

Actuator

MK35

MK35 is an intelligent actuator with PCBA control board inside. Its robust mechanical design can provide up to 10,000N thrust, and meets IP69K waterproof protection. The built-in control circuit board has the protection function of monitoring current and voltage, and there are various control options to suit the user's system. MK35 is truly a favorable choice for applications such as agriculture, construction and industrial automation.



Features

- Main applications: Agriculture, Construction and Industrial Automation.
- Input voltage: 12V DC / 24V DC
- Max. load: 10,000N (Push/Pull)
- Max. static load: 18,000N (Push)
- Speed at no load: 40mm/sec (typical value)
- Speed at full load: 8mm/sec (typical value @10,000N loaded)
- Stroke: 100 ~ 1,000mm (the max. stroke is depending on load, refer to Dimensions)
- Manual drive capable by an hexagon socket wrench
- Stainless steel extension tube
- IP level: IP66 (dynamic) and IP67/IP69K (static)
- Built-in stroke limit switches
- Various control options to suit the user's system
- Operating voltage and current monitoring and protection
- Soft start / stop
- Duty cycle: 15 ~ 25%. Refer to Performance Data
- Operating ambient temperature: -40°C ~ +80°C (full performance +5°C ~+40°C)

Options

Control options

- S0L Control options: Signal control + End of stroke signal output**
 The S0L uses low current signal to control the actuator move or stop without switching the polarity of the input DC power, and there is an arrival signal output when it reaches the end of stroke (EoS).
- SPL Control options: Signal control + Potentiometer + End of stroke signal output**
 In addition to having all the same features as S0L, the SPL option also provides a potentiometer output, allowing the user's control equipment to know the absolute position of the actuator at any time.
- SHL Control options: Signal control + Dual Hall effect sensors + End of stroke signal output**
 The SHL has the same control platform and EoS arrival output as SPL, but use dual Hall effect sensors for positioning signal output.
- J00 Control options: SAE J1939 CAN Bus protocol**
 The J00 can be used for full stroke positioning and speed control. It is a CAN Bus control method and adopts the communication protocol standard of SAE J1939. In addition to the complete position control, it provides current, speed... and other status information feedback through the CAN Bus platform.

Control options overview

	S0L	SPL	SHL	J00
Control platform	Low current signal	Low current signal	Low current signal	J1939 CAN Bus
H-bridge ⁽¹⁾	✓	✓	✓	✓
Potentiometer output ⁽²⁾	-	✓	-	-
Hall signal output ⁽³⁾	-	-	✓	-
EoS signal output ⁽⁴⁾	✓	✓	✓	-
Soft start/stop	✓	✓	✓	✓
Over current protection	✓	✓	✓	✓
Over voltage protection	✓	✓	✓	✓
Temperature monitoring ⁽⁵⁾	✓	✓	✓	✓
Status feedback	-	-	-	✓
Current feedback	-	-	-	✓
Position feedback	-	-	-	✓
Speed/ramp feedback	-	-	-	✓
Error code feedback	-	-	-	✓

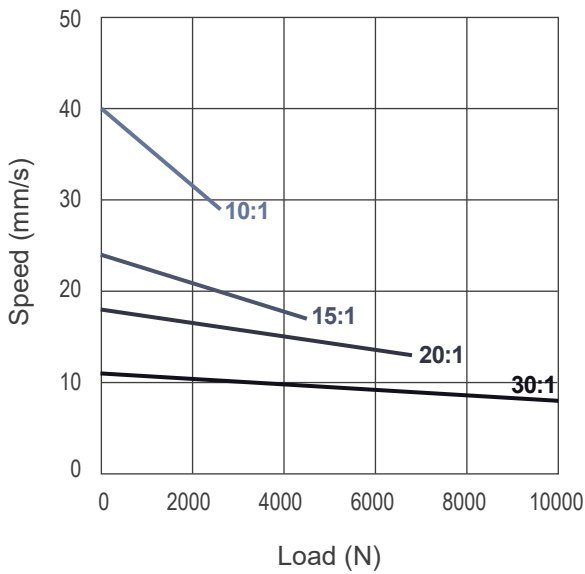
Remarks:

- Polarity of input DC power is fixed and should not be switched.
- A wire connection of voltage input (Vin) is required. The recommended voltage is the same as motor power V+, maximum 32V DC.
- Output voltage of Hall signal = 11.4V DC max.
- End of stroke signal output is not potential free. An external 5V~24V power supply and pull-up resistor are required to drive other devices.
- Automatically compensate the current limit at low temperatures to ensure normal operation without nuisance tripping.

