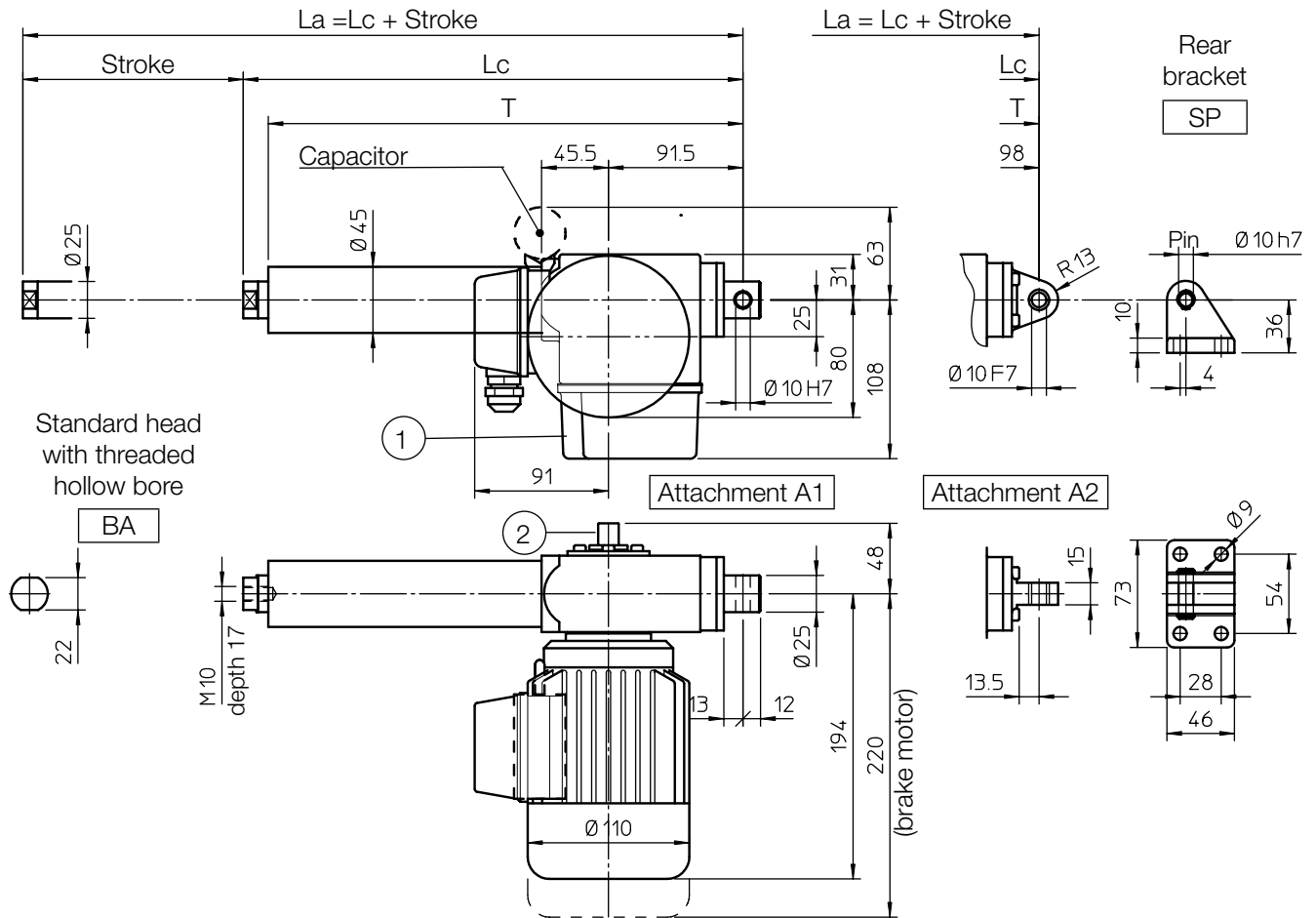


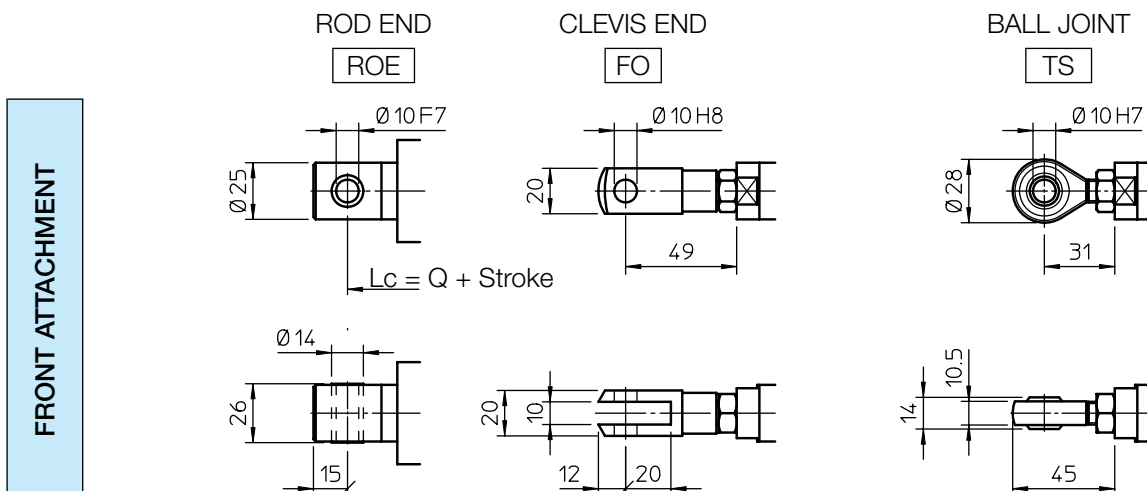
## OVERALL DIMENSIONS



1. STROKE END SWITCHES BOX AND POTENTIOMETER
2. MOTOR SHAFT EXTENSION for:  
Emergency manual activation  
Stroke end switches and potentiometer adjustment

