

Elevator data

Nominal load	Q	kg	1000	
Car weight	F	kg	1200	(1114 - 1361kg)
Counterweight	G	kg	1700	(50%)
Travelling speed	v	(V_3=)	m/s	1,00
Travel distance	H	m	30,0	
Suspension / (roping)	is			2 : 1
Machine at the top, above				
Shaft efficiency	etaS	%	82	
Number of pulleys	(ball bearing)		3	
Type of rope	WOLF F 819 S-FE			
Number of ropes	z		7	
Rope diameter	ds	mm	8	
Rope weight	s	kg	45	(0,215 kg/m)
Compensation rope weight	su	kg	0	
Car cable weight	HK	kg	15	
Rope span weight	R	kg	0	
Min. rope breaking load	B	N	30500	
Traction sheave diameter	Dtr	mm	320	(ZA01007199)
Sheave width		mm	112	(number of grooves)
7)				
Groove distance		mm	14,0	Minimum distance
Angle of wrap minimum	min.	deg	180	
Undercutangle		deg	95	
Undercutwidth	b	mm	5,90	
Groove angle		deg	30	
Sheave profile: circular undercut groove				

Traction, rope pressure, rope safety

Traction empty, on top, accelerating (1,18)
 $1,7352 \leq 1,8399$
Traction 150% nominal load, below, not moving
 $1,6414 \leq 1,8399$
Rope pressure $k <$ permissible rope pressure
 $6,95 < 9,00 \text{ N/mm}^2$

Conditions according to EN81-1 or -20:

Load 125% $1,4943 \leq 1,8582$ (1)
Emergency stop $1,6358 \leq 1,6759$ (4)
with deceleration $[m/s^2] 0,500$
Blocked car $16,611 > 3,4528$ (4)

Real safety factor $>$ Minimum safety factor for ropes
 $19,00 > 12$

Rope safety factor according to EN81-1 or -20:
NEQUIV = 08,7 NEQUIVT = 06,7 NEQUIVP = 02,0
Pulleys $\geq 320 \text{ mm}$, pulleys NPR = 0 NPS = 2
Rope safety $\nu_{ue} = 19,0 > 17,8$ (minSF)
Rope certification EN81

Traction conditions are fulfilled.
Rope safety conditions are fulfilled.

ZAlift - 20170315 - Machine dimensioning ZA-145535

Mechanical drive data

Machine manufactured by Ziehl-Abegg
Machine type SM 200.40C Gearless synchronous
Machine version ZAtop *

Traction sheave	mm	320 /112/14,0/7x8/U95
Load output torque	Nm	561 (max. 660)
Real statical axle load	kg	2002 (max. 3300)

Brake with overexcitation

Brake data

brake Warner ERS VAR07 SZ800/800, 2x800 Nm, EU-BD 819/1 (ABV826/1 + ESV826)
Dual Circuit disk brake, 207/103 V DC, fast acting rectifier necessary
(463 Nm, 1,02 m/s², 1 m, 6486 J, 168 W)
207/103 V brake, with overexcitation, with hand release, microswitch

Machine load data in the installation

Typical motor operating power	kW	4,7
Typ. operating current	A	19,7
Start. Current	A	28,2
Start. Current	A	29,7
Average power losses	kW	1,03
Output speed	rpm	119
Load torque	Nm	561,7 (eff. 377,5)
Inertia of installation	kgm ²	26,11

240 Starts per hour , 40 % required duty cycle at elevator operation
Max. static load pulleys 16678 N, pulley speed 1,00 m/s

Selected ZIEHL-ABEGG motor

Motor type SM200.40C-20 - gearless

	Nameplate data	(Operating
Rated voltage	V	360
Rated frequency	Hz	20 (19,9)
Rated torque	Nm	600 (561,7)
Rated speed	rpm	120 (119,4)
Rated output power	kW	7,5 (7,0)
Rated current	A	21 (19,7)
Maximum torque	Nm	1000 (1000)
Current at maximum torque	A	39 (39)
Inertia of motor	kgm ²	0,310
Possible acceleration	m/s ²	1,33

(MKmax=600,0 Nm)

Without cooling (58)

Dimension sheet A-M-6453 / A-M-6460, Motor construction type IMB3

Motor with encoder ECN 1313-2048Endat

Selected frequency inverter

Inverter ZAdyn 4CS023, Rated inverter current 23 A
mains current 15,0 A, 400 V, 9,9 kW, Max. 1,33 m/s²
Radio interference filter, integrated ; Line reactor, integrated
Brake resistance separate BR25-3 (or Recuperation: ZArec4C 013