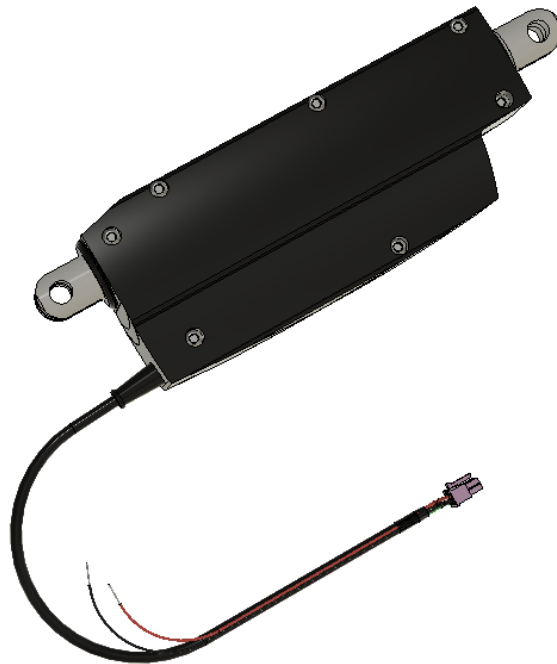


# LA12

Linear actuator for controlling UL aircraft flaps settings



## Product description:

The LA12 product is a servomotor intended for the electric control of UL aircraft flaps. It is usually supplied as a motor + controller set (product FLAPS HBxx V6). The linear actuator has a 10 cm extendable rod, which extends or retracts depending on the connected polarity of the input voltage to the control motor. The exact position of the drive is signaled by the built-in position sensor. The controller can then set the actuator to precisely predefined positions. The actuator feed has an internal limit position detection, so the feed stops automatically after reaching the limit positions. Engine power reaches up to 750 N. A 5-wire cable with a diameter of 6 mm is taken out of the product and ends with a 10-pin connector. Connector output and cables can be modified differently according to the used connected optional accessories (chassis control unit, dimmer - see manual. FLAPS V6 HBxx). Only one type of optional accessory can be connected.

Installation of the product is very simple. The actuator is attached by two 10 mm pins and properly secured against them falling out. Care must be taken to ensure that the product does not collide with surrounding objects in its immediate vicinity due to its movement (the actuator housing also partially deflects) (it could be damaged). Next, you connect LA12 to the FLAPS unit and connect a fused supply voltage. If necessary, optional accessories are connected. Finally, a functional check on LA12 and calibration/adjustment must be performed on the FLAPS unit.

**THIS PRODUCT IS NOT APPROVED FOR INSTALLATION ON CERTIFIED AIRCRAFT. THIS PRODUCT DOES NOT HAVE TSO CERTIFICATION.**

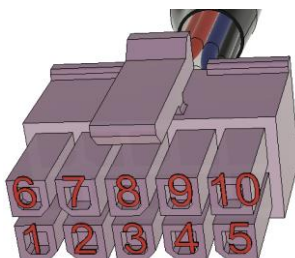
## Characteristic parameters of the actuator:

Parameter	min	Type	max	unit	note
Supply voltage		12		VDC	
Current consumption	1m		5	A	
Recommended fuse protection		10		A	
Actuator motor consumption	1,6		4,6	A	No load/full load
Actuator speed	5		14	mm/s	Full load / no load; ±10%
Thrust max.		750		N	
Self-Lock Max. Push			750	N	
Self-Lock Max. Pull			375	N	
Spindle pitch		2		mm	
Stroke length	98	100	102	mm	
Back fixture orientation		0		°	piston vs holder see Fig. 2
Automatic stop on the max and min stroke position		YES			
Loop-back		YES			(built-in position sensor)
Supply voltage of loop-back	4		10	V	usually, others are not excluded, max. 1 mA
Loop-back life			10000	cycles	max. 1mA

## Mechanical parameters:

Parameter	Value	Unit	Note
Width	267	mm	
Depth	49,5	mm	
High	85	mm	
Mounting hole	10	mm	
Weight	820	g	
Cable length	1 a 1,5(*)	m	*Supply wire
Cable diametral	6	mm	
Piston rod and back fixture material	high-strength plastic	-	

### Legend for wiring and connector:

Pin num.	Wire color	Signal	Description	Connector
1	BLACK <sup>(1)</sup>	GROUND (FLAPS - LIMSW_UP)		 <p>Fig. 1: Pinout of connector</p>
2	BLACK <sup>(1)</sup>	GROUND (FLAPS - LIMSW_DOWN)		
3	GREEN	POT_HI	Position sensor supply (+)	
4	YELLOW	POT_MID	Position sensor signal (OUT)	
5	BLACK	POT_LOW	Position sensor supply (-)	
6	RED <sup>(2)</sup>	V <sub>IN</sub> (+12V)	Power supply control unit (+)	
7	RED	MOTB	Motor power supply - B	
8	<sup>(3)</sup> <sup>(4)</sup> <sup>(5)</sup>	NC	Not connected, LBUS/DIMM (3)	
9	BLUE	MOTA	Motor power supply - A	
10	BLACK <sup>(1)</sup> <sup>(2)</sup> <sup>(4)</sup>	GND	Power supply control unit (-)	
<b>Note:</b>	<p>(1) Connected in a connector                  (2) Free output power wire                  (3) For the FLAPS V6 unit, the LBUS or DIM bus is connected to this pin (see the instructions for the FLAPS V6 HBxx unit)                  (4) In case of use for chassis accessories: PIN8 brown + PIN10 blue                  (5) In the case of using the PIN8-white dimming input (Flaps_DIM_BOX or Multidimmer accessories)</p>			

