

Linear actuator CAMT



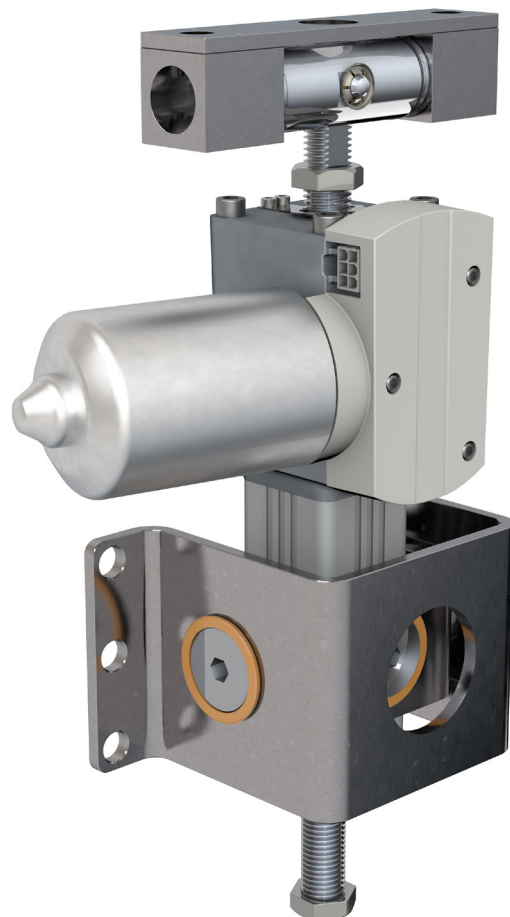
Play-free motion



Easy installation



Compact design



Standards

IEC/UL 60601-1 (Edition 3.1)

IEC/UL 60601-1-2 (Edition 4)



**New medical
solution**

CAMT

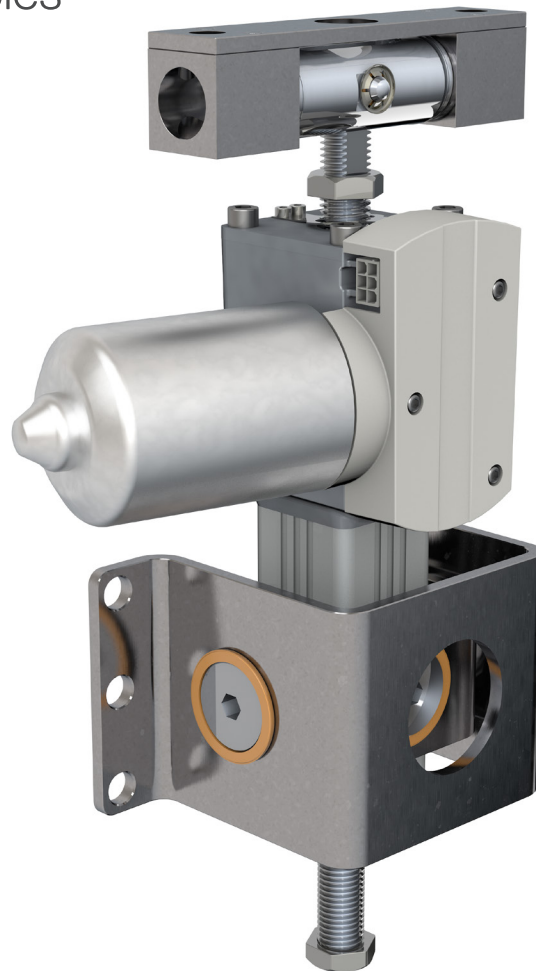
Linear actuator for surgical tables
and procedure chairs

Benefits

- Play free motion
- Easy installation
- Compact design

Standards

- IEC/UL 60601-1 (Edition 3.1)
- IEC/UL 60601-1-2 (Edition 4)



Technical data

	Unit	CAMT20
Rated push load	N	6 000
Rated pull load	N	6 000
Static load (push/pull) ¹⁾	N	13 200
Safety factor on rated load ^{2) 3)}	–	4
Speed (full load to no load) ⁴⁾	mm/s	5 to 6,5
Stroke	mm	50 to 250
Voltage	VDC	24
Current consumption	A	10
Duty cycle	%	10 (1/9 minutes)
Ambient temperature	°C	+10 to +40
Degree of protection	–	IP20
Noise level (max)	dB	≤ 55
Weight ⁵⁾	Kg	5,8