Q [mm]	Attachment A1	Attachment A2
	195	202

STROKE CODE	Actuator - Attachment A1				Actuator - Attachment A2				MASS [Kg]
	STROKE [mm]	LENGTH		T [mm]	STROKE [mm]	LENGTH		T [mm]	
		Lc [mm]	La [mm]			Lc [mm]	La [mm]		
C100	100	290	390	273	100	297	397	280	5.3
C200	200	390	590	373	200	397	597	380	5.6
C300	300	490	790	473	300	497	797	480	5.9



## PERFORMANCES AND FEATURES

- Push load up to 5 000 N
- Pull load up to 4 000 N
- Linear speed up to 93 mm/s
- Standard stroke lengths: 100, 150, 200, 250, 300 mm (for different / longer stroke lengths please contact us)
- Aluminium alloy housing
- Rear attachment:
  - A1 zinc-plated steel
  - A2 aluminium alloy with bronze bush
- Anodized aluminium outer tube
- Chrome-plated steel push rod – tolerance f7
- Standard head BA or rod end ROE in stainless steel AISI 303 with bronze bush
- AC 3-phase or 1-phase motor (motor features on page 70)
- Duty cycle with max load: 30% over 10 min at (-10 ... +40) °C
- Standard protection:
  - with AC motor without brake IP55
  - with AC brake-motor IP54
- Standard motor mounting position as per sketch (right-hand, code RH)
- Long-life lubrication, maintenance free

## ACCESSORIES

- Different front attachments
- Stainless steel push rod (code SS)
- Rear bracket (code SP) with rear attachment A2
- Mechanical overload protection: safety clutch (code FS)
- Brake motor
- Adjustable electric stroke end switches (code FC2)
- Adjustable electric stroke end switches, switching off the motor (not available with AC 3-phase motor) (code FC2X)
- Extra switch for intermediate position (code FC)
- Rotative potentiometer 5kOhm for positioning control (code POR5K)

NOTE: Extra limit switch and rotative potentiometer cannot be selected together

## OPTIONS

- Motor mounting position on opposite side (left-hand, code LH)
- Fixing attachment turned at 90° (code RPT 90)

### PERFORMANCES with AC 3-phase 50 Hz 230/400 V or 1-phase 50 Hz 230 V motor

1-start acme screw Tr 14x4				
RATIO	0.09 kW - 4 pole motor		0.12 kW - 2 pole motor	
	LOAD [N]	SPEED [mm/s]	LOAD [N]	SPEED [mm/s]
RH1	1750	23	1250	47
RV1	2620	15	1860	30
RN1	4490	7.5	3230	15
RL1	5000	3.5	5000	7.5
RXL1	5000	2	5000	3.5

2-starts acme screw Tr 14x8 (P4)				
RATIO	0.09 kW - 4 pole motor		0.12 kW - 2 pole motor	
	LOAD [N]	SPEED [mm/s]	LOAD [N]	SPEED [mm/s]
RH2	1070	47	790	93
RV2	1620	30	1180	60
RN2	2880	15	2080	30
RL2	4800	7.5	3520	15

