عمران مدرن

بازار نوین ارتباطات ساختمانی

نصب آسانسور

و تهیه کلیه قطعات

سراسر کشور

با قیمت استثنایی و اکیپ متخصص

برای مشاوره رایگان تماس بگیرید

02162999675

Elevator calculation **acc. EN81-20/50** **Künzelsau, Germany egd Date: 05.05.2017**

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 <= 1,8399
Traction 150% nominal load, below, not moving
1,6414 <= 1,8399
Rope pressure k < permissible rope pressure
6,95 < 9,00 N/mm²

Conditions according to EN81-1 or -20:

Load 125%	1,4943 <= 1,8582	(1)
Emergency stop	1,6358 <= 1,6759	(4)
with deceleration [m/s²]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 >= 320 mm, pulleys NPR = 0 NPS = 2
Rope safety nue = 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 19,7 A, Start. Current 28,2 A at acceleration 0,60 m/s²		
Start. Current		29,7 A at acceleration 0.7 m/s²
Average power losses		1,03 kW = 3722,34 kJ/h
Output speed	rpm	119
Load torque	Nm	561,7(eff. 377,5)
Inertia of installation	kgm²	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 data)
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	kgm²	0,310	
Possible accelleration (MKmax=600,0 Nm)	m/s²	1,33	

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