EN

Movement by Perfection

Drive Technology

for elevators
2016 Edition

The Royal League in ventilation, control and **drive technology**

ZIEHL-ABEGG

ZIEHL-ABEGG Brand Products for Elevator Technology

ZAtop - The Flexible One

Complete series for elevators up to 6,500 kg payload - everything from one single source! The gearless elevator machine of the ZAtop series, designed as an internal rotor is the BEST solution for elevators with and without machine room.

ZAsyn - The Slim One

Complete series for elevators up to 2,500 kg payload - everything from one single source! The gearless elevator machine of the ZAsyn series, designed as an external rotor, stands out as an extremely slim elevator machine for elevators with and without machine room.

ZAdisc - The Flat One

Complete series for elevators up to 1,125 kg payload - everything from one single source! The gearless elevator machine of the ZAdisc series, designed as a disc rotor, is the space-saving miracle par excellence for elevators without a machine room.

ZAS - The Gear Ratio Multiplier

Complete series for elevators up to 10,000 kg payload - everything from one single source! The ZAS series consists of a high quality gearbox Made in Germany and a special elevator asynchronous motor from ZIEHL-ABEGG. The universally usable geared machine suits perfectly for modernisation.

ZAlift - The Perfect Choice

With the ZAlift calculation software, you can accurately calculate your elevator system and you will immediately obtain important information for the installation, operation and final inspection of your elevator.

ZAdyn - For Proper Control

With the frequency inverter from the ZAdyn series, you comfortably and reliably control the speed of your elevator machines. The compact design and the simple, intelligent control make it an indispensable companion.

EVAC - The Bodyguard

The evacuation units from the EVAC series make laborious, delayed rescue of trapped people by external personnel superfluous.

ZApad - The Optimal Control

If you want external activation, the ZApad operating terminal is the perfect add-on for ZAdyn frequency inverters and EVAC evacuation units.

ZAmon - The Optimiser

If transparency and intelligent control are required, ZAmon is the software at your side. ZAmon provides all options needed to selectively control the ZAdyn frequency inverters, to backup and manage the data and to diagnose weak points - the optimiser for your elevator system.

Contents

The ZIEHL-ABEGG Company — Page 4

Gearless elevator machines ZAtop — Page 12

Gearless elevator machines ZAsyn — Page 34

Gearless elevator machines ZAdisc — Page 42

Elevator machines with gearbox ZAS — Page 48

Motors VFD — Page 62

System components — Page 66

Control technology — Page 88

System components control technology — Page 106

ZIEHL-ABEGG global — Page 137

ZIEHL-ABEG
Die Königskla
der Lufttechnik,
Regeltechnik und Antriebstechni
Radialventilator
ZAmid® Technologie

No one can get past the Royal League

ZIEHL-ABEGG has stood for movement by perfection in the ventilation technology, control technology and drive technology sectors for more than 100 years. What started with the invention of the first external rotor motor by Emil Ziehl is now being carried on at the company's sites around the world. We are the pioneers, masterminds and developers of technologies for the future who more than satisfy all demands to preserve an environment worth living in and to meet all our customers' requirements and wishes.

Think in the future - discover ZIEHL-ABEGG

We look forward to seeing you in ventilation, control and drive technology. There, where ideas are the daily challenge and where the latest, outstanding technologies are developed.

Welcome to the best.

Welcome to the Royal League

Safety
Output
Drive comfort

Elevator technology from ZIEHL-ABEGG

Millions of people ride elevators day for day all over the world. They ride quickly, safely and comfortably up to their offices, apartments or hotel rooms and back down again. They have good reason to trust this technology because many elevator manufacturers put their trust in the decisive contribution that ZIEHL-ABEGG makes to safety and drive comfort. It is the drive and control engineering, the “heart” and “soul” of the elevator. One of the reasons for this trust is ZIEHL-ABEGG’s ability to adapt the motor and control engineering to the manufacturer’s specific requirements regardless of how far up or down the elevator is to travel and how much space is available. Another good reason is the ZIEHL-ABEGG know-how based on their 100 years of experience. It is the visions of the elevator manufacturers that become reality in the drive and control systems made by ZIEHL-ABEGG.

The Royal League of elevator machines

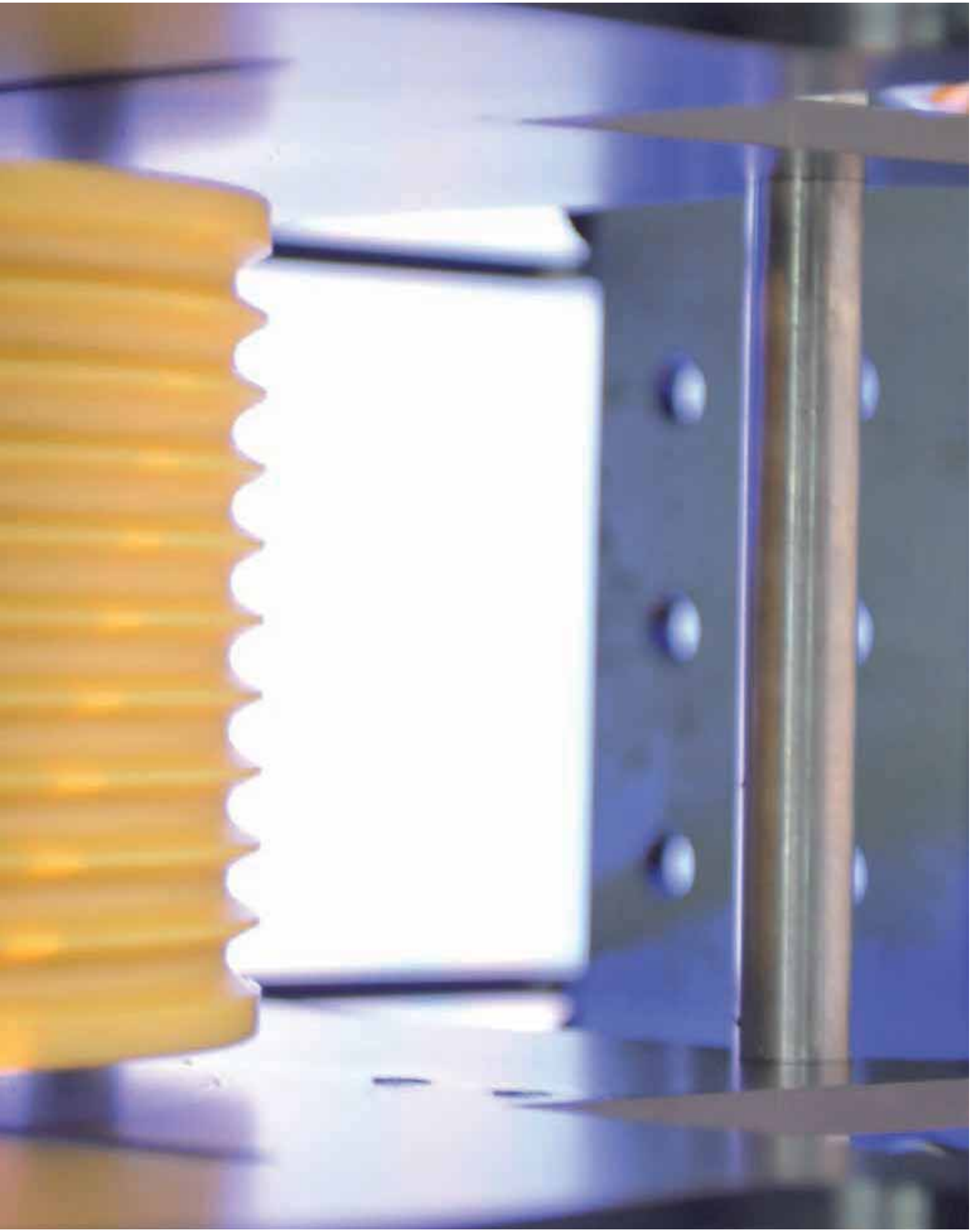
Maximum benefit for manufacturers and user

Meeting the requirements of elevator builders, owners and passengers is the decisive success factor for elevator manufacturers. As a partner to leading manufacturers, ZIEHL-ABEGG constantly strive to make the maximum contribution to satisfying these needs. This goal is reflected in many ways. For example in the cost saving and environmentally friendliness of the elevators thanks to the high efficiency of the ZIEHL-ABEGG motor technology with the precisely adapted control technology. Or in the certainty of getting the ideal drive for every architectural and constructional requirement: Low-noise, with and without gear, as a synchronous or asynchronous motor, with powerful, compact drives right down to small motors for minimal shaft volumes. ZIEHL-ABEGG also demonstrate their solution competence in highly intelligent frequency inverters and evacuation units and in user-friendly diagnostic software. But the root of all considerations is still the passenger and the fulfilment of his needs: Maximum safety and greatest drive comfort. ZIEHL-ABEGG makes the best possible contribution to this.

The Royal League of modernisation

Obtained values - securing the future

ZIEHL-ABEGG offers maximum customer benefits quickly and simply: They turn old elevators into efficient, energy saving, comfortable and low-noise systems. Often just a few but all the more intelligent retrofits suffice. ZIEHL-ABEGG has a wide range of high-tech components ready for this. The experienced ZIEHL-ABEGG technicians plan the modernisation of the old elevator technology quickly and reliably. The customer gets innovating solution suggestions. The competence of ZIEHL-ABEGG and the use of the high quality and high efficiency products result in a reasonable and profitable investment. Drives with the highest standards and in different sizes as well as precisely adapted control engineering and suitable machine frames are a central part of the product portfolio.



BEGG

Gearless elevator machine ZAtop

Product overview

Information	Page 14
ZAtop SM132	Page 18
ZAtop SM160	Page 20
ZAtop SM190	Page 22
ZAtop SM200	Page 24
ZAtop SM210	Page 26
ZAtop SM225	Page 28
ZAtop SM250	Page 30

ZAtop Gearless elevator machine

General information

Gearless permanent magnet elevator machine in internal rotor design.
The BEST solution for elevators with and without machine room.

Complete series for elevators up to 6,500 kg payload - everything from one single source!

Great flexibility and variability:
- Different sizes for ideal shaft and shaft head dimensions
- Speeds up to 4.0 m/s
- Traction sheave diameters from 120 mm to 640 mm
- For rope diameters from 4 mm to 16 mm
- Various encoder systems
- Brake systems with various operating voltages
- Optimum package solutions with the ZIEHL-ABEGG frequency inverter ZAdyn
- Reliable selection with the ZAlift calculation software

A glimpse inside

① Absolute encoder
② Brake
③ Flange B-side
④ Housing with electric terminal box
⑤ Stator lamination
⑥ Rotor with magnets
⑦ Motor shaft
⑧ Shaft seal ring
⑨ Shaft bearing
⑩ Flange A-side
⑪ Traction sheave

Your safety

All ZAtop series machines have type-approved brakes with certificates that they can be used as safety device against uncontrolled and unintended car movement.

EC type-examination certificate

Certificate no.:	ABV 845
Notified body:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München – Germany
Applicant/ Certificate holder:	Chr. Mayr GmbH & Co. KG Eichenstr. 1 87665 Mauerstetten – Germany
Date of application:	2009-11-25
Manufacturer of the test sample:	Chr. Mayr GmbH & Co. KG Eichenstr. 1 87665 Mauerstetten – Germany
Product:	Braking device, acting on the shaft of the traction sheave, as part of the protection device against overspeed for the car moving in upwards direction
Type:	RTW Größe 150, 200, 250, 350 Type 8012.___.___

Type-examination certificate

Certificate no.:	ESV 845
Certification office:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München - Germany
Applicant/ certificate holder:	Chr. Mayr GmbH & Co. KG Eichenstr. 1 87665 Mauerstetten - Germany
Date of application:	2011-03-01
Manufacturer of the test sample:	Chr. Mayr GmbH & Co. KG Eichenstr. 1 87665 Mauerstetten - Germany
Product:	Braking element acting on the shaft of the traction sheave, as a part of the protection device against unintended car movement
Type:	RTW Größe 150, 200, 250, 350 Type 8012.___.___

The machines are optimised for use in elevators without machine room as well as for 1:1, 2:1 or 4:1 suspensions or centrally guided cantilever elevators.

Cantilevered elevator in suspension 2:1

Cantilevered elevator in suspension 1:1

Elevator machines by ZIEHL-ABEGG

Portfolio

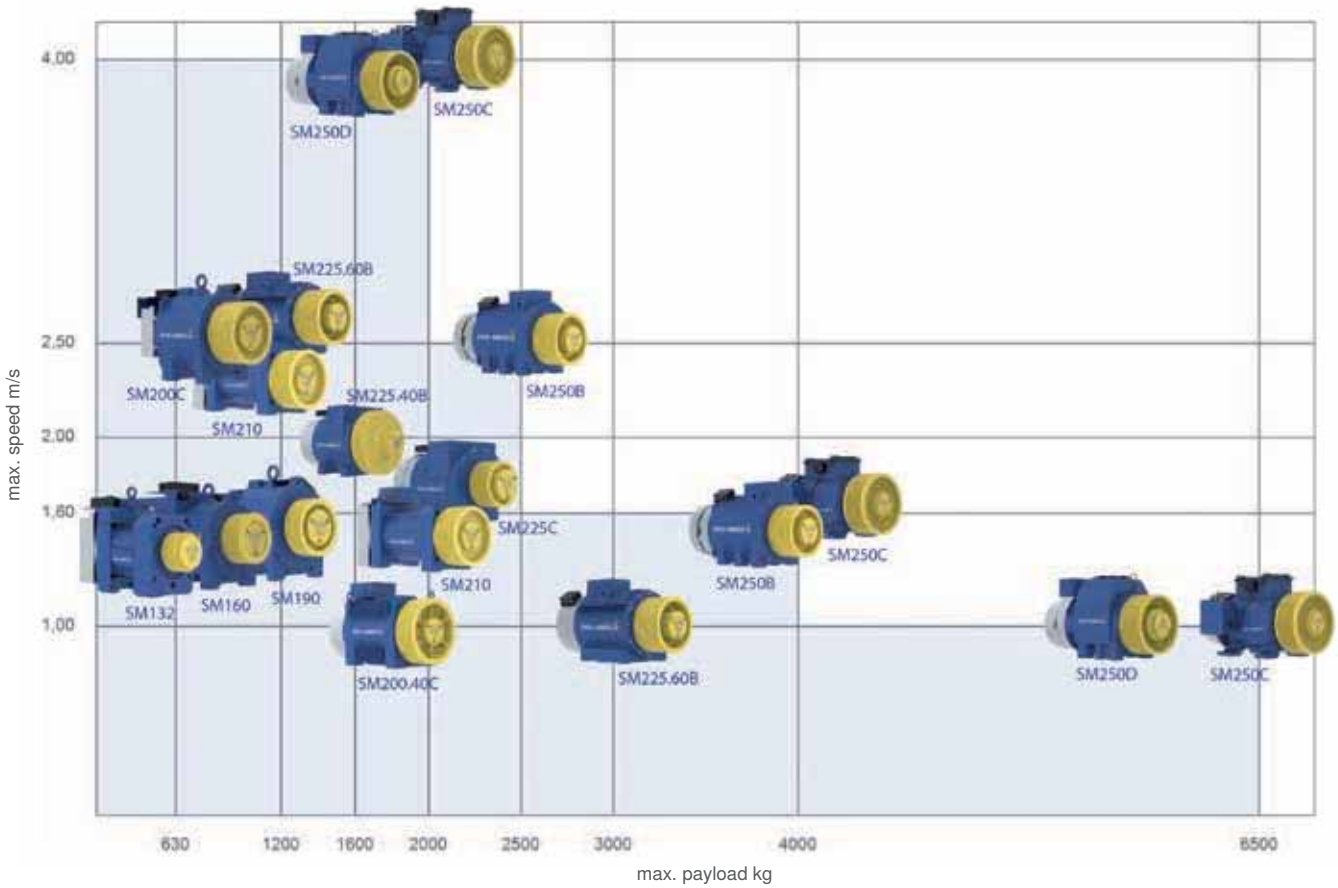
ZIEHL-ABEGG SE offers a wide portfolio of gearless elevator machines.

Elevator machines from ZIEHL-ABEGG ensure high flexibility and variability.

The different frame sizes, which are designed as narrow and short as possible, enable optimum shaft and shaft head dimensions. The combination of the machine with a customised traction sheave of 120 mm to 640 mm and rope diameters from 4 mm to 16 mm enables travelling speeds up to 4.0 m/s.

Different encoder systems are available for the ZAtop for adaptation to all frequency inverters.
The high efficiency and smooth running are distinguishing features of the ZAtop. The optimum package solution for every elevator is formed by the ZAtop in combination with the ZAdyn frequency inverter.

Overview



More detailed information about the respective combinations of the machines can be found on the following pages. To determine the suitable machine for your elevator system, our ZAlift calculation software is available to you free of charge.

ZAtop Gearless elevator machine

SM132

Deflection pulleys Page 80
ZAlift Page 87

Description

- Permanent magnet synchronous motor with NdFeB magnets
- Specially developed for the use of plastic coated ropes
- With 205 mm installation width designed for the narrowest shaft dimensions
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 2,400 kg
- Traction sheave: 120 mm or 160 mm
- Separately controllable brake circuits, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave
- Absolute encoder type Heidenhain ECN1313 EnDat
- 5 m motor cable
- Rope guard according to EN 81

Options

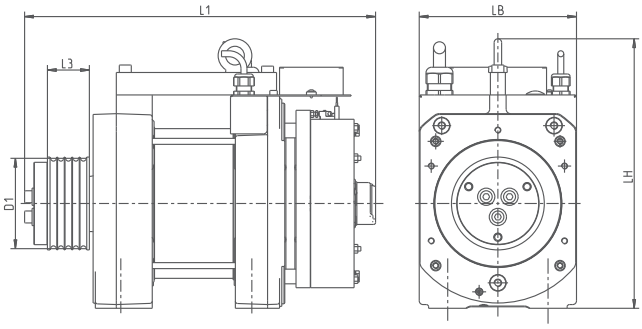
- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable in lengths 10 m, 15 m, 20 m and 25 m
- Mechanical hand release system for brake
- Pre-parametrised frequency inverter ZAdyn

Technical data

Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM132.21	120	2400	240...510	3.0...6.4
SM132.35	200	2400	240...510	5.0...10.7

Dimensions mm

SM132



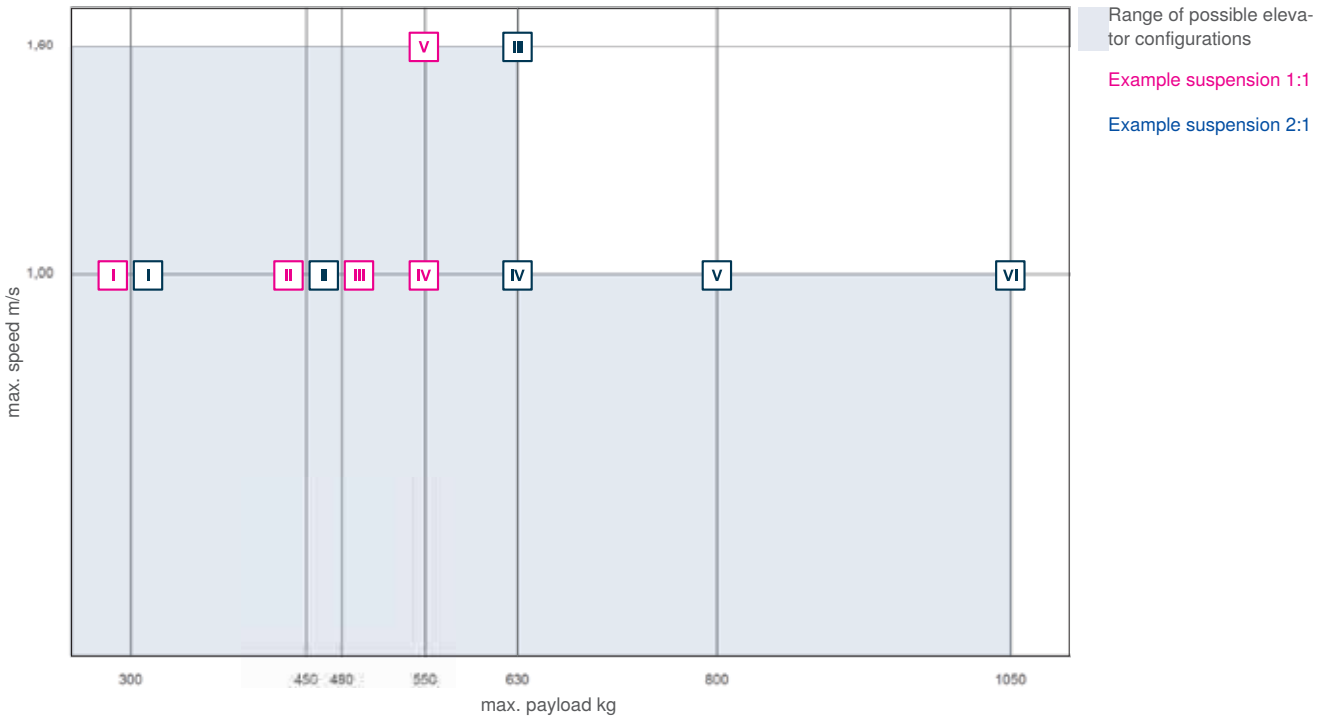
Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM132.21/B	469	360	205	120	56	108
SM132.35/B	559				76	138
SM132.21/B	469			160	56	112
SM132.35/B	559				76	142

Range of possible elevator configurations for SM132

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAtop SM132 elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	300	1.0	SM132.21	120	5 x 6.5	2.0	6.5
	II	450	1.0	SM132.35	160	6 x 6.5	2.8	11.8
	III	480	1.0	SM132.35	120	6 x 6.5	3.0	9.4
	IV	550	1.0	SM132.35	120	7 x 6.5	3.4	10.8
	V	550	1.6	SM132.35	120	7 x 6.5	5.5	19.0
2:1	I	300	1.0	SM132.21	160	4 x 6.5	2.1	6.2
	II	450	1.0	SM132.21	160	4 x 6.5	3.0	8.9
	III	630	1.6	SM132.21	120	4 x 6.5	6.5	17.1
	IV	630	1.0	SM132.21	120	5 x 6.5	4.4	12.5
	V	800	1.0	SM132.35	160	6 x 6.5	6.5	19.2
	VI	1050	1.0	SM132.35	120	7 x 6.5	6.7	18.7



ZAtop Gearless elevator machine

SM160

Description

- Permanent magnet synchronous motor with NdFeB magnets
- With 245 mm installation width for the narrowest shaft dimensions
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 2,500 kg
- Traction sheave: 120 mm to 240 mm
- Separately controllable brake circuits, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave
- Absolute encoder type Heidenhain ECN1313 EnDat
- 5 m motor cable
- Rope guard according to EN 81

Options

- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable in lengths 10 m, 15 m, 20 m and 25 m
- Mechanical hand release system for brake
- Pre-parametrised frequency inverter ZAdyn

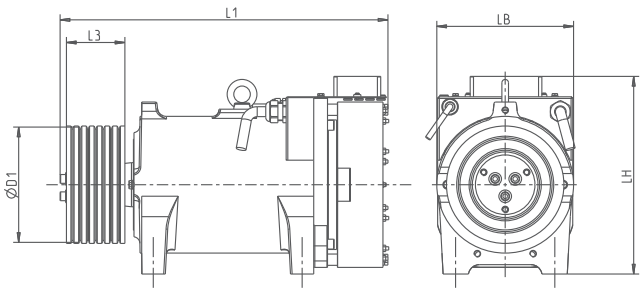
- Machine frame — Page 68
- Deflection pulleys — Page 80
- Adapter plates — Page 79
- ZAlift — Page 87

Technical data

Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM160.30B	195	1900	192...384	3.9...7.8
SM160.40B	260	2500	192...384	5.2...10.5

Dimensions mm

SM160



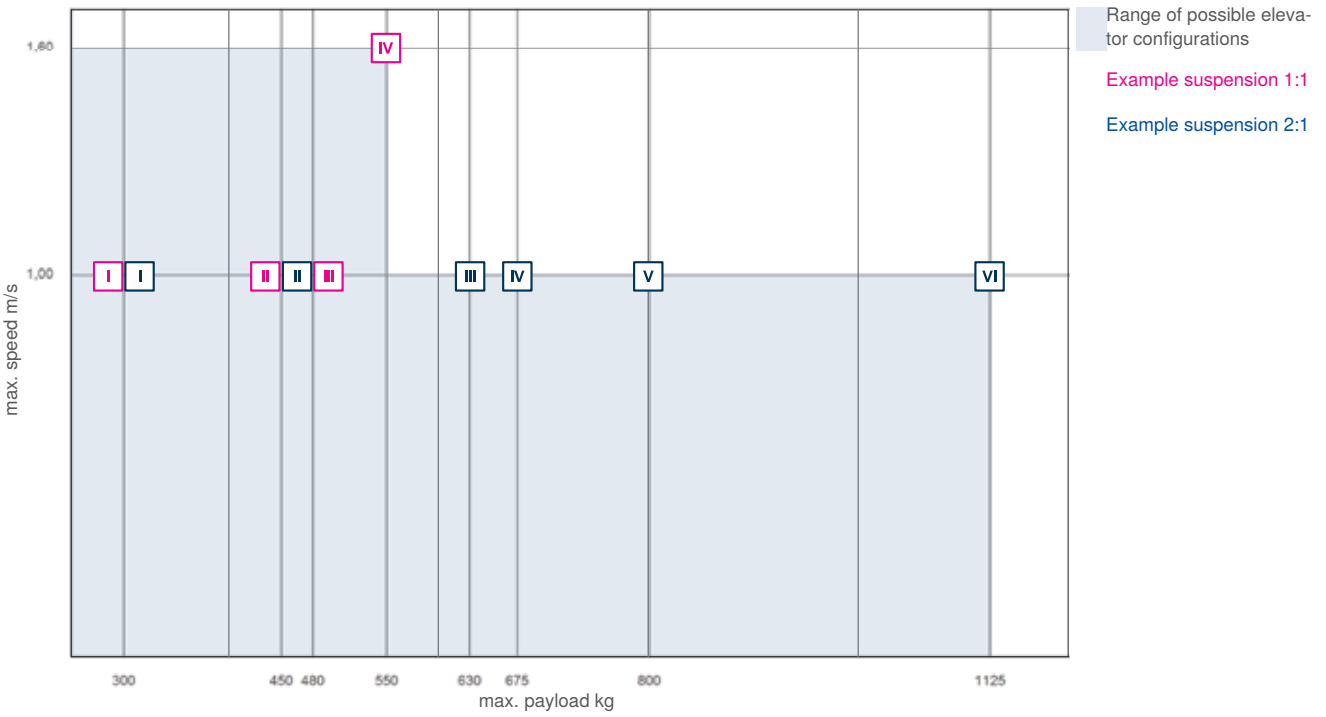
Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM160.30B	525	359	248	120	101	140
	521			160		146
	522			200	76	149
	522			210		150
	522		254	240		155
SM160.40B	608		248	120	140	165
	608			160		172
	596			210	106	178
	596		254	240	88	181

Range of possible elevator configurations for SM160

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAtop SM160 elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	300	1.0	SM160.30B	200	7 x 6.5	3.3	11.3
	II	450	1.0	SM160.40B	160	5 x 6.5	3.5	11.5
	III	480	1.0	SM160.40B	160	5 x 6.5	3.7	12.2
	IV	550	1.6	SM160.40B	160	6 x 6.5	5.4	14.0
2:1	I	300	1.0	SM160.30B	200	4 x 6.5	4.4	10.5
	II	450	1.0	SM160.30B	200	5 x 6.5	5.1	12.3
	III	630	1.0	SM160.40B	210	7 x 6.5	7.2	18.1
	IV	675	1.0	SM160.40B	240	7 x 6.5	5.9	14.8
	V	800	1.0	SM160.30B	160	6 x 6.5	6.5	16.0
	VI	1125	1.0	SM160.40B	160	7 x 6.5	7.1	18.0



ZAtop Gearless elevator machine

SM190

Description

- Permanent magnet synchronous motor with NdFeB magnets
- With ≤ 320 mm installation width for the narrowest shaft dimensions
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 2,400 kg
- Traction sheave: 200 mm or 240 mm
- Separately controllable brake circuits, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC thermistor

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave with 40°, 45° or 50° V-groove, alternatively round groove for plastic coated ropes
- Absolute encoder type Heidenhain ECN1313 EnDat
- 10 m motor cable
- Rope guard according to EN 81

Options

- Pre-parametrised frequency inverter ZAdyn

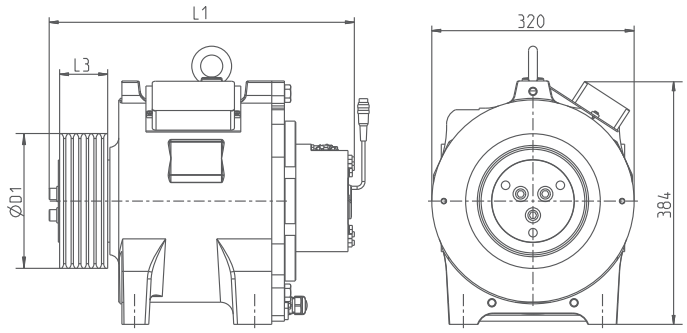
- Machine frame Page 68
- Deflection pulleys Page 80
- Adapter plates Page 79
- ZAlift Page 87

Technical data

Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM190.15	250	1850	168 / 192	4.4 / 5.0
SM190.23	380	2400		6.7 / 7.6

Dimensions mm

SM190.15, SM190.23



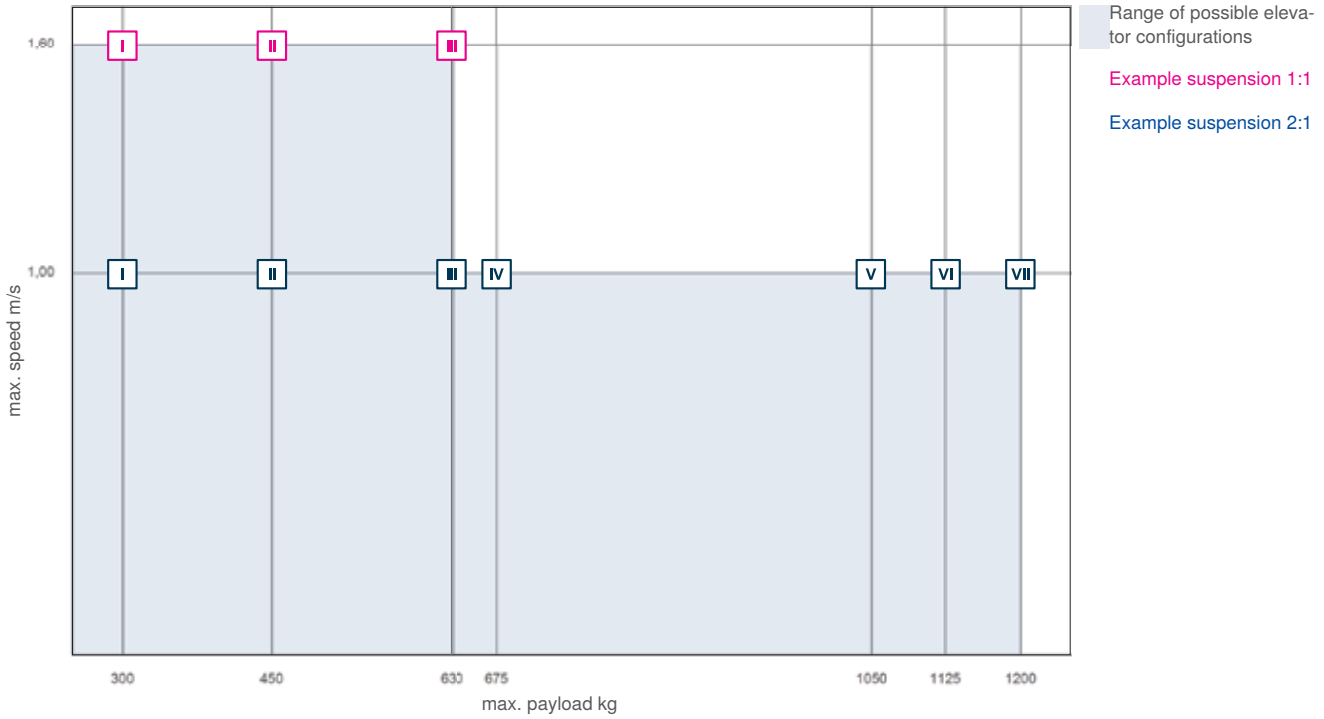
Motor type	L1	D1	L3	Weight
	mm	mm	mm	kg
SM190.15	483	200	76	160
		240	88	166
SM190.23	514	200	106	195
		240	124	204

Range of possible elevator configurations for SM190

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAtop SM190 elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	300	1.6	SM190.15	200	6 x 6.5	3.3	10.6
	II	450	1.6	SM190.23	240	7 x 6.5	4.8	17.5
	III	630	1.6	SM190.23	200	7 x 6.5	6.3	19.1
2:1	I	300	1.0	SM190.15	200	4 x 6.5	2.2	6.3
	II	450	1.0	SM190.15	200	5 x 6.5	3.2	9.2
	III	630	1.0	SM190.15	240	6 x 6.5	4.4	13.5
	IV	675	1.0	SM190.15	200	7 x 6.5	4.8	13.6
	V	1050	1.0	SM190.23	200	9 x 6.5	7.2	19.9
	VI	1125	1.0	SM190.23	200	7 x 6.5	7.0	19.5
	VII	1200	1.0	SM190.23	200	7 x 6.5	7.6	21.1



ZAtop Gearless elevator machine

SM200

SM200.15C/20C/30C

SM200.40C

Description

- Permanent magnet synchronous motor with NdFeB magnets
- With ≤ 320 mm installation width for the narrowest shaft dimensions
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 3,300 kg
- Traction sheave: 160 mm to 500 mm
- Separately controllable brake circuits, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave
- Absolute encoder type Heidenhain ECN1313 EnDat
- 5 m Motor cable in SM200.15C to SM200.30C
- Rope guard according to EN 81

Options

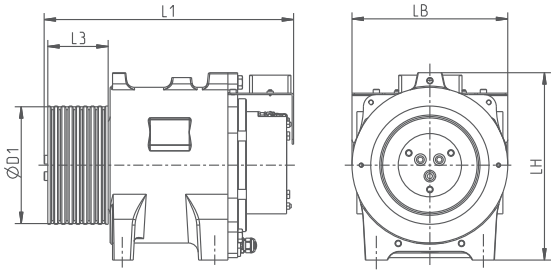
- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable in lengths 5 m, 10 m, 15 m, 20 m and 25 m
- Mechanical hand release system for brake
- Pre-parametrised frequency inverter ZAdyn

Technical data

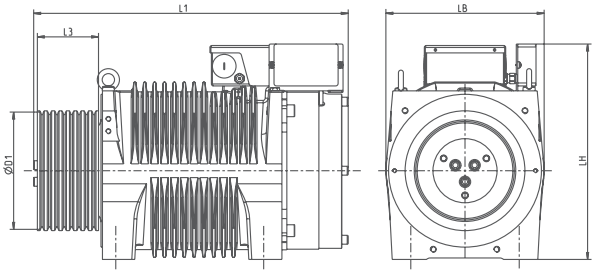
Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM200.15C	250	1850	96...300	2.5...7.9
SM200.20C	330	2850		3.3...10.4
SM200.30C	475	2850		4.8...14.1
SM200.40C	600	3300		6.0...18.8

