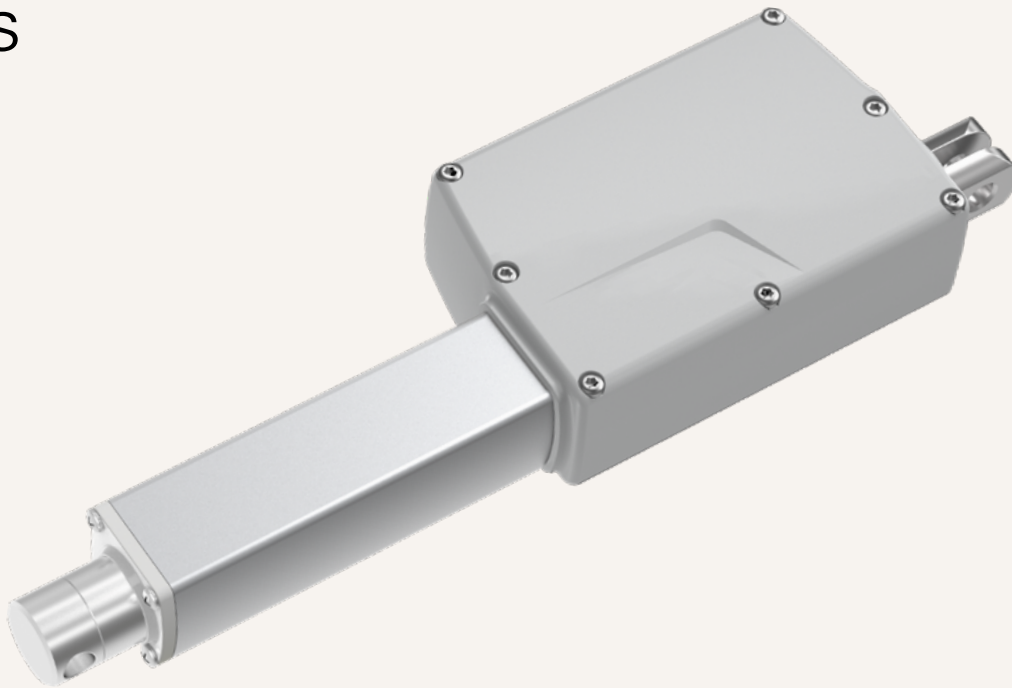


TA29

series



Product Segments

- **Care Motion**
- **Ergo Motion**

TiMOTION's TA29 is one of our next generation medical DC linear actuators, which can lift up to 6000N, while maintaining a compact installation dimension. Its IP66W protection rating ensures durability and water resistance. The TA29 is highly recommended for various medical applications that require a short, retracted length, yet need to support a large force, such as the leg adjustment or sling angle actuator on the patient hoist system.

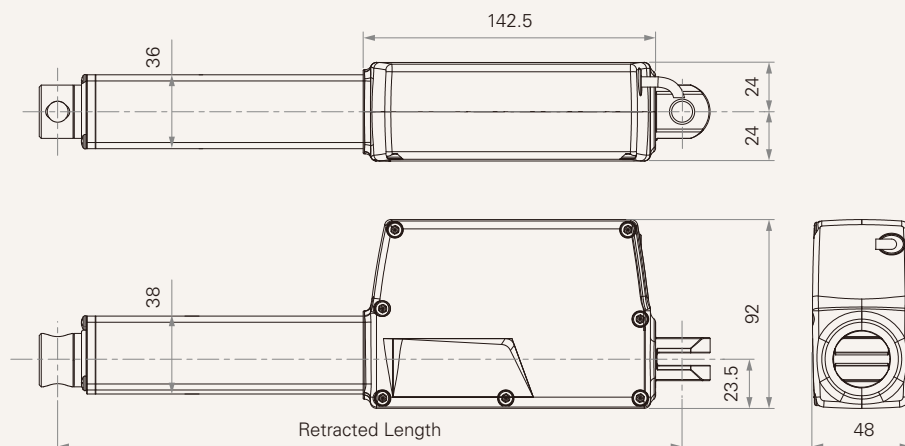
Compact yet powerful, the TA29 is ideal for mobility-related medical equipment. Designed to reduce maintenance and increase comfort, this actuator enables smooth, safe motion for both patients and caregivers. It's a trusted choice for manufacturers seeking durability and efficiency in a compact medical actuator.

