LAM-1/-2/-1A H: LAN3
Power	1: DC in charger by LAKCH-A 2: AC in charger (100~230VAC, 50~60HZ)
Battery type	1: 4.5Ah

• **Charger/Battery**

Charger : LAKCH-B



Charger : LAKCH-A



• **Ordering Information**

**LAKCH - A - 24 - B**

Color	B: Black
Output power	DC: 24V
External charger for LAK2J-11	

**LAKCH - B - 24 - W E**

Special models according to Client's requirement	None E=Special requirement
Color	W: White G: Gray
Output power	DC: 24V
Wall charger	

# 12.

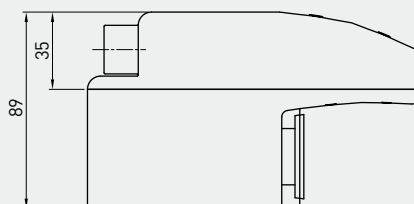
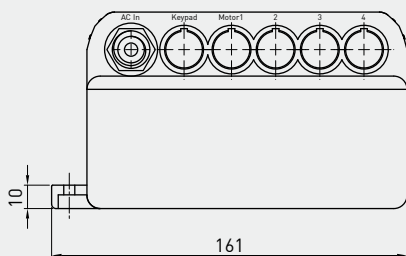
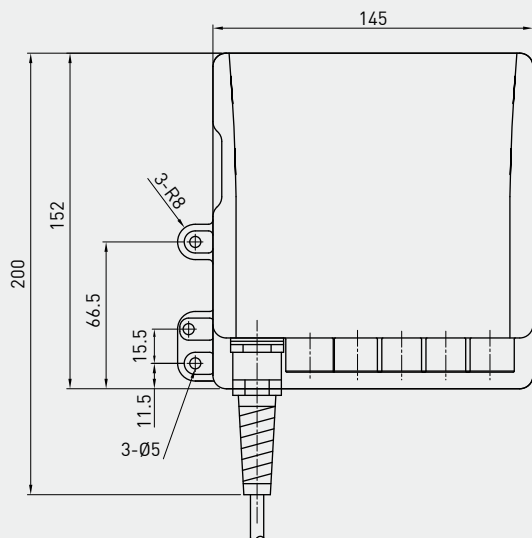
## HIWIN 3-Axis Controller

**LAK4**



Input voltage	AC 100/110/120/220/230V(50/60Hz)
Output power	72.5VA(24VDC)max
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

\* Option: (1) IP66  
(2) UL version only for LAK4-F000-110-B

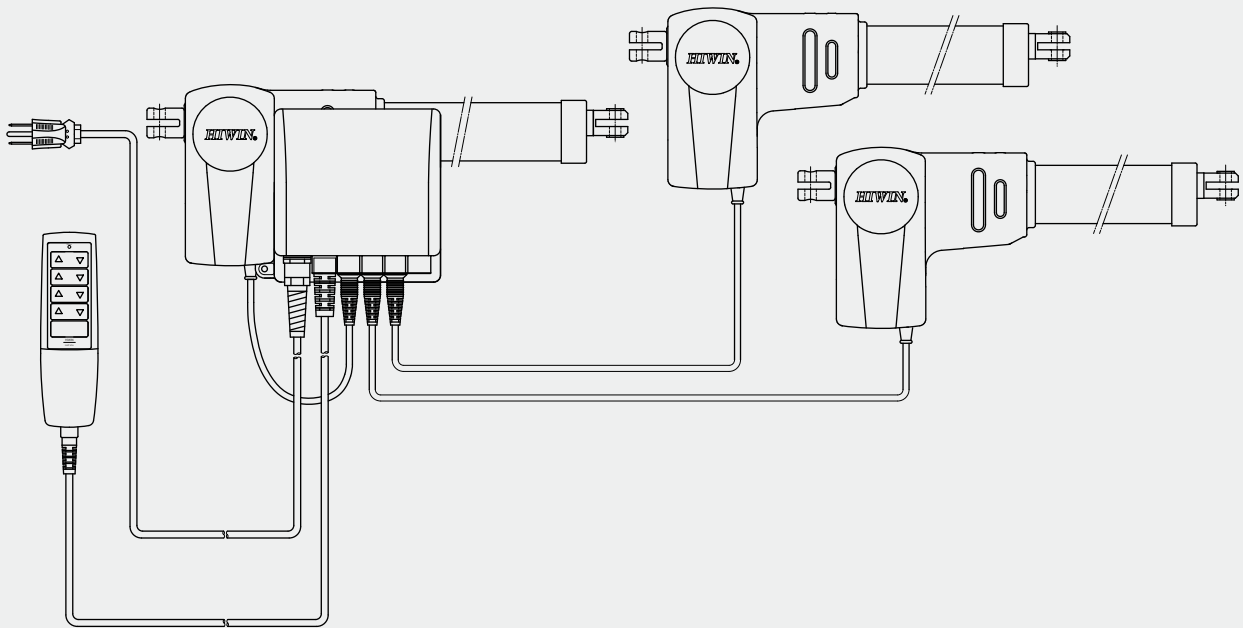




• **Features of LAK4**

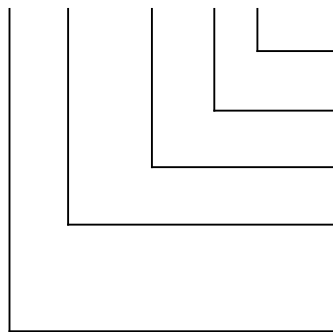
- Control 1 to 3 Actuators
- Can be mounted directly on the LAN1
- Standard cable length: 4M

• **For Series LAM3 and the LAN1, only LAN1 can mounted directly onto the LAK4.**



• **Ordering Information**

**LAK4 - D 000 - 110 - B E**



Special models according to Client's requirement	None E=Special requirement
Color	B: Black G: Gray
Input Voltage	100: AC100V; 110: AC110V 220: AC220V; 230: AC230V
Actuator No. 2 ~ No. 3	0: None D: LAN1-1/-2; LAM3-3/-4; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAN1-1/-2/-3(24Q); LAN4-1/2; LAM3-1
Actuator No. 1	D: LAN1-1/-2; LAM3-3/-4; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAN1-1/-2/-3(24Q); LAN4-1/2; LAM3-1

Note: Please select the LAK4N for applications incorporating 3 axis.

# 13.

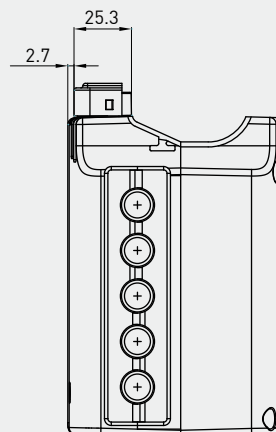
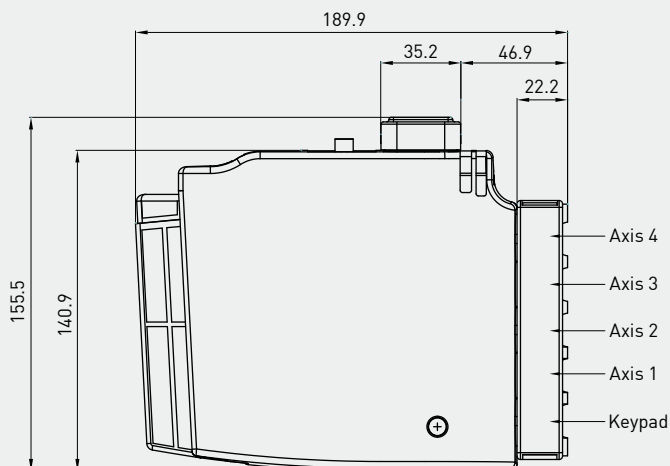
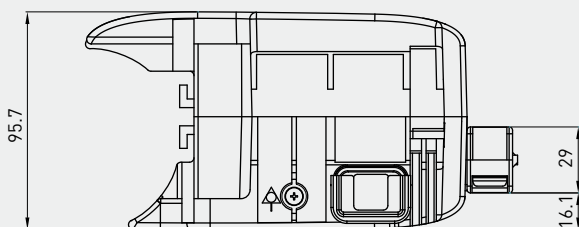
## HIWIN 4-Axis Controller (1)

