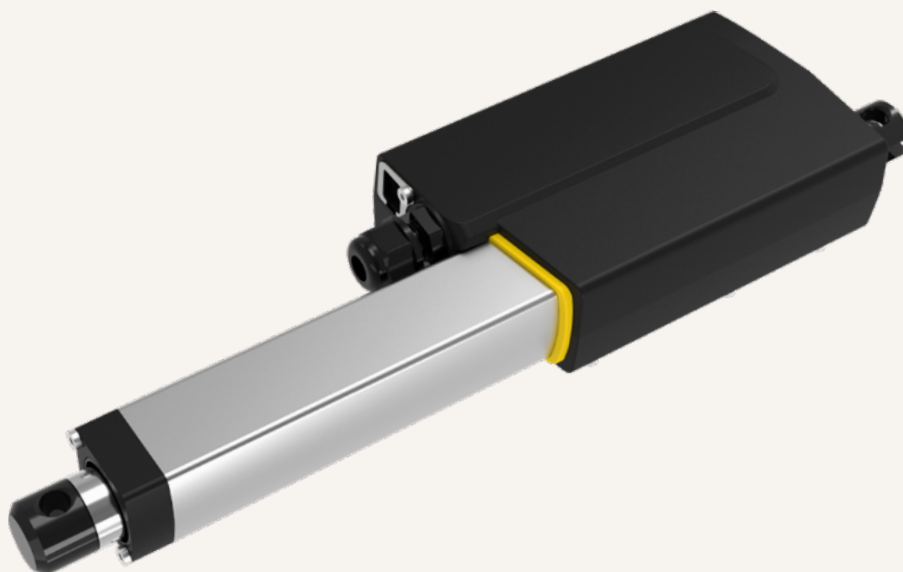


# SR1

## series



### Product Segments

#### • Industrial Motion

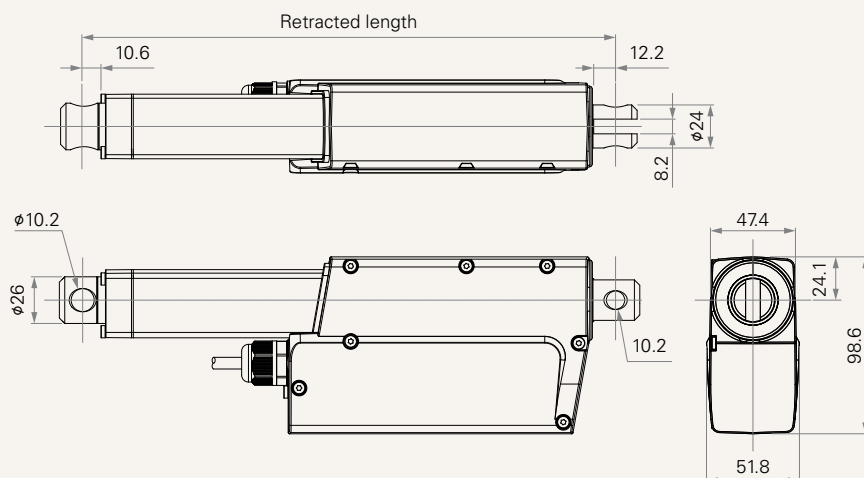
TiMOTION's SR1 series is a low-noise industrial linear actuator specifically designed for applications requiring a resilient and quiet solution. Constructed with plastic helical gearing and a sturdy metal housing, the SR1 has a noise level lower than 58 dBA. Available with an optional IP rating of up to IP69K (static), suppressed noise and robust quality, it's capable of working in almost any environment. Compact, silent, and weather-resistant, the SR1 series is an ideal choice for light industrial use.

