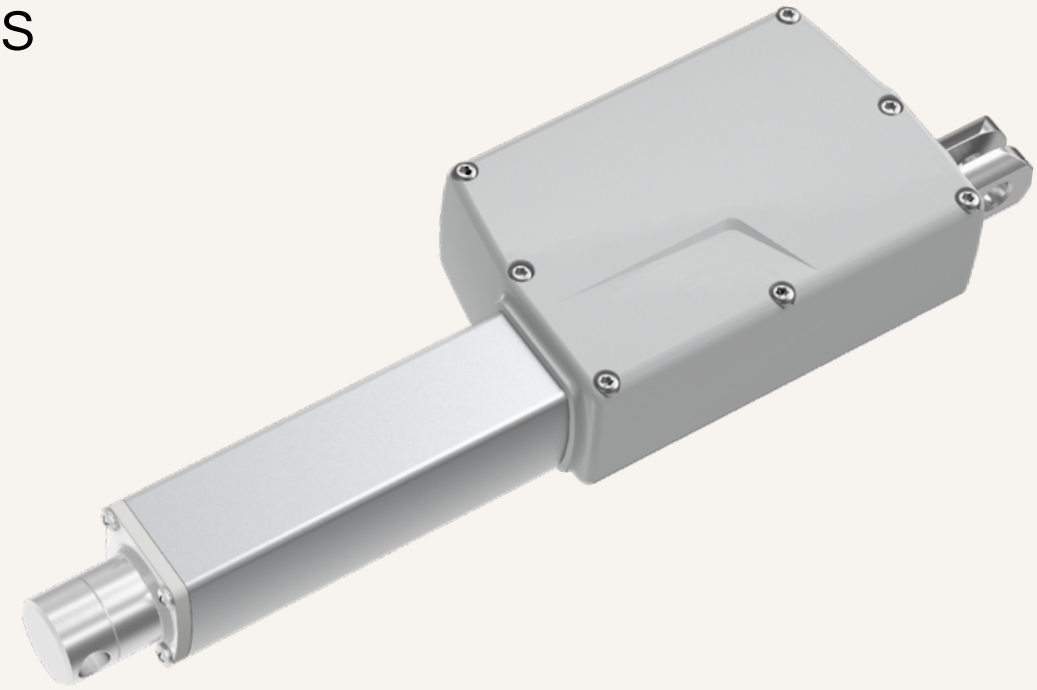
TA29

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.

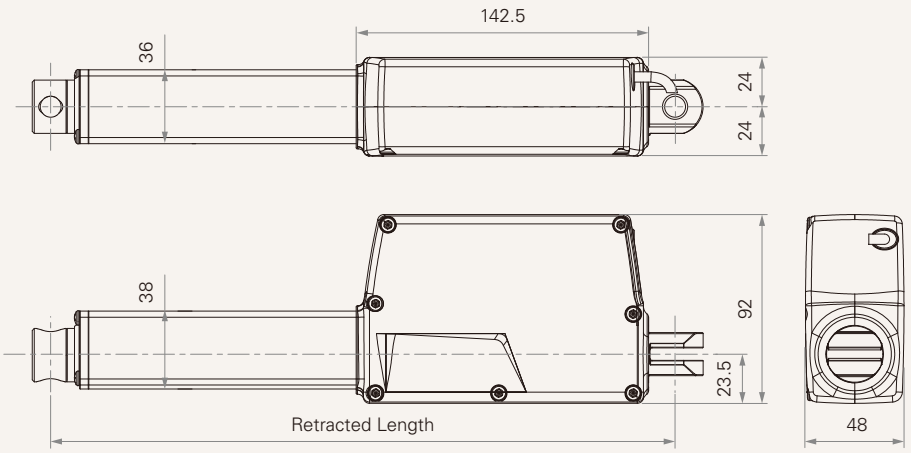
General Features

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	25~1000mm
Output signals	Hall sensor * 2, 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)

