

JP3

series



Product Segments

• Industrial Motion

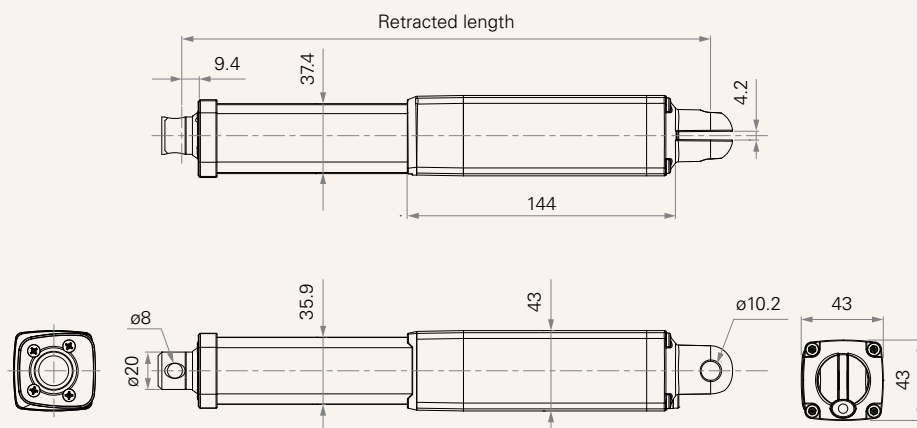
TiMOTION's JP3 series inline linear actuator was designed for low load industrial applications where up to IP69K dust and liquid ingress protection is necessary. It is best suited for applications with visual or compact installation dimension requirements. Hall sensors are optional for the JP3 which allow for synchronization and position feedback.

General Features

| | |
|---|----------------------------|
| Max. load | 2,000N (push/pull) |
| Max. speed at max. load | 3.5mm/s |
| Max. speed at no load | 23.5mm/s |
| Retracted length | ≥ Stroke + 217mm |
| IP rating | IP69K |
| Certificate | UL73 |
| Stroke | 20~1000mm |
| Output signals | NPN Hall sensors |
| Voltage | 12/24V DC; 12/24V DC (PTC) |
| Color | Black, grey |
| Operational temperature range | -5°C~+65°C |
| Operational temperature range at full performance | +5°C~+45°C |
| Storage temperature range | -40°C~+70°C |

Drawing

Standard Dimensions
(mm)



Load and Speed

| CODE | Load (N) | | Self Locking Force (N) | Typical Current (A) | | Typical Speed (mm/s) | | Typical Current (A) | | Typical Speed (mm/s) | |
|--|----------|------|------------------------|---------------------|------------------|----------------------|------------------|---------------------|------------------|----------------------|------------------|
| | Push | Pull | | No Load 24V DC | With Load 24V DC | No Load 24V DC | With Load 24V DC | No Load 12V DC | With Load 12V DC | No Load 12V DC | With Load 12V DC |
| Motor Speed (5600RPM, Duty Cycle 20% : 2min on / 8min off) | | | | | | | | | | | |
| B | 2000 | 2000 | 2000 | 1.5 | 3.3 | 7.0 | 4.5 | 2.5 | 6.5 | 7.0 | 3.5 |
| C | 1500 | 1500 | 1000 | 1.5 | 3.3 | 10.0 | 6.5 | 2.5 | 6.5 | 10.0 | 6.5 |
| D | 1000 | 1000 | 700 | 1.5 | 3.0 | 14.5 | 9.8 | 2.5 | 6.0 | 14.5 | 8.5 |
| E | 500 | 500 | 500 | 1.5 | 3.0 | 23.5 | 19.0 | 2.5 | 6.0 | 23.5 | 19.0 |

