

SCHIEBEL

failsafe series

issue October 2023

CM Failsafe Linear

Modulating-Duty / On-Off-Duty
up to 110 kN and 170 mm



Power supply

- AC: 1phase 100VAC...240VAC 50/60Hz +/-10%
- DC: 24VDC +/-10% ■ 3-phase: 380...480VAC 50/60Hz +/-10%

Motor

- PM-motor ■ Controlled via BLDC motor control board
- Isolation class F

Absolut encoder

- (magnetic based) for high precision control with an accuracy of 0,1%

Operation mode

- CMxx: ON/OFF duty S2-15min & class A and B ■ rCMxx: Modulating duty S4-1200 cycles/hour with 40% duty cycle & class C

Local control

- Selector switch LOCAL-OFF-REMOTE - lockable
- Control switch OPEN-STOP-CLOSE ■ Large LC-display for detailed visualization of status information & parameters - different languages selectable ■ Red display backlight for alarms ■ 5 RGB LEDs for status indication & control information ■ Cover lid with display in 90° steps rotatable ■ Bluetooth & infrared interface for data exchange and actuator control with Android App or Windows PC

Remote control

- 5 binary inputs 24VDC: Open - Stop - Close - Emergency Open - Emergency Close, free programmable, 24VDC rated voltage with common ground potential, inputs with jumpers configurable in groups with separated commons

Status signals

- 8 binary outputs 24VDC: Ready - Open - Closed - Opening - Closing - Torque - Local - Remote, free programmable, 24VDC supply, max. load 0,5A/channel

Handwheel

- Optional

Explosion protection

- Protection class Ex II 2 G Ex de IIC T4
- Certifications ATEX, IECEx, NEC

Features

- Free programmable step mode control for open and close
- 4 intermediate positions definable ■ Actuator torque adjustable between 25-100% from max. torque ■ Alternative menu structure available ■ Different user levels selectable ■ Counter values for preventive Maintenance notification

Valve connection

- Flange and output shaft according ISO 5210

Electric connectors

- Power connection via 10pole screw plug Han10E+PE
- Control and status signals via 24pole screw plug Han24E
- Metric cable entries for cable glands, closed with dummy glands
- Ex-design: terminal block

Ambient temperature

- -25°C up to +60°C, extended temperature range on request

Enclosure protection

- IP67 according EN 60 529, IP68 on request

Corrosion protection

- C2 according EN ISO 12944-5 for installation in aggressive atmosphere, C3 to C5 on request

Color

- RAL7024 - graphite grey, all others on request

CM Failsafe Linear

Issue October 2023

Modulating-Duty / On-Off-Duty / up to 85 kN and 170 mm

Failsafe Actuators for Shut-Off Valves

| Size | | (r)CM03 FS 30/5 | (r)CM03 FS 50/8 | (r)CM03 FS 100/12 | (r)CM06 FS 100/30 | (r)CM06 FS 170/25 | (r)CM12 FS 120/45 |
|---|----------|---|--------------------|----------------------|----------------------|----------------------|----------------------|
| Electric force for valve against FS Direction | kN | 8 | 19 | 16 | 22 | 22 | 56 |
| Max. force S4-operation | kN | 5 | 10 | 12 | 15 | 15 | 30 |
| Max. force S9-operation | kN | 3 | 7 | 8 | 10 | 10 | 20 |
| Spring remaining torque in failsafe mode | kN | 5 | 8 | 12 | 30 | 25 | 45 |
| Max. valve stroke | mm | 30 | 50 | 100 | 100 | 170 | 120 |
| Stroke speed electrical, adjustable | mm/sec | 0,21-5,83 | 0,21-5,83 | 0,21-5,83 | 0,13-3,93 | 0,13-3,93 | 0,16-4,53 |
| Stroke speed electrical, adjustable 24VDC | mm/sec | 0,21-5,83 | 0,21-5,83 | 0,21-5,83 | 0,21-1,62 | 0,21-1,62 | -- |
| Stroking time in failsafe mode | sec | 1-5 | 1-5 | 2-10 | 4-15 | 4-15 | 5-10 |
| Valve flange | ISO 5210 | F10 | F10 | F10&F14 | F10&F14 | F10&F14 | F14 |
| Weight | kg | 80 | 99 | 104 | 159 | 165 | 312 |
| Failsafe direction / Failsafe action | | spindle extending close / spindle retracting open | | | | | |
| Power supply Failsafe brake – 24VDC | A | 0,67A (16W) | | 0,875A (21W) | | 1,17A (28W) | |
| Power supply 1ph (Standard) | | AC: 1phase 100VAC...240VAC 50/60Hz +/-10% | | | | | |
| Nominal current @1x230VAC | A | 1,47A (16Nm / 72rpm) | | 2,17A (20Nm / 60rpm) | | 3,8A (40Nm / 70rpm) | |
| Power supply 3ph (Option) | | AC: 3phase 380...480VAC 50/60Hz +/-10% | | | | | |
| Nominal current @3x400VAC | A | 0,46A (16Nm / 72rpm) | | 0,9A (32Nm / 60rpm) | | 1,4A (64Nm / 60rpm) | |
| Power supply 24VDC (Option) | | DC: 24VDC +/-10% | | | | | |
| Nominal current | A | 4,6A (10Nm / 20rpm) | | 9,2A (32Nm / 20rpm) | | -- | |