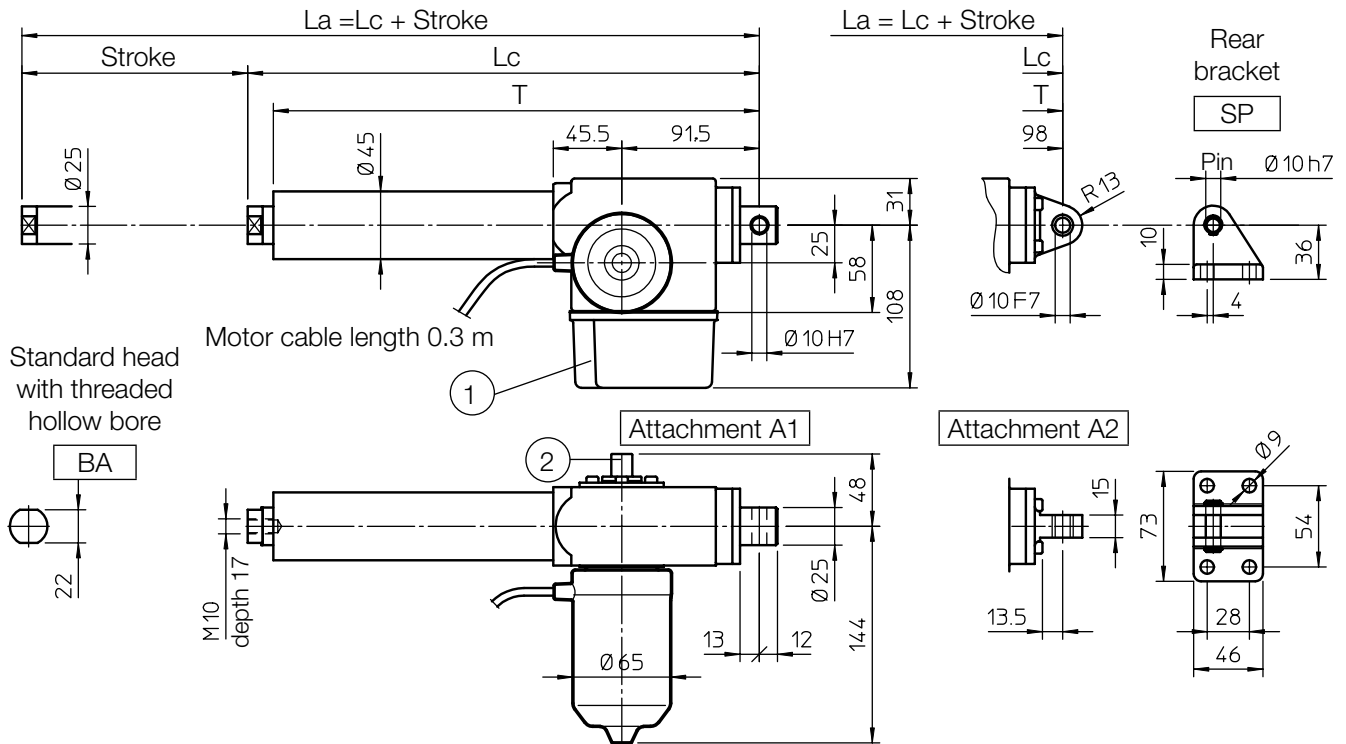
## Self-locking conditions

Information about statically self-locking conditions with pull or push load on page 68.

## ORDERING CODE EXAMPLE

CLA 25	RL1	C200	CA 230/400 V	FC2	POR 5K				
Actuator	Selected ratio	Required stroke	Motor	Stroke end switches	Accessories			Options	

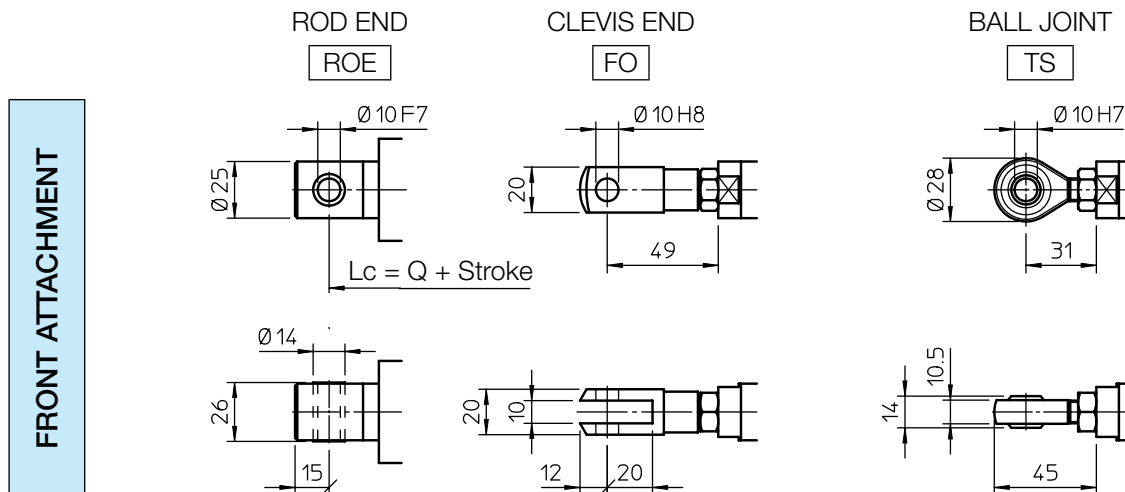
## OVERALL DIMENSIONS



1. STROKE END SWITCHES BOX AND POTENTIOMETER
2. MOTOR SHAFT EXTENSION for:  
Emergency manual activation  
Stroke end switches and potentiometer adjustment

Q [mm]	Attachment A1	Attachment A2
	195	202

STROKE CODE	Actuator - Attachment A1				Actuator - Attachment A2				MASS [Kg]
	STROKE [mm]	LENGTH		T [mm]	STROKE [mm]	LENGTH		T [mm]	
		Lc [mm]	La [mm]			Lc [mm]	La [mm]		
C100	100	290	390	273	100	297	397	280	4.1
C200	200	390	590	373	200	397	597	380	4.4
C300	300	490	790	473	300	497	797	480	4.7



### Self-locking conditions

Information about statically self-locking conditions with pull or push load on page 68.

