



EWELLIX

EWELLIX Linear Actuators

CAR, CAP, CAT

Product Data Sheet

We pioneer motion

SCHAEFFLER

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1 CAR, CAP, CAT

The modular design of the CAR, CAP, and CAT series allows key components such as motors, gearboxes, screws, attachments, etc. to be easily replaced. Customized linear actuators can be easily and cost-effectively built from standard components. Thanks to its high flexibility, the CAT series is suitable for a wide range of applications.

Benefits

- reliable and robust linear actuators for industrial applications
- wide range of components
- right-hand and left-hand versions
- option for feedback via incremental or absolute position

Characteristics

- compact
- robust design
- modular
- with lifetime lubrication
- high efficiency

2 CAR22

1 CAR22



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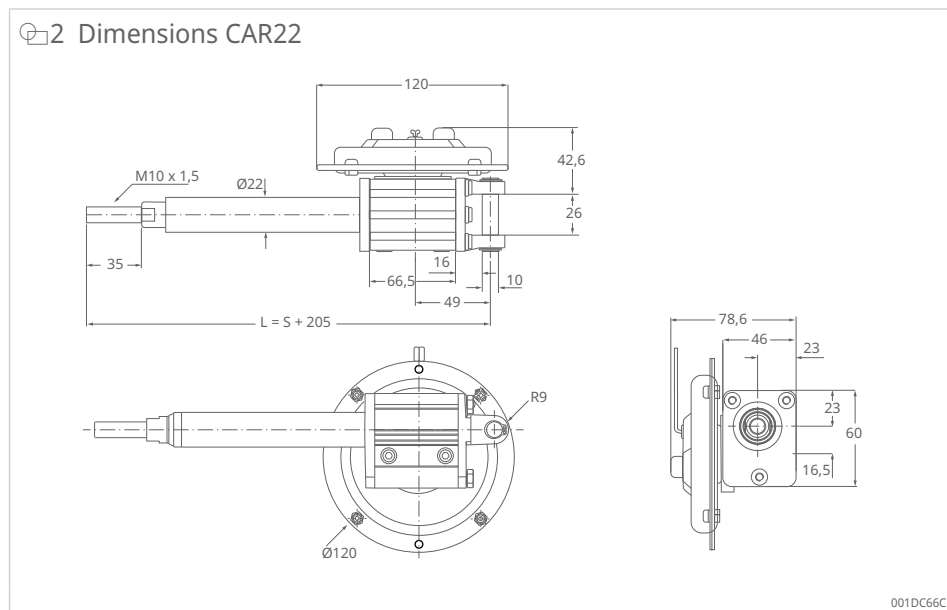
Benefits

- reliable and robust linear actuators for industrial applications
- available in right-hand and left-hand versions
- maintenance-free

1 Technical data CAR22

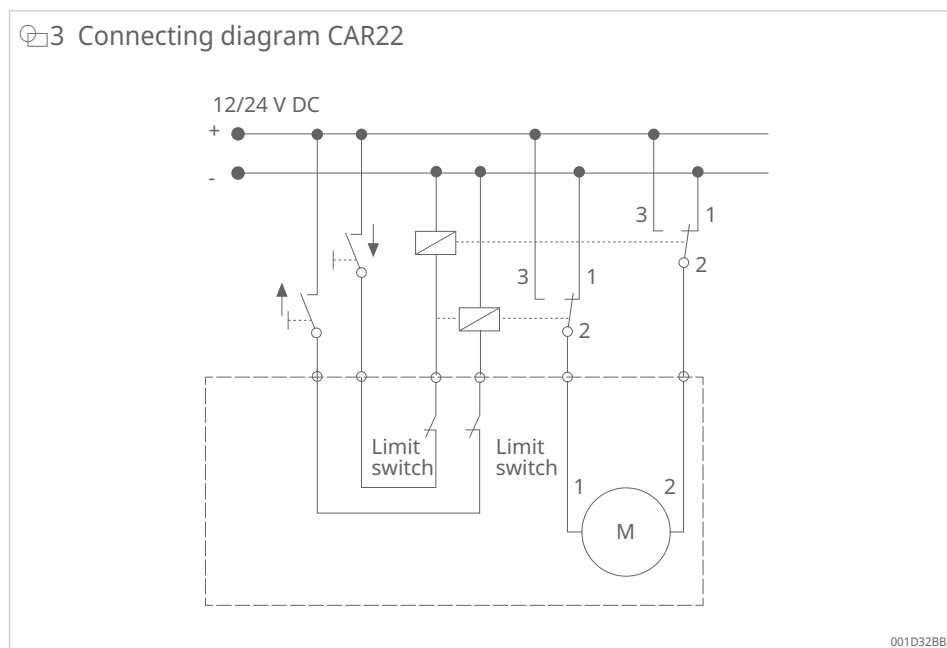
Feature	Unit	CAR22
Rated push force	N	1000 to 1500
Rated pull force	N	1000 to 1500
Speed (full load ... no load)	mm/s	11 to 34
Stroke S	mm	50 to 300
Retracted length L	mm	S + 205
Voltage	AC	V
		12 / 24
Power consumption	W	120
Current consumption	DC 12 V	A
	DC 24 V	A
		10
		4
Duty cycle	%	25
Ambient temperature	°C	-20 to +70
Protection code (IP)	-	IP44
Mass	kg	1.2 to 1.6

Dimensional drawings



S mm Stroke
 L mm Retracted length

Wiring diagrams

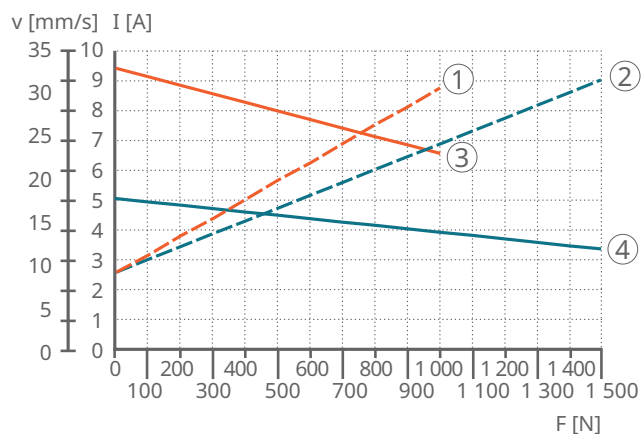


Suitable operating devices and controls CAR22

Linear actuator	Limit switch
CAR22	CAXE 22
P12B	✓
P24B	✓
✓	suitable

Performance diagrams

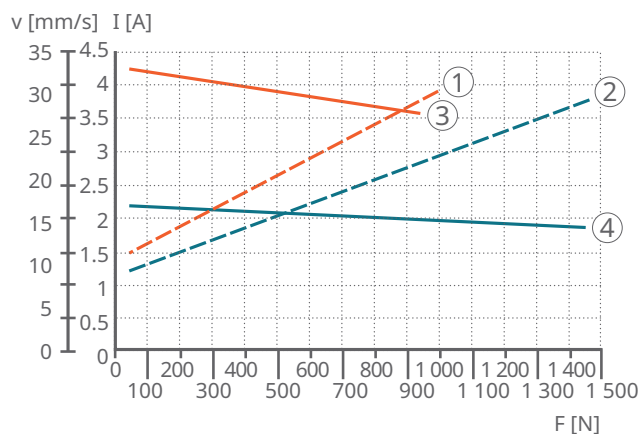
4 Performance diagram CAR22.../P12B



001D17A7

1	I (A) gear 1	2	I (A) gear 2
3	v (mm/s) gear 1	4	v (mm/s) gear 2
F	Load	v	Speed

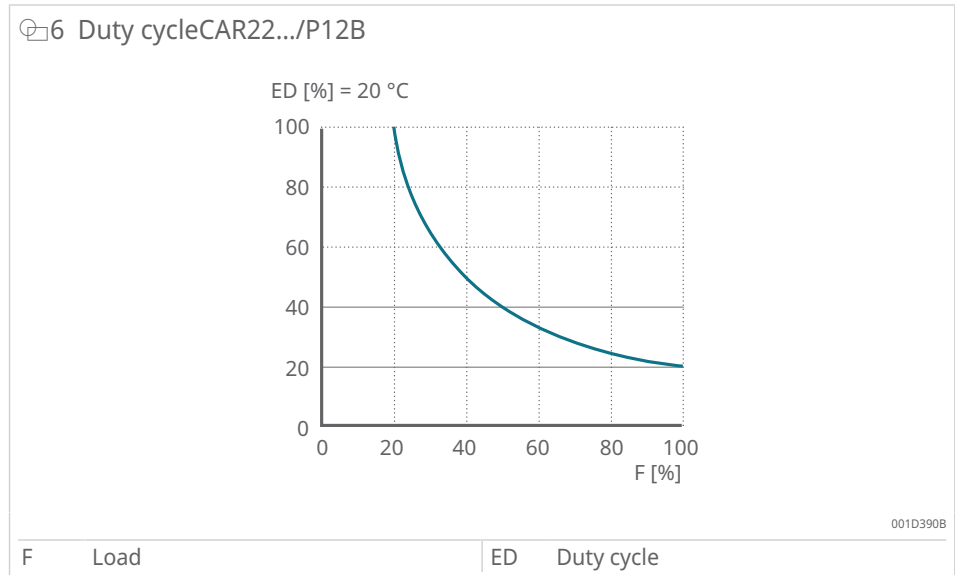
5 Performance diagram CAR22.../P24B



001D17AA

1	I (A) gear 1	2	I (A) gear 2
3	v (mm/s) gear 1	4	v (mm/s) gear 2
F	Load	v	Speed

Duty cycle



Ordering key

7 Ordering designation CAR22

Load [N]/speed at full load [mm/s]		Motor options	
1500/xx	1000/xx	No motor	0000
1500/18-11	1000/34-21	DC 12 V, flat motor, IP44	P12B
1500/17-14.5	1000/33-28	DC 24 V, flat motor, IP44	P24B

1 2
 └──────────┬──────────┘
 Gearbox

CAR R 22 x 050 x 1 / 0000

Type

Motor installation
 R Right
 L Left

Stroke (S)
 050 50 mm
 100 100 mm
 150 150 mm
 200 200 mm
 300 300 mm
 - Other stroke lengths available on request

001DF3FE

CAR22 – Type codes for accessories and spare parts

3 Accessories and spare parts for CAR22

Description	Ordering designation	Order number
Motor DC 12 V (flat motor)	P12B	M/0405516-V01
Motor DC 24 V (flat motor)	P24B	M/0405517-V01
Limit switch for stroke = 50 mm	CAXE22X50	M/0412019
Limit switch for stroke = 100 mm	CAXE22X100	M/0412020
Limit switch for stroke = 150 mm	CAXE22X150	M/0412021
Limit switch for stroke = 200 mm	CAXE22X200	M/0412022
Limit switch for stroke = 300 mm	CAXE22X300	M/0412023
Proximity switch for CAXE	CAXE	M/0432369
Front attachments, rod end type	575-22	M/0430575-22
Front attachments, rod clevis type	576-22	M/0430576-22
Rear attachments, single bracket with ear type	580-22	M/0430580-22
Rear attachments, bracket with ball joint type	581-22	M/0430581-22

3 CAP32

8 CAP32



001CF069

Benefits

- high-efficiency ball screw
- extension tube (stainless steel)
- protection tube (steel)
- enhanced corrosion resistance
- mechanical overload protection (clutch)
- with lifetime lubrication
- robust, designed for harsh environments
- no back-driving
- motor with thermal protection

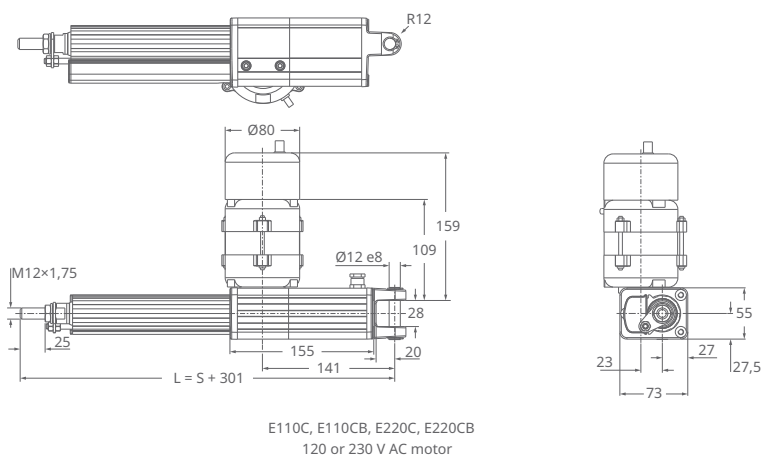
4 Technical data CAP32

Feature		Unit	CAP32	
			AC	DC
Rated push force		N	1500 to 3500	1000 to 3500
Rated pull force		N	1500 to 3500	1000 to 3500
Speed (full load ... no load)		mm/s	6 ... 32 ¹⁾	6 ... 66 ¹⁾
Stroke S		mm	50 to 700	50 to 700
Retracted length L		mm	S + 301	S + 301
Voltage	AC	V	120 / 230	-
	DC	V	-	12 / 24
Power consumption	AC 120 V	W	98 (brake 133.2 W)	n/a
	AC 230 V	W	92 (brake 117.3 W)	-
	DC 12 V / 24 V	W	-	n/a
Current consumption	AC 120 V	A	0.82 (brake +0.29 A)	-
	AC 230 V	A	0.4 (brake +0.11 A)	-
	DC 12 V	A	-	13
	DC 24 V	A	-	9
	DC 24 V	A	-	5 (for motor P24CW)
Duty cycle		%	30	25
Ambient temperature		°C	-20 to +50	-20 to +50
Protection code (IP)		-	IP20, IP54	IP20, IP54
Mass		kg	2.9 to 5.0	2.9 to 5.0

¹⁾ depending on selected motor

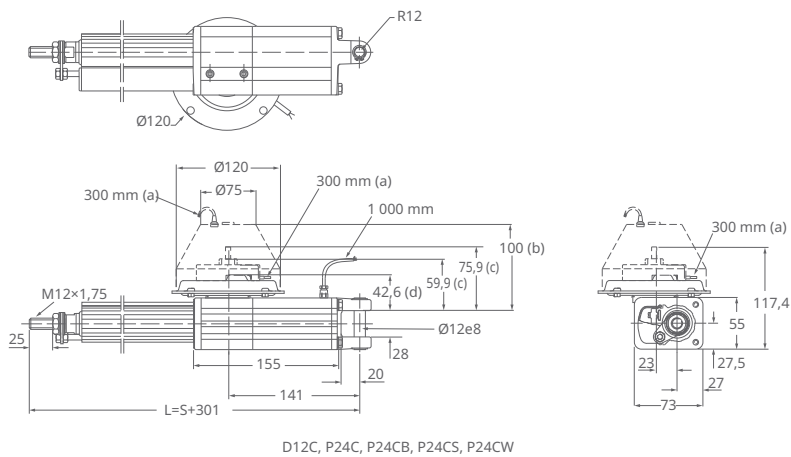
Dimensional drawings

9 Dimensions CAP32, AC



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10 Dimensions CAP32, DC



001DC5C7

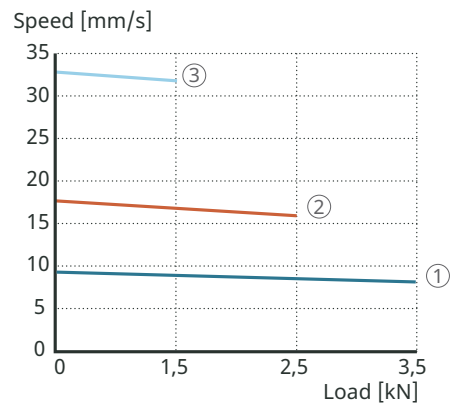
S mm Stroke
L mm Retracted length

Performance diagrams

AC version

3

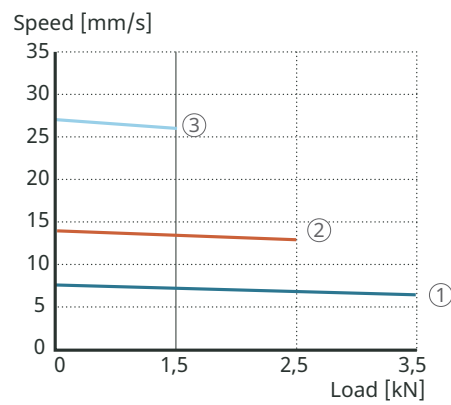
11 Speed-load diagram CAP32, AC 120 V



001DCBC5

1	Gear 1	2	Gear 2
3	Gear 4		

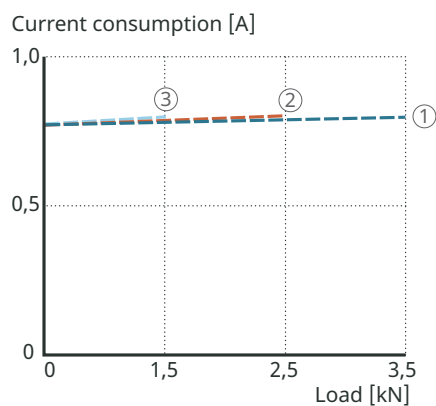
12 Speed-load diagram CAP32, AC 230 V



001DCBD2

1	Gear 1	2	Gear 2
3	Gear 4		

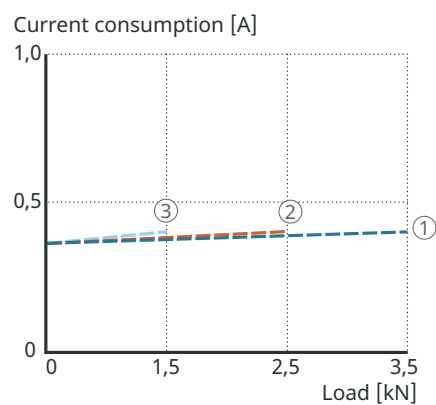
13 Current-load diagram CAP32, AC 120 V



001DF40E

1	Gear 1	2	Gear 2
3	Gear 4		

14 Current-load diagram CAP32, AC 230 V



001DF41E

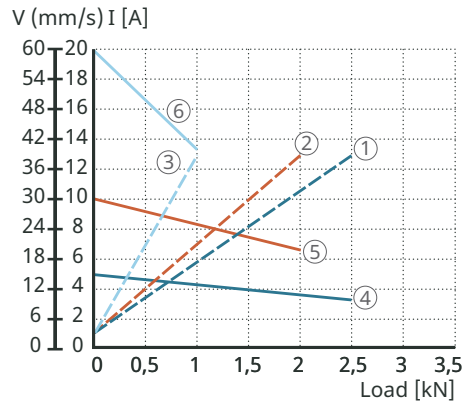
1	Gear 1	2	Gear 2
3	Gear 4		

Deviations of $\pm 10\%$ from the values in the diagram may occur.

DC version

3

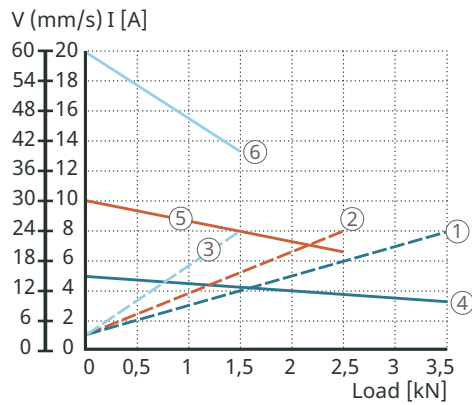
15 Performance diagram CAP32.../D12C



001DF42E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

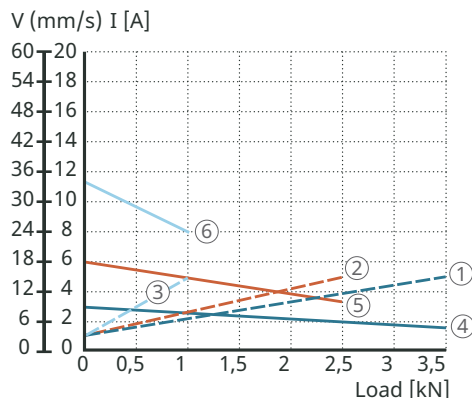
16 Performance diagram CAP32...//P24C/P24CS/P24CB



001DF43E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

17 Performance diagram CAP32.../P24CW



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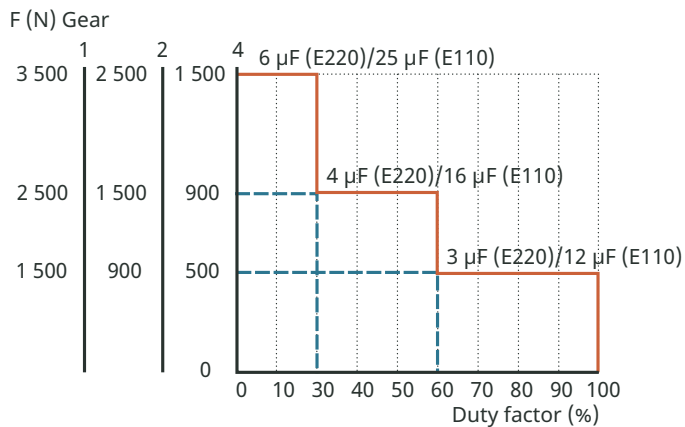
1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

Deviations of ±10 % from the values in the diagram may occur.