Failsafe Actuators for Reverse Acting Gate Valves

| Size | | (r)CM03 FS 80/4 | (r)CM06 FS 80/4 | (r)CM12 FS 120/20 |
|---|----------|---|----------------------|----------------------|
| Electric force for valve against FS Direction | kN | 23 | 46 | 85 |
| Max. force S4-operation | kN | 8 | 15 | 30 |
| Max. force S9-operation | kN | 5 | 10 | 20 |
| Spring remaining torque in failsafe mode | kN | 4 | 4 | 20 |
| Max. valve stroke | mm | 30 | 100 | 120 |
| Stroke speed electrical, adjustable | mm/sec | 0,21-5,83 | 0,13-3,93 | 0,16-4,53 |
| Stroke speed electrical, adjustable 24VDC | mm/sec | 0,21-5,83 | 0,21-1,62 | -- |
| Stroking time in failsafe mode | sec | 1-5 | 4-15 | 5-10 |
| Valve flange | ISO 5211 | F10 | F10&F14 | F14 |
| Weight | kg | 49 | 56 | 258 |
| Failsafe direction / Failsafe action | | spindle retracting close / spindle extending open | | |
| Power supply Failsafe brake – 24VDC | A | 0,67A (16W) | 0,875A (21W) | 1,17A (28W) |
| Power supply 1ph (Standard) | | AC: 1phase 100VAC...240VAC 50/60Hz +/-10% | | |
| Nominal current @1x230VAC | A | 1,47A (16Nm / 72rpm) | 2,17A (20Nm / 60rpm) | 70rpm) |
| Power supply 3ph (Option) | | AC 3~380-480V 50/60Hz +/-10% | | |
| Nominal current @3x400VAC | A | 0,46A (16Nm / 72rpm) | 0,9A (32Nm / 60rpm) | 1,4A (64Nm / 60rpm) |
| Power supply 24VDC (Option) | | DC: 24VDC +/-10% | | |
| Nominal current | A | 4,6A (10Nm / 20rpm) | 9,2A (32Nm / 20rpm) | -- |