¹⁾ Compliant with static load according to IEC/UL 60601-2-46

²⁾ Static safety factor to prevent mechanical hazards according to IEC/UL 60601-1

³⁾ Depending on stroke and attachment type, safe work load in push direction is reduced. For details, see diagram **Safety factor load conditions**

⁴⁾ Speed with 24 V DC, speed with V/SCU is higher. For details, see diagram **Load-Speed**

⁵⁾ For stroke 250 mm, without attachment

Product benefits

Play free motion – Extra comfort

Feel the smooth movement introduced by CAMT because all parts are play-free. Unlike common actuators which shake when the load direction changes, CAMT keeps the movement smooth throughout the whole process (↳ diagram 1).

Easy installation – Simplicity

It is easy to install thanks to the new design with extra front and rear attachment with 1 or 2 DOF in motion (↳ fig. 1 and 2).

Compact design – Perfect system integration

The compact design enables a perfect system integration. It can be installed as a single actuator or be combined with other CAMT actuators and a column (e.g. CPMT) to achieve combined motion in any direction (↳ fig. 3).

Fig. 1

Front attachment: play-free



Fig. 2

Rear attachment: play-free

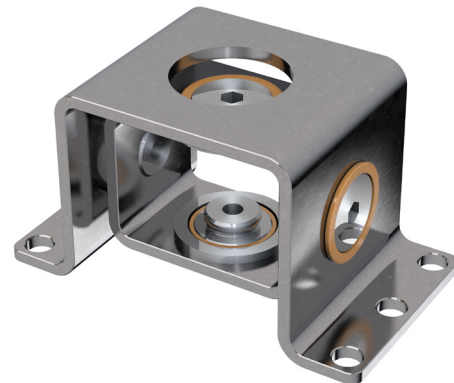
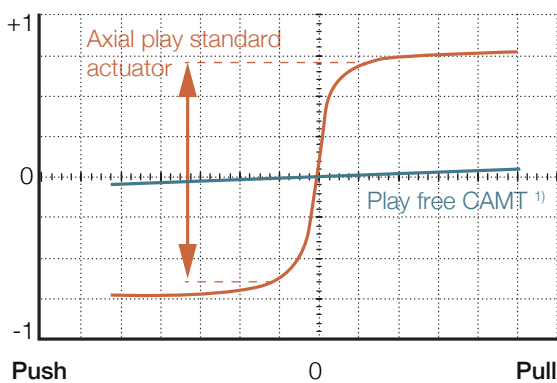


Diagram 1

Displacement [mm]

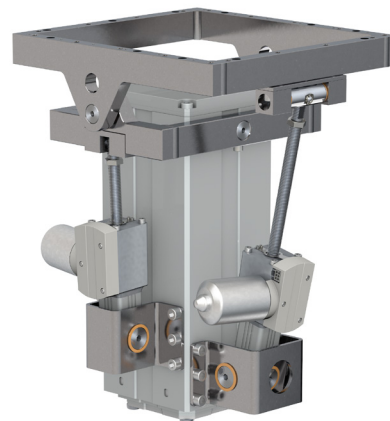


CAMT actuator — Standard actuator —

¹⁾ Actuator after service life of 10 years in a typical medical procedure equipment application, with the meaning of 60 000 cycles at average load of 3 000 N and average stroke of 100 mm.