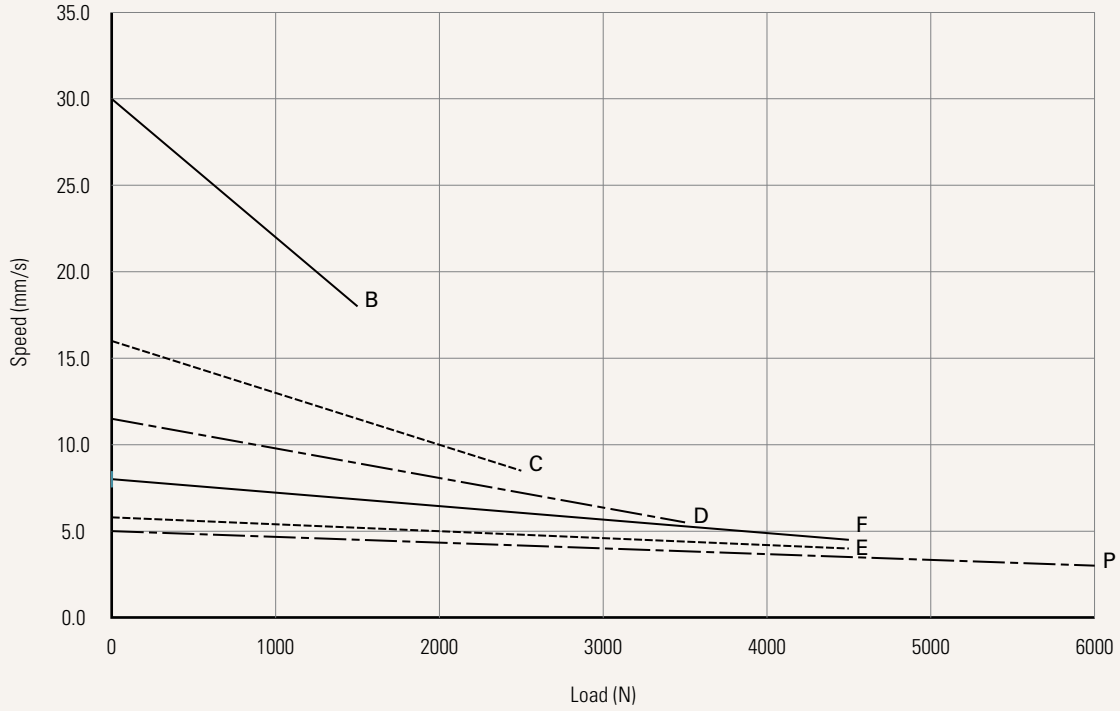
6 Standard stroke: Min. ≥ 25mm, Max. please refer to below table.

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

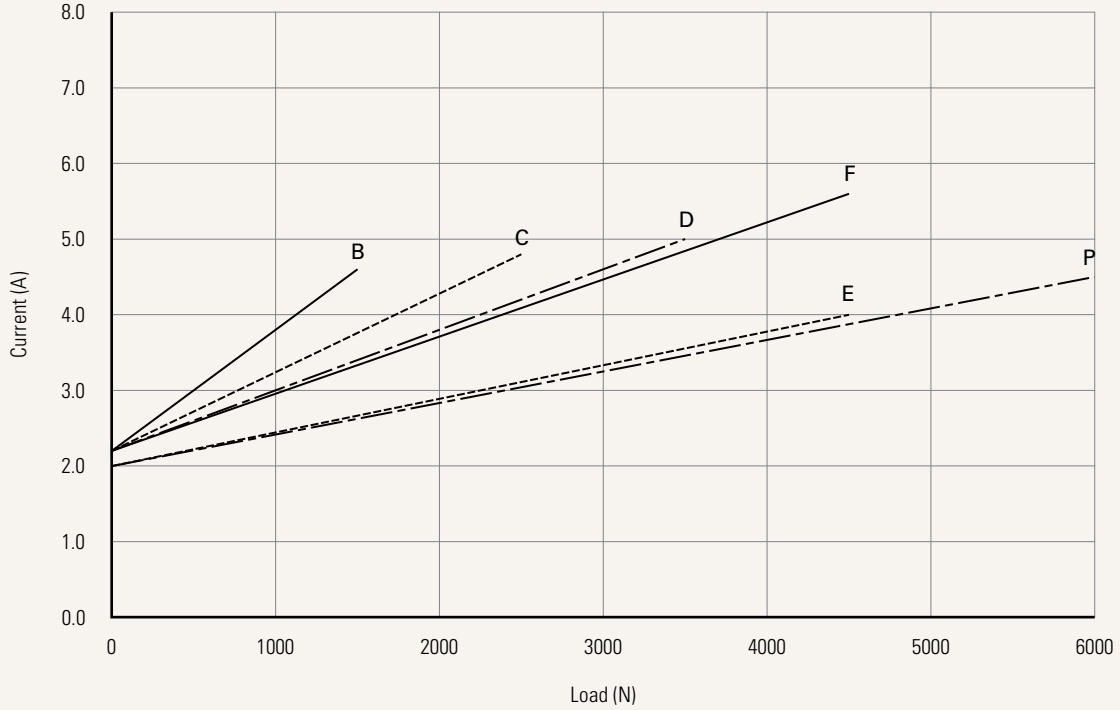
Performance Data (24V DC Motor)