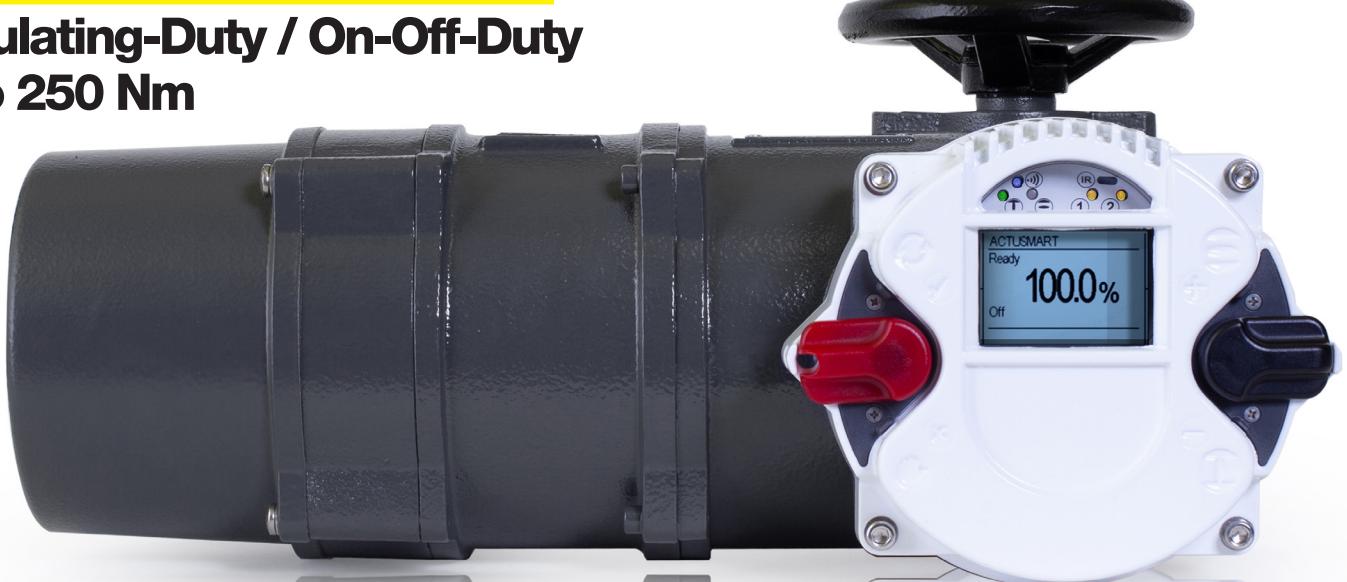
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Due to production tolerance variation, the electrical values are averages compiled from actuator production test data.

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CM Multiturn Actuator

Modulating-Duty / On-Off-Duty
up to 250 Nm



Power supply

- AC: 1phase 100VAC...240VAC 50/60Hz +/-10%
- DC: 24VDC +/-10% ■ 3-phase: 380...480VAC 50/60Hz +/-10%

Motor

- PM-motor ■ Controlled via BLDC motor control board
- Isolation class F

Absolut encoder

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Operation mode

- CMxx: ON/OFF duty S2-15min & class A and B ■ rCMxx: Modulating duty S4-1200 cycles/hour with 40% duty cycle & class C

Local control

- Selector switch LOCAL-OFF-REMOTE - lockable
- Control switch OPEN-STOP-CLOSE ■ Large LC-display for detailed visualization of status information & parameters - different languages selectable ■ Red display backlight for alarms ■ 5 RGB LEDs for status indication & control information ■ Cover lid with display in 90° steps rotatable ■ Bluetooth & infrared interface for data exchange and actuator control with Android App or Windows PC

Remote control

- 5 binary inputs 24VDC: Open - Stop - Close - Emergency Open - Emergency Close, free programmable, 24VDC rated voltage with common ground potential, inputs with jumpers configurable in groups with separated commons

Status signals

- 8 binary outputs 24VDC: Ready - Open - Closed - Opening - Closing - Torque - Local - Remote, free programmable, 24VDC supply, max. load 0,5A/channel

Explosion protection

- Protection class Ex II 2 G Ex de IIC T4
- Certifications ATEX, IECEx, NEC

Features

- Free programmable step mode control for open and close
- 4 intermediate positions definable ■ Actuator torque adjustable between 25-100% from max. torque ■ Alternative menu structure available ■ Different user levels selectable ■ Counter values for preventive maintenance notification

Valve connection

- Flange and output shaft according ISO 5210

Electric connectors

- Power connection via 6pole screw plug Han6E+PE
- Control and status signals via 24pole screw plug Han24E
- Metric cable entries for cable glands, closed with dummy glands
- Ex-design: terminal block

Ambient temperature

- -25°C up to +60°C, extended temperature range on request

Enclosure protection

- IP67 according EN 60 529, IP68 on request

Corrosion protection

- C2 according EN ISO 12944-5 for installation in aggressive atmosphere, C3 to C5 on request

