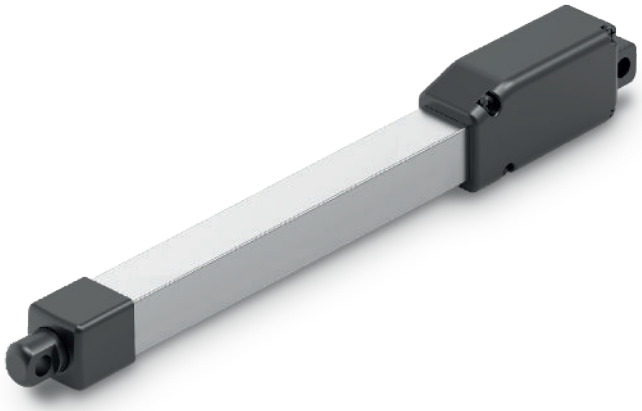
Actuator
AMKS1

AMKS1 is an in-line linear actuator characterized by its miniature size and waterproof. There are four stroke options and different speed options, with a maximum force (push/pull) of 80N. There are two function options in this model, you can choose with travel limit switch or with potentiometer positioning info.



Features

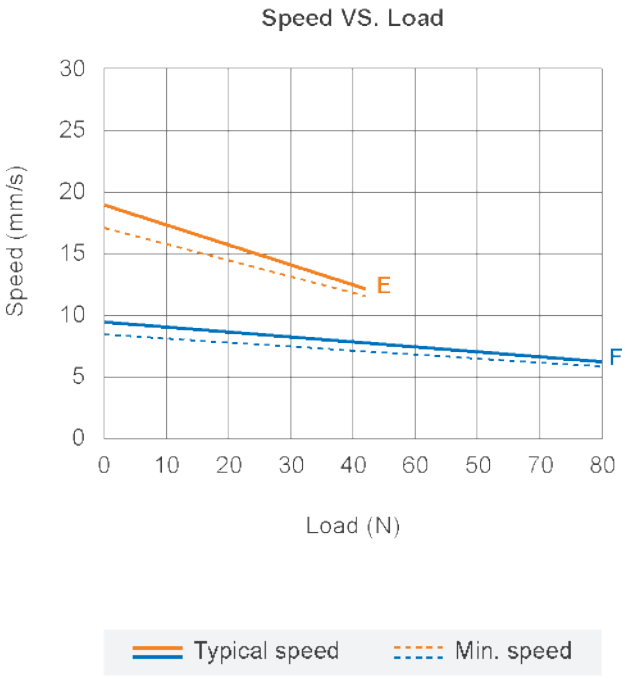
Main applications: Industry, Furniture, DIY application
Standard features:
- Input voltage: 12V DC
- Max. load: 80N (Push/Pull)
- Max. static load: 40N
- Max. speed at no load: 19.0mm/sec (typical value)
- Speed at max load: 6.3mm/sec (typical value @80N Loaded)
- Stroke: 10 / 30 / 50 / 100 mm
- Noise level: ≤55dB
- IP level: IP66/IP69K (static; non-action)
- Material: Aluminum extension and inner tube, plastic case.
- Duty cycle: 20%
- Operating ambient temperature: -10°C ~ +50°C

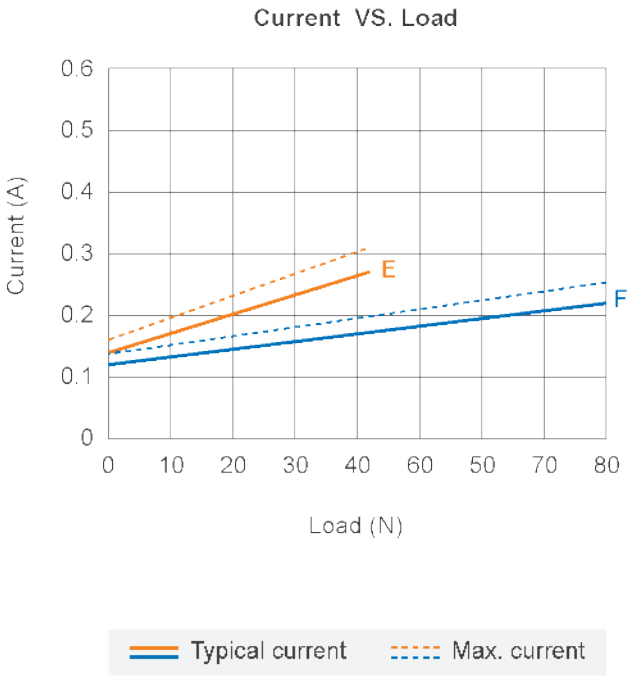
Options

- AMKS1-L version: With travel limit switch, which cuts off power and stop the motor automatically.
- AMKS1-P version: With potentiometer positioning info, so that controller can detect the stroke position of the actuator at any time. And it is an absolute position information, which will not deviate due to power failure.