#### General Features

|                                                      |                                                       |
|------------------------------------------------------|-------------------------------------------------------|
| Max. load                                            | 6,000N (push); 6,000N (pull)                          |
| Max. speed at max. load                              | 3mm/s                                                 |
| Max. speed at no load                                | 7.6mm/s                                               |
| Retracted length                                     | ≥ 230mm                                               |
| IP rating                                            | IP69K (static)                                        |
| Stroke                                               | 50~1000mm                                             |
| Output signals                                       | Mechanical pot.,<br>NPN Hall sensor (5-36V input) * 2 |
| Options                                              | Manual drive                                          |
| Voltage                                              | 12/24V DC                                             |
| Operational temperature range                        | -25°C~+65°C                                           |
| Operational temperature range<br>at full performance | +5°C~+45°C                                            |
| Low noise                                            |                                                       |

## Drawing

Standard Dimensions  
(mm)



### Load and Speed (12V DC)

| CODE                  | Load (N) |      | Self Locking Force (N) | Duty | Typical Current (A) |                  | Typical Speed (mm/s) |                  | T-Smart Default OCP Value (A) |
|-----------------------|----------|------|------------------------|------|---------------------|------------------|----------------------|------------------|-------------------------------|
|                       | Push     | Pull |                        |      | No Load 24V DC      | With Load 24V DC | No Load 24V DC       | With Load 24V DC |                               |
| Motor Speed (4800RPM) |          |      |                        |      |                     |                  |                      |                  |                               |
| B                     | 2000     | 2000 | 2600                   | 25%  | 4.0                 | 7.8              | 7.6                  | 5.0              | 10.0                          |
| C                     | 4000     | 4000 | 5200                   | 25%  | 3.5                 | 6.8              | 3.8                  | 3.0              | 9.0                           |
| D                     | 6000     | 4000 | 6000                   | 10%  | 3.5                 | 9.0              | 3.8                  | 3.0              | 12.0                          |

### Load and Speed (24V DC)

| CODE                  | Load (N) |      | Self Locking Force (N) | Duty | Typical Current (A) |                  | Typical Speed (mm/s) |                  | T-Smart Default OCP Value (A) |
|-----------------------|----------|------|------------------------|------|---------------------|------------------|----------------------|------------------|-------------------------------|
|                       | Push     | Pull |                        |      | No Load 24V DC      | With Load 24V DC | No Load 24V DC       | With Load 24V DC |                               |
| Motor Speed (4800RPM) |          |      |                        |      |                     |                  |                      |                  |                               |
| B                     | 2000     | 2000 | 2600                   | 25%  | 2.0                 | 3.8              | 7.6                  | 6.0              | 5.0                           |
| C                     | 4000     | 4000 | 5200                   | 25%  | 1.8                 | 3.4              | 3.8                  | 3.0              | 4.5                           |
| D                     | 6000     | 4000 | 6000                   | 10%  | 1.8                 | 4.5              | 3.8                  | 3.0              | 6.0                           |