Motor Speed (4800RPM, Duty Cycle 10%)

Speed vs. Load



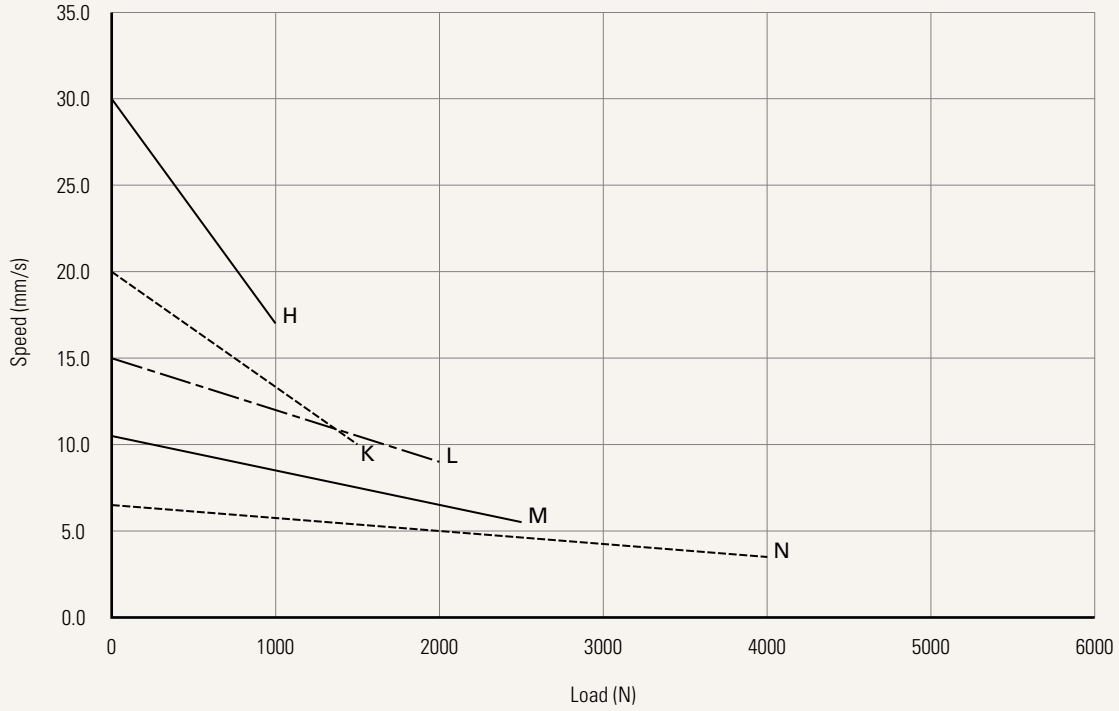
Current vs. Load



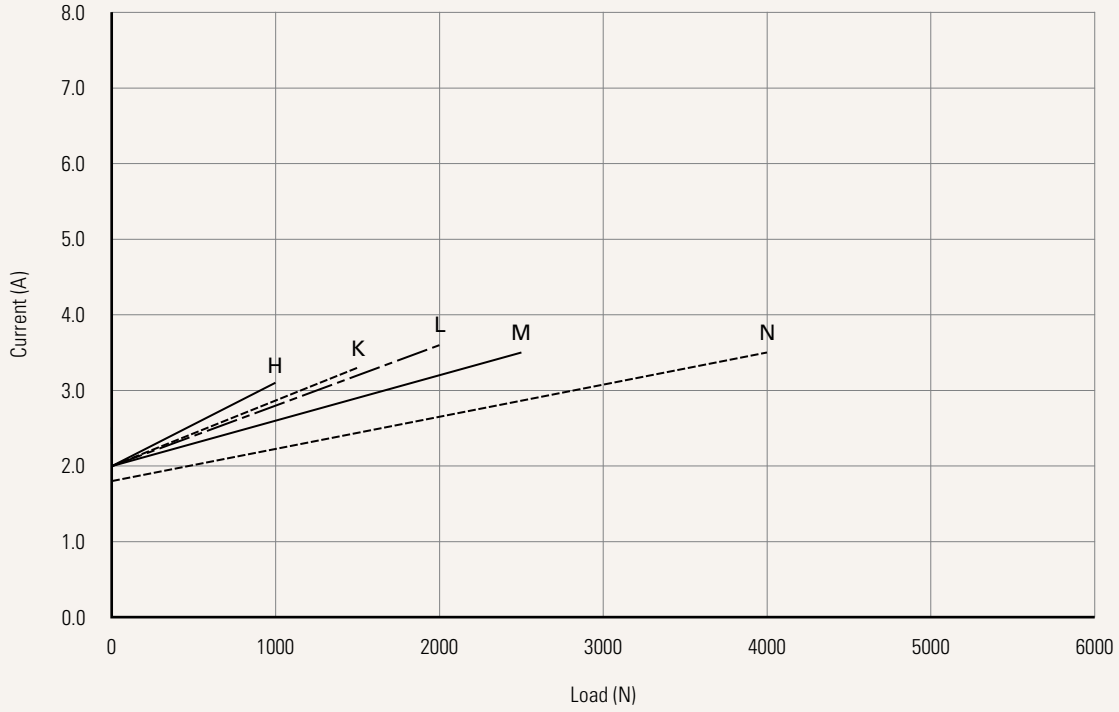
Performance Data (24V DC Motor)

Motor Speed (5200RPM, Duty Cycle 10%)

Speed vs. Load



Current vs. Load



TA29 Ordering Key

TiMOTION

TA29

Version: 20251230-P

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) See page 7	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) See page 7	3 = Aluminum CNC, without slot, hole 10.2		4 = Aluminum CNC, without slot, hole 12.2	
Direction of Rear Attachment (Counterclockwise) See page 7	1 = 90°	2 = 0°		
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 See page 8	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)			
Output Signals	0 = Without	2 = Hall sensor * 2	P = POT	