Performance Data

Model No.	Push/Pull Max. load (N)	Self-locking ability (N)	Typical speed (mm/s)		Typical current (A) @12V DC	
			No load	Full load	No load	Full load
AMKS1-X-12-E-XXX-0XX	42	21	19.0	12.2	0.14	0.27
AMKS1-X-12-F-XXX-0XX	80	40	9.5	6.3	0.12	0.22





Dimensions

Installation dimention:

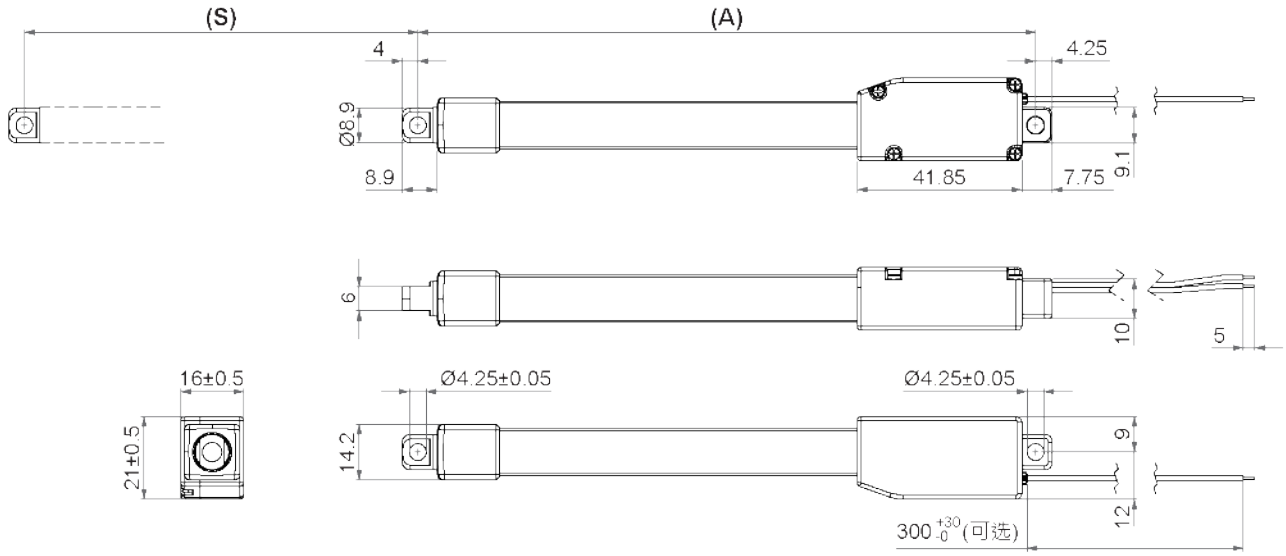
- Extended length = Retracted lenght (A) + Stroke (S)
- Minimum retracted length (A) of various options

