EWELLIX

MAKERS IN MOTION

Linear actuator CAHB series

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CAHB series

Designed to operate in harsh environment with temperatures from –40 to 85 °C up to 25 % duty cycle, Ewellix electromechanical actuator CAHB family features robust metal gears and corrosion-resistant housings.

Available in 7 series - CAHB-20A/20E/21E/22E for medium and heavy load applications with an over load protection by clutch, CAHB-10, a compact solution for low-load applications and CAHB-30A/31N for AC version- Ewellix electromechanical actuators, are virtually maintenance-free, self-locking up to 2 times the rated load and rated up to IP69K/66M. Additional design options are available like limit switches, positioning feedback and manual over ride.

Features

- Long stroke and high speed
- High holding force up to 20 000 N
- Absolute or incremental Position feedback and limit switches option
- Low backlash
- Manual override option
- Overload and thermal protection
- Ingress protection IP69K/66M with vent
- Stainless steel push tube and Corrosion protected metal parts
- Wide temperature range (–40 to 85 °C)
- Mechanical, electrical and climatic tests
- High efficiency
- Virtually maintenance-free

See **pages 38** and **39** for test results.

Benefits

- High productivity and usability of the adjustment
- Reliability and safety
- Save development time and shorten the time to market
- Cost effectiveness
- Durable

CAHB-10

Linear actuator

Benefits

- Compact design
- Designed for harsh environment
- Robust and reliable
- Integrated limit switches
- Quiet operation
- Thermal protection
- Optional potentiometer and 2-Hall encoder available
- Electromagnetic compatibility (EMC) compliant