## PERFORMANCES AND FEATURES

- Pull-Push load up to 4 000 N
- Linear speed up to 100 mm/s
- Standard stroke lengths:  
100, 150, 200, 250, 300 mm  
(for different / longer stroke lengths please contact us)
- Aluminium alloy housing
- Rear attachment:
  - A1 zinc-plated steel
  - A2 aluminium alloy with bronze bush
- Anodized aluminium outer tube
- Chrome-plated steel push rod – tolerance f7
- Standard head BA or rod end ROE in stainless steel AISI 303 with bronze bush
- 12, 24 or 36 V DC motor with electromagnetic noise suppressor (motor features details on page 69)
- Duty cycle with max load: 15% over 10 min at (-10...+40) °C
- Standard protection IP65:  
Test IP6X according to EN 60529 §12 §13.4-13.6  
Test IPX5 according to EN 60529 §14.2.5  
(tests made with not running actuator)

- Standard motor mounting position as per sketch (right-hand, code RH)
- Long-life lubrication, maintenance free

## ACCESSORIES

- Different front attachments
- Stainless steel push rod (code SS)
- Rear bracket (code SP) with rear attachment A2
- Mechanical overload protection: safety clutch (code FS)
- Adjustable electric stroke end switches (code FC2)
- Adjustable electric stroke end switches, switching off the motor (code FC2X) (not available with AC 3-phase motor)
- Extra switch for intermediate position (code FC)
- Rotative potentiometer 5kOhm for positioning control (code POR5K)

NOTE: Extra limit switch and rotative potentiometer cannot be selected together

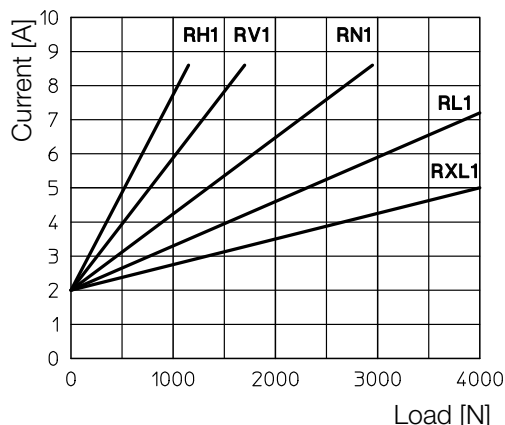
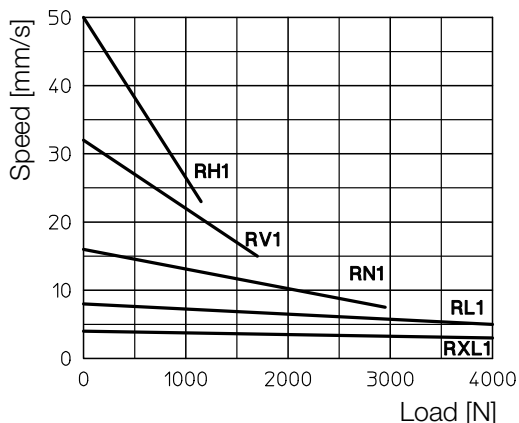
## OPTIONS

- Motor mounting position on opposite side (left-hand, code LH)
- Fixing attachment turned at 90° (code RPT 90)

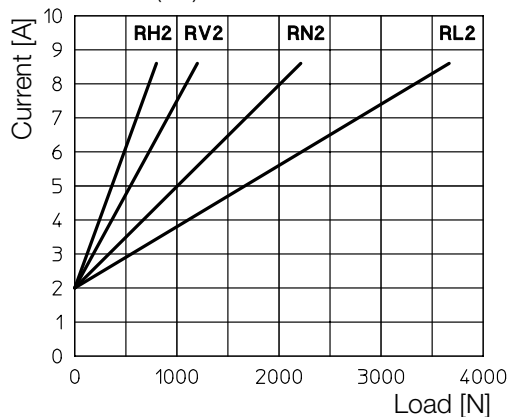
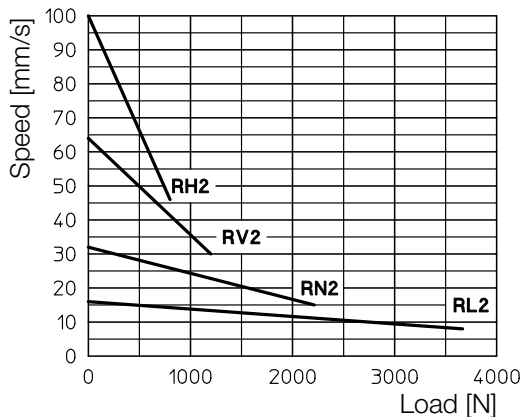
### PERFORMANCES with 24 V DC motor

(Performances with 12 V DC motor: same load, linear speed 10 % less, electrical consumption 2 times more)