Dimensions mm

SM200.15C, SM200.20C, SM200.30C



SM200.40C



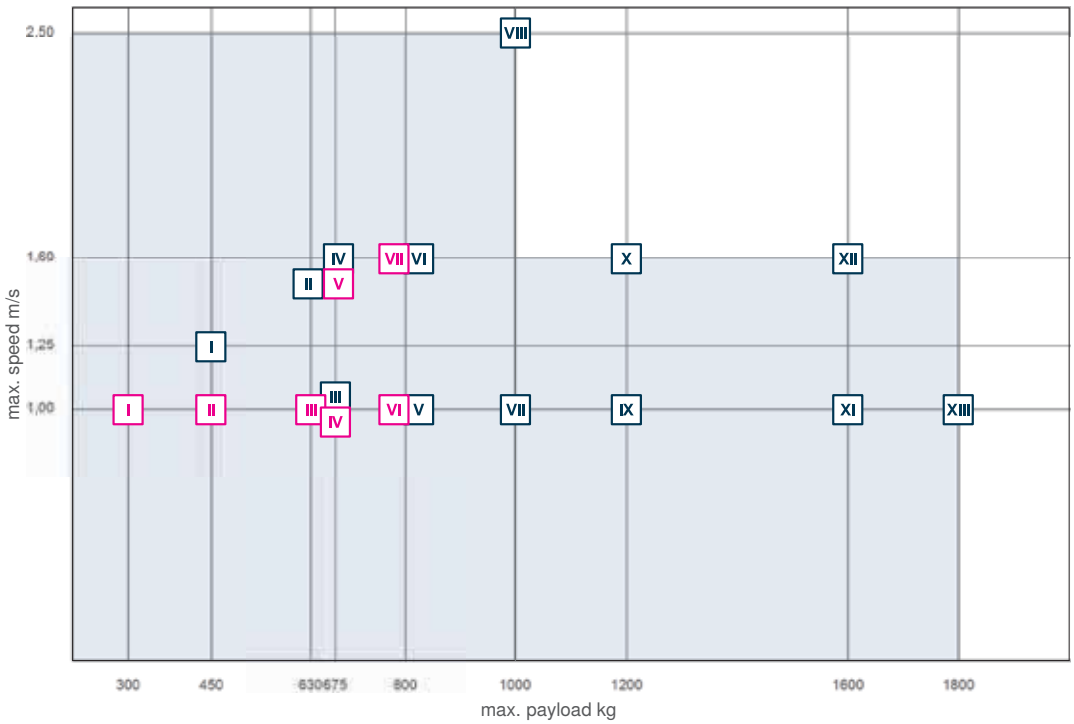
Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM200.15C	487	385	320	160	76	167
				210	76	175
				240	88	180
				320	74	185
SM200.20C	517	385	320	160	106	187
				210	106	195
				240	124	205
				320	110	210
				400	92	230
				450	92	235
SM200.30C	562	398	320	210	106	225
				240	124	235
				320	110	240
				400	92	260
				450	92	265
SM200.40C	676	437	320	160	143	295
	686			240	173	302
	638			240	124	294
				320	112	297
				400	95	309
				500	90	327

Range of possible elevator configurations for SM200C

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAtop SM200C elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	300	1.0	SM200.15C	240	6 x 6.5	2.0	8.8
	I	300	1.0	SM200.30C	400	3 x 10	3.4	12.8
	II	450	1.0	SM200.30C	240	8 x 6.5	3.1	11.3
	III	630	1.0	SM200.40C	320	5 x 8	4.0	18.8
	IV	675	1.0	SM200.20C	160	8 x 6.5	4.2	12.9
	V	675	1.6	SM200.20C	160	8 x 6.5	6.7	19.2
	VI	800	1.0	SM200.40C	160	9 x 6.5	4.9	13.8
	VII	800	1.6	SM200.40C	160	9 x 6.5	7.9	21.0
2:1	I	450	1.25	SM200.15C	320	4 x 8	4.2	14.3
	II	630	1.6	SM200.20C	320	4 x 8	7.2	20.8
	III	675	1.0	SM200.20C	320	4 x 8	4.8	14.8
	III	675	1.0	SM200.15C	200 / 210	7 x 6....	4.9	15.4
	IV	675	1.6	SM200.15C	200 / 210	7 x 6....	7.8	22.1
	V	800	1.0	SM200.20C	200	7 x 6....	5.7	16.3
	V	800	1.0	SM200.20C	240	7 x 6....	5.7	17.0
	VI	800	1.6	SM200.30C	320	4 x 8	8.9	22.8
	VII	1000	1.0	SM200.40C	320	6 x 8	7.1	19.9
	VIII	1000	2.5	SM200.40C	320	6 x 8	17.8	41.7
	IX	1200	1.0	SM200.20C	160	6 x 6.5	7.7	23.2
	X	1200	1.6	SM200.30C	200	6 x 6.5	12.2	29.7
	XI	1600	1.0	SM200.40C	240	10 x 6.5	10.4	28.0
	XII	1600	1.6	SM200.40C	240	10 x 6.5	17.1	41.6
	XIII	1800	1.0	SM200.40C	160	10 x 6.5	19.3	45.2



ZAtop Gearless elevator machine

SM210

Description

- Permanent magnet synchronous motor with NdFeB magnets
- With ≤ 340 mm installation width for the narrowest shaft dimensions
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 4,500 kg
- Traction sheave: 240 mm to 520 mm
- Separately controllable brake circuit, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave
- Absolute encoder type Heidenhain ECN1313 EnDat
- Rope guard according to EN 81

Options

- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable in lengths 5 m, 10 m, 15 m, 20 m and 25 m
- Mechanical hand release system for brake
- Pre-parametrised frequency inverter ZAdyn

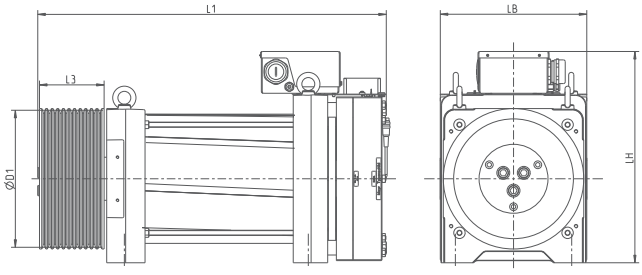
Motor cables Page 82
Deflection pulleys Page 80
ZAlift Page 87

Technical data

Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM210.60	850	4500	60...258	5.3...23.0
SM210.70	1000			6.3...27.0

Dimensions mm

SM210.60/.70



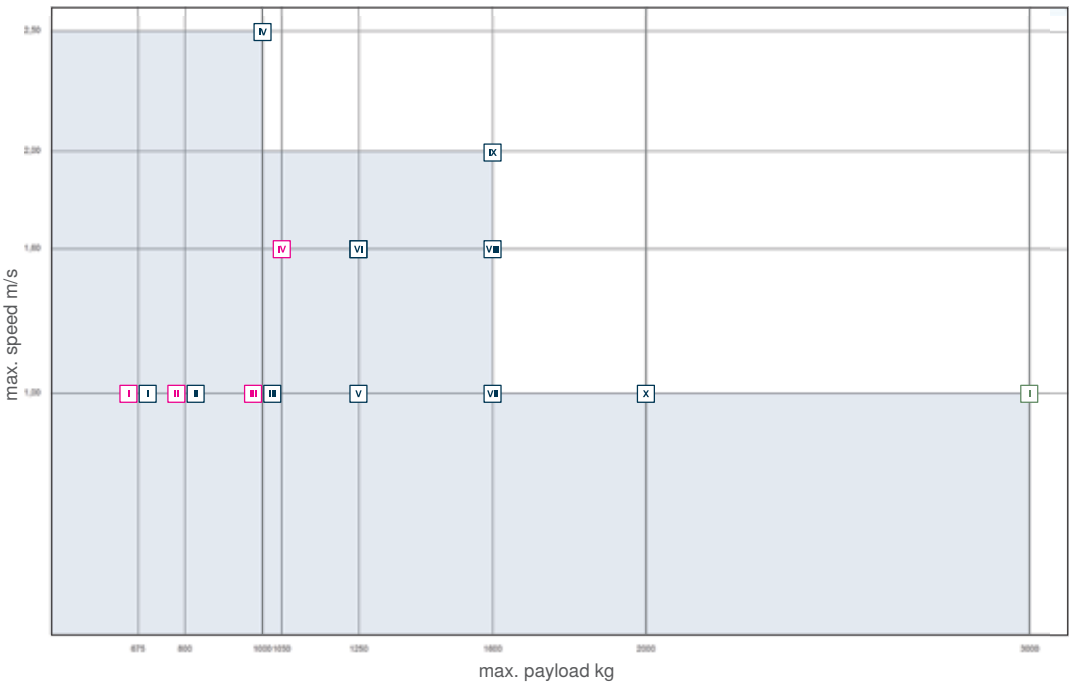
Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM210.60	806	491	340	240	150	455
SM210.60				320		485
SM210.60			340	400		520
SM210.60			340	520		590
SM210.70	856	491	340	240	150	480
SM210.70				320		510
SM210.70			340	400		545
SM210.70			340	520		620

Range of possible elevator configurations for SM210

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAtop SM210 elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload kg	Speed m/s	Motor type	Traction sheave mm	Rope Number x Ø mm	Motor power kW
1:1	I	675	1.0	SM210.60	400	4 x 10	4.5
	II	800	1.0	SM210.60	320	8 x 8	5.2
	III	1000	1.0	SM210.70	320	10 x 8	6.8
	IV	1050	1.6	SM210.70	320	10 x 8	10.9
2:1	I	675	1.0	SM210.60	520	4 x 11	5.2
	II	800	1.0	SM210.60	400	4 x 10	5.6
	III	1000	1.0	SM210.60	400	4 x 10	6.7
	IV	1000	2.5	SM210.60	520	3 x 12	15.0
	V	1250	1.0	SM210.60	320	7 x 8	8.8
	VI	1250	1.6	SM210.60	400	5 x 10	13.5
	VII	1600	1.0	SM210.60	320	10 x 8	10.8
	VIII	1600	1.6	SM210.70	400	8 x 10	17.9
	IX	1600	2.0	SM210.60	320	10 x 8	18.9
	X	2000	1.0	SM210.70	320	10 x 8	13.8
4:1	I	3000	1.0	SM210.70	400	6 x 10	18.6



ZAtop Gearless elevator machine

SM225

SM225.40B / SM225.45C

SM225.60B

Description

- Permanent magnet synchronous motor with NdFeB magnets
- Installation width ≤ 400 mm
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 5,300 kg
- Traction sheave: 240 mm to 640 mm
- Separately controllable brake circuit, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave
- Absolute encoder type Heidenhain ECN1313 EnDat
- Rope guard according to EN 81

Options

- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable in lengths 5 m, 10 m, 15 m, 20 m and 25 m
- Mechanical hand release system for brake
- Pre-parametrised frequency inverter ZAdyn

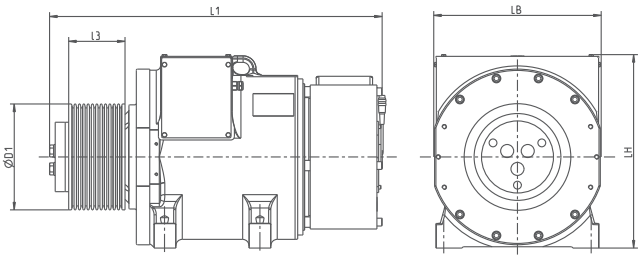
- Motor cables Page 82
- Machine frame Page 71
- Deflection pulleys Page 80
- Adapter plates Page 79
- Forced ventilation Page 81
- ZAlift Page 87

Technical data

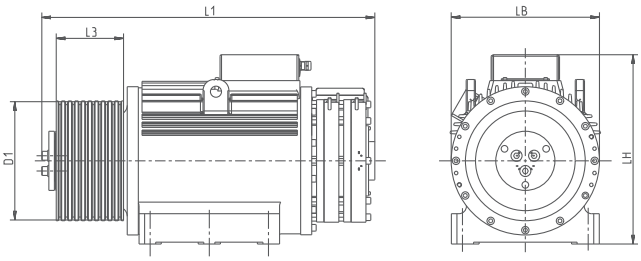
Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM225.40B	710	3600	60...192	4.5...13.0
SM225.45C	900	4000	60...300	5.7...23.6
SM225.60B	1120	5300	60...336	7.0...31.5

Dimensions mm

SM225.40B, SM225.45C



SM225.60B



Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM225.40B	773	446	380	320	112	418
				400	95	429
				500	150	473
				600	150	502
SM225.45C	776	446	380	240	130	411
				320	146	425
				400		446
SM225.60B	907	510	400	320	182	605
				400	150	615
				500		640
				520		643
				600		665
				640		720

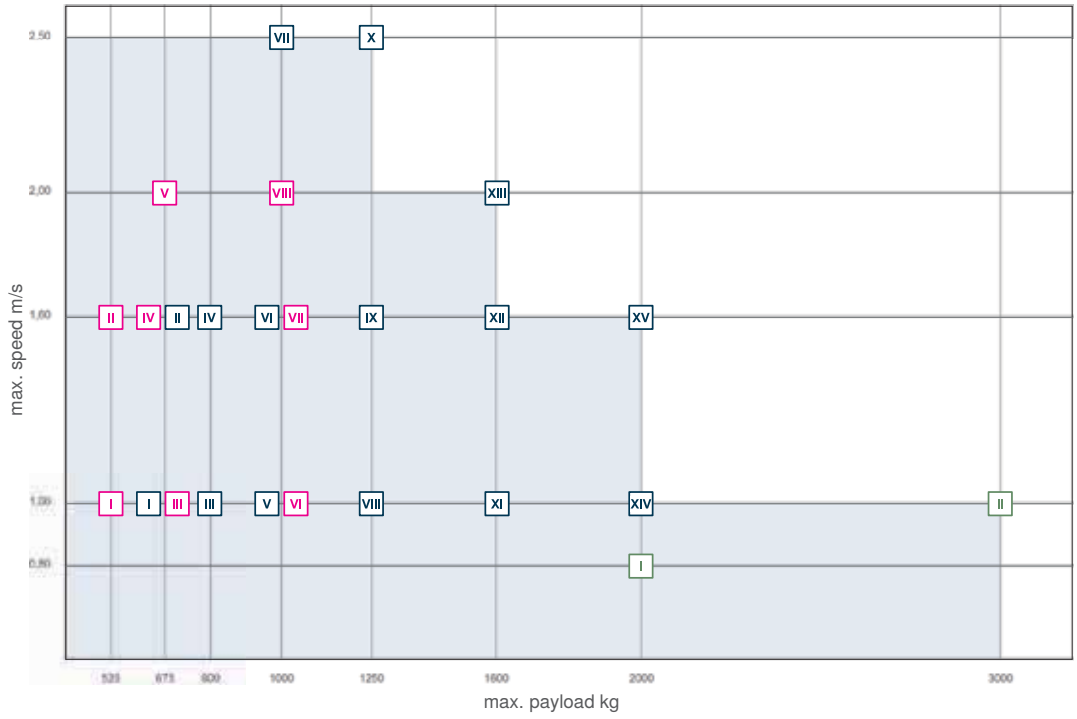
Range of possible elevator configurations for SM225

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAtop SM225 elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	525	1.0	SM225.40B	400	4 x 10	3.4	15.4
	II	525	1.6	SM225.40B	320	6 x 8	5.4	17.2
	III	675	1.0	SM225.40B	320	7 x 8	4.5	16.2
	IV	675	1.6	SM225.45C	320	8 x 8	7.3	21.9
	V	675	2.0	SM225.45C	400	5 x 10	9.2	27.7
	VI	1000	1.0	SM225.45C	240	12 x 6.5	6.4	23.0
	VII	1000	1.6	SM225.60B	320	10 x 8	10.7	28.8
	VIII	1000	2.0	SM225.60B	320	10 x 8	13.4	35.2
2:1	I	675	1.0	SM225.40B	400	3 x 10	5.4	17.1
	II	675	1.6	SM225.40B	320	5 x 8	5.5	15.4
	III	800	1.0	SM225.40B	400	4 x 10	6.5	20.7
	IV	800	1.6	SM225.60B	600	4 x 10	10.5	30.7
	V	1000	1.0	SM225.45C	400	4 x 10	7.8	23.5
	VI	1000	1.6	SM225.45C	400	4 x 10	12.6	36.2
	VI	1000	1.6	SM225.60B	640	2 x 14	9.8	30.8
	VII	1000	2.5	SM225.60B	320	6 x 8	19.5	45.7
	VIII	1250	1.0	SM225.40B	320	7 x 8	9.6	27.1
	IX	1250	1.6	SM225.45C	320	7 x 8	15.4	42.8
	X	1250	2.5	SM225.60B	400	5 x 10	25.3	63.9
	XI	1600	1.0	SM225.60B	320	10 x 8	12.6	37.7
	XII	1600	1.6	SM225.45C	320	10 x 8	18.3	50.9
	XIII	1600	2.0	SM225.60B	320	10 x 8	22.9	57.7
	XIV	2000	1.0	SM225.45C	240	14 x 6.5	13.7	37.9
	XV	2000	1.6	SM225.60B	320	10 x 8	22.1	59.2
4:1	I	2000	0.8	SM225.40B	400	4 x 10	11.4	33.8
	II	3000	1.0	SM225.60B	400	6 x 10	21.5	57.4

Travel distance: 25 m at 1 m/s, 35-40 m at 1.6 m/s



ZAtop Gearless elevator machine

SM250.60B and SM250.80D

SM250.60B

SM250.80D

Description

- Permanent magnet excitedsynchronous motor with NdFeB solenoid
- For fast elevators up to 4 m/s
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 8,000 kg
- Traction sheave: 320 mm to 640 mm
- Separately controllable brake circuit, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave
- Absolute encoder type Heidenhain ECN1313 EnDat
- Rope guard according to EN 81

Options

- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable in lengths 5 m, 10 m, 15 m, 20 m and 25 m
- Mechanical hand release system for brake
- Pre-parametrised frequency inverter ZAdyn

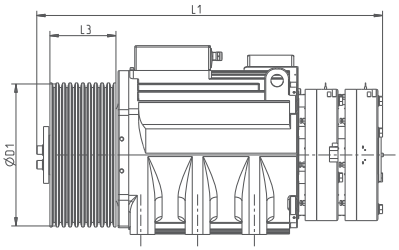
Motor cables	Page 82
Machine frame	Page 71
Deflection pulleys	Page 80
Adapter plates	Page 79
Forced ventilation	Page 81
ZAlift	Page 87

Technical data

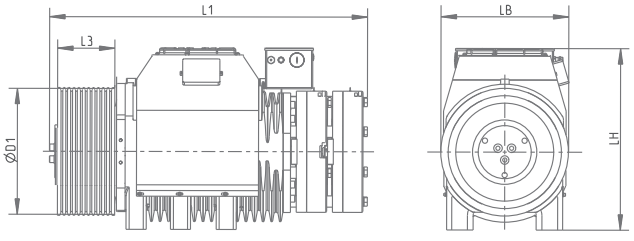
Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM250.60B	1600	6000	60...336	7.0...42.0
SM250.80D	2000	8000	90...300	18.8...62.8
SM250.80D-FB	2500		78...276	20.4...72.0

Dimensions mm

SM250.60B



SM250.80D



Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM250.60B	977	535	410	320	182	670
				400	186	685
				500	150	705
				520		715
				600		730
				640		785
SM250.80D	1147	645	440	440	200	1021
				520		1041
				640		1128

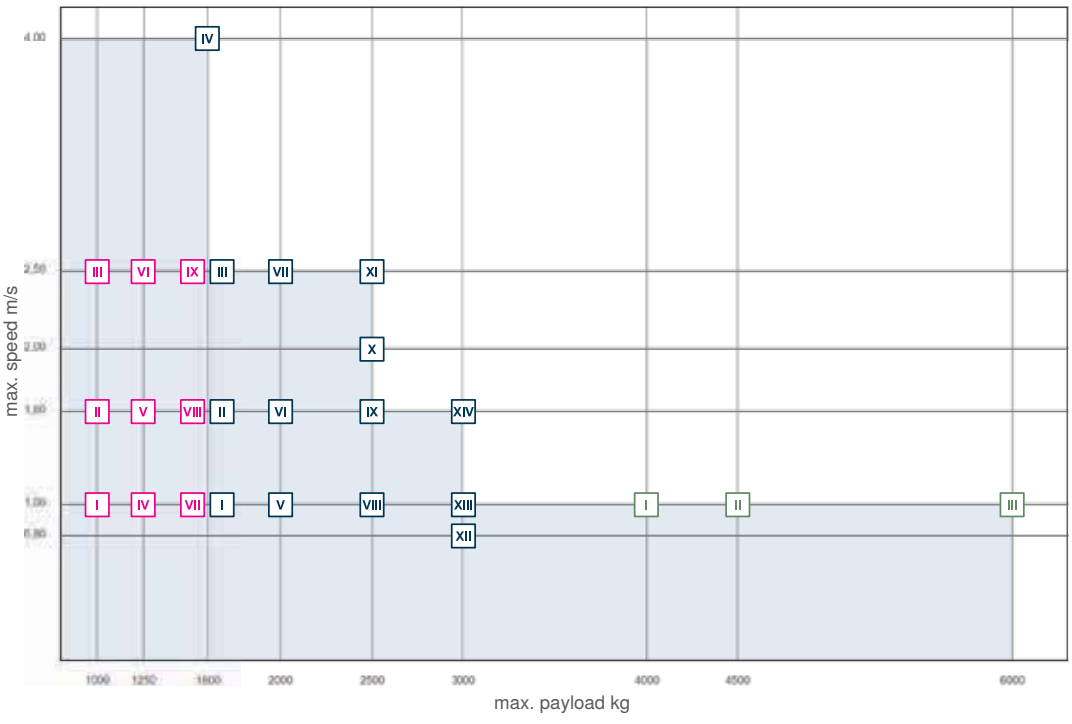
Range of possible elevator configurations for SM250B / D

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAtop SM250B / D elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	1000	1.0	SM250.60B	400	8 x 10	6.9	26.0
	II	1000	1.6	SM250.60B	400	8 x 10	11.1	37.3
	III	1000	2.5	SM250.60B	400	8 x 10	17.4	45.6
	IV	1250	1.0	SM250.80D	440	7 x 11	8.5	35.3
	V	1250	1.6	SM250.80D	520	7 x 11	13.5	58.9
	VI	1250	2.5	SM250.80D	520	7 x 12	21.7	75.0
	VII	1600	1.0	SM250.80D	440	10 x 10	10.7	45.2
	VIII	1600	1.6	SM250.80D	440	9 x 11	17.3	63.8
	IX	1600	2.5	SM250.80D	440	9 x 11	27.1	79.1
2:1	I	1600	1.0	SM250.60B	600	7 x 10	11.6	46.9
	I	1600	1.0	SM250.80D	640	6 x 12	12.1	50.4
	II	1600	1.6	SM250.60B	320	10 x 8	11.4	30.1
	II	1600	1.6	SM250.60B	640	3 x 16	15.6	41.8
	III	1600	2.5	SM250.60B	500	5 x 11	11.3	38.1
	IV	1600	4.0	SM250.80D	520	6 x 11	38.8	95.1
	V	2000	1.0	SM250.60B	400	8 x 10	14.3	38.5
	VI	2000	1.6	SM250.60B	400	8 x 10	22.9	60.8
	VII	2000	2.5	SM250.80D	440	9 x 11	43.4	112.8
	VIII	2500	1.0	SM250.80D	440	8 x 11	18.8	68.5
	IX	2500	1.6	SM250.80D	520	7 x 12	30.3	97.4
	X	2500	2.0	SM250.80D	520	7 x 12	37.8	118.1
	XI	2500	2.5	SM250.80D	440	9 x 11	48.1	161.8
	XII	3000	0.8	SM250.80D	440	10 x 11	18.2	67.0
	XIII	3000	1.0	SM250.80D	440	10 x 11	22.7	82.9
	XIV	3000	1.6	SM250.80D	440	10 x 11	36.3	119.9
4:1	I	4000	1.0	SM250.80D	440	8 x 11	31.6	81.6
	II	4500	1.0	SM250.60B	440	10 x 10	34.8	90.0
	III	6000	1.0	SM250.80D-FB	440	10 x 11	43.0	141.9

Travel distance: 25 m at 1 m/s, 35-40 m at 1.6 m/s



Range of possible elevator configurations
Example suspension 1:1
Example suspension 2:1
Example suspension 4:1

ZAtop Gearless elevator machine

SM250.100C

Description

- Permanent magnet synchronous motor with NdFeB magnets
- For fast elevators up to 5 m/s
- For systems with double wrap rope configuration
- Noise emissions: < 50 dB(A)
- Axle load: up to 13,000 kg
- Traction sheave: 450 mm to 520 mm
- Separately controllable brake circuit, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave
- Absolute encoder type Heidenhain ECN1313 EnDat
- Rope guard according to EN 81

Options

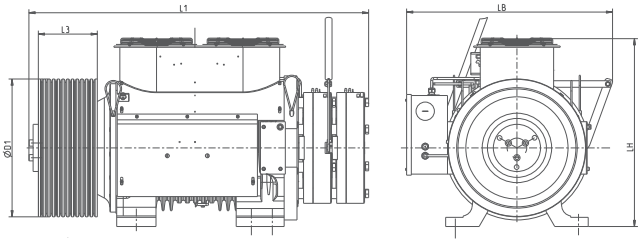
- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable on lengths 5 m, 10 m, 15 m, 20 m and 25 m
- Mechanical hand release system for brake
- Pre-parametrised frequency inverter ZAdyn

- Motor cables Page 82
- Machine frame Page 74
- Deflection pulleys Page 80
- ZAlift Page 87

Technical data

Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM250.100C	2100...2650	13000	78...312	22.0...69.0

Dimensions mm



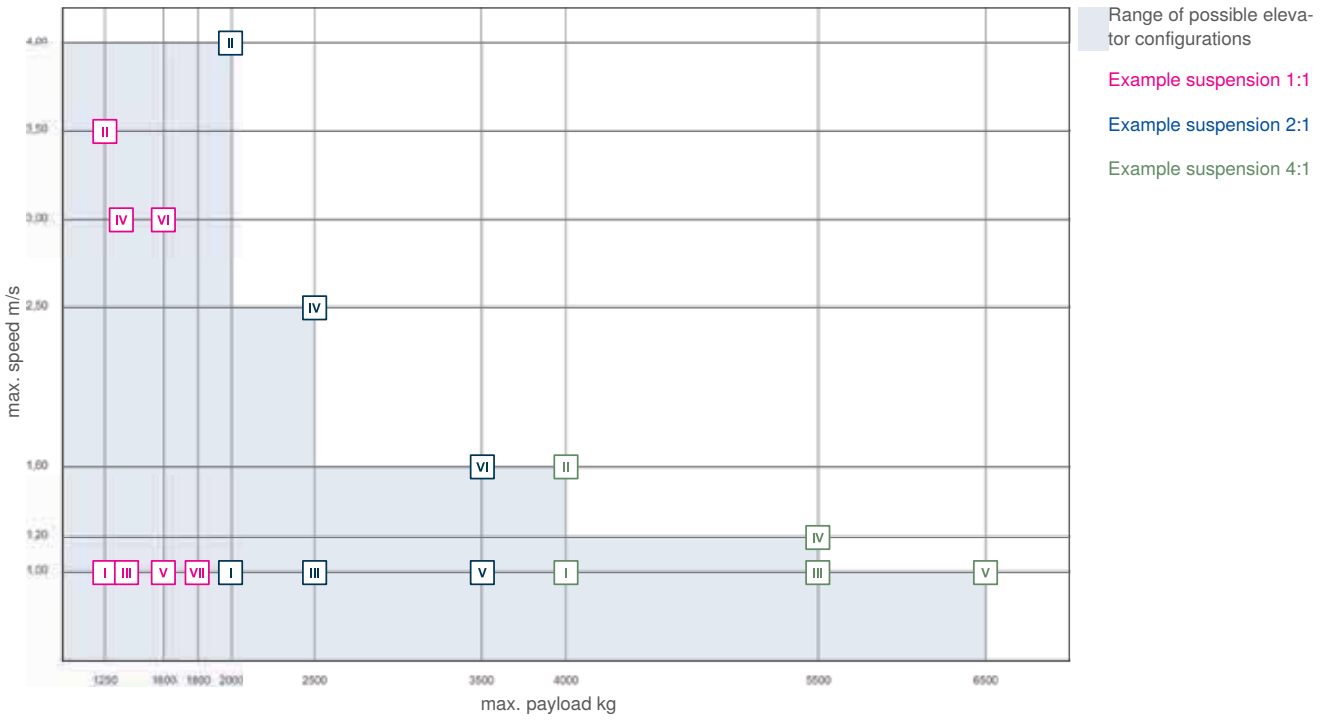
Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM250.100C	1313	730	794	400	260	1250
				450	282	
				500	220	
				520		

Range of possible elevator configurations for SM250C

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAtop SM250C elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	1250	1.0	SM250.100C	450	8 x 11	10.0	52.9
	II	1250	3.5	SM250.100C	450	8 x 11	26.5	80.2
	III	1350	1.0	SM250.100C	520	6 x 13	8.1	49.5
	IV	1350	3.0	SM250.100C	520	6 x 13	24.4	65.5
	V	1600	1.0	SM250.100C	450	9 x 11	12.4	65.4
	VI	1600	3.0	SM250.100C	450	9 x 11	28.7	79.7
	VII	1800	1.0	SM250.100C	450	10 x 11	12.2	64.0
2:1	I	2000	1.0	SM250.100C	500	6 x 12	17.1	50.0
	II	2000	4.0	SM250.100C	500	6 x 12	49.0	113.7
	III	2500	1.0	SM250.100C	500	7 x 11	20.0	58.4
	IV	2500	2.5	SM250.100C	500	7 x 11	50.0	116.6
	V	3500	1.0	SM250.100C	450	11 x 11	24.8	86.4
	VI	3500	1.6	SM250.100C	450	11 x 11	39.7	103.3
4:1	I	4000	1.0	SM250.100C	520	5 x 13	34.0	104.2
	II	4000	1.6	SM250.100C	520	5 x 13	49.3	124.0
	III	5500	1.0	SM250.100C	500	9 x 11	40.5	119.4
	IV	5500	1.2	SM250.100C	500	9 x 11	50.1	109.0
	V	6500	1.0	SM250.100C	450	10 x 11	47.4	125.7



ZIEHL-ABEGG

Gearless elevator machine ZAsyn

Product overview

Information Page 36

ZAsyn SM700 Page 38

ZAsyn SM860 Page 40

ZAsyn Gearless elevator machine

General information

Gearless permanent magnet elevator machine in external rotor design.
The flat machine for elevators with and without machine room.

Complete series for elevators up to 2,500 kg payload - everything from one single source!

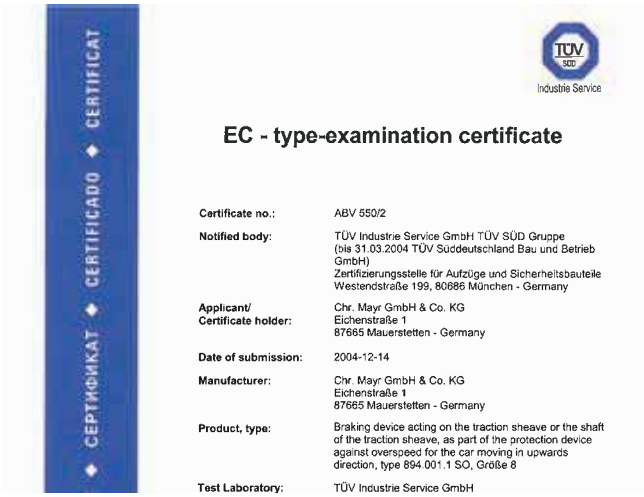
High flexibility and variability:
- Flat design for optimum shaft measurements
- Optimised for easy installation in the elevator shaft
- Speeds up to 3.0 m/s
- Traction sheave diameter from 400 mm to 680 mm
- For rope diameters from 8 mm to 16 mm
- Different encoder systems
- Brake systems with different operating voltage
- Optimum package solution with the ZIEHL-ABEGG ZAdyn frequency inverter
- Reliable calculation by ZAlift calculation software

A glimpse inside

① Brake
② Housing
③ Stator lamination
④ Bearing
⑤ Bearing
⑥ Magnets
⑦ Rotor
⑧ Traction sheave
⑨ Traction sheave bracket

Your safety

All ZAsyn series machines have type-approved brakes with certificates that they can be used as safety device against uncontrolled and unintended car movement.



СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Industrie Service

EC - type-examination certificate

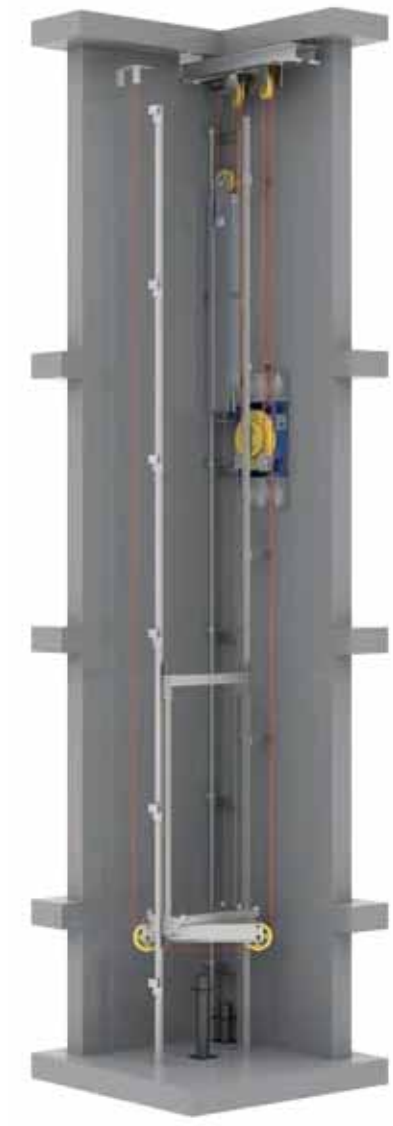
Certificate no.:	ABV 550/2
Notified body:	TÜV Industrie Service GmbH TÜV SÜD Gruppe (bis 31.03.2004 TÜV Süddeutschland Bau und Betrieb GmbH) Zertifizierungsstelle für Aufzüge und Sicherheitsbauteile Westendstraße 199, 80686 München - Germany
Applicant/ Certificate holder:	Chr. Mayr GmbH & Co. KG Eichenstraße 1 87665 Mauerstetten - Germany
Date of submission:	2004-12-14
Manufacturer:	Chr. Mayr GmbH & Co. KG Eichenstraße 1 87665 Mauerstetten - Germany
Product, type:	Braking device acting on the traction sheave or the shaft of the traction sheave, as part of the protection device against overspeed for the car moving in upwards direction, type 894.001.1 SO, Größe 8
Test Laboratory:	TÜV Industrie Service GmbH

СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Industrie Service

Type-examination certificate

Certificate no.:	ESV 550
Certification office:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München - Germany
Applicant/ certificate holder:	Chr. Mayr GmbH & Co. KG Eichenstr. 1 87665 Mauerstetten - Germany
Date of application:	2011-03-01
Manufacturer of the test sample:	Chr. Mayr GmbH & Co. KG Eichenstr. 1 87665 Mauerstetten - Germany
Product:	Braking element acting on the shaft of the traction sheave, as a part of the protection device against unintended car movement
Type:	894.001.1 SO, Größe 8



2:1 Machine in the middle of elevator shaft

2:1 Machine below in the elevator shaft

ZAsyn Gearless elevator machine

SM700.09-16A

Description

- Permanent magnet synchronous motor with NdFeB magnets
- With installation depth < 336 mm perfect for mounting on the wall of the elevator shaft
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 3,000 kg
- Separately controllable brake circuit, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor
- Replaceable traction sheave

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave 400 mm
- Absolute encoder type Heidenhain ECN1313 EnDat
- Rope guard according to EN 81

Options

- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable in lengths 5 m, 10 m 15 m, 20 m and 25 m
- Mechanical hand release system for brake (Bowden cables)
- Rope protection with cover
- Console for wall mounting

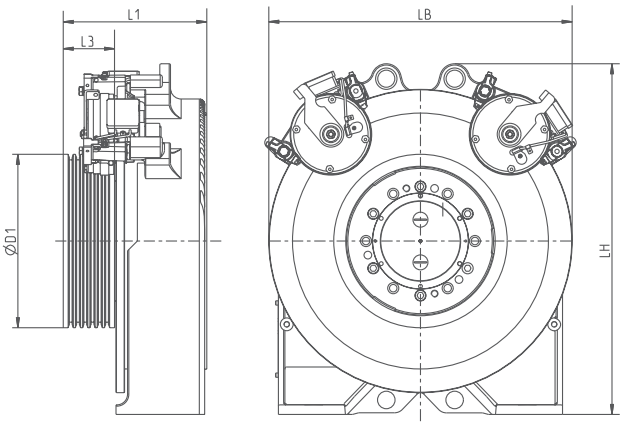
Technical data

Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM700.09AL	500	3000	60...96	3.0...5.0
SM700.12AL	750		60...168	4.5...13.0
SM700.14AL	850		60...240	5.5...17.5
SM700.16AL	1000	3600	60...240	6.5...20.0
SM700.16AL3	1150		60...168	7.2...20.0

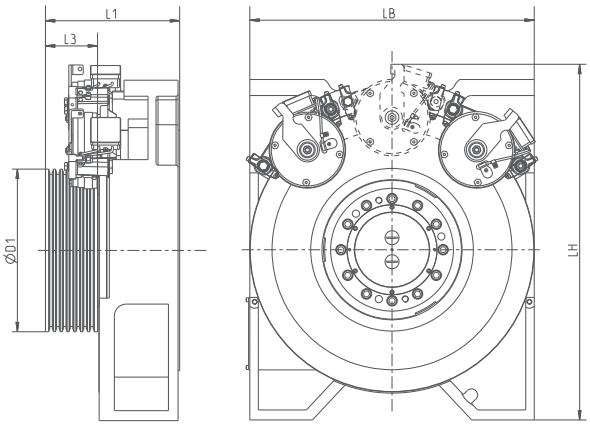
- Motor cables — Page 82
- Deflection pulleys — Page 80
- ZAlift — Page 87

Dimensions mm

SM700.09-14



SM700.16AL(3)



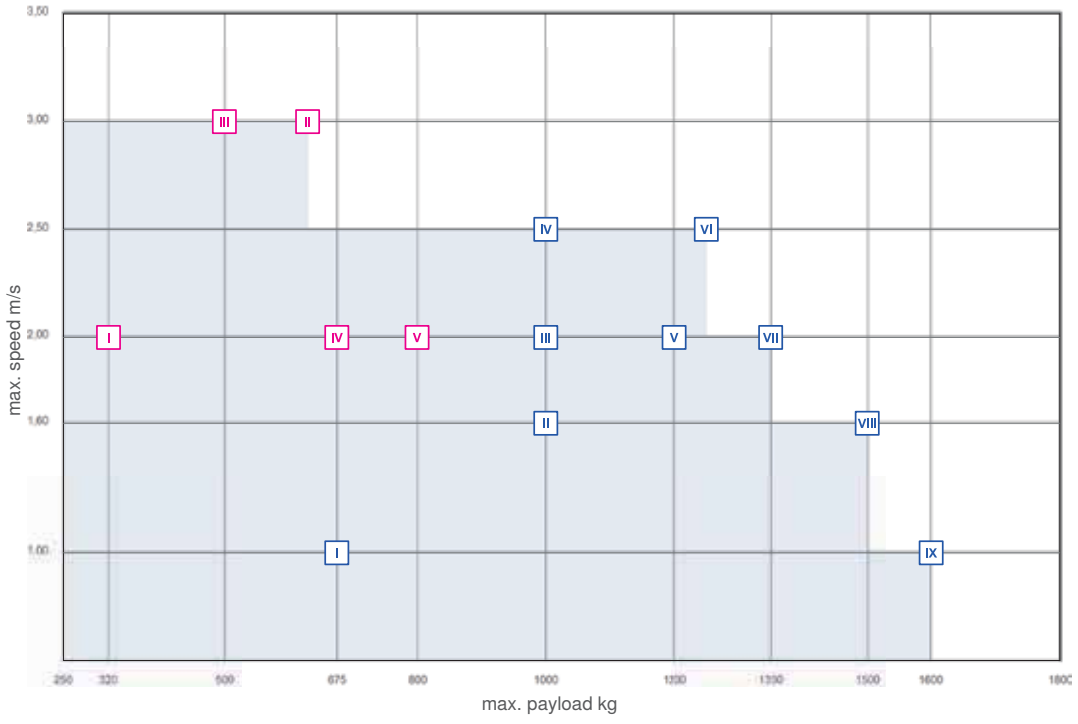
Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM700.09AL	276	821	710	400	60	530
SM700.12AL	306				90	535
SM700.14AL	336				120	540
SM700.16AL	265	850	710	400	60	560
	295				90	565
	325				120	570
	335				130	575
SM700.16AL3	295	888	710	400	90	580
	325				120	595
	335				130	605

Range of possible elevator configurations for SM700.09-16A

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAsyn SM700.09-16A elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	320	2.0	SM700.09	400	3 x 10	5	11.5
	II	630	3.0	SM700.14	400	5 x 10	14.0	33.5
	III	500	3.0	SM700.12	400	4 x 10	13.0	32.5
	IV	675	2.0	SM700.16A	400	6 x 10	10	25.0
	V	800	2.0	SM700.16A-3	400	7 x 10	11.6	29.0
2:1	I	675	1.0	SM700.09	400	3 x 10	5	12.2
	II	1000	1.6	SM700.12	400	4 x 10	12.0	29.0
	III	1000	2.0	SM700.14	400	5 x 10	17	40.5
	IV	1000	2.5	SM700.14A	400	5 x 10	17.5	43.0
	V	1200	2.0	SM700.14	400	6 x 10	17.0	40.6
	VI	1250	2.5	SM700.16A	400	6 x 10	20	50.0
	VII	1350	2.0	SM700.16A	400	6 x 10	18	50.0
	VIII	1500	1.6	SM700.16A-3	400	7 x 10	18.8	45.0
	IX	1600	1.0	SM700.16A-3	400	7 x 10	11.6	29.0



ZAsyn Gearless elevator machine

SM860.28

Description

- Permanent magnet synchronous motor with NdFeB magnets
- With installation depth < 586 mm perfect for mounting on the wall of the elevator shaft
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 8,000 kg
- Traction sheave: 480 mm to 600 mm
- Separately controllable brake circuit, type-tested as safety device against uncontrolled and unintended car movement
- Temperature monitoring by PTC or KTY thermistor
- Replaceable traction sheave

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave from 480 mm to 600 mm
- Absolute encoder type Heidenhain ECN1313 EnDat
- Rope guard according to EN 81

Options

- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cable in lengths 5 m, 10 m 15 m, 20 m and 25 m
- Mechanical hand release system for brake (Bowden cables)

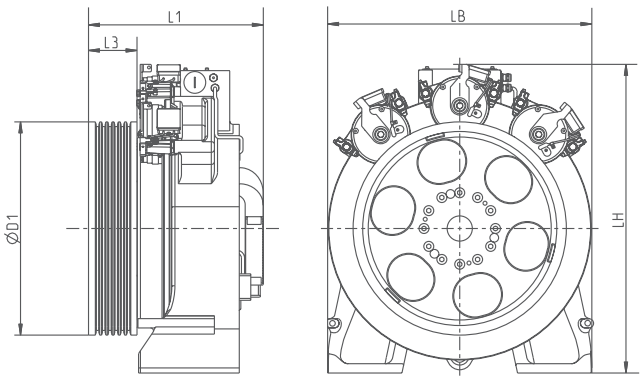
- Motor cables Page 82
- Deflection pulleys Page 80
- ZAlift Page 87

Technical data

Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SM860.28AL	2200	8000	40...196	9.2...39.0

Dimensions mm

SM860.28



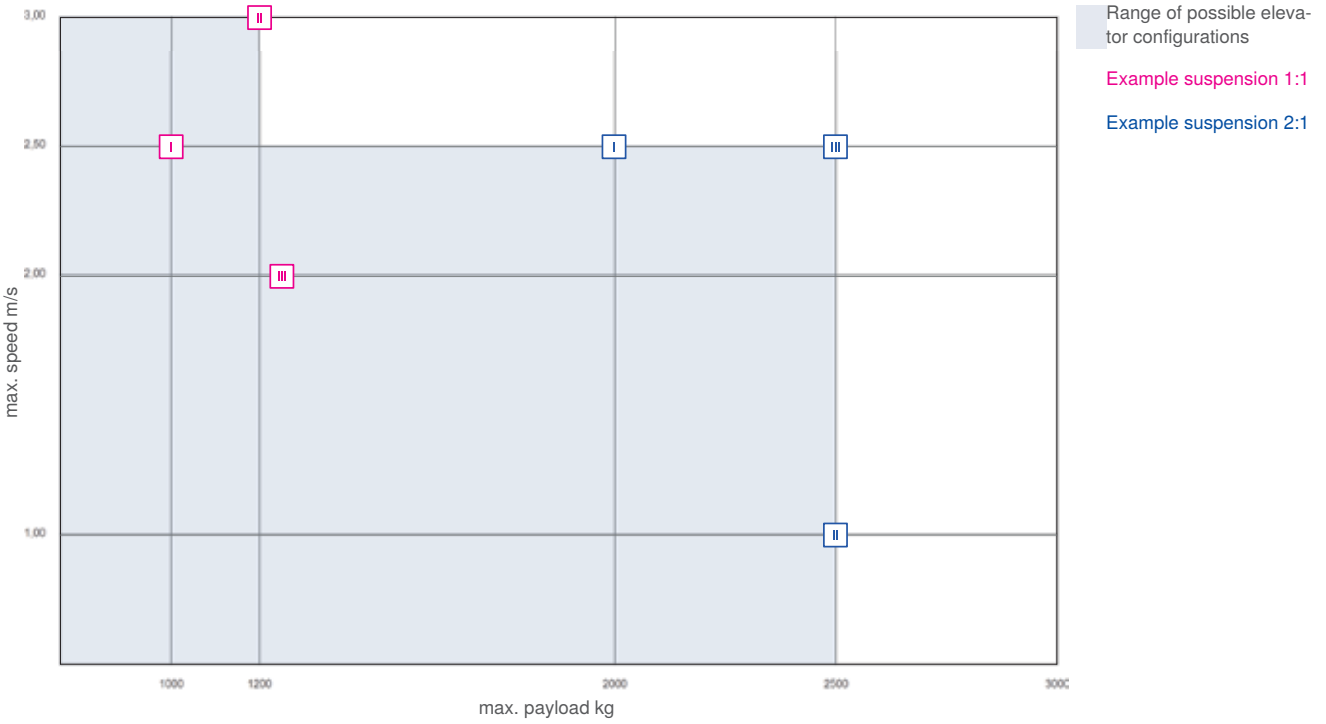
Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SM860.28	586	993	850	480	150	1020
				520		1025
				600		1040
				680		1060

Range of possible elevator configurations for SM860.28

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAsyn SM860.28 elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
1:1	I	1000	2.5	SM860.28	600	5 x 13	22.0	52.7
	II	1200	3.0	SM860.28	480	7 x 12	30.0	55.0
	III	1250	2.0	SM860.28	480	7 x 12	22.0	53.5
2:1	I	2000	2.5	SM860.28	600	4 x 13	39.0	78.1
	II	2500	1.0	SM860.28	480	7 x 12	22.0	53.5
	III	2500	2.5	SM860.28	480	6 x 12	39.0	77.8



Gearless elevator machine ZAdisc

Product overview

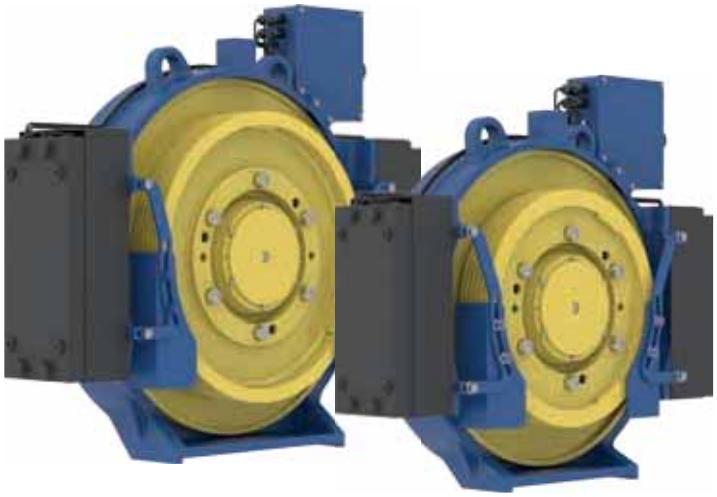
Information Page 44

ZAdisc SL506 / 510 Page 46

ZAdisc Gearless elevator machine

General information

Gearless permanent magnet elevator machine designed as disc rotor motor.
The flat machine for elevators with and without machine room.



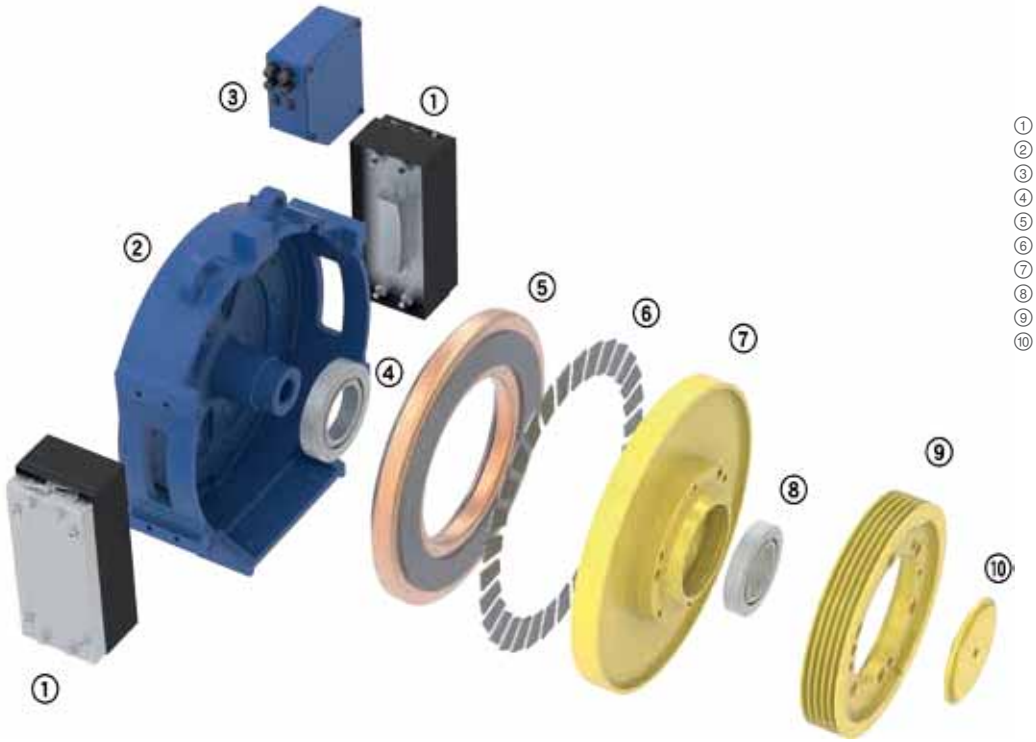
Series for elevators up to 1,125 kg payload.

Hight flexibility and variability:
- Very flat design for optimum shaft dimensions
- Optimised for fixing at the guide rail
- Speeds up to 1.6 m/s
- Traction sheave diameters of 400 mm and 480 mm
- For rope diameters from 8 mm to 12 mm
- Different encoder systems
- Optimum package solution with the ZIEHL-ABEGG ZAdyn frequency inverter
- Reliable calculation by ZAlift calculation software

Your safety

All ZAdisc series machines have type-approved brakes with certificate that they can be used as safety device against uncontrolled and unintended car movement.

A glimpse inside



① Brake
② Housing
③ Junction box
④ Bearing
⑤ Stator lamination
⑥ Magnets
⑦ Rotor
⑧ Bearing
⑨ Traction sheave
⑩ Cover plate

ZAdisc Gearless elevator machine

SL506 / 510

SL506

SL510

Description

- Permanent magnet synchronous motor with NdFeB magnets
- Installation width <= 200 mm
- High efficiency
- Noise emissions: < 50 dB(A)
- Axle load: up to 2,400 kg
- Traction sheave: 400 mm and 480 mm
- Separately controllable brake circuits, type-tested as safety device against uncontrollable and unintended car movement
- Temperature monitoring by PTC or KTY thermistor
- Replaceable traction sheave

Scope of delivery

- Gearless elevator machine
- Type-tested brake system
- Traction sheave
- Absolute encoder type Heidenhain ECN1313 EnDat
- Rope guard according to EN 81

Options

- Absolute encoder type Heidenhain ECN1313 SSI or ERN1387
- Motor cables in lengths 5 m, 10 m, 15 m, 20 m and 25 m
- Pre-parametrised frequency inverter ZAdyn

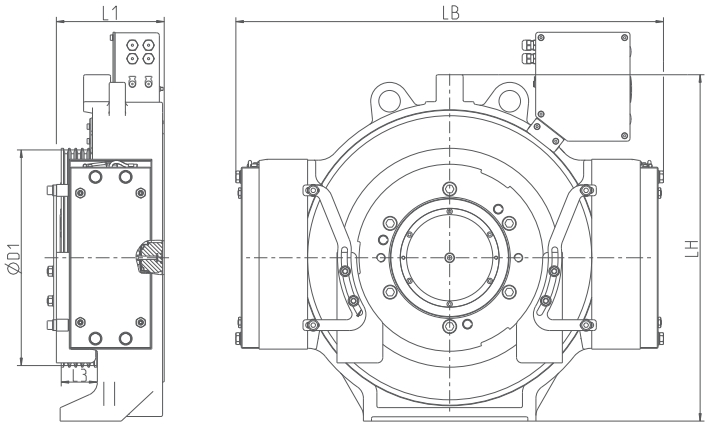
Motor cables	Page 82
Deflection pulleys	Page 80
ZAlift	Page 87

Technical data

Motor type	Nominal torque	Max. axle load	Nominal speed	Rated output power
	Nm	kg	min^{-1}	kW
SL506	560	1800	240	2.7...6.2
SL510	960	2400	200	4.3...12.5

Dimensions mm

SL506 / SL510



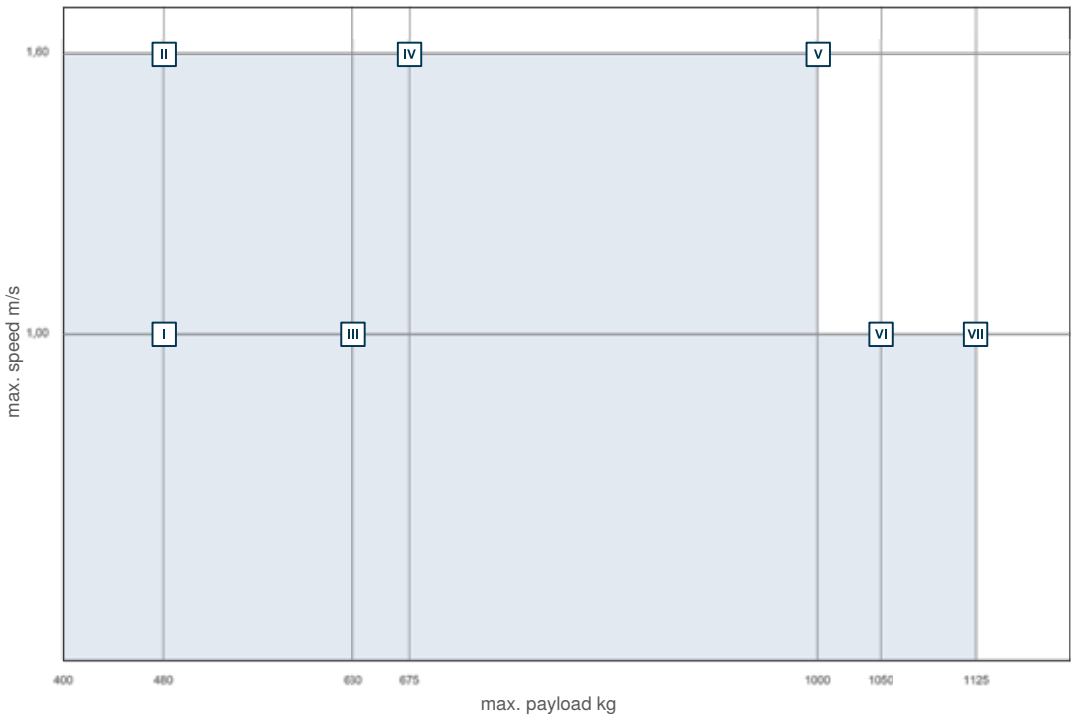
Motor type	L1	LH	LB	D1	L3	Weight
	mm	mm	mm	mm	mm	kg
SL506	193	721	793	400	66	310
SL510	193	770	854	480	76	380

Range of possible elevator configurations for SL506 / 510

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAdisc SL506 / 510 elevator machine.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Motor type	Traction sheave	Rope	Motor power	Rated current
		kg	m/s		mm	Number x Ø mm	kW	A
2:1	I	480	1.0	SL506.12	400	3 x 8	3.2	11
	II	480	1.6	SL506.12	400	3 x 8	5.5	18.4
	III	630	1.0	SL506.12	400	3 x 10	4.4	14.8
	IV	675	1.6	SL506.12	400	3 x 10	7.9	26.3
	V	1000	1.6	SL510.17	480	4 x 10	11.4	41.1
	VI	1050	1.0	SL510.17	480	4 x 10	7	26.9
	VII	1125	1.0	SL510.17	480	5 x 8	7.3	28



Elevator machines with gearbox ZAS

Product overview

Information	Page 50
ZAS0	Page 54
ZAS1	Page 56
ZAS2	Page 58
ZAS3	Page 60

ZAS Elevator machine with gearbox

General information

The ZAS includes a high-quality German gearbox and a special elevator asynchronous motor from ZIEHL-ABEGG.
The flexible elevator machine with gearbox applicable for modernisation and new installation.

Complete series for elevators up to 10,000 kg payload - everything from one single source!

High flexibility and variability:
- Optimised for simple installation in the machine room
- Great elevator travelling comfort through low noise and vibration-free operation
- Speeds up to 2.5 m/s
- Traction sheave diameter from 320 mm to 700 mm
- For rope diameters from 8 mm to 16 mm
- Various encoder systems
- Optimum package solution with the ZIEHL-ABEGG ZAdyn frequency inverter
- Reliable selection with the ZAlift calculation software

Your safety

As an option, a type-approved safety brake is available for each ZAS frame size.
That means the elevator machines meet the requirements for use as a safety device against uncontrolled and unintended car movement.

СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Industrie Service

EC type-examination certificate

Certificate no.:	ABV 592/2
Notified body:	TÜV SÜD Industrie Service GmbH Westendstr. 199 80686 München - Germany
Applicant/ Certificate holder:	WARNER Electric Europe 7, rue de Champfleur BP 20095 49124 St. Barthelemy D'Anjou - France
Date of application:	2010-11-05
Manufacturer of the test sample:	WARNER Electric Europe 7, rue de Champfleur BP 20095 49124 St. Barthelemy D'Anjou - France
Product:	Braking device acting on the shaft of traction sheave, as part of the protection device against overspeed for the car moving in upwards direction
Type:	ERS VAR10 SZ2500/_ _ _

СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Type-examination certificate

Complete program for the ZAS elevator machine:

In addition to the geared machines and frequency inverters, ZIEHL-ABEGG also provides an entire program for modernisation in the machine room:

- Flat frames
- Elevated frames equipped with deflection pulley with deep groove bearings
- Insulation elements

Gearbox on elevated frame

Gearbox on flat frame

Elevator machines by ZIEHL-ABEGG

Portfolio

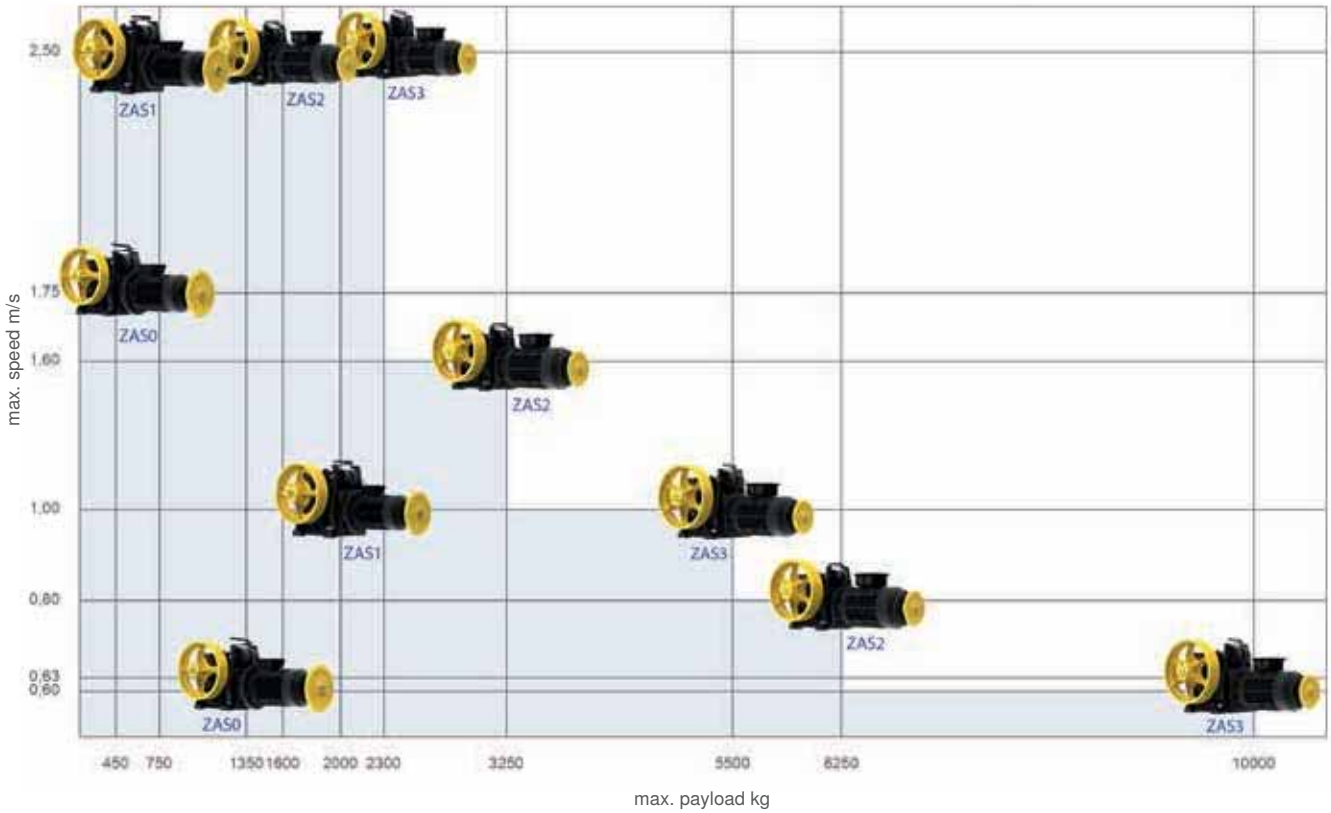
ZIEHL-ABEGG SE offers a wide portfolio of elevator machine with gearbox.

Elevator machines from ZIEHL-ABEGG ensure high flexibility and variability.

The different frame sizes enable easy installation in the machine room with or without machine frame. The combination of the machine with a customised traction sheave from 320 mm to 700 mm and rope diameters from 8 mm to 16 mm enables travelling speeds up to 2.5 m/s.

Different encoder systems are available for the ZAS for adaptation to all frequency inverters.
The high efficiency, low noise and vibration-free operation are distinguishing features of the ZAS. The optimum package solution for each elevator is composed by the ZAS in combination with the ZAdyn frequency inverter.

Overview



More detailed information about the respective combinations of the machines can be found on the following pages. To determine the suitable elevator machine with gearbox for your elevator system, our ZAlift calculation software is available to you free of charge.

ZAS Elevator machine with gearbox

ZAS0

Description

- Elevator machine with gearbox
- Flexibly usable, both in modernisation and in new installations
- Low noise
- Vibration-free
- Axle load: up to 3,000 kg
- Service brake with mechanically separate brake circuits
- Temperature monitoring by PTC thermistor

Scope of delivery

- Elevator machine with asynchronous motor and worm gear
- Service brake
- Traction sheave from 320 mm to 630 mm
- Incremental encoder with sinusoidal signal
- Rope guard according to EN 81
- Mechanical hand release system for service brake

Options

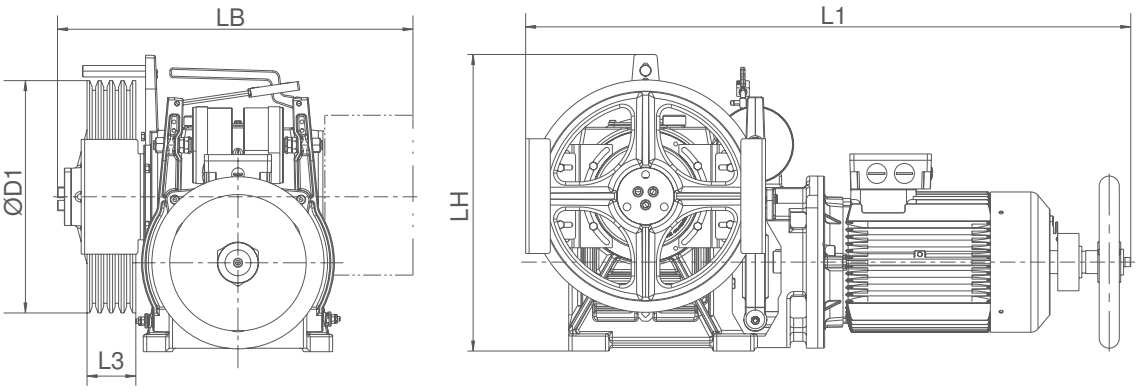
- Incremental encoder in different signal forms and resolutions
- Safety brake against uncontrolled car movement
- Fast acting rectifier for service brake and safety brake

- Motor cables Page 82
- Machine frame Page 77
- Deflection pulleys Page 80
- ZAlift Page 87

Technical data

Gearbox type	Max. axle load kg	Gear ratio
SWG0	3000	39:1
SWG0		49:2
SWG0		51:1

Dimensions mm



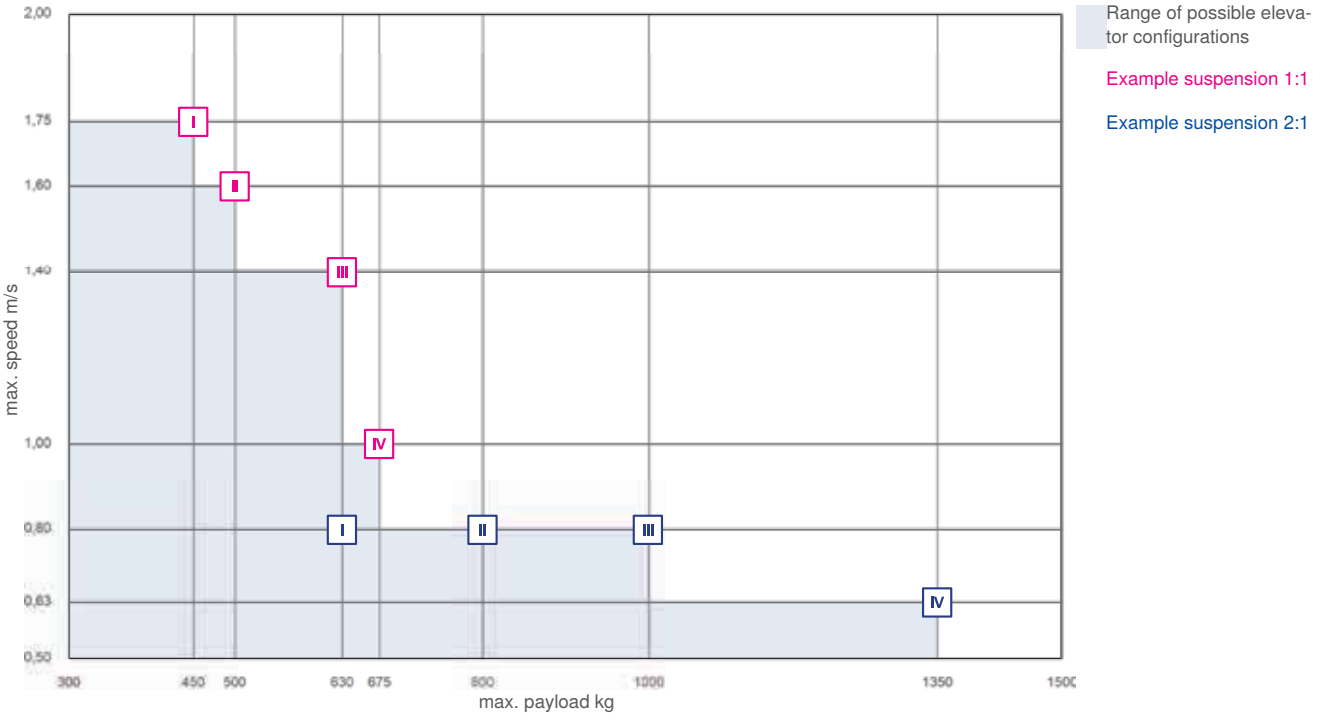
Elevator machine type	L1 mm	LH mm	LB mm	D1 mm	L3 mm
ZAS0-SB	1069 - 1340	max. 587	622	320	90
				400	
				520	
				630	
ZAS0			494	320	
				400	
				520	
				630	