**LAK4D**



Input voltage	AC 100/110/120/220/230V
Output power	72.5VA(24VDC)Max
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

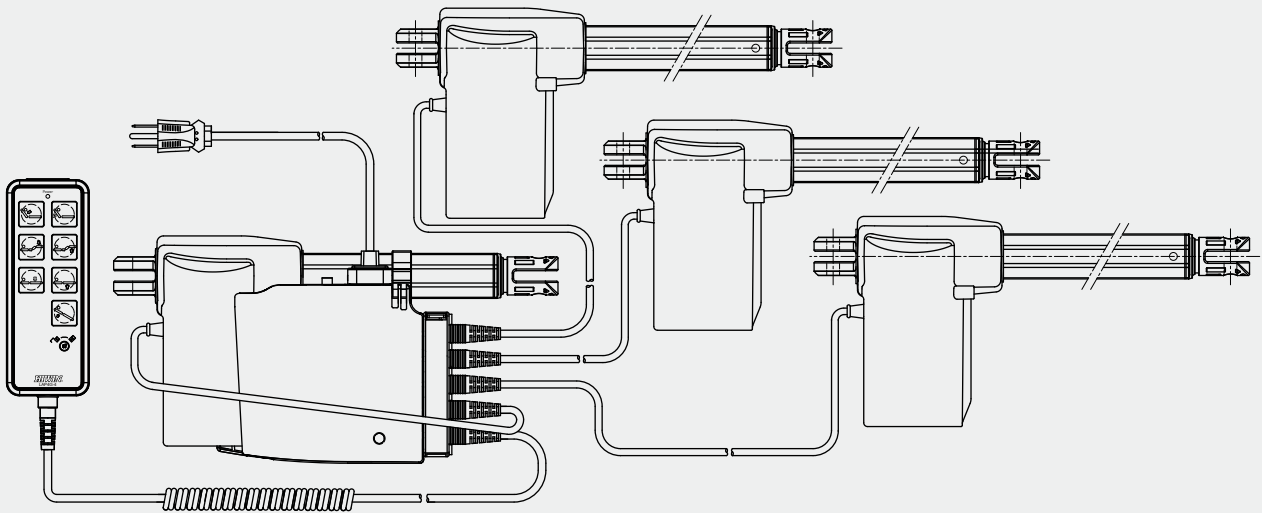
- \* Option: (1) IP66
- (2) Output power: 144VA, 216VA
- (3) UL Version



• **Features of the LAK4D**

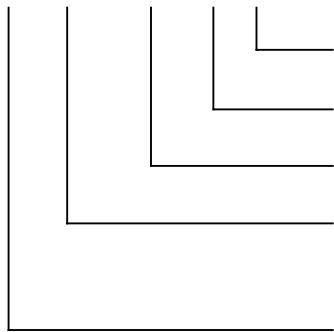
- Control 1 to 4 Linear Actuator
- Standard cable length: 4M
- Detachable cable retainer (protection against accidental unplugging)
- Removable AC power cable.
- External ground and LED power display.
- Can be mounted directly on the LAN5. (LAN5 min. RL must be greater than 300mm)

• **For Series LAN1, LAN5, LAM3, only the LAN5 can mounted directly on LAK4D.**



• **Ordering Information**

**LAK4D - D 000 - 110 - G E**



Special models according to Client's requirement	None E=Ignore this part of the serial number if not available
Color	B: Black G: Gray
Input Voltage	100: AC100V; 110: AC110V 220: AC220V; 230: AC230V
Actuator No. 2 ~ No. 4	0: None D: LAN1-1/-2; LAM3-3/-4; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAN1-1/-2/-3(24Q); LAN4-1/-2; LAM3-1
Actuator No. 1	D: LAN1-1/-2; LAM3-3/-4; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAN1-1/-2/-3(24Q); LAN4-1/-2; LAM3-1

# 13.

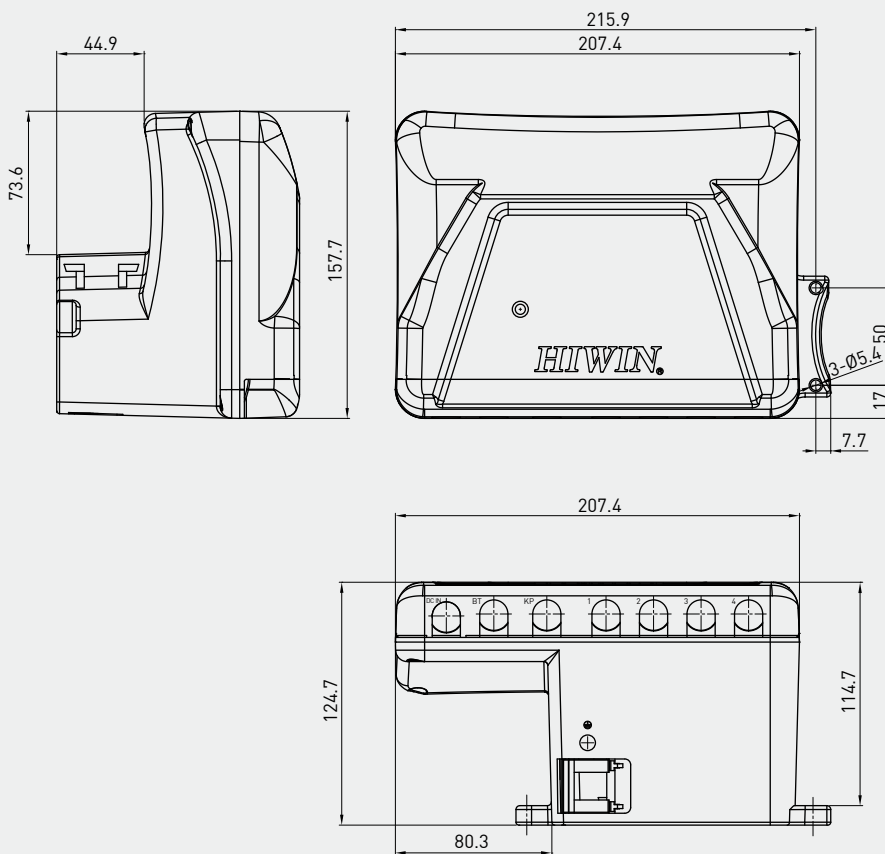
## HIWIN 4-Axis Controller (2)

**LAK4N**



Input voltage	AC 100/110/220/230V
Output power	216VA(DC 24V)Max
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

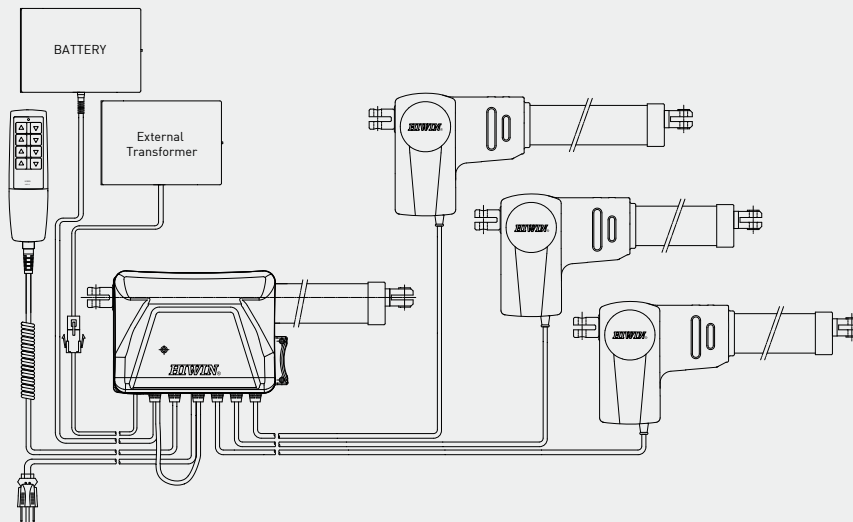
- \* Option: (1) IP66  
 (2) Custom program  
 (3) Two axes move simultaneously  
 (4) Two axes move synchronously (Actuators must have feedback)