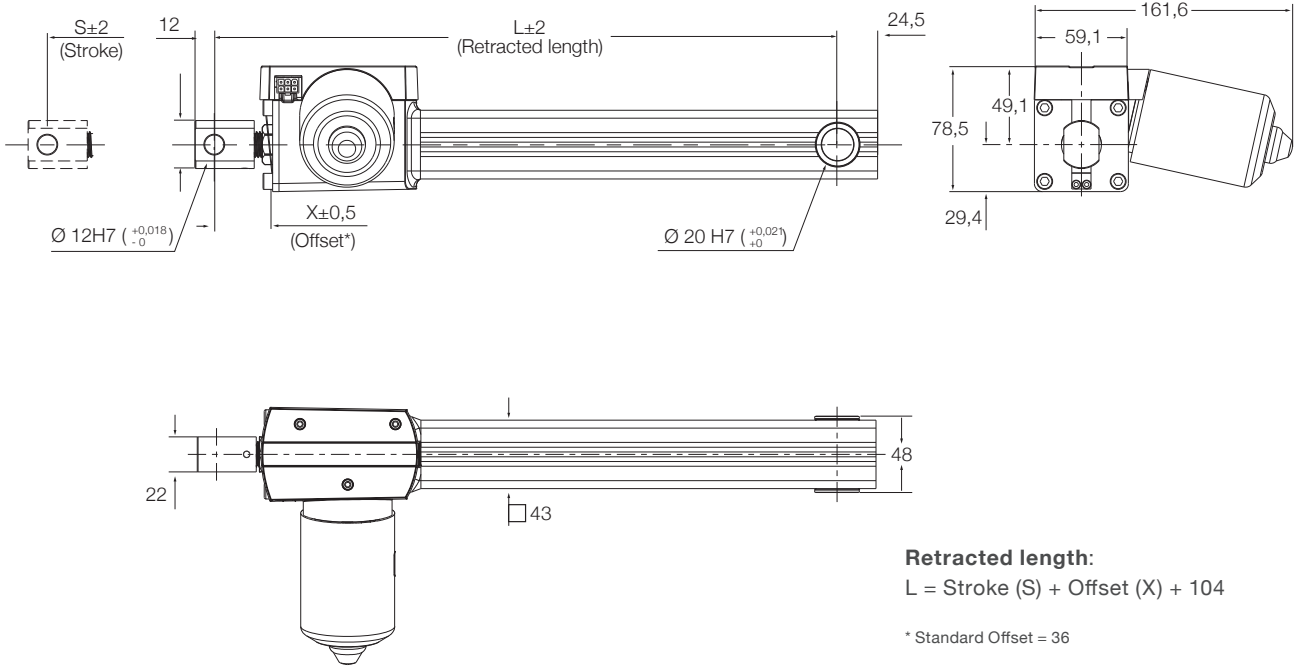
Fig. 3

Surgical module

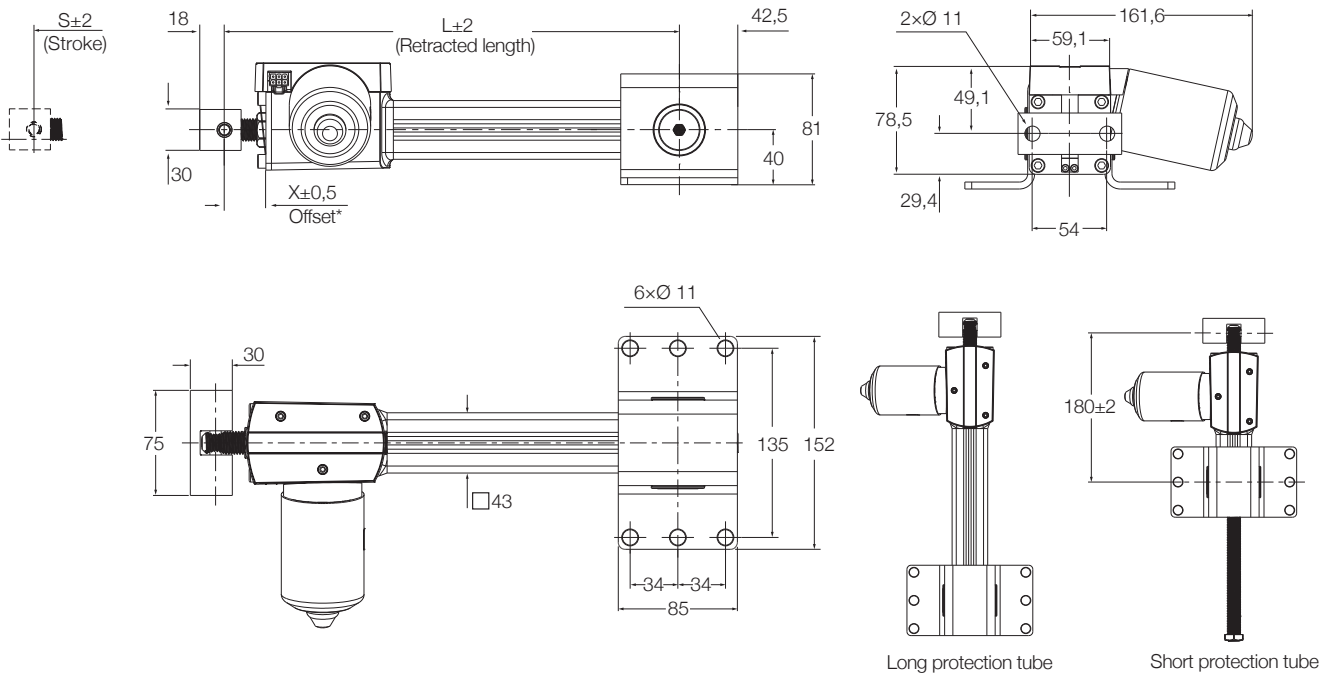


Dimensional drawing