Range of possible elevator configurations for ZAS0

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAS0 gearbox.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Elevator machine type	Traction sheave	Rope	Motor power
		kg	m/s		mm	Number x Ø mm	kW
1:1	I	450	1.75	ZAS0	520	3 x 13	7.5
	II	500	1.6	ZAS0	520	3 x 13	7.5
	III	630	1.4	ZAS0	400	4 x 10	7.5
	IV	675	1.0	ZAS0	520	3 x 13	7.5
2:1	I	630	0.8	ZAS0	520	3 x 10	5.5
	II	800	0.8	ZAS0	520	3 x 10	5.5
	III	1000	0.8	ZAS0	520	3 x 10	5.5
	IV	1350	0.63	ZAS0	400	4 x 10	7.5



ZAS Elevator machine with gearbox

ZAS1

Description

- Elevator machine with gearbox
- Flexibly usable, both in modernisation and in new installations
- Low noise
- Vibration-free
- Axle load: up to 5,000 kg
- Service brake with mechanically separate brake circuits
- Temperature monitoring by PTC thermistor

Scope of delivery

- Elevator machine with asynchronous motor and worm gear
- Service brake
- Traction sheave from 400 mm to 600 mm
- Incremental encoder with sinusoidal signal
- Rope guard according to EN 81
- Mechanical hand release system for service brake

Options

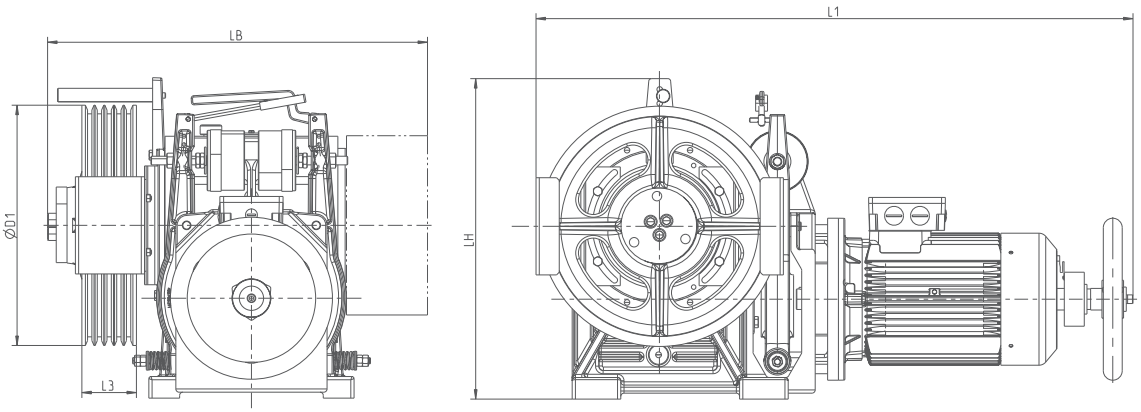
- Incremental encoder in different signal forms and resolutions
- Safety brake against uncontrolled car movement
- Fast acting rectifier for service brake and safety brake

Technical data

Gearbox type	Max. axle load kg	Gear ratio
SWG1	5000	40:1
SWG1		50:2
SWG1		39:2
SWG1		27:2
SWG1		51:1
SWG1		33:1

- Motor cables Page 82
- Machine frame Page 77
- Deflection pulleys Page 80
- ZAlift Page 87

Dimensions mm



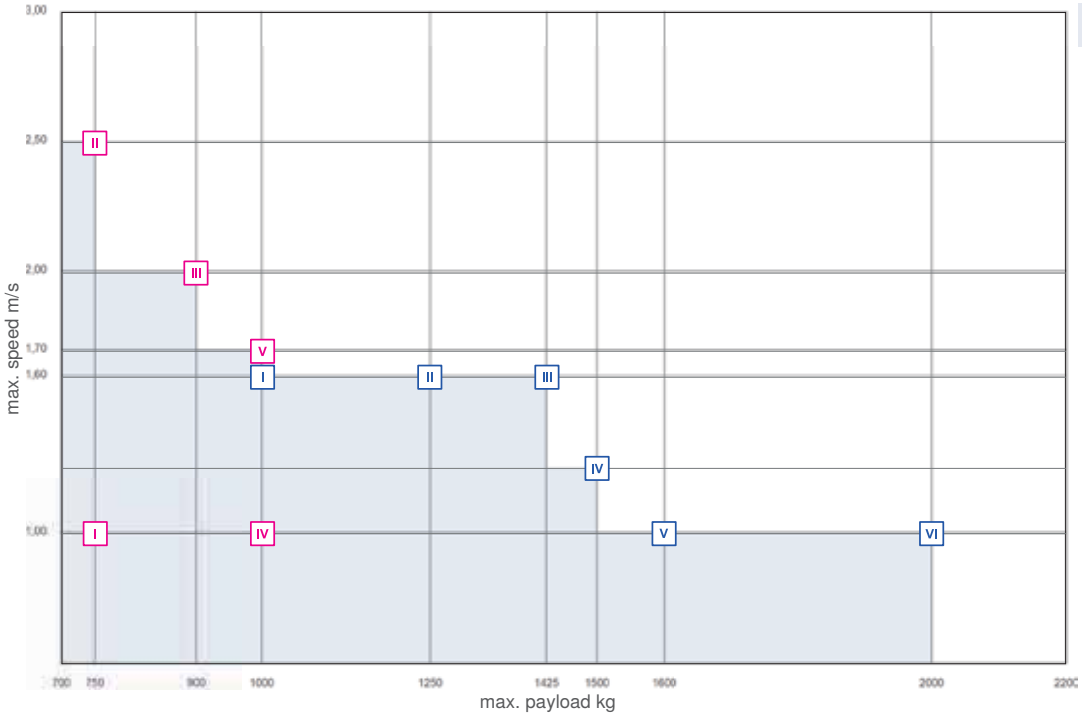
Elevator machine type	L1 mm	LH mm	LB mm	D1 mm	L3 mm
ZAS1-SB	1109 - 1327	max. 712	707	400	101
					128
				520	101
					128
				600	
ZAS1			601	400	101
					128
				520	101
					128
				600	

Range of possible elevator configurations for ZAS1

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAS1 gearbox.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Elevator machine type	Traction sheave	Rope	Motor power
		kg	m/s		mm	Number x Ø mm	kW
1:1	I	750	1.0	ZAS1	520	6 x 10	7.5
	II	750	2.5	ZAS1	600	4 x 13	15.0
	III	900	2.0	ZAS1	600	4 x 13	15.0
	IV	1000	1.0	ZAS1	520	6 x 12	9.2
	V	1000	1.7	ZAS1	600	4 x 13	15.0
2:1	I	1000	1.6	ZAS1	520	4 x 10	15.0
	II	1250	1.6	ZAS1	520	3 x 13	15.0
	III	1425	1.6	ZAS1	520	3 x 13	20.0
	IV	1500	1.25	ZAS1	600	3 x 13	15.0
	V	1600	1.0	ZAS1	520	5 x 12	15.0
	VI	2000	1.0	ZAS1	600	6 x 12	15.0



Range of possible elevator configurations

Example suspension 1:1

Example suspension 2:1

ZAS Elevator machine with gearbox

ZAS2

Description

- Elevator machine with gearbox
- Flexibly usable, both in modernisation and in new installations
- Low noise
- Vibration-free
- Axle load: up to 7,500 kg
- Service brake with mechanically separate brake circuits
- Temperature monitoring by PTC thermistor

Scope of delivery

- Elevator machine with asynchronous motor and worm gear
- Service brake
- Traction sheave from 520 mm to 700 mm
- Incremental encoder with sinusoidal signal
- Rope guard according to EN 81
- Mechanical hand release system for service brake

Options

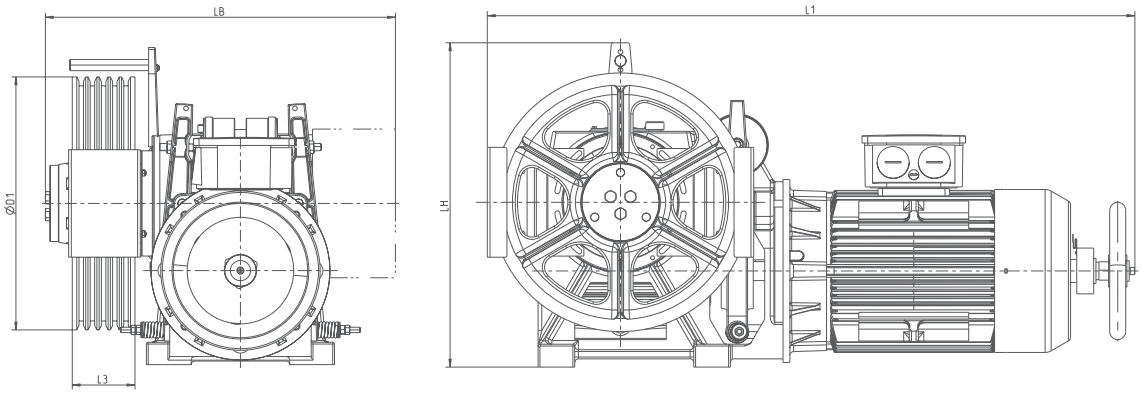
- Incremental encoder in different signal forms and resolutions
- Safety brake against uncontrolled car movement
- Fast acting rectifier for service brake and safety brake

Technical data

Gearbox type	Max. axle load kg	Gear ratio
SWG2	7500	46:1
SWG2		28:1
SWG2		45:2
SWG2		27:2
SWG2		38:1
SWG2		35:2

- Motor cables Page 82
- Machine frame Page 77
- Deflection pulleys Page 80
- ZAlift Page 87

Dimensions mm



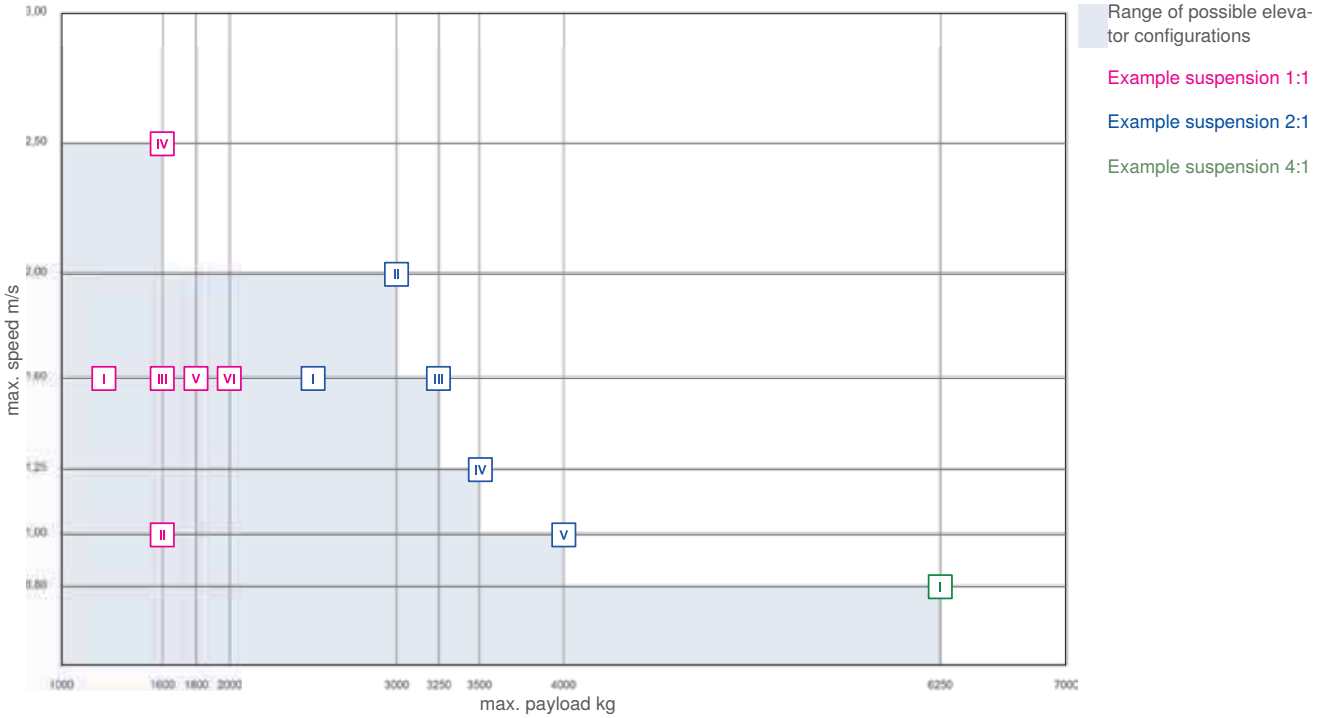
Elevator machine type	L1 mm	LH mm	LB mm	D1 mm	L3 mm
ZAS2-SB	1457 - 1547	max. 770	790	520	140
				560	
				590	170
				600	140
				640	184
				700	148
ZAS2			703	520	140
				560	
				590	170
				600	140
				640	184
				700	148

Range of possible elevator configurations for ZAS2

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAS2 gearbox.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Elevator machine type	Traction sheave	Rope	Motor power
		kg	m/s		mm	Number x Ø mm	kW
1:1	I	1250	1.6	ZAS2	590	6 x 12	16.5
	II	1600	1.0	ZAS2	600	7 x 12	15.0
	III	1600	1.6	ZAS2	590	7 x 12	22.0
	IV	1600	2.5	ZAS2	600	5 x 15	45.0
	V	1800	1.6	ZAS2	590	7 x 13	22.0
	VI	2000	1.6	ZAS2	590	8 x 13	30.0
2:1	I	2500	1.6	ZAS2	700	7 x 12	30.0
	II	3000	2.0	ZAS2	700	6 x 13	45.0
	III	3250	1.6	ZAS2	590	7 x 13	45.0
	IV	3500	1.25	ZAS2	560	6 x 13	45.0
	V	4000	1.0	ZAS2	590	8 x 13	30.0
4:1	I	6250	0.8	ZAS2	590	7 x 13	45.0



ZAS Elevator machine with gearbox

ZAS3

- Motor cables Page 82
- Machine frame Page 77
- Deflection pulleys Page 80
- ZAlift Page 87

Description

- Elevator machine with gearbox
- Flexibly usable, both in modernisation and in new installations
- Low noise
- Vibration-free
- Axle load: up to 11,000 kg
- Service brake with mechanically separate brake circuits
- Temperature monitoring by PTC thermistor

Scope of delivery

- Elevator machine with asynchronous motor and worm gear
- Service brake
- Traction sheave from 520 mm to 700 mm
- Incremental encoder with sinusoidal signal
- Rope guard according to EN 81
- Mechanical hand release system for service brake

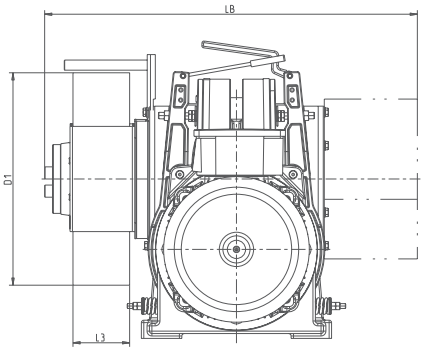
Options

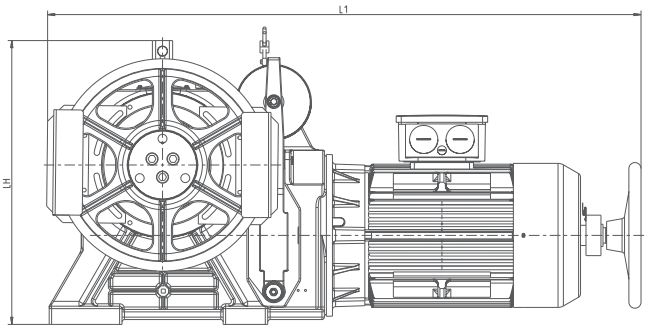
- Incremental encoder in different signal forms and resolutions
- Safety brake against uncontrolled car movement
- Fast acting rectifier for service brake and safety brake

Technical data

Gearbox type	Max. axle load kg	Gear ratio
SWG3	11000	46:1
SWG3		27:2
SWG3		43:2
SWG3		34:1
SWG3		35:2

Dimensions mm





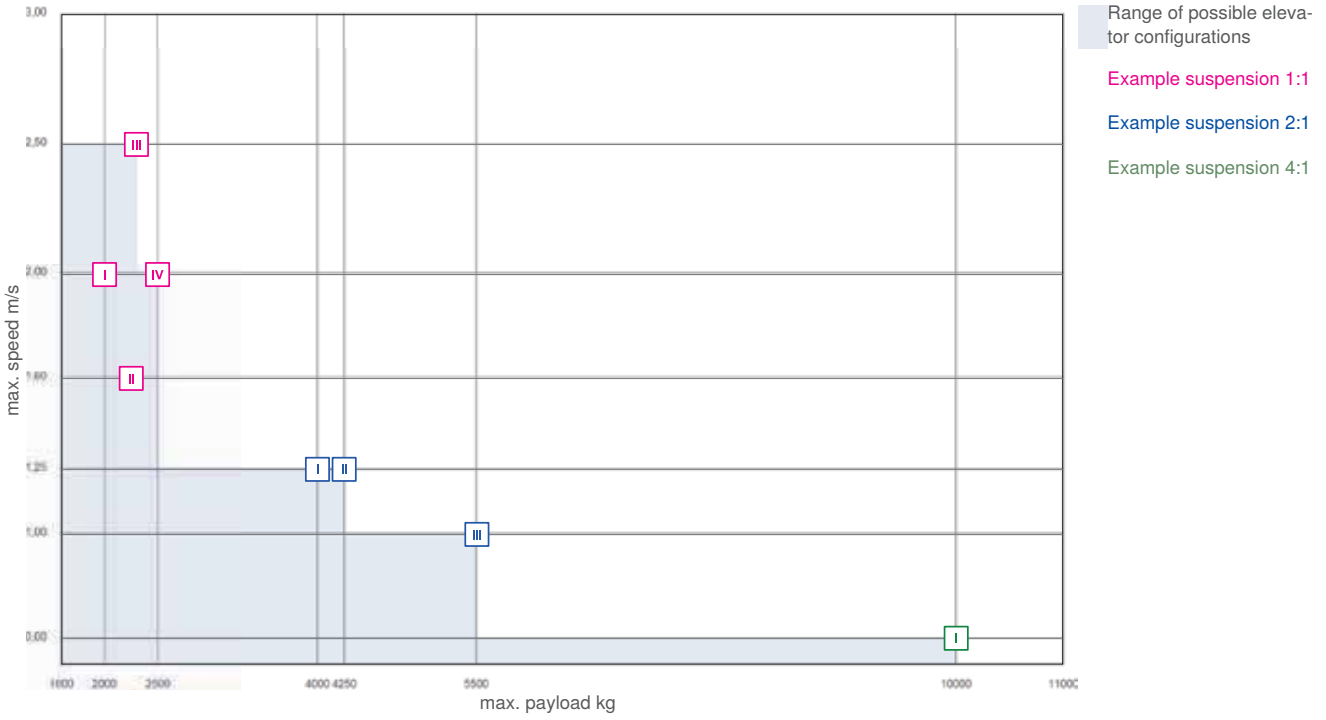
Elevator machine type	L1 mm	LH mm	LB mm	D1 mm	L3 mm
ZAS3-SB	1295 - 1582	max. 820	921	520	140
				560	
				600	
				600	184
				640	
				700	
ZAS3			744	520	140
				560	
				600	
				600	184
				640	
				700	

Range of possible elevator configurations for ZAS3

Important technical data for the drawn configuration examples are listed in the table below.
The following diagram shows the range of elevator configurations which can be achieved with the ZAS3 gearbox.
Other elevator configurations, also outside this range, are possible. Flexibility is our business!
Our calculation software ZAlift is available free of charge to you for fast and convenient calculation of your elevator project.

Example configurations

Suspension	No	Max. payload	Speed	Elevator machine type	Traction sheave	Rope	Motor power
		kg	m/s		mm	Number x Ø mm	kW
1:1	I	2000	2.0	ZAS3	700	7 x 16	37.0
	II	2250	1.6	ZAS3	640	7 x 16	34.0
	III	2300	2.5	ZAS3	700	7 x 14	45.0
	IV	2500	2.0	ZAS3	640	8 x 14	45.0
2:1	I	4000	1.25	ZAS3	700	6 x 14	37.0
	II	4250	1.25	ZAS3	700	6 x 14	45.0
	III	5500	1.0	ZAS3	600	8 x 14	45.0
4:1	I	10000	0.6	ZAS3	640	7 x 14	45.0



Motors VFD

Motors VFD

Frequency controlled elevator motors

Description

- Surface-cooled asynchronous motor
- Especially for elevator machines with gearbox
- High efficiency
- Frequency controllable
- Optimised for low-noise operation
- Operating voltage 360 V AC
- Design IM B3

Options

- Hand wheel with low moment of inertia
- Incremental encoder in different signal forms and resolutions

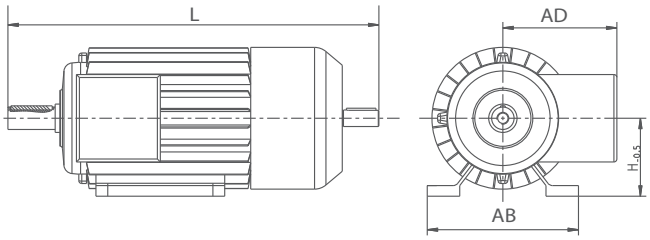
Motor cables Page 82

Technical data

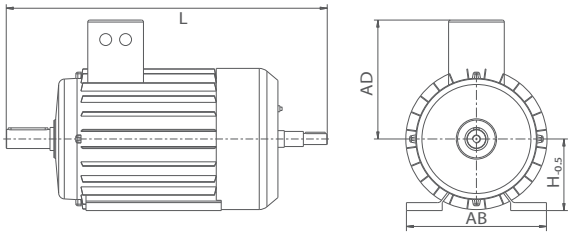
Motor type	Rated frequency Hz	Rated power kW	Rated torque Nm	Rated current A	Rated speed min^{-1}
VFD132M-4	38 50 66	4.0 5.5 7.5	37	9.7 13.0 17.5	1090 1453 1934
VFD132MA-4	38 50 66	5.5 7.5 10.0	50	13.1 17.8 22.7	1093 1451 1933
VFD132MB-4	38 50 66	6.8 9.2 12.0	61	15.8 21.0 27.4	1089 1448 1929
VFD160LA-4	38 50 66	8.5 11.0 14.5	72	18.0 24.0 31.0	1113 1469 1953
VFD160LB-4	38 50 66	11.5 15.0 20.0	100	24.0 32.5 42.0	1113 1471 1953
VFD180L-4	38 50 66	16.5 22.0 29.0	144	34.5 46.0 60.0	1115 1476 1955
VFD200L-4	38 50 66	23.0 30.0 40.0	197	47.0 64.0 81.0	1122 1479 1962
VFD225M-4	38 50 66	28.0 37.0 50.0	242	60.0 79.0 104.0	1120 1468 1960
VFD225M-4	38 50 60	34.0 45.0 60.0	292	70.0 91.0 121.0	1119 1483 1959
VFD250M-4	38 50 66	42.0 55.0 73	357	85.0 116.0 146.0	1119 1480 1959

Dimensions mm

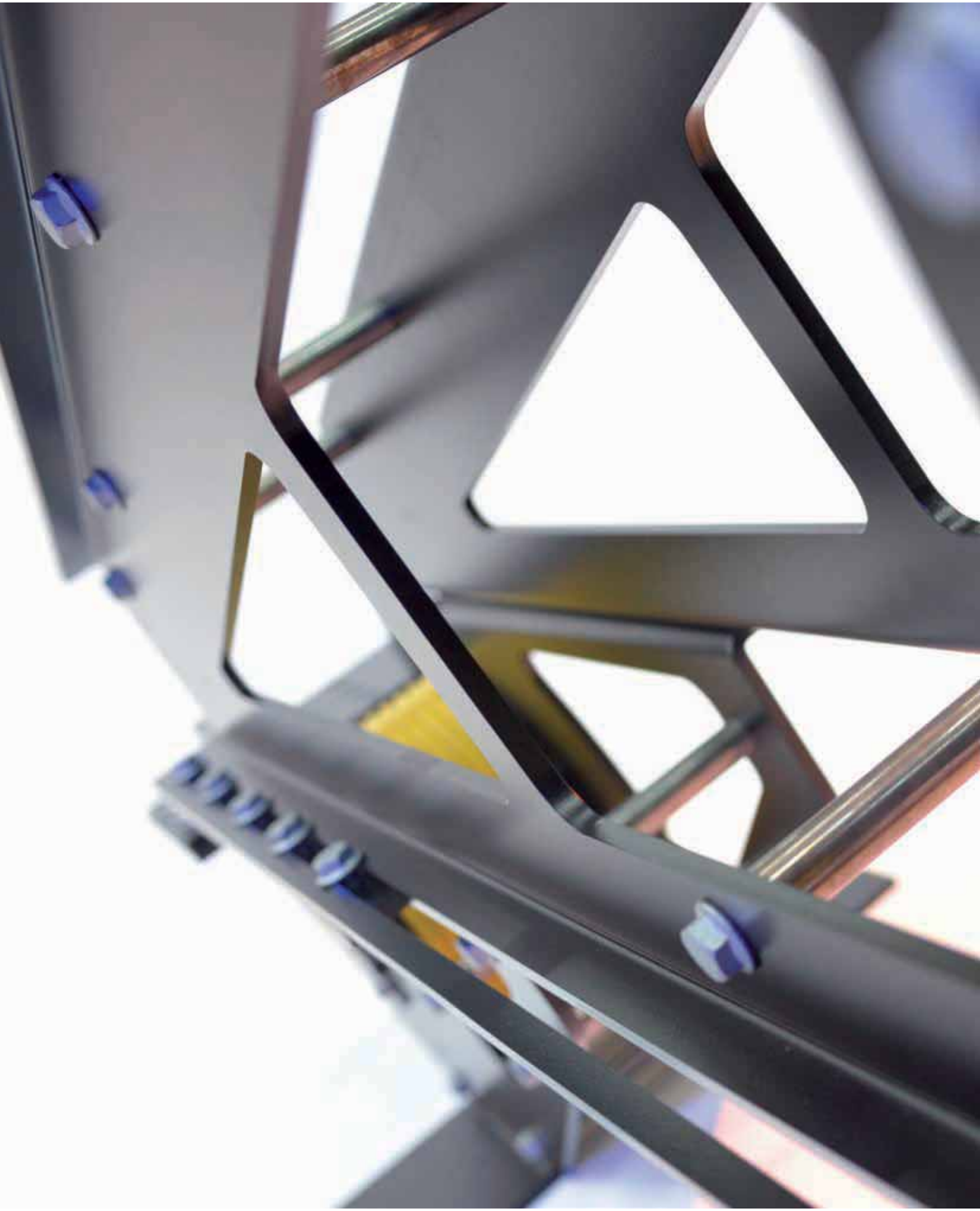
VFD132..., VFD160...

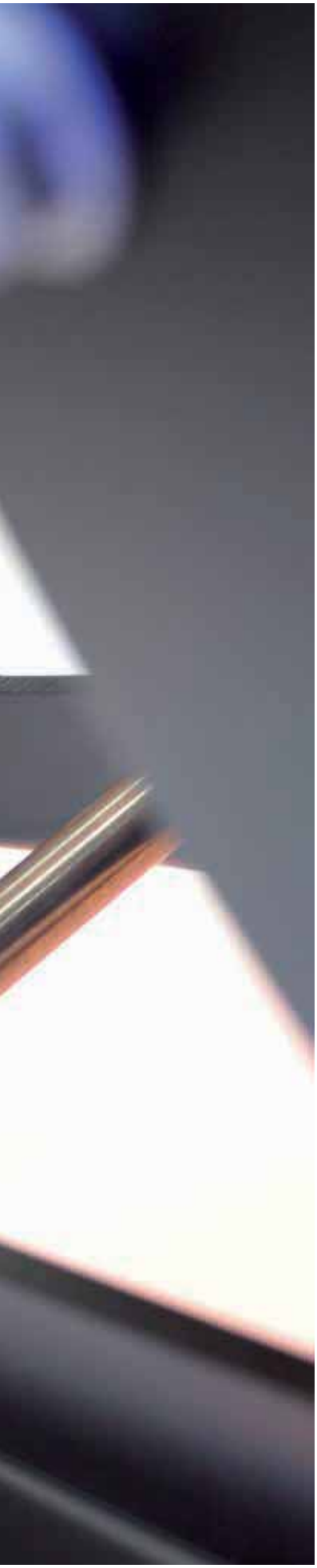


VFD180..., VFD200..., VFD225..., VFD250..., VFD280...



Motor type	D mm	L mm	AB mm	AD mm	H mm
VFD132M-4	38	613	256	193	132
VFD132MA-4					
VFD132MB-4		628			
VFD160LA-4	42	742	320	250	160
VFD160LB-4					
VFD180L-4	48	807	352	299	180
VFD200L-4	55	857	403	299	200
VFD225M-4	60	925	440	238	225
VFD250M-4	65	1004	490	361	250
VFD280S-4	75	1054	536	361	280
VFD280M-4					





System components

Product overview

ZAframe MH4000	Page 68
ZAframe MH6000	Page 69
ZAframe MF2800 / MF4000 / MF6000	Page 70
ZAframe MS4000 / MS8000	Page 72
ZAframe MD13000	Page 74
ZAframe MK2800	Page 75
ZAframe MN3000	Page 76
ZAframe MZH2900 - MZH11000	Page 77
ZAframe MZF3000 - 11000	Page 78
Adapter plate MP / MZP	Page 79
Deflection pulleys	Page 80
Forced ventilation ZAtop	Page 81
Motor cables	Page 82
Oil heating motors	Page 85
Tool set	Page 86
ZAlift	Page 87

ZAframe MH4000

Elevated frame for ZAtop SM160.30B - SM225.45C

Description

- Elevated frame with one deflection pulley
- Screwed sheet metal design
- Static load: up to 4,000 kg
- Typical payload: 630 kg to 1,600 kg
- Rope distance (ASL): 400 mm to 1,330 mm, adjustable in 40 mm steps
- Traction sheave: 160 mm to 500 mm
- Deflection pulley: 160 mm to 520 mm
- Version as illustrated or motor turned through 180°
- Can be delivered assembled or unassembled

Scope of delivery

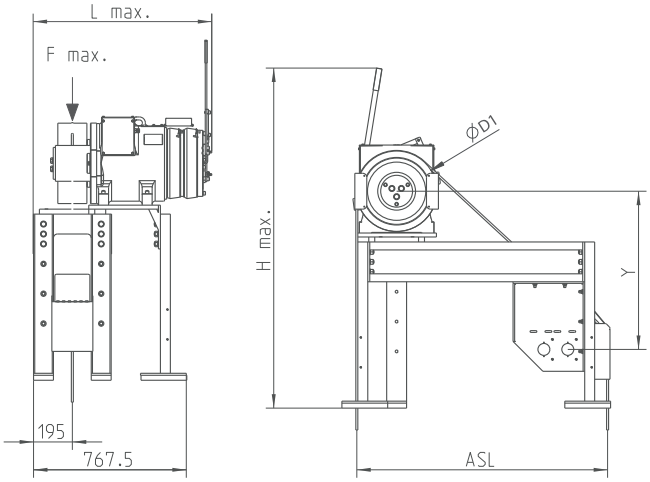
- Frame with fastening material
- Deflection pulley with fastening material
- Insulating elements

Options

- Nip guard
- Special adaptation of the frame
- Different traction sheaves and deflection pulleys

MH4000					
Motor type	Traction sheave D1	Deflection pulley	ASL	Max. static load	**Article no.**
	mm	mm	mm	kg	
SM160.30B/40B	240	240	420 - 1140	4000	**70028156**
SM200.15C/20C/30C	240	240	420 - 1140		**70028158**
SM200.15C/20C/30C	320	320	500 - 1220		**70028161**
SM200.15C/20C/30C	400	400	500 - 1260		**70028162**
SM200.40C	160	160	420 - 1060		**70028159**
SM200.40C	240	240	420 - 1140		**70028160**
SM200.40C	320	320	500 - 1220		**70028163**
SM200.40C	400	400	500 - 1260		**70028164**
SM200.40C	500	520	500 - 1280		**70028166**
SM225.40B/45C	240	240	420 - 1100		**70028167**
SM225.40B/45C	320	320	580 - 1180		**70028168**
SM225.40B/45C	400	400	580 - 1260		**70028169**
SM225.40B/45C	500	520	610 - 1330		**70028170**

Dimensions mm



Motor type	Y	H max.	L max.
	mm	mm	mm
SM160.30B/40B	774	1492	810
SM200.15C/20C/30C	680	1323	763
SM200.40C	797	2045	879
SM225.40B/45C	795	1800	905

ZAframe MH6000

Elevated frame for ZAtop SM225.60B - SM250.80D

Description

- Elevated frame with one deflection pulley
- Screwed sheet metal design
- Static load: up to 6,000 kg
- Typical payload: 630 kg to 3,000 kg
- Rope distance (ASL): 520 mm to 1,045 mm
- Traction sheave: 400 mm to 640 mm
- Deflection pulley: 400 mm to 520 mm
- Version as illustrated or motor turned through 180°

Scope of delivery

- Frame with fastening material
- Deflection pulley with fastening material
- Insulating elements

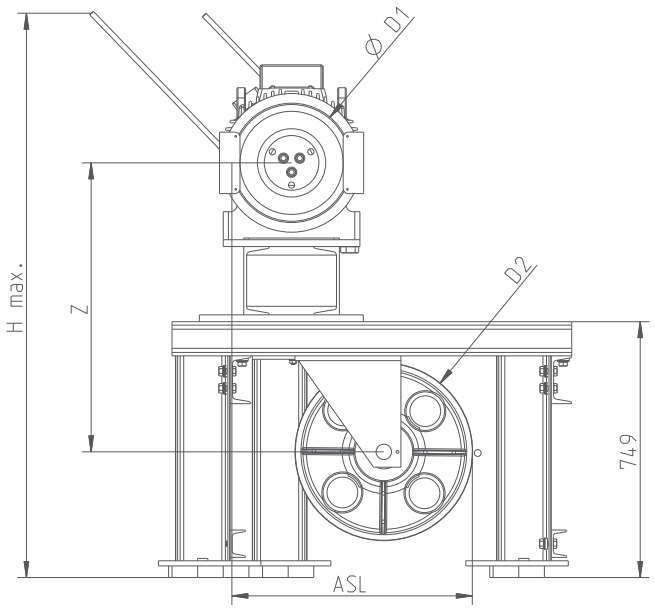
Options

- Nip guard
- Special adaptation of the frame
- Different traction sheaves and deflection pulleys

Base frame
Article no. 02014254-M

MH6000					
Motor type	Traction sheave D1	Deflection pulley	ASL	Max. static load	**Article no. adaptation**
	mm	mm	mm	kg	
SM225.60B	400	400	520 - 925	6000	**70027828**
	500	520	630 - 975		**70027848**
	520	520	640 - 985		**70027848**
	600	520	660 - 1025		**70027849**
	640	520	680 - 1045		**70027849**
SM250.60B	400	400	520 - 925		**70027828**
	500	520	630 - 975		**70027848**
	520	520	640 - 985		**70027848**
	600	520	660 - 1025		**70027849**
	640	520	680 - 1045		**70027849**
SM250.80D	440	400	540 - 945		**70027828**
	520	520	640 - 985		**70027848**
	640	520	680 - 1045		**70027849**