Note

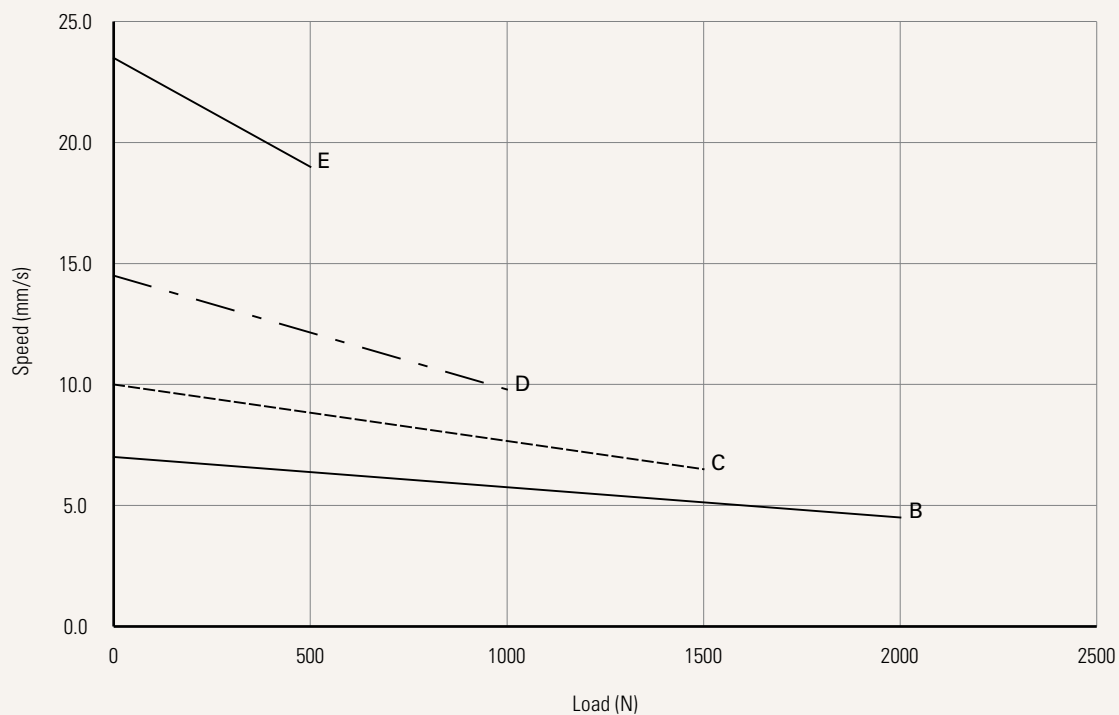
- Please refer to the approved drawing for the final authentic value.
- This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in. The self-locking force is a minimum value and can be actually higher.
- The current & speed in table are tested with 24V DC motor. With a 12V DC motor, the current is approximately twice the current measured in 24V DC; speed will be similar for both voltages.
- The current & speed in table are tested when the actuator is extending under push load.
- The current & speed in table and diagram are tested with a stable 24V DC power supply.
- Without load, noise level $\leq 65\text{dBA}$ (by TiMOTION test standard, ambient noise level $\leq 36\text{dBA}$)
- Standard stroke: Min. $\geq 20\text{mm}$, Max. please refer to below table

| CODE | Load (N) | Max Stroke (mm) |
|----------|----------|-----------------|
| B | 2000 | 500 |
| C | 1500 | 600 |
| D | 1000 | 800 |
| E | 500 | 1000 |

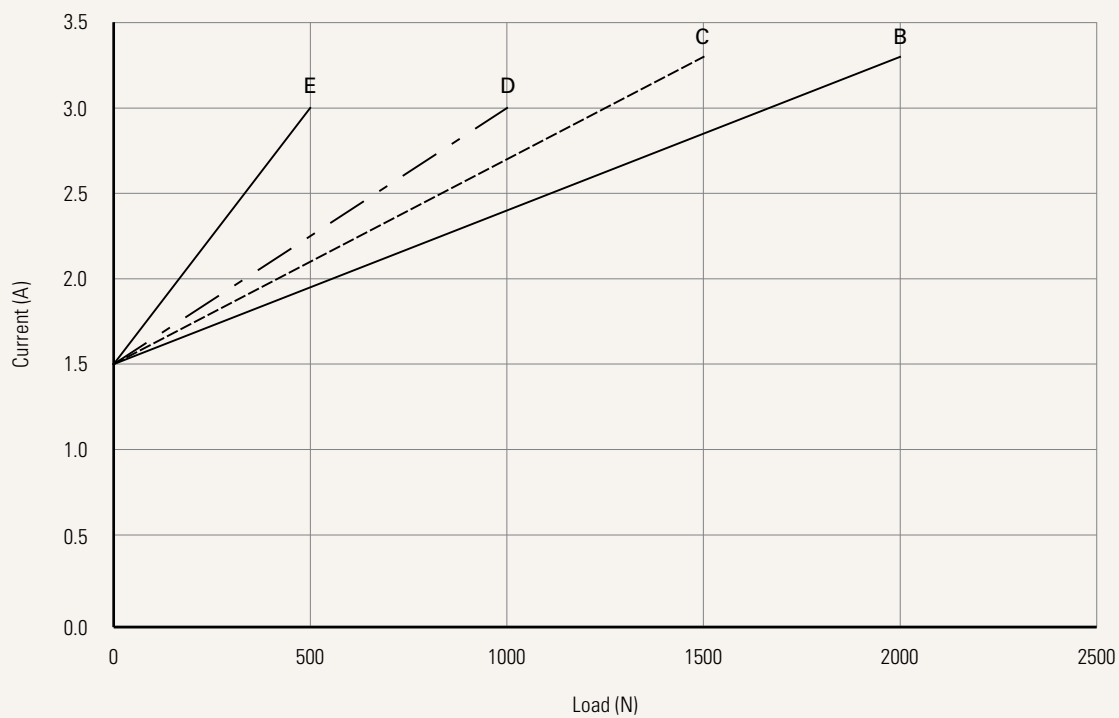
Performance Data (24V DC Motor)