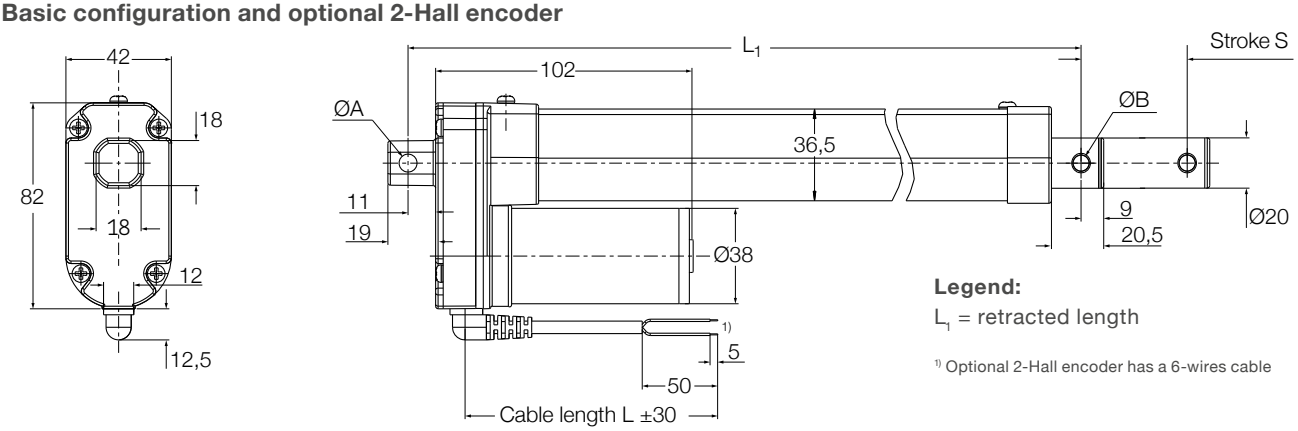
Technical data

Designation	Unit	CAHB–10... 1	CAHB–10... 2	CAHB–10... 3	CAHB–10... 4	CAHB–10... 5	CAHB–10... 6
Push load	N	120	240	500	750	1 000	1 500
Pull load	N	120	240	500	750	1 000	1 500
Speed (full load to no load)	mm/s	45 to 56	24 to 30	13 to 16	8 to 10	6 to 8	5 to 8
Stroke	mm	50 to 300	50 to 300	50 to 300	50 to 300	50 to 300	50 to 300
Retracted length	mm	– [1]	– [1]	– [1]	– [1]	– [1]	– [1]
Voltage	V DC	12 or 24	12 or 24	12 or 24	12 or 24	12 or 24	12 or 24
Power consumption	W	N/A	N/A	N/A	N/A	N/A	N/A
Current consumption 12 V DC	A	4	3,5	3,2	3	2,8	4,4
24V DC	A	2,2	2	1,8	1,8	1,6	2,8
Duty cycle	%	25	25	25	25	25	20
Ambient temperature	°C	–40 to +85	–40 to +85	–40 to +85	–40 to +85	–40 to +85	–40 to +85
Type of protection	IP	66s/69k	66s/69k	66s/69k	66s/69k	66s/69k	66s/69k
Weight (at 300 mm stroke)	kg	1,5	1,5	1,5	1,5	1,5	1,5
Color	–	Silver	Silver	Silver	Silver	Silver	Silver
Limit switches	–	Yes	Yes	Yes	Yes	Yes	Yes
Thermal protection	–	Yes	Yes	Yes	Yes	Yes	Yes

[1] For basic configuration see dimensional drawing (↳ **page 5**)
For potentiometer configuration see dimensional drawing (↳ **page 6**)

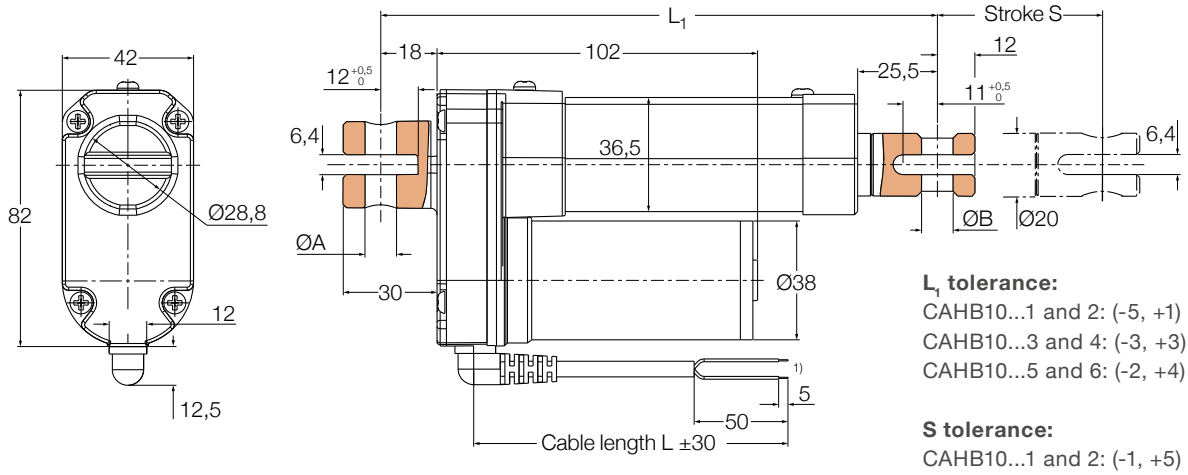
Dimensional drawing

Basic configuration and optional 2-Hall encoder



Legend:
L_1 = retracted length

[1] Optional 2-Hall encoder has a 6-wires cable



L_1 tolerance:
CAHB10...1 and 2: (-5, +1)
CAHB10...3 and 4: (-3, +3)
CAHB10...5 and 6: (-2, +4)

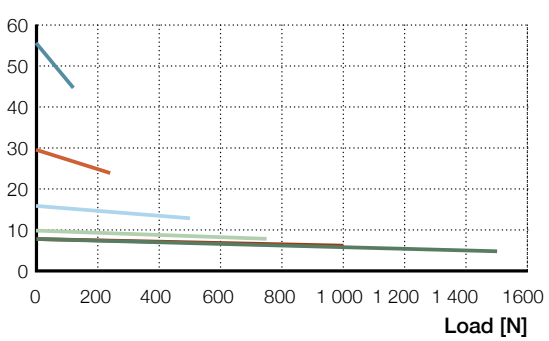
S tolerance:
CAHB10...1 and 2: (-1, +5)
CAHB10...3 and 4: (-3, +3)
CAHB10...5 and 6: (-4, +2)