Connector See page 8	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	
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	

TA29 Ordering Key Appendix

Retracted Length (mm)

1. Calculate A+B+C+D = Y
2. Retracted length needs to ≥ Stroke + Y
3. Retracted length needs to > 178mm

A. Front Attachment	
3, 4	+115

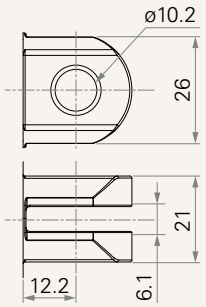
B. Stroke (mm)	Load (N)				
	< 3500	3500	4000	4500	6000
25~150	-	+7	+7	+12	+27
151~200	+5	+15	+15	+20	+35
201~250	+5	+15	+15	+20	+35
251~300	+10	+20	+20	+25	+40
301~350	+10	+20	+20	+25	+40
351~400	+15	+25	+25	+30	+45
401~450	+20	+30	+30	+35	+50
451~500	+25	+35	+35	+40	+55
501~550	+30	+40	+40	+45	+60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

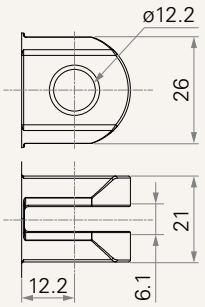
D. Output Signals	
P_POT	+20

Rear Attachment (mm)