Clevis attachment (CAMT20-xxxxx-00L-AA-AFx-000)



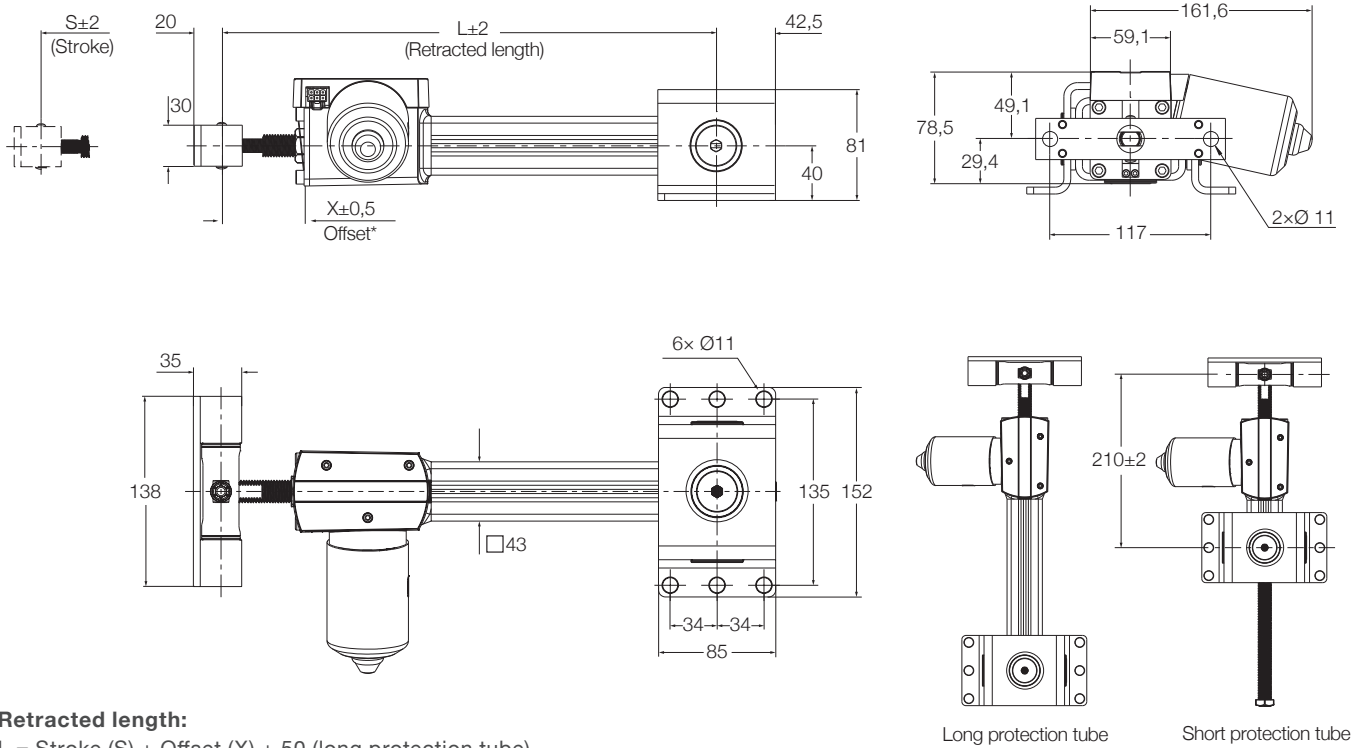
1 DOF attachment (CAMT20-xxxxx-00x-BB-AFx-000)