Performance Data

Gear ratio	Push / Pull Max. (N)	*Typical Speed (mm/s)		*Typical Current (A)				Duty Cycle
		No load	Full load	No load		Full load		
				24V	12V	24V	12V	
10:1	2,600	40	29	1.5	3.0	9	18	25%
15:1	4,500	24	17	1.5	3.0	9	18	25%
20:1	6,800	18	13	1.5	3.0	10	20	25%
30:1	10,000	11	8	1.5	3.0	9	18	15%

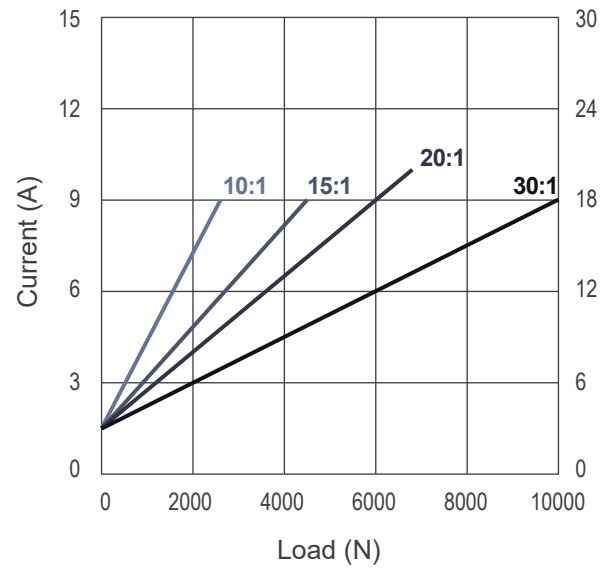
Speed vs. Load



24V DC

Current vs. Load

12V DC



Remarks:

* The typical speed or typical current means the average value neither upper limit nor lower limit. The performance curves are made with typical values.

Dimensions

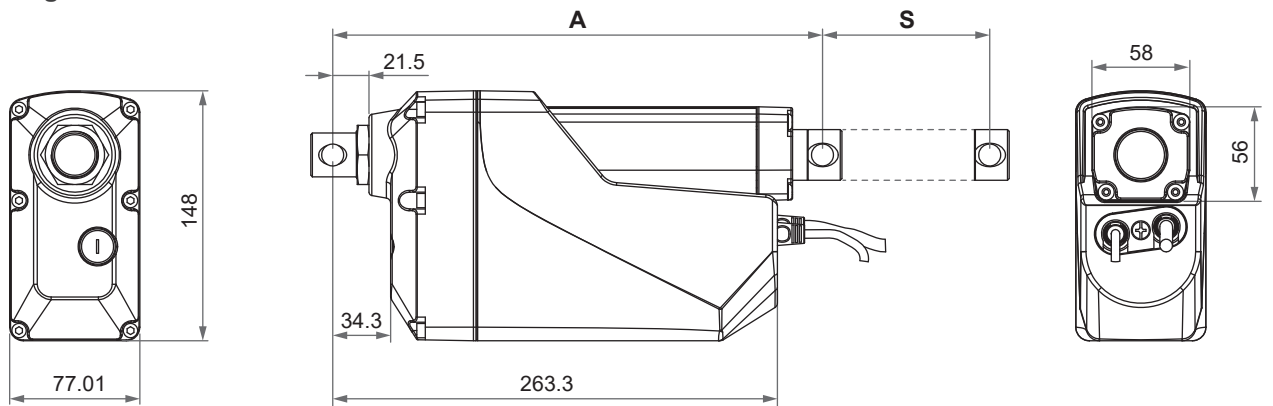
● Installation dimension (A)

Gear type	Solid connector	Slot connector	Available stroke (S)	Max. load
10	$A \geq S + 190\text{mm}$	$A \geq S + 199\text{mm}$	100~1000mm	$\leq 2,600\text{N}$
15			100~800mm	$\leq 4,500\text{N}$
20			100~600mm	$\leq 6,800\text{N}$
30	$A \geq S + 220\text{mm}$	$A \geq S + 229\text{mm}$	100~500mm	$\leq 10,000\text{N}$

(tolerance: $\pm 4\text{mm}$)