Duty cycle

AC version

18 Duty cycle CAP32, AC 230/120 V

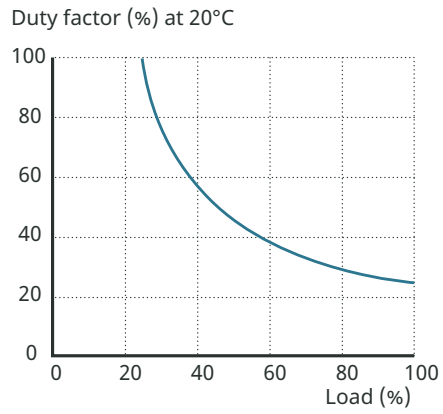


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F	Load
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DC version

19 Duty cycle CAP32, DC

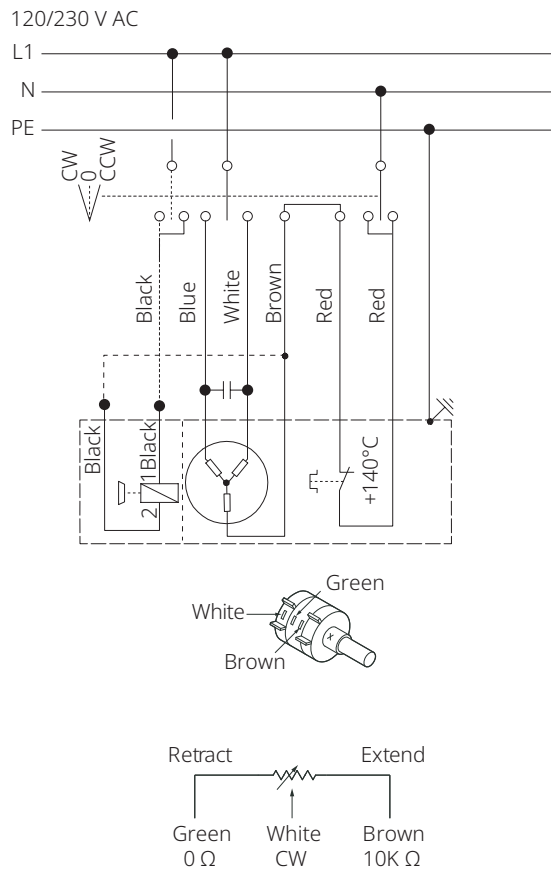


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Wiring diagrams

AC version

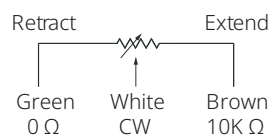
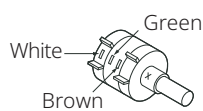
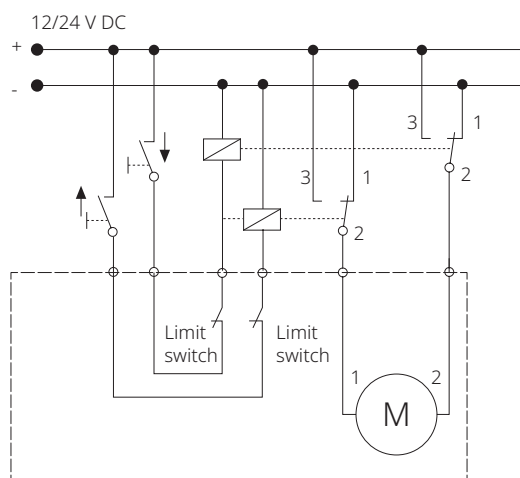
20 Connecting diagram CAP32 AC version



001D6686

DC version

21 Wiring diagram CAP32 DC version



001D6697

Ordering key

22 Ordering designation CAP32

Dynamic load [N]/speed [mm/s]			Motor options	
3500/xx	2500/xx	1500/xx	No motor	0000
3500/B	2500/16	1500/32	AC 120 V/60 Hz, 1-phase, IP54	E110C
3500/B	2500/16	1500/32	AC 120 V/60 Hz, 1-phase, brake, IP20	E110CB
3500/6	2500/13	1500/26	AC 230 V/50 Hz, 1-phase, IP54	E220C
3500/6	2500/13	1500/26	AC 230 V/50 Hz, 1-phase, brake, IP20	E220CB
3500/xx	2500/xx	1500/xx	No motor	0000
2500/15-10	2000/30-20	1000/60-40	DC 12 V, flat motor, IP44	D12C
3500/15-10	2500/30-20	1500/60-40	DC 24 V, flat motor, IP44	P24C
3500/10-6	2500/18-12	1500/36-26	DC 24 V, flat motor, low speed, IP44	P24CW
3500/15-10	2500/30-20	1500/60-40	DC 24 V, flat motor, extended shaft, IP44	P24CS
3500/15-10	2500/30-20	1500/60-40	DC 24 V, flat motor, brake, IP20	P24CB



CAP R 32 x 050 x 1 S / E110CB

Type

Motor installation

- R Right
- L Left

Stroke (S)

- 050 50 mm
- 100 100 mm
- 200 200 mm
- 300 300 mm
- 400 400 mm
- 500 500 mm
- 700 700 mm
- Other stroke lengths; 50 < S < 700 mm, available on request

Cable/connecting plug

- S Back-up nut

001DF45E

CAP32 – Type codes for accessories and spare parts

5 Accessories and spare parts for CAP32

Description	Ordering designation	Order number
Motor DC 12 V (flat motor)	D12C	M/0405518
Motor DC 24 V (flat motor)	P24C	M/0405519-V01
Motor DC 24 V (flat motor with brake)	P24CB	M/0405523-V01
Motor DC 24 V (flat motor with extended shaft)	P24CS	M/0405522-V01
Motor DC 24 V (flat motor with low speed)	P24CW	M/0405521-V01
Motor AC 120 V (cylindrical motor)	E110C	M/0405533
Motor AC 120 V (cylindrical motor with brake)	E110CB	M/0405534
Motor AC 230 V (cylindrical motor)	E220C	M/0405531
Motor AC 230 V (cylindrical motor with brake)	E220CB	M/0405532
Capacitor value 25 μ F (AC 120 V)	Capacitor 25 μ F	M/0430670-16
Capacitor value 6 μ F (AC 230 V)	Capacitor 6 μ F	M/0430670-03
Limit switch for stroke = 50 mm	CAXE32X50	M/0412030
Limit switch for stroke = 100 mm	CAXE32X100	M/0412031
Limit switch for stroke = 200 mm	CAXE32X200	M/0412033
Limit switch for stroke = 300 mm	CAXE32X300	M/0412034
Limit switch for stroke = 500 mm	CAXE32X500	M/0412036
Limit switch for stroke = 700 mm	CAXE32X700	M/0412037
Proximity switch for CAXE	CAXE	M/0432369
Front attachments, rod end type	575-32	M/0430575-32
Front attachments, rod clevis type	576-32	M/0430576-32
Rear attachments, single bracket with ear type	580-32	M/0430580-32
Rear attachments, universal joint type	582-32	M/0431780-32

4 CAT32B, CAP43B

23 CAT32B, CAP43B



Benefits

- compact
- robust design
- modular
- with lifetime lubrication
- high efficiency
- digital encoder feedback

6 Technical data CAT32B and CAP43B

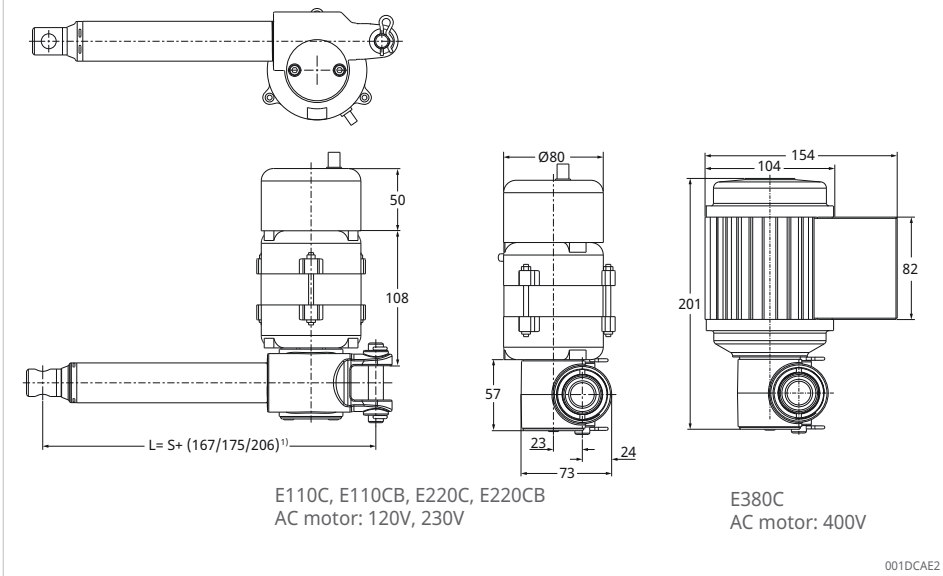
Feature		Unit	CAT32B	CAT32B	CAP43B
			AC	DC	DC
Rated push force		N	1500 to 3500	1000 to 4000	1500 to 4000
Rated pull force		N	1500 to 3500	1000 to 4000	1500 to 4000
Speed (full load ... no load)		mm/s	6.5 ... 32 ¹⁾	6 ... 66 ¹⁾	6 ... 66 ¹⁾
Stroke S		mm	50 to 700	50 to 700	50 to 700
Retracted length L		mm	S + 167/175/206 ²⁾	S + 167/175/206 ²⁾	S + 167/175/206 ²⁾
Voltage	AC	V	120, 230 / 400	-	-
	DC	V	-	12 / 24	24
Power consumption	AC 120 V	W	98 (brake 133.2 W)	-	-
	AC 230 V	W	92 (brake 117.3 W)	-	-
	AC 400 V	W	80	-	-
	DC 12 V / 24 V	W	-	n/a	n/a
Current consumption	AC 120 V	A	0.82 (brake 0.29 A)	-	-
	AC 230 V	A	0.4 (brake 0.11 A)	-	-
	AC 400 V	A	0.2	-	-
	DC 12 V	A	-	18	-
	DC 24 V	A	-	9	9
	DC 24 V	A	-	5 (for motors C24CW and P24CW)	5 (for motors C24CW and P24CW)
Duty cycle		%	30	20	20
Ambient temperature		°C	-20 to +50	-20 to +50	-20 to +50
Protection code (IP)		-	IP20, IP54	IP20, /IP44, IP66 ¹⁾	IP44
Mass		kg	2 to 3.5	2 to 3.5	2.0 to 2.7

¹⁾ depending on selected motor

²⁾ dimension depends on selected front attachment

Dimensional drawings

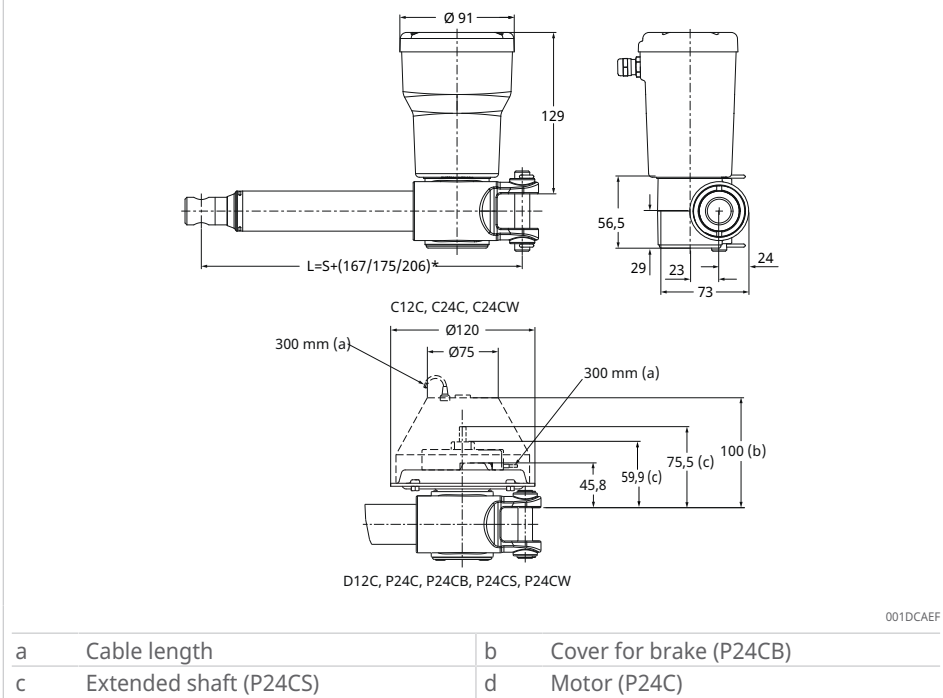
24 Dimensions CAT32B, AC version



¹⁾ dimension depends on selected front attachment

S	mm	Stroke
L	mm	Retracted length

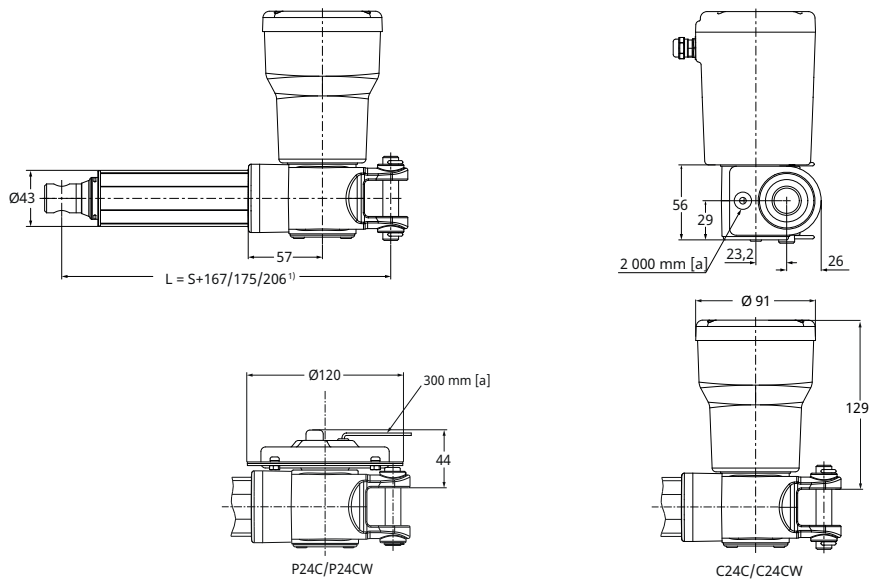
25 Dimensions CAT32B, DC version



¹⁾ dimension depends on selected front attachment

S	mm	Stroke
L	mm	Retracted length

26 Dimensions CAP43B



001DCB3D

a Cable length

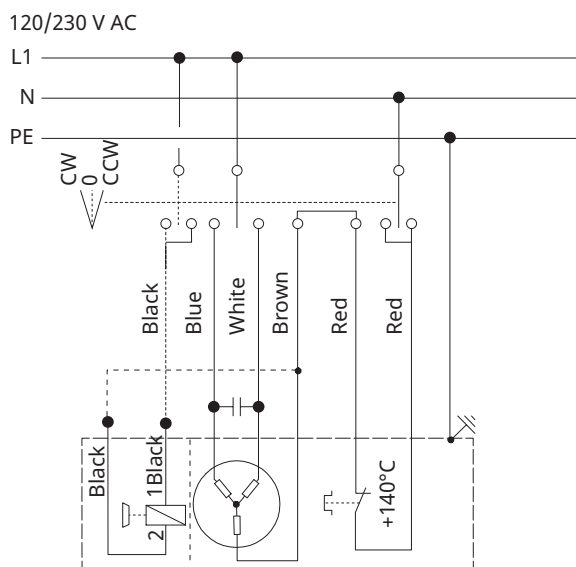
¹⁾ dimension depends on selected front attachment

S	mm	Stroke
L	mm	Retracted length

Wiring diagrams

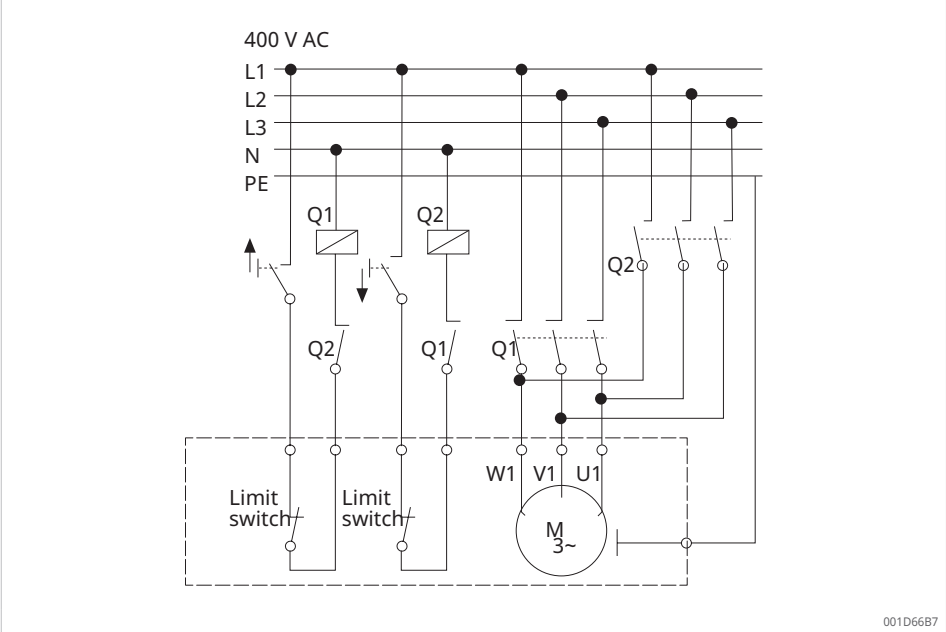
AC version

27 Connecting diagram CAT32B and CAP43B, AC 120/230 V



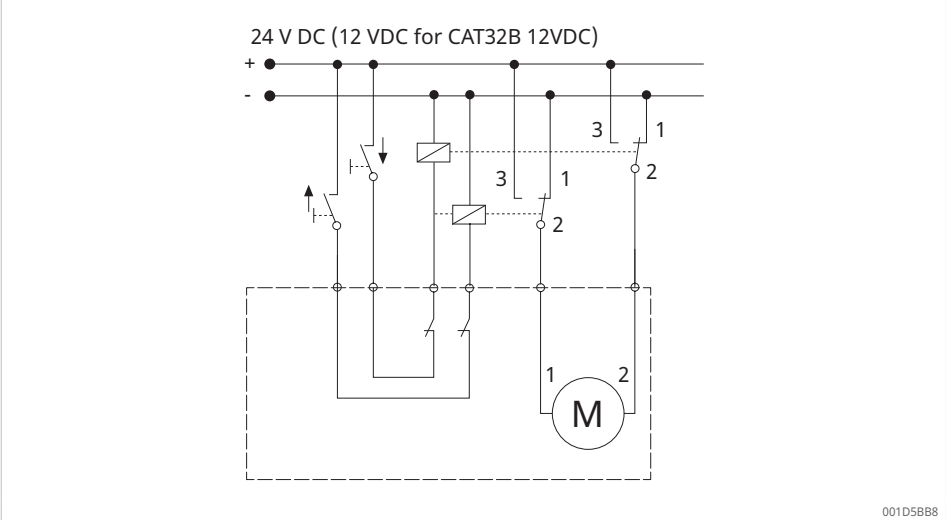
001D66A7

28 Connecting diagram CAT32B and CAP43B, AC 400 V

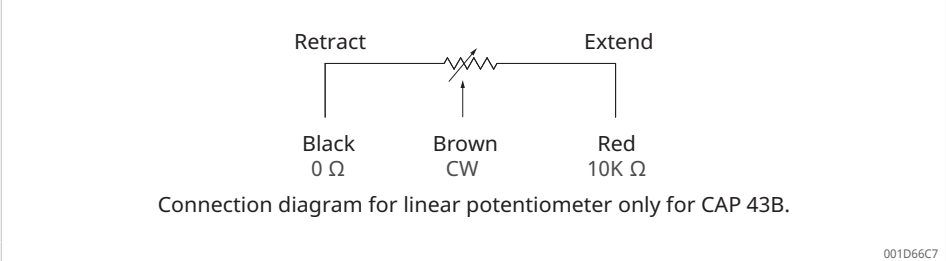


DC version

29 Connecting diagram CAT32B and CAP43B, DC 24 V



30 Wiring diagram for linear potentiometer CAP43B



Suitable control units and accessories

AC version

7 Suitable operating devices and controls CAT32B AC version

Linear actuator	Limit switch	Encoder
CAT32B AC	CAXE 32B	E2
E110C	✓	✓
E110CB	✓	✓
E220C	✓	✓
E220CB	✓	✓
E380C	✓	✓