General Features

| | |
|--|---------------------------------------|
| Max. load | 6,000N (push); 3,500N (pull) |
| Max. speed at max. load | 3mm/s |
| Max. speed at no load | 30mm/s |
| Retracted length | ≥ 178mm (depending on chosen options) |
| IP rating | IP66W |
| Stroke | 25~600mm |
| Output signals | Hall sensors, POT |
| Voltage | 12/24V DC; 12/24V DC (PTC) |
| Color | Black, grey |
| Operational temperature range | +5°C~+45°C |
| Suitable for patient hoist application | |

Drawing

Standard Dimensions
(mm)



Load and Speed

| CODE | Load (N) | | Self Locking Force (N) | Typical Current (A) | | Typical Speed (mm/s) | |
|--|----------|------|------------------------|---------------------|------------------|----------------------|------------------|
| | Push | Pull | | No Load 32V DC | With Load 24V DC | No Load 32V DC | With Load 24V DC |
| Motor Speed (4800RPM, Duty Cycle 10%) | | | | | | | |
| B | 1500 | 1500 | 1500 | 2.2 | 4.6 | 30.0 | 18.0 |
| C | 2500 | 2500 | 2500 | 2.2 | 4.8 | 16.0 | 8.5 |
| D | 3500 | 3500 | 3500 | 2.2 | 5.0 | 11.5 | 5.5 |
| E | 4500 | 3500 | 4500 | 2.0 | 4.0 | 5.8 | 4.0 |
| F | 4500 | 3500 | 4500 | 2.2 | 5.6 | 8.0 | 4.5 |
| P | 6000 | 3500 | 6000 | 2.0 | 4.5 | 5.0 | 3.0 |
| Motor Speed (5200RPM, Duty Cycle 10%) | | | | | | | |
| H | 1000 | 1000 | 1000 | 2.0 | 3.1 | 30.0 | 17.0 |
| K | 1500 | 1500 | 1500 | 2.0 | 3.3 | 20.0 | 10.0 |
| L | 2000 | 2000 | 2000 | 2.0 | 3.6 | 15.0 | 9.0 |
| M | 2500 | 2500 | 2500 | 2.0 | 3.5 | 10.5 | 5.5 |
| N | 4000 | 3500 | 4000 | 1.8 | 3.5 | 6.5 | 3.5 |