* **Remarks:** One step in every 50mm

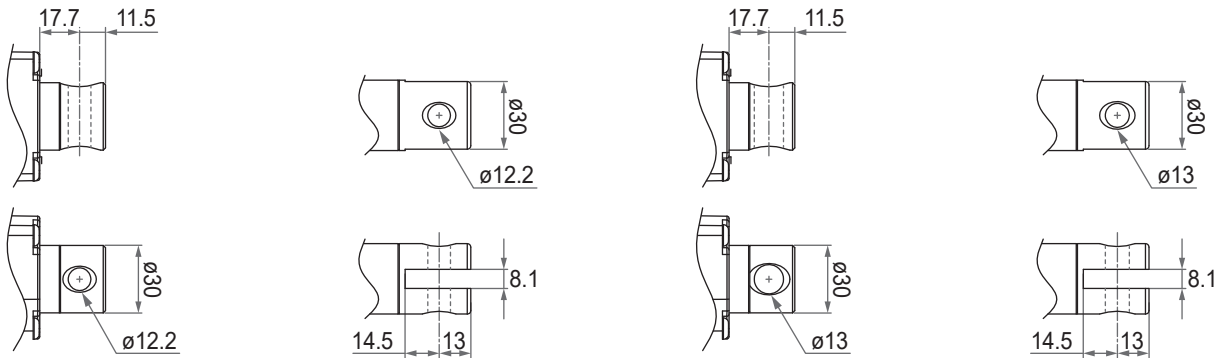
● Drawing



Note: Front and rear connectors shown in standard 0°

Unit: mm

● Front connector



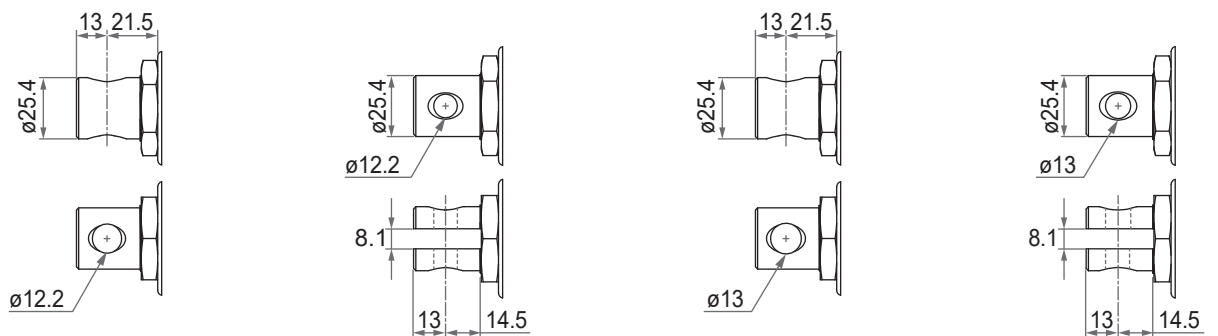
1: Solid type, hole $\varnothing 12.2$

2: Slot type, hole $\varnothing 12.2$

3: Solid type, hole $\varnothing 13$

4: Slot type, hole $\varnothing 13$

● Rear connector



1: Solid type, hole $\varnothing 12.2$

2: Slot type, hole $\varnothing 12.2$

3: Solid type, hole $\varnothing 13$

4: Slot type, hole $\varnothing 13$

Ordering Key

	MK35 - 24 G - 30 B - XXXX - J00 - 1 1 0 0 0 0
Input voltage	12 : 12V DC 24 : 24V DC
Motor code	G : 4500rpm
Gear type	10 : 10:1 15 : 15:1 20 : 20:1 30 : 30:1
Spindle type	B : Ball Screw
Stroke	XXXX : 0100~1000mm (one step in every 50mm)
Control options	S0L : Signal control + EoS SPL : Signal control + Potentiometer + EoS SHL : Signal control + Dual Hall effect sensors + EoS J00 : J1939 CAN Bus
Front connector	1 : Solid, hole \varnothing 12.2mm 2 : Slot, hole \varnothing 12.2mm 3 : Solid, hole \varnothing 13mm 4 : Slot, hole \varnothing 13mm
Rear connector	1 : Solid, hole \varnothing 12.2mm 2 : Slot, hole \varnothing 12.2mm 3 : Solid, hole \varnothing 13mm 4 : Slot, hole \varnothing 13mm
Connector orientation	0 : 0° (standard) 9 : 90° <i>(Front and rear connectors shown in standard 0°)</i>
Reserved	0 : Reserved
Reserved	0 : Reserved
Cable length	0 : 500mm 1 : 1500mm 3 : 3000mm



For more information about installation and use, please contact Moteck sales to obtain 《 MK35 Manual 》 .