Long protection tube

Short protection tube

2 DOF attachment (CAMT20-xxxxx-00x-CC-AFx-000)



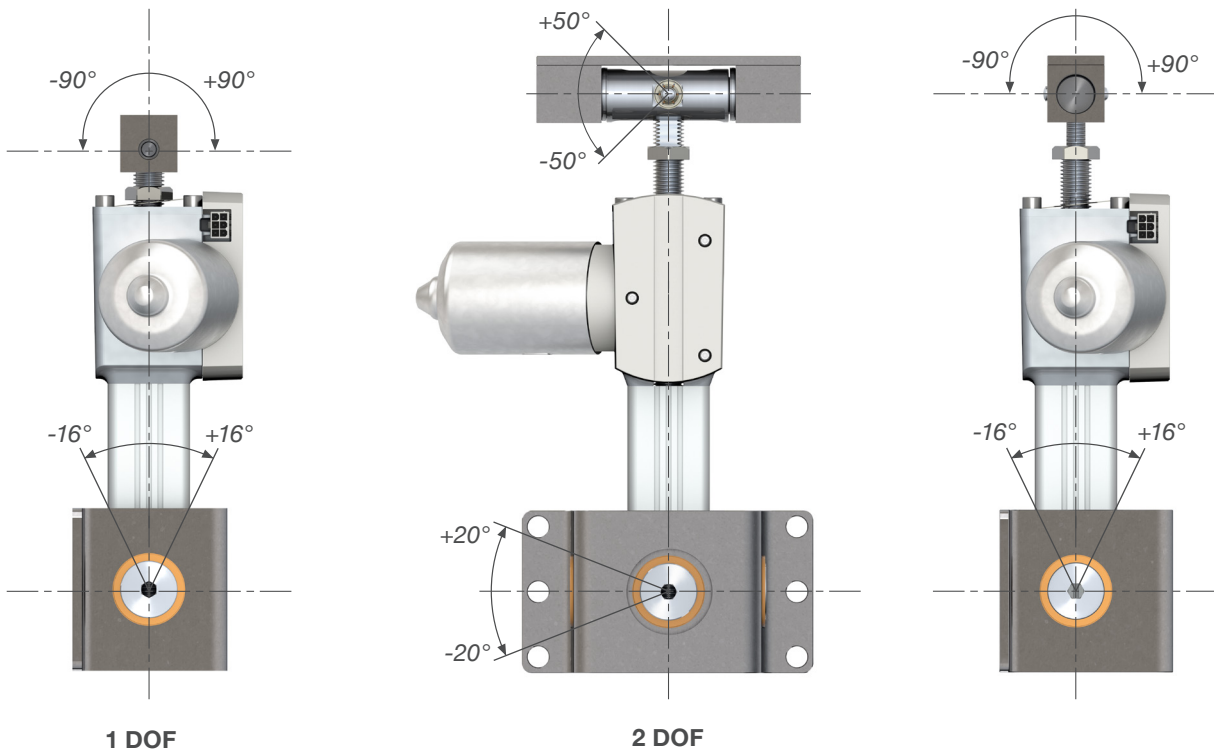
Retracted length:

$L = \text{Stroke (S)} + \text{Offset (X)} + 50$ (long protection tube)

$L = \text{Offset (X)} + 150$ (short protection tube)

* Standard Offset = 60

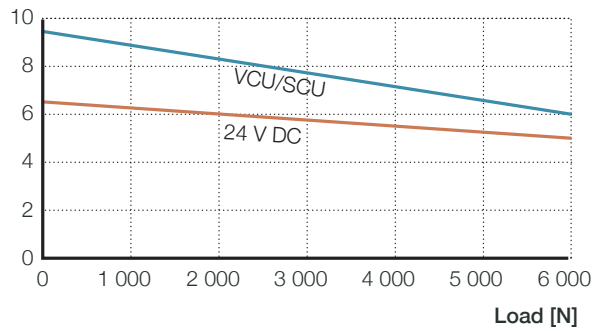
Motion angles of play front and rear attachments