Note

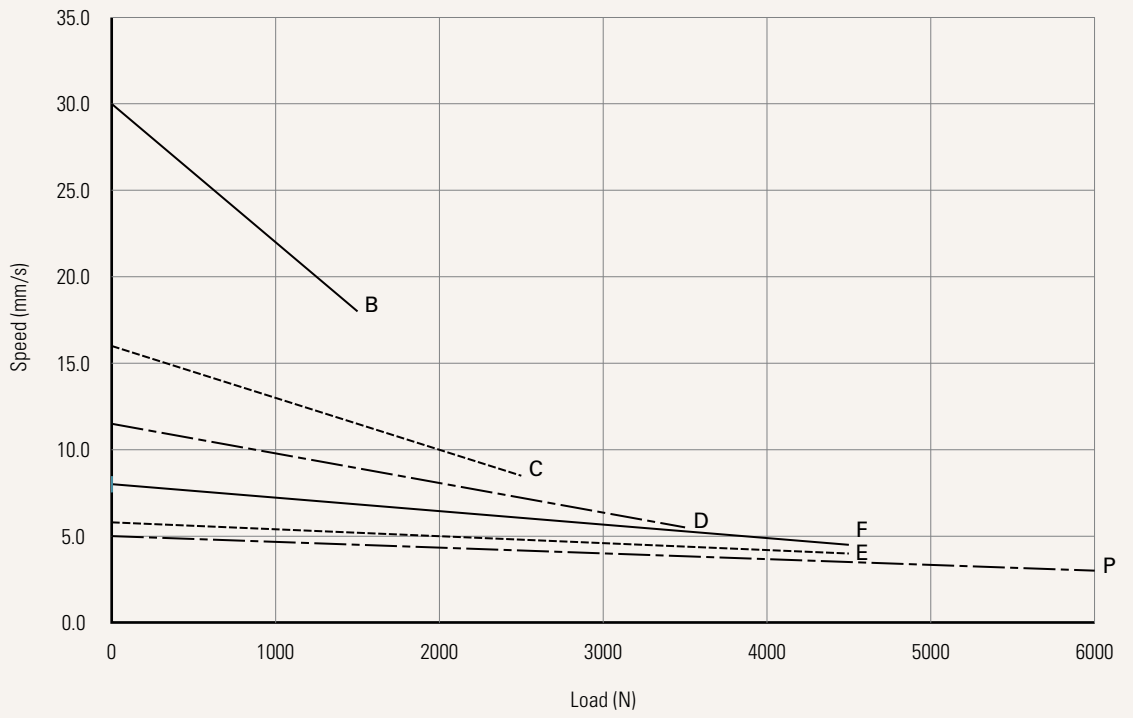
- 1 Please refer to the approved drawing for the final authentic value.
- 2 The current & speed in table are tested when the actuator is extending under push load.
- 3 This self-locking force level is reached only when a short circuit is applied on the terminals of the motor. All the TiMOTION control boxes have this feature built-in.
- 4 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.