Version	Stroke (S)			
	10	30	50	100
AMKS1-L	67	87	107	157
AMKS1-P	N/A	87	107	157

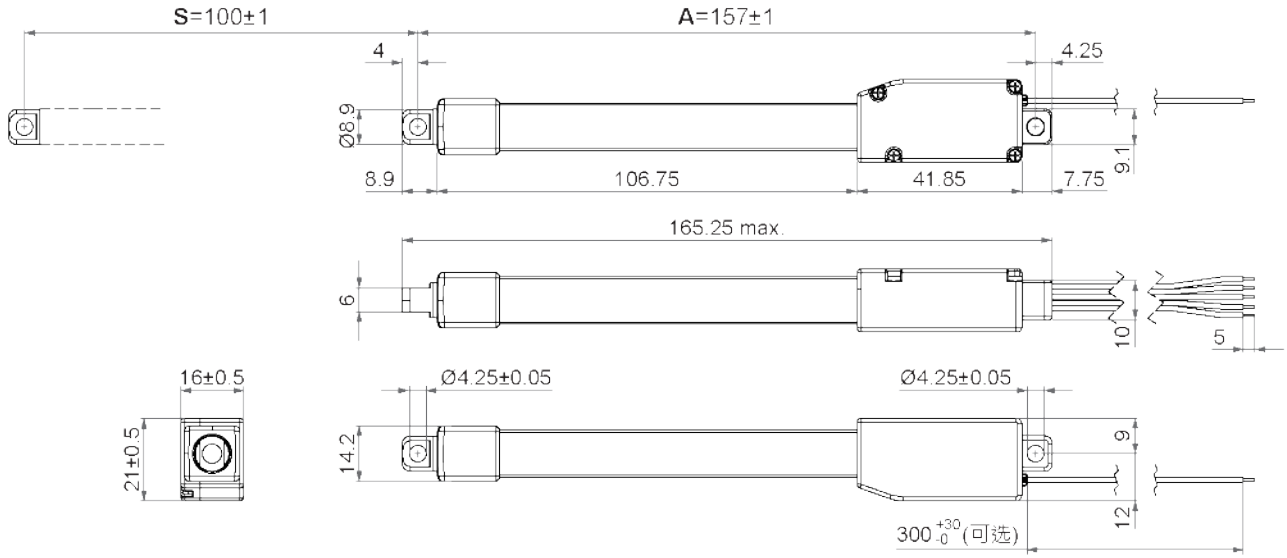
(Tolerance: ±1mm)

Drawing

- AMKS1-L



- AMKS1-P (only one size)



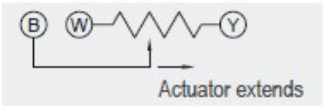
Unit: mm

Wiring with Flying Leads

• AMKS1-P (with limit switches)

	Wire color	Definition	Descriptions
Power wires	Red	DC Power	Connect red wire to “Vdc +” & black wire to “Vdc -” of DC power to extend the actuator. Switch the polarity of DC input to retract it.
	Black		

• AMKS1-P (with potentiometer positioning info)

<table>
<tr><th></th><th>Wire color</th><th>Definition</th><th>Descriptions</th></tr>
<tr><td>Power wires</td><td>Red
Black</td><td>DC power</td><td>Connect red wire to “Vdc +” & black wire to “Vdc -“ of DC power to extend the actuator. Switch the polarity of DC input to retract it.</td></tr>
<tr><td rowspan="4">Signal wires</td><td>Yellow</td><td>Vin</td><td>Input any stable high reference voltage <30V</td></tr>
<tr><td>Blue</td><td>POT output</td><td>1. Potentiometer specifications: There are different total resistance according to the stroke options (as table below).
<table><tr><th>Stroke option</th><th>* Max. resistance</th></tr><tr><td>30 mm</td><td>3KΩ±40%</td></tr><tr><td>50 mm</td><td>6KΩ±40%</td></tr><tr><td>100 mm</td><td>11KΩ±40%</td></tr></table>* Remarks: It is the resistance value between the blue and the white wires when the actuator is extended to its longest position.
2. Output voltage: As the actuator extends, the voltage (resistance) measurement between the blue and white wires increases linearly. Conversely, decrement when retracting.
 
3. When using for the first time (or when the actuator is replaced), after correctly connecting the wires, measure the output voltage at the beginning and end of the actuator stroke from the blue line (more sampling points can be added in the middle) to calculate the linear conversion formula between the POT output voltage and the stroke position. By building the formula into the control system's program parameters, the measured voltage can be converted into stroke position in real time.</td></tr>
<tr><td>White</td><td>GND</td><td>Any stable low reference voltage (e.g. grounding)</td></tr>
</table>

Ordering Key

AMKS1- L - 12 - E - 030 - 0 0 3

Version	**L:** Preset power switches for stroke end limits **P:** With potentiometer positioning info
Input voltage	**12:** 12V DC
Performance	**E, F** (refer to p.2 Performance Data)
Stroke	**010:** 10mm **030:** 30mm **050:** 50mm **100:** 100mm
Reserved	**0**
Reserved	**0**
Cable length	**0:** 300mm straight **3:** 900mm straight

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