## • Features of LAK4N

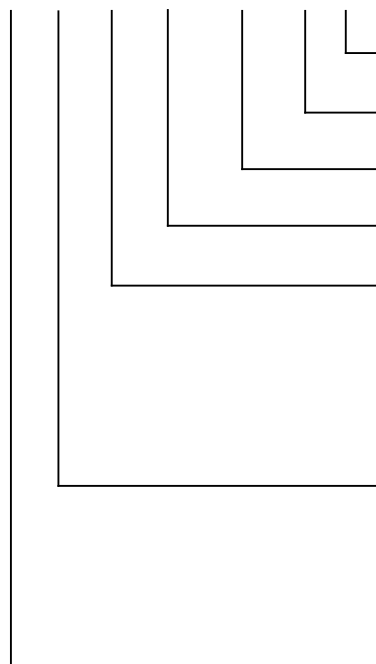
- Control 1 to 4 Linear Actuators
  - Standard cable length: 4M
  - Detachable cable retainer for accidental unplugging protection
  - LED for power indication
  - External DC input (LAKB-1/-2)
  - Reconfigurable simultaneous movement
  - Microprocessor (Software version) can receive the signal of hall sensor, optical sensor or potentiometer
  - Over Load protection
  - Removable AC power cable
  - Soft - start / stop
  - External battery input
  - Can be mounted directly on LAN1
- \* Note: Simultaneous or Synchronous movement is not available for the LAN3-1/-2/-3(24Q)

## • For Series LAN1, LAM, LAM3, LAN3 and LAN5, only LAN1 can mounted directly on LAK4N.



## • Ordering Information

### LAK4N - 1 - C000 - 01 - 110 - G E



Special models according to Client's requirement	None E=Ignore this part of the serial number if not available
Color	B: Black G: Gray
Input Voltage	100: AC100V; 110: AC110V 220: AC220V; 230: AC230V
Type	01: Standard software 02: Custom software
Actuator No.4	0: None C: LAI-1 D: LAN1-1/-2; LAM3-3/-4; LAI-1A; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAN1-1/-2/-3/-4(24Q); LAN4-1/-2; LAM3-1 G: LAM-1/-2/1A; LAN2 H: LAN3 J: LAN3-1/-2/-3(24Q)
Actuator No.1 ~ No.3	C: LAI-1 D: LAN1-1/-2; LAM3-3/-4; LAI-1A; LAN5-2/-3/-4 E: LAM3-2; LAN4-3/-4; LAC3-1; LAN5-1 F: LAN1-1/-2/-3/-4(24Q); LAN4-1/-2; LAM3-1 G: LAM-1/-2/1A; LAN2 H: LAN3 J: LAN3-1/-2/-3(24Q)
External power	0: None 1: 1.3Ah battery 2: 2.9Ah battery 3: External power (216VA Transformer) 4: With 2.9Ah battery and external power (216VA Transformer)

\* Check attached table for over current setting...see page 53.

# 14.

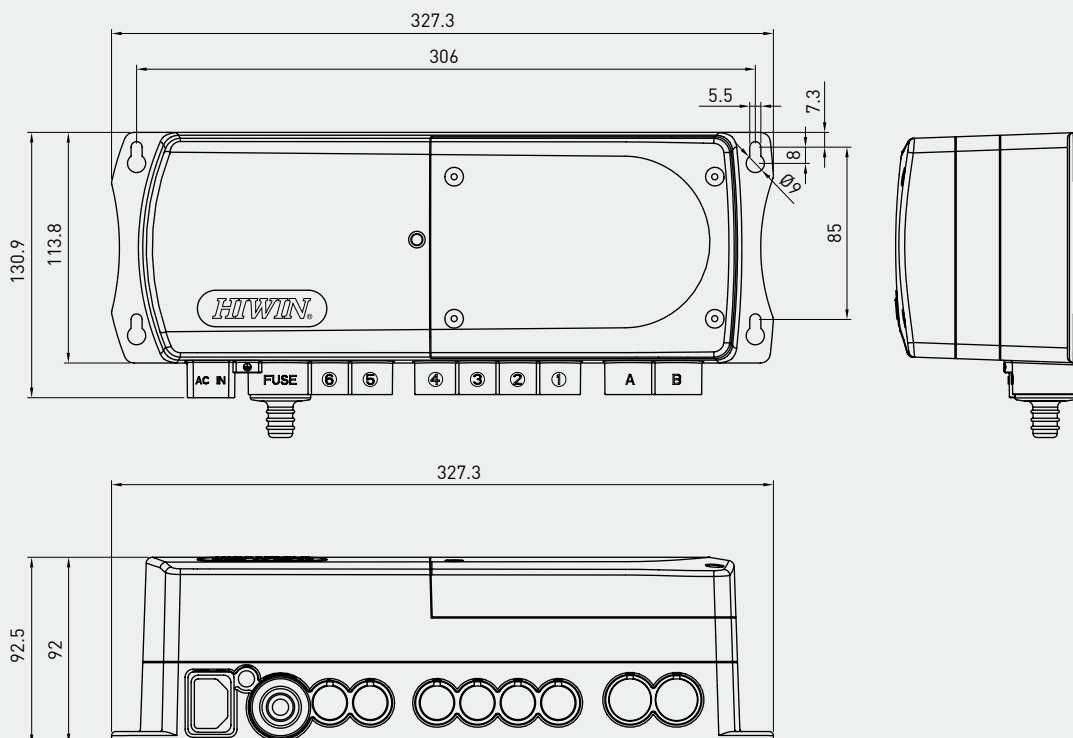
## HIWIN 6-Axis Controller

**LAK6B**



Input voltage	AC 100/110/220/230V
Output power	216VA(24VDC)max
Duty cycle	10%
Working temp	+5°C~40°C
Protection*	IP54

\* Option: (1) IP66  
(2) Custom Program





• **Over Current Setting Table**

Code No.	Current setting	Actuator Model	Controller Model
A	2.5A	LAS4-1	LAK2; LAK2D; LAK2LR; AK2BN; LAK2J; LAK4; LAK4N; LAK4D; LAK6B
B	3.0A	LAS-1; LAS3-1; LAM2-3/-4; LAI2-1; LAS2-1	LAK2; LAK2D; LAK2LR; AK2BN; LAK2J; LAK4; LAK4N; LAK4D; LAK6B
C	4.0A	LAS-2; LAS3-2; LAS4-2; LAI-1(24V); LAM2-1/-2; LAI2-2; LAS2-2	LAK2; LAK2LR; LAK2D; LAK2BN; LAK4; LAK4N; LAK6B
D	5.0A	LAM3-3/-4; LAN1-1/-2; LAI-1A(24V); LAN5-2/-3/-4	LAK2; LAK2D; LAK2LR; LAK2BN; LAK2J; LAK4; LAK4N; LAK4D; LAK6B
E(24V)	6.0A	LAM3-2; LAN4; LAC3-1; LAN4-3/-4; LAN5-1	LAK2D; LAK2BN; LAK2J; LAK4; LAK4N; LAK4D; LAK6B
E(12V)	6.0A	LAS-1(12V); LAS3-1(12V); LAS4-1(12V); LAM2-3/-4; LAS2-1/-2	LAK2(DC)
F(24V)	7.0A	LAN1-1/-2/-3/-4(24Q); LAM3-1; LAN4-1/-2 LAN5-3/-4(24Q)	LAK2; LAK2D; LAK2LR; LAK2BN; LAK2J; LAK4; LAK4N; LAK4D; LAK6B
F(12V)	7.0A	LAS-2(12V); LAS3-2(12V); LAS4-2(12V)	LAK2(DC)
G(24V)	8.0A	LAM-1/-2/-1A; LAN2; LAN5-1/-2(24Q)	LAK2; LAK2LR; LAK4N; LAK6B
G(12V)	8.0A	LAI-1(12V); LAM-1/-2	LAK2(DC)
H(24V)	9.0A	LAN3	LAK6B; LAK4N
H(12V)	9.0A	LAI-1A(12V)	LAK2(DC)
I	10A	For reservation	
J	12A	LAN3-1/-2/-3(24Q)	LAK4N; LAK6B
K	14A	For reservation	
L	15A	LAN1-1/-2/-3(12V); LAM-1/-2/-1A(12V), -2A(12V) LAM3(12V); LAN4(12V)	LAK2(DC)
Z	**A	Special current value (special requirement)	