- 5 The current & speed in table and diagram are tested with TiMOTION control boxes, and there will be around 10% tolerance depending on different models of the control box. (Under no load condition, the voltage is around 32V DC. At rated load, the voltage output will be around 24V DC)
- 6 Standard stroke: Min. ≥ 25 mm, Max. please refer to below table.

| Load (N) | Max Stroke (mm) |
|---------------------------|-----------------|
| 6000 | 450 |
| 3500 ≤ load ≤ 4500 | 600 |
| < 3500 | 1000 |

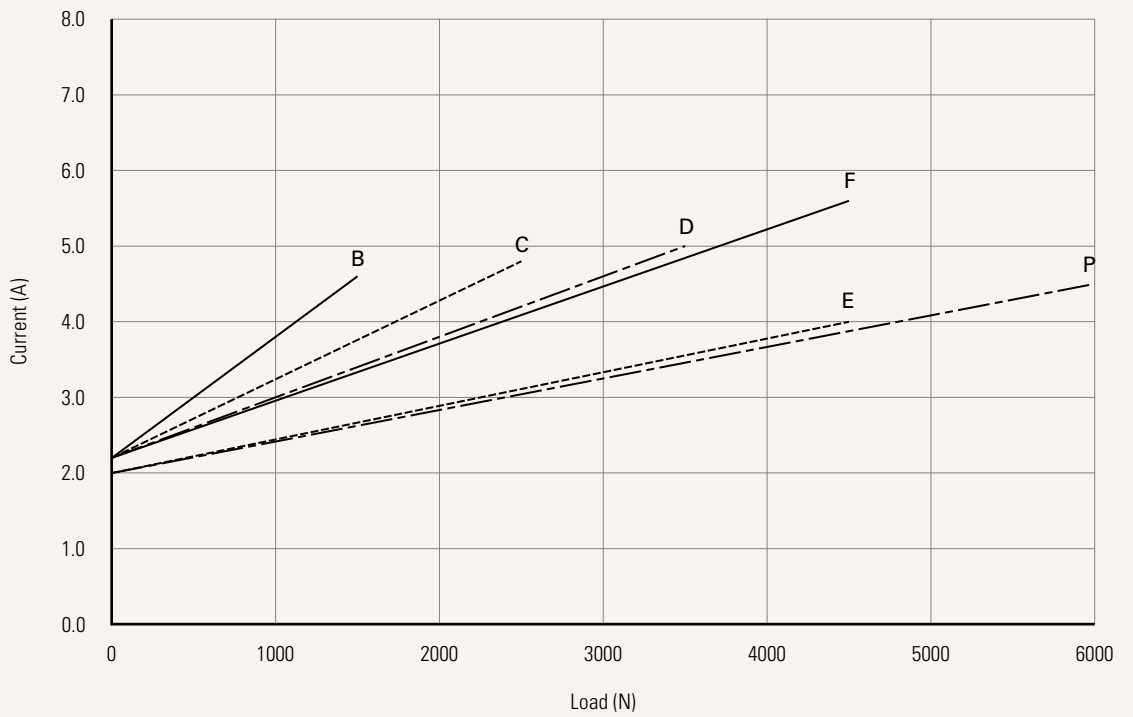
Performance Data (24V DC Motor)

