# ZAtop gearless elevator machine

## SM250.45, SM250.60, SM250.80

SM250.45B/60B

SM250.80D

### Synchronous motor actuated by permanent magnets and according to the provisions of the Lift Directive 2014/33/EU

Elevator machine
- NdFeB magnets
- For fast elevators of up to 4 m/s
- Noise emissions: < 50 dB(A)
- Insulation class F with temperature monitoring

Brake system
- Safety component in accordance with Lift Directive 2014/33/EU
- Separately activated brake circuits
- Deployable as an element of the ascending car overspeed protection means
- Deployable as part of the protection against unintended car movement


| | |
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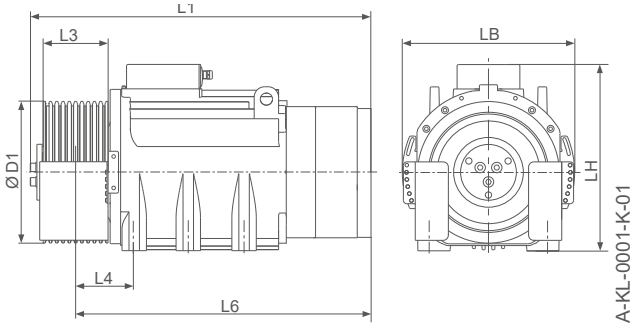
| Forced ventilation | Page 73 |
| ZAlift | Page 76 |


### Technical data

SM250

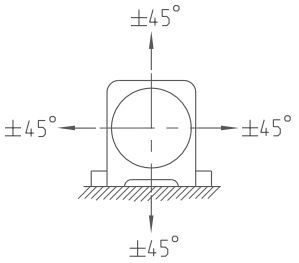



| Motor type | Nominal torque Nm | Max. axle load kg | Nominal speed rpm | Rated output power kW | L1 mm | LH mm | L4 mm | L6 mm | LB mm | D1 mm | L3 mm | Weight kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SM250.45B-20 | 900 - 1120 | 6000 | 60 - 336 | 7.0 - 31.7 | 922 | 535 | 163 | 785 | 410 | 320 | 182 | 635 |
| | | | | | | | | | 425 | 400 | 150 | 640 |
| | | | | | | | | | 500 | | 186 | 650 |
| | | | | | | | | | 520 | 500 | 150 | 670 |
| | | | | | | | | | 543 | 520 | | 680 |
| | | | | | | | | | 620 | 600 | | 695 |
| | | | | | | | | | 660 | 640 | | 750 |
| SM250.60B-20 | 1200 - 1600 | | | 10.0 - 42 | 984 | | | 847 | 410 | 320 | 182 | 695 |
| | | | | | | | | | 425 | 400 | 150 | 700 |
| | | | | | | | | | 500 | | 186 | 715 |
| | | | | | | | | | 520 | 500 | 150 | 735 |
| | | | | | | | | | 543 | 520 | | 740 |
| | | | | | | | | | 620 | 600 | | 765 |
| | | | | | | | | | 660 | 640 | | 810 |
| SM250.80D-20 | 2000 - 2500 | 8000 | 54 - 300 | 12.6 - 72.3 | 1147 | 645 | 170 | 999 | 474 | 440 | 200 | 1020 |
| | | | | | | | | | 546 | 520 | | 1041 |
| | | | | | | | | | 666 | 640 | | 1128 |

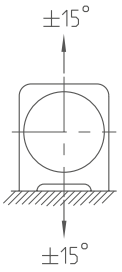
## Scope of delivery and options

| SM250 | Standard | Options |
|---|---|---|
| **Motor** | Gearless elevator machine | - |
| **Traction sheave** | See D1 | - |
| **Brake** | Certified brake system | Mechanical hand release |
| **Brake monitoring** | Microswitch | Inductive proximity switches |
| **Motor cable** | - | 10 m, 15 m, 20 m, 25 m halogen free |
| **Absolute encoder** | EnDat | BiSS-C / SSI / SinCos / TTL |
| **Rope guard** | 2 pieces | 3. Rope guard |
| **Temperature monitoring** | PTC thermistor | PT100-thermistor |
| **Cooling** | Surface cooling | Forced ventilation |

## Resulting rope force




with lateral form lock support




without lateral form lock support

## Example configurations

Other configurations, also outside of the examples listed below, are possible.
Our calculation software ZAlift is available to you for fast and convenient calculation of your elevator machine.

| Suspension | Payload kg | Speed m/s | Traction sheave mm | Motor type | Number of ropes | Rope diameter mm | Motor power kW | Rated current A |
|---|---|---|---|---|---|---|---|---|
| 1:1 | 630 | 1.60 | 520 | SM250.45B-20 | 7 | 12.0 | 7.0 | 22.0 |
| | 1000 | 1.60 | 520 | SM250.60B-20 | 7 | 13.0 | 10.0 | 30.0 |
| | 1000 | 2.00 | 320 | SM250.45B-20 | 10 | 8.0 | 14.1 | 37.0 |
| | 1000 | 2.00 | 520 | SM250.80D-20 | 9 | 12.0 | 18.8 | 52.0 |
| | 1250 | 1.60 | 640 | SM250.80D-20 | 7 | 16.0 | 14.1 | 50.0 |
| | 1250 | 2.00 | 400 | SM250.60B-20 | 10 | 10.0 | 16.0 | 43.0 |
| 2:1 | 1000 | 1.00 | 640 | SM250.45B-20 | 8 | 10.0 | 7.0 | 22.0 |
| | 1050 | 1.60 | 600 | SM250.45B-20 | 7 | 13.0 | 12.7 | 34.0 |
| | 1250 | 1.60 | 640 | SM250.60B-20 | 8 | 11.0 | 16.0 | 43.0 |
| | 1275 | 1.00 | 500 | SM250.45B-20 | 8 | 8.0 | 11.3 | 31.5 |
| | 1600 | 1.00 | 320 | SM250.45B-20 | 10 | 8.0 | 14.1 | 37.0 |
| | 1600 | 1.60 | 320 | SM250.45B-20 | 10 | 8.0 | 20.1 | 50.0 |
| | 1600 | 2.50 | 320 | SM250.45B-20 | 10 | 8.0 | 31.7 | 73.0 |
| | 1600 | 2.50 | 640 | SM250.80D-20 | 9 | 13.0 | 36.4 | 94.0 |
| | 2000 | 1.60 | 320 | SM250.45B-20 | 10 | 8.0 | 20.1 | 50.0 |
| | 2000 | 1.60 | 520 | SM250.80D-20 | 11 | 10.0 | 25.1 | 67.0 |
| | 2000 | 2.50 | 500 | SM250.60B-20 | 9 | 10.0 | 32.0 | 80.0 |
| | 2500 | 2.00 | 520 | SM250.80D-20 | 9 | 13.0 | 40.8 | 120.0 |
| | 3000 | 1.00 | 440 | SM250.80D-20 | 11 | 11.0 | 28.3 | 86.0 |
| | 3000 | 1.60 | 440 | SM250.80D-20 | 11 | 10.0 | 28.9 | 78.0 |
| 4:1 | 5000 | 1.00 | 440 | SM250.80D-20 | 11 | 10.0 | 36.4 | 94.0 |
| | 6300 | 1.00 | 440 | SM250.80D-20 | 11 | 10.0 | 53.4 | 150.0 |
| | 6500 | 0.80 | 440 | SM250.80D-20 | 11 | 10.0 | 40.8 | 120.0 |
| 6:1 | 6000 | 1.00 | 520 | SM250.80D-20 | 8 | 10.0 | 46.5 | 118.0 |