• **LA Cable connector Vs. controller model**

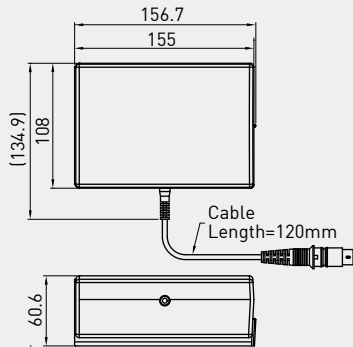
			Controller Model								
			LAK2LR	LAK2BN	LAK2D	LAK2	LAK2J	LAK4	LAK4D	LAK4N	LAK6B
Normal connector			audio	4pin	4pin	audio	audio	4pin	4pin	4pin	4pin
Actuator Model	LAM	bare wire	to audio	to 4pin	to 4pin	to audio	to audio	to 4pin	to 4pin	to 4pin	to 4pin
	LAM2	4pin	to audio	normal	normal	to audio	to audio	normal	normal	normal	normal
	LAM3	4pin	to audio	normal	normal	to audio	to audio	normal	normal	normal	normal
	LAI	bare wire	to audio	to 4pin	to 4pin	to audio	to audio	to 4pin	to 4pin	to 4pin	to 4pin
	LAI2	bare wire	to audio	to 4pin	to 4pin	to audio	to audio	to 4pin	to 4pin	to 4pin	to 4pin
	LAS	bare wire	to audio	to 4pin	to 4pin	to audio	to audio	to 4pin	to 4pin	to 4pin	to 4pin
	LAS2	bare wire	to audio	to 4pin	to 4pin	to audio	to audio	to 4pin	to 4pin	to 4pin	to 4pin
	LAS3	bare wire	to audio	to 4pin	to 4pin	to audio	to audio	to 4pin	to 4pin	to 4pin	to 4pin
	LAS4	bare wire	to audio	to 4pin	to 4pin	to audio	to audio	to 4pin	to 4pin	to 4pin	to 4pin
	LAN1	4pin	to audio	normal	normal	to audio	to audio	normal	normal	normal	normal
	LAN2	audio	normal	to 4pin	to 4pin	normal	normal	to 4pin	to 4pin	to 4pin	to 4pin
	LAN3	4pin	to audio	normal	normal	to audio	to audio	normal	normal	normal	normal
	LAN4	audio	normal	to 4pin	to 4pin	normal	normal	to 4pin	to 4pin	to 4pin	to 4pin
LAN5	4pin	to audio	normal	normal	to audio	to audio	normal	normal	normal	normal	
LAC3	4pin	to audio	normal	normal	to audio	to audio	normal	normal	normal	normal	



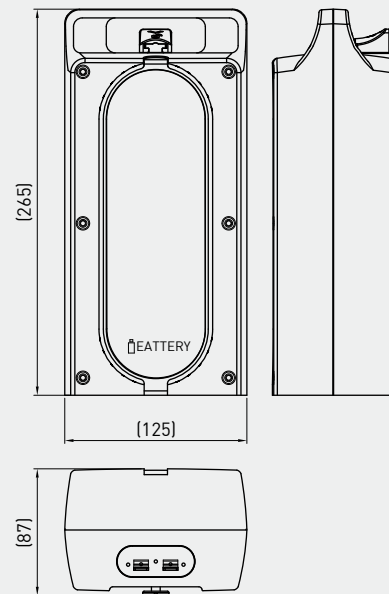
# 15.

## HIWIN Battery

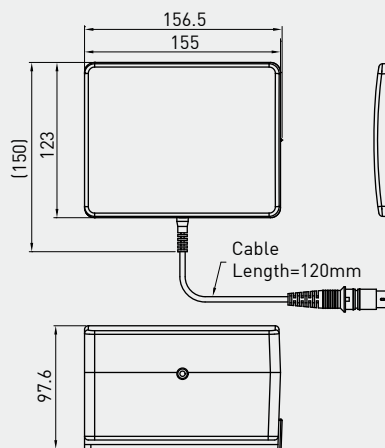
Battery: LAKB-1



Battery: LAKB-3



Battery: LAKB-2



### • Ordering Information (Battery)



#### LAKB - 3 - G - E

Special model according to Client's requirement	None E=Ignore this part of the serial number if not available
Color	W: White G: Gray
Battery for LAK2J	3: 4.5Ah



#### LAKB - 1 - G E

Special models according to Client's requirement	None E=Ignore this part of the serial number if not available
Color	B: Black G: Gray
Battery	1: 1.3Ah 2: 2.9Ah

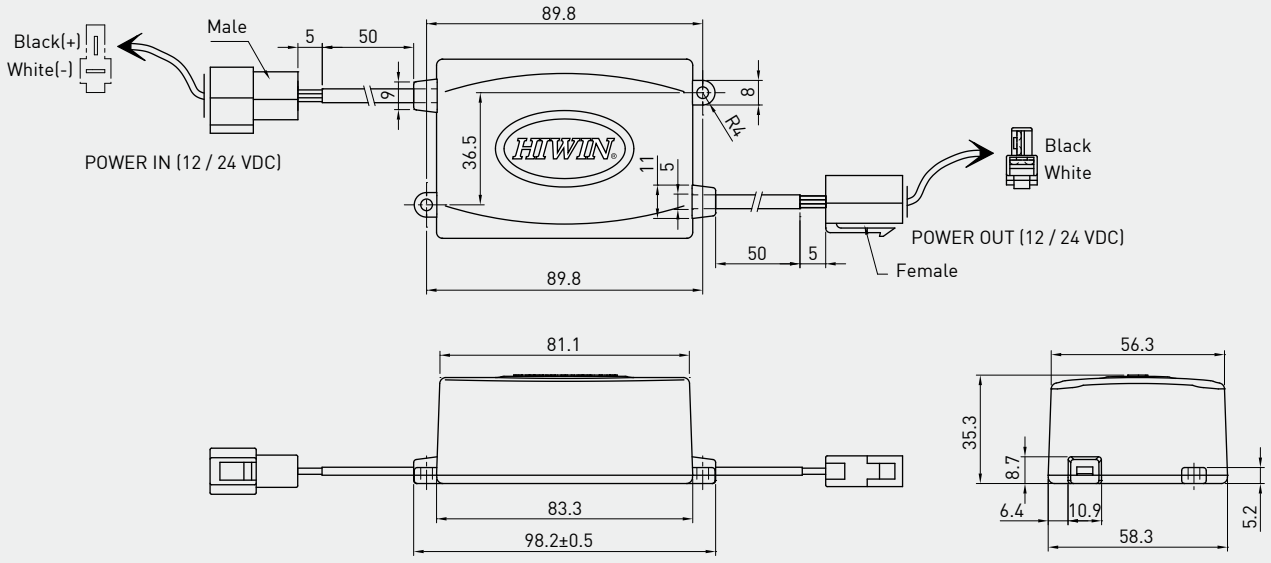
# 16. HIWIN Over Current Protection Box

## LAKC-1



Input voltage	12/24VDC
Output voltage	12/24VDC
Duty cycle	10%
Working temp.	+5°C~40°C
Protection*	IP54