Motor Speed (4800RPM, Duty Cycle 10%)

Speed vs. Load



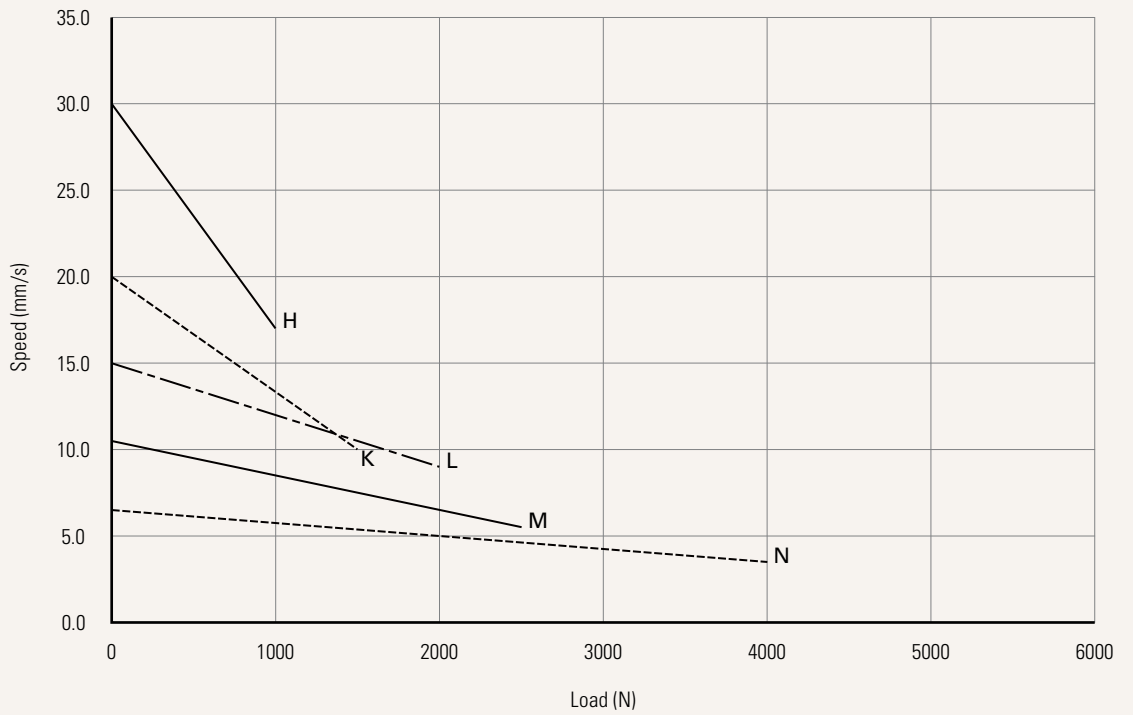
Current vs. Load



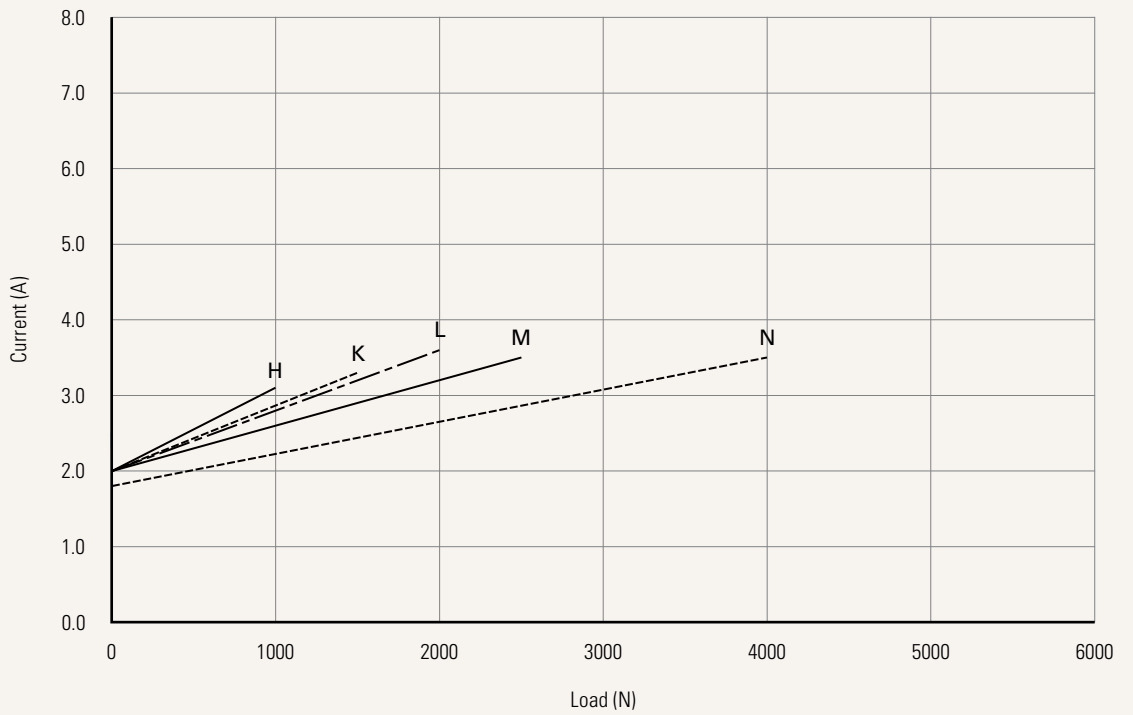
Performance Data (24V DC Motor)

Motor Speed (5200RPM, Duty Cycle 10%)