### Dimension drawing:

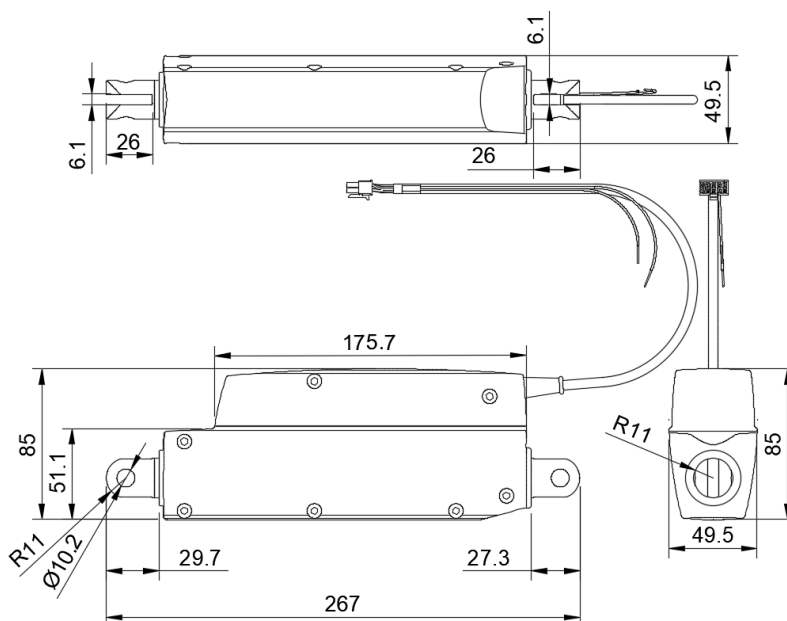


Fig. 2: Dimension drawing

## Block diagram of product integration:

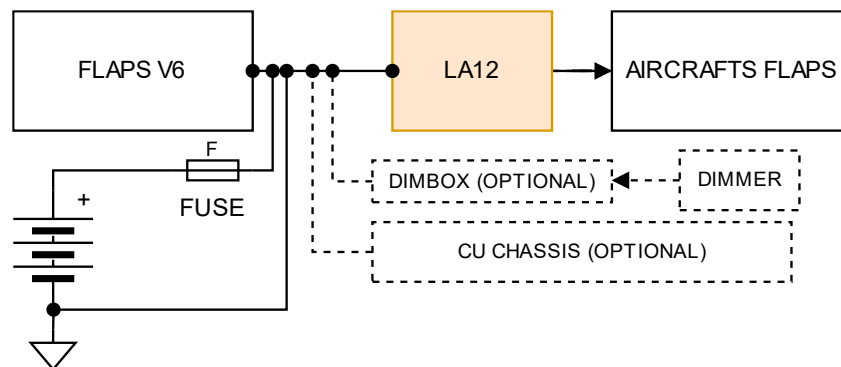


Fig. 3: product integration

## Operating conditions:

Parameter	Value	Unit	Note
Working temperature	-20 ÷ 60	°C	Full performance +5÷40°C
Humidity	20 ÷ 80 %	RH	
Atm. Pressure	900 ÷ 1100	hPa	
IP	IP66	-	
Type of mounting	By screwing	-	Pin/screw diameter 10mm
Working position	any	-	

## Product photo:



Fig. 4: Product view

## Important notes and warnings

Thank you for purchasing **LA12**. For a comfortable and safe use of this product, please pay attention to THE ENTIRE MANUAL, especially the notes and warnings below.

- Although the **LA12** unit has been thoroughly tested to ensure maximum safety in all conceivable situations, THE RIGHT FUNCTIONALITY DEPENDS ON THE RIGHT INSTALLATION AND SETTINGS.
- Therefore, it is **NECESSARY to READ CAREFULLY and UNDERSTAND THIS MANUAL COMPLETELY**.
- Keep this manual printed in an airplane for cases of emergency or change of ownership.
- **THIS PRODUCT IS NOT APPROVED FOR INSTALLATION IN CERTIFIED AIRPLANES.**
- The pilot **MUST UNDERSTAND** the control of this product before the first flight. **DO NOT** use the product unless you are sure how it works!
- Do not allow unauthorized persons to handle the installed product.

- After installing the product, before the first flight, turn on ALL possible sources of electromagnetic interference on board the aircraft and ensure that the instrument is functioning properly.
- Use of the device in conflict with this manual, with bad wiring, outside the allowed operating conditions, etc., may cause the device to malfunction or damage and endanger flight safety.
- If the product repeatedly indicates an error, do not use it and turn off the power!
- AVOID contact with liquids and chemicals
- Before installation, check the mechanical integrity of the device and its accessories
- DO NOT disassemble the device!
- After installation, carefully check the functionality of the device and its installation
- The responsibility for the installation is entire with the installer.
- Responsibility for performing control actions based on information indicated by the product is full of the operator (pilot). The operator must be able to evaluate an incorrect indication even if the product does not indicate an error.
- Ensure regular maintenance of the aircraft's main battery
- If you do not agree to the notes and warnings above, do not use this product.

Company LAMBERT AERODEVICES s.r.o reserves the right to change or improve the product or manual without prior or subsequent notice.

**Document history:**

<i>Date</i>	<i>Version</i>	<i>Change</i>	<i>Author</i>
22.08.2022	0	Create the document	NEPOR
10.10.2022	1	position sensor update	NEPOR
23.02.2023	2	Update mechanical parameters and wiring legend	NEPOR



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