## Note

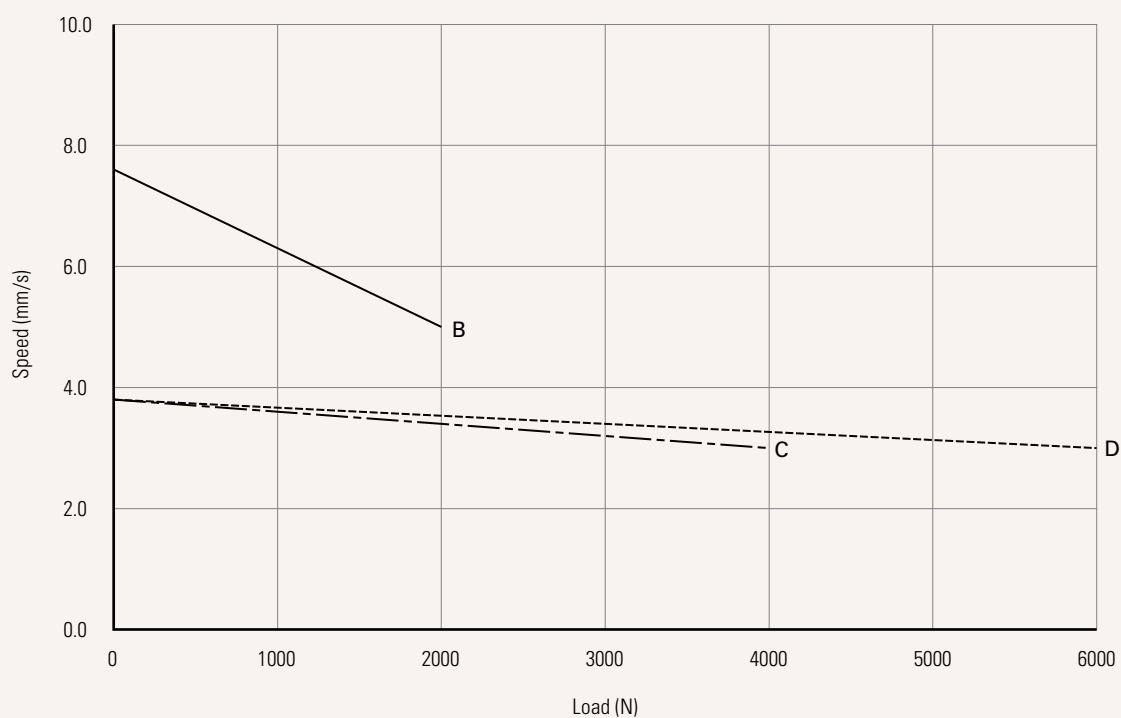
- Please refer to the approved drawing for the final authentic value.
- The current & speed in table are tested with 24V DC motor. With a 12V DC motor, the current is approximately twice the current measured in 24V DC; speed will be similar for both voltages.
- The current & speed in table is tested when the actuator is extending under push load.
- The current & speed in table and diagram are tested with a stable 24V, 12V DC power supply
- Without load, noise level  $\leq 59$  dBA (by TiMOTION test standard, ambient noise level  $\leq 36$  dBA)
- Standard stroke: Min.  $\geq 50$  mm, Max. please refer to the table below.

| CODE     | Load (N)    | Max Stroke (mm) |
|----------|-------------|-----------------|
| <b>B</b> | $\leq 2000$ | 1000            |
| <b>C</b> | $\leq 4000$ | 600             |
| <b>D</b> | $\leq 6000$ | 450             |

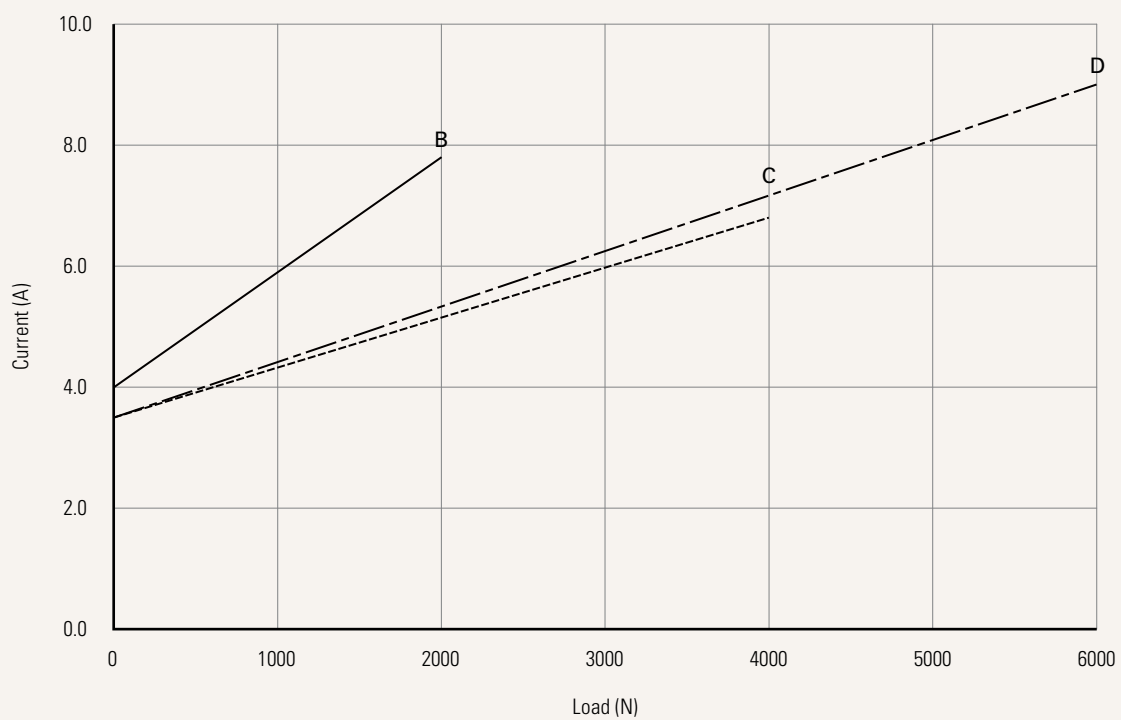
## Performance Data (12V DC Motor)