✓ suitable

DC version

8 Suitable operating devices and controls CAT32B DC version and CAP43B

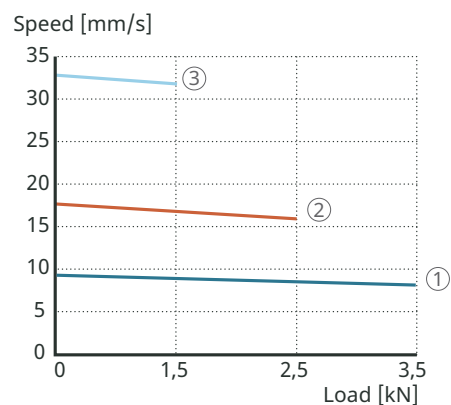
Linear actuator	Limit switch	Encoder
CAT32B DC, CAP43B	CAXE 32B	E2
C12C	✓	✓
D12C	✓	✓
C24C	✓	✓
C24CW	✓	✓
P24C	✓	✓
P24CB	✓	✓
P24CS	✓	✓
P24CW	✓	✓

✓ suitable

Performance diagrams

AC version

31 Speed-load diagram CAT32B, AC 120 V

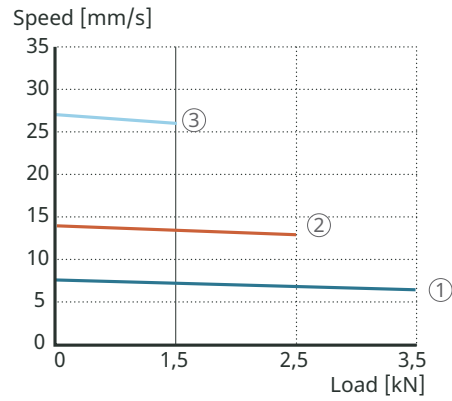


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1 Gear 1
3 Gear 4

2 Gear 2

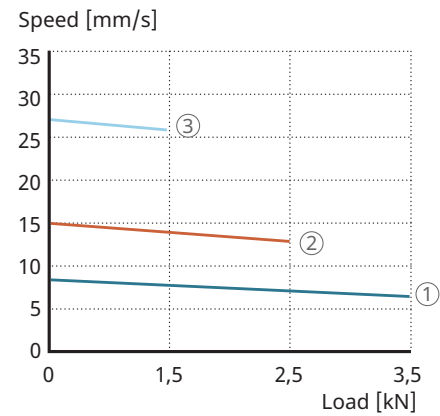
32 Speed-load diagram CAT32B, AC 230 V



001DCBD2

1	Gear 1	2	Gear 2
3	Gear 4		

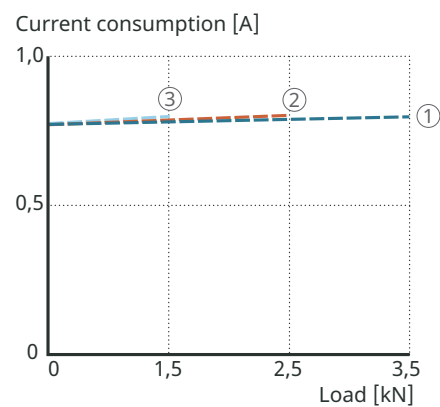
33 Speed-load diagram CAT32B, AC 400 V



001DCBDF

1	Gear 1	2	Gear 2
3	Gear 4		

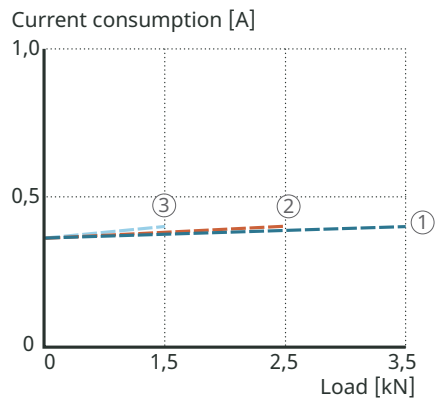
34 Current-load diagram CAT32B, AC 120 V



001DF40E

1	Gear 1	2	Gear 2
3	Gear 4		

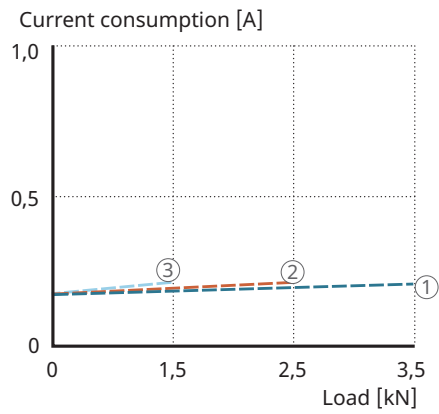
35 Current-load diagram CAT32B, AC 230 V



001DF41E

1	Gear 1	2	Gear 2
3	Gear 4		

36 Current-load diagram CAT32B, AC 400 V



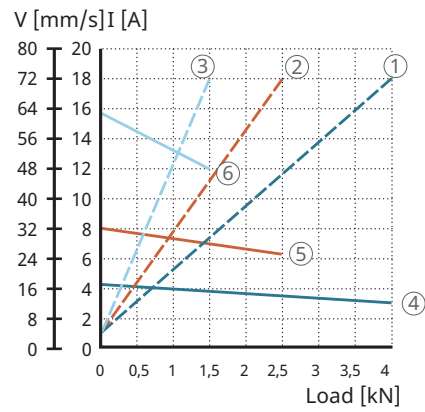
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1	Gear 1	2	Gear 2
3	Gear 4		

Deviations of $\pm 10\%$ from the values in the diagram may occur.

DC version

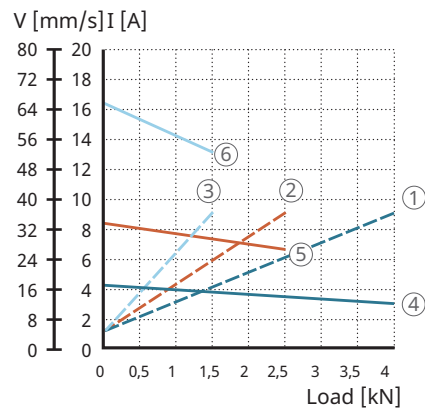
37 Performance diagram CAT32B.../C12C



001DF47E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

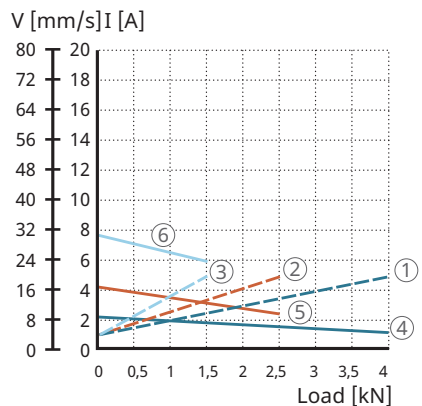
38 Performance diagram CAT32B.../C24C, CAP43B.../C24C



001DF48E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

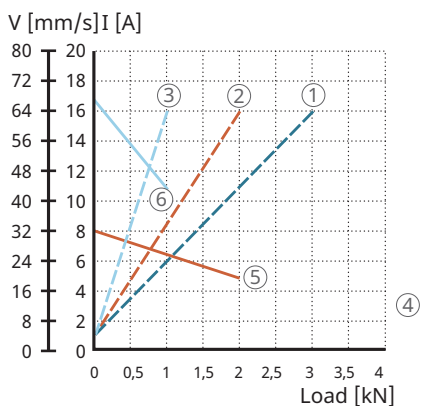
39 Performance diagram CAT32B.../C24CW, CAP43B.../C24CW



001DF49E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

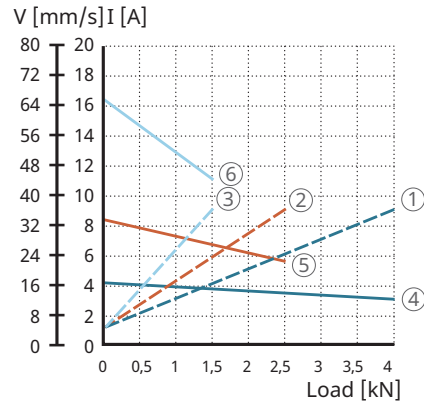
40 Performance diagram CAT32B.../D12C



001DF4AE

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

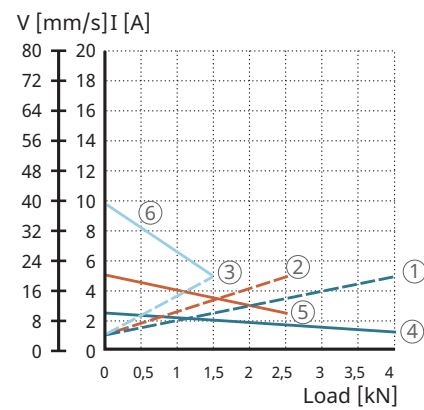
41 Performance diagram CAT32B.../P24C/P24CB/24CS, CAP43B.../P24C



001DF4BE

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

42 Performance diagram CAT32B.../P24CW, CAP43B.../P24CW



001DF4CE

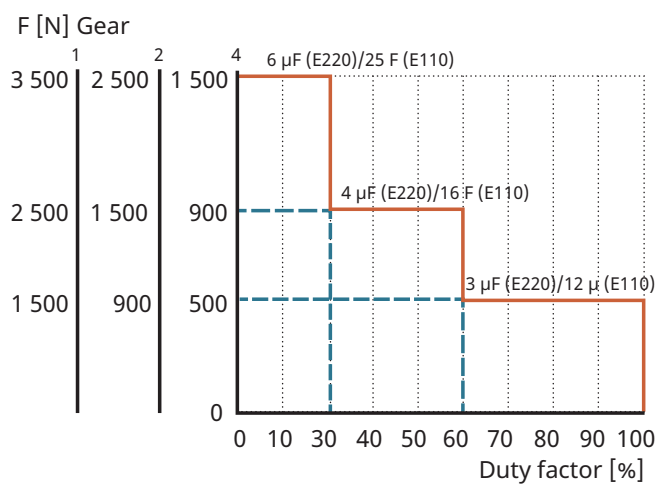
1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

Deviations of ±10 % from the values in the diagram may occur.

Duty cycle

AC version

43 Duty cycle CAT32B, AC 230/120 V

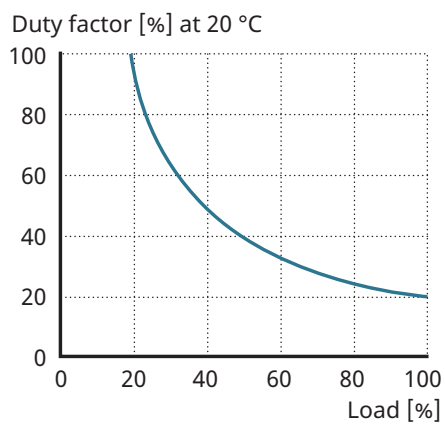


001D66F7

F Load

DC version

44 Duty cycle CAT32B and CAP43B



001D6767

CAT 32B – Type codes for accessories and spare parts

9 Accessories and spare parts for CAT32B

Description	Ordering designation	Order number
Motor DC 12 V (flat motor)	D12C	M/0405518
Motor DC 24 V (flat motor)	P24C	M/0405519-V01
Motor DC 24 V (flat motor with brake)	P24CB	M/0405523-V01
Motor DC 24 V (flat motor with extended shaft)	P24CS	M/0405522-V01
Motor DC 24 V (flat motor with low speed)	P24CW	M/0405521-V01
Motor AC 120 V (cylindrical motor)	E110C	M/0405533
Motor AC 120 V (cylindrical motor with brake)	E110CB	M/0405534
Motor AC 230 V (cylindrical motor)	E220C	M/0405531
Motor AC 230 V (cylindrical motor with brake)	E220CB	M/0405532
Capacitor value 25 µF (AC 120 V)	Capacitor 25 µF	M/0430670-16
Capacitor value 6 µF (AC 230 V)	Capacitor 6 µF	M/0430670-03
Limit switch for stroke = 50 mm	CAXE32X50	M/0412030
Limit switch for stroke = 100 mm	CAXE32X100	M/0412031
Limit switch for stroke = 200 mm	CAXE32X200	M/0412033
Limit switch for stroke = 300 mm	CAXE32X300	M/0412034
Limit switch for stroke = 500 mm	CAXE32X500	M/0412036
Limit switch for stroke = 700 mm	CAXE32X700	M/0412037
Proximity switch for CAXE	CAXE	M/0432369
Front attachments, rod end type	575-32	M/0430575-32
Front attachments, rod clevis type	576-32	M/0430576-32
Rear attachments, single bracket with ear type	580-32	M/0430580-32
Rear attachments, universal joint type	582-32	M/0431780-32

CAP 43B – Type codes for accessories and spare parts

10 Accessories and spare parts for CAP43B

Description	Ordering designation	Order number
Motor DC 24 V (cylindrical motor)	C24C	M/0405536
Motor DC 24 V (cylindrical motor with low speed)	C24CW	M/0405537
Motor DC 24 V (flat motor)	P24C	M/0405519-V01
Motor DC 24 V (flat motor with low speed)	P24CW	M/0405521-V01
Front attachments, rod end type	575-32	M/0430575-32
Front attachments, rod clevis type	576-32	M/0430576-32
Rear attachments, single bracket with ear type	580-32	M/0430580-32
Rear attachments, universal joint type	582-32	M/0431780-32

Ordering key

45 Ordering designation CAT32B

Load [N]/speed at full load [mm/s]			Motor options	
4000/xx	2000/xx	1500/xx	No motor	0000
3000/17-11	2000/34-19	1000/67-43	DC 12 V, flat motor, IP44	D12C
3500/8	2000/16	1500/32	AC 120 V/60 Hz, 1-phase, IP54	E110C
3500/8	2000/16	1500/32	AC 120 V/60 Hz, 1-phase, brake, IP20	E110CB
3500/6,5	2000/13	1500/26	AC 230 V/50 Hz, 1-phase, IP54	E220C
3500/6,5	2000/13	1500/26	AC 230 V/50 Hz, 1-phase, brake, IP20	E220CB
3500/7	2000/14	1500/32	AC 400 V/50 Hz, 3-phase, IP55	E380C
4000/xx	2000/xx	1 500/xx	No motor	0000
4000/17-12	2500/32-25	1500/63-48	DC 12 V, IP66	C12C
4000/17-13	2500/33-26	1500/65-52	DC 24 V, IP66	C24C
4000/9-5	2500/17-10	1500/31-24	24 V DC, motor with low speed, IP66	C24CW
4000/16-12	2500/33-22	1500/65-44	DC 24 V, flat motor, IP44	P24C
4000/16-12	2500/33-22	1500/65-44	DC 24 V, flat motor, brake, IP20	P24CB
4000/16-12	2500/33-22	1500/65-44	DC 24 V, flat motor, extended shaft, IP44	P24CS
4000/16-6	2500/18-12	1500/36-26	DC 24 V, flat motor, low speed, IP44	P24CW



CAT R 32B x 050 1 A1 G1 E2 F E110CB T2

Type

Motor installation

- R Right
- L Left

Stroke (S)

- 050 50 mm
- 100 100 mm
- 200 150 mm
- 300 200 mm
- 400 250 mm
- 500 300 mm
- 700 350 mm
- Other stroke lengths available on request

Rear attachment

- A1 Rod clevis, Ø12,0 mm
- A2 Rod clevis, Ø12,7 mm
- K1 Single bracket with ear, Ø12,0 mm
- K2 Single bracket with ear, Ø12,7 mm

Cable/connecting plug

- G1 Hole, Ø12,0 mm
- G2 Hole, Ø12,7 mm
- G3 Male thread, M12
- G4 Female thread, M12
- G5 Rod clevis, Ø10,1 mm

Feedback

- E2 No encoder (no code)
- Encoder (for all standard motors)

Option

- F Friction clutch (not available with optional encoder)
- Z No friction clutch
- S Back-up nut

Option for CxxC motors

- T2 Straight cable, 2,0 m, no plug
- T2P Straight cable, 2,0 m, jack plug
- T6 Straight cable, 6,0 m, no plug

001DF4DE

46 Ordering designation CAP43B

Load [N]/speed at full load [mm/s]			Motor options	
4000/xx	2500/xx	1500/xx	No motor	0000
4000/17-13	2500/33-26	1500/65-52	DC 24 V, IP44	C24C
4000/9-5	2500/17-10	1500/31-24	DC 24 V, low speed, IP44	C24CW
4000/17-11	2500/34-19	1500/66-38	DC 24 V, flat motor, IP44	P24C
4000/10-6	2500/18-12	1500/36-26	DC 24 V, flat motor, low speed, IP44	P24CW



Type

Motor installation

- R Right
- L Left

Stroke (S)

- 100 100 mm
- 200 200 mm
- 300 300 mm
- 400 400 mm
- 500 500 mm
- 700 700 mm

Rear attachment

- A1 Rod clevis, Ø12,0 mm
- A2 Rod clevis, Ø12,7 mm
- K1 Single bracket with ear, Ø12,0 mm
- K2 Single bracket with ear, Ø12,7 mm

Front attachment

- G1 Hole, Ø12,0 mm
- G2 Hole, Ø12,7 mm
- G3 Male thread, M12
- G4 Female thread, M12
- G5 Rod clevis, Ø10,1 mm

Option

- F Friction clutch
- S Back-up nut

Cable option for C24C[W] motors

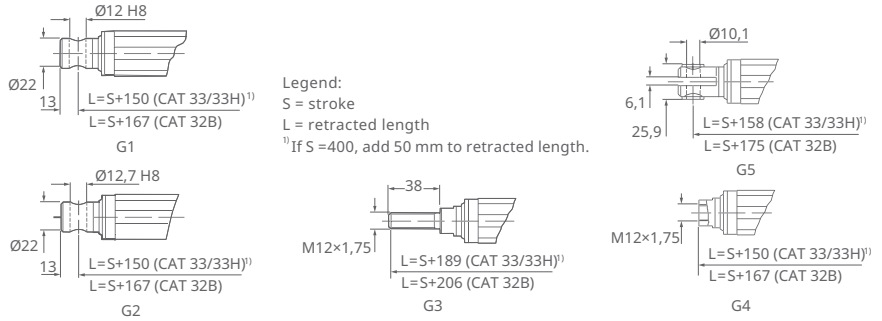
- T2 Straight, 2,0 m
- T6 Straight cable, 6,0 m, no plug

001DF4EE

Detailed drawings of front and rear attachments for CAT and CAP and motor options for CAT