#### 1-start acme screw Tr 14x4



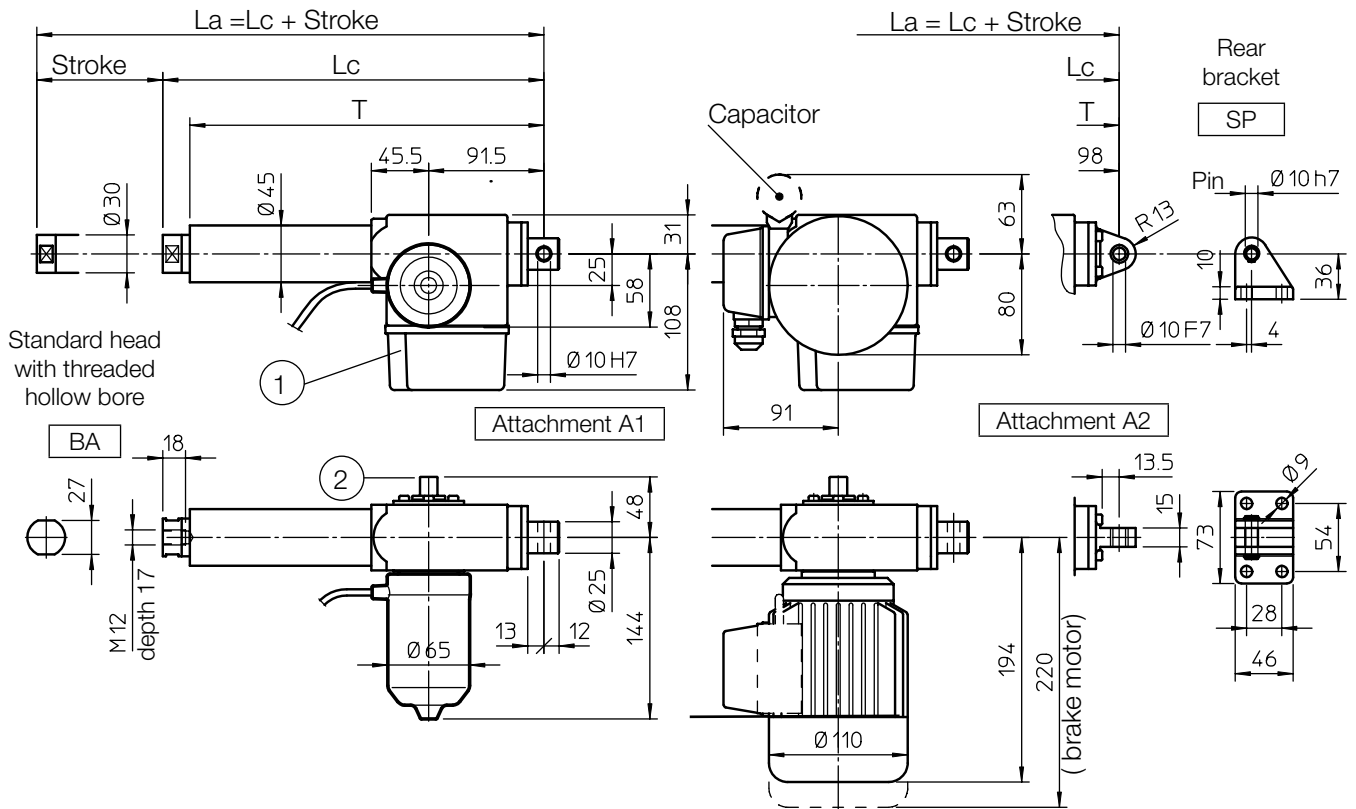
#### 2-starts acme screw Tr 14x8 (P4)



## ORDERING CODE EXAMPLE

CLA 25	RL1	C200	CC 24 V	FC2	POR 5K			
Actuator	Selected ratio	Required stroke	Motor	Stroke end switches	Accessories			Options

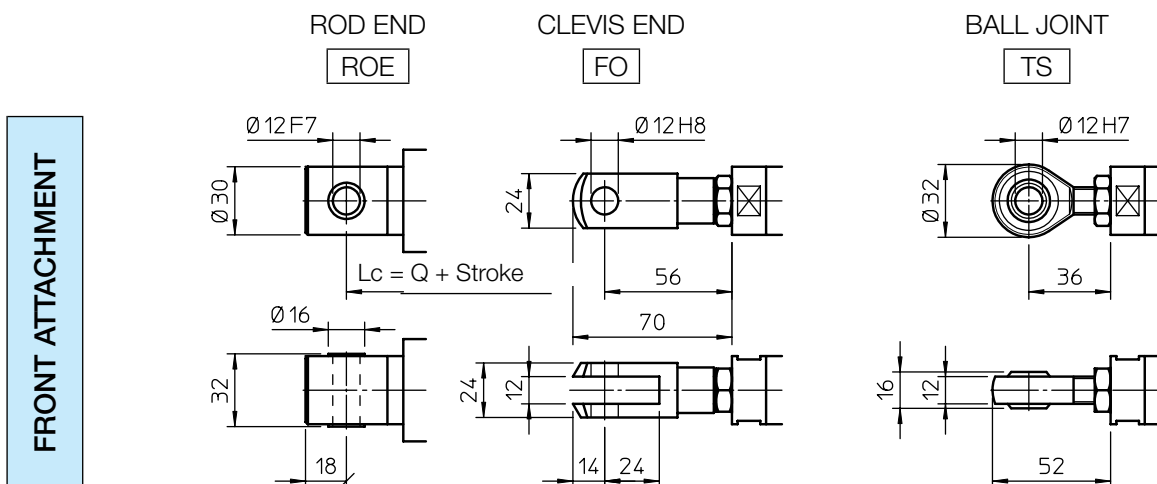
## OVERALL DIMENSIONS



1. STROKE END SWITCHES BOX AND POTENTIOMETER
2. MOTOR SHAFT EXTENSION for:
  - Emergency manual activation
  - Stroke end switches and potentiometer adjustment