Dimensions mm



Motor type	D1	D2	Z	H max.
	mm	mm	mm	mm
SM225.60B	400	400	816	1817
	500/520	520	896	1867
	600/640	520	946	1917
SM250.60B	400	400	816	1952
	500/520	520	896	2002
	600/640	520	946	2052
SM250.80D	440	400	858	2088
	500/520	520	888	2088
	600/640	520	938	2138

ZAframe MF2800 + MF4000

Flat frame for ZAtop SM160.30B - SM225.45C

Description

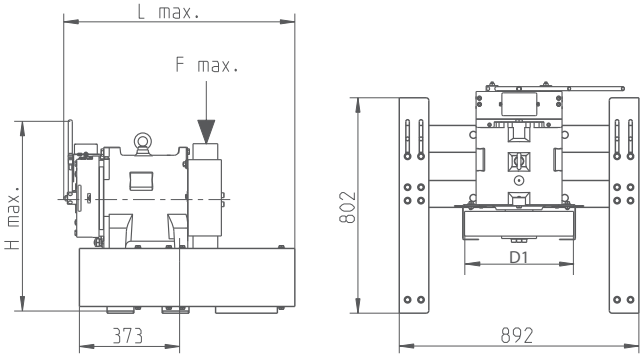
- Flat frame
- Screwed sheet metal design
- Static load: up to 4,000 kg
- Typical payload: 630 kg to 1,600 kg
- Can be delivered assembled or unassembled

Scope of delivery

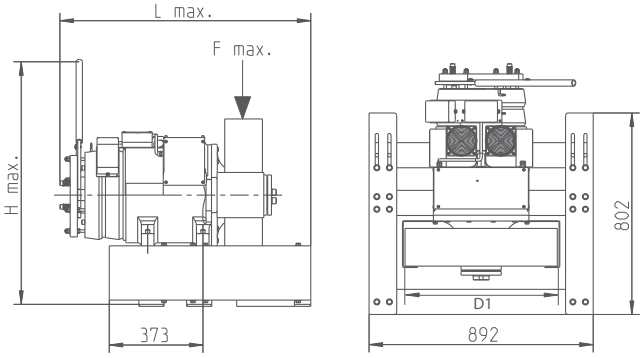
- Frame with fastening material
- Insulating elements

MF2800 / MF4000			
Motor type	Traction sheave D1 mm	Max. static load kg	**Article no.**
SM160.30B/40B SM190.15/23 SM200.15C/20C/30C	160 - 240 200 - 240 160 - 450	2800	**70028278**
SM200.40C	160 - 500	4000	**70028279**
SM225.40B SM225.45C	320 - 600 240 - 400		**70028280**

Dimensions mm



Motor type	H max. mm	L max. mm
SM160.30B/40B	853	896
SM190.15/23	681	777
SM200.15C/20C/30C	860	833



Motor type	H max. mm	L max. mm
SM200.40C	1406	1117
SM225.40B/45C	1161	973

ZAframe MF6000

Flat frame for ZAtop SM225.60B - SM250.80D

Description

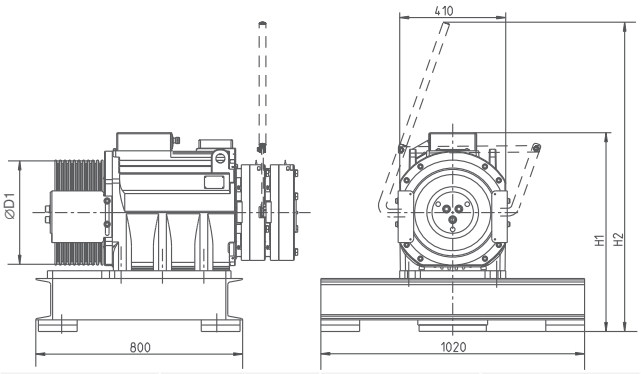
- Flat frame
- Screwed sheet metal design
- Static load: up to 6,000 kg
- Typical payload: 1,000 kg to 3,600 kg
- Can be delivered assembled or unassembled

Scope of delivery

- Frame with fastening material
- Insulating elements

MF6000			
Motor type	Traction sheave mm	Max. static load kg	**Article no.**
SM225.60B	320	6000	**02010208**
SM250.60B			
SM225.60B	400		
SM250.60B			
SM250.80D	440		
SM225.60B	500		
SM250.60B			
SM250.80D	520		
SM225.60B	600		
SM250.60B			
SM250.80D	640		

Dimensions mm



Motor type	D1 mm	H1 mm	H2 mm
SM225.60B	320	769	1197
	400	769	1197
	500	819	1247
	600	869	1297
SM250.60B	320	769	1197
	400	769	1197
	500	819	1247
	600	869	1297
SM250.80D	440	880	1334
	520	880	1334
	640	930	1384

ZAframe MS4000

Frame S-wrap for ZAtop SM160 - SM225.45C

Description

- Frame with two deflection pulleys
- Screwed sheet metal design
- Static load: up to 4,000 kg
- Typical payload: 630 kg to 2,000 kg
- Rope distance (ASL): 360 mm to 1,200 mm, adjustable in 40 mm steps
- Traction sheave: 200 mm to 400 mm
- Deflection pulley: 240 mm to 400 mm
- Version as illustrated or motor turned through 180°
- Can be delivered assembled or unassembled

Scope of delivery

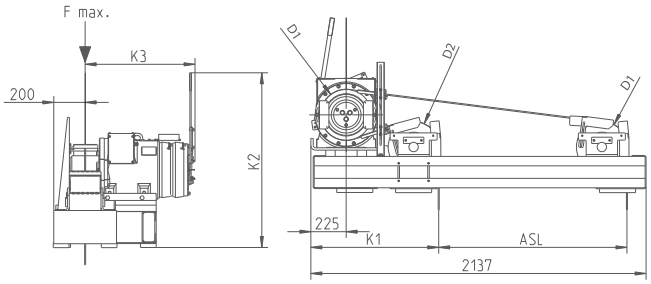
- Frame with fastening material
- Deflection pulley with fastening material
- Insulating elements

Options

- Nip guard
- Special adaptation of the frame
- Different traction sheaves and deflection pulleys

MS4000				
Motor type	Traction sheave	ASL	Max. static load	**Article no.**
	mm	mm	kg	
SM160.30B/40B	240	400 - 1200	4000	**70028387**
SM200.15C/20C/30C	240	400 - 1200		**70028388**
SM200.15C/20C/30C	320 400	440 - 1200 520 - 1200		**70028390**
SM200.40C	240	400 - 1200		**70028389**
SM200.40C	320 400	440 - 1200 520 - 1200		**70028391**
SM225.45C	240	400 - 1200		**70028392**
SM225.40B/45C	320 400	400 - 1200		**70028393**

Dimensions mm



Motor type	D1	D2	K1	K2	K3
	mm	mm	mm	mm	mm
SM160.30B/40B	240	240	775	897	540
SM200.15C/20C/30C	240	240	775	877	535
SM200.40C	240	240	775	1450	810
SM200.15C/20C/30C	320	320	815	877	535
	400	400	855	877	535
SM200.40C	320	320	815	1450	810
	400	400	855	1450	810
SM225.45C	240	240	775	1114	700
SM225.40B	320	320	815	1205	700
	400	400	855	1205	700
SM225.45C	320	320	815	1114	700
	400	400	855	1114	700

ZAframe MS8000

Frame S-wrap for ZAtop SM225.60B - 250.80D

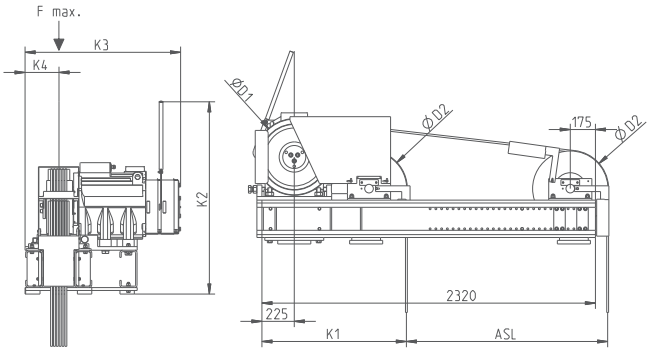
Description
- Frame with two deflection pulleys
- Screwed sheet metal design
- Static load: up to 8,000 kg
- Typical payload: 1,000 kg to 3,000 kg
- Rope distance (ASL): 400 mm to 1,400 mm, adjustable in 40 mm steps
- Traction sheave: 320 mm to 520 mm
- Deflection pulley: 320 mm to 520 mm
- Version as illustrated or motor turned through 180°
- Can be delivered assembled or unassembled

Scope of delivery
- Frame with fastening material
- Deflection pulley with fastening material
- Insulating elements

Options
- Nip guard
- Special adaptation of the frame
- Different traction sheaves and deflection pulleys

MS8000					
Motor type	Traction sheave D1	Deflection pulley D2	ASL	Max. static load	**Article no.**
	mm	mm	mm	kg	
SM225.60B	320	320	400 - 1400	8000	**70028057 70028307**
SM225.60B	400	400	440 - 1400		**70028058 70028302**
SM225.60B	520	520	560 - 1400		**70028059 70028062**
SM250.60B	320	320	400 - 1400		**70028060 70028308**
SM250.60B	400	400	440 - 1400		**70028058 70028302**
SM250.60B	520	520	560 - 1400		**70028061 70028062**
SM250.80D	440	400	560 - 1400		**70028063 70028309**
SM250.80D	520	520	560 - 1400		**70028064 70028350**

Dimensions mm



Motor type	D1	K1	K2	K3	K4
	mm	mm	mm	mm	mm
SM225.60B	320	905	1158	1050	236
	400	945	1158	1050	236
	520	1005	1158	1050	236
SM250.60B	320	905	1345	1250	236
	400	945	1345	1250	236
	520	1005	1345	1250	236
SM250.80D	440/520	1005	1430	1230	229

ZAframe MD13000

Frame for double wrap for ZAtop SM250.100C

Description

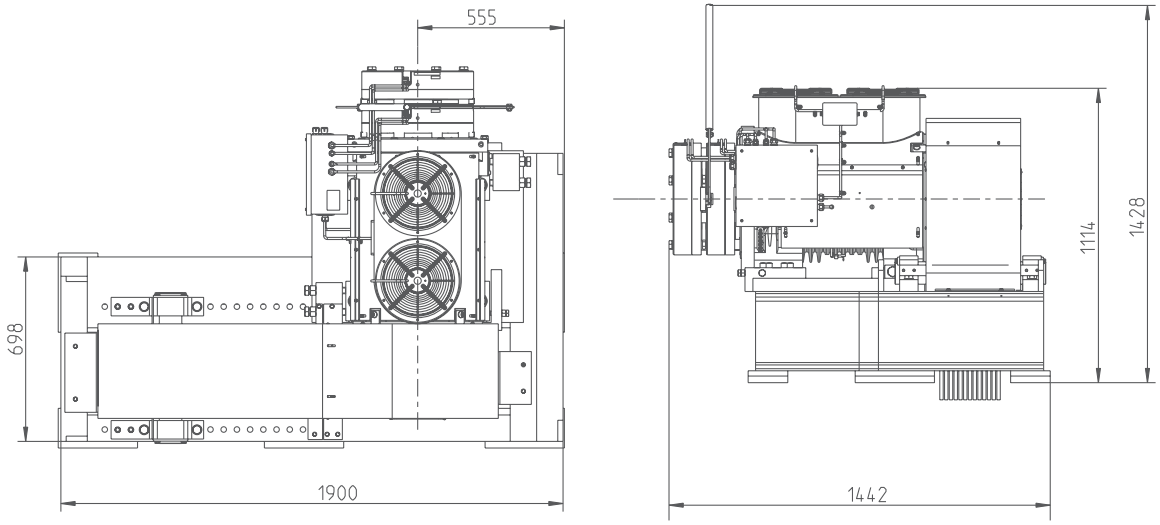
- Frame with one deflection pulley
- Welded / screwed construction
- Static load: up to 13,000 kg
- Typical payload: 1,000 kg to 3,500 kg
- Rope distance (ASL): 1,020 mm to 1,455 mm, adjustable in 50 mm steps
- Traction sheave: 450 mm to 520 mm
- Deflection pulley: 520 mm
- Version as illustrated or motor turned through 180°

Scope of delivery

- Frame with fastening material
- Deflection pulley with fastening material
- Nip guard
- Rope guard
- Insulating elements

MD13000					
Motor type	Traction sheave	Max. static load	Deflection pulley	ASL	**Article no.**
	mm	kg	mm	mm	
SM250.100C	450	13000	520	1020 - 1420	**70027456-M**
SM250.100C	500			1045 - 1445	**70027457-M**
SM250.100C	520			1055 - 1455	

Dimensions mm



ZAframe MK2800

Frame for ZAtop SM160 - SM200.30C

Description

- Frame with one deflection pulley
- Screwed sheet metal design
- Static load: up to 2,800 kg
- Typical payload: 300 kg to 1,000 kg
- Rope distance (ASL): 400 mm to 1,100 mm, adjustable in 40 mm steps
- Traction sheave: 160 mm to 240 mm
- Deflection pulley: 160 mm to 240 mm
- Version as illustrated or motor turned through 180°
- Can be delivered assambled or unassembled

Scope of delivery

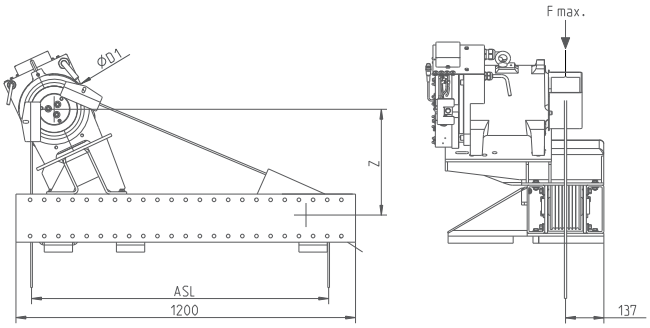
- Frame with fastening material
- Deflection pulley with fastening material
- Rope guard
- Insulating elements

Options

- Special adaptation of the frame
- Rope terminations

MK2800					
Motor type	Traction sheave D1	Deflection pulley	ASL	Max. static load	**Article no.**
	mm	mm	mm	kg	
SM160.30B/40B	160-240	160-240	400-1100	2800	**70028312**
SM190.15/23	200				**70028314**
	240				
SM200.15C/20C/30C	160-240				

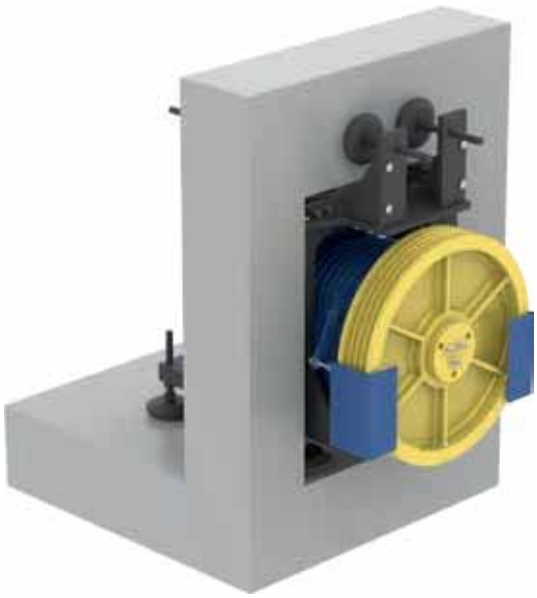
Dimensions mm



Motor type	Z
	mm
SM160.30B/40B	385
SM190	415
SM200.15C/20C/30C	415

ZAframe MN3300

Maschine frame for ZAtop SM200.15C - SM200.40C



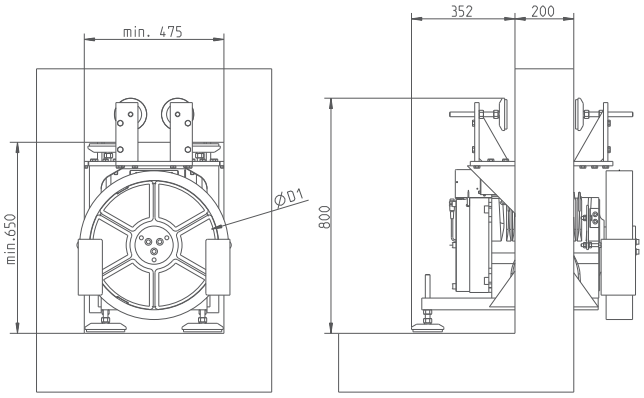
Description

- Frame for installation position traction sheave in the shaft
- Welded / screwed construction
- Static load: up to 3,300 kg
- Typical payload: 450 kg to 1,000 kg

Scope of delivery

- Frame with fastening material

Dimensions mm



Motor type	Traction sheave D1 mm	Max. static load kg	**Article no.**
SM200.15C	320	3300	**70028146**
SM200.20C	320		
SM200.30C	320		
SM200.40C	320		**70028147**
SM200.20C	400		**70028146**
SM200.30C	400		
SM200.40C	400		
SM200.20C	450		
SM200.30C	450		
SM200.40C	500		**70028147**

ZAframe MZH2900 / MZH5000 / MZH7500 / MZH11000

Elevated frame for ZAS1 - ZAS3

Description

- Elevated frame with one deflection pulley
- Screwed sheet metal design
- Static load: up to 1,100 kg
- Typical payload:
  1:1: 450 kg to 1,250 kg
  2:1: 1,600 kg to 4,000 kg
- Rope distance (ASL): 550 mm to 1,200 mm, steplessly adjustable
- Traction sheave: 320 mm to 700 mm
- Deflection pulley: 400 mm to 520 mm

Scope of delivery

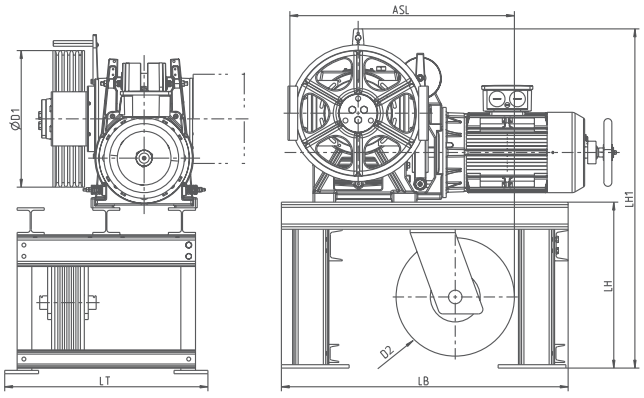
- Frame with fastening material
- Deflection pulley with fastening material
- Insulating elements

Options

- Special adaptation of the frame
- Different traction sheaves and deflection pulleys

MZH					
Elevator machine	Traction sheave D1	Deflection pulley D2	ASL	Max. static load	**Article no.**
	mm	mm	mm	kg	
ZAS0	320	400	550-770	2900	**02014252-M**
	400	400	590-800		
	520	520	730-850		
ZAS1	400	400	595-1015	5000	**02014253-M**
	520	520	735-1065		
	600	520	775-1100		
ZAS2	520	520	690-1030	7500	**02014254-M**
	560	520	715-1040		
	590	520	720-1060		
	600	520	730-1070		
	640	640	750-1090		
	700	640	780-1120		
ZAS3	520	520	670-1060	11000	**02014255-M**
	560	520	700-1140		
	600	520	710-1160		
	640	640	730-1180		
	700	640	760-1200		

Dimensions mm



Elevator machine	LB	LH	LH1	LT
	mm	mm	mm	mm
ZAS0	1015	715	425	680
ZAS1	1210	715	1210	724
ZAS2	1210	715	1265	810
ZAS3	1310	735	1405	890

ZAframe MZF3000 / MZF5000 / MZF7500 / MZF11000

Flat frame for ZAS

Description

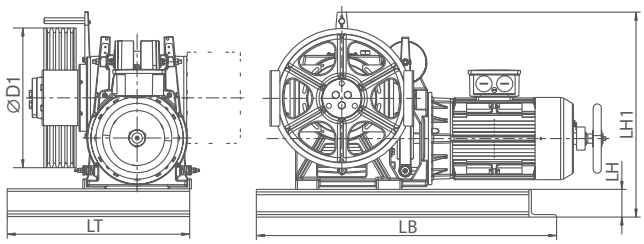
- Flat frame
- Welded steel construction
- Static load: up to 11,000 kg
- Typical payload:
  1:1: 450 kg to 1,250 kg
  2:1: 1,600 kg to 4,000 kg
- Traction sheave: 320 mm to 700 mm

Scope of delivery

- Frame with fastening material
- Insulating elements

MZF3000 / MZF5000 / MZF7500 / MZF11000			
Elevator machine	Traction sheave D1 mm	Max. static load kg	**Article no.**
ZAS0	320	3000	**02018150-M**
	400		
	520		
ZAS1	400	5000	**02018151-M**
	520		
	600		
ZAS2	520	7500	**02018152-M**
	560		
	590		
	600		
	640		
	700		
ZAS3	520	11000	**02018153-M**
	560		
	600		
	640		
	700		

Dimensions mm



Elevator machine	LB mm	LH mm	LH1 max. mm	LT mm
ZAS0	1090	100	710	550
ZAS1	1160	90	830	624
ZAS2	1230	100	910	710
ZAS3	1300	120	970	790

Mechanical adapter

For existing substructure

Description
- Adapter for existing sub-structures
- For screwed/welded mounting

Scope of delivery
- Adapter plates or adapter rail
- Fastening material for motor

MP350 / MP500
Adapter plates for ZAtop SM160.30B - SM250.80D

Motor type	Article no.	Dimensions (W x H x D) mm	Weight kg
SM160.30/40B	70027343	350 x 40 x 300	48
SM190.15/23	70027344		
SM200.15/20/30C	70027344		
SM200.40C	70027345		
SM225.40B	70027375	500 x 40 x 450	72
SM225.60B	70027376		
SM250.60B			
SM250.80D			

MP3300
Adapter rail for ZAtop SM160.30B - SM200.40C longitudinal or transversal to traction sheave shaft

Motor type	Mounting	Article no.	Length mm	Weight kg
SM160.30B/40B	longitudinal	70028534	1000	19
	transversal	70027242		
SM190.15/23	longitudinal	70028535		
	transversal	70027242		
SM200.15C/20C/30C	longitudinal	70028535		
	transversal	70027242		
SM200.40C	longitudinal	70028536		
	transversal	70027243		

MZP3000 / MZP5000 / MZP7500 / MZP11000
Adapter rail for ZAS0 - ZAS3 longitudinal or transversal to traction sheave shaft

Elevator machine type	Mounting	Article no.	Length mm	Weight kg
ZAS0	longitudinal	70027319	1000	19
	transversal			
ZAS1	longitudinal	70028346		
	transversal	70027320		
ZAS2	longitudinal	70027993		
	transversal			
ZAS3	longitudinal	70027994		
	transversal			

Deflection pulleys

Scope of delivery

- Deflection pulley (plastic) with deep groove ball bearings including axle
- Two axle keep plates
- Mounting screws
- Washers
- Spacer sleeves

Options

- Two angle brackets

Deflection pulleys with axle and axle keep plates

Deflection pulley diameter	Rope diameter	Number of grooves	Groove spacing	Rim width	Axle diameter	Axle length	Bearing type	Weight without axle	Max. axle load
mm	mm		mm	mm	mm	mm		kg	kg
120	6 + 6.5	6	10	70	40	152	BS2 2208-2CS	1.9	2500
160	4	7	10	80	55	170	6211-2RS	4.5	1000
		12	10	126	55	190	6211-2RS	5.5	1650
	8.1	4	12	54	55	170	6211-2RS	4.0	2000
		6	12	84	55	170	6211-2RS	4.5	2000
		8	12	108	55	170	6311-2RS	5.0	3000
210	6 - 6.7	7	10	82	55	170	6211-2RS	5.6	2000
		10	10	112	55	190	6211-2RS	7.2	2500
240	6 - 6.7	7	10	82	55	170	6211-2RS	5.6	2000
		10	10	112	55	190	6211-2RS	7.2	2500
		12	10	134	55	190	6211-2RS	7.2	2500
	6.5 - 6.7	14	10	156	55	230	6311 2RS	9.2	3000
320	6.5 - 6.7	10	10	116	60	170	6212-2RS	8.4	3000
	8	6	17	116	60	170	6212-2RS	8.4	3000
		7	14	116	60	170	6212-2RS	8.4	3000
		10	17	182	60	250	6312-2ZR.L272	17.8	5000
		12	14	182	60	250	6312-2ZR.L272	17.8	5000
400	8	6	17	116	60	170	6212-2RS	9.8	3000
		7	14	116	60	170	6212-2RS	9.8	3000
		10	17	182	60	250	6312-2ZR.L272	18.4	5000
		12	14	182	60	250	6312-2ZR.L272	18.4	5000
	10	5	17	116	60	170	6212-2RS	9.8	3000
		7	17	138	60	210	6312-2ZR.L272	14.2	5000
		10	17	182	60	250	6312-2ZR.L272	18.4	5000
		10	17	182	60	250	BS2-2212-2CS	19	6000
520	12	6	20	145	60	210	6312-2ZR.L272	23.2	5000
	13	6	20	145	60	210	6312-2ZR.L272	23.2	5000

Special deflection pulleys on request

Forced ventilation ZAtop

Example of axial forced ventilation ZAtop SM250.60B

Example of forced cooling ZAtop SM200.30C

Description

For mounting on elevator machines of the ZAtop series

Forced ventilation for ZAtop		
Elevator machine	**Article no.**	Comment
SM200.15-30B/C	**70027042**	for machines with and without hand release system
SM200.40C	**70027114**	for machines with and without hand release system
SM225.30/40	**70026809**	only for brake without hand release
SM225.40B	**70028013**	for machines with and without hand release system
SM225.45C	**70027363**	for machines with and without hand release system
SM225.60B	**70026808**	Warner-brake without hand release
	70026995	Warner-brake with hand release
	70026995	Mayr-brake with and without hand release system
SM250.60B	**70026807**	Mayr-brake without hand release
	70026858	Mayr brake with hand release system without return spring
	70027888	Mayr brake with hand release system with return spring
	70027021	Mayr-brake with and without hand release system
SM250.80D	**70027846**	Mayr-brake with and without hand release system
SM250.100C	**70026864 + 02010643**	Terminal box right
	70026847 + 02010643	Terminal box left

Article no. valid for machine built from 2014 onwards.

Motor cables

For motor type ZAtop, ZAsyn SM860 and VFD

- Cable for connecting the motor to frequency inverter type ZETADYN / ZAdyn
- Including cable gland
- Prefabricated:
  - Connection side motor: ring cable lug
  - Connection side ZETADYN / ZAdyn: wire-end sleeves

Rated current* A	Cable cross section mm²	Cable gland	Ring cable lug for terminal board	Fits motor	Cable length** m	Type	Article no.
20	4 x 2.5	M25	M6	VFD132	5.0	L-ML-05-YY-2.5-M6-AE	356035-05M
					10.0	L-ML-10-YY-2.5-M6-AE	356035-10M
			M8	SM200.40 SM225 VFD160	1.8	L-ML-018-YY-2.5-M8-AE	356038-01.8M
					3.0	L-ML-03-YY-2.5-M8-AE	356038-03M
					5.0	L-ML-05-YY-2.5-M8-AE	356038-05M
					10.0	L-ML-10-YY-2.5-M8-AE	356038-10M
25	4 x 4.0	M32	M6	VFD132	5.0	L-ML-05-YY-4-M6-AE	356036-05M
					10.0	L-ML-10-YY-4-M6-AE	356036-10M
			M8	SM200.40 SM225 SM860 VFD160	1.8	L-ML-018-YY-4-M8-AE	356039-01.8M
					3.0	L-ML-03-YY-4-M8-AE	356039-03M
					5.0	L-ML-05-YY-4-M8-AE	356039-05M
					10.0	L-ML-10-YY-4-M8-AE	356039-10M
35	4 x 6.0	M32	M6	VFD132	5.0	L-ML-05-YY-6-M6-AE	356037-05M
					10.0	L-ML-10-YY-6-M6-AE	356037-10M
			M8	SM200.40 SM225 SM250 SM860 VFD180	1.8	L-ML-018-YY-6-M8-AE	356040-01.8M
					3.0	L-ML-03-YY-6-M8-AE	356040-03M
					5.0	L-ML-05-YY-6-M8-AE	356040-05M
					10.0	L-ML-10-YY-6-M8-AE	356040-10M
50	4 x 10.0	M40	M8	SM200.40 SM225 SM250 SM860 VFD160-225	1.8	L-ML-018-YY-10-M8-AE	356041-018M
					3.0	L-ML-03-YY-10-M8-AE	356041-03M
					5.0	L-ML-05-YY-10-M8-AE	356041-05M
					10.0	L-ML-10-YY-10-M8-AE	356041-10M
63	4 x 16.0	M40	M8	SM200.40 SM225 SM250 SM860 VFD180-250	1.8	L-ML-018-YY-16-M8-AE	356042-01.8M
					3.0	L-ML-03-YY-16-M8-AE	356042-03M
					5.0	L-ML-05-YY-16-M8-AE	356042-05M
					10.0	L-ML-10-YY-16-M8-AE	356042-10M
80	4 x 25.0	M50	M8	SM225 SM250 SM860 VFD180-250	1.8	L-ML-018-YY-25-M8-AE	356043-018M
					3.0	L-ML-03-YY-25-M8-AE	356043-03M
					5.0	L-ML-05-YY-25-M8-AE	356043-05M
					10.0	L-ML-10-YY-25-M8-AE	356043-10M
100	4 x 35.0	M50	M8	SM225	10.0	L-ML-10-YY-35-M8-AE	356044-10M
			M10	SM250 SM860 VFD180-25	5.0	L-ML-05-YY-35-M10-AE	356033-05M
					10.0	L-ML-10-YY-35-M10-AE	356033-10M

* The stated rated currents are rated according to DIN VDE 0298-4 for laying system B2 and a max. ambient temperature of 40° C.

** Other cable lengths on request.

Motor cables

For motor type ZAsyn SM700 and externally procured motors

- Cable for connecting the motor to frequency inverter type ZETADYN / ZAdyn
- Including cable gland
- Prefabricated:
  - Connection side motor: wire-end sleeves
  - Connection side ZETADYN / ZAdyn: wire-end sleeves

Rated current* A	Cable cross section mm²	Cable gland	Fits motor	Cable length m	**Type**	**Article no.**
20.0	4 x 2.5	M25	SM700	3.0	**L-ML-03-YY-2.5-AE-AE**	**356016-03M**
				10.0	**L-ML-10-YY-2.5-AE-AE**	**356016-10M**
25.0	4 x 4.0	M32	SM700	3.0	**L-ML-03-YY-4-AE-AE**	**356017-03M**
				10.0	**L-ML-10-YY-4-AE-AE**	**356017-10M**
35.0	4 x 6.0	M32	SM700	3.0	**L-ML-03-YY-6-AE-AE**	**356018-03M**
				10.0	**L-ML-10-YY-6-AE-AE**	**356018-10M**
50.0	4 x 10.0	M25	SM700	3.0	**L-ML-03-YY-10-AE-AE**	**356019-03M**
				10.0	**L-ML-10-YY-10-AE-AE**	**356019-10M**
63.0	4 x 16.0	M40	SM700	3.0	**L-ML-03-YY-16-AE-AE**	**356020-03M**
				10.0	**L-ML-10-YY-16-AE-AE**	**356020-10M**
80.0	4 x 25.0	M50	SM700	10.0	**L-ML-10-YY-25-AE-AE**	**356021-10M**
100.0	4 x 35.0	M50	SM700	10.0	**L-ML-10-YY-35-AE-AE**	**356022-10M**

* The stated rated currents are rated according to DIN VDE 0298-4 for laying system B2 and a max. ambient temperature of 40° C.

Halogen-free motor cables

For motor type ZAtop, ZAsyn SM860 and VFD

- Cable for connecting the motor to frequency inverter type ZETADYN / ZAdyn
- Halogen-free
- Including cable gland
- Prefabricated:
  - Connection side motor: ring cable lug
  - Connection side ZETADYN / ZAdyn: wire-end sleeves

Rated current* A	Cable cross section mm²	Cable gland	Ring cable lug for terminal board	Fits motor	Cable length m	**Type**	**Article no.**
20	4 x 2.5	M25	M8	SM200.40 SM225 VFD160	3.0	**L-ML-03-HX-2.5-M8-AE**	**356056-03M**
					5.0	**L-ML-05-HX-2.5-M8-AE**	**356056-05M**
					10.0	**L-ML-10-HX-2.5-M8-AE**	**356056-10M**
25	4 x 4.0	M32	M8	SM200.40 SM225 VFD160	3.0	**L-ML-03-HX-4-M8-AE**	**356057-03M**
					5.0	**L-ML-05-HX-4-M8-AE**	**356057-05M**
					10.0	**L-ML-10-HX-4-M8-AE**	**356057-10M**
35	4 x 6.0	M32	M8	SM200.40 SM225 SM250 VFD160	3.0	**L-ML-03-HX-6-M8-AE**	**356058-03M**
					5.0	**L-ML-05-HX-6-M8-AE**	**356058-05M**
					10.0	**L-ML-10-HX-6-M8-AE**	**356058-10M**
50	4 x 10.0	M40	M8	SM200.40 SM225 SM250 SM860 VFD160-225	3.0	**L-ML-03-HX-10-M8-AE**	**356059-03M**
					5.0	**L-ML-05-HX-10-M8-AE**	**356059-05M**
					10.0	**L-ML-10-HX-10-M8-AE**	**356059-10M**
63	4 x 16.0	M40	M8	SM200.40 SM225 SM250 VFD180-250	3.0	**L-ML-03-HX-16-M8-AE**	**356060-03M**
					5.0	**L-ML-05-HX-16-M8-AE**	**356060-05M**
					10.0	**L-ML-10-HX-16-M8-AE**	**356060-10M**
80	4 x 25.0	M50	M8	SM225 SM250 VFD180-250	3.0	**L-ML-03-HX-25-M8-AE**	**356061-03M**
					5.0	**L-ML-05-HX-25-M8-AE**	**356061-05M**
					10.0	**L-ML-10-HX-25-M8-AE**	**356061-10M**
100	4 x 35.0	M50	M10	SM250	3.0	**L-ML-03-HX-35-M10-AE**	**356062-03M**
					5.0	**L-ML-05-HX-35-M10-AE**	**356062-05M**
					10.0	**L-ML-10-HX-35-M10-AE**	**356062-10M**

* The stated rated currents are rated according to DIN VDE 0298-4 for laying system B2 and a max. ambient temperature of 40° C.