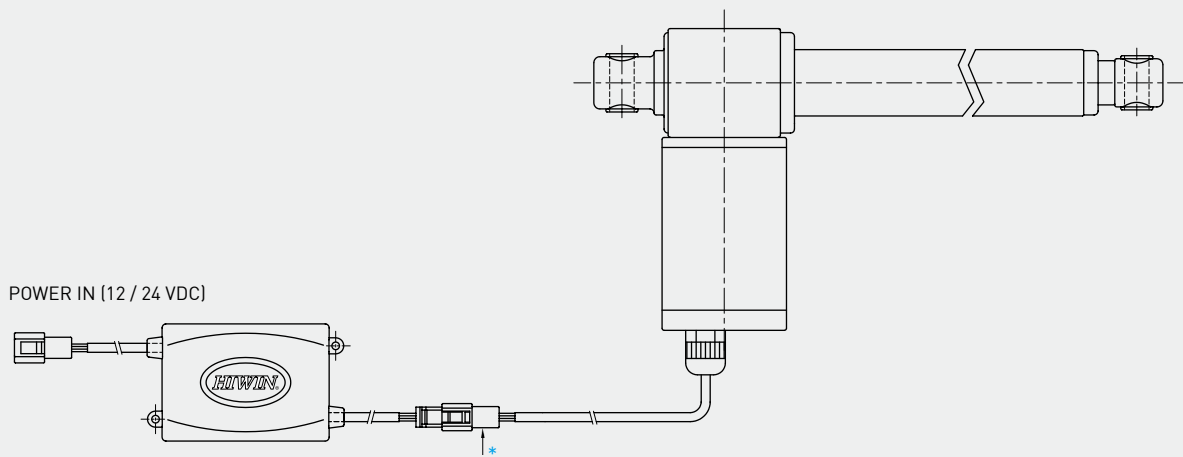
\* Option: IP66



## • Features of LAKC-1

- Compact size
- Low cost
- Easy to use
- Multiple over- current settings available
- Fast response time

## • For Series



\* When purchasing an actuator to be connected with the LAKC, please inform the Hiwin sales representative.

## • Ordering Information

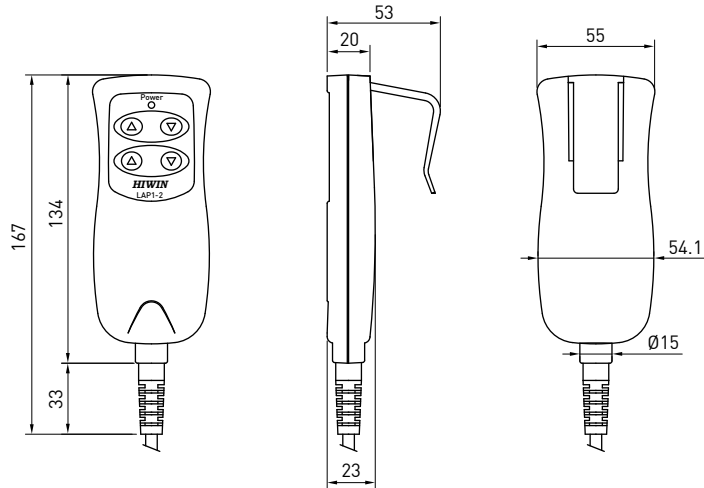
**LAKC - 1 - 12 - 6 G E**

Special models according to Client's requirement	None	E=Ignore this part of the serial number if not available
Color	B: Black G: Gray	
Over Current Setting	12V: 2: 2A 3: 3A 4: 4A 5: 5A 6: 6A 8: 8A 10: 10A 12: 12A 18: 18A	24V: 2: 2A 2.5: 2.5A 3: 3A 4: 4A 5: 5A 6: 6A 7: 7A 8: 8A 9: 9A 10: 10A
Input(Output)Voltage	12: 12VDC 24: 24VDC	
Model number		

# 17.

## HIWIN Keypad Series

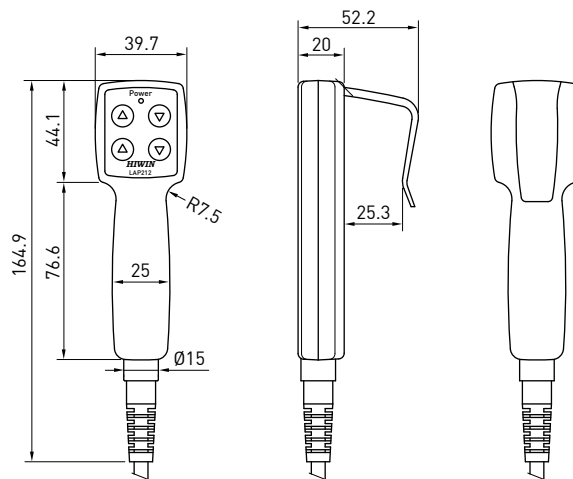
### LAP1



#### • Features of the LAP1

- Controls a maximum of 2 Actuators
- Compatible with the LAK2, LAK4, LAK4D, LAK4N, LAK2LR, & the LAK2D
- Ergonomic design
- Standard cable length: coil 600mm; total 1100mm
- Protection: IP66

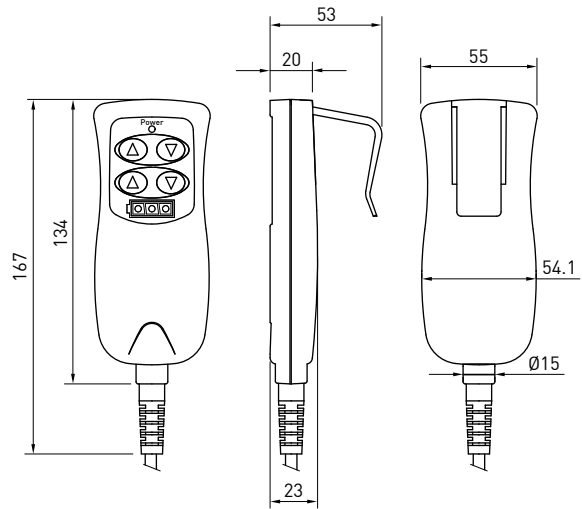
### LAP2



#### • Features of the LAP2

- Control maximum of 2 Actuators
- Compatible with LAK2, LAK4, LAK2D
- Ergonomic design and small size
- Standard cable length: coil 600mm; total 1100mm
- Protection: IP66

## LAP3

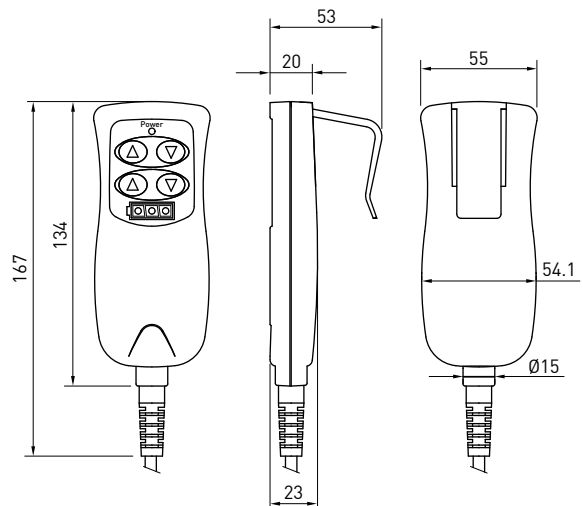


### • Features of the LAP3

- Control maximum of 2 Actuators
- Compatible with LAK2B, LAK2J
- Ergonomic design
- Standard cable length: coil 600mm; total 1100mm
- LED for battery capacity
- Protection: IP66