Q [mm]	Attachment A1	Attachment A2
	220	227

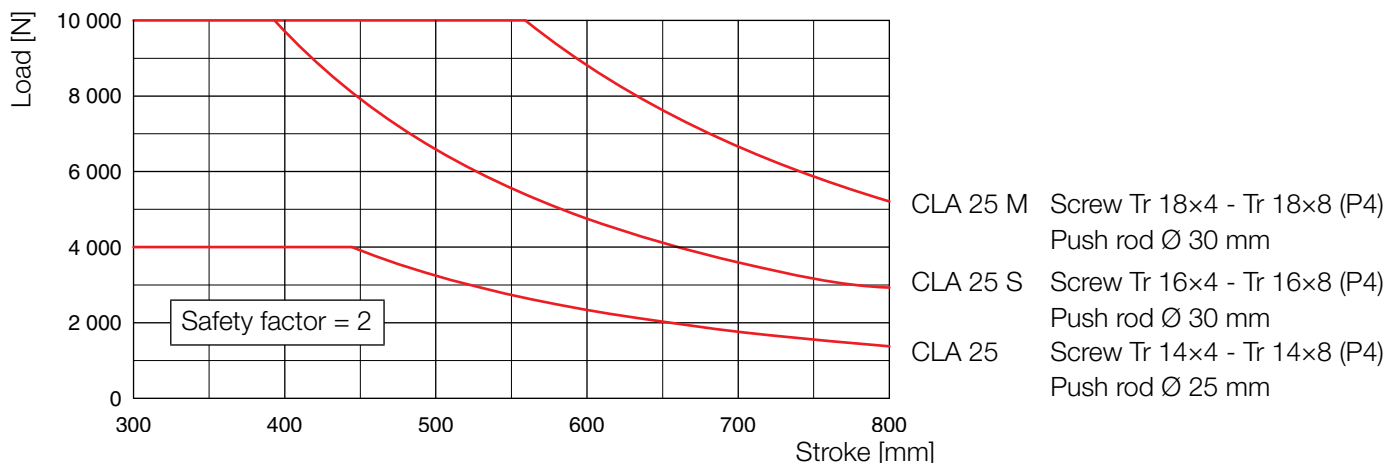
STROKE CODE	Actuator - Attachment A1			Actuator - Attachment A2			MASS [Kg] DC motor	MASS [Kg] AC motor
	STROKE [mm]	LENGTH		T [mm]	STROKE [mm]	LENGTH		
		Lc [mm]	La [mm]			Lc [mm]	La [mm]	
C300	300	516	816	481	300	523	823	488
C400	400	616	1016	581	400	623	1023	588
C500	500	716	1216	681	500	723	1223	688
C600	600	816	1416	781	600	823	1423	788
C700	700	916	1616	881	700	923	1623	888
C800	800	1016	1816	981	800	1023	1823	988



**CLA 25 S** and **CLA 25 M** are reinforced versions of CLA 25 linear actuator, with stronger linear drive part to improve push load resistance in case of long stroke lengths. For tables and performances graphs with the available ratios please refer to CLA 25 linear actuator.

Furthermore, compared to CLA 25 actuator, the anti-turn device (AR) is here available.

### Buckling push load diagram



### PERFORMANCES AND FEATURES

- Pull-Push load up to 5 000 N
- Linear speed up to 100 mm/s (DC motor)  
Linear speed up to 90 mm/s (AC motor)
- Standard stroke lengths:  
300, 400, 500, 600, 700, 800 mm  
(for different / longer stroke lengths please contact us)
- Aluminium alloy housing
- Rear attachment:
  - A1 zinc-plated steel
  - A2 aluminium alloy with bronze bush
- Anodized aluminium outer tube
- Chrome-plated steel push rod – tolerance f7
- Standard head BA or rod end ROE  
stainless steel AISI 303 with bronze bush
- Motors:
  - 12, 24 or 36 V DC motor  
with electromagnetic noise suppressor
  - AC 3-phase or 1-phase motor  
(motor features details on page 69, 70)
- Duty cycle with max load:  
DC motor max 15% over 10 min at (-10 ... +40) °C  
AC motor max 30% over 10 min at (-10 ... +40) °C
- Standard protection:
  - with DC motor IP65  
Test IP6X according to EN 60529 §12 §13.4-13.6  
Test IPX5 according to EN 60529 §14.2.5  
(tests made with not running actuator)
  - with AC motor without brake IP55
  - with AC brake-motor IP54

- Standard motor mounting position as per sketch  
(right-hand, code RH)
- Long-life lubrication, maintenance free

### ACCESSORIES

- Different front attachments
- Stainless steel push rod (code SS)
- Rear bracket (code SP)  
with rear attachment A2
- Mechanical overload protection:  
safety clutch (code FS)
- AC 1-phase or 3-phase brakemotor
- Anti-turn device (code AR)
- Adjustable electric stroke end switches (code FC2)
- Adjustable electric stroke end switches,  
switching off the motor (code FC2X)  
(not available with AC 3-phase motor)
- Extra switch for intermediate position (code FC)
- Rotative potentiometer 5kOhm for positioning control  
(code POR5K)

NOTE: Extra limit switch and rotative potentiometer cannot be selected together

### OPTIONS

- Motor mounting position on opposite side  
(left-hand, code LH)
- Fixing attachment turned at 90°  
(code RPT 90)

### Self-locking conditions

Information about statically self-locking conditions with pull or push load on page 68.