Motor cables

For motor type ZAsyn SM700 and externally procured motors

- Cable for connecting the motor to frequency inverter type ZETADYN / ZAdyn
- Halogen-free
- Including cable gland
- Prefabricated:
  - Connection side motor: wire-end sleeves
  - Connection side ZETADYN / ZAdyn: wire-end sleeves

Rated current* A	Cable cross section mm²	Cable gland	Fits motor	Cable length m	**Type**	**Article no.**
20.0	4 x 2.5	M25	SM700	10.0	**L-ML-10-HX-2.5-AE-AE**	**356026-10M**
25.0	4 x 4.0	M32	SM700	10.0	**L-ML-10-HX-4-AE-AE**	**356027-10M**
35.0	4 x 6.0	M32	SM700	3.0	**L-ML-03-HX-6-AE-AE**	**356028-03M**
				10.0	**L-ML-10-HX-6-AE-AE**	**356028-10M**
50.0	4 x 10.0	M40	SM700	3.0	**L-ML-03-HX-10-AE-AE**	**356029-03M**
				10.0	**L-ML-10-HX-10-AE-AE**	**356029-10M**
63.0	4 x 16.0	M40	SM700	10.0	**L-ML-10-HX-16-AE-AE**	**356030-10M**
80.0	4 x 25.0	M50	SM700	10.0	**L-ML-10-HX-25-AE-AE**	**356031-10M**
100.0	4 x 35.0	M50	SM700	10.0	**L-ML-10-HX-35-AE-AE**	**356032-10M**

* The stated rated currents are rated according to DIN VDE 0298-4 for laying system B2 and a max. ambient temperature of 40° C.

Connection box for shielded motor cables

Description

- Simple and EMC-conform extension of ZIEHL-ABEGG motor cables
- Cable glands on both sides
- Wire cross section from 4 x 2.5 mm² to 4 x 16 mm²
- Dimensions without cable glands (W x H x T) in mm: 260 x 160 x 91

Article no. 70026751

EMC cable glands

Type	**Article no.**	**EMC lock nut** **Article no.**	∅ Motor cable mm	Brake resistance cable threaded connection	Motor cable threaded connection
M25 x 1,5	**02002881**	**02002803**	4 x 2.5	ZETADYN 3C.011 ZETADYN 3C.013 ZETADYN 3C.017 ZEATDYN 3C.023 ZETADYN 3C.032	
M32 x 1,5	**02002184**	**02002198**	4 x 4.0 4 x 6.0	ZETADYN 3C.040* ZETADYN 3C.050* ZETADYN 3C.062* ZETADYN 3C.074*	ZETADYN 3C.011 ZETADYN 3C.013 ZETADYN 3C.017 ZEATDYN 3C.023 ZETADYN 3C.032
M40 x 1,5	**02002185**	**02002199**	4 x 10 4 x 16		ZETADYN 3C.040 ZETADYN 3C.050
M50 x 1,5	**02002186**	**02002200**	4 x 25 4 x 35		ZETADYN 3C.062 ZETADYN 3C.074

* Reducing sealing ring (Article no. 02008019) required
** With cutting edge for secure contacting even on painted housings

Oil heating motors

The solution for oil tanks in elevator and industrial hydraulics

Description

- Short-circuit proof motor for heating up hydraulic oils
- Gently heat-up oils and prevent movement and cracking through rotation
- Nearly the entire electrically absorbed energy is converted into heat
- For hydraulic oil types HL and HLP with viscosity class 22-46

FZ023-4EA.OC.V7

- Bracket with magnetic clamps
- Temperature controller
  - Closing temperature 15 °C ± 3 °C
    Opening temperature 23 °C ± 3 °C
- Terminal box

FZ025-4DA.4C.A6

- Terminal box

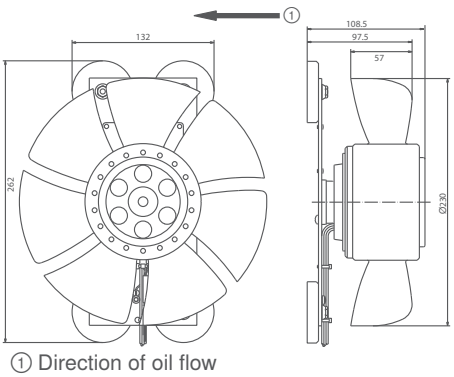
Options FZ025-4DA.4C.A6

- Temperature controller (article no. 02001138)
  - Closing temperature 15 °C ± 3 °C
    Opening temperature 23 °C ± 3 °C

Oil heating motors			
Type		**FZ023-4EA.OC.V7**	**FZ025-4DA.4C.A6**
Article no.		**880004751**	**104873**
Thermal output at 100 rpm	kW	0.5	1.4
Current consumption at 100 rpm	A	2.2	2.8
Connection voltage		1~ 230 V / 50 Hz	3~ 400 V AC / 50 Hz
Insulation class		F	F
Weight	kg	4.0	9.0
Blade diameter	mm	230	250

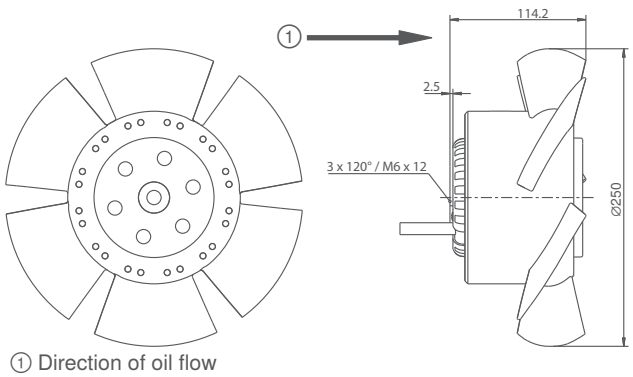
Dimensions mm

FZ023-4EA.OC.V7



① Direction of oil flow

FZ025-4DA.4C.A6



① Direction of oil flow

Tool set

Tool set for changing the brake on ZAtop SM160 - SM250C

Description

Tool set for changing the brake on elevator machines of the ZAtop series. The assembly bolts are graded in three sizes for the different brake types. Details for changing the brake are described in the operating instructions of the respective motor.

Article no. 70027450

Scope of delivery

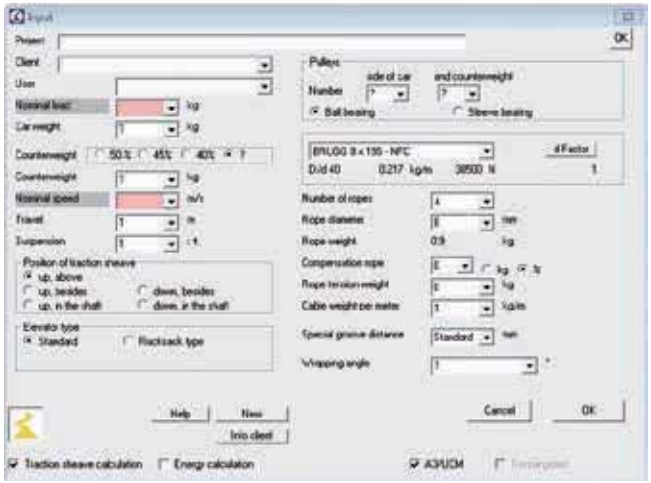
The tool set contains:

Quantity	Article no.	Designation
1	**01003811**	Mounting Tool
1	**01005372**	Mounting shaft complete
1	**00003390**	Cylinder screw M10 x 25 - 8.8
2	**01007976**	Assembly bolts 12 x 220 mm
2	**02014692**	Assembly bolts 16.1 x 258 mm
4	**02014693**	Assembly bolts 21.1 x 300 mm
1	**02020060**	Plastic suitcase

ZAlift Calculation software

Calculation software for elevator machines from ZIEHL-ABEGG

ZAlift - the optimum tool for reliable selection of your elevator components. Using the technical data of the elevator, ZAlift calculates the perfect package of machine and frequency inverter. ZAlift additionally supplies important information for installation, operation and final inspection of the elevator.



The functions of ZAlift

- Calculation of the components for the drive package:
  - Gearless elevator machine ZAtop, ZAsyn and ZAdisc
  - Elevator machine with gearbox ZAS
  - Frequency inverter ZAdyn
  - Power recuperation unit ZArec

- Information for the final inspection of the elevator system
  - EN 81-conform calculation of the traction conditions
  - Calculation of the stopping distance in case if unintended car movement

- Information for installation of the elevator system
  - Calculation of the power and current consumption of the elevator system
  - Calculation of the rope and possibly compensation rope weights

- Extensive database of all available suspension means
- Backup of all calculation data

ZAlift is available as a free of charge download on the ZIEHL-ABEGG homepage. Periodic updates of the software always keep you at the cutting edge.

ZApad
ZIEHL-ABEGG

Control technology

Product overview

Information	Page 90
ZAdyn4C	Page 94
ZAdyn4CS MRL	Page 96
ZAdyn4B	Page 98
ZETADYN 3BF	Page 100
EVAC 3C	Page 102
ZArec4C	Page 104

Control technology

General information

Modern elevator systems are designed today without machine room. The consequence of this is the installation of the frequency inverter in the elevator shaft. With this type of installation the avoidance of noise emissions in the shaft is inescapable. The contactor-less ZAdyn4 frequency inverter enables absolutely noiseless operation of the elevator machine and therefore maximum comfort for the building.

STO (Safe Torque Off) - contactor-less operation for maximum safety

The contactor-less operation of the elevator machine according to operating mode STO (Safe Torque Off according to IEC 61800-5-2 (SIL 3)) or EN ISO 13849 Category 3, Performance Level e meets all the safety requirements according to EN 81-20 for operation of the elevator machine.

Electronic short-circuit - safe evacuation

The short-circuiting of the motor windings of synchronous motors avoids uncontrolled acceleration of the drive and therefore ensures safe evacuation of persons by manual opening of the motor brakes. The ZAdyn4 also has this function which was so well appreciated in its predecessors. It was implemented with consistent pursuance of the principle of the contactor-less frequency inverter and an electronic variant was developed. This is also active when no operating voltage exists!

ZAsbc4 - 100 % noiseless

The contactor-less operation of the elevator machine already makes a major contribution towards a low-noise elevator system.
The ZAsbc4 increases this to 100 %! Electronic switching of the brakes enables completely contactor-less operation of the elevator machine. This ensures minimum noise emissions and maximum comfort in the building.

Contactor-less operation - your benefit

- No switching noises
- Lower costs
- Lower power consumption
- Lower wiring costs
- No wearing components
- Reduced space requirements for the controller
- Safe operation

Specialists for elevator technology

Units for the ZAdyn series are frequency inverters solely developed for elevator technology. The various housing designs and the continuously compact construction makes them perfectly suitable for both switch cabinet mounting as well as for wall installation in the machine room or elevator shaft.

Both in rope elevators with synchronous or asynchronous motors as well as in hydraulic elevators, type ZAdyn frequency inverter provide the greatest travelling comfort and the most precise stopping accuracy.

The software, specifically matched to elevator technology, facilitates intuitive operation and fast commissioning. The high variety of various interfaces facilitate fast connection to the elevator controller.

Made by ZIEHL-ABEGG

A high degree of vertical integration means great flexibility. And an ultra-modern machine fleet is available to ensure that. From component placing in the boards up to the final test and inspection of the frequency inverter and their accessories, the entire ZAdyn series is produced in our headquarters in Künzelsau. That enables us to meet our partners' demands for flexibility and speed.

EMC-conform without any great effort

All standards which are obligatory for elevator systems are complied with through the line reactor and the radio interference filter integrated in the ZAdyn4.

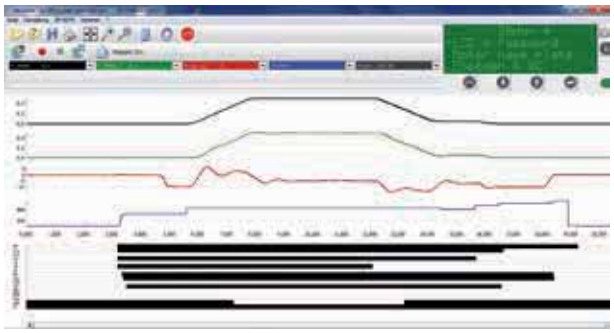
EN 12015: Electromagnetic compatibility - Product family standard for lifts, escalators and moving walks - Emission
EN 12016: Electromagnetic compatibility - Product family standard for lifts, escalators and moving walks - Immunity

With the integration of the EMC components, the ZAdyn4 provides the user with even more advantages:

- No mounting and wiring effort
- Use of components specifically matched to the ZAdyn4
- No risk regarding the compliance with EMC standards
- No additional space requirement

Control technology

General information



Data backup and recording measuring curves - fast and simple!

Alle Devices of the ZAdyn, ZArec and EVAC 3 series as well as the ZApad operating terminal are equipped with an interface for a conventional MMC / SD card. The use of an MMC / SD card provides many functions which simplify the work.

Data backup:
- Data backup for professional documentation without special software
- Copying of parameters for identical elevator systems

Recording measuring curves:
- 4 analogue and 1 digital measuring channel – freely configurable
- Saving of normal and faulty travels
- Extended error analysis in servicing by measured value storage
- Analysis of sporadic errors
- Long-term documentation of travel processes

Better energy efficiency of your system!

In typical elevator systems, the unused energy generated during travel is converted by a brake resistor into waste heat. From an environmental perspective, this approach is put into question by increasing resource scarcity, rising energy costs and the resulting increasing demands for energy efficiency and sustainability, which require ways of using the unexploited energy potential. These requirements are met by using the ZArec power recuperation unit. The generated energy is preprocessed and fed back into the power supply. ZArec has been developed especially for brief, highly dynamic recuperation operation, such as that which occurs in elevator systems.

More competence.
More experience.
More commitment.

In addition to excellent, easy to use products, personal customer support and fast, on-time delivery, customer-orientated service is also one of our special strengths. Competent support by specialised, experienced service staff are prerequisite for saving time and costs on site. With our comprehensive service package we therefore make an essential contribution to fast start-up of your elevator system.

- TÜV-safe technical design of drive systems
- Application-engineering consulting when selecting frequency inverters, elevator machines, evacuation units, recuperation units and their system components
- Preset of all parameters of the ZAdyn before delivery when ordering drive packages (machine with frequency inverter) from ZIEHL-ABEGG
- Service hotline for start-up or technical questions
- Technical service and training on-site

ZAdyn Frequency inverter for elevator machines

4C - The solution for switch cabinet and wall installation

- Operating terminal ZApad — Page 108
- Brake resistors BR — Page 109
- Brake control ZAsbc4 — Page 110
- Control and connection cables — Page 118
- Encoder cables — Page 130
- Evacuation unit EVAC 3C — Page 102
- Power recuperation unit ZArec4C — Page 104

Operation without contactors:

- STO (Safe Torque Off) according to IEC 61800-5-2 (SIL 3) or EN ISO 13849 category 3, Performance Level e with protection class IP20.
- Safety requirements according to EN 81-81 are met!

Description

- Wall mounting in the machine room or elevator shaft
- Mounting in the switch cabinet
- Line reactor, radio interference filter integrated
- Space-saving installation by compact design
- Operation of synchronous motors (ZAdyn4CS) and asynchronous motors (ZAdyn4CA)
- Open-Loop-Operation of asynchronous motors
- Standby function
- 4-line display with plain text display
- Minimal noise generation and low energy consumption through controlled ventilation
- Automatic travel curve pre-assignment
- Switching frequency: 4...16 kHz (automatic adaptation)
- Applied EMC standards: EN 12015 und EN 12016
- Protection class: IP20

Interfaces

Controller

- Programmable inputs and outputs
  - 5 x relay output (potential-free)
  - 12 x digital inputs (24 VDC)
- DCP
- CANopen-Lift
- All interfaces galvanic isolated

Encoder

- Incremental encoder
  - HTL / TTL / Sine
- Absolute encoder
  - EnDat / SSI / ERN 1387 / Codeface / Hyperface
- Encoder simulation for controller

Monitorings

- Temperature monitoring brake resistor
- Temperature monitoring motor (in accordance with EN 61800-5-1:2008-04)
- Motor contactor monitoring (with optional use of motor contactors)
- Brake release monitoring in accordance with EN 81-20

The ZAdyn4 is equipped with all interfaces at the factory!

Technical data

Type	Article no.	Motor type	Mains connection voltage	Motor power	Rated current	Max. operating current	Duty cycle at nominal current	Weight
			VAC	kW	A	A	%	kg
4CA 011	352194	Asynchronous	3~ 180...440, 50/60 Hz	4.6	11.0	20.0	60	11.6
4CS 011	352201	Synchronous						11.8
4CA 013	352195	Asynchronous		5.5	13.0	24.0		12.1
4CS 013	352202	Synchronous						12.3
4CA 017	352196	Asynchronous		7.5	17.0	31.0		12.7
4CS 017	352203	Synchronous						12.9
4CA 023	352197	Asynchronous		11.0	23.0	42.0		13.9
4CS 023	352204	Synchronous						14.1
4CA 032	352198	Asynchronous		14.0	32.0	58.0		16.2
4CS 032	352205	Synchronous						16.4
4CA 040	352206	Asynchronous		19.0	40.0	72.0		32.4
4CS 040	352216	Synchronous						32.6
4CA 050	352207	Asynchronous		24.0	50.0	90.0		33.3
4CS 050	352217	Synchronous						33.5
4CA 062	352208	Asynchronous		30.0	62.0	112.0		36.2
4CS 062	352218	Synchronous						36.4
4CA 074	352209	Asynchronous		37.0	74.0	134.0		36.4
4CS 074	352219	Synchronous						36.6

Features
- MMC / SD card interface for data backup and exchange
- USB interface for ZAmon software (via ZApad)

Options
- External ZApad operating terminal; 4-line display with plain text display
- Electronic brake control ZAsbc4
- ZAmon software

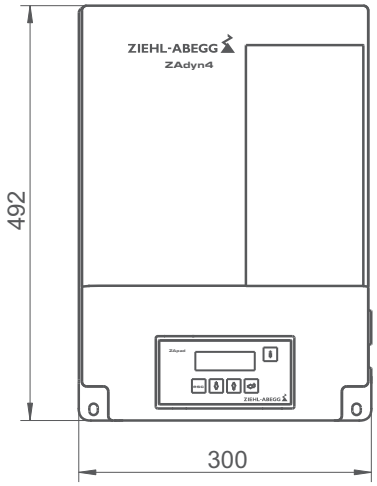
Evacuation mode
Supply during power failure through:
- EVAC 3C evacuation unit
- Uninterruptible power supply (UPS)

Electromagnetic compatibility
Compliance with EN 12015 and EN 12016 through integration of line reactor and radio interference filter in the ZAdyn4C.

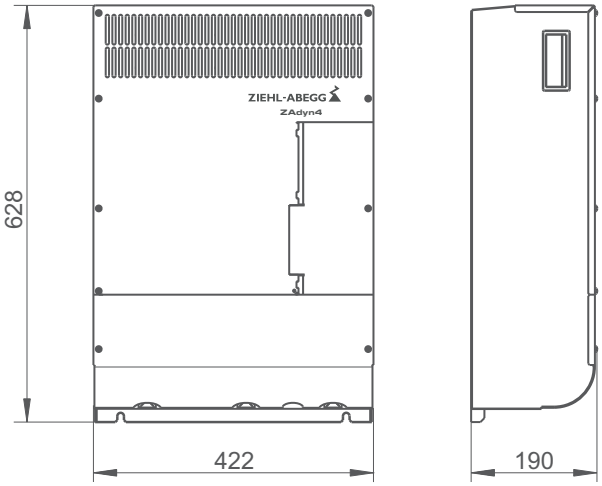
Frequency inverter	Brake resistor	Article no.
4C 011	**BR11-A** **BR14-A** **BR17**	**357171** **357195** **357216**
4C 013	**BR14-A** **BR17**	**357195** **357216**
4C 017	**BR17**	**357216**
4C 023	**BR25**	**357217**
4C 032	**BR25** **BR50**	**357217** **357218**
4C 040	**BR50**	**357218**
4C 050	**BR50**	**357218**
4C 062	**BR50**	**357218**
4C 074	**BR50** **BR100-A**	**357218** **357214**

Dimensions mm

ZAdyn4C 011-032



ZAdyn4C 040-074



ZAdyn Frequency inverter for elevator machines

4CS...MRL - The solution for elevators without machine room

- Operating terminal ZApad Page 108
- Brake resistors BR Page 109
- Control and connection cables Page 118
- Encoder cables Page 130
- Evacuation unit EVAC 3C Page 126
- Power recuperation unit ZArec4C Page 104

Operation without contactors:

- STO (Safe Torque Off) according to IEC 61800-5-2 (SIL 3) or EN ISO 13849 category 3, Performance Level e with protection class IP20.
- Safety requirements according to EN 81-20 are met!
- Integrated relays for evaluation safety circuit and enable contactor-less operation

Description

- Installation on the machine carrier
- Extremely compact design
- Operation of synchronous motors
- Line reactor, radio interference filter integrated
- Integrated brake control (optional)
- Integrated circuit breaker
- Standby function
- External operating terminal ZApad; 4-line display with plain text display
- Minimal noise generation and low energy consumption through controlled ventilation
- Automatic travel curve pre-assignment
- Applied standards: EN 12015 and EN 12016
- Switching frequency: 4...16 kHz (automatic adaptation)
- Protection class: IP20

Interfaces

Controller

- Programmable inputs and outputs
  - 5 x replay outputs (potential-free)
  - 12 x digital inputs (24 VDC)
- DCP
- CANopen-Lift
- All interfaces galvanic isolated

Encoder

- Incremental encoder
  - HTL / TTL / Sine
- Absolute encoder
  - EnDat / SSI / ERN 1387 / Codeface / Hyperface
- Encoder simulation for controller

Monitorings

- Temperature monitoring brake resitor
- Temperature monitoring motor (in accordance with IEC 61800-5-1:2008- 04)
- Brake release monitoring in accordance with EN 81-20

The ZAdyn4CS MRL is equipped with all interfaces at the factory!

Technical data

Type	Article no.	Mains connection voltage VAC	Motor power kW	Rated current A	Max. operating current A	Duty cycle at nominal current %
4CS 011 MRL AI **4CS 011 MRL BI** **4CS 011 MRL BE**	**352220** **352225** **352230**	3~ 180...440, 50/60 Hz	4.6	11.0	20.0	60
4CS 013 MRL AI **4CS 013 MRL BI** **4CS 013 MRL BE**	**352221** **352226** **352231**		5.5	13.0	24.0	
4CS 017 MRL AI **4CS 017 MRL BI** **4CS 017 MRL BE**	**352222** **352227** **352232**		7.5	17.0	31.0	
4CS 023 MRL AI **4CS 023 MRL BI** **4CS 023 MRL BE**	**352223** **352228** **352233**		11.0	23.0	42.0	
4CS 032 MRL AI **4CS 032 MRL BI** **4CS 032 MRL BE**	**352224** **352229** **352234**		14.0	32.0	58.0	

Features

- External operating terminal ZApad; 4-line display with plain text display
- MMC / SD-card interface for data backup and exchange
- USB interface for ZAmon software (via ZApad)

Options

- Integrated brake control ZAsbc4
- Remote control by operating terminal ZApad
- ZAmon software

Evacuation operation

Power supply during power failure through:

- EVAC 3C evacuation unit
- Uninterruptible power supply (UPS)

Electromagnetic compatibility

Compliance with EN 12015 by integration of line reactor and radio interference filter in the ZAdyn4CS MRL.

Frequency inverter	**Brake resistor**	**Article no.**
4CS 011 MRL	**BR11-A*** **BR14-A**** **BR17**	**357171** **357195** **357216**
4CS 013 MRL	**BR14-A**** **BR17**	**357195** **357216**
4CS 017 MRL	**BR17**	**357216**
4CS 023 MRL	**BR25**	**357217**
4CS 032 MRL	**BR25** **BR50*****	**357217** **357218**

* only in ZAdyn4CS 011 MRL BE
** only in ZAdyn4CS 011 MRL BE and ZAdyn4CS 013 MRL BE
*** only in ZAdyn4CS 032 MRL BE

ZAdyn4CS...MRL AI

For controller type NEW LIFT FST-2S
Brake resistor integrated
Main contactor for remote switching off
Electronic brake control ZAsbc4 integrated
Contactors for manual brake release integrated

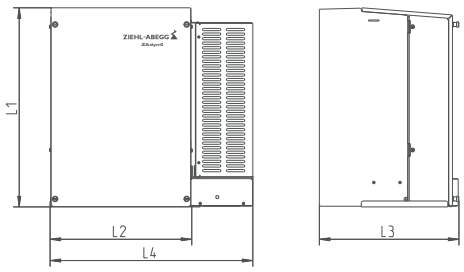
ZAdyn4CS...MRL BI

Brake resistor integrated

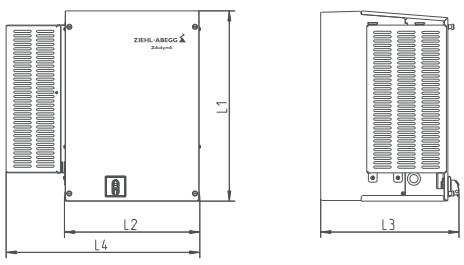
ZAdyn4CS...MRL BE

Brake resistor external

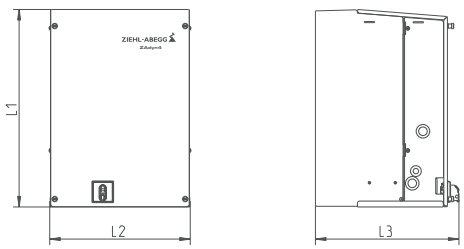
Dimensions mm



Type	L1	L2	L3	L4
4CS 013 MRL AI	437	311	306	445
4CS 017 MRL AI				
4CS 023 MRL AI				
4CS 032 MRL AI				



Type	L1	L2	L3	L4
4CS 013 MRL BI	437	311	318	445
4CS 017 MRL BI				
4CS 023 MRL BI				
4CS 032 MRL BI				



Type	L1	L2	L3	L4
4CS 013 MRL BE	437	311	318	-
4CS 017 MRL BE				
4CS 023 MRL BE				
4CS 032 MRL BE				

ZAdyn Frequency inverter for elevator machines

4B -The solution for high performances

Description

- Mounting in the switch cabinet
- Space-saving installation through compact design
- Operation of synchronous motors (ZAdyn4BA) and asynchronous motors (ZAdyn4BS)
- Open-Loop-Operation of asynchronous motors
- Standby function
- 4-line display with plain text display
- Minimal noise development and low energy consumption by controlled ventilation
- Automatic travel curve setting
- Switching frequency: 4...16 kHz (automatic adaptation)
- Applied standards: EN 12015 and EN 12016
- Protection class: IP10

Interfaces

Control

- Programmable inputs and outputs
  - 5 x relay outputs (potential-free)
  - 5 x relay output (potential-free)
  - 12 x digital inputs (24 VDC)
- DCP
- CANopen-Lift
- All interfaces electrically isolated

Encoder

- Incremental encoder
  - HTL / TTL / sine
- Absolute encoder
  - EnDat / SSI / ERN 1387 / Codeface / Hyperface
- Encoder simulation for controller

Monitoring

- Temperature monitoring brake resistor
- Temperature monitoring motor (according to IEC 61800-5-1:2008-04)
- Motor contactor monitoring
- Brake release monitoring according to EN 81-20

The ZAdyn4 is equipped with all interfaces at the factory!

- Operating terminal ZApad — Page 108
- Brake resistors BR — Page 109
- Brake control ZAsbc4 — Page 110
- Control and connection cables — Page 118
- Encoder cables — Page 130
- Power recuperation unit ZArec4C — Page 104

Technical data

Type	Article no.	Motor type	Mains connection voltage	Motor power	Rated current	Max. operating current	Duty cycle at nominal current	Weight
			VAC	kW	A	A	%	kg
ZAdyn4BA 110	**352210**	asynchron	3~ 180...440, 50/60 Hz	50.0	110.0	198.0	60	57.0
ZAdyn4BS 110	**352212**	synchron						
ZAdyn4BA 180	**352211**	asynchron		90.0	180.0	324.0		63.0
ZAdyn4BS 180	**352213**	synchron						

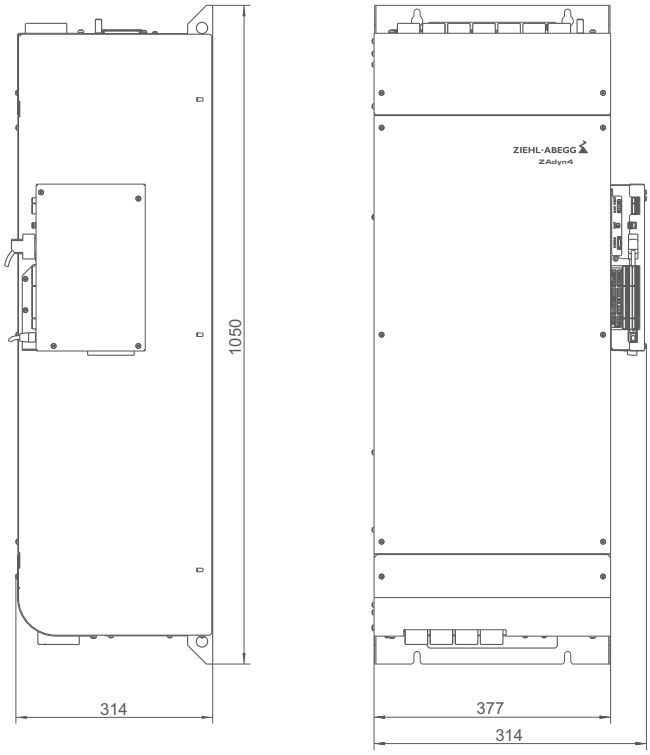
Features
- MMC / SD card interface for data backup and exchange
- USB interface for ZAmon software (by ZApad)

Options
- External operating terminal ZApad; 4-line display with plain text display
- Electronic brake control ZAsbc4
- ZAmon software

Electromagnetic compatibility
Compliance with EN 12015 by use of:
- Line reactor ND
- Radio interference filter FEF

Frequency inverter	Brake resistor	Article no.
4B 110	**BR100-B**	**357215**
4B 180	**BR100-B**	**357215**

Dimensions mm



ZETADYN Frequency inverter for elevator machines

3BF - The solution for switch cabinet mounting

- Operating terminal ZETAPAD — Page 108
- Radio interference filter FEF — Page 113
- Line reactor ND — Page 112
- Brake resistors BR — Page 109
- Brake control ZAsbc4 — Page 110
- Control and connection cables — Page 123
- Encoder cables — Page 130
- Evacuation unit EVAC 3C — Page 126
- Power recuperation unit ZArec4C — Page 104

Description

- Mounting in switch cabinet
- Compact design means space-saving installation
- Operation of synchronous and asynchronous motors
- Open-Loop-Operation of asynchronous motors
- Standby function
- Minimal noise generation and low energy consumption through controlled ventilation
- Automatic travel curve pre-assignment
- Applied standards: EN 12015 and EN 12016
- Switching frequency: 4...16 kHz (automatic adaptation)
- Protection class: IP20

Interfaces

Controller
- Programmable inputs and outputs
  - 4 x relay outputs (floating)
  - 1 x relay output (24 VDC)
  - 12 x digital inputs (24 VDC)
- DCP
- CANopen-Lift
- All interfaces galvanic isolated

Encoder
- Incremental encoder
  - HTL / TTL / Sine
- Absolute encoder
  - EnDat / SSI / ERN 1387 / Codeface / Hyperface
- Encoder simulation for controller

Monitoring
- Temperature monitoring brake resistor
- Temperature monitoring of motor (according to IEC 61800-5-1:2008-04)
- Motor contactor monitoring
- Brake release monitoring according to EN 81-20

Technical data

Type	Article no.	Mains connection voltage	Motor power	Rated current	Max. operating current	Duty cycle at nominal current	Weight
		VAC	kW	A	A	%	kg
3BF009-1	352190	1~ 195...253, 50/60 Hz	2.0	9.0	16	35	7.2
3BF011	352170	3~ 180...440, 50/60 Hz	4.6	11.0	20.0	60	7.2
3BF013	352171		5.5	13.0	24.0		7.2
3BF017	352172		7.5	17.0	31.0		7.2
3BF023	352173		11.0	23.0	42.0		10.8
3BF032	352169		14.0	32.0	58.0		10.8
3BF040	352178		19.0	40.0	72.0		10.8
3BF050	352179		24.0	50.0	90.0		23.8
3BF062	352176		30.0	62.0	112.0		24.6
3BF074	352177		37.0	74.0	134.0		24.6

Features
- MMC / SD card interface for data backup and exchange
- USB interface for ZAmon software (by ZETAPAD)

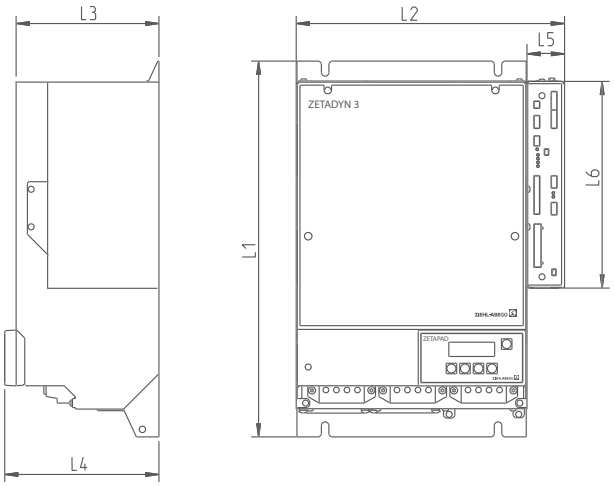
Options
- External operating terminal ZETAPAD; 4-line display with plain text display
- Expansion module for encoder connection
- Expansion module for DCP and CAN
- Expansion module for motor temperature monitoring
- Remote control by operating terminal ZETAPAD
- ZAmon software

Evacuation operation
Supply during power failure through:
- Evacuation unit EVAC 3C
- Uninterruptible power supply (UPS)

Electromagnetic compatibility
Compliance with EN 12015 by use of:
- Line reactor ND
- Radio interference filter FEF

Frequency inverter	**Brake resistor**	**Article no.**
3BF009-1	**BR09-1**	**357120**
3BF011	**BR11-A** **BR14-A** **BR17**	**357171** **357195** **357216**
3BF013	**BR14A** **BR17**	**357195** **357216**
3BF017	**BR17**	**357216**
3BF023	**BR25**	**357217**
3BF032	**BR25** **BR50**	**357217** **357218**
3BF040	**BR50**	**357218**
3BF050	**BR50**	**357218**
3BF062	**BR50**	**357218**
3BF074	**BR50** **BR100-A**	**357218** **357214**

Dimensions mm



Type	L1	L2	L3	L4*	L5	L6
3BF009-1	340	195	185	185	50	275
3BF011						
3BF013						
3BF017						
3BF023	340	245	185	185	50	275
3BF032						
3BF040						
3BF050	500	357	190	205	50	275
3BF062						
3BF074						

* includes ZETAPAD operating terminal

Evacuation unit

EVAC 3C - The solution for wall installation

Monitoring of the power supply and activation of the evacuation

The evacuation unit EVAC 3C monitors the supply network of the elevator system. If one or more supply phases fail, the frequency inverter is disconnected from the supply network. At the same time the elevator controller is informed about the mains failure. The battery power supply is switched with a time delay.
The evacuation unit EVAC 3C switches the frequency inverter into emergency mode and direction-independent travel at reduced speed can take place. There is no longer any need for delayed and expensive evacuation of trapped persons by external personnel.