Stroke [mm]	50	100	150	200	250	300
Retracted length (L_1)	158	209	260	311	362	413
Retracted length with fork head	179	230	281	332	383	434

Performance diagrams

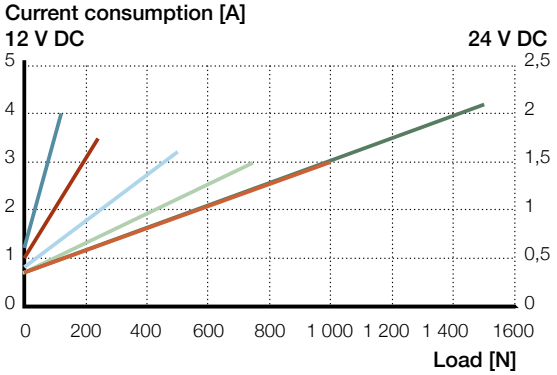
Speed-load diagram

Speed [mm/s]



Current-load diagram

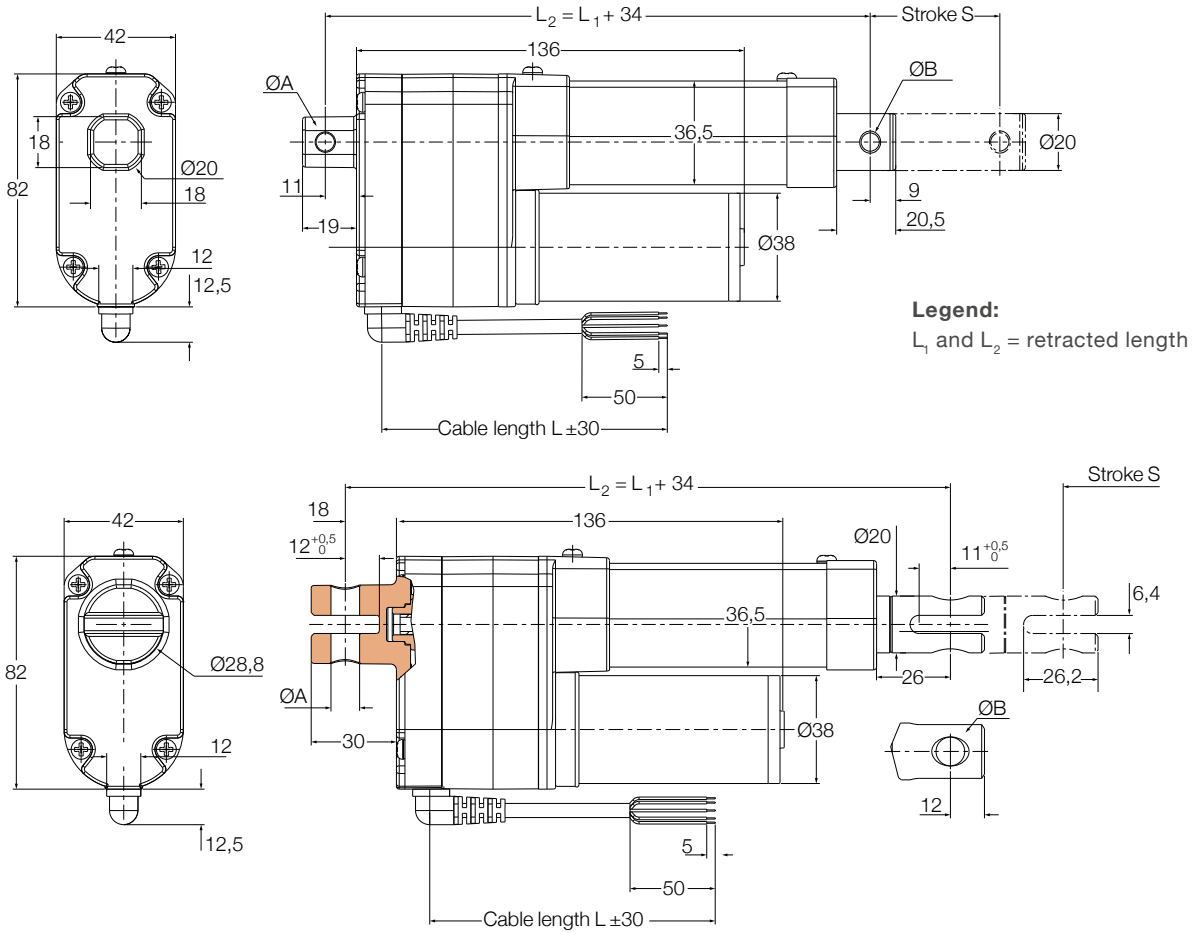
Current consumption [A]