Color

- RAL7024 - graphite grey, all others on request

CM Multiturn Actuator

Issue October 2023

Modulating-Duty / On-Off-Duty up to 250 Nm

| Size | (r)CM03 | (r)CM06 | (r)CM12 | (r)CM25 | |
|--|----------------------------|--|-------------------------|------------------------|----------------------|
| Torque range 1phase or 3phase, free adjustable | Nm | 8-32 | 19-64 | 32-125 | |
| Torque range 24VDC, up to 5rpm with 20rpm | Nm | 8-32 | 16-55 | -- | |
| Max. torque S4-operation | Nm | 16 | 32 | 64 | |
| Max. torque S9-operation | Nm | 10 | 20 | 30 | |
| Speed range 1ph or 3ph, free adjustable | rpm | 1-72 | 1-64 | 1-60 | |
| Speed range 24VDC, free adjustable | rpm | 1,0-20 | 1,0-20 | -- | |
| Travel sensor range | Turns | 0,25-105 | 0,25-105 1-300 | 0,25-105 1-300 | |
| Valve flange | ISO 5210 | F07/F10 | F10 | F10 | |
| Output drive | ISO 5210/DIN 3210/DIN 3338 | A/Am/B/B1/BSO/C/CSO/D/E-DO/DO/E/B3/ESO/X | | | |
| Weight | kg | 11,5 | 17,5 | 22 | |
| Motor | M | Brushless DC motor controlled by integrated control unit | | | |
| Power factor | cos φ | >0,95 | | | |
| Power supply 1ph (Standard) | | 1phase 100VAC...240VAC 50/60Hz +/-10% | | | |
| Nominal current @1x230VAC | A | 1,47A (16Nm / 72rpm) | 2,17A (20Nm / 60rpm) | 3,8A (40Nm / 70rpm) | 3,8A (80Nm/32rpm) |
| Power supply 3ph (Option) | | AC: 3phase 380...480VAC 50/60Hz +/-10% | | | |
| Nominal current @3x400VAC | A | 0,46A (16Nm / 72rpm) | 0,9A (32Nm / 60rpm) | 1,4A (64Nm/60rpm) | 1,4A (64Nm/60rpm) |
| Power supply 24VDC (Option) | | DC: 24VDC +/-10% | | | |
| Nominal current | A | 4,6A (10Nm / 20rpm) | 9,2A (32Nm / 20rpm) | -- | -- |

| Sofware Options | Code |
|--|------|
| 0/4-20 mA position transmission, galvanic separated (no signal isolator required), signal configurable as current sink | ER |
| Positioner for actuator control with 0/4-20 mA signal from PLC, passiv, potential isolation from thre remaining electronic | SR |
| PID positioner for two 0/4-20 mA input signals (target value, external actual value, configurable as activ or current sink signal) | PID |
| Actuator KKS / TAG on display (max. 15 digits) | ID |
| Customer parametrization (customer specific parametrization of binary input- and output signals in accordance with customer specific wiring diagram) | KP |
| Torque curve - torque in relation to the stroke | AP |
| Logic operations of input and output signals | VIRT |
| KVS valve characteristics - Flow in relation to the position of the actuator | VK |
| Speed characteristics - speed in relation to the stroke | SC |
| Advanced service and maintenance capabilities | ADSM |
| Automatic partial and full stroke test | ST |
| Multiport valve support - Intermediate positioning | MPIP |

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Due to production tolerance variation, the electrical values are averages compiled from actuator production test data.