Motor Speed (4800RPM)

Speed vs. Load



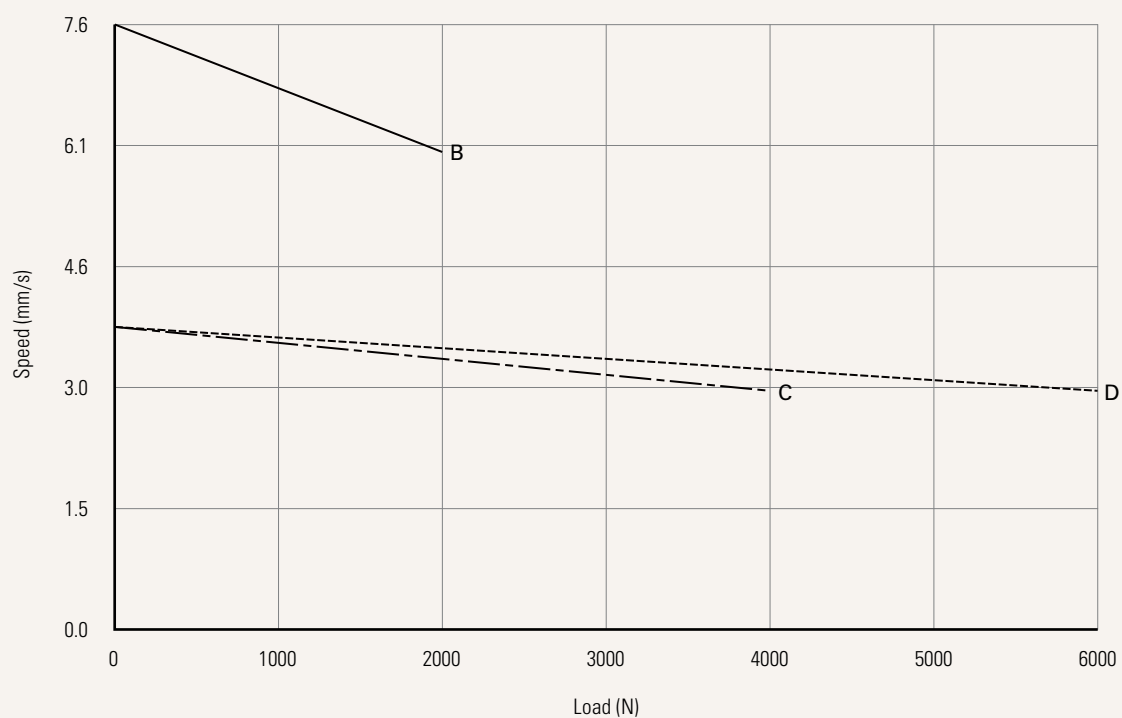
Current vs. Load



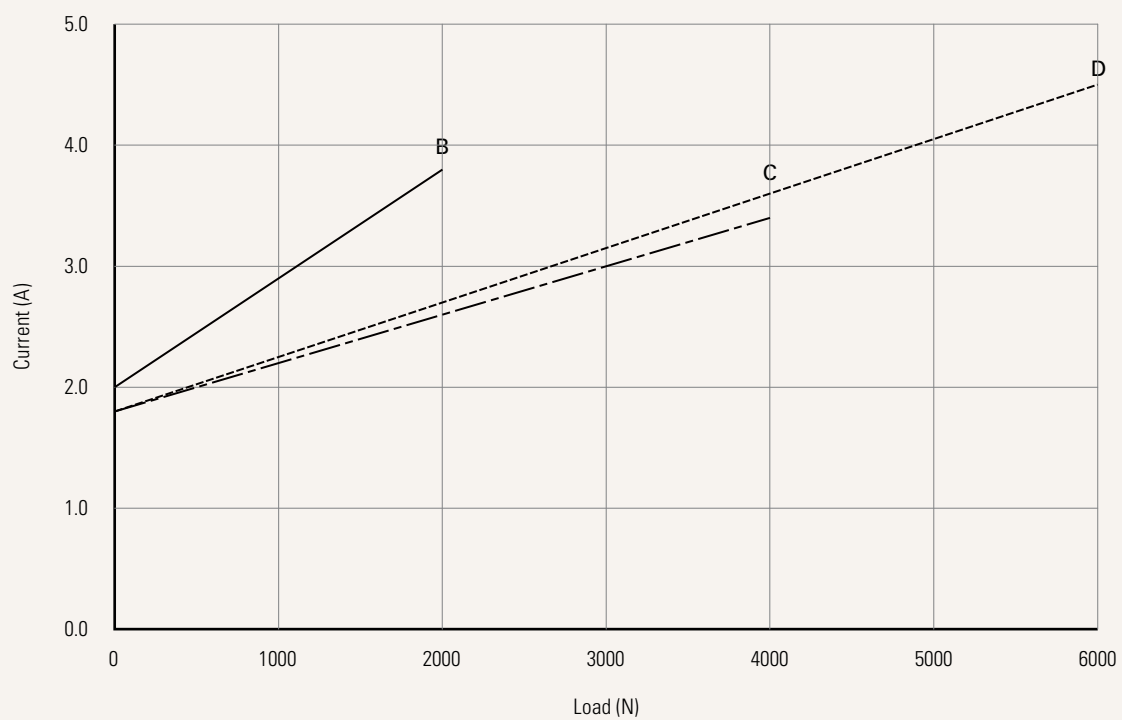
## Performance Data (24V DC Motor)

Motor Speed (4800RPM)

Speed vs. Load



Current vs. Load



## SR1

5

## Retracted Length (mm)

1. Calculate  $A+B = Y$
2. Retracted length needs to  $\geq \text{Stroke}+Y$
3. Retracted length needs to  $\geq 230\text{mm}$

### A. Front Attach. Load & Speed Type(N)

|                       | B    | C, D |
|-----------------------|------|------|
| <b>Slotless 1,2,3</b> | +124 | +131 |
| <b>U clevis 4,5,6</b> | +134 | +141 |

### B. Stroke (mm)

|                 |      |
|-----------------|------|
| <b>25~150</b>   | -    |
| <b>151~200</b>  | -    |
| <b>201~250</b>  | +10  |
| <b>251~300</b>  | +20  |
| <b>301~350</b>  | +30  |
| <b>351~400</b>  | +40  |
| <b>401~450</b>  | +50  |
| <b>451~500</b>  | +60  |
| <b>501~550</b>  | +70  |
| <b>551~600</b>  | +80  |
| <b>601~650</b>  | +90  |
| <b>651~700</b>  | +100 |
| <b>701~750</b>  | +110 |
| <b>751~800</b>  | +120 |
| <b>801~850</b>  | +130 |
| <b>851~900</b>  | +140 |
| <b>901~950</b>  | +150 |
| <b>951~1000</b> | +160 |