### ORDERING CODE EXAMPLE

CLA 25 S	RL1	C300	CC 24 V	FC2	POR 5K				
Actuator	Selected ratio	Required stroke	Motor	Stroke end switches	Accessories			Options	

### 12.3 DC MOTORS

#### Motors with interchangeable brushes (actuators ATL 10, UAL 0, BSA 10, BSA 11, UBA 0, CLB 25, CLB 27)

Permanent magnet DC motors, without fan, available with or without brake.

Long-life brushes, easy to replace.

Bipolar power supply cable 2 x 1 mm<sup>2</sup>, 1.5 m length. Motor weight: 1.3 kg.

Output power	70 W		Rated speed	3000 rpm	
Rated current	3.7 A (24 V)	8.4 A (12 V)	Rated torque	0.22 Nm	
Peak current	18 A (24 V)	30 A (12 V)	Peak torque	1.1 Nm	
Resistance	0.85 Ohm (24 V)	0.23 Ohm (12 V)	Inductance	1.34 mH (24 V)	0.36 mH (12 V)
Protection class	IP 54		Insulation class	F	

MOTOR BRAKE: Normally closed holding brake activated by DC electromagnet available on request.

Brake separately wired with bipolar cable 2 x 1 mm<sup>2</sup>, 1 m length.

Motor with brake total weight: 1.8 kg.

Power supply: 0.4 A a 24 V; 0.85 A a 12 V	Braking torque: 0.5 Nm
---	------------------------

**WARNING! The motor brake is normally closed; to open it, a constant rated voltage power supply is required. With lower voltage, the brake does not open.**

#### Motors with non-interchangeable brushes (linear actuators LMR, ATL, CLA, LMP, LMI Series)

Permanent magnet DC motors, without fan.

The brake is not available; the brushes are not interchangeable.

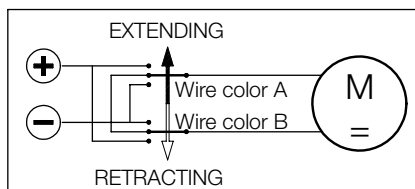
Standard motors winding has insulation class B.

These motors have open enclosures: the actuator is fitted with proper motor outer protections which allow to reach motor Protection Class IP 65.

The performance diagrams concerning actuators with DC motor stated in this catalogue, show the input power variation depending on the load variation.

This allows to select power supply / drivers properly.

#### Motor wires connection – Actuator push rod travelling direction



Actuator with DC motor, RIGHT-HAND mounting	LMR 01	LMR 03	ATL 02	ATL 05	ATL 08	ATL 12	CLA 20	CLA 25
Wire color A	red	red	brown	brown	brown	red	brown	brown
Wire color B	black	black	blue	blue	blue	blue	blue	blue

Actuator with DC motor, LEFT-HAND mounting	LMR 01	LMR 03	ATL 02	ATL 05	ATL 08	ATL 12	CLA 20	CLA 25
Wire color A	red	red	blue	blue	blue	blue	blue	blue
Wire color B	black	brown	brown	brown	brown	red	brown	brown

12.4 AC MOTOR							
Actuator	Motor	Power kW	N° of poles	Input voltage Vca	Frequency Hz	Rated current A	Capacitor uF
ATL 02	AC 3-phase	0.06	2	230/400	50	0,7-0,4	-
	AC 1-phase	0.06		230		0.68	5
ATL 10	AC 3-phase	0.12	2	230/400	50	0,81-0,46	-
		0.09	4			0,8-0,45	-
	AC 1-phase	0.12	2	230		2.6	12.5
		0.09	4			1.6	12.5
ATL 12	AC 3-phase	0.25	2	230/400	50	1,3-0,75	-
		0.18	4			1,1-0,66	-
	AC 1-phase	0.25	2	230		2.1	20
		0.18	4			1.9	16
CLA 20	AC 3-phase	0.06	2	230/400	50	0,7-0,4	-
	AC 1-phase	0.06		230		0.68	5
CLA 25 CLA 25S CLA 25M	AC 3-phase	0.12	2	230/400	50	0,81-0,46	-
		0.09	4			0,8-0,45	-
	AC 1-phase	0.12	2	230		2.6	12.5
		0.09	4			1.6	12.5
CLA 28 CLA 28 T	AC 3-phase	0.06	2	230/400	50	0,7-0,4	-
	AC 1-phase	0.06		230		0.68	5
BSA 10 BSA 11	AC 3-phase	0.12	2	230/400	50	0,81-0,46	-
		0.09	4			0,8-0,45	-
	AC 1-phase	0.12	2	230		2.6	12.5
		0.09	4			1.6	12.5
BSA 12	AC 3-phase	0.25	2	230/400	50	1,3-0,75	-
		0.18	4			1,17-0,66	-
	AC 1-phase	0.25	2	230		2.1	20
		0.18	4			1.9	16
CLB 25 CLB 27	AC 3-phase	0.12	2	230/400	50	0,81-0,46	-
		0.09	4			0,8-0,45	-
	AC 1-phase	0.12	2	230		2.6	12.5
		0.09	4			1.6	12.5