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cm/ab series

issue September 2023

Partturn Gearboxes

Modulating-Duty / On-Off-Duty
up to 300.000 Nm



Planetary Gearboxes

Mode of operation

- S2-20min(On/Off) & Class A and B or S4-1200 cycles/h with 40% duty cycle and Class C

Ambient temperature

- 40°C up to +85°C

Protection enclosure

- IP67 according EN 60 529 and IEC529

Corrosion protection

- K2 (C2) for installation in aggressive atmosphere, C3 up to C5 on request

Colour

- RAL7024 with CM-series & RAL7030 with AB-series actuator

End stop

- QT12.V2 | QT25 | QT50: Mechanical endstops at 95° in Open & Close position

- QTM12.V2 | QTM25 | QTM50: Planetary gearbox without mechanical end stops

- QTP12.V2 | QTP25 | QTP50: Mechanical endstops at 185° in Open & Close position

Valve connection

- Flange according to ISO5211

- Plug-in coupling with bore and keyway or square

Worm Gearboxes

Mode of operation

- S2-20min(On/Off) & Class A and B or S4-1200 cycles/h with 40% duty cycle and Class C

Rotation

- Clockwise insert rotation by clockwise rotation of input shaft

Self-locking

- Self-locking gearbox with single worm

Ambient temperature

- 40°C up to +150°C, various versions available

Protection enclosure

- IP67 according EN 60 529 and IEC529

Corrosion protection

- C2 according EN ISO 12944-5 for installation in aggressive atmosphere, C3 to C5 on request

Colour

- RAL7024 with CM-series & RAL7030 with AB-series actuator

Position indicator

- Mechanical position indicator on gearbox

End stop

- Stop screws for easy adjustment of the swivel angle for 0° and 90° +/- 5°.

Valve connection

- Flange according to ISO5211

- Plug-in coupling with bore and keyway or square

Partturn Gearboxes

issue September 2023

Modulating-Duty / On-Off-Duty up to 300.000 Nm

Planetary Gearboxes QT-series

| Type | max. allowed output torque Nm | max. torque S4-duty Nm | Gearbox ratio | Mechanical advantage | Input flange for actuator | Valve output flange | max. shaft-Ø valve | max. valve square | Max. height valve shaft | Weight approx. | Suitable actuator size |
|--------------------------------|----------------------------------|---------------------------|---------------|----------------------|---------------------------|---------------------|--------------------|-------------------|-------------------------|----------------|--------------------------|
| | Nm | Nm | -- | -- | ISO 5211 | ISO 5211 | mm | mm | mm | kg | |
| QT12.V2 QTM12.V2 / QTP12.V2 | 120 | 60 | 4,88 | 4,16 | F10 | F05 F07 / F10 | 20 | 17 | 30 | 3,2 | CM03 / AB3 |
| QT25 QTM25 / QTP25 | 250 | 125 | 9 | 7,92 | F10 | F07 F10 | 25 | 22 | 41 | 4,8 | CM03 / CM06 AB3 / AB5 |
| QT50 QTM50 / QTP50 | 500 | 250 | 9 | 7,92 | F10 | F10 F12 | 40 | 32 | 46 | 8,9 | CM06 / AB5 |