- Operating terminal ZETAPAD — Page 108
- Frequency inverter ZAdyn4C — Page 94
- Frequency inverter ZETADYN 3BF — Page 100
- Battery set EVAC BATT — Page 126
- Wiring harnesses — Page 126

Description

- Wall installation in machine room or elevator shaft
- For synchronous and asynchronous motors
- For frequency inverters type ZETADYN 3 and ZAdyn4
- 60 min availability (with restricted number of trips)
- Integrated mains monitoring
- Integrated charger for controlled charging of lead-gel rechargeable battery
- Operation and configuration via the ZETAPAD operating terminal
- Monitoring of the battery temperature
- Function test via digital input
- LED display for operation / fault
- 4 x relay outputs
- 4 x digital inputs (24 VDC)
- External main switch; that permits installation in the elevator shaft
- Prefabricated cables for fast installation
- Power contactors for switching from normal to battery mode
- Integrated inverted rectifier 230 VAC / 500 W to supply:
  - Elevator controller
  - Cabin light
  - Door drive
  - Motor brake
- SD card slot for data backup

Technical data

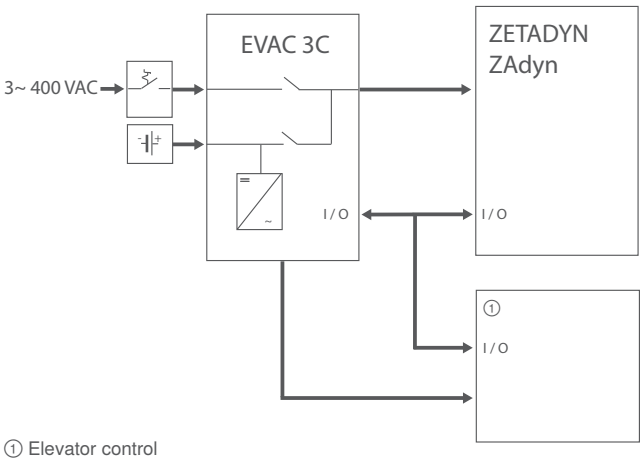
Type	Article no.	Mains connection voltage	Rated current	Power dissipation	Loading power consumption	230 VAC inverted rectifier	Battery voltage	Battery type	Evacuation mode time limit	Weight
		VAC	A	W	W	W	V		min	kg
EVAC 3C032	357231	3~ 360...440, 50/60 Hz	32	<20	300	500	120...216	Lead-gel rechargeable battery	60	33.2
EVAC 3C050	357232		50							34.7
EVAC 3C074	357233		74							38.4

Features
- External operating terminal ZETAPAD
- MMC/SD card interface for data backup and exchange

Options
- Wiring harness LS-EVAC3C-03-HX-...-ZA3/4
- Wiring harness LS-EVAC3C-..-HX-ST

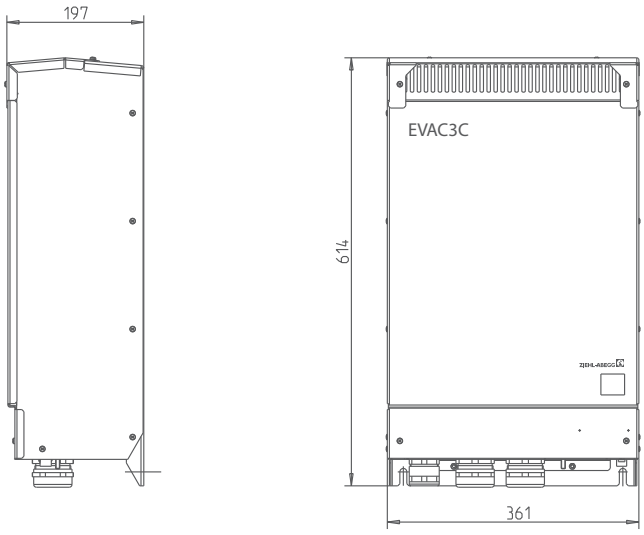
Additionally required components
- Battery set corresponding to the required output
- 4-pole main switch

Simplified diagram



① Elevator control

Dimensions mm



Power recuperation units

ZArec4C - The solution for improving energy efficiency and sustainability

With the ZArec power recuperation unit the demands for energy efficiency and sustainability of elevator systems are met. The generated energy is preprocessed and fed back into the power supply. ZArec has been developed especially for brief, highly dynamic recuperation operation, such as that occurs in elevator systems.

- Operating terminal ZApad — Page 108
- Frequency inverter ZAdyn4C — Page 94
- Frequency inverter ZAdyn4B — Page 98
- Frequency inverter ZETADYN 3BF — Page 100
- Wiring harnesses — Page 126

Description

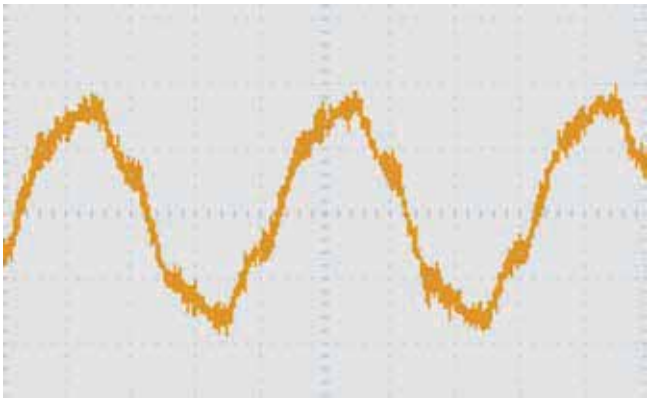
- Extremely flat design
- Perfect for the elevator shaft
  - ZArec4C 013: Mounting above the landing door
  - ZArec4C 026 / 039: Mounting between the guiding rails
- Wall mounting in the machine room or elevator shaft
- Can be used for ZETADYN 3 and ZAdyn4C type frequency inverters
- Integrated standby function for saving energy
- Prefabricated cables for fast assembly
- Applied standards: EN 12015 and EN 12016
- Protection class: IP20
- Max. on-time: 20%

Interfaces

- 2x relay outputs
- 2x digital inputs

Regeneration “Clean energy”

- Sinusoidal regenerative power through integrated EMC components
- Harmonic waves I1/15: < 5 %
- Distortion factor THD: < 5 %
- Requirements of EN 12015 for the electromagnetic compatibility are met
- No interference with network infrastructure
- No interference with the function of other devices connected to the mains power supply, e.g. computers, medical devices or radios



Sinusoidal power feed-in

Technical data

Type	Article no.	Mains connection voltage	Max. extractable power	Max. recuperation power	Max. recuperation current	Power loss standby	Weight
		VAC	kW	kW	A	W	kg
ZArec4C 013	357269	3~ 400, 50 Hz	13.0	5.0	7.2	< 10.0	42.5
ZArec4C 026	357294		26.0	10.0	14.4	< 15.0	68.0
ZArec4C 039	357295		39.0	15.0	21.7		85.0

No additional brake resistor for evaluations

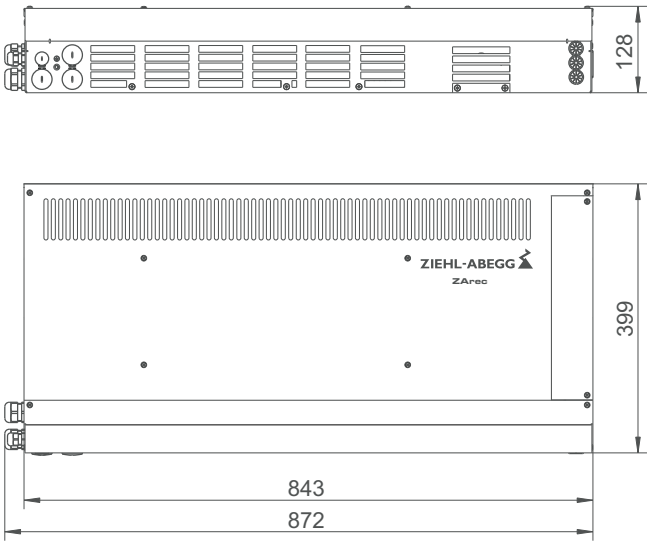
During evacuation travel, the brake resistor belonging to the ZArec converts the created energy into heat. Additional costs for an additional brake resistor are saved.

Brake resistor allocation

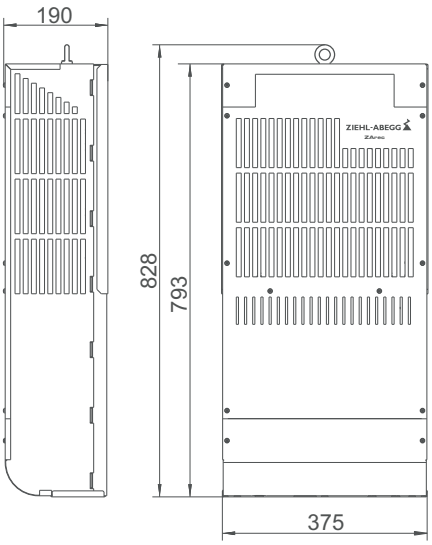
Type	Brake resistor	Article no.
ZArec4C 013	**integrated**	**-**
ZArec4C 026	**BR25-3**	**357217**
ZArec4C 039	**BR50-3**	**357218**

Dimensions mm

ZArec4C 013



ZArec4C 026-039



ZApad
ZAdyn
+Startup
Statistik
Memory Card
esc
ZIEHL

System components control technology

Product overview

ZApad / BR100-BOX	Page 108
Brake resistor BR	Page 109
Electronic brake control ZAsbc4	Page 110
Modules ZETADYN 3BF	Page 111
Line reactor ND	Page 112
Radio interference filter FEF	Page 113
Retrofit kits	Page 114
Control and connection cables ZAdyn4	Page 118
Control and connection cables ZAsbc4	Page 122
Connection cables ZETADYN 3BF	Page 123
Connection cables ZApad / ZETAPAD	Page 125
EVAC Battery set and wiring harness	Page 126
Motor cables	Page 127
Encoder cables	Page 130
Incremental encoder	Page 132
Absolute encoder / adapter cables	Page 134
Software ZAmon	Page 135

ZApad

Operating terminal ZApad

Description

- External operating terminal for frequency inverters type ZAdyn / ZETADYN, recuperation units type ZArec and evacuation units type EVAC 3
- Connection by standard network cable
- Card slot for MMC / SD memory card
- USB interface for using the ZAmon software
- Remote control up to a cable length of 50 m

ZApad for ZAdyn4 and ZArec4 (white)
Article No. 357256

ZETAPAD for ZETADYN 3 and EVAC 3 (anthracite)
Article No. 357190V2

BR100-BOX

For connection of 2 or 3 BR100-3 type brake resistors to ZAdyn4B 110/180.

Description

- Connection box with integrated terminals
- For parallel connection of up to three BR100-3 type brake resistors

BR100-BOX
Article no. 357261

Brake resistor BR

BR17 - BR100

BR09 - BR14

For converting the energy generated during regenerative travel into heat.

Description

- Prepared for wall installation
- Compact design
- Integrated temperature monitoring (only BR...-3)
- Prefabricated connection cable (only BR...-A)

Retrofit kit for BR11-A and BR14-A for installing the connection cables as per DIN VDE 0100-410
Article no. 357260

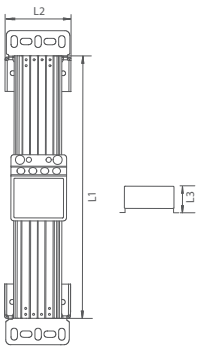
Technical data

Type	Article no.	Max. peak current	Continuous braking power	Temperature monitor trigger	Cable length	Protection class	Weight
		A	kW	°C	m		kg
BR09-1	**357120**	9.0	0.29	-	1.0*	IP50	0.8
BR11-A	**357171**	11.0	0.45	-	1.0*	IP50	1.8
BR14-A	**357195**	14.0	0.85	-	1.0*	IP50	2.9
BR17-3	**357216**	17.0	1.75	137 ± 4 K	5.0**	IP20	2.6
BR25-3	**357217**	25.0	1.75	137 ± 4 K	5.0**	IP20	2.6
BR50-3	**357218**	50.0	3.3	137 ± 4 K	5.0**	IP20	4.8
BR100-3A	**357214**	100.0	6.5	125 ± 4 K	5.0**	IP20	8.5
BR100-3B	**357215**	100.0	6.5	125 ± 4 K	5.0**	IP20	8.5

* Connection cable integrated
** Connection cable separate

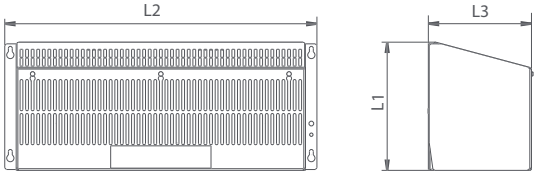
Dimensions mm

BR09 - BR14



Type	L1	L2	L3
BR09-1	317	67	75
BR011-A	225	124	120
BR014-A	426	124	120

BR17 - BR100



BR017-3	230	300	185
BR025-3	230	300	185
BR050-3	230	560	185
BR100-3A	414	560	185
BR100-3B	414	560	185

Electronic brake control

ZAsbc4

Following conditions are necessary for comfortable travel behaviour of the elevator:
- Correctly timed switching of the brake
- Noiseless activation of the brake
- Low-noise switching of the brake

The electronic brake control ZAsbc4 provides these conditions.
The ZAsbc4 is available for mounting on to the ZAdyn4C frequency inverter and for installation in the switch cabinet.

Description

- Noiseless activation of the mechanical brake
- Correctly timed switching of the mechanical brake
- For brakes of synchronous and asynchronous motors
- Low-noise switching of the mechanical brake
- Minimum cable lengths for elevators without machine room
- Low space requirement for the controller

Electronic brake control

- For brakes with and without overexcitation
- Operating voltage brake: 207 VDC / 103 VDC
- Evaluation of safety circuit and enabling of contactor-less operation
- Retrofittable
- Prefabricated cables for connection to elevator controller

- Control inputs:
  - Activation of brake
  - Evaluation of safety circuit
  - Push-buttons emergency operation and brake test

- Control outputs:
  - Activation of contactor-less operation ZAdyn4C
  - Status monitoring
  - Fault

Technical data

ZAsbc4C

- For mounting on ZAdyn4C
- For wall mounting
- Prefabricated cables for connection to ZAdyn4C

Type	Article no.	Voltage safety circuit VAC	Voltage supply brake U~ VAC	Motor brake output voltage VDC	Output current A
ZAsbc4C 110	**357292**	110	110...230	0.9 x U~ 0.45 x U~	2 x 1.0
ZAsbc4C 230	**357293**	230			

ZAsbc4B

- For switch cabinet installation

Type	Article no.	Voltage safety circuit VAC	Voltage supply brake U~ VAC	Motor brake output voltage VDC	Output current A
ZAsbc4B 110	**357290**	110	110...230	0.9 x U~ 0.45 x U~	2 x 1.0
ZAsbc4B 230	**357291**	230			

Modules ZETADYN 3BF

Expansion modules ZETADYN 3BF

ZETADYN 3BF can be expanded with additional functions by expansion modules.
That facilitates adapting the frequency inverter perfectly to its operating conditions.

Encoder expansion module

All expansion modules have:
- 4 x digital inputs for brake release monitoring
- Encoder simulation

Type	Article no.	Encoder type	Connection
EM3-ENC-ASM-ZA	**357104**	HTL / TTL / Sine	D-SUB 9-pin Screw terminal
EM3-ENC-SYN-ZA	**357105**	Absolute encoder with EnDat0 or SSI protocol	D-SUB 15-pin
EM3-ENC-SYN-01	**357116**	Absolute encoder type ERN 1387	D-SUB 15-pin

Communication expansion module

Type	Article no.	Communication protocol
EM3-CAN-DCP	**357107**	DCP CANopen-Lift

Motor temperature monitoring expansion module

Type	Article no.	Sensor types
EM3-MOT-TEMP	**357108**	PTC thermistor (PTC acc DIN 44082) Temperature sensor KTY84-130 Thermal switch

Line reactor ND

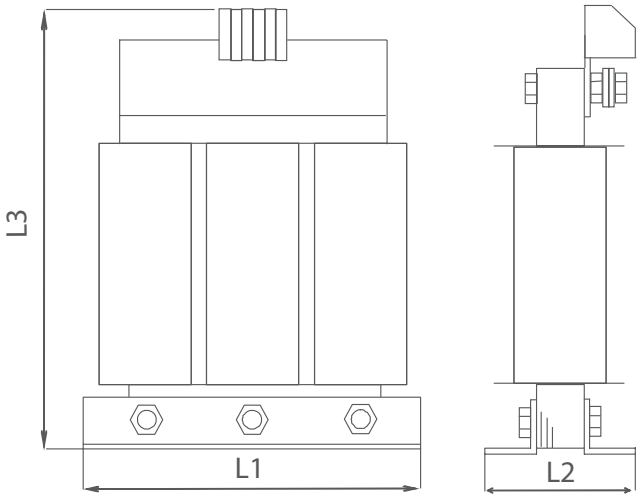
Description

- For ZETADYN 3BF and ZAdyn4B
- For compliance with the limits required by EN 12015 (interference emission)
- Reduction of the harmonics
- Damping of commutation notches and mains feedback

Technical data

Type	Article no.	Rated current A	Protection class	Weight kg	Frequency inverter
ND009-1	**357091**	9.0	IP00	1.3	ZETADYN3BF009-1
ND011	**357180**	11.0		2.4	ZETADYN3BF011
ND013	**357181**	13.0		2.5	ZETADYN3BF013
ND017	**357182**	17.0		3.3	ZETADYN3BF017
ND023	**357183**	23.0		4.0	ZETADYN3BF023
ND032	**357184**	32.0		6.7	ZETADYN3BF032
ND040	**357185**	40.0		7.7	ZETADYN3BF040
ND050	**357186**	50.0		8.7	ZETADYN3BF050
ND062	**357187**	62.0		12.1	ZETADYN3BF062
ND074	**357188**	74.0		12.3	ZETADYN3BF074
ND110	**357196**	110.0		14.0	ZAdyn4B 110
ND180	**357197**	180.0		21.0	ZAdyn4B 180

Dimensions mm



Type	L1	L2	L3
ND009-1	80	65	118
ND011	125	61	135
ND013	125	71	135
ND017	125	71	135
ND023	155	80	160
ND032	155	95	170
ND040	190	85	200
ND050	190	120	200
ND062	190	120	200
ND074	190	120	200
ND110	230	150	280
ND180	230	150	305

Radio interference filter FEF

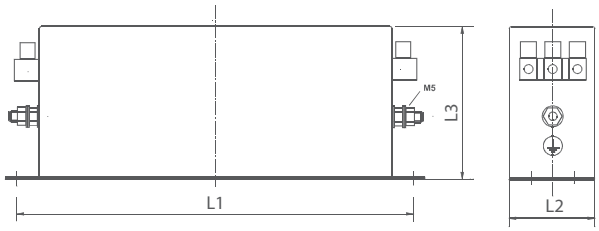
Description

- For ZETADYN 3BF and ZAdyn4B
- For compliance with the limits required by EN 12015 (interference emission)
- Reduces high-frequency electromagnetic emission

Technical data

Type	Article no.	Rated current A	Protection class	Weight kg	Frequency inverter
FEF009KK2D	**357166**	9.0	IP20	0.4	ZETADYN 3BF009-1
FEF011KK4D	**357192**	11.0		0.7	ZETADYN 3BF011
FEF023KK4D	**357176**	23.0		1.0	ZETADYN 3BF013 ZETADYN 3BF017 ZETADYN 3BF023
FEF040KK4D	**357177**	40.0		1.4	ZETADYN 3BF032 ZETADYN 3BF040
FEF050KK4D	**357178**	50.0		1.5	ZETADYN 3BF050
FEF074KK4D	**357179**	74.0		2.0	ZETADYN 3BF062 ZETADYN 3BF074
FEF180KK4D	**357199**	180.0		6.0	ZAdyn4B 110 ZAdyn4B 180

Dimensions mm



Type	L1	L2	L3
FEF009KK2D	115	54	41
FEF011KK4D	190	40	70
FEF023KK4D	250	45	70
FEF040KK4D	270	50	85
FEF050KK4D	250	85	90
FEF074KK4D	250	85	90
FEF180KK4D	450	130	180

Retrofit kits

Retrofit kit DISCcontrol

Description

- Retrofit kit for operation of permanently excited disc motors with ZAdyn4CS
- Quick frequency inverter replacement in combination with a commonly available elevator controller
- Simple attachment of the incremental encoder and hall sensor
- Fail-safe connection of incremental encoder and hall sensor thanks to 15-pin D-SUB plug
- Extremely safe operation thanks to adjustment of the number of correction magnets on the existing motor type
- Software-supported magnet positioning
- Existing brake resistor can be used furthermore

Scope of delivery

- ZAdyn4CS with special software
- Attachment kit with incremental encoder and hall sensor
- Magnets for determining the rotor position
- Encoder cable 5 m
- Adhesive and template for magnet assembly
- Assembly instructions

Technical data

System type	**Retrofit kit**	ZAdyn	**Article no.**
480 kg, 1.0 m/s, 2:1	**DISCcontrol05-480-1**	4CS 011	**357282**
630 kg, 1.0 m/s, 2:1	**DISCcontrol06-630-1**	4CS 017	**357283**
1000 kg, 1.0 m/s, 2:1	**DISCcontrol10-1000-1**	4CS 017	**357284**
1000 kg, 1.6 m/s, 2:1	**DISCcontrol10-1000-1,6**	4CS 023	**357285**

Retrofit kit SMART

Description

- Retrofit kit for replacement of the frequency inverter on Schindler Smart type elevator systems based on ZAdyn4CS
- No replacement of the controller
- With incremental encoder for improved travel comfort

Scope of delivery

- Incremental encoder
- Adapter M16 for incremental encoder
- 3 relays (110 VAC) for signal adaptation

Article no. 357281

ZETADYN 2 retrofit kit

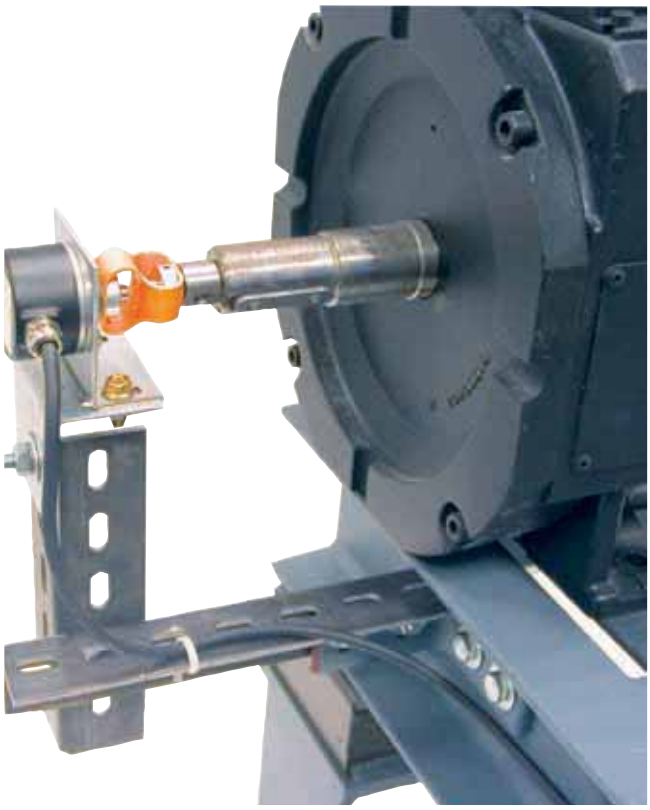
Adapter board ZETADYN 2 → ZETADYN 3

- Adapter for fast and simple conversion from ZETADYN 2 to ZETADYN 3
- No rewiring of the control and signal cables necessary

Article no. 357245

Retrofit kits

Retrofit incremental encoder with solid shaft



Description

- Retrofit kit for fast and simple mounting of an incremental encoder with solid shaft
- Mounting with and without hand wheel possible
- Prefabricated encoder cable

Scope of delivery

- Incremental encoder
  - Incl. cable with plug D-SUB 15-pin for ZAdyn4C and ZETADYN 3
- Flex coupling
  - Thermoplastic compensation element for connection between incremental encoder and motor shaft
- Adaptor
  - For mounting the flex coupling on the motor shaft
- Motor add-on kit
  - Solid angles and struts for rigid connection to the machine frame or floor

Technical data

Type	Threaded nipple	Operating voltage incremental encoder VDC	Signal shape	Cable length m	Article no.
Retrofit kit incremental encoder	M8	4.75 ... 30	RS422 Inkremental	10.0	**70028208**
	M10				**70028209**
	M12				**70028210**
	M14				**70028211**
	M16				**70028212**
	M20				**70028327**

Retrofit kit incremental encoder with hollow shaft

Description

- Adapter for quick and simple assembly of an incremental encoder with hollow shaft
- Assembly with or without handwheel

Centring thread Motor shaft	Shaft diameter Adapter mm	Article no.
M10	28	70024258
M12		70024259
M16		70024260
M20		70025581

Retrofit kit for initiators

Description

- Retrofit kit for conversion to contact-less monitoring of the motor brakes by proximity switches

Scope of delivery

- 2 proximity switches
- Connecting cable 3.0 m or 15.0 m

Technical data

Type	Motor type ZAtop	Connection cable length m	Article no.
Retrofit kit initiators	SM160.30B SM160.40B SM200.15C SM200.20C	3.0	70028330
		15.0	70028331
	SM200.30C	3.0	70028332
		15.0	70028333
	SM225.60B	3.0	70028334
		15.0	70028335
	SM250.60B SM250.80C	3.0	70028336
		15.0	70028337
	SM250.80D SM250.100C	3.0	70028338
		15.0	70028339

Control and connection cables ZAdyn4

Allocation control and connection cables

Connection	ZAdyn4C		ZAsbc4
	DCP	Parallel	-
DCP	L-SL-..HX-ZA3/4-DCP*	-	-
Digital inputs	L-SL-..HX-ZA4-IN**	L-SL-..HX-ZA4-IN	-
Digital outputs	L-SL-..HX-ZA4-OUT***	L-SL-..HX-ZA4-OUT	-
Safe Torque Off (STO)	L-SL-..HX-ZA4-STO	L-SL-..HX-ZA4-STO	-
Brake release monitoring	L-BL-..-HX-ZA4-AE	L-BL-..-HX-ZA4-AE	-
Motor PTC	L-KL-..-HX-ZA3/4-AE	L-KL-..-HX-ZA3/4-AE	-
- Supply voltage - Monitoring safety circuit - Activation, emergency operation and brake test - Test overvoltage protection - Status monitoring	-	-	LS-SBC4-..-HX-ST
Brake control	-	-	L-BA-..-HX-SBC4-AE

* with the NEW LIFT control special cable L-SL-..-HX-ZA3/4-DCP-1
** Only with additional triggering from digital inputs
*** Only required with additional use of digital outputs

Brake release monitoring

- For ZAtop and ZAS
- Connection of the micro-switches for the brake release monitoring to the ZAdyn4 frequency inverter
- Prefabricated:
  - Connection side ZAdyn4: plug 5-pin
  - Connection side brake: wire-end sleeves
- Halogen-free

Type	Article no.	Length m	Cable cross section mm²
L-BL-018-HX-ZA4-AE	**00165936-018M**	1.8	3 x 0.75
L-BL-03-HX-ZA4-AE	**00165936-03M**	3.0	
L-BL-05-HX-ZA4-AE	**00165936-05M**	5.0	
L-BL-10-HX-ZA4-AE	**00165936-10M**	10.0	
L-BL-15-HX-ZA4-AE	**00165936-15M**	15.0	
L-BL-20-HX-ZA4-AE	**00165936-20M**	20.0	
L-BL-25-HX-ZA4-AE	**00165936-25M**	25.0	

Control and connection cables ZAdyn4

Brake resistor cable

- Cable to connect the brake resistor BR..-3 to the ZAdyn4 frequency inverter and BR100-BOX
- Prefabricated
- Integrated conductors for temperature monitoring
- Halogen-free

L-BR-..-HX-2,5-ZA4
L-BR-..-HX-6-ZA4

L-BR-..-HX-16-ZA3/4

Frequency inverter type	Type	Article no.	Cable length m	Cable cross section mm²
ZAdyn4C 011 ZAdyn4C 013 ZAdyn4C 017 ZAdyn4C 023	**L-BR-03-HX-2,5-ZA4** **L-BR-05-HX-2,5-ZA4**	**00165932-03M** **00165932-05M**	3.0 5.0	3 x 2.5 + 2 x 0.5
ZAdyn4C 032 ZAdyn4C 040 ZAdyn4C 050 ZAdyn4C 062 ZAdyn4C 074	**L-BR-03-HX-6-ZA4** **L-BR-05-HX-6-ZA4**	**00165933-03M** **00165933-05M**	3.0 5.0	3 x 6.0 + 2 x 0.5
ZAdyn4B 110 ZAdyn4B 180	**L-BR-03-HX-16-ZA3/4** **L-BR-05-HX-16-ZA3/4**	**00165724** **00165725**	3.0 5.0	3 x 16.0 + 2 x 0.5

Cable BR100-BOX

- Cable for connecting the BR100-BOX to ZAdyn4B 110/180
- Prefabricated
- Integrated wires for temperature monitoring
- Halogen-free

Frequency inverter type	Type	Article no.	Cable length m	Cable cross section mm²
ZAdyn4B 110/180	**L-BR-03-HX-16-BR-BOX**	**00165953-03M**	3.0	3x16.0 + 2x0.5

Connection cable motor temperature monitoring PTC thermistor

- Connection of the PTC to the ZAdyn4 frequency inverter
- Prefabricated:
  - Connection side ZAdyn4: plug 4-pin
  - Connection side motor: wire-end sleeves
- Halogen-free

Type	Article no.	Cable length m	Cable cross section mm²
L-KL-018-HX-ZA3/4-AE	**00165801**	1.8	2 x 0.75
L-KL-03-HX-ZA3/4-AE	**00165650**	3.0	
L-KL-05-HX-ZA3/4-AE	**00165846**	5.0	
L-KL-10-HX-ZA3/4-AE	**00165800**	10.0	
L-KL-15-HX-ZA3/4-AE	**00165847**	15.0	
L-KL-20-HX-ZA3/4-AE	**00165801-20M**	20.0	
L-KL-25-HX-ZA3/4-AE	**00165801-25M**	25.0	

Control and connection cables ZAdyn4

Control cable DCP

Standard cables

- Prefabricated:
  - Connection side ZAdyn4: plug 4-pin
  - Connection side elevator controller: wire-end sleeves
- Halogen-free

Type	Article no.	Cable length m	Cable cross section mm²
L-SL-03-HX-ZA-DCP	00164123	3.0	2 x 2 x 0.25
L-SL-05-HX-ZA-DCP	00165925	5.0	
L-SL-10-HX-ZA-DCP	00164136	10.0	
L-SL-25-HX-ZA-DCP	00164137	25.0	
L-SL-50-HX-ZA-DCP	00164138	50.0	

Control-dependent special cable NEW LIFT

- Prefabricated:
  - Connection side ZAdyn4: plug 4-pin
  - Connection side elevator controller: D-SUB 9-pin
- Halogen-free

Type	Article no.	Cable length m	Cable cross section mm²
L-SL-03-HX-ZA-DCP-1	00164048	3.0	2 x 2 x 0.25
L-SL-05-HX-ZA-DCP-1	00165926	5.0	
L-SL-10-HX-ZA-DCP-1	00164049	10.0	
L-SL-25-HX-ZA-DCP-1	00164050	25.0	
L-SL-50-HX-ZA-DCP-1	00164051	50.0	

Control and connection cables ZAdyn4

STO control cable

- Activation of the Safe Torque Off (STO) function
- Prefabricated:
  - Connection side ZAdyn4: plug 6-pin
  - Connection side elevator controller: wire-end sleeves
- Halogen-free

Type	Article no.	Cable length m	Cable cross section mm²
L-SL-03-HX-ZA4-STO	00165938-03M	3.0	3 x 0.5
L-SL-05-HX-ZA4-STO	00165938-05M	5.0	
L-SL-10-HX-ZA4-STO	00165938-10M	10.0	
L-SL-25-HX-ZA4-STO	00165938-25M	25.0	
L-SL-50-HX-ZA4-STO	00165938-50M	50.0	

Control cable digital inputs

- Activation of the digital inputs through the elevator controller
- Prefabricated:
  - Connection side ZAdyn4: plug, 13-pin
  - Connection side elevator controller: wire-end sleeves
- Halogen-free

Type	Article no.	Cable length m	Cable cross section mm²
L-SL-03-HX-ZA4-IN	00165934-03M	3.0	12 x 0.5
L-SL-05-HX-ZA4-IN	00165934-05M	5.0	
L-SL-10-HX-ZA4-IN	00165934-10M	10.0	
L-SL-25-HX-ZA4-IN	00165934-25M	25.0	
L-SL-50-HX-ZA4-IN	00165934-50M	50.0	

Control cable digital outputs

- Evaluation of the digital outputs through the elevator controller
- Prefabricated:
  - Connection side ZAdyn4: plug, 10-pin
  - Connection side elevator controller: wire-end sleeves
- Halogen-free

Type	Article no.	Cable length m	Cable cross section mm²
L-SL-03-HX-ZA4-OUT	00165935-03M	3.0	10 x 0.5
L-SL-05-HX-ZA4-OUT	00165935-05M	5.0	
L-SL-10-HX-ZA4-OUT	00165935-10M	10.0	
L-SL-25-HX-ZA4-OUT	00165935-25M	25.0	
L-SL-50-HX-ZA4-OUT	00165935-50M	50.0	

Plug connector X-ENC15

- Adapter plug for connecting absolute encoder to ZAdyn4
- D-SUB 15-pin to screw connection

Article no. 00152676

Plug set ST4

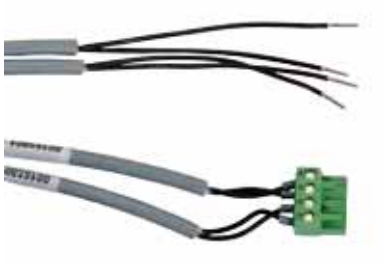
- Consisting of all connectors for connecting the ZAdyn4

Article no. 357258

Control and connection cables ZAsbc4

Brake control

- For ZAtop and ZAS
- Connection of the brake coils on ZAsbc4
- Prefabricated:
  - Connection side ZAsbc4: plug 4-pin
  - Connection side brake: wire-end sleeves
- Halogen-free



Type	Article no.	Length m	Cable cross section mm²
L-BA-018-HX-SBC4-AE	00166059-018M	1.8	2 x 2 x 1.0
L-BA-03-HX-SBC4-AE	00166059-03M	3.0	
L-BA-05-HX-SBC4-AE	00166059-05M	5.0	
L-BA-10-HX-SBC4-AE	00166059-10M	10.0	
L-BA-15-HX-SBC4-AE	00166059-15M	15.0	
L-BA-20-HX-SBC4-AE	00166059-20M	20.0	
L-BA-25-HX-SBC4-AE	00166059-25M	25.0	

ZAsbc4C wiring harness

- 5-part prefabricated wiring harness for connecting the elevator controller to ZAsbc4C
  - Supply voltage
  - Monitoring safety circuit
  - Activation, emergency operation and brake test
  - Test overvoltage protection
  - Status monitoring
- Prefabricated
  - Connection side ZAsbc4: plugs
  - Connection side controller: wire-end sleeves