CAHB-10...1
CAHB-10...2
CAHB-10...3
CAHB-10...4
CAHB-10...5
CAHB-10...6

Dimensional drawing

Optional potentiometer

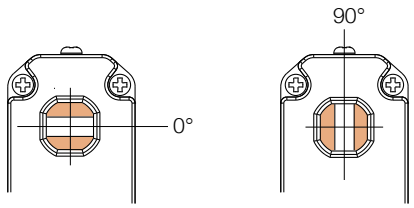


L_1 tolerance:
CAHB10...1 and 2: (-5, +1)
CAHB10...3 and 4: (-3, +3)
CAHB10...5 and 6: (-2, +4)

S tolerance:
CAHB10...1 and 2: (-1, +5)
CAHB10...3 and 4: (-3, +3)
CAHB10...5 and 6: (-4, +2)

Stroke (mm)	50	100	150	200	250	300
Retracted length (L_2)	192	243	294	345	396	447
Retracted length with fork head	213	264	315	366	417	468

Attachment



Encoder resolution

Type	CAHB-10...1	CAHB-10...2	CAHB-10...3	v CAHB-10...4	CAHB-10...5/6
mm/pulse	0,3	0,15	0,075	0,05	0,0375

Potentiometer resolution

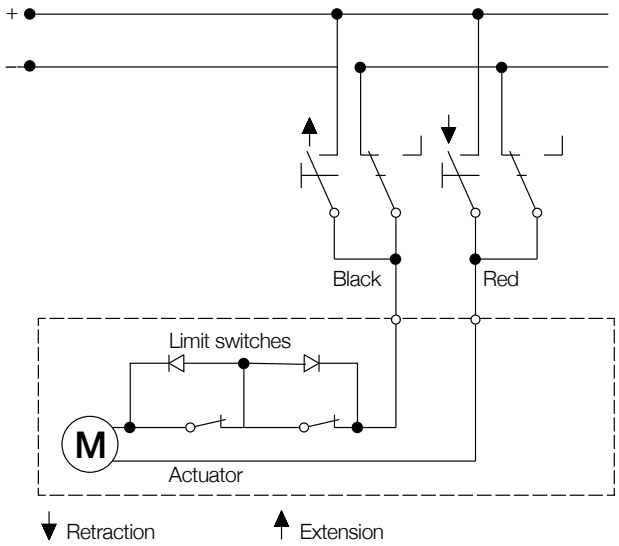
Stroke [mm]	50~80	80~160	160~300
Minimum resistence value of potentiometer	700~1 300 Ω	700~1 300 Ω	700~1 300 Ω
Potentiometer resolution	100 Ω/mm	50 Ω/mm	16,6 Ω/mm

Absolute analog output

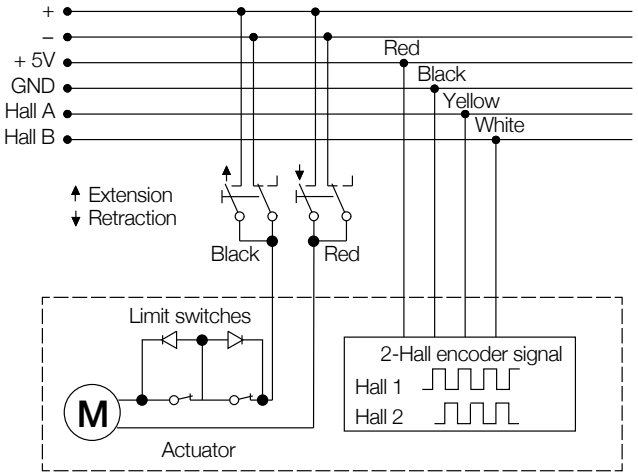
Stroke [mm]	50~80	80~160	160~300
Initial value VS RL position (V)	0,5	0,5	0,5
Resolution (mm)	0,024	0,049	0,146
Position feedback change (V/mm)	0,05	0,025	0,0083