Worm Gearboxes SBWG-Series

| Type | max. allowed gearbox output torque Nm | max. torque S4-duty Nm | Gearbox ratio | Mechanical advantage | Valve output flange | max. shaft-Ø valve | max. valve square | Max. height valve shaft | Weight | Suitable actuator size |
|---------------|--|---------------------------|---------------|----------------------|---------------------|--------------------|-------------------|-------------------------|--------|--------------------------|
| | Nm | Nm | -- | -- | ISO 5211 | mm | mm | mm | kg | -- |
| SBWG-BF M | 360 | 180/174 | 32 | 11,6 | F07 | 20 | 17 | 76 | 4 | CM03 CM06 AB3 AB5 |
| SBWG-0 M | 780 | 390 | 36 | 13,4 | F07/F10 | 28 | 22 | 77 | 6 | CM03 CM06 AB3 AB5 |
| SBWG-00 M | 1200 | 600 | 40 | 14,1 | F10/F12 | 36 | 28 | 86 | 10 | CM06 CM12 AB5 AB8 |
| SBWG-01 M | 1812 | 906 | 44 | 15,1 | F10/F12/F14 | 46 | 35 | 96 | 13 | CM12 AB8 |
| SBWG-02 M | 2800 | 1400 | 48 | 15,9 | F12/F14/F16 | 60 | 46 | 109 | 21 | CM12 AB8 AB18 |
| SBWG-02-1S M | 2800 | 1400 | 121,6 | 37,1 | F12 & F16 F14 | 60 | 46 | 109 | 25 | CM06 CM12 AB5 AB8 |
| SBWG-03 M | 4300 | 2150 | 52 | 16,9 | F14/F16 | 75 | 58 | 116 | 29 | AB18 AB40 |
| SBWG-03-1S M | 4300 | 2150 | 131,7 | 39,5 | F14 F16 | 75 | 58 | 116 | 33 | CM12 AB8 |
| SBWG-04 M | 10400 | 5200 | 56 | 18,3 | F16/F25 | 95 | 73 | 147 | 56 | AB18 AB40 AB80 |
| SBWG-04-1S M | 6048 | 3024 | 168 | 50,4 | F16 & F25 | 95 | 73 | 147 | 66 | CM12 AB8 |
| | 10400 | 5200 | 168 | 50,4 | F16/F25 | 95 | 73 | 147 | 66 | AB18 |
| SBWG-05 M | 15900 | 7950 | 60 | 19,6 | F25/F30 | 115 | 89 | 155 | 78 | AB80 AB100 |
| SBWG-05-1S M | 15900 | 7950 | 180 | 54,0 | F25 & F30 | 115 | 89 | 155 | 88 | AB18 AB40 |
| SBWG-05-1SD M | 15900 | 7950 | 540 | 149,0 | F25 & F30 | 115 | 89 | 155 | 93 | CM06 CM12 AB5 AB8 |
| SBWG-06-1S M | 32800 | 16400 | 256 | 74,2 | F25 & F30 | 140 | 108 | 200 | 175 | AB18 AB40 |
| SBWG-06-1S M | 32800 | 16400 | 256 | 74,2 | F35 | 140 | 108 | 200 | 175 | AB18 AB40 AB80 |
| SBWG-06-1SD M | 32748 | 16374 | 1024 | 272,9 | F25 & F30 | 140 | 108 | 200 | 188 | CM06 CM12 AB5 AB8 |
| SBWG-06-1SD M | 32748 | 16374 | 1024 | 272,9 | F35 | 140 | 108 | 200 | 188 | CM06 CM12 AB5 AB8 |
| SBWG-07-1S M | 51100 | 25550 | 272 | 80,9 | F30/F35/F40 | 180 | 139 | 227 | 271 | AB40 AB80 |
| SBWG-07-1SD M | 51100 | 25550 | 1088 | 297,9 | F30/F35/F40 | 180 | 139 | 227 | 284 | CM12 AB8 AB18 |
| SBWG-75-1S M | 81500 | 40750 | 330 | 106,1 | F35/F40/F48 | 210 | 160 | 246 | 422 | AB40 AB80 |
| SBWG-75-1SD M | 81500 | 40750 | 1650 | 488,2 | F35/F40/F48 | 210 | 160 | 246 | 450 | CM12 AB8 AB18 |

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Due to production tolerance variation, the electrical values are averages compiled from actuator production test data.

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cm/ab series

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Linear Units

up to 350 kN and 500 mm



Mode of operation

- S2-20min(On/Off) & Class A and B or S4-1200 cycles/h with 40% duty cycle and Class C
- LK-units: up to S9 and Class D

Self-locking

- L-units: self-locking
- LK-units: non self-locking

Ambient temperature

- -40°C up to +80°C

Protection enclosure

- L-units: IP66 according EN 60 529 and IEC529
- LK-units: IP67 according EN 60 529 and IEC529

Corrosion protection

- C2 according EN ISO 12944-5 for installation in aggressive atmosphere, C3 to C5 on request

Colour

- RAL7024 with CM-series & RAL7030 with AB-series actuator

Valve connection

- Flange according to ISO 5210

Technology

- L-units: threaded spindle and spindle nut
- LK-units: ballscrew spindle

Application

- L-units: standard process control
- LK-units: high-precision process control, control of small strokes with high cycles of operation