Front attachments and retracted length

47 Front attachments and retracted length

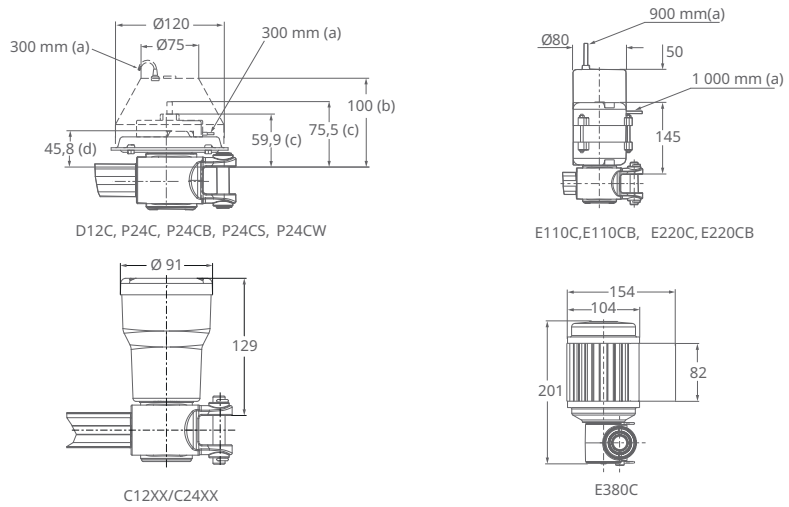


001DCADS

S mm Stroke
 L mm Retracted length

Motor options for CAT

48 Motor options for CAT

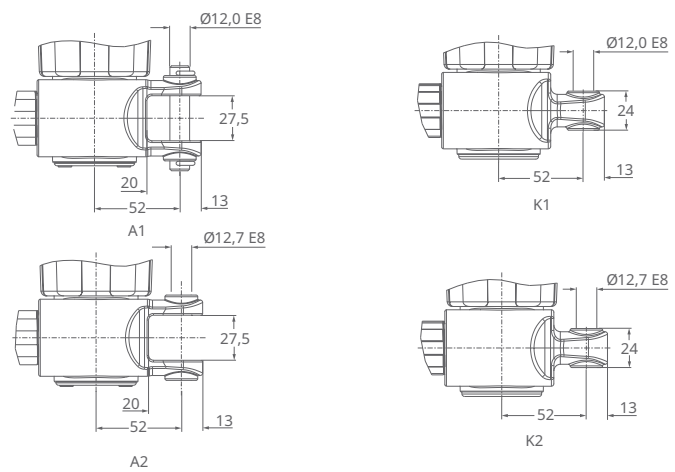


001DCABA

a	Cable length	b	Cover for brake
c	Extended shaft	d	Motor

Rear attachments

49 Rear attachments



001DCAC7

5 CAT33, CAP43A

50 CAT33, CAP43A



001D5BD5

Benefits

- compact
- robust design
- highly efficient
- with lifetime lubrication
- digital encoder feedback

11 Technical data CAT33 and CAP43A

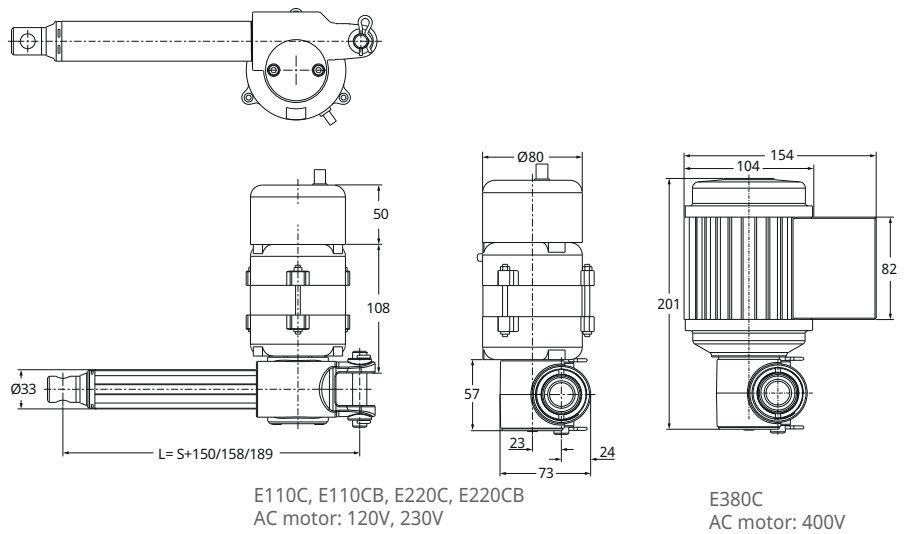
Feature		Unit	CAT33		CAP43A
			AC	DC	DC
Rated push force		N	800 to 3000	800 to 3000	1000 to 3000
Rated pull force		N	800 to 3000	800 to 3000	1000 to 3000
Speed (full load ... no load)		mm/s	5 ... 24 ¹⁾	6 ... 66 ¹⁾	6 ... 66 ¹⁾
Stroke S		mm	100 to 400	100 to 400	100 to 400
Retracted length L		mm	S + 150/158/189 ²⁾	S + 150/158/189 ²⁾	S + 150/158/189 ²⁾
Voltage	AC	V	120, 230 / 400	-	-
	DC	V	-	12 / 24	24
Power consumption	AC 120 V	W	98 (brake 133.2 W)	-	-
	AC 230 V	W	92 (brake 117.3 W)	-	-
	AC 400 V	W	80	-	-
	DC 12 V / 24 V	W	-	n/a	n/a
Current consumption	AC 120 V	A	0.82 (brake +0.29 A)	-	-
	AC 230 V	A	0.4 (brake +0.11 A)	-	-
	AC 400 V	A	0.2	-	-
	DC 12 V	A	-	18	-
	DC 24 V	A	-	9	9
	DC 24 V	A	-	5 (for motors C24CW and P24CW)	5 (for motors C24CW and P24CW)
Duty cycle		%	30	15	15
Ambient temperature		°C	-20 to +50	-20 to +50	-20 to +50
Protection code (IP)		-	IP20, IP54, IP55	IP20, /IP44, IP66 ¹⁾	IP44
Mass		kg	2 to 2.7	2 to 2.7	2 to 2.7

¹⁾ depending on selected motor

²⁾ dimension depends on selected front attachment

Dimensional drawings

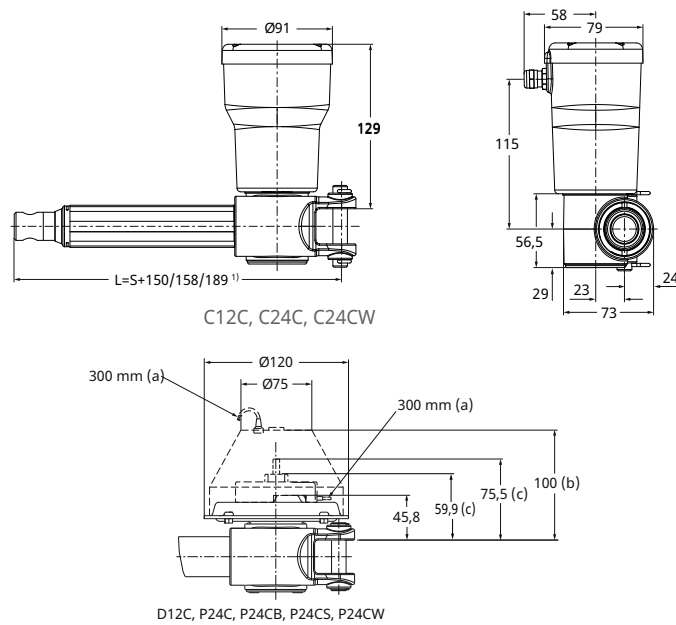
51 Dimensions CAT33, AC version



001DCAFC

S mm Stroke
L mm Retracted length

52 Dimensions CAT33, DC version

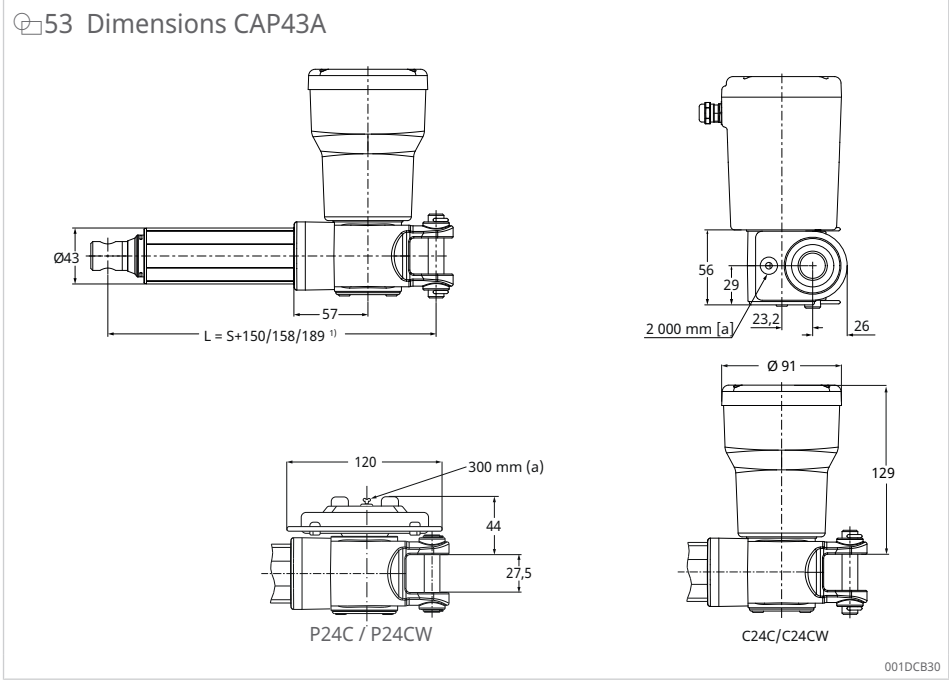


001DCB09

a	Cable length	b	Cover for brake (P24CB)
c	Extended shaft (P24CS)	d	Motor (P24C)

¹⁾ dimension depends on selected front attachment

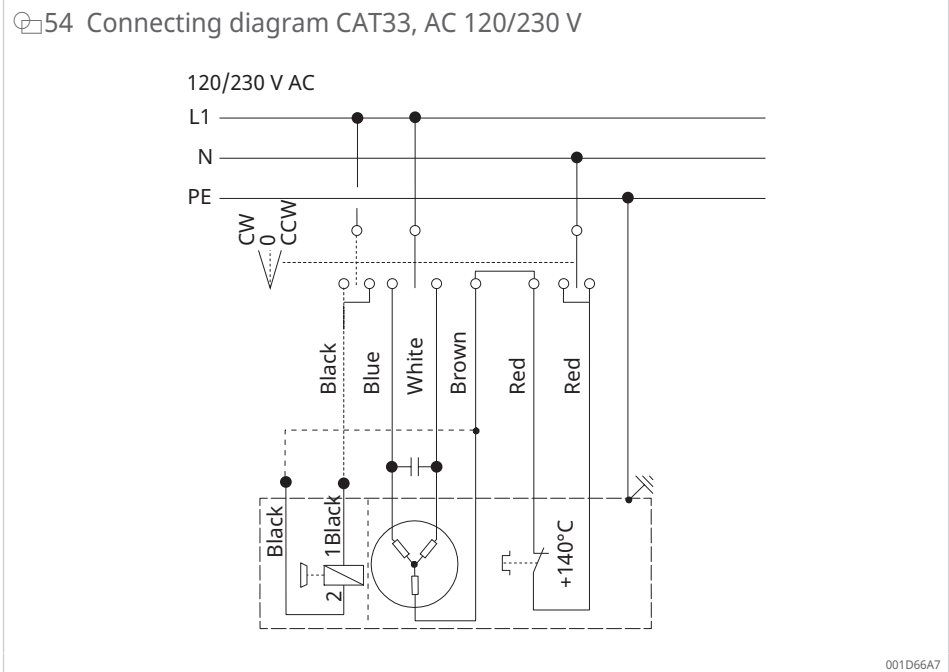
S mm Stroke
L mm Retracted length



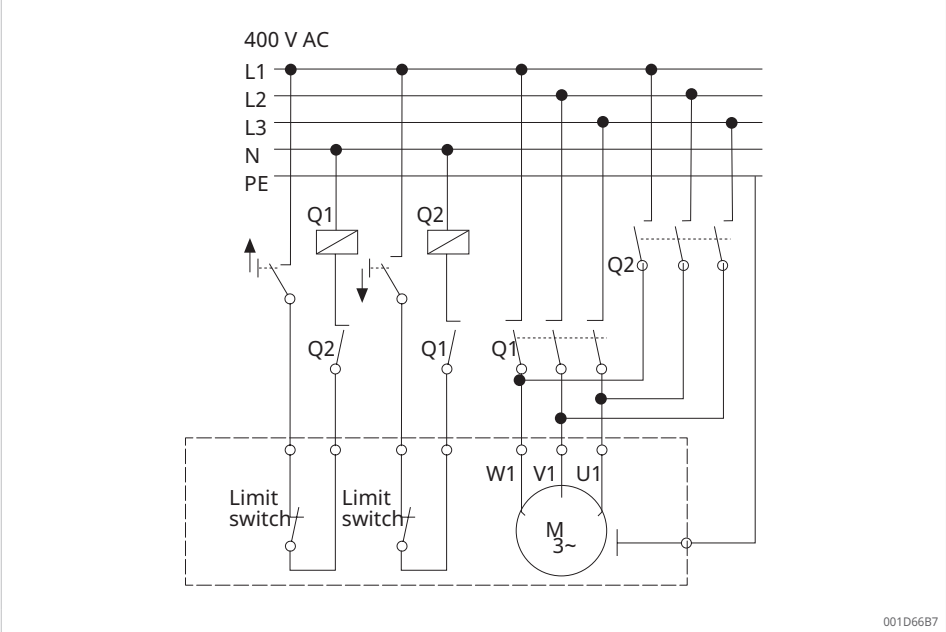
¹⁾ dimension depends on selected front attachment

Wiring diagrams

AC version

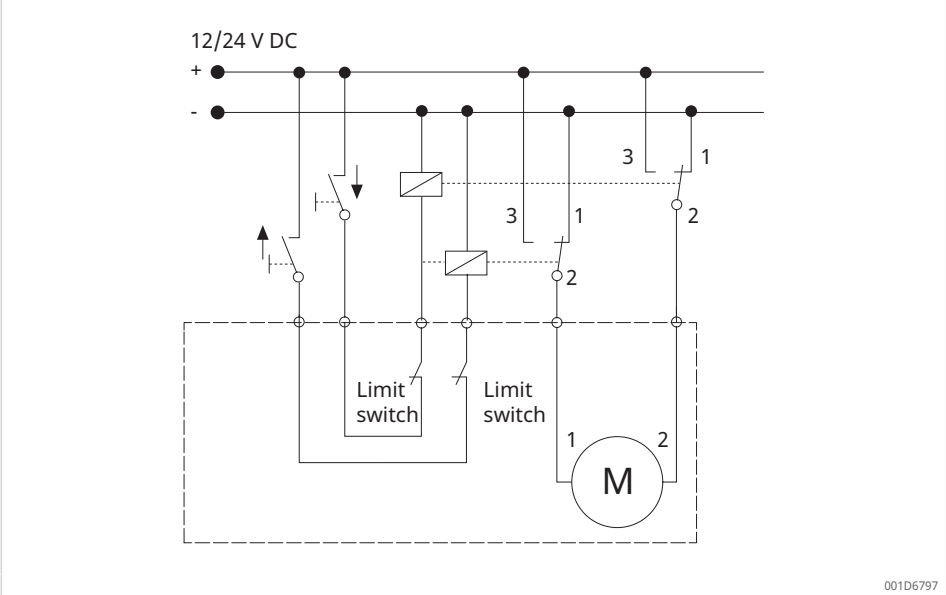


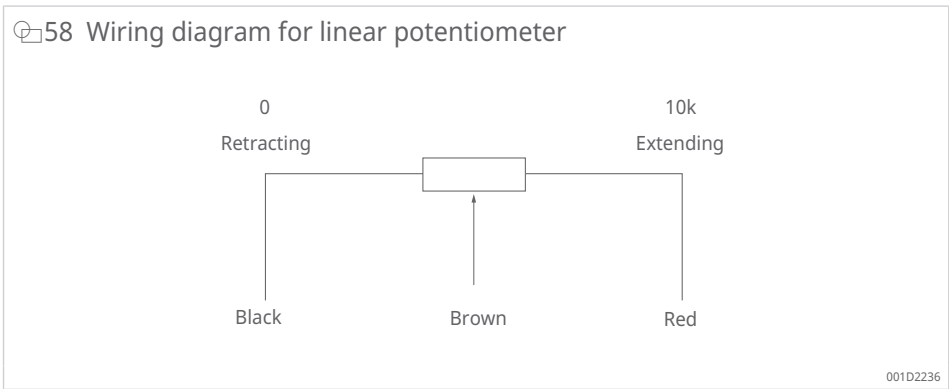
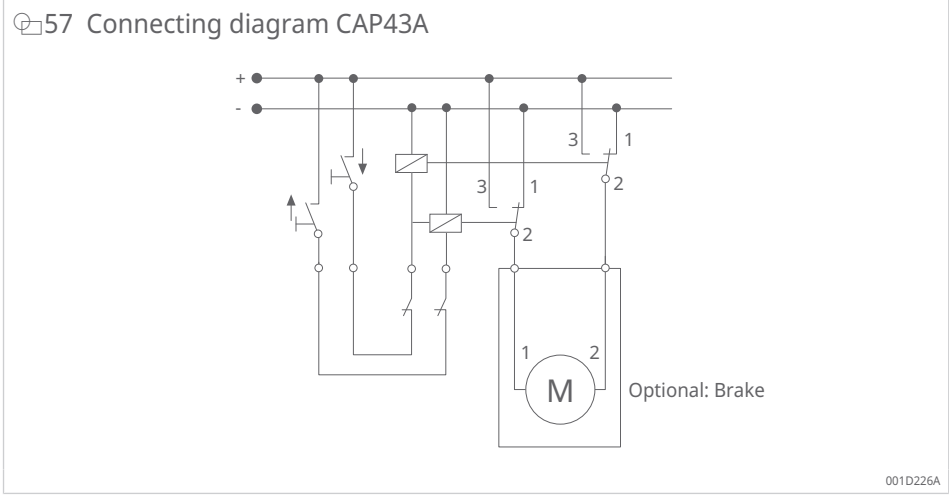
55 Connecting diagram CAT33, AC 400 V



DC version

56 Connecting diagram CAT33, DC 12/24 V





Suitable control units and accessories

AC version

12 Suitable operating devices and controls CAT33 AC version

Linear actuators	Limit switch	Encoder
CAT33 AC	CAXD33	E2
E110C	✓	✓
E110CB	✓	✓
E220C	✓	✓
E220CB	✓	✓
E380C	✓	✓

✓ suitable

DC version

13 Suitable operating devices and controls CAT33 DC version and CAP43A

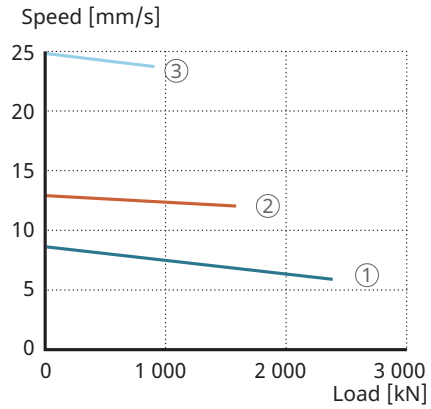
Linear actuators	Encoder
CAT33 DC, CAP43A	E2
C12C	✓
D12C	✓
C24C	✓
C24CW	✓
P24C	✓
P24CB	✓

Linear actuators	Encoder
CAT33 DC, CAP43A	E2
P24CS	✓
P24CW	✓
✓	suitable

Performance diagrams

AC version

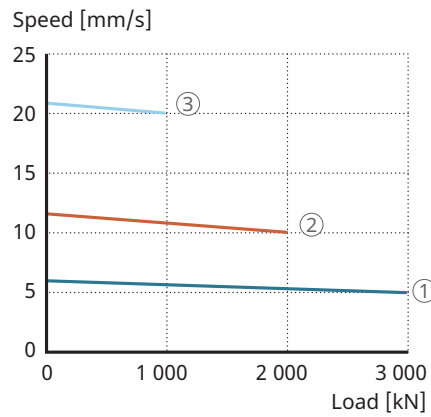
59 Speed-load diagram CAT33, AC 120 V



001DF4FE

1	Gear 1	2	Gear 2
3	Gear 4		

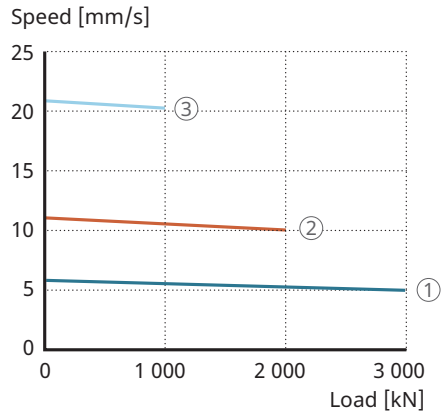
60 Speed-load diagram CAT33, AC 230 V



001DF50E

1	Gear 1	2	Gear 2
3	Gear 4		

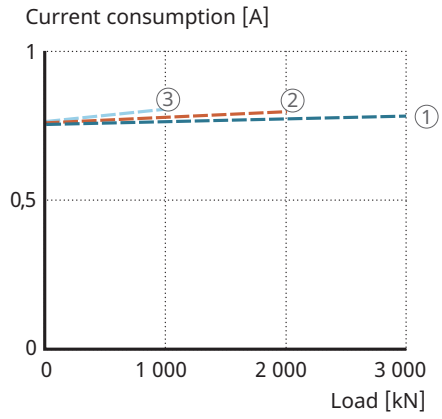
61 Speed-load diagram CAT33, AC 400 V



001DF51E

1	Gear 1	2	Gear 2
3	Gear 4		

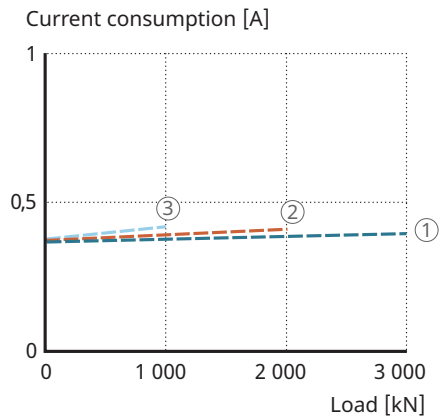
62 Current-load diagram CAT33, AC 120 V



001DF52E

1	Gear 1	2	Gear 2
3	Gear 4		

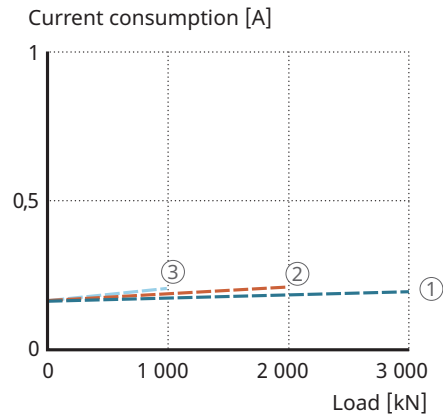
63 Current-load diagram CAT33, AC 230 V



001DF53E

1	Gear 1	2	Gear 2
3	Gear 4		

64 Current-load diagram CAT33, AC 400 V



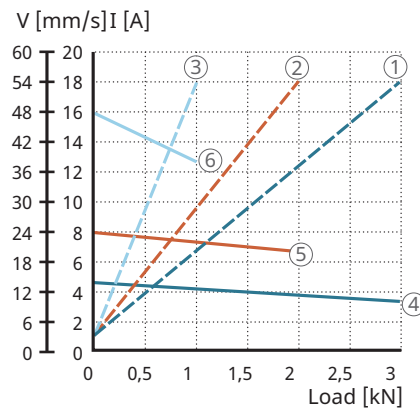
001DF54E

1	Gear 1	2	Gear 2
3	Gear 4		

Deviations of ±10 % from the values in the diagram may occur.