Performance diagrams

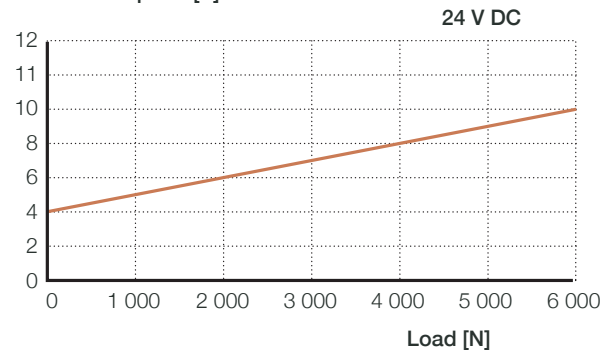
Speed-load diagram

Speed [mm/s]



Current-load diagram

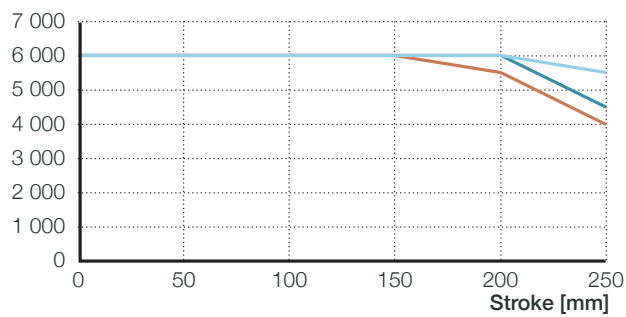
Current consumption [A]



Safety factor load conditions

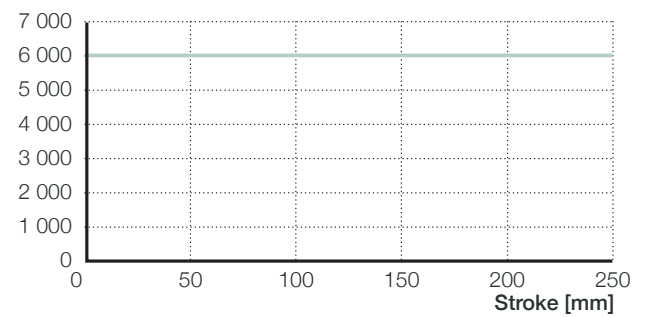
Push load reduction for static safety factor S=4 (IEC/UL 60601-1)

Load [N]



Safe push and pull load for static safety factor S=2.2 (IEC/UL 60601-2-46)

Load [N]



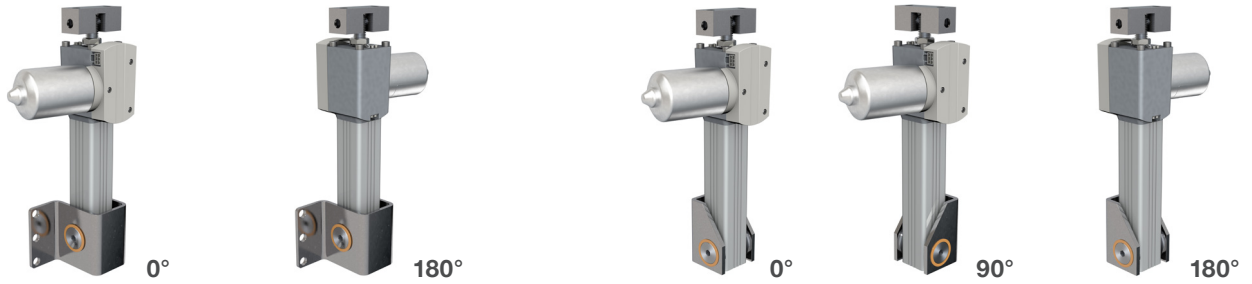
- Clevis attachment
- 1 DOF attachment, with long protection tube ^{1) 2)}

- 2 DOF attachment, with long protection tube ¹⁾
- Valid for all CAMT configurations

¹⁾ No load reduction with short protection tube

²⁾ No load reduction for 1DOF U-bracket

Rear attachment orientation



Standard bracket (1 DOF and 2 DOF)