Linear Drives

issue September 2023

Linear Drives up to 350 kN and 500 mm

L-units – threaded spindle and spindle nut

| Type | Thrust force max. | Thrust force min. | Modulating force max. | Stroke max. | Mechanical advantage | Valve flange | Spindle end work for mounting on valve stem | max. thrust forces in combination with rotary actuator [kN] | | | | | | | | Weight approx. | |
|-------------|-------------------|-------------------|-----------------------|-------------|----------------------|--------------|---|---|------|-----|---------|----------|------|------|-------|----------------|-----|
| | kN | kN | kN | mm | -- | ISO 5210 | | AB3 | CM03 | AB5 | CM06 | AB8 CM12 | AB18 | AB40 | AB100 | AB200 | |
| -- | | | | | | | | | | | | | | | | | |
| L50 | 15 | 3,5 | 7,5 | 50 | 2 | F10 | M16x1,5 | 15 | 15 | 15 | -- | -- | -- | -- | -- | -- | 7 |
| L75 | 25 | 3,5 | 7,5/ 12,5 | 75 | 2 | F10 | M16x1,5 | 15 | 15 | 15 | 25 | 25 | -- | -- | -- | -- | 8 |
| L100 | | | | 100 | 2 | | | 15 | 15 | 15 | 25 | 25 | -- | -- | -- | -- | 9 |
| L350 (1) | | | 13 | 350 | 2,43 | | M24x2,0 | 12 | -- | 15 | 26 | 25 | -- | -- | -- | -- | 15 |
| L500 (1) | | | | 500 | 3,62 | | | 8 | -- | 15 | 17,5 | 25 | -- | -- | -- | -- | 19 |
| L200,5 (1) | 30 | 10 | 20 | 200 | 2,44 | F10 | M16x1,5 | 12 | 13 | 15 | 15 | -- | -- | -- | -- | -- | 15 |
| L200,8 (1) | | | | | | | | -- | -- | -- | -- | 30 | -- | -- | -- | -- | 15 |
| L100,8 | 45 | 18 | 22 | 100 | 2,73 | F10 | M16x1,5 | -- | -- | -- | -- | 45 | -- | -- | -- | -- | 14 |
| L120,18 | 75 | 38 | 39,5 | 120 | 3,16 | F14 | M36x3,0 M20x1,5 | -- | -- | -- | -- | 75 | -- | -- | -- | -- | 28 |
| L220,18 (1) | | | | | | | | 220 | 3,16 | F14 | M36x3,0 | -- | -- | -- | 75 | -- | -- |
| L150,40 | 100 | 45 | 55,5 | 150 | 4,45 | F14 | M36x3,0 | -- | -- | -- | -- | -- | 100 | -- | -- | -- | 39 |
| L300,40 (1) | | | | 300 | 4,45 | | | -- | -- | -- | -- | -- | 100 | -- | -- | -- | 43 |
| L100,100 | 220 | 108 | 108 | 100 | 4,61 | F16 | M42x3,0 | -- | -- | -- | -- | -- | -- | 217 | -- | -- | 110 |
| L200,100 | | | | | | | | -- | -- | -- | -- | -- | -- | 217 | -- | -- | 120 |
| L200,200 | 350 | 177 | 177 | 200 | 5,64 | F25 | M48x3,0 | -- | -- | -- | -- | -- | -- | -- | -- | 350 | 150 |

LK-units – ballscrew spindle

| | | | | | | | | | | | | | | | | | |
|-------|----|----|---------|-----|------|-----|---------|----|----|----|----|----|----|----|----|----|------|
| LK50 | 15 | 8 | 7,5 (3) | 50 | 1,06 | F10 | M20x1,5 | -- | 15 | -- | -- | -- | -- | -- | -- | -- | 12,3 |
| LK100 | 30 | 8 | 15 (3) | 100 | 1,06 | F10 | M20x1,5 | -- | 30 | -- | -- | -- | -- | -- | -- | -- | 15,0 |
| LK120 | 60 | 16 | 30 (3) | 120 | 1,06 | F10 | M20x1,5 | -- | -- | -- | 60 | -- | -- | -- | -- | -- | 19,2 |
| | | | | | | F14 | M36x3,0 | -- | -- | -- | -- | -- | -- | -- | -- | -- | |