DC version

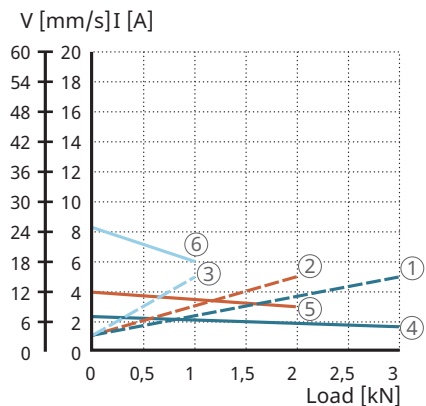
65 Performance diagram CAT33.../C12C



001DF55E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

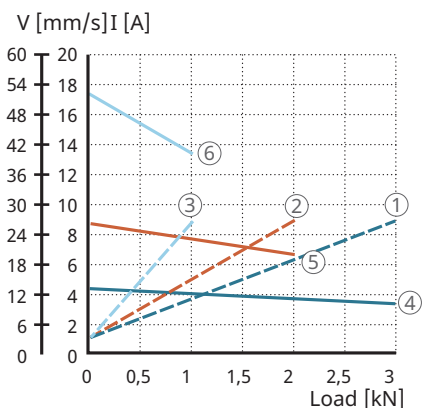
66 Performance diagram CAT33.../C24C, CAP43A.../C24C



001DF56E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

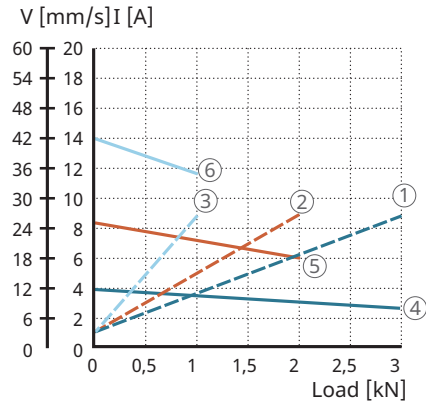
67 Performance diagram CAT33.../C24CW, CAP43A.../C24CW



001DF57E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

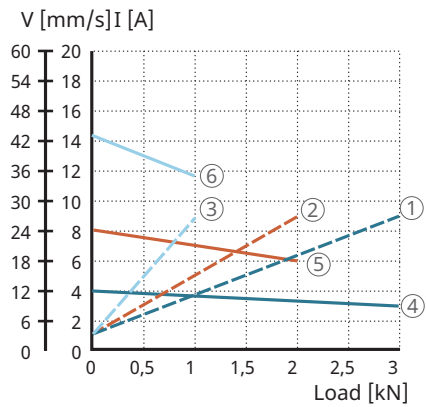
68 Performance diagram CAT33.../D12C



001DF58E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

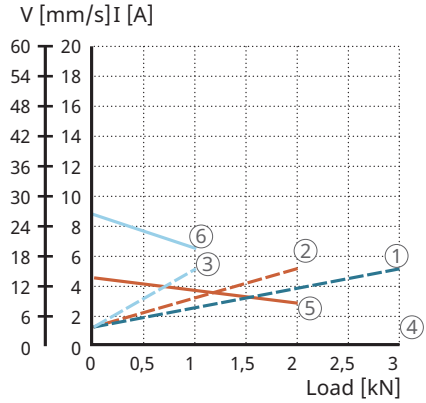
69 Performance diagram CAT33.../P24C/P24CB/P24CS, CAP43A.../P24C



001DF59E

1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
1	I [A] gear 1	2	I [A] gear 2
3	I [A] gear 4	4	v [mm/s] gear 1
v	Speed	I	Current consumption

70 Performance diagram CAT33.../P24CW, CAP43A.../P24CW



001DF5AE

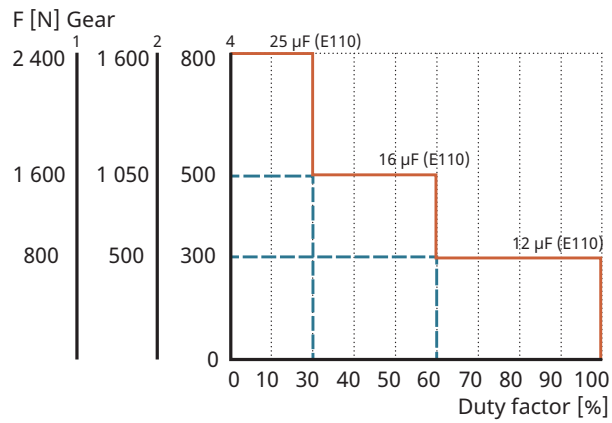
1	I (A) gear 1	2	I (A) gear 2
3	I (A) gear 4	4	v (mm/s) gear 1
5	v (mm/s) gear 2	6	v (mm/s) gear 4
v	Speed	I	Current consumption

Deviations of ±10 % from the values in the diagram may occur.

Duty cycle

AC version

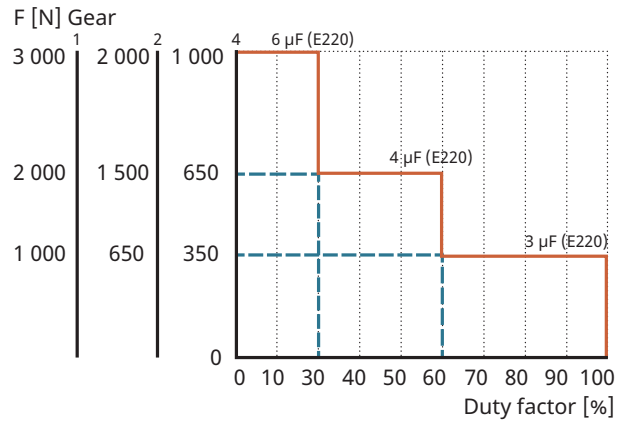
71 Duty cycle CAT33, AC 120 V



001D6806

F	Load
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72 Duty cycle CAT33, AC 230 V

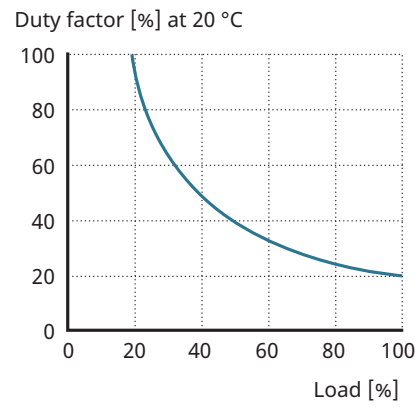


001D6817

F Load

DC version

73 Duty cycle CAT33 and CAP43A, DC version



001D6887

CAT33 – Type codes for accessories and spare parts

14 Accessories and spare parts for CAT33

Description	Ordering designation	Order number
Motor DC 12 V (cylindrical motor)	C12C	M/0405535
Motor DC 12 V (flat motor)	D12C	M/0405518
Motor DC 24 V (cylindrical motor)	C24C	M/0405536
Motor DC 24 V (cylindrical motor with low speed)	C24CW	M/0405537
Motor DC 24 V (flat motor)	P24C	M/0405519-V01
Motor DC 24 V (flat motor with brake)	P24CB	M/0405523-V01
Motor DC 24 V (flat motor with extended shaft)	P24CS	M/0405522-V01
Motor DC 24 V (flat motor with low speed)	P24CW	M/0405521-V01
Motor AC 120 V (cylindrical motor)	E110C	M/0405533
Motor AC 120 V (cylindrical motor with brake)	E110CB	M/0405534
Motor AC 230 V (cylindrical motor)	E220C	M/0405531
Motor AC 230 V (cylindrical motor with brake)	E220CB	M/0405532
Motor AC 400 V (cylindrical motor)	E380C	M/0411607
Capacitor value 25 µF (AC 120 V)	Capacitor 25 µF	M/0430670-16
Capacitor value 6 µF (AC 230 V)	Capacitor 6 µF	M/0430670-03
Limit switch for any stroke, normally closed	CAXD33, NC	M/0440054
Limit switch for any stroke, normally open	CAXD33, NO	M/0440053
Front attachments, rod end type	575-32	M/0430575-32
Front attachments, rod clevis type	576-32	M/0430576-32
Rear attachments, single bracket with ear type	580-32	M/0430580-32
Rear attachments, universal joint type	582-32	M/0431780-32

CAP43A – Type codes for accessories and spare parts

15 Accessories and spare parts for CAP43A

Description	Ordering designation	Order number
Motor DC 24 V (cylindrical motor)	C24C	M/0405536
Motor DC 24 V (cylindrical motor with low speed)	C24CW	M/0405537
Motor DC 24 V (flat motor)	P24C	M/0405519-V01
Motor DC 24 V (flat motor with low speed)	P24CW	M/0405521-V01
Front attachments, rod end type	575-32	M/0430575-32
Front attachments, rod clevis type	576-32	M/0430576-32
Rear attachments, single bracket with ear type	580-32	M/0430580-32
Rear attachments, universal joint type	582-32	M/0431780-32

Ordering key

74 Ordering designation CAT33

Load [N]/speed at full load [mm/s]			Motor options	
3000/xx	2000/xx	1000/xx	No motor	0000
2400/6	1600/12	800/24	AC 120 V/60 Hz, 1-phase, IP54	E110C
2400/6	1600/12	800/24	AC 120 V/60 Hz, 1-phase, brake, IP20	E110CB
3000/5	2000/10	1000/20	AC 230 V/50 Hz, 1-phase, IP54	E220C
3000/5	2000/10	1000/20	AC 230 V/50 Hz, 1-phase, brake, IP20	E220CB
3000/5	2000/10	1000/20	AC 400 V/50 Hz, 3-phase, IP55	E380C
3000/xx	2000/xx	1000/xx	No motor	0000
3000/13-10	2000/24-20	1000/48-38	DC 12 V, IP66	C12C
2400/ 11-7	1600/21-15	800/39-21	DC 12 V, flat motor, IP44	D12C
3000/13-10	2000/26-20	1000/52-40	DC 24 V, IP66	C24C
3000/7-5	2000/13-9	1000/25-18	DC 24 V, low speed, IP66	C24CW
3000/17-11	2000/34-19	1000/66-38	DC 24 V, flat motor, IP44	P24C
3000/12-9	2000/25-18	1000/43-35	DC 24 V, flat motor, brake, IP20	P24CB
3000/17-11	2000/34-19	1000/66-38	DC 24 V, flat motor, IP44, extended shaft	P24CS
3000/10-16	2000/18-12	1000/36-26	DC 24 V, flat motor, low speed, IP44	P24CW



Type

Motor installation

R	Right
L	Left

Stroke (S)

100	100 mm
200	200 mm
300	300 mm
400	400 mm
---	Other stroke lengths available on request

Rear attachment

A1	Rod clevis, Ø12,0 mm
A2	Rod clevis, Ø12,7 mm
K1	Single bracket with ear, Ø12,0 mm
K2	Single bracket with ear, Ø12,7 mm

Front attachment

G1	Hole, Ø12,0 mm
G2	Hole, Ø12,7 mm
G3	Male thread, M12
G4	Female thread, M12
G5	Rod clevis, Ø10,1 mm

Feedback

-	No encoder (no code)
E2	Encoder (for all standard motors)

Option

F	Friction clutch (not available with optional encoder)
Z	No friction clutch

Option for CxxC motors

T2	Straight cable, 2,0 m, no plug
T2P	Straight cable, 2,0 m, jack plug
T6	Straight cable, 6,0 m, no plug

001DF5BE

75 Ordering designation CAP43A

Load [N]/speed at full load [mm/s]			Motor options	
3000/xx	2000/xx	1000/xx	No motor	0000
3000/13-10	2000/26-20	1000/52-40	DC 24 V, IP44	C24C
3000/7-5	2000/13-9	1000/25-18	DC 24 V, IP44	C24CW
3000/17-11	2000/34-19	1000/66-38	DC 24 V, flat motor, IP44	P24C
3000/7-5	2000/13-8	1000/26-19	DC 24 V, flat motor, low speed, IP44	C24CW



Type

Motor installation

- R Right
- L Left

Stroke (S)

- 100 100 mm
- 200 200 mm
- 300 300 mm
- 400 400 mm

Rear attachment

- A1 Rod clevis, Ø12,0 mm
- A2 Rod clevis, Ø12,7 mm
- K1 Single bracket with ear, Ø12,0 mm
- K2 Single bracket with ear, Ø12,7 mm

Front attachment

- G1 Hole, Ø12,0 mm
- G2 Hole, Ø12,7 mm
- G3 Male thread, M12
- G4 Female thread, M12
- G5 Rod clevis, Ø10,1 mm

Option

- F Friction clutch

Cable option for C24C[W] motors

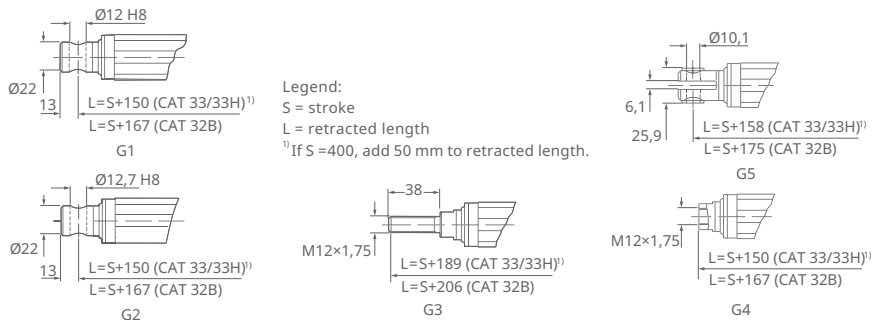
- T2 Straight, 2,0 m
- T6 Straight cable, 6,0 m, no plug

001DF5CE

Detailed drawings of front and rear attachments for CAT and CAP and motor options for CAT

Front attachments and retracted length

76 Front attachments and retracted length



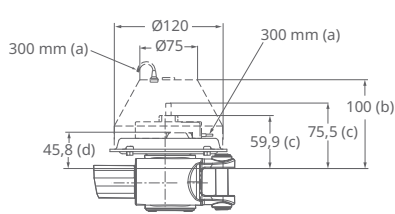
001DCAD5

S mm Stroke

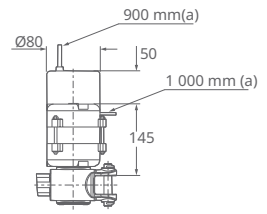
L mm Retracted length

Motor options for CAT

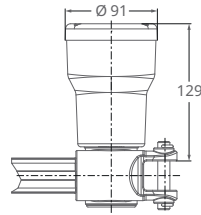
77 Motor options for CAT



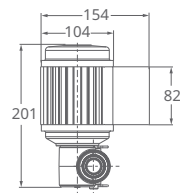
D12C, P24C, P24CB, P24CS, P24CW



E110C, E110CB, E220C, E220CB



C12XX/C24XX



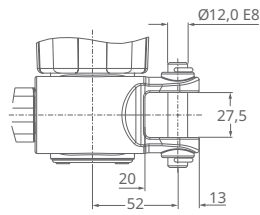
E380C

001DCABA

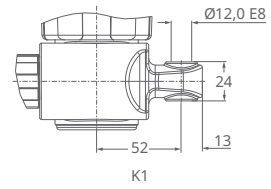
a	Cable length	b	Cover for brake
c	Extended shaft	d	Motor

Rear attachments

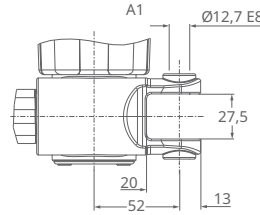
78 Rear attachments



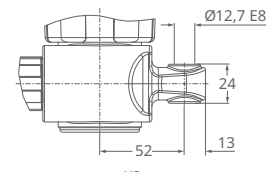
A1



K1



A2



K2

001DCAC7

6 CAT33H

79 CAT33H



001D5C19

Benefits

- compact
- robust design
- modular
- with lifetime lubrication
- high efficiency
- digital encoder feedback

16 Technical data CAT33H

Feature		Unit	CAT33H	
			AC	DC
Rated push force		N	500 to 1200	400 to 1200
Rated pull force		N	500 to 1200	400 to 1200
Speed (full load ... no load)		mm/s	20 ... 90 ¹⁾	17 ... 93 ¹⁾
Stroke S		mm	100 to 400	100 to 400
Retracted length L		mm	S + 150/158/189 ²⁾	S + 150/158/189 ²⁾
Voltage	AC	V	120, 230 / 400	-
	DC	V	-	12 / 24
Power consumption	AC 120 V	W	98 (brake 133.2 W)	-
	AC 230 V	W	92 (brake 117.3 W)	-
	AC 400 V	W	80	-
	DC 12 V / 24 V	W	-	n/a
Current consumption	AC 120 V	A	0.82 (brake +0.29 A)	-
	AC 230 V	A	0.4 (brake +0.11 A)	-
	AC 400 V	A	0.2	-
	DC 12 V	A	-	18
	DC 24 V	A	-	9
	DC 24 V	A	-	5 (for motors C24CW and P24CW)
Duty cycle		%	30	20