Motor Speed (5600RPM, Duty Cycle 20%: 2min on / 8min off)

Speed vs. Load



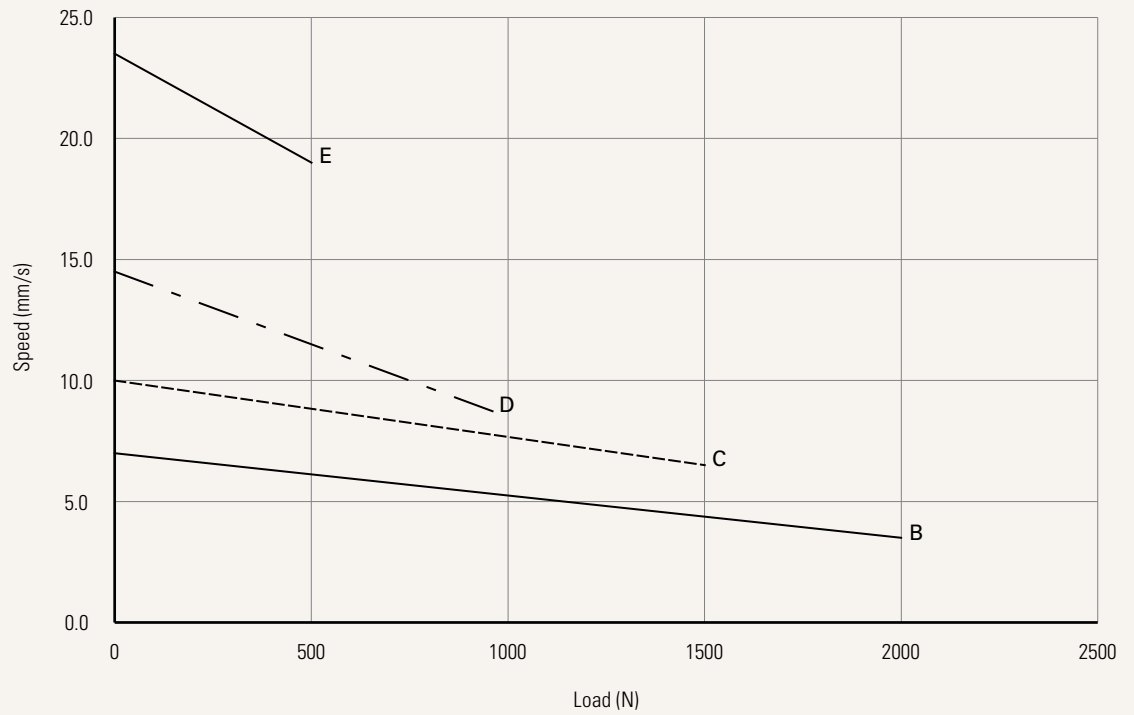
Current vs. Load



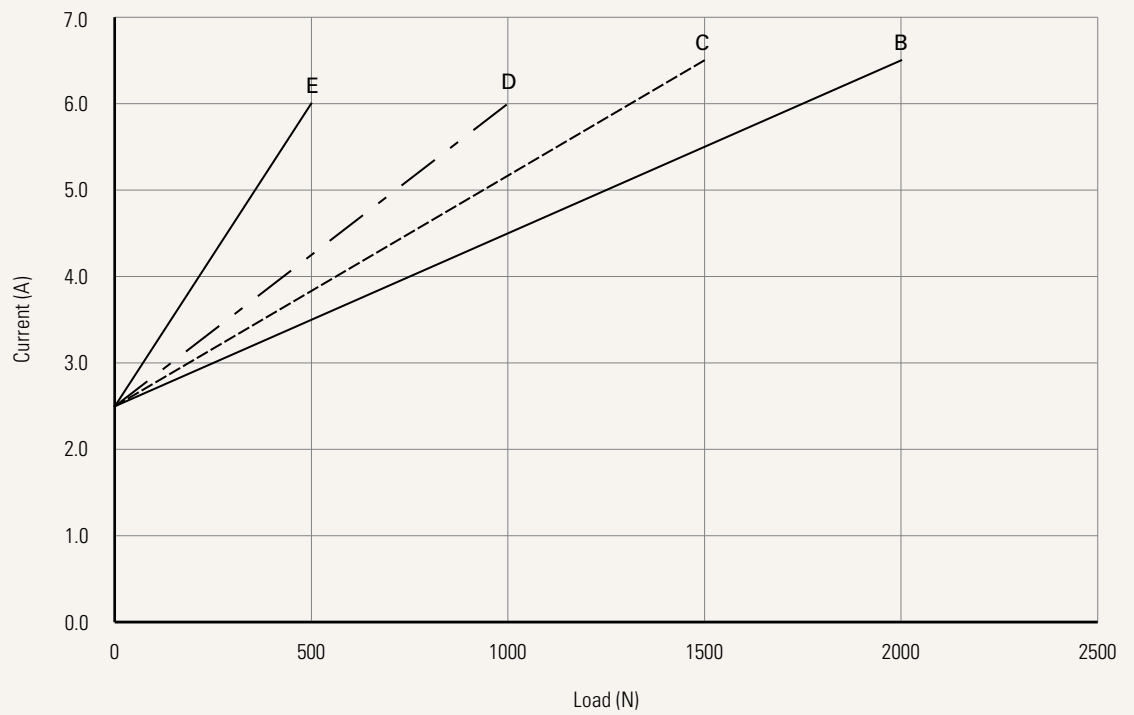
Performance Data (12V DC Motor)

Motor Speed (5600RPM, Duty Cycle 20%: 2min on / 8min off)

Speed vs. Load



Current vs. Load



| | | | | |
|--|--|-------------------------|-----------------------|-----------------|
| Voltage See page 9 | 1 = 12V DC | 2 = 24V DC | 5 = 24V DC, PTC | 6 = 12V DC, PTC |
| Load and Speed See page 2 | | | | |
| Stroke (mm) See page 2 | | | | |
| Retracted Length (mm) See page 6 | | | | |
| Rear Attachment (mm) See page 7 | 1 = Aluminum, U clevis, slot 4.2, depth 18.0, hole 10.2 | | | |
| Front Attachment (mm) See page 7 | 1 = Aluminum, slotless, hole 6.4 2 = Aluminum, slotless, hole 8.0 3 = Aluminum, U clevis, slot 6.0, depth 13.0, hole 10.0 4 = Aluminum, U clevis, slot 6.0, depth 13.0, hole 6.4 5 = Aluminum, U clevis, slot 6.0, depth 13.0, hole 8.0 6 = Aluminum, hole 10.0 | | | |
| Direction of Rear Attachment (Counterclockwise) See page 8 | 1 = 0° | | | |
| Color | 1 = Black | 2 = Pantone 428C | | |
| IP Rating | 1 = Without 2 = IP54 | 3 = IP66 5 = IP66W | 6 = IP66M 7 = IP68 | 8 = IP69K |