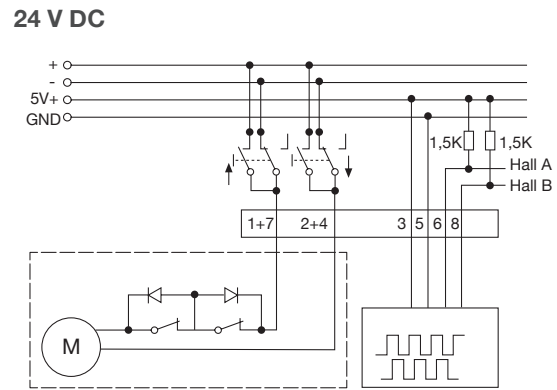
U-bracket (1 DOF)

Suitable control units and accessories

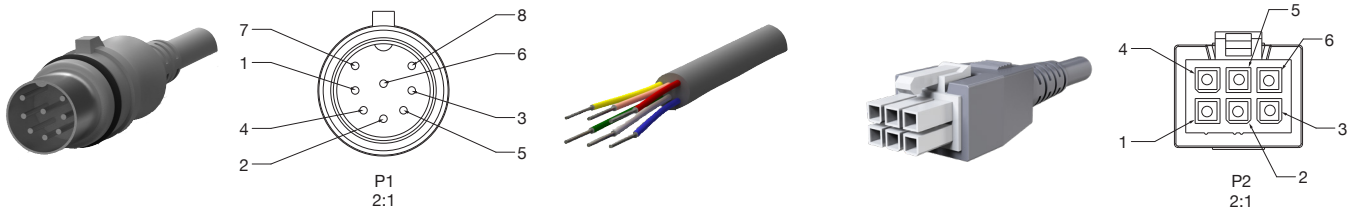
	Control units							
	SCU 1	SCU 5	SCU 9	VCU 5	VCU 8	VCU 9	*BCU 5	*BCU 8
CAMT	•	•	•	•	•	•	•	•
Operating switches								
EHA 3	•	•	•	•	•	•	•	•
STJ	•	•	•	•	•	•	•	•
STE	•	•	•	•	•	•	•	•
Hand switch								
Foot switch								
Desk switch								

Reduced to 4 kN

Connecting diagram



Electrical connection



Plug P1: DIN-8 connector

Flying leads

Plug P2: Molex Mini-fit Jr. 6-pole

Plug P1	Wire color	Section	Function	Plug P2
1+7	Blue	AWG 16	- on, + off	4
2+4	Red	AWG 16	+ on, - off	1
3	Pink	AWG 24	+ 5 V	2
5	Grey	AWG 24	gnd	5
6	Yellow	AWG 24	hall sensor 1 signal	3
8	Green	AWG 24	hall sensor 2 signal	6

Ordering key

		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">C</td> <td style="padding: 2px;">A</td> <td style="padding: 2px;">M</td> <td style="padding: 2px;">T</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">0</td> </tr> </table>	C	A	M	T	2	0	-	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>					-	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>				-	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>				-	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>					-	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>				
C	A	M	T	2	0																															

Type	
Load	
2	6 000 N
Voltage	
0	24 VDC
Stroke length	
0 5 0	50 mm
1 0 0	100 mm
1 5 0	150 mm
2 0 0	200 mm
2 5 0	250 mm
x x x	Customised (10 mm steps)
Distance between front pivot and gear box (Offset "X", see dimensional drawing)	
0 0	Standard
x x	Customised (1 mm steps)
Protection tube length	
0 0 S	Short (shortest possible length)
0 0 L	Long (lead screw covered when retracted)
x x x	Customised (10 mm steps)
Front attachment	
A	Rod clevis D12 H7 bore
B	1 DOF attachment
C	2 DOF attachment
D	Rod with D8 JS7 bore
Rear attachment	
A	Rear clevis D20 H7 bore 0° (only with long protection tube)
B	1 DOF attachment 0°
C	2 DOF attachment 0°
D	Rear clevis D20 H7 90° (only with long protection tube)
E	1 DOF attachment 180°
F	1 DOF U-bracket attachment 0°
G	1 DOF U-bracket attachment 90°
H	1 DOF U-bracket attachment 180°
I	2 DOF attachment 180°
Mechanical options	
A	Backup nut
Electrical options	
F	End limit switches
Cable options	
A	1 m straight with DIN8 plug
B	2,3 m straight with DIN8 plug
C	2,3 m straight with flying leads
0	Without cable

■ Options shown in red are only available on request. Contact Ewellix for more information on minimum quantities and additional costs.



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