Type	Article no.	Length m	Cable cross section mm²
LS-SBC4-03-HX-ST	357289-03M	3.0	3 x 1.0 (Supply) 3 x 0.75 (Monitoring, safety circuit) 3 x 0.75 (Activation, emergency operation and brake test) 2 x 0.75 (Test overvoltage protection) 2 x 0.75 (Status monitoring)
LS-SBC4-05-HX-ST	357289-05M	5.0	
LS-SBC4-10-HX-ST	357289-10M	10.0	
LS-SBC4-25-HX-ST	357289-25M	25.0	
LS-SBC4-50-HX-ST	357289-50M	50.0	

Connection cables ZETADYN 3BF

Brake release monitoring

- For ZAtop and ZAS
- Connection of the micro-switches for the brake release monitoring to the ZETADYN 3 frequency inverter
- Prefabricted:
  - Connection side ZETADYN 3: plug 6-pin
  - Connection side brake: wire-end sleeves
- Halogen-free

Type	Article no.	Cable length m	Cable cross section mm²
L-BL-018-HX-ZA3-AE	00165645	1.8	3 x 0.75
L-BL-03-HX-ZA3-AE	00165646	3.0	
L-BL-05-HX-ZA3-AE	00165831	5.0	
L-BL-10-HX-ZA3-AE	00165796	10.0	
L-BL-15-HX-ZA3-AE	00165832	15.0	
L-BL-20-HX-ZA4-AE	00165936-20M	20.0	
L-BL-25-HX-ZA4-AE	00165936-25M	25.0	

Brake resistor cable for ZETADYN 3BF

- Cable to connect the brake resistor BR..-3 to the ZETADYN 3BF frequency inverter
- Prefabricated
- Integrated conductors for temperature monitoring
- Halogen-free

L-BR-..-HX-2,5-ZA3BF
L-BR-..-HX-6-ZA3BF

Frequency inverter type	Type	Article no.	Cable length m	Cable cross section mm²
ZETADYN 3BF011 3BF013 3BF017 3BF023	L-BR019-HX-2,5-ZA3BF	00164177	1.9	3 x 2.5 + 2 x 0.5
	L-BR03-HX-2,5-ZA3BF	00164178	3.0	
	L-BR05-HX-2,5-ZA3BF	00164182	5.0	
ZETADYN 3BF032 3BF040 3BF050 3BF062 3BF074	L-BR019-HX-6-ZA3BF	00164179	1.9	3 x 6.0 + 2 x 0.5
	L-BR03-HX-6-ZA3BF	00164180	3.0	
	L-BR05-HX-6-ZA3BF	00164183	5.0	

Control and connection cables ZETADYN 3BF

Connection cable motor temperature monitoring PTC thermistor

- Connection of the PTC to the ZETADYN 3 frequency inverter
- Prefabricated:
  - Connection side ZETADYN 3: plug 3-pin
  - Connection side motor: wire-end sleeves
- Halogen-free

Type	Article no.	Cable length m	Cable cross section mm²
L-KL-018-HX-ZA3/4-AE	00165801	1.8	2 x 0.75
L-KL-03-HX-ZA3/4-AE	00165650	3.0	
L-KL-05-HX-ZA3/4-AE	00165846	5.0	
L-KL-10-HX-ZA3/4-AE	00165800	10.0	
L-KL-15-HX-ZA3/4-AE	00165874	15.0	
L-KL-20-HX-ZA3/4-AE	00165801-20M	20.0	
L-KL-25-HX-ZA3/4-AE	00165801-25M	25.0	

Connector X-ENC15

- Adapter plug for connecting absolute encoder to ZETADYN 3
  - D-SUB 15-pole to screw connection

Article no. 00152676

Connector X-IN

- For additional activation of the digital inputs with DCP or CAN operation

Article no. 00162353

Connector X-OUT

- For additional evaluation of the digital outputs with DCP or CAN operation

Article no. 00162354

Connector X-K

- For controlling the motor contactors

Article no. 00156241

Connection cables ZApad

ZApad data cable

- Connection of the ZApad to frequency inverter type ZETADYN / ZAdyn, recuperation units type ZArec and evacuation units type EVAC 3
- Double plug RJ45
- Halogen-free

Type	Article no.	Cable length m
L-DL-005-HX-RJ45	00159973	0.5
L-DL-10-HX-RJ45	00159967	10.0
L-DL-25-HX-RJ45	00159968	25.0
L-DL-50-HX-RJ45	00164122	50.0

Modular coupler RJ

- Coupler to connect the cable type L-DL-...-HX-RJ45
- Double jack RJ45

Article no. 00155975

ZAmon data cable

- Connection of the ZApad to a notebook or PC to be able to use the ZAmon software
- USB 2.0 connection line A/B
- Halogen-free
- Length: 1.8 m
- Type: L-DL-018-HX-USB-A-B

Article no. 00159946

ZArec wiring harness

LS-ZArec4C-..-HX-...-ZA3/4

- 2-part prefabricated wiring harness for connecting the ZArec to ZETADYN 3 and ZAdyn4:
  - Signal transmission ZArec - ZETADYN 3 / ZAdyn4
  - Connection DC-link voltage ZArec - ZETADYN 3 / ZAdyn4

Type	Article no.	Frequency inverter	Length m	Cable cross section mm²
LS-ZArec4C-03-HX-023-ZA3/4	357276	ZETADYN 3BF011-023 ZETADYN 3C011-023 ZAdyn4C 011-023	3	6 x 0.75 (Signals) 3 x 2.5 (DC-link)
LS-ZArec4C-05-HX-023-ZA3/4	357277		5	6 x 0.75 (Signals) 3 x 2.5 (DC-link)
LS-ZArec4C-03-HX-074-ZA3/4	357278	ZETADYN 3BF032-074 ZETADYN 3C032-074 ZAdyn4C 032-074	3	6 x 0.75 (Signals) 3 x 6.0 (DC-link)
LS-ZArec4C-05-HX-074-ZA3/4	357279		5	6 x 0.75 (Signals) 3 x 6.0 (DC-link)

EVAC battery set and wiring harness

Battery set EVAC-BATT

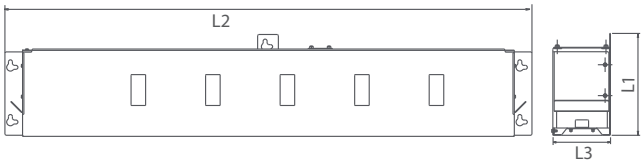
Description

- Selection is made depending on the nominal current of the motor and the duration or number of evacuations

Technical data

Type	Article no.	Rated voltage	Rated capacity	Rated current	Weight
		VDC	Ah	A	kg
032-120-24	357234	120	24.0	32	2 x 50
050-120-24	357235	120	24.0	50	2 x 50
074-120-24	357236	120	24.0	74	2 x 50
032-180-7.2	357238	180	7.2	32	24 + 26
032-180-24	357242	180	24.0	32	3 x 50
050-180-24	357243	180	24.0	50	3 x 50
074-180-24	357244	180	24.0	74	3 x 50

Dimensions mm



Type	L1	L2	L3
032-120-24	231	1195	130
050-120-24			
074-120-24			
032-180-7.2	205	948	116
032-180-24	231	1195	130
050-180-24			
074-180-24			

EVAC 3C wiring harness

LS-EVAC3C-..-HX-...-ZA3/4

- 3-part wiring harness for connecting the ZETADYN 3 / ZAdyn4 and the EVAC BATT to EVAC 3C:
  - Power supply of the ZETADYN 3 / ZAdyn4 by EVAC 3C
  - Signal transmission EVAC 3C ⇄ ZETADYN 3 / ZAdyn4
  - Connection battery set EVAC BATT

Type	Article no.	Cable length	Cable cross-section EVAC 3C ⇄ ZETADYN 3 / ZAdyn4	Cable cross-section EVAC 3C ⇄ EVAC BATT
		m	mm²	mm²
LS-EVAC3C-03-HX-032-ZA3/4	357239	3	4 x 6.0 (supply) 4 x 0.5 (signals)	3 x 6.0 + 2 x 0.5
LS-EVAC3C-03-HX-050-ZA3/4	357240	3	4 x 10.0 (supply) 4 x 0.5 (signals)	3 x 6.0 + 2 x 0.5
LS-EVAC3C-03-HX-074-ZA3/4	357241	3	4 x 25.0 (supply) 4 x 0.5 (signals)	4 x 10.0 + 2 x 1.0

LS-EVAC3C-..-HX-ST

- 3-part wiring harness for connecting the elevator controller and the main switch monitoring to EVAC 3C:
  - Control power supply through EVAC 3C
  - Signal transmission EVAC 3C ⇄ Controller
  - Main switch monitoring

Type	Article no.	Cable length	Cable cross-section EVAC 3C ⇄ Controller	Cable cross-section EVAC 3C ⇄ Main switch
		m	mm²	mm²
LS-EVAC3C-03-HX-ST	357247	3	3 x 1.5 (supply) 3 x 0.75 (signals)	2 x 0.75 (monitoring)
LS-EVAC3C-10-HX-ST	357248	10	3 x 1.5 (supply) 3 x 0.75 (signals)	2 x 0.75 (monitoring)

Motor cables

For motor type ZAtop, ZAsyn SM860 and VFD

- Cable for connecting the motor to frequency inverter type ZETADYN / ZAdyn
- Including cable gland
- Prefabricated:
  - Connection side motor: ring cable lug
  - Connection side ZETADYN / ZAdyn: wire-end sleeves

Rated current* A	Cable cross section mm²	Cable gland	Ring cable lug for terminal board	Fits motor	Cable length** m	**Type**	**Article no.**
20	4 x 2.5	M25	M6	VFD132	5.0	**L-ML-05-YY-2,5-M6-AE**	**356035-05M**
					10.0	**L-ML-10-YY-2,5-M6-AE**	**356035-10M**
			M8	SM200.40 SM225 VFD160	1.8	**L-ML-018-YY-2,5-M8-AE**	**356038-01.8M**
					3.0	**L-ML-03-YY-2,5-M8-AE**	**356038-03M**
					5.0	**L-ML-05-YY-2,5-M8-AE**	**356038-05M**
					10.0	**L-ML-10-YY-2,5-M8-AE**	**356038-10M**
25	4 x 4.0	M32	M6	VFD132	5.0	**L-ML-05-YY-4-M6-AE**	**356036-05M**
					10.0	**L-ML-10-YY-4-M6-AE**	**356036-10M**
			M8	SM200.40 SM225 SM860 VFD160	1.8	**L-ML-018-YY-4-M8-AE**	**356039-01.8M**
					3.0	**L-ML-03-YY-4-M8-AE**	**356039-03M**
					5.0	**L-ML-05-YY-4-M8-AE**	**356039-05M**
					10.0	**L-ML-10-YY-4-M8-AE**	**356039-10M**
35	4 x 6.0	M32	M6	VFD132	5.0	**L-ML-05-YY-6-M6-AE**	**356037-05M**
					10.0	**L-ML-10-YY-6-M6-AE**	**356037-10M**
			M8	SM200.40 SM225 SM250 SM860 VFD180	1.8	**L-ML-018-YY-6-M8-AE**	**356040-01.8M**
					3.0	**L-ML-03-YY-6-M8-AE**	**356040-03M**
					5.0	**L-ML-05-YY-6-M8-AE**	**356040-05M**
					10.0	**L-ML-10-YY-6-M8-AE**	**356040-10M**
50	4 x 10.0	M40	M8	SM200.40 SM225 SM250 SM860 VFD160-225	1.8	**L-ML-018-YY-10-M8-AE**	**356041-018M**
					3.0	**L-ML-03-YY-10-M8-AE**	**356041-03M**
					5.0	**L-ML-05-YY-10-M8-AE**	**356041-05M**
					10.0	**L-ML-10-YY-10-M8-AE**	**356041-10M**
63	4 x 16.0	M40	M8	SM200.40 SM225 SM250 SM860 VFD180-250	1.8	**L-ML-018-YY-16-M8-AE**	**356042-01.8M**
					3.0	**L-ML-03-YY-16-M8-AE**	**356042-03M**
					5.0	**L-ML-05-YY-16-M8-AE**	**356042-05M**
					10.0	**L-ML-10-YY-16-M8-AE**	**356042-10M**
80	4 x 25.0	M50	M8	SM225 SM250 SM860 VFD180-250	1.8	**L-ML-018-YY-25-M8-AE**	**356043-018M**
					3.0	**L-ML-03-YY-25-M8-AE**	**356043-03M**
					5.0	**L-ML-05-YY-25-M8-AE**	**356043-05M**
					10.0	**L-ML-10-YY-25-M8-AE**	**356043-10M**
100	4 x 35.0	M50	M8	SM225	10.0	**L-ML-10-YY-35-M8-AE**	**356044-10M**
			M10	SM250 SM860 VFD180-25	5.0	**L-ML-05-YY-35-M10-AE**	**356033-05M**
					10.0	**L-ML-10-YY-35-M10-AE**	**356033-10M**

* The stated rated currents are rated according to DIN VDE 0298-4 for laying system B2 and a max. ambient temperature of 40° C.

** Other cable lengths on request.

Motor cables

For motor type ZAsyn SM700 and externally procured motors

- Cable for connecting the motor to frequency inverter type ZETADYN / ZAdyn
- Including cable gland
- Prefabricated:
  - Connection side motor: wire-end sleeves
  - Connection side ZETADYN / ZAdyn: wire-end sleeves

Rated current* A	Cable cross section mm²	Cable gland	Fits motor	Cable length m	Type	Article no.
20.0	4 x 2.5	M25	SM700	3.0	L-ML-03-YY-2,5-AE-AE	356016-03M
				10.0	L-ML-10-YY-2,5-AE-AE	356016-10M
25.0	4 x 4.0	M32	SM700	3.0	L-ML-03-YY-4-AE-AE	356017-03M
				10.0	L-ML-10-YY-4-AE-AE	356017-10M
35.0	4 x 6.0	M32	SM700	3.0	L-ML-03-YY-6-AE-AE	356018-03M
				10.0	L-ML-10-YY-6-AE-AE	356018-10M
50.0	4 x 10.0	M25	SM700	3.0	L-ML-03-YY-10-AE-AE	356019-03M
				10.0	L-ML-10-YY-10-AE-AE	356019-10M
63.0	4 x 16.0	M40	SM700	3.0	L-ML-03-YY-16-AE-AE	356020-03M
				10.0	L-ML-10-YY-16-AE-AE	356020-10M
80.0	4 x 25.0	M50	SM700	10.0	L-ML-10-YY-25-AE-AE	356021-10M
100.0	4 x 35.0	M50	SM700	10.0	L-ML-10-YY-35-AE-AE	356022-10M

* The stated rated currents are rated according to DIN VDE 0298-4 for laying system B2 and a max. ambient temperature of 40° C.

Halogen-free motor cables

For motor type ZAtop, ZAsyn SM860 and VFD

- Cable for connecting the motor to frequency inverter type ZETADYN / ZAdyn
- Halogen-free
- Including cable gland
- Prefabricated:
  - Connection side motor: ring cable lug
  - Connection side ZETADYN / ZAdyn: wire-end sleeves

Rated current* A	Cable cross section mm²	Cable gland	Ring cable lug for terminal board	Fits motor	Cable length m	Type	Article no.
20	4 x 2.5	M25	M8	SM200.40 SM225 VFD160	3.0	L-ML-03-HX-2,5-M8-AE	356056-03M
					5.0	L-ML-05-HX-2,5-M8-AE	356056-05M
					10.0	L-ML-10-HX-2,5-M8-AE	356056-10M
25	4 x 4.0	M32	M8	SM200.40 SM225 VFD160	3.0	L-ML-03-HX-4-M8-AE	356057-03M
					5.0	L-ML-05-HX-4-M8-AE	356057-05M
					10.0	L-ML-10-HX-4-M8-AE	356057-10M
35	4 x 6.0	M32	M8	SM200.40 SM225 SM250 VFD160	3.0	L-ML-03-HX-6-M8-AE	356058-03M
					5.0	L-ML-05-HX-6-M8-AE	356058-05M
					10.0	L-ML-10-HX-6-M8-AE	356058-10M
50	4 x 10.0	M40	M8	SM200.40 SM225 SM250 SM860 VFD160-225	3.0	L-ML-03-HX-10-M8-AE	356059-03M
					5.0	L-ML-05-HX-10-M8-AE	356059-05M
					10.0	L-ML-10-HX-10-M8-AE	356059-10M
63	4 x 16.0	M40	M8	SM200.40 SM225 SM250 VFD180-250	3.0	L-ML-03-HX-16-M8-AE	356060-03M
					5.0	L-ML-05-HX-16-M8-AE	356060-05M
					10.0	L-ML-10-HX-16-M8-AE	356060-10M
80	4 x 25.0	M50	M8	SM225 SM250 VFD180-250	3.0	L-ML-03-HX-25-M8-AE	356061-03M
					5.0	L-ML-05-HX-25-M8-AE	356061-05M
					10.0	L-ML-10-HX-25-M8-AE	356061-10M
100	4 x 35.0	M50	M10	SM250	3.0	L-ML-03-HX-35-M10-AE	356062-03M
					5.0	L-ML-05-HX-35-M10-AE	356062-05M
					10.0	L-ML-10-HX-35-M10-AE	356062-10M

* The stated rated currents are rated according to DIN VDE 0298-4 for laying system B2 and a max. ambient temperature of 40° C.

Motor cables

For motor type ZAsyn SM700 and externally procured motors

- Cable for connecting the motor to frequency inverter type ZETADYN / ZAdyn
- Halogen-free
- Including cable gland
- Prefabricated:
  - Connection side motor: wire-end sleeves
  - Connection side ZETADYN / ZAdyn: wire-end sleeves

Rated current* A	Cable cross section mm²	Cable gland	Fits motor	Cable length m	**Type**	**Article no.**
20.0	4 x 2.5	M25	SM700	10.0	**L-ML-10-HX-2,5-AE-AE**	**356026-10M**
25.0	4 x 4.0	M32	SM700	10.0	**L-ML-10-HX-4-AE-AE**	**356027-10M**
35.0	4 x 6.0	M32	SM700	3.0	**L-ML-03-HX-6-AE-AE**	**356028-03M**
				10.0	**L-ML-10-HX-6-AE-AE**	**356028-10M**
50.0	4 x 10.0	M40	SM700	3.0	**L-ML-03-HX-10-AE-AE**	**356029-03M**
				10.0	**L-ML-10-HX-10-AE-AE**	**356029-10M**
63.0	4 x 16.0	M40	SM700	10.0	**L-ML-10-HX-16-AE-AE**	**356030-10M**
80.0	4 x 25.0	M50	SM700	10.0	**L-ML-10-HX-25-AE-AE**	**356031-10M**
100.0	4 x 35.0	M50	SM700	10.0	**L-ML-10-HX-35-AE-AE**	**356032-10M**

* The stated rated currents are rated according to DIN VDE 0298-4 for laying system B2 and a max. ambient temperature of 40° C.

Connection box for shielded motor cables

Description

- Simple and EMC-conform extension of ZIEHL-ABEGG motor cables
- Cable glands on both sides
- Wire cross section from 4 x 2.5 mm² to 4 x 16 mm²
- Dimensions without cable glands (W x H x T) in mm: 260 x 160 x 91

Article no. 70026751

EMC cable glands

Type	**Article no.**	**EMC lock nut** **Article no.**	∅ Motor cable mm	Brake resistance cable threaded connection	Motor cable threaded connection
M25 x 1,5	**02002881**	**02002803**	4 x 2.5	ZETADYN 3C.011 ZETADYN 3C.013 ZETADYN 3C.017 ZEATDYN 3C.023 ZETADYN 3C.032	
M32 x 1,5	**02002184**	**02002198**	4 x 4.0 4 x 6.0	ZETADYN 3C.040* ZETADYN 3C.050* ZETADYN 3C.062* ZETADYN 3C.074*	ZETADYN 3C.011 ZETADYN 3C.013 ZETADYN 3C.017 ZEATDYN 3C.023 ZETADYN 3C.032
M40 x 1,5	**02002185**	**02002199**	4 x 10 4 x 16		ZETADYN 3C.040 ZETADYN 3C.050
M50 x 1,5	**02002186**	**02002200**	4 x 25 4 x 35		ZETADYN 3C.062 ZETADYN 3C.074

* Reducing sealing ring (Article no. 02008019) required
** With cutting edge for secure contacting even on painted housings

Encoder cables

Standard encoder cables

For absolute encoder (synchronous motors)

- Cable for connecting the absolute encoder to frequency inverter type ZAdyn / ZETADYN
- For ZAtop and ZAsyn type motors
- Prefabricated

Encoder type	Frequency inverter	Encoder connection	Frequency inverter connection	Cable cross section mm²	Cable length m	Type	Article no.
ECN113 ECN1313	ZETADYN 3 ZAdyn 4	Jack M16 x 0.75 (KV120)	Plug D-SUB 15-pin	6 x 2 x 0.14	5.0	**L-GL-05-YY-ZA-ECN**	**00159923**
					10.0	**L-GL-10-YY-ZA-ECN**	**00155050**
					25.0	**L-GL-25-YY-ZA-ECN**	**00159925**
ERN1387	ZETADYN 3 ZAdyn 4	Jack M23 x 1	Plug D-SUB 15-pin	8 x 2 x 0.14	10.0	**L-GL-10-YY-ZA3-ERN1387**	**00159964**
						L-GL-10-YY-ZA4-ERN1387	**00165948-10M**

For incremental encoder (asynchronous motors)

- Cable to connect the incremental encoder to frequency inverter type ZAdyn / ZETADYN
- For VFD type motors
- Prefabricated

Encoder type	Frequency inverter	Encoder connection	Frequency inverter connection	Cable cross section mm²	Cable length m	Type	Article no.
ET2S	ZETADYN 3 ZAdyn4*	Jack M16 x 0.75 (KV120)	Plug D-SUB 9-pin	6 x 0.14	10.0	**L-GL-10-YY-ZA-ET2S**	**00159927**

* ZAdyn4 only with D-SUB 9 ⇄ D-SUB 15 adapter (article no. 00165930-004M)

For incremental encoder BUCHER hydraulic unit (asynchronous motors)

- Cable to connect the incremental encoder of the hydraulic pump to frequency inverter type ZAdyn / ZETADYN
- For units type Saturn ALPHA and Orion ALPHA from the company BUCHER HYDRAULICS
- Prefabricated

Encoder type	Frequency inverter	Encoder connection	Frequency inverter connection	Cable cross section mm²	Cable length m	Type	Article no.
Bucher	ZETADYN 3 ZAdyn4*	Jack D-SUB 9-pin	Plug D-SUB 9-pin	6 x 2 x 0.14	3.0	**L-GL-03-YY-ZA-BU**	**00165660**
					6.0	**L-GL-06-YY-ZA-BU**	**00165661**
					10.0	**L-GL-10-YY-ZA-BU**	**00165662**

* ZAdyn4 only with D-SUB 9 ⇄ D-SUB 15 adapter (article no. 00165930-004M)

Halogen-free encoder cable

For absolute encoders (synchronous motors)

- Cable to connect the absolute encoder to frequency inverter type ZAdyn / ZETADYN
- For ZAtop and ZAsyn type motors
- Prefabricated
- Halogen-free

Encoder type	Frequency inverter	Encoder connection	Frequency inverter connection	Cable cross section mm²	Cable length m	Type	Article no.
ECN113 ECN1313	ZETADYN 3 ZAdyn 4	Jack M16 x 0.75 (KV120)	Plug D-SUB 15-pin	6 x 2 x 0.14	1.8	**L-GL-018-HX-ZA-ECN**	**00165713**
					3.0	**L-GL-03-HX-ZA-ECN**	**00165644**
					10.0	**L-GL-10-HX-ZA-ECN**	**00165615**
					15.0	**L-GL-15-HX-ZA-ECN**	**00157818**
					25.0	**L-GL-25-HX-ZA-ECN**	**00165616**

Encoder cables

Encoder cables for frequency inverters from other manufacturers

For absolute encoders (synchronous motors)

- Cable to connect the absolute encoder to frequency inverters from other manufacturers
- For ZAtop and ZAsyn type motors
- Prefabricated

Encoder type	Frequency inverter	Encoder connection	Frequency inverter connection	Cable cross section mm²	Cable length m	Type	Article no.
ECN113 ECN1313	Arkel Step	Jack M16 x 0.75 (KV120)	Plug D-SUB 15-pin	6 x 2 x 0.14	10.0	**L-GL-10-YY-ARKEL/STEP-ECN**	**00166052-10M**
	FUJI		Plug 16-pin MC1.5 / Phoenix		10.0	**L-GL-10-YY-FUJI-ENC**	**00165827**
					5.0	**L-GL-05-YY-FUJI-ENC**	**00165827-05M**
	KEB		Plug D-SUB 15-pin		5.0	**L-GL-05-YY-KEB-F5-ENC**	**00157813**
					10.0	**L-GL-10-YY-KEB-F5-ENC**	**00159734**
	Schindler		Plug D-SUB 15-pin		5.0	**L-GL-05-YY-SCH-ENC**	**00159922**
					10.0	**L-GL-10-YY-SCH-ENC**	**00159951**
					20.0	**L-GL-20-YY-SCH-ENC**	**00159954**
	independent		Wire-end sleeves		10.0	**L-GL-10-YY-ECN/ERN-AE**	**02013478-10M**
ERN1387	GEFRAN / SIEI		Plug D-SUB 15-pin		10.0	**L-GL-10-YY-SIEI-ERN1387**	**00159941**
					25.0	**L-GL-25-YY-SIEI-ERN1387**	**00159944**

Extension cables for encoder cables

- For incremental encoder and absolute encoder with connection D-SUB 15-pin*
- Prefabricated
- Only in combination with encoder cable

Connection side encoder cable	Frequency inverter connection	Cable cross section mm²	Cable length m	Type	Article no.
Jack D-SUB 15-pin	Plug D-SUB 15-pin	6 x 2 x 0.25	5.0	**L-GL-05-YY-ZA-EXT**	**00159952-05M**
Jack D-SUB 15-pin	Plug D-SUB 15-pin	6 x 2 x 0.25	10.0	**L-GL-10-YY-ZA-EXT**	**00159952**
Jack M16 x 0.75 (KV120)	Plug M16 x 0.75 (SV120)	6 x 2 x 0.14	0.8	**L-GL-008-HX-ECN-EXT-KV120**	**00165665**
			10.0	**L-GL-10-HX-ECN-EXT-KV120**	**00165665-10M**

* for incremental encoder with connection D-SUB 9-pin the adapter article no. 00165930-004M is required in addition

Adapter

Adapter D-SUB 9 <-> D-SUB 15

- Connection of incremental encoder with D-SUB 9 plug to ZAdyn4
  - Connection side encoder cable: D-SUB 9-pin
  - Connection side ZAdyn4: D-SUB 15-pin
- Prefabricated
- Halogen-free

Type: L-GL-004-HX-ZA-ASM-9-15
Article no. 00165930-004M

Adapter D-SUB 15 <-> D-SUB 9

- Connection of incremental encoder with D-SUB 15 plug to ZETADYN 3
  - Connection side encoder cable: D-SUB 15-pin
  - Connection side ZETADYN 3: D-SUB 9-pin
- Prefabricated
- Halogen-free

Type: L-GL-004-HX-ZA-ASM-15-9
Article no. 00165931-004M

Incremental encoder

Incremental encoder with hollow shaft

Description

- For motor types VFD and other asynchronous motors
- Signal shape: sine or square
- Speed: max. 3500 rpm
- Phase shift: 90°
- With prefabricated connection cable
- Protection class: IP54

Type	Article no.	Shaft diameter mm	Signal shape	Reso-lution ppr	Signal tracks	Operating voltage VDC	Frequency inverter connection	Cable length m	For frequency inverter
ET2R-1024/28/05V	359010	28	TTL	1024	A, B, /A, /B	5.0	Wire-end sleeves	10.0	-
ET2R-1024/28/05V-1	359026		TTL	1024	A, B, /A, /B, N	5.0	D-SUB 9-pin	10.0	ZETADYN / ZAdyn*
ET2S-1024/28/05V-15	02014700		1 V_{SS}	1024	A, B, /A, /B	5.0	D-SUB 15-pin	10.0	ZETADYN** / ZAdyn
ET2R-1024/28/30V	359004		HTL	1024	A, B	10…30	Wire-end sleeves	10.0	-
ET2R-2500/28/05V-1	359023		TTL	2500	A, B, /A, /B, N	5.0	D-SUB 9-pin	10.0	ZETADYN / ZAdyn*
ET2R-1024/38/05V	359011	38	TTL	1024	A, B, /A, /B	5.0	Wire-end sleeves	10.0	-
ET2R-1024/38/05V-1	359027		TTL	1024	A, B, /A, /B, N	5.0	D-SUB 9-pin	10.0	ZETADYN / ZAdyn*
ET2S-1024/38/05V-15	02014701		1 V_{SS}	1024	A, B, /A, /B	5.0	D-SUB 15-pin	10.0	ZETADYN** / ZAdyn
ET2S-1024/38/05V-2	02006794		1 V_{SS}	1024	A, B, /A, /B	5.0	M16 x 0.75 (SV120) 12-pin	0.5	-
ET2R-1024/38/30V	359005		HTL	1024	A, B	10…30	Wire-end sleeves	10.0	-
ET2R-2500/38/05V-1	359024		TTL	2500	A, B, /A, /B, N	5.0	D-SUB 9-pin	10.0	ZETADYN / ZAdyn*
ET2R-4096/38/05V-1	00037299		TTL	4096	A, B, /A, /B, N	5.0	D-SUB 9-pin	10.0	ZETADYN / ZAdyn*
ET2R-1024/42/05V	359012	42	TTL	1024	A, B, /A, /B	5.0	Wire-end sleeves	10.0	-
ET2R-1024/42/05V-1	359028		TTL	1024	A, B, /A, /B, N	5.0	D-SUB 9-pin	10.0	ZETADYN / ZAdyn*
ET2R-1024/42/30V	359006		HTL	1024	A, B	10…30	Wire-end sleeves	10.0	-
ET2R-2500/42/05V-1	359025		TTL	2500	A, B, /A, /B, N	5.0	D-SUB 9-pin	10.0	ZETADYN / ZAdyn*

* ZAdyn4 only with D-SUB 9 ⇄ D-SUB 15 adapter (article no. 00165930-004M)
** ZETADYN 2 and ZETADYN 3 (older than May 2012) only with D-SUB 15 ⇄ D-SUB 9 adapter (article no. 00165931-004M)

Incremental encoder

Incremental encoder with solid shaft

Description

- For VFD motor types and other asynchronous motors
- Signal shape: square
- Speed: max. 3500 rpm
- Phase shift: 90°
- With prefabricated connection cable
- Protection class: IP54

Type	Article no.	Shaft diameter mm	Signal shape	Resolution ppr	Signal tracks	Operating voltage VDC	Frequency inverter connection	Cable length m	For frequency inverter
ET2R-1024/10/30V	**359020**	10	HTL	1024	A, B	10...30	Wire-end sleeves	10.0	-
ERN1321	**02010592**	9.25 Cone 1:10	TTL	4096	A, B, /A, /B	5.0	Board plug 12 pin	-	-

Absolute encoder / adapter cables

Encoder - absolute encoder

Absolute encoder with hollow shaft

- For ZAtop motor type
- Signal shape speed: sine
- Speed: max. 3500 rpm
- Phase shift: 90°
- With prefabricated connection cable
- Protection class: IP64

Type	Article no.	Shaft diameter mm	Interface absolute value	Resolution ppr	Signal tracks	Operating voltage VDC	Connection	Cable length m
ECN113 ENDAT 2048 Hiatus	01009635	50	EnDat 01	2048	A, B, /A, /B	5.0	M16 x 1 (SV120) 12-pin	0.5
ECN113 ENDAT 17pol.	359003		EnDat 01				M23 17-pin	
ECN113 SSI 2048	359000		SSI				M16 x 0.75 (SV120) 12-pin	

Absolute encoder with solid shaft

- For ZAtop and ZAsyn motor types
- Signal shape speed: sine
- Speed: max. 3500 rpm
- Phase shift: 90°
- Without connection cable
- Protection class: IP40

Type	Article no.	Shaft diameter mm	Interface absolute value	Resolution ppr	Signal tracks	Operating voltage VDC	Connection
ECN1313 ENDAT 2048 Hiatus	02014378-E	9.25 Cone 1:10	EnDat 01	2048	A, B, /A, /B	5.0	Board plug 12 pin
ECN1313 SSI 2048 Hiatus	02011423		SSI				

Type	Article no.	Shaft diameter mm	Interface absolute value	Resolution ppr	Signal tracks	Operating voltage VDC	Connection
ERN 1387 Z 2048	02014377_59	9.25 Cone 1:10	Z* ~	2048	A, B, /A, /B	5.0	Board plug 14 pin
ERN 1326 UVW 4096	02011534		U, V, W	4096			Board plug 16 pin
ERN 1326 UVW 8192	02008298		⊓⊔	8192			

* 1 sine period / revolution

Adapter cable encoder ⇆ encoder cable

Encoder type	Article no.	Length m	Encoder connection	Encoder cable connection	Cable cross section mm²
ECN 1313	00159930	0.245	Jack 12 pin	Plug M16 x 0.75 (SV120)	12 x 0.14
	00159953	0.560			
	00159933	0.245		Plug M23 x 1	12 x 0.14
ERN 1387	00159931	0.245	Jack 14 pin	Plug M16 x 0.75 (SV120)	12 x 0.14
	00159934	0.245		Plug M23 x 1	14 x 0.14
ERN 1326	00159942	0.245	Jack 16 pin	Plug M23 x 1	16 x 0.14

Software ZAmon

ZAmon

The perfect tool for diagnosing elevator systems and managing device data. ZAmon enables fast and simple access to all parameters and functions of the frequency inverters and recuperation units from ZIEHL-ABEGG.

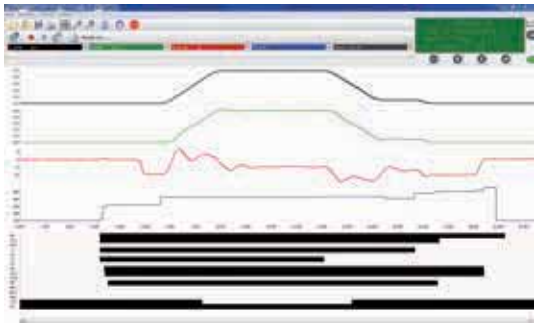
The functions of ZAmon

- Time-optimised start-up of the elevator system
- Analysis and optimisation of the elevator system
- Fast diagnosis of weak points such as rail joints, door lock interruptions or communication problems to the elevator control system
- Back-up and management of the parameters
- Creation of documents for documentation of the elevator system

ZAmon provides the suitable software module for every application:

Module “Display”

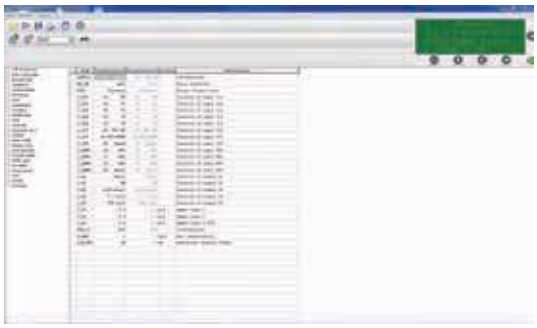
- Remote control of the frequency inverter or recuperation unit via Notebook



Module “Recorder”

Recording of travel curves for diagnostic purposes