\* Option: UL version only for LAP3-1-B

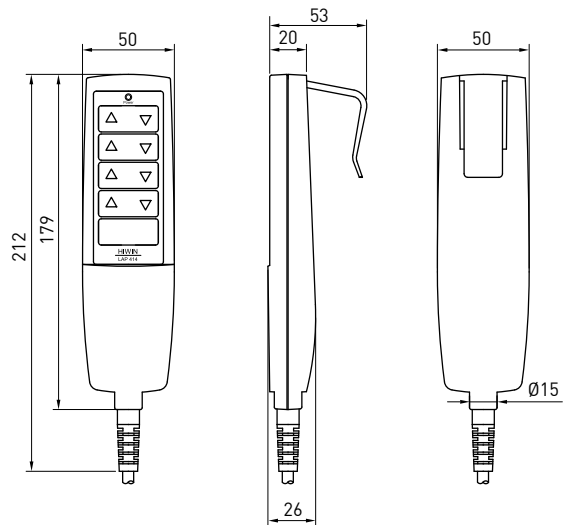
## LAP3N



### • Features of the LAP3N

- Control maximum of 2 Actuators
- Compatible with LAK2BN
- Ergonomic design
- Standard cable length: coil 600mm; total 1100mm
- LED for battery capacity
- Protection: IP66

## LAP4

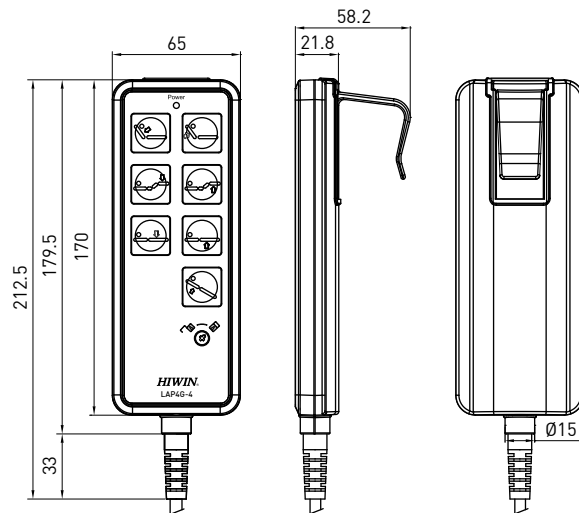


### • Features of the LAP4

- Control maximum of 4 Actuators
- Compatible with LAK4
- Ergonomic design
- Standard cable length: coil 600mm; total 1100mm
- Protection: IP66
- UL version only for LAP4-3-B

\* Option: (1) Cable length: coil 600mm; total 2250mm  
(2) UL version only for LAP4-3-B

## LAP4G

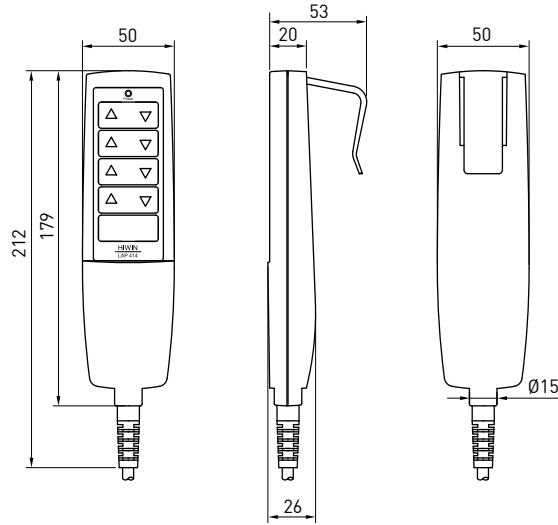


### • Features of the LAP4G

- Control maximum of 4 Actuators
- Compatible with LAK4D, LAK4N, LAK6B
- Ergonomic design
- Standard cable length : coil 600mm; total 1100mm
- Protection: IP66
- With lock function

\* Option: (1) UL version  
(2) Cable length:coil 600mm; total 2250mm

## LAP4N

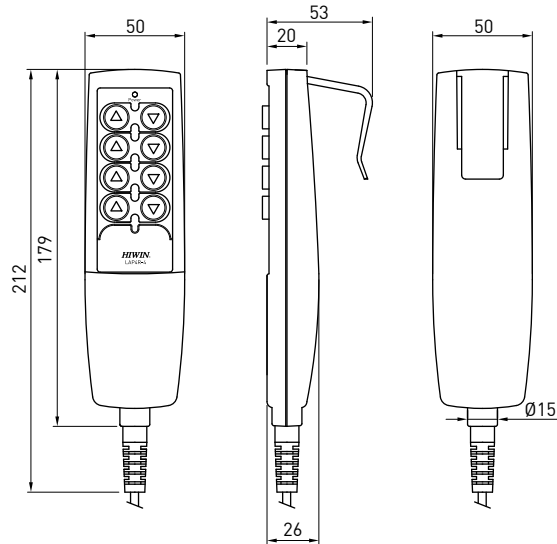


### • Features of the LAP4N

- Control maximum of 4 Actuators
- Compatible with LAK4N, LAK4D
- Ergonomic design
- Standard cable length: coil 600mm; total 1100mm
- Protection: IP66

\* Option: Cable length: Coil 600mm; total 2250mm

## LAP4R

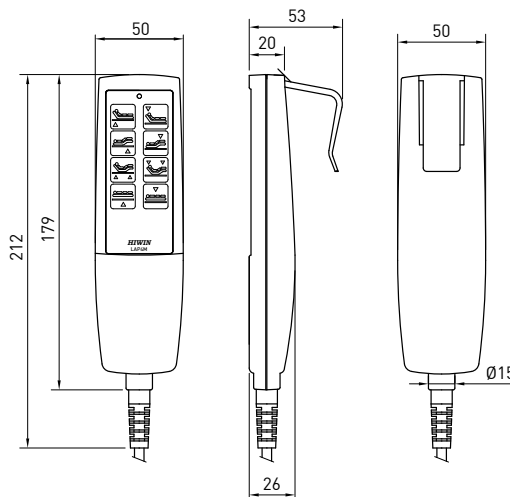


### • Features of the LAP4R

- Control maximum of 4 Actuators
- Compatible with LAK4, LAK4D, LAK4N, LAK2J, LAK6B
- Ergonomic design
- Standard cable length: coil 600mm; total 1100mm
- Protection: IP66

\* Option: Cable length: coil 600mm; total 2250mm

**LAP4M**

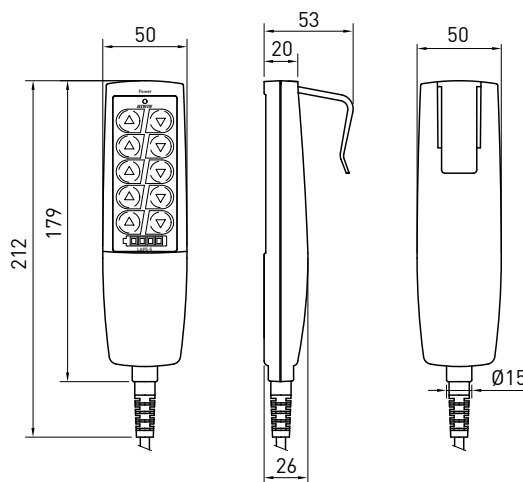


• **Features of the LAP4M**

- Control maximum of 4 Actuators
- Compatible with LAK4, LAK4D, LAK4N
- Ergonomic design
- Standard cable length: coil 600mm; total 1100mm
- Protection: IP66

\* Option: Cable length: coil 600mm; total 2250mm

**LAP5**

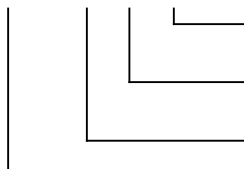


• **Features of the LAP5**

- Control maximum of 5 Actuators
- Compatible with LAK6B, LAK2J
- Ergonomic design
- Standard cable length: coil 600mm; total 1100mm
- Protection: IP66