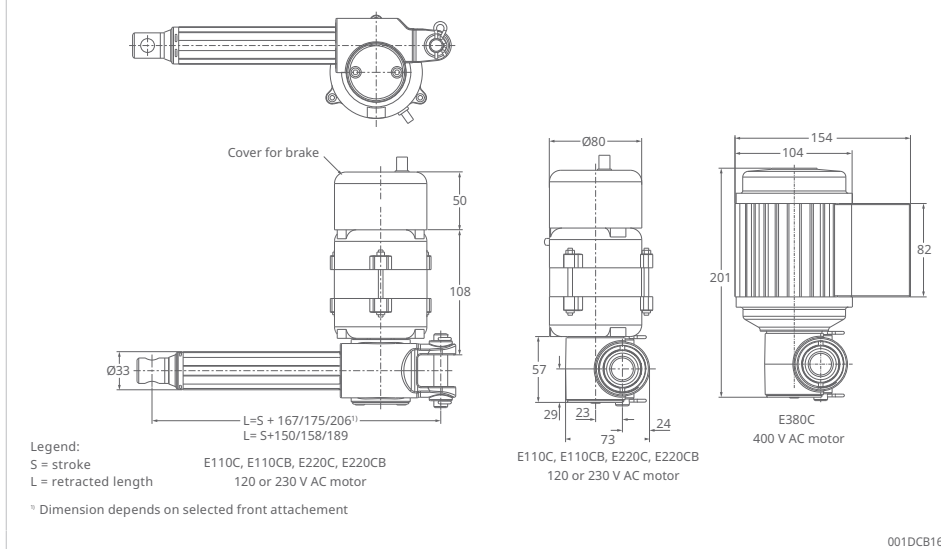
Feature	Unit	CAT33H	
		AC	DC
Ambient temperature	°C	-20 to +50	-20 to +50
Protection code (IP)	-	IP20, IP54, IP55	IP20, /IP44, IP66 ¹⁾
Mass	kg	2 to 2.7	2 to 2.7

1) depending on selected motor

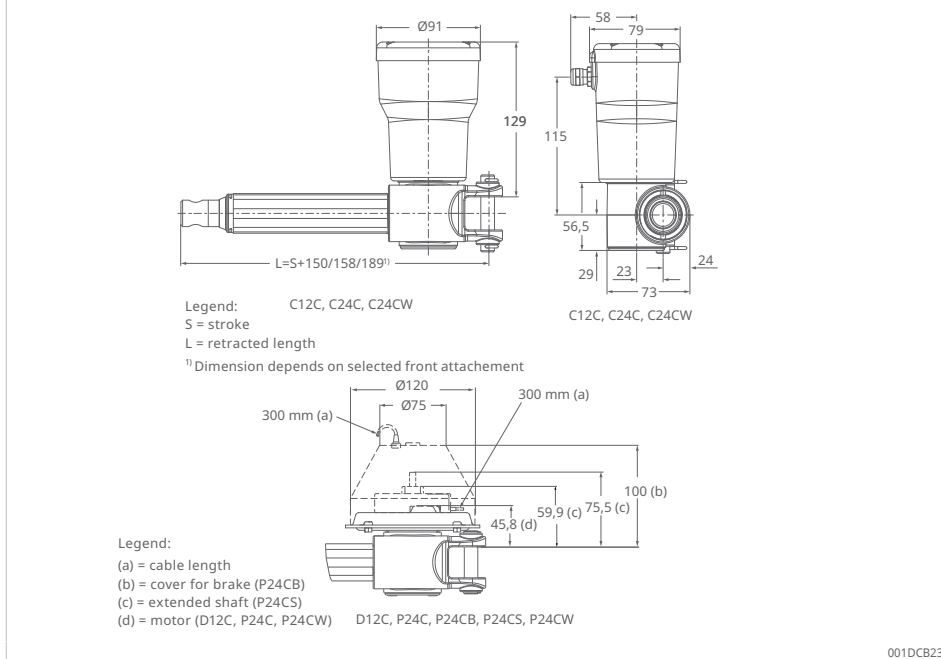
2) dimension depends on selected front attachment

Dimensional drawings

80 Dimensions CAT33H - AC version



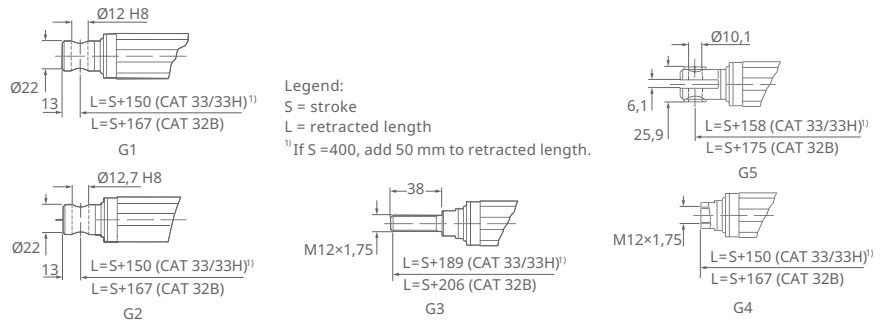
81 Dimensions CAT33H - DC version



Detailed drawings of front and rear attachments for CAT and CAP43 and motor options for CAT

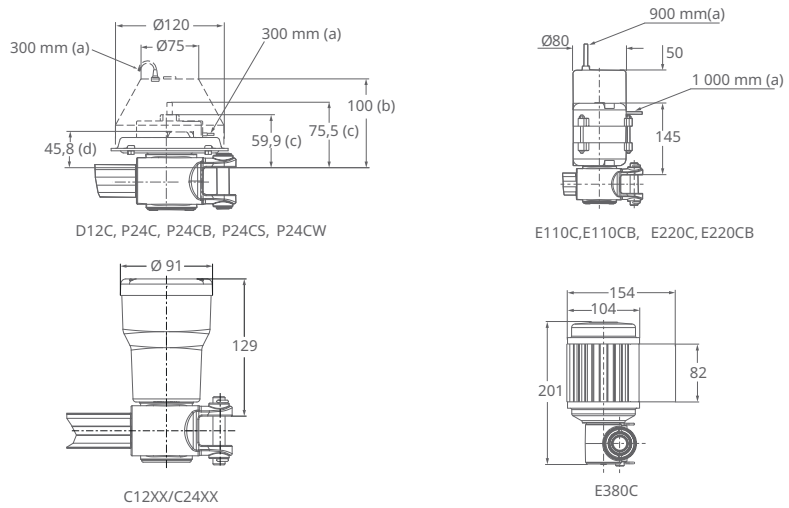
6

82 Front attachments and retracted length



001DCAD5

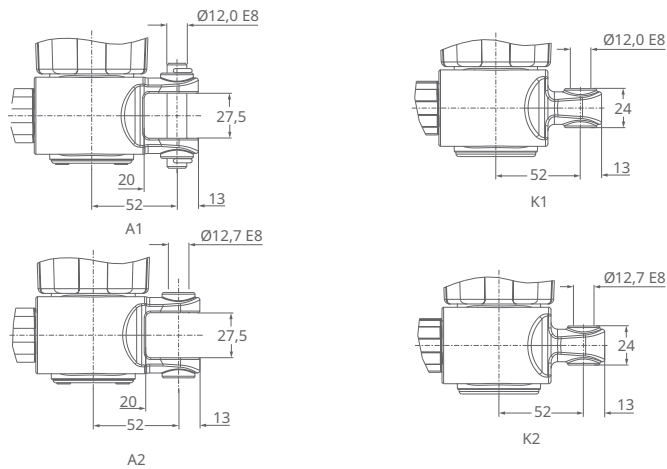
83 Motor options for CAT



001DCABA

a	Cable length	b	Cover for brake
c	Extended shaft	d	Motor

84 Rear attachments

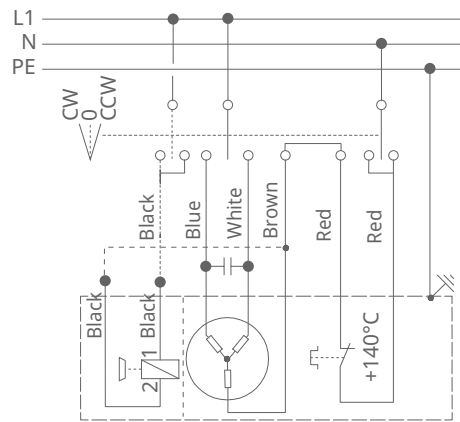


001DCAC7

Wiring diagrams

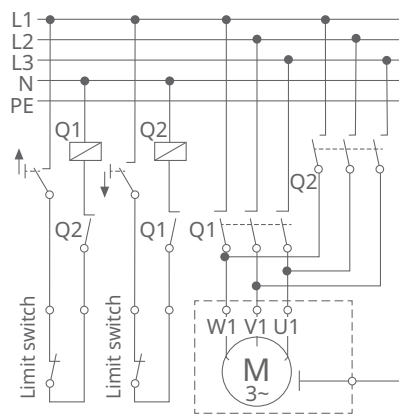
AC version

85 AC single-phase alternating current: 120 V, 230 V



001D2216

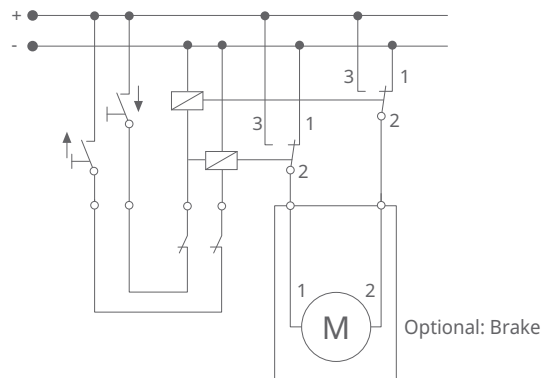
86 AC three-phase alternating current: 400 V



001D2286

DC version

87 DC: 12 V, 24 V



001D226A

Suitable control units and accessories

AC version

17 Suitable operating devices and controls CAT33H AC version

Linear actuator	Encoder
CAT33H AC	E2
E110C	✓
E110CB	✓
E220C	✓
E220CB	✓
E380C	✓
✓	suitable

DC version

18 Suitable operating devices and controls CAT33H DC version

Linear actuator	Encoder
CAT33H DC	E2
C12C	✓
D12C	✓
C24C	✓
C24CW	✓
P24C	✓
P24CB	✓
P24CS	✓
P24CW	✓
✓	suitable

CAT 33H – Type codes for accessories and spare parts

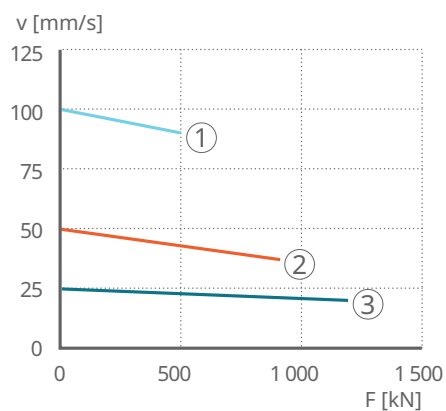
19 Accessories and spare parts for CAT33H

Description	Ordering designation	Order number
Motor DC 12 V (cylindrical motor)	C12C	M/0405535
Motor DC 12 V (flat motor)	P24C	M/0405518-V01
Motor DC 24 V (cylindrical motor)	C24C	M/0405536
Motor DC 24 V (cylindrical motor with low speed)	C24CW	M/0405537
Motor DC 24 V (flat motor)	P24C	M/0405519-V01
Motor DC 24 V (flat motor with brake)	P24CB	M/0405523-V01
Motor DC 24 V (flat motor with extended shaft)	P24CS	M/0405522-V01
Motor DC 24 V (flat motor with low speed)	P24CW	M/0405521-V01
Motor AC 120 V (cylindrical motor)	E110C	M/0405533
Motor AC 120 V (cylindrical motor with brake)	E110CB	M/0405534
Motor AC 230 V (cylindrical motor)	E220C	M/0405531
Motor AC 230 V (cylindrical motor with brake)	E220CB	M/0405532
Motor AC 400 V (cylindrical motor)	E380C	M/0411607
Capacitor value 25 µF (AC 120 V)	Capacitor 25 µF	M/0430670-16
Capacitor value 6 µF (AC 230 V)	Capacitor 6 µF	M/0430670-03
Front attachments, rod end type	575-32	M/0430575-32
Front attachments, rod clevis type	576-32	M/0430576-32
Rear attachments, single bracket with ear type	580-32	M/0430580-32
Rear attachments, universal joint type	582-32	M/0431780-32

Performance diagrams

AC version

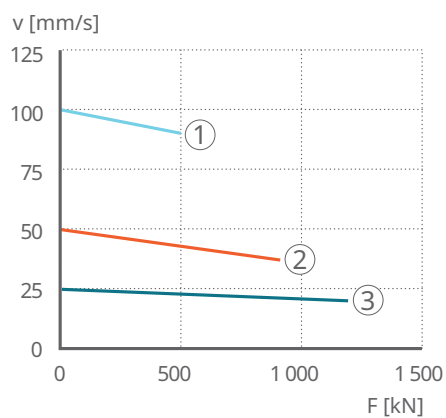
88 Speed-load diagram CAT33H, AC 120 V



001D17AD

1	Gear 1	2	Gear 3
3	Gear 2	F	Load
v	Speed		

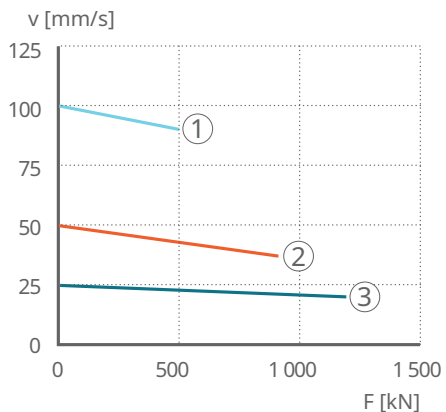
89 Speed-load diagram CAT33H, AC 230 V



001D17AF

1	Gear 1	2	Gear 3
3	Gear 2	F	Load
v	Speed		

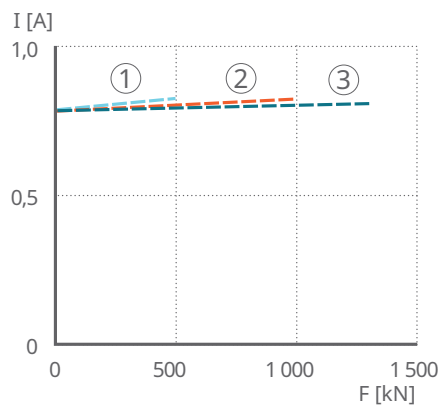
90 Speed-load diagram CAT33H, AC 400 V



001D17B0

1	Gear 1	2	Gear 3
3	Gear 2	F	Load
v	Speed		

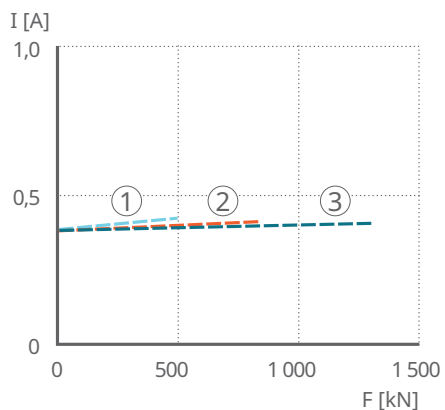
91 Current-load diagram CAT33H, AC 120 V



001D17B1

1	Gear 1	2	Gear 3
3	Gear 2	F	Load
I	Current consumption		

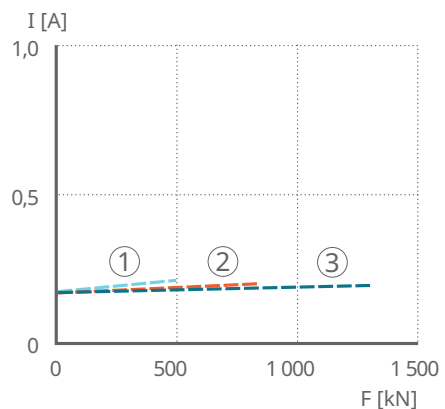
92 Current-load diagram CAT33H, AC 230 V



001D17B4

1	Gear 1	2	Gear 3
3	Gear 2	F	Load
I	Current consumption		

93 Current-load diagram CAT33H, AC 400 V



001D17BA

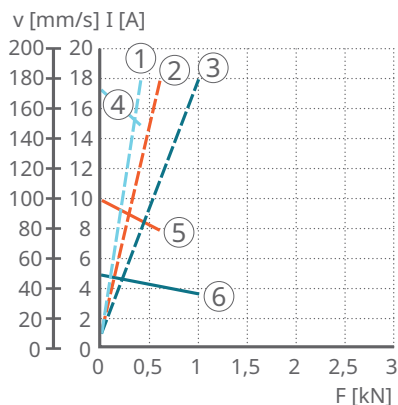
1	Gear 1	2	Gear 3
3	Gear 2	F	Load
I	Current consumption		

Deviations of $\pm 10\%$ from the values in the diagram may occur.

DC version

6

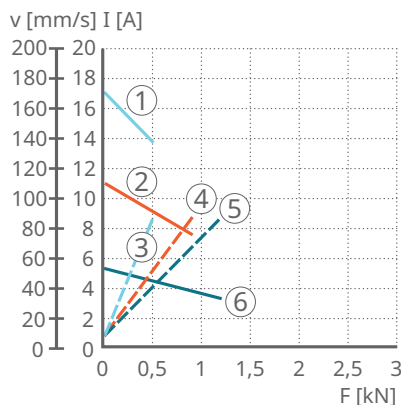
94 Performance diagram CAT33H.../C12C



001D17BC

1	I [A] gear 1	2	I [A] gear 2
3	I [A] gear 4	4	v [mm/s] gear 1
5	v [mm/s] gear 2	6	v [mm/s] gear 4
v	Speed	I	Current consumption
F	Load		

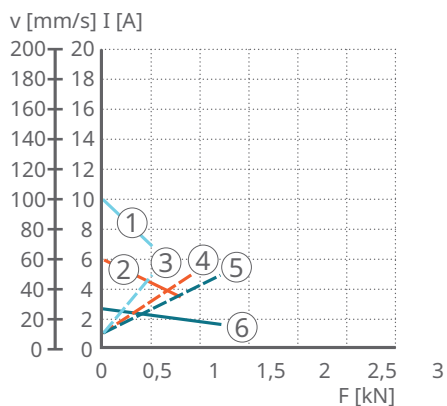
95 Performance diagram CAT33H.../C24C



001D17BE

1	I [A] gear 1	2	I [A] gear 2
3	I [A] gear 4	4	v [mm/s] gear 1
5	v [mm/s] gear 2	6	v [mm/s] gear 4
v	Speed	I	Current consumption
F	Load		

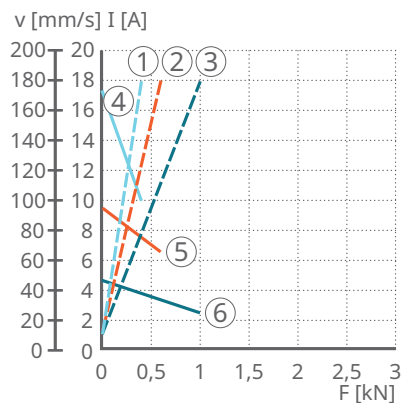
96 Performance diagram CAT33H.../C24CW



001D17C1

1	I [A] gear 1	2	I [A] gear 2
3	I [A] gear 4	4	v [mm/s] gear 1
5	v [mm/s] gear 2	6	v [mm/s] gear 4
v	Speed	I	Current consumption
F	Load		

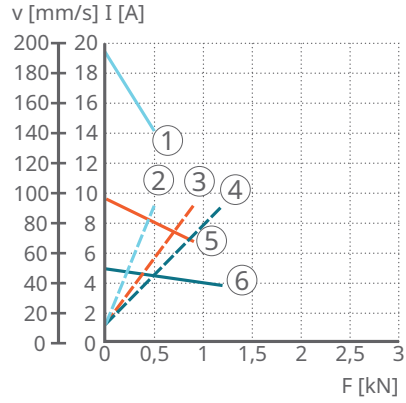
97 Performance diagram CAT33H.../D12C



001D17C3

1	I [A] gear 1	2	I [A] gear 2
3	I [A] gear 4	4	v [mm/s] gear 1
5	v [mm/s] gear 2	6	v [mm/s] gear 4
v	Speed	I	Current consumption
F	Load		

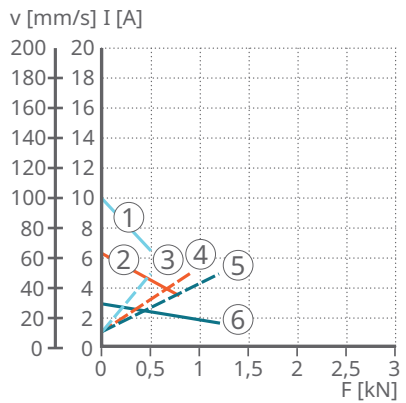
98 Performance diagram CAT33H.../P24...