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

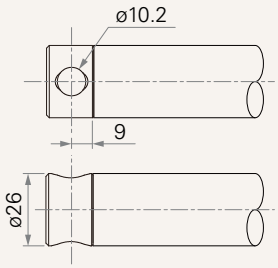


4 = Aluminum casting, U clevis, slot 6.2, depth 12.2, hole 12.2

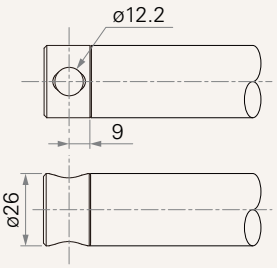


Front Attachment (mm)

3 = Aluminum CNC, without slot, hole 10.2

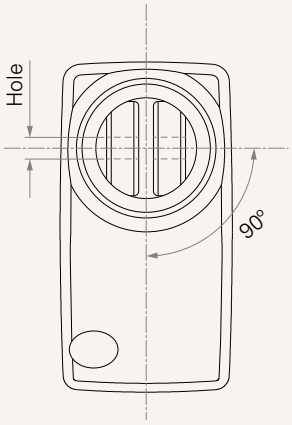


4 = Aluminum CNC, without slot, hole 12.2

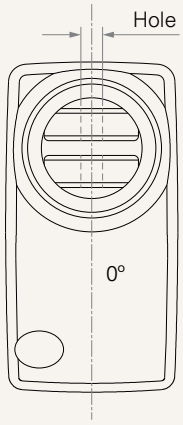


Direction of Rear Attachment (Counterclockwise)

1 = 90°



2 = 0°



TA29 Ordering Key Appendix

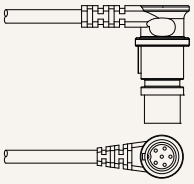
Functions for Limit Switches

Wire Definitions

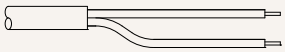
CODE	Pin					
	1 (Green)	2 (Red)	3 (White)	4 (Black)	5 (Yellow)	6 (Blue)
1	extend (VDC+)	N/A	N/A	N/A	retract (VDC+)	N/A
2	extend (VDC+)	N/A	middle switch pin B	middle switch pin A	retract (VDC+)	N/A
3	extend (VDC+)	common	upper limit switch	N/A	retract (VDC+)	lower limit switch
4	extend (VDC+)	common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

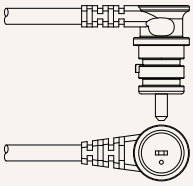
1 = DIN 6P, 90° plug



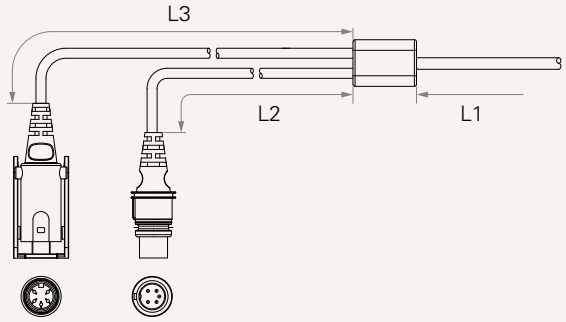
2 = Tinned leads



4 = Big 01P, 90° plug



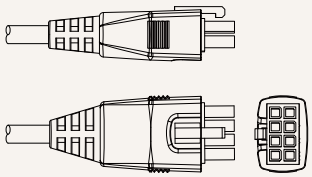
C = Y cable (for direct cut system, water proof, anti pull)



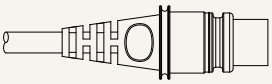
Cable Length for Direct Cut System (mm)

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

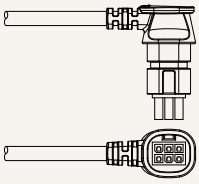
E = Molex 8P, 180° plug



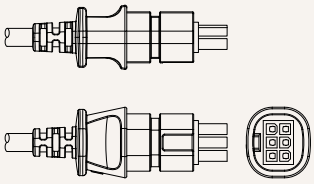
F = DIN 6P, 180° plug



Q = Molex 6P, 90° plug



S = Molex 6P, 180° plug



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