### C. Output Signals

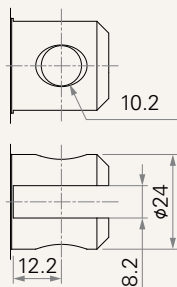
|                          |     |
|--------------------------|-----|
| <b>P_Mechanical Pot.</b> | +20 |
|--------------------------|-----|

### D. Spindle Set

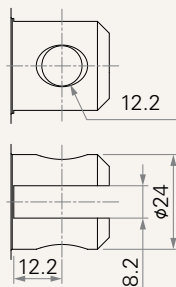
|                     |     |
|---------------------|-----|
| <b>0_Without</b>    | -   |
| <b>1_Safety nut</b> | +12 |

## Rear Attachment (mm)

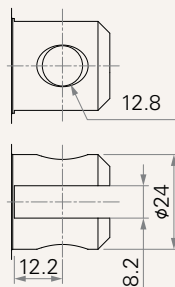
1 = Aluminum, U clevis, slot 8.2, depth 12.2, hole 10.2



2 = Aluminum, U clevis, slot 8.2, depth 12.2, hole 12.2

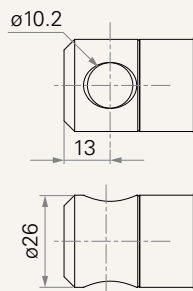


3 = Aluminum, U clevis, slot 8.2, depth 12.2, hole 12.8

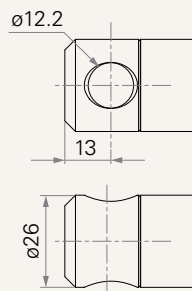


## Front Attachment (mm)

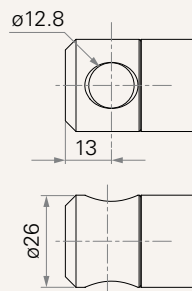
1 = Aluminum, slotless, hole 10.2



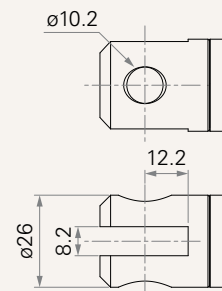
2 = Aluminum, slotless, hole 12.2



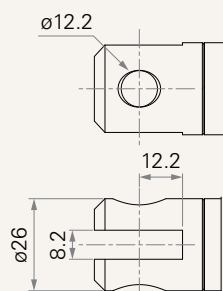
3 = Aluminum, slotless, hole 12.8



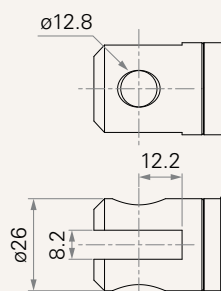
4 = Aluminum, U clevis, slot 8.2, depth 12.2, hole 10.2



5 = Aluminum, U clevis, slot 8.2, depth 12.2, hole 12.2



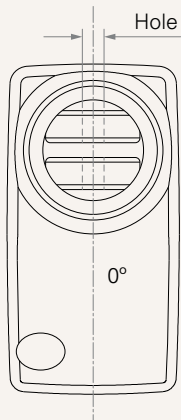
6 = Aluminum, U clevis, slot 8.2, depth 12.2, hole 12.8



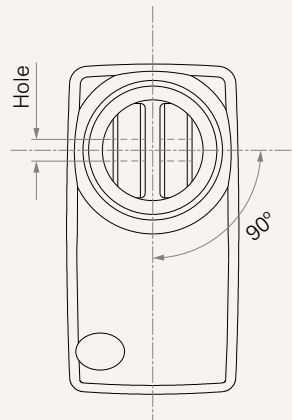
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## Direction of Rear Attachment (Counterclockwise)