| Special Function of Spindle Subassembly | 0 = Without (Standard) | | | |
| Function of Limit Switches See page 8 | 1 = Two micro switches cut off the actuator at end of stroke 2 = Two micro switches cut off the actuator at end of stroke + third one in between sends signal 3 = Two micro switches send signal at end of stroke 4 = Two micro switches send signal at end of stroke + third one in between sends signal | | | |
| Output Signal | 0 = Without | N = NPN Hall sensor * 2 | | |
| Connector See page 8 | 1 = DIN 6P, 90° plug | 2 = Tinned leads | | |
| Cable Length (mm) | 0 = Straight, 100 | 1 = Straight, 500 | 3 = Straight, 1000 | |

Retracted Length (mm)

1. Calculate $A+B+C = Y$
2. Retracted length needs to \geq Stroke + Y

A. Front Attachment

| | |
|----------------|------|
| 1, 2, 6 | +217 |
| 3, 4, 5 | +230 |

B. Stroke (mm)

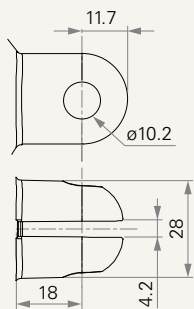
| | |
|-----------------|-----|
| 20~150 | - |
| 151~200 | - |
| 201~250 | +5 |
| 251~300 | +10 |
| 301~350 | +15 |
| 351~400 | +20 |
| 401~450 | +25 |
| 451~500 | +30 |
| 501~550 | +35 |
| 551~600 | +40 |
| 601~650 | +45 |
| 651~700 | +50 |
| 701~750 | +55 |
| 751~800 | +60 |
| 801~850 | +65 |
| 851~900 | +70 |
| 901~950 | +75 |
| 951~1000 | +80 |