Connecting diagram

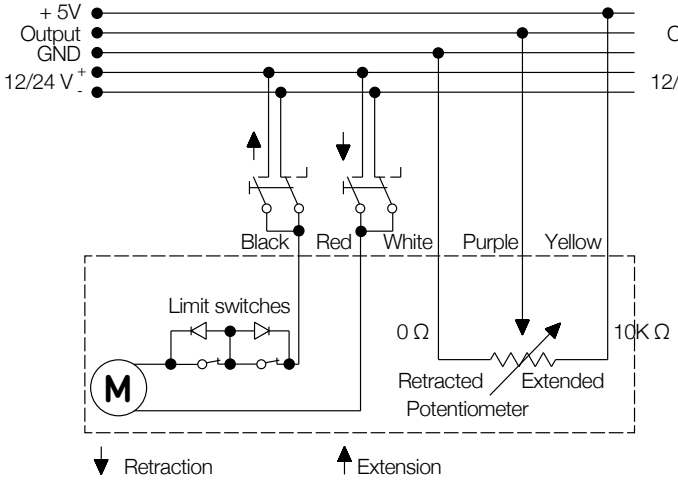
Basic configuration
12/24 V DC



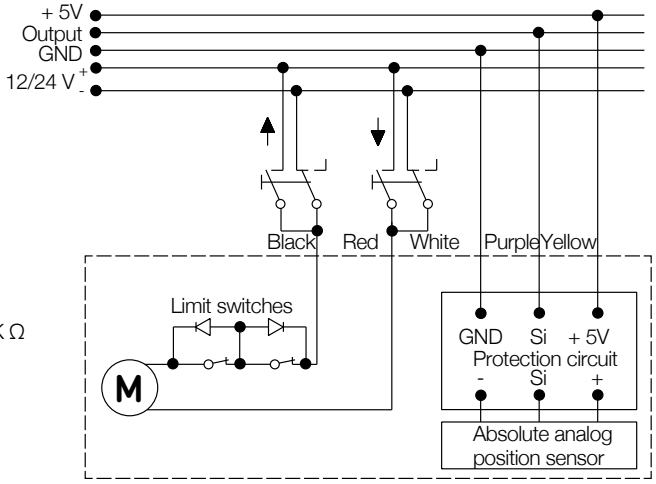
2-Hall encoder
12/24 V DC



Potentiometer



Absolute analog output



Ordering key

Type

Voltage
A 12 V DC
B 24 V DC

Load
1 120 N
2 240 N
3 500 N
4 750 N
5 1 000 N
6 1 500 N

Screw
A TR12 screw
X Customized

Stroke
050 50 mm
100 100 mm
150 150 mm
200 200 mm
250 250 mm
300 300 mm

Retracted length [1]

Stroke without potentiometer: [2]	A(B)+A(B)	A(B)+C	C+A(B)	C+C
50 mm	158	165	172	179
100 mm	209	216	223	230
150 mm	260	267	274	281
200 mm	311	318	325	332
250 mm	362	369	376	383
300 mm	413	420	427	434

IP
A Standard (IP 66s/69k)

Front attachment
A Rod with hole Ø6,4 mm
B Rod with hole Ø8 mm
C Fork head with hole Ø10,1 mm
X Customized

Rear attachment
A Rod with hole Ø6,4 mm
B Rod with hole Ø8 mm
C Fork head with hole Ø10,1 mm
X Customized

Hole direction of the attachments
A 0°
B 90°

Option 1: Position output
0 None
A Absolute analog output
P Potentiometer
H 2-Hall encoder

Cable lenght
A 600 mm without connector
B 1 000 mm without connector
C 1 500 mm without connector
D 2 000 mm without connector
E 2 500 mm without connector
F 3 000 mm without connector

Customized
X

[1] Retracted lenght will be englared 34 mm with Potentiometer or Absolute analog position option
[2] Front attachment + Rear attachment; A, B, C mean the attachment types