Speed vs. Load



Current vs. Load



| | | | | |
|--|---|--|---|-----------------|
| Voltage | 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) | 3 = Aluminum casting, U clevis, slot 6.2, depth 12.2, hole 10.2 4 = Aluminum casting, U clevis, slot 6.2, depth 12.2, hole 12.2 See page 7 | | | |
| Front Attachment (mm) | 3 = Aluminum CNC, without slot, hole 10.2 | | 4 = Aluminum CNC, without slot, hole 12.2 See page 7 | |
| Direction of Rear Attachment (Counterclockwise) | 1 = 90° | 2 = 0° See page 7 | | |
| Color | 1 = Black | 2 = Pantone 428C | | |
| IP Rating | 1 = Without | 2 = IP54 | 3 = IP66 | 5 = IP66W |
| Special Functions for Spindle Sub-Assembly | 0 = Without (Standard) 1 = Safety nut | | 2 = Standard push only 3 = Standard push only + safety nut | |
| Functions for Limit Switches | 1 = Two switches at full retracted / extended positions to cut current 2 = Two switches at full retracted / extended positions to cut current + third one in between to send signal 3 = Two switches at full retracted / extended positions to send signal 4 = Two switches at full retracted / extended positions to send signal + third one in between to send signal 5 = Two switches at full retracted / extended positions to send signal (Operate with control box: TC1, TC8, TC10, TC14) See page 8 | | | |
| Output Signals | 0 = Without | 2 = Hall sensor * 2 | P = POT | |
| Connector | 1 = DIN 6P, 90° plug 2 = Tinned leads 4 = Big 01P, 90° plug C = Y cable (For direct cut system, water proof, anti pull) | | E = Molex 8P, 180° plug F = DIN 6P, 180° plug Q = Molex 6P, 90° plug S = Molex 6P, 180° plug See page 8 | |
| Cable Length (mm) | 0 = Straight, 100 1 = Straight, 500 3 = Straight, 1000 | 5 = Straight, 1500 6 = Straight, 2000 7 = Curly, 200 | 8 = Curly, 400 B-H = For direct cut system See page 8 | |

Retracted Length (mm)

1. Calculate $A+B+C+D = Y$
2. Retracted length needs to \geq Stroke + Y
3. Retracted length needs to $> 178\text{mm}$

A. Front Attachment

| | |
|-------------|------|
| 3, 4 | +115 |
|-------------|------|

B. Stroke (mm) Load (N)

| | Load (N) | | | | |
|----------------|----------|------|------|------|------|
| | < 3500 | 3500 | 4000 | 4500 | 6000 |
| 25~150 | - | +7 | +7 | +12 | +27 |
| 151~200 | +5 | +15 | +15 | +20 | +35 |
| 201~250 | +5 | +15 | +15 | +20 | +35 |
| 251~300 | +10 | +20 | +20 | +25 | +40 |
| 301~350 | +10 | +20 | +20 | +25 | +40 |
| 351~400 | +15 | +25 | +25 | +30 | +45 |
| 401~450 | +20 | +30 | +30 | +35 | +50 |
| 451~500 | +25 | +35 | +35 | +40 | +55 |
| 501~550 | +30 | +40 | +40 | +45 | +60 |
| 551~600 | +35 | +45 | +45 | +50 | +65 |

C. Spindle Functions

| | Load (N) | | | | |
|----------|----------|------|------|------|------|
| | < 3500 | 3500 | 4000 | 4500 | 6000 |
| 0 | - | - | - | - | - |
| 1 | +19 | +12 | +12 | +12 | +12 |
| 2 | +6 | +6 | +6 | +6 | +6 |
| 3 | +25 | +18 | +18 | +18 | +18 |

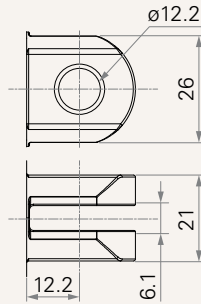
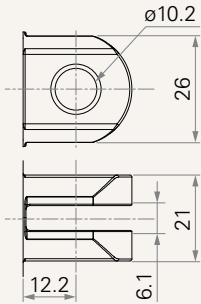
D. Output Signals

| | |
|--------------|-----|
| P_POT | +20 |
|--------------|-----|

Rear Attachment (mm)

3 = Aluminum casting, U clevis, slot 6.2, depth 12.2, hole 10.2

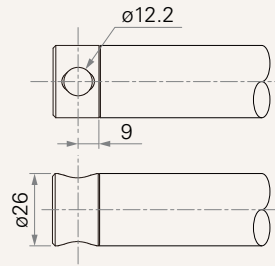
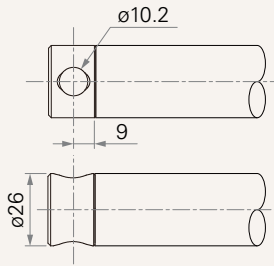
4 = Aluminum casting, U clevis, slot 6.2, depth 12.2, hole 12.2