• **Ordering Information**

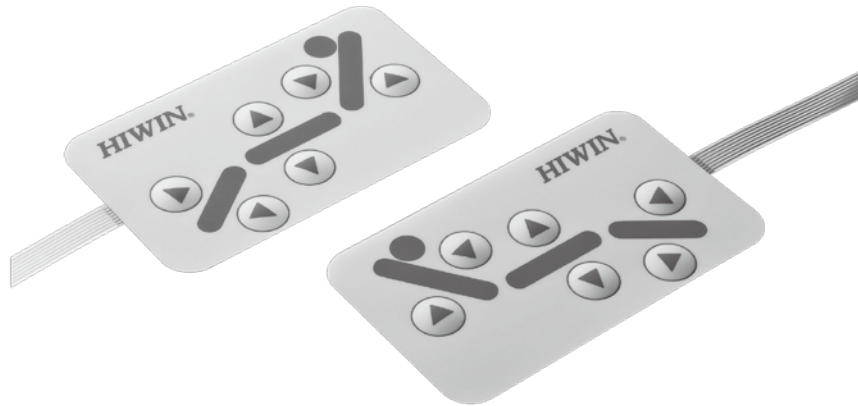
**LAP1 - 2 - B E**



Special models according to Client's requirement	None	E=Ignore this part of the serial number if not available		
Color	B: Black	G: Gray		
Number of axis controlled				
Model number	LAP1	LAP4	LAP4N	LAP4G
	LAP2	LAP4M	LAP4R	
	LAP3	LAP3N	LAP5	

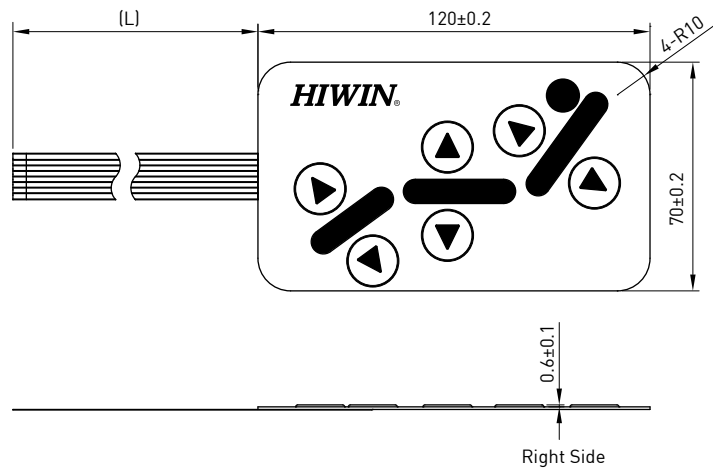


# LAPM



## • Features of the LAPM

- Control maximum of 4 Actuators
- Compatible with LAK4D, LAK4N, LAK6B
- Cable length:200mm



## • Ordering information

### LAPM - 1 - R E

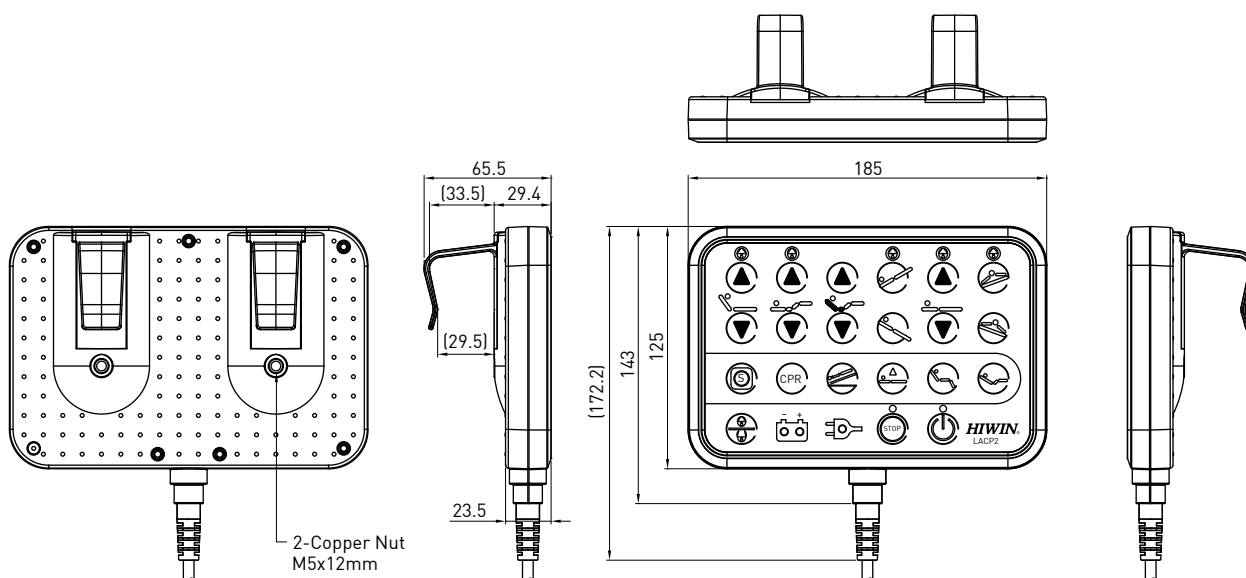
Special models according to client's requirement	None
R: Right side L: Left side	E = Ignore this part of the serial number if not available
Model number	

# LACP2



## • Features of the LACP2

- Control maximum of 5 Actuators
- Compatible with LAK6B
- Ergonomic design
- Custom mask and function
- Standard cable length:coil 600mm;total 1100mm
- Protection: IP54
- Option: IP66

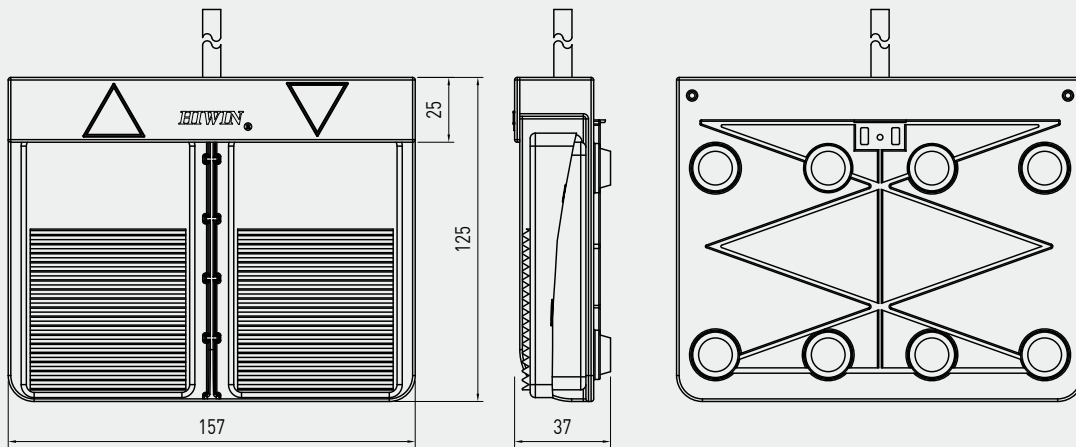


## • Ordering information

### LACP2 - 2 - B E

Special models according to client's requirement	None E = Ignore this part of the serial number if not available
Color	B : Black G : Gray
Number of axis controlled	
Model number	

**LAFS**



**• Features of the LAFS1**

- Controls 1 Actuator
- Compatible with all controllers
- \* Notice the type of controller
- Easily portable with attached magnet
- Standard cable length: coil 600mm; total 1100mm

**• Ordering Information**

**LAFS1 - 1 - GE**

	Special models according to Client's requirement	None E=Ignore this part of the serial number if not available
	Color	G: Gray
	Number of axis controlled	
	Model number	LAFS1

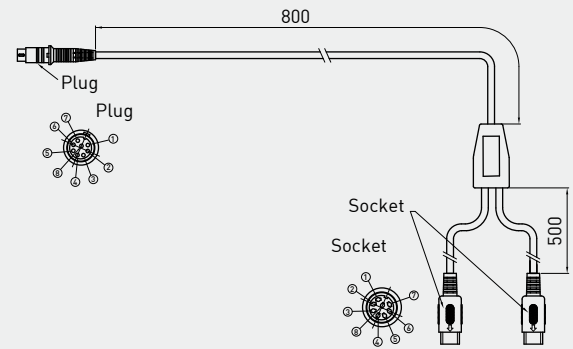
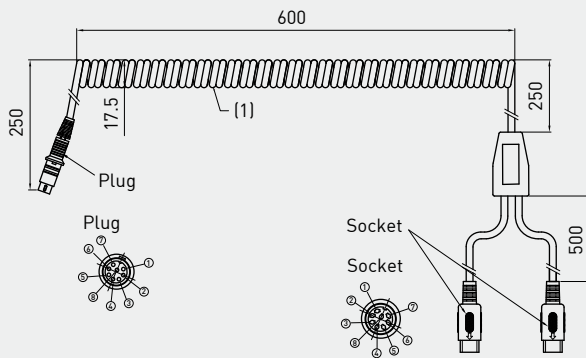
# 18.