001D17C4

1	I [A] gear 1	2	I [A] gear 2
3	I [A] gear 4	4	v [mm/s] gear 1
5	v [mm/s] gear 2	6	v [mm/s] gear 4
v	Speed	I	Current consumption
F	Load		

99 Performance diagram CAT33H.../P24CW



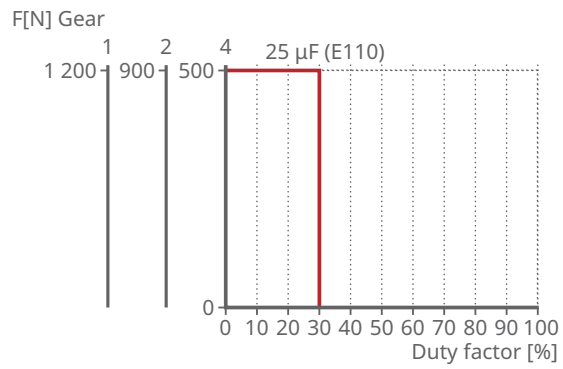
001D17C8

1	I [A] gear 1	2	I [A] gear 2
3	I [A] gear 4	4	v [mm/s] gear 1
5	v [mm/s] gear 2	6	v [mm/s] gear 4
v	Speed	I	Current consumption
F	Load		

Deviations of ±10 % from the values in the diagram may occur.

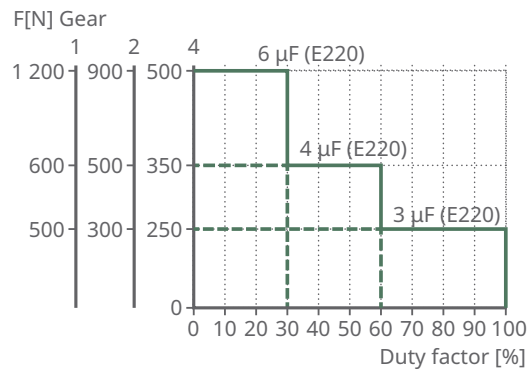
Duty cycle

100 CAT33H AC: 120 V



001C36DC

101 CAT33H AC: 230 V



001C36DE

Ordering key

102 Ordering designation CAT33H

Load [N]/speed at full load [mm/s]			Motor options	
1200/xx	900/xx	600/xx	No motor	0000
1200/20	900/37	500/90	AC 120 V/60 Hz, 1-phase, IP54	E110C
1200/20	900/37	500/90	AC 120 V/60 Hz, 1-phase, brake, IP20	E110CB
1200/20	900/37	500/90	AC 230 V/50 Hz, 1-phase, IP54	E220C
1200/20	900/37	500/90	AC 230 V/50 Hz, 1-phase, brake, IP20	E220CB
1200/20	900/37	500/90	AC 400 V/50 Hz, 3-phase, IP55	E380C
1200/xx	900/xx	600/xx	No motor	0000
1200/50-38	600/100-80	400/174-150	DC 12 V, IP66	C12C
1200/47-25	600/95-65	400/170-100	DC 12 V, flat motor, IP44	D12C
1200/56-36	900/113-79	500/174-140	DC 24 V, IP66	C24C
1200/27-17	900/60-35	500/100-69	24 V DC, motor with low speed, IP66	C24CW
1200/48-37	900/95-65	500/193-140	DC 24 V, flat motor, IP44	P24C
1200/48-37	900/95-65	500/193-140	DC 24 V, flat motor, brake, IP20	P24CB
1200/48-37	900/95-65	500/193-140	DC 24 V, flat motor, extended shaft, IP44	P24CS
1200/30-17	900/63-35	500/100-65	DC 24 V, flat motor, low speed, IP44	P24CSW



CAT R 33 H x 100 x 1 A1 G1 E2 F / E110CB T2P

Type

Motor installation

R Right
L Left

Stroke (S)

100 100 mm
200 200 mm
300 300 mm
400 400 mm
- Other stroke lengths available on request

Rear attachment

A1 Rod clevis, Ø12,0 mm
A2 Rod clevis, Ø12,7 mm
K1 Single bracket with ear, Ø12,0 mm
K2 Single bracket with ear, Ø12,7 mm

Front attachment

G1 Hole, Ø12,0 mm
G2 Hole, Ø12,7 mm
G3 Male thread, M12
G4 Female thread, M12
G5 Rod clevis, Ø10,1 mm

Feedback

- No encoder (no code)
E2 Encoder (for all standard motors)

Option

F Friction clutch (not available with optional encoder)
Z No friction clutch

Option for CxxC motors

T2 Straight cable, 2,0 m, no plug
T2P Straight cable, 2,0 m, jack plug
T6 Straight cable, 6,0 m, no plug

001DF5DE

7 CAR40

103 CAR40



001CF094

Benefits

- reliable and robust linear actuators for industrial applications
- wide range of components
- available in right-hand and left-hand versions

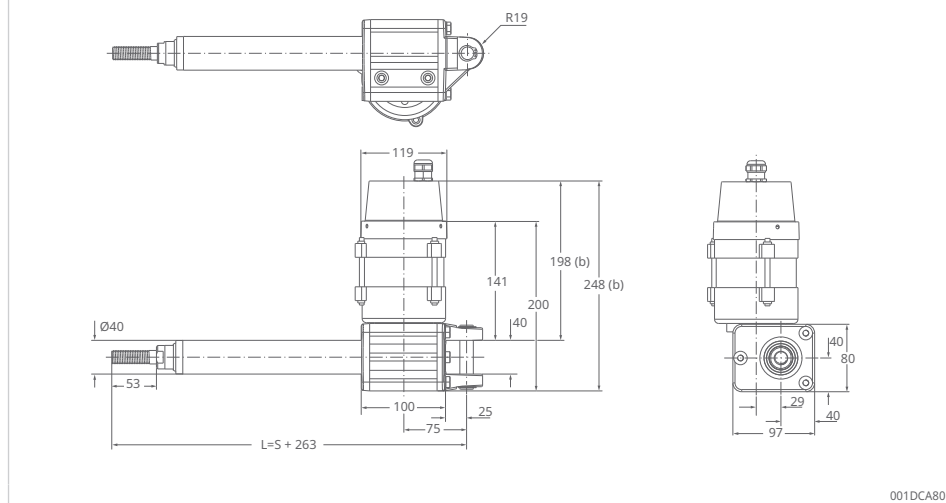
20 Technical data CAR40

Feature		Unit	CAR40	
			AC	DC
Rated push force		N	2000 to 6000	2000 to 6000
Rated pull force		N	2000 to 6000	2000 to 6000
Speed (full load ... no load)		mm/s	9 ... 40 ¹⁾	8 to 50
Stroke S		mm	100 to 700	100 to 700
Retracted length L		mm	S + 263	S + 263
Voltage	AC	V	120 / 230	-
	DC	V	-	24
Power consumption	AC 120 V	W	360	-
	AC 230 V	W	299	-
	DC 24 V	W	-	n/a
Current consumption	AC 120 V	A	3 (brake +0.29 A)	-
	AC 230 V	A	1.3 (brake +0.11 A)	-
	DC 24 V	A	-	16
Duty cycle		%	40	25
Ambient temperature		°C	-20 to +70	-20 to +70
Protection code (IP)		-	IP20, IP54	IP20, IP54
Mass		kg	5.8 to 8.4	5.8 to 8.4

¹⁾ depending on selected motor

Dimensional drawings

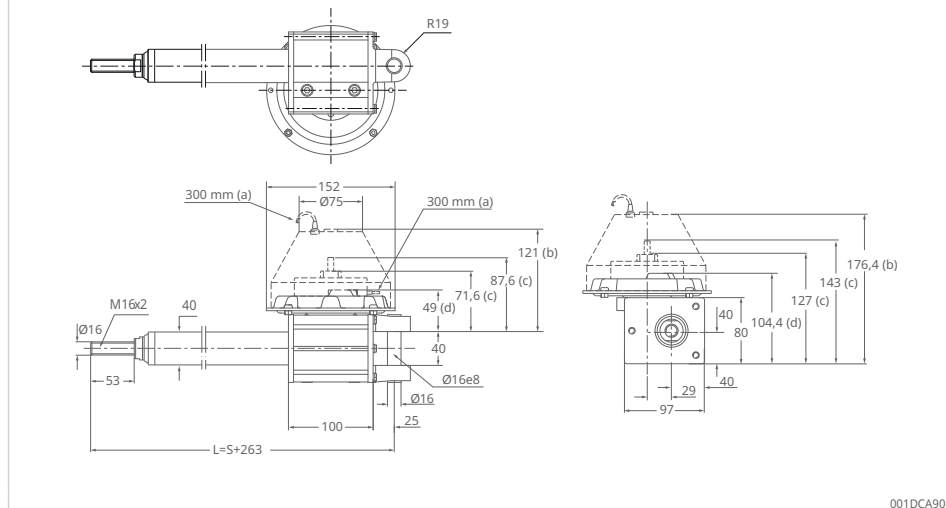
104 Dimensions CAR40 – AC version



001DCA80

S mm Stroke
L mm Retracted length

105 Dimensions CAR40 – DC version



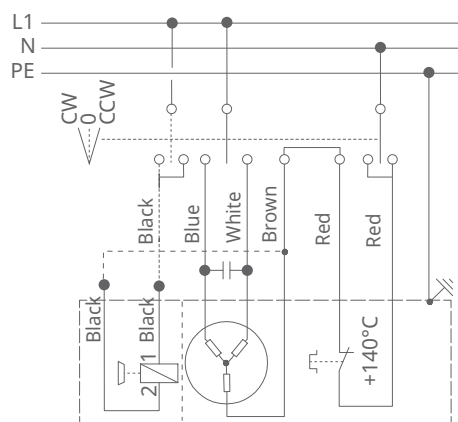
001DCA90

S mm Stroke
L mm Retracted length

Wiring diagrams

AC version

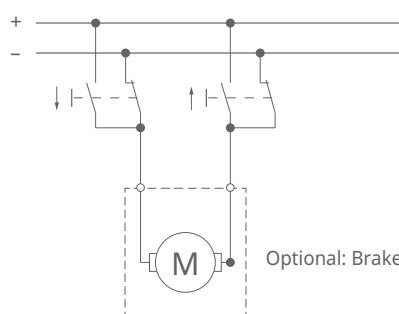
106 AC single-phase alternating current: 120 V, 230 V



001D2216

DC version

107 DC: 12 V, 24 V



001D2226

Suitable control units and accessories

AC version

21 Suitable operating devices and controls CAR40 AC version

Linear actuator	Limit switch
CAR40 AC	CAXE40
E110D	✓
E110DB	✓
E220D	✓
E220DB	✓
✓	suitable

DC version

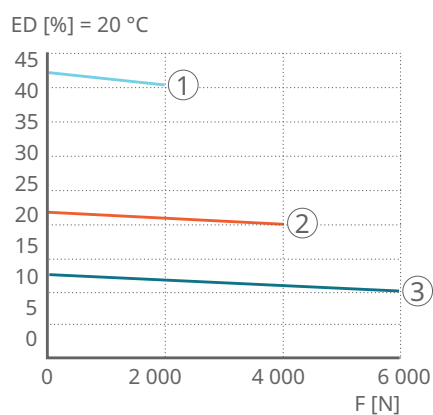
22 Suitable operating devices and controls CAR40 DC version

Linear actuator	Limit switch
CAR40 DC	CAXE40
P24D	✓
P24DS	✓
P24DB	✓
✓	suitable

Performance diagrams

AC version

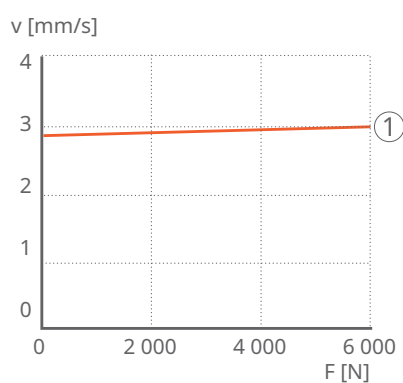
108 Speed-load diagram CAR40, AC 120 V



001D3912

1	Gear 1	2	Gear 3
3	Gear 2	F	Load
ED	Duty cycle		

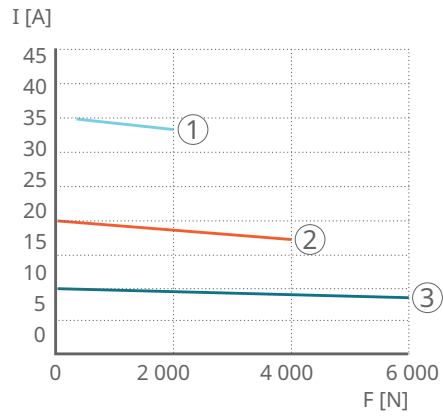
109 Speed-load diagram CAR40, AC 230 V



001D17CB

1	CAR40	F	Load
v	Speed		

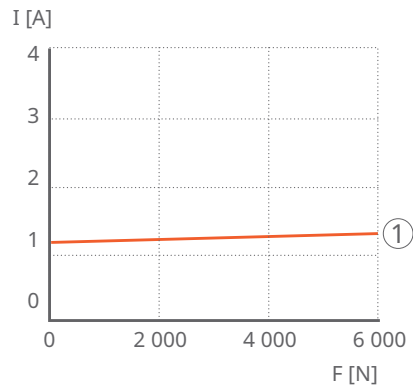
110 Current-load diagram CAR40, AC 120 V



001D17CF

1	Gear 1	2	Gear 3
3	Gear 2	F	Load
I	Current consumption		

111 Current-load diagram CAR40, AC 230 V

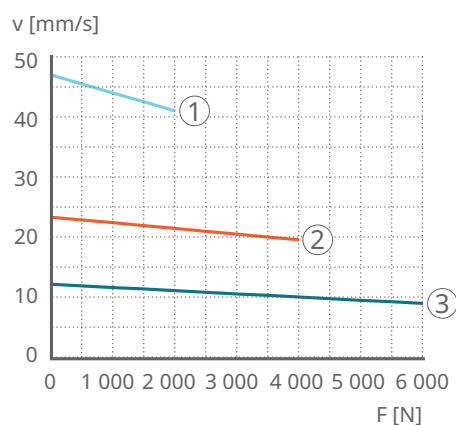


001D17D1

1	CAR40	F	Load
I	Current consumption		

DC version

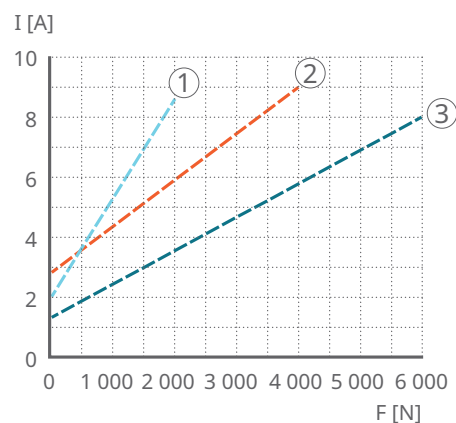
112 Speed-load diagram CAR40, DC 24 V



001D17D2

1	Gear 1	2	Gear 3
3	Gear 2	F	Load
v	Speed		

113 Current-load diagram CAR40, DC 24 V



001D17D5

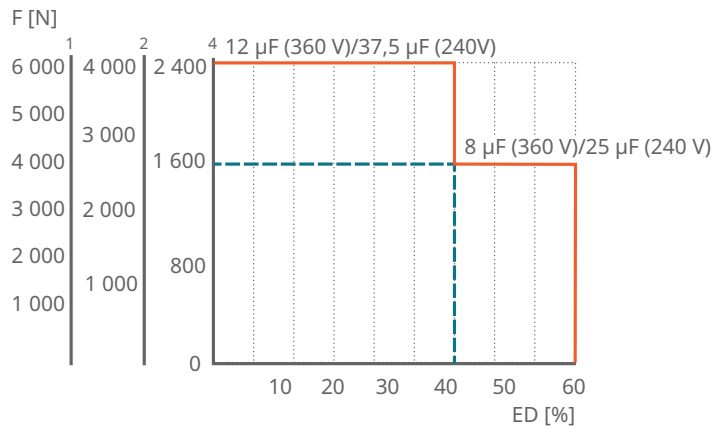
1	Gear 1	2	Gear 3
3	Gear 2	F	Load
I	Current consumption		

Deviations of ±10 % from the values in the diagram may occur.

Duty cycle

AC version

114 Duty cycle CAR40, AC

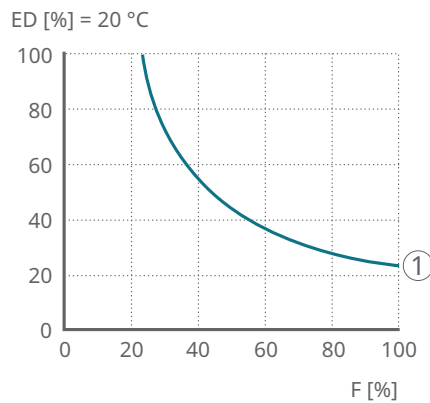


001D3911

ED	Duty cycle	F	Load
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DC version

115 Duty cycle CAR40, DC



001D3913

1	CAR40	ED	Duty cycle
F	Load		

7

CAR 40 – Type codes for accessories and spare parts

23 Accessories and spare parts for CAR40

Description	Ordering designation	Order number
Motor DC 24 V (flat motor)	P24D	M/0405524-V01
Motor DC 24 V (flat motor with extended shaft)	P24DS	M/0405526-V01
Motor DC 24 V (flat motor with brake)	P24DB	M/0405525-V01
Motor AC 120 V (cylindrical motor)	E110D	M/0405529
Motor AC 120 V (cylindrical motor with brake)	E110DB	M/0405530
Motor AC 230 V (cylindrical motor)	E220D	M/0405527
Motor AC 230 V (cylindrical motor with brake)	E220DB	M/0405528
Capacitor value 12 µF (motor AC 230 V)	Capacitor 12 µF	M/0430670-04
Limit switch for stroke = 100 mm	CAXE40X100	M/0412051
Limit switch for stroke = 300 mm	CAXE40X300	M/0412054
Limit switch for stroke = 500 mm	CAXE40X500	M/0412056
Limit switch for stroke = 700 mm	CAXE40X700	M/0412057
Proximity switch for CAXE	CAXE	M/0432369
Front attachments, rod end type	575-40	M/0430575-40
Front attachments, rod clevis type	576-40	M/0430576-40
Rear attachments, single bracket with ear type	590-40	M/0430590-40
Rear attachments, bracket with ball joint type	581-40	M/0430581-40

Ordering key

116 Ordering designation CAR40

Dynamic load [N]/speed [mm/s]			Motor options	
6000/xx	4000/xx	2000/xx	No motor	0000
6000/10	4000/20	2000/40	AC 120 V/60 Hz, 1-phase, IP54	E110D
6000/10	4000/20	2000/40	AC 120 V/60 Hz, 1-phase, brake, IP20	E110DB
6000/9	4000/17	2000/34	AC 230 V/50 Hz, 1-phase, IP54	E220D
6000/9	4000/17	2000/34	AC 230 V/50 Hz, 1-phase, brake, IP20	E220DB
6000/xx	4000/xx	2000/xx	No motor	0000
6000/13-8	4000/25-18	2000/50-38	DC 24 V, flat motor, IP44	P24D
6000/13-8	4000/25-18	2000/50-38	DC 24 V, flat motor, extended shaft, IP44	P24DS
6000/13-8	4000/25-18	2000/50-38	DC 24 V, flat motor, brake, IP20	P24DB



CAR R 40 x 100 x 1 F S / E110DB

Type

Motor installation

R Right
L Left

Stroke (S)

100 100 mm
300 300 mm
500 300 mm
700 500 mm
- Other stroke lengths available on request

Option 1

F Friction clutch
Z No friction clutch

Option 2

- No back-up nut
S Back-up nut

001DF5EE

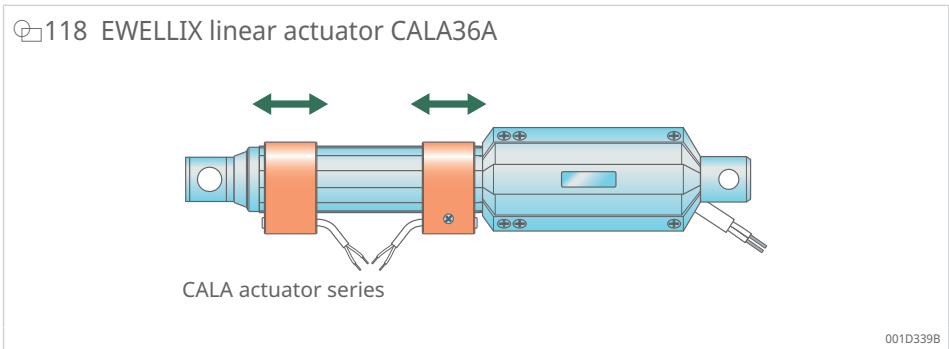
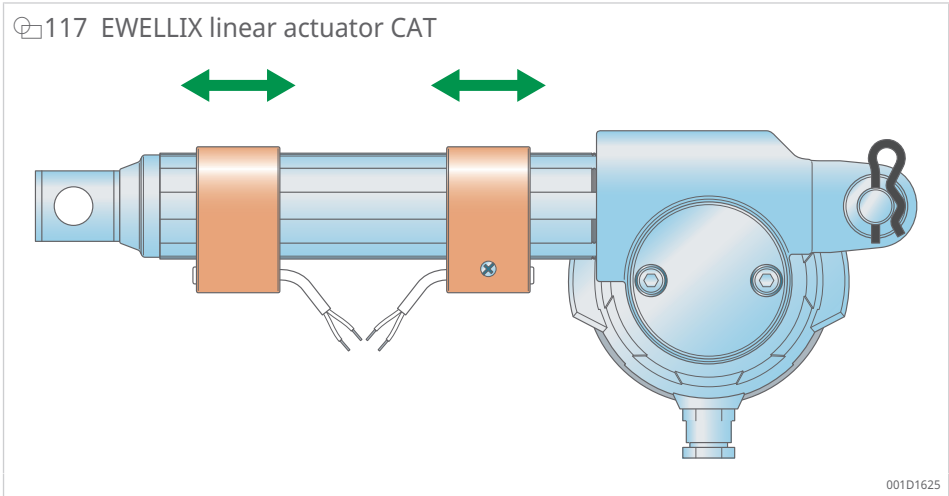
8 Replacement parts

8.1 EWELLIX limit switch CAXD

EWELLIX limit switch CAXD is an electronically controlled limit switch based on reed technology. It is mounted on the protection tube to indicate the positions of the actuator. When combined with actuator control units, the limit switch enables the stroke to be set to any desired length.