12.4 AC MOTOR							
Insulation class (1)	Motor protection class (1)	Fan	Brake	Brake coil power supply (2) (3)	Brake rated current A	Braking torque Nm	Brake protection class
F	IP 55	Not available	Not available	-	-	-	-
F	IP 55	Standard	On request	DC powered by rectifier	0.05	1.7	IP 44
F	IP 55	Standard	On request	DC powered by rectifier	0.09	4	IP 44
F	IP 55	Not available	Not available	-	-	-	-
F	IP 55	Standard	On request	DC powered by rectifier	0.05	1.7	IP 44
F	IP 55	Standard	Not available	-	-	-	-
F	IP 55	Standard	On request	DC powered by rectifier	0.05	1.7	IP 44
F	IP 55	Standard	On request	DC powered by rectifier	0.09	4	IP 44
F	IP 55	Standard	On request	DC powered by rectifier	0.05	1.7	IP 44

(1) Higher insulation and protection classes available on request.

(2) Normally closed activated by DC electromagnet.  
The electromagnet is powered by a 1-phase rectifier fitted in the terminal box.

(3) Motors with separately powered brake available on request.  
This solution shall be used for applications with frequency inverter.

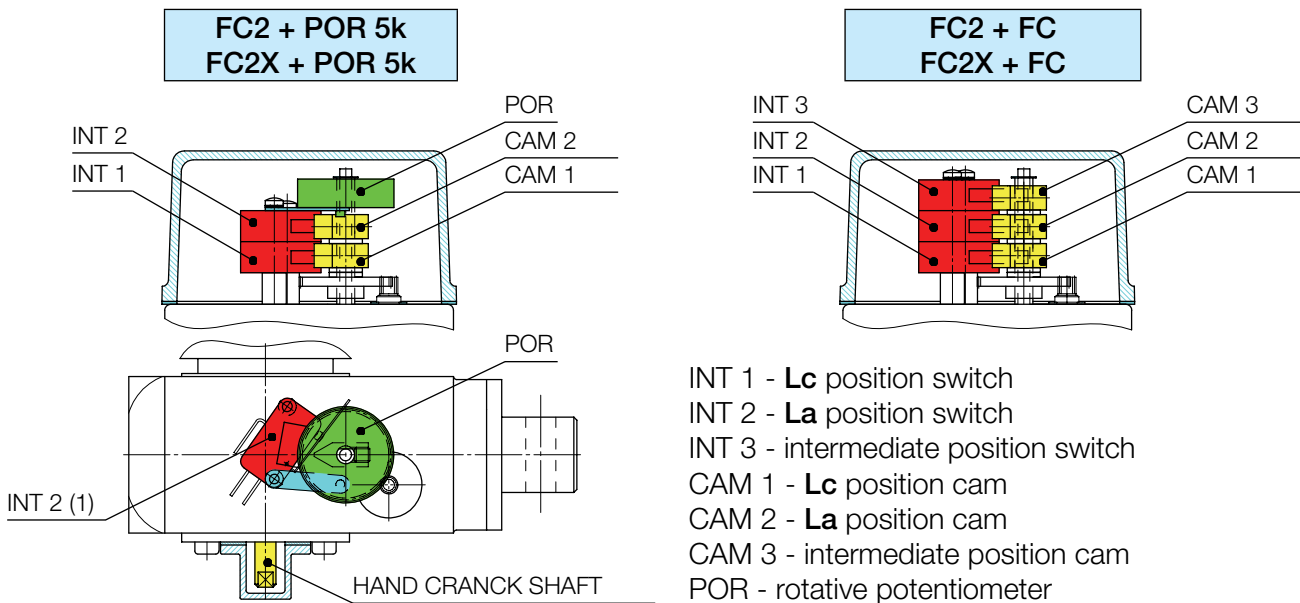
## 13.4 Electric cam-operated stroke end switches (linear actuators CLA and CLB Series)

Code **FC2**: two electric cam-operated switches, wired on contact NC (to be connected into the external control circuit). On request, the switches can be wired on the contact NO or on the switch-over contact CS. (For available configurations please contact our Technical Dpt).

Code **FC2X**: two electric cam-operated switches, internally wired between power supply and electric motor, in order to switch off the power supply directly, without relays. Available for actuators with Dc or AC 1-phase motor.

Code **FC2 + FC** or **FC2X + FC**: Stroke end switches FC2 or FC2X with a third switch for any intermediate position. The third switch can be wired on contact NC or NO on request. (For different configurations please contact our Technical Dpt).

SWITCH RATED VALUES		
Voltage	Max current	
	Resistive load	Inductive load
250 Vac	21 A	12 A
30 Vdc	14 A	12 A
125 Vdc	0.8 A	0.6 A



**Lc** = actuator retracted length, **La = Lc + Stroke** – actuator extended length

## 13.4 Rotative potentiometer for positioning control (linear actuators CLA and CLB Series)

Code **POR 5k**: rotative potentiometer, single turn (340°), 5 kOhm ± 20 %, linearity ± 2 %

The rotative potentiometer is an absolute transducer, whose output signal is proportional to the current position of the actuator push rod. Analogic output signal.

Standard cable: 4 x 0.25 mm<sup>2</sup> + shield, 1.5 m length (for different configurations please contact us).

POR 5k standard wiring diagram:

POR Power supply: 0 V dc

Reference signal: ZERO

Reference signal: RETURN

POR Power supply: + V cc

SHIELD