Front Attachment (mm)

3 = Aluminum CNC, without slot, hole 10.2

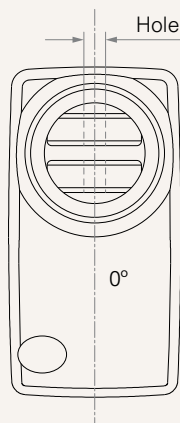
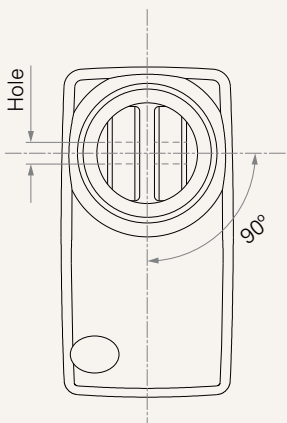
4 = Aluminum CNC, without slot, hole 12.2



Direction of Rear Attachment (Counterclockwise)

1 = 90°

2 = 0°



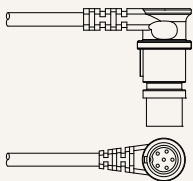
Functions for Limit Switches

Wire Definitions

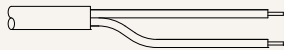
| CODE | Pin | | | | | |
|------|---------------|-----------|---------------------|---------------------|----------------|--------------------|
| | ● 1 (Green) | ● 2 (Red) | ○ 3 (White) | ● 4 (Black) | ● 5 (Yellow) | ● 6 (Blue) |
| 1 | extend (VDC+) | N/A | N/A | N/A | retract (VDC+) | N/A |
| 2 | extend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

Connector

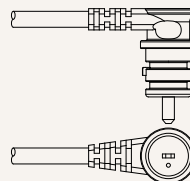
1 = DIN 6P, 90° plug



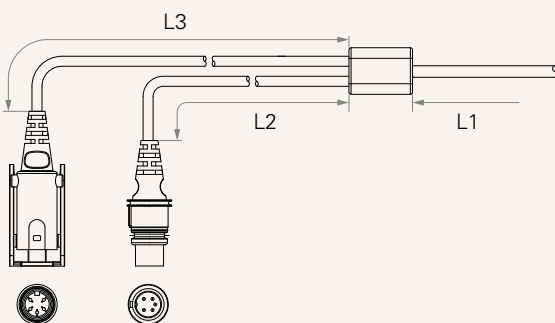
2 = Tinned leads



4 = Big 01P, 90° plug



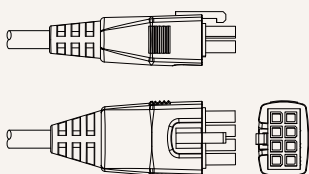
C = Y cable (for direct cut system, water proof, anti pull)



Cable Length for Direct Cut System (mm)

| CODE | L1 | L2 | L3 |
|------|------|------|------|
| B | 100 | 100 | 100 |
| C | 100 | 1000 | 400 |
| D | 100 | 2700 | 500 |
| E | 1000 | 100 | 100 |
| F | 100 | 600 | 1000 |
| G | 1500 | 1000 | 1000 |
| H | 100 | 100 | 1200 |

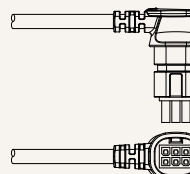
E = Molex 8P, 180° plug



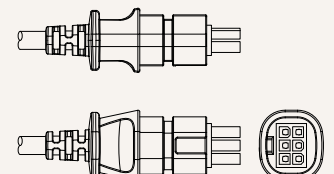
F = DIN 6P, 180° plug



Q = Molex 6P, 90° plug



S = Molex 6P, 180° plug



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