## Options for each Actuator Type

### Y-CABLE

#### • Features of the Y-Cable

- Compatible with 2 keypads independent input.



#### • Ordering Information

##### LAPY - 1 - G - E

Special models according to Client's requirement	None E=Ignore this part of the serial number if not available
Color	B: Black G: Gray
Cable	1: Coil cable 2: Straight cable
Model of Y extension cable	

# 18.

## Options for each Actuator Type

Series	Function	IP54	IP65	IP66	Back fixture turn 90°	Gear box material S45C	Rod end with flat connector	Safety nut	Spline (push only)	Quick release	Internal limit switches	External limit switches	Hall Sensor		Potentiometer	Optical Sensor		
													NPN	TTL		NPN	PNP	TTL
LAM	LAM-1	●	▲		▲	▲						▲						
	LAM-2	●	▲		▲	▲						▲						
	LAM-1A	●	▲		▲	▲						▲						
	LAM-2A	●	▲		▲	▲						▲						
LAM3	LAM3-1	●		▲	▲			▲	▲		●							
	LAM3-2	●		▲	▲			▲	▲		●							
	LAM3-3	●		▲	▲			▲	▲		●							
	LAM3-4	●		▲	▲			▲	▲		●							
LAS	LAS1-1	●	▲		▲		▲				●							
	LAS1-2	●	▲		▲		▲				●							
LAS3	LAS3-1	●	▲		▲						●				■	■	■	■
	LAS3-2	●	▲		▲						●				■	■	■	■
LAS4	LAS4-1	●	▲								●							
	LAS4-2	●	▲								●							
LAN1	LAN1-1	●		▲	▲			▲	▲		●		▲	▲				
	LAN1-2	●		▲	▲			▲	▲		●		▲	▲				
	LAN1-3	●		▲	▲			▲	▲		●		▲	▲				
	LAN1-4	●		▲	▲			▲	▲	▲	●		▲	▲				
LAN2	LAN2-1A	●		▲				▲	◆			◆	▲					
	LAN2-2A	●		▲				▲	◆			◆	▲					
	LAN2-3A	●		▲				▲	◆			◆	▲					
LAN3	LAN3-1	●		▲	▲			▲	▲	▲	●				▲			
	LAN3-2	●		▲	▲			▲	▲	▲	●				▲			
	LAN3-3	●		▲	▲			▲	▲	▲	●				▲			
LAN4	LAN4-1	●		▲														
	LAN4-2	●		▲														
	LAN4-3	●		▲														
	LAN4-4	●		▲														
LAN5	LAN5-1	●	▲		▲			▲	▲		●		▲	▲				
	LAN5-2	●	▲		▲			▲	▲		●		▲	▲				
	LAN5-3	●	▲		▲			▲	▲		●		▲	▲				
	LAN5-4	●	▲		▲			▲	▲		●		▲	▲				
LAC3	LAC3-1	●									●				▲			

● Standard

▲ Option is available.

◆ ■ Only 1 option is available.

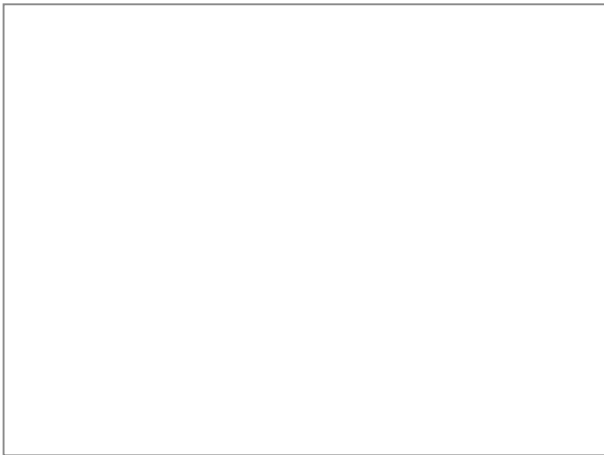
# 19.

## HIWIN Customer Requirements (LA)

\*Required

NO: \_\_\_\_\_

Customer		Application	
Tel:		Fax:	
Contact person		Executive	
<input type="checkbox"/> Actuator		<input type="checkbox"/> Controller	
*Voltage VDC (V)		*Input voltage (V) AC ___ V or DC ___ V	
*Max. current (A)		*Control axis no.	
*Max. thrust force (N)		*Battery <input type="checkbox"/> YES <input type="checkbox"/> NO	
*Max. pulling force (N)		*Power cord type <input type="checkbox"/> US <input type="checkbox"/> UK <input type="checkbox"/> EU <input type="checkbox"/> other _____	
*Max.holding force (N)		*Over load protection <input type="checkbox"/> YES <input type="checkbox"/> NO	
*Stroke (mm)		*IP Class	
*Install length (mm)		Output power (VA)	
*Speed (mm/s)	No load	Power cord length	
	Full load	Removable Power cord <input type="checkbox"/> YES <input type="checkbox"/> NO	
*Load (N)		Duty cycle	
*IP Class		Operation temp. (°C)	
No-Load current (A)		Outdoor use <input type="checkbox"/> YES <input type="checkbox"/> NO	
Duty cycle		With HIWIN's Actuator <input type="checkbox"/> YES (Model) _____ <input type="checkbox"/> NO	
Operation temp. (°C)		Custom program <input type="checkbox"/> YES <input type="checkbox"/> NO	
Outdoor use	<input type="checkbox"/> YES <input type="checkbox"/> NO	Housing color <input type="checkbox"/> BLACK <input type="checkbox"/> GRAY	
Direction	<input type="checkbox"/> H. <input type="checkbox"/> V.	Expected price	
Bending moment	<input type="checkbox"/> YES <input type="checkbox"/> NO	Quantity (year/month)	
With HIWIN's L/S	<input type="checkbox"/> YES <input type="checkbox"/> NO	<input type="checkbox"/> Keypad	
With HIWIN's Controller	<input type="checkbox"/> YES (Model) _____ <input type="checkbox"/> NO	*Control axis no.	
With customer's L/S	<input type="checkbox"/> YES <input type="checkbox"/> NO	*Custom mask <input type="checkbox"/> YES <input type="checkbox"/> NO	
Over current	<input type="checkbox"/> YES <input type="checkbox"/> NO	*Lock function <input type="checkbox"/> YES <input type="checkbox"/> NO	
Position feedback	<input type="checkbox"/> YES <input type="checkbox"/> NO	*With HIWIN's Controller <input type="checkbox"/> YES (Model) _____ <input type="checkbox"/> NO	
Special install requirement (Fixture, Space...etc.)		Housing color <input type="checkbox"/> BLACK <input type="checkbox"/> GRAY	
Expected price		Key mode <input type="checkbox"/> Membrane <input type="checkbox"/> Rubber	
Quantity (year/month)		Expected price	
		Quantity (year/month)	
*Other function / requirement:			
(The following fills in by HIWIN Engineer) Recommend Specification:			
Engineer:		Manager:	



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