C. Output Signal

| | |
|----------|-----|
| 0 | - |
| N | +13 |

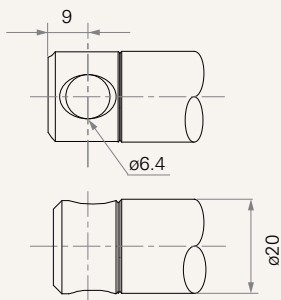
Rear Attachment (mm)

1 = Aluminum, U clevis, slot 4.2, depth 18.0, hole 10.2

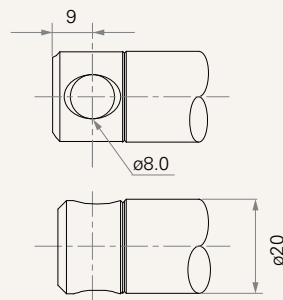


Front Attachment (mm)

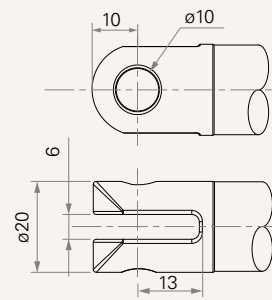
1 = Aluminum, slotless, hole 6.4



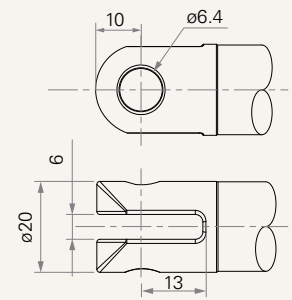
2 = Aluminum, slotless, hole 8.0



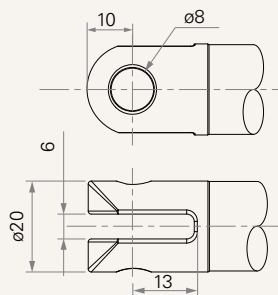
3 = Aluminum, U clevis, slot 6.0, depth 13.0, hole 10.0



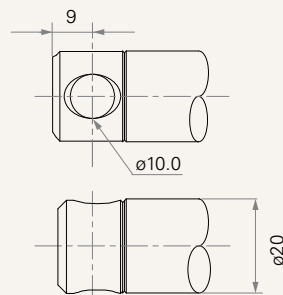
4 = Aluminum, U clevis, slot 6.0, depth 13.0, hole 6.4



5 = Aluminum, U clevis, slot 6.0, depth 13.0, hole 8.0

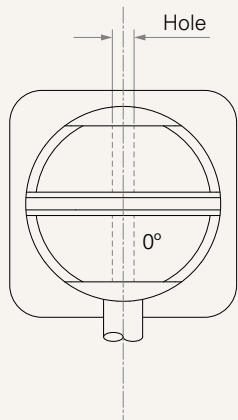


6 = Aluminum, hole 10.0



Direction of Rear Attachment (Counterclockwise)

1 = 0°



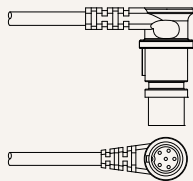
Functions for Limit Switches

Wire Definitions

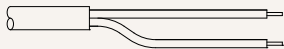
| CODE | Pin | | | | | |
|------|---------------|---------|---------------------|---------------------|----------------|--------------------|
| | 1 (Green) | 2 (Red) | 3 (White) | 4 (Black) | 5 (Yellow) | 6 (Blue) |
| 1 | extend (VDC+) | N/A | N/A | N/A | retract (VDC+) | N/A |
| 2 | extend (VDC+) | N/A | middle switch pin B | middle switch pin A | retract (VDC+) | N/A |
| 3 | extend (VDC+) | common | upper limit switch | N/A | retract (VDC+) | lower limit switch |
| 4 | extend (VDC+) | common | upper limit switch | medium limit switch | retract (VDC+) | lower limit switch |

Connector

1 = DIN 6P, 90° plug

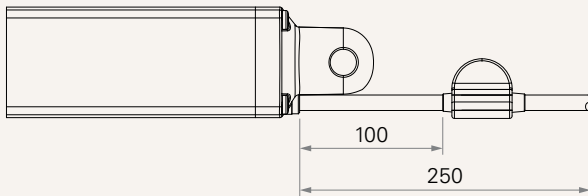


2 = Tinned leads



Voltage

5 = 24V DC, PTC



PTC outside the motor; at cable length 100mm,
min total cable = 250mm

Terms of Use

The user is responsible for determining the suitability of TiMOTION products for a specific application.
TiMOTION products are subject to change without prior notice.