1 = 0°



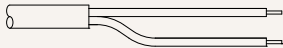
3 = 90°



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## Connector (mm)

01 = Tinned leads, core wire 50,  
stripped wire 10



## Wire Definition

### N\_Normal

| Port Number | Function of Limit Switches                                                                         | Wire Color | AWG | Position Feedback |                    |                     |
|-------------|----------------------------------------------------------------------------------------------------|------------|-----|-------------------|--------------------|---------------------|
|             |                                                                                                    |            |     | 0. Without        | 1. Mechanical Pot. | 5, N. Hall sensor*2 |
| A1          | 1.<br>Two limit switches cut off the actuator at end of stroke                                     | ● RD       | 16  | EXT+              | EXT+               | EXT+                |
|             |                                                                                                    | ● BK       | 16  | RET+              | RET+               | RET+                |
|             |                                                                                                    | ● RD       | 26  | -                 | POT-out            | Vcc+                |
|             |                                                                                                    | ○ WH       | 26  | -                 | POT-Vin (5V)       | S1                  |
|             |                                                                                                    | ● BK       | 26  | -                 | GND                | Hall-GND            |
|             |                                                                                                    | ● BU       | 26  | -                 | -                  | S2                  |
|             |                                                                                                    | ● BN       | 26  | -                 | -                  | -                   |
|             |                                                                                                    | ● GY       | 26  | -                 | -                  | -                   |
|             |                                                                                                    | ● OG       | 26  | -                 | -                  | -                   |
|             |                                                                                                    | ● VT       | 26  | -                 | -                  | -                   |
| A1          | 2.<br>Two limit switches cut off the actuator at end of stroke + third one in between sends signal | ● RD       | 16  | EXT+              | EXT+               | EXT+                |
|             |                                                                                                    | ● BK       | 16  | RET+              | RET+               | RET+                |
|             |                                                                                                    | ● RD       | 26  | -                 | -                  | Vcc+                |
|             |                                                                                                    | ○ WH       | 26  | 3rd LS pin1       | 3rd LS pin1        | S1                  |
|             |                                                                                                    | ● BK       | 26  | 3rd LS pin2       | POT-GND            | Hall-GND            |
|             |                                                                                                    | ● BU       | 26  | -                 | 3rd LS pin2        | S2                  |
|             |                                                                                                    | ● BN       | 26  | -                 | POT-Vin (5V)       | 3rd LS pin1         |
|             |                                                                                                    | ● GY       | 26  | -                 | -                  | -                   |
|             |                                                                                                    | ● OG       | 26  | -                 | POT-Vout           | 3rd LS pin2         |
|             |                                                                                                    | ● VT       | 26  | -                 | -                  | -                   |
| A1          | 3.<br>Two limit switches send signal at end of stroke                                              | ● RD       | 16  | EXT+              | EXT+               | EXT+                |
|             |                                                                                                    | ● BK       | 16  | RET+              | RET+               | RET+                |
|             |                                                                                                    | ● RD       | 26  | COM               | COM                | Vcc+                |
|             |                                                                                                    | ○ WH       | 26  | EOS-extended      | EOS-extended       | S1                  |
|             |                                                                                                    | ● BK       | 26  | -                 | POT-GND            | Hall-GND            |
|             |                                                                                                    | ● BU       | 26  | EOS-extended      | EOS-extended       | S2                  |
|             |                                                                                                    | ● BN       | 26  | -                 | POT-Vin (5V)       | EOS-extended        |
|             |                                                                                                    | ● GY       | 26  | -                 | -                  | -                   |
|             |                                                                                                    | ● OG       | 26  | -                 | POT-Vout           | EOS-extended        |
|             |                                                                                                    | ● VT       | 26  | -                 | -                  | COM                 |

## 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.