- CAXD designed for the following linear actuators
 - CAT33
 - CALA36A
- A CAXD is required for each end position
- The use of limit switches reduces the useful stroke of CAT33 by 20 mm and CALA36A by 25 mm (affects the retracted position)

8

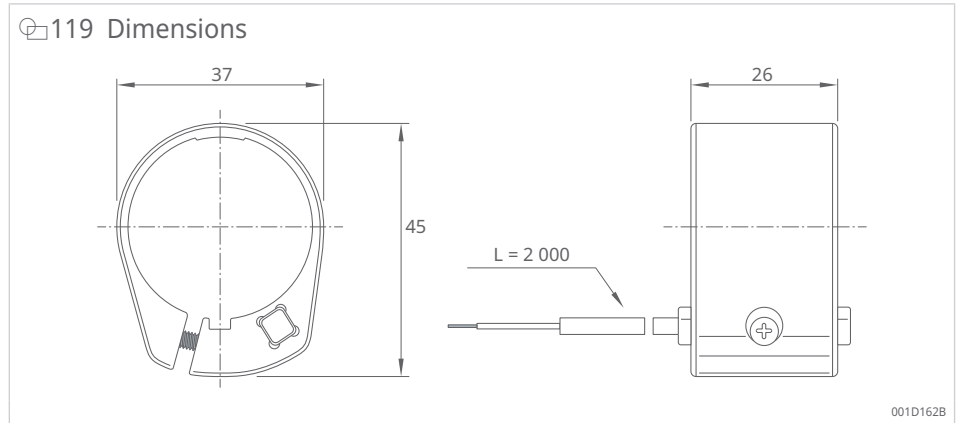


24 Technical data, CAXD

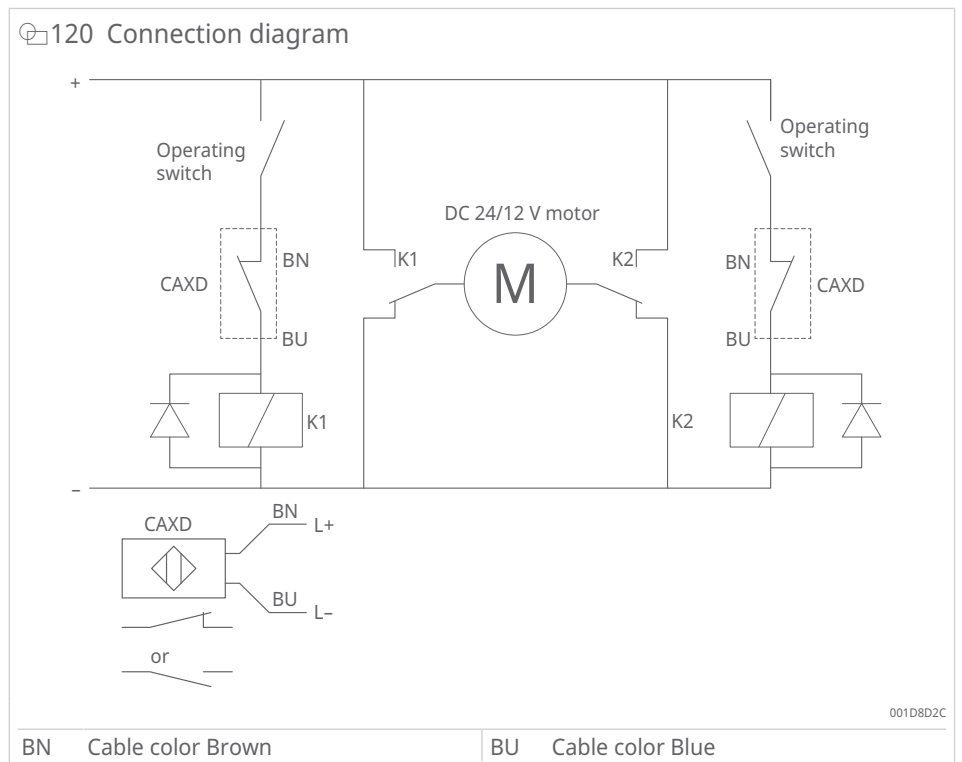
Characteristic	Unit	CAXD
Power supply	-	DC
Operating voltage	V	5 ... 30
Current max.	mA	100
Voltage drop	V	< 5
Electrical function	-	NC: normally closed NO: normally open
Response time	ms	0.3
Release time	ms	0.6
Operating temperature	°C	-20 ... +50
Sensor element protection type	-	IP67
Vibration/shock, sensor element	-	According to IEC 90947-5-2

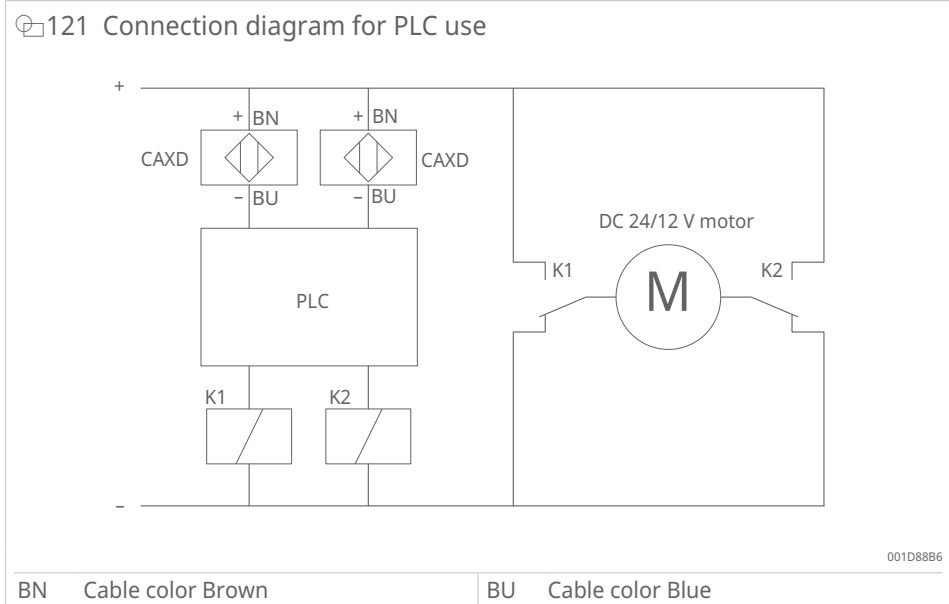
Characteristic	Unit	CAXD
Cable length L	mm	2000
Cable diameter D	mm	3
Cable material	-	PUR
Cable cross-section	mm ²	2 × 0.14
Housing color	-	Black

Dimensional drawings



Wiring diagrams





Never connect the limit switches to an AC power supply.

Ordering key

25 Order key limit switch CAXD

Code	Description
CAXD 33 LIMIT SWITCH, NC	Opener (Normally Closed, NC)
CAXD 33 LIMIT SWITCH, NO	Closer (Normally Open, NO)

8.2 EWELLIX limit switch CAXE

The EWELLIX limit switch CAXE is based on 2 complementary (NO/NC) proximity switches mounted on a special protection tube to indicate the end positions of the actuator. When combined with actuator controllers or other PLC controllers, the limit switch enables the stroke to be set to any desired length.

- CAXE developed for the following linear actuators
 - CAR22
 - CAR32
 - CAR40
 - CAT32B
 - CARN32
- It is recommended to place the limit switch at a distance of at least 10 mm from the end stop to avoid mechanical defects.
- For this option, the front attachment G3 must be selected.

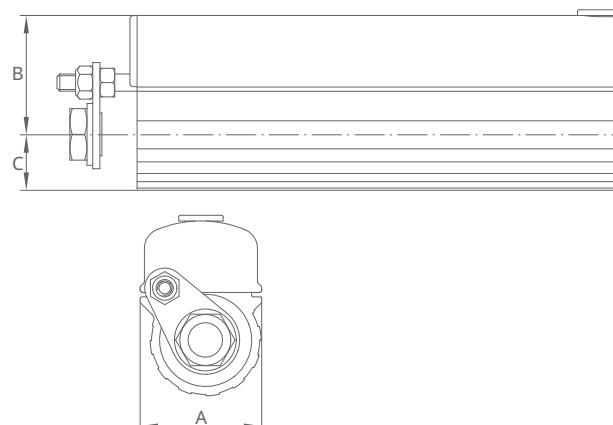
26 Technical data, CAXE

Characteristic	Unit	CAXE
Power supply	-	DC
Operating voltage	V	5 ... 30
Current max.	mA	100
Protection class	-	III
Voltage drop	V	< 5
Electrical function	-	NC: normally closed NO: normally open
Response time	ms	0.3
Release time	ms	0.6
Operating temperature	°C	-20 ... +70
Sensor element protection type	-	IP67
Vibration/shock, sensor element	-	According to IEC 60947-5-1
Cable length L	mm	2000
Cable diameter D	mm	3
Cable material	-	PUR
Cable cross-section	mm ²	3 × 0.14

! The sensor has no overload protection and no reverse polarity protection.

Dimensional drawings

122 Dimensions



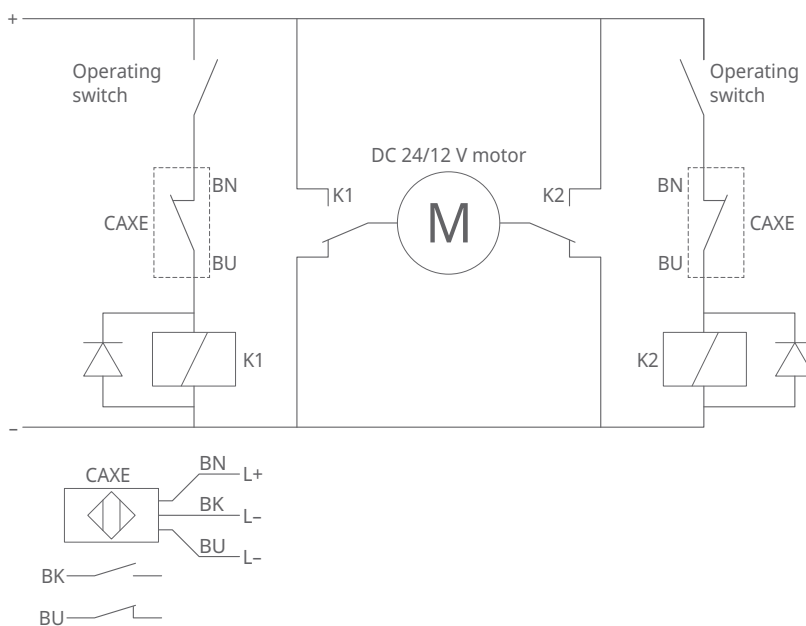
001D12B5

27 Dimensions

Limit switch	A	B	C
CAXE 22	42.5	37	14
CAXE 32	47.5	40	20
CAXE 32B	47.5	40	20
CAXE 40	46	46	23

Wiring diagrams

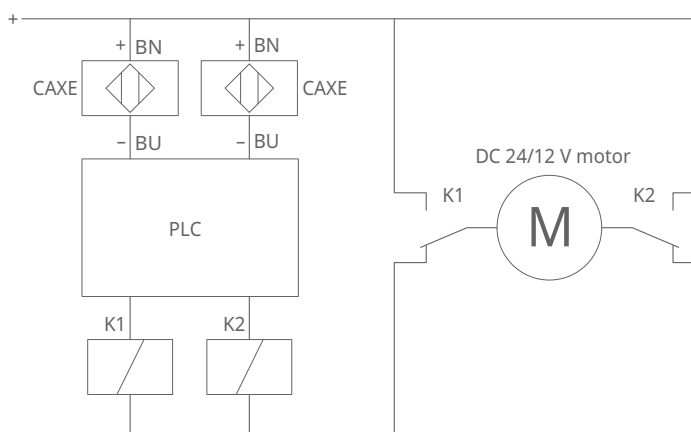
123 Connection diagram



001D88E6

BK	Cable color Black	BN	Cable color Brown
BU	Cable color Blue		

124 Connection diagram for PLC use



001D88D6

BN	Cable color Brown	BU	Cable color Blue
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Never connect the limit switches to an AC power supply.

Ordering key

125 Order key CAXE

CAXE - 022 050

Type

022	CAXE32	CAR 22
032	CAXE32	CAR 32, CARN 32
32B	CAXE32B	CAT 32B
040	CAXE40	CAR 40

Actuator stroke (mm)

050	050	CAR 22, 32 CARN 32 and CAT 32B
100	100	CAR 22, 32, 40, CARN 32 and CAT 32B
150	150	CAR 22
200	200	CAR 22, 32 CARN 32 and CAT 32B
300	300	CAR 22, 32, 40, CARN 32 and CAT 32B
400	400	CAT 32B
500	500	CAR 32, 40, CARN 32 and CAT 32B
700	700	CAR 32, 40, CARN 32 and CAT 32B

001DC082

8.3 Feedback for EWELLIX linear actuator CAT – EWELLIX encoder E2

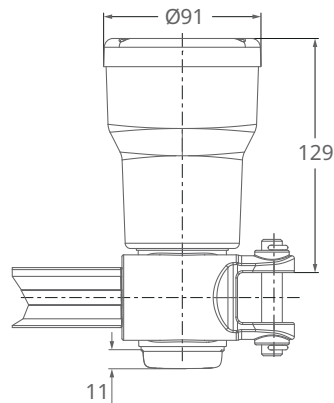
- can be fitted to all standard motors
- Hall effect, two channels, offset by 90°
- arranged on the gearbox housing
- 2 pulses/channel and motor revolution
- supply voltage: DC 5 V to DC 24 V
- final resolution according to gear ratio and base type of the linear actuator

128 Feedback EWELLIX encoder E2

EWELLIX linear actuator	Gearbox	Pulses at 1 mm stroke	Resolution (mm) per pulse
CAT33	1	16.67	0.06
	2	8.33	0.12
	4	4.17	0.24
CAT33H	1	4.00	0.25
	2	2.00	0.50
	4	1.00	1.00
CAT32B	1	12.50	0.08
	2	6.25	0.16
	4	3.13	0.32

Dimensional drawings

126 Dimensions EWELLIX encoder E2

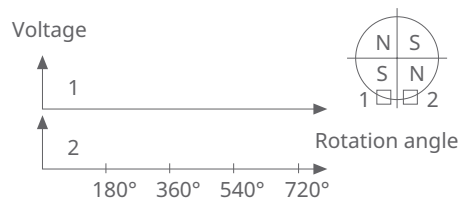


Encoder option E2

001D33F9

Wiring diagrams

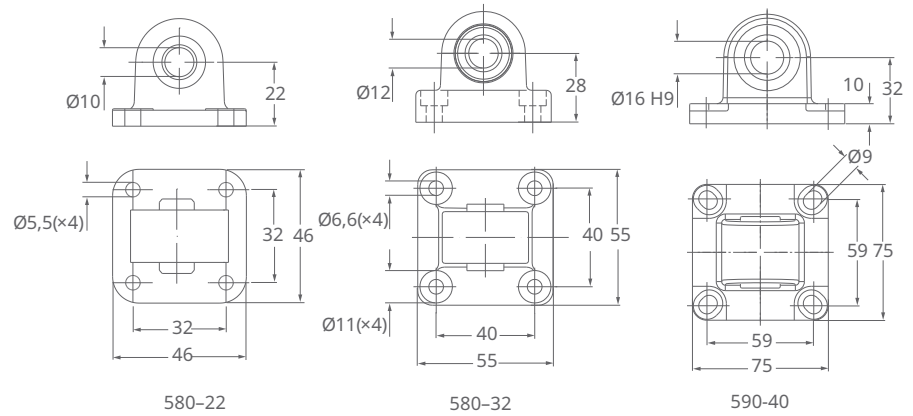
127 Connecting diagram



001D33EB

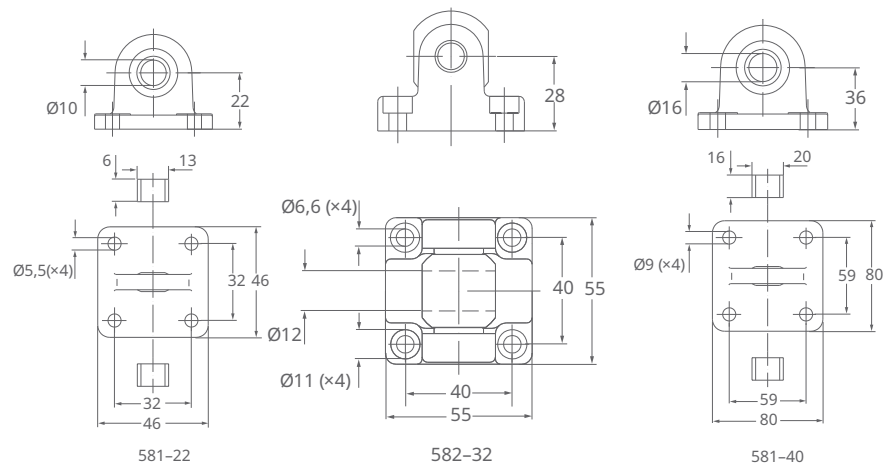
Attachments

128 Attachments 580-22, 580-32, 590-40



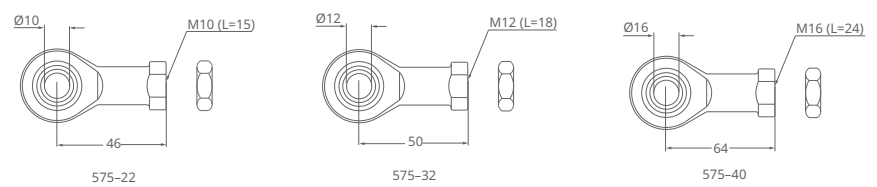
001DCB4A

129 Attachments 581-22, 582-32, 581-40



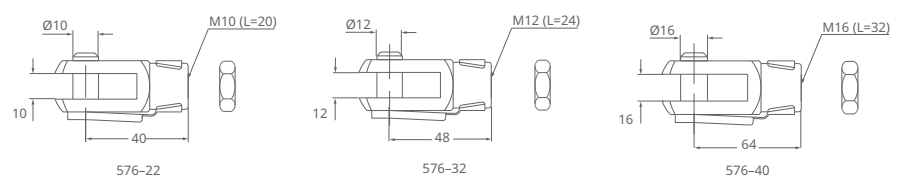
001DCB84

130 Attachments 575-22, 575-32, 575-40



001DCB91

131 Attachments 576-22, 576-32, 576-40



001DCB9E

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PDB 88 / 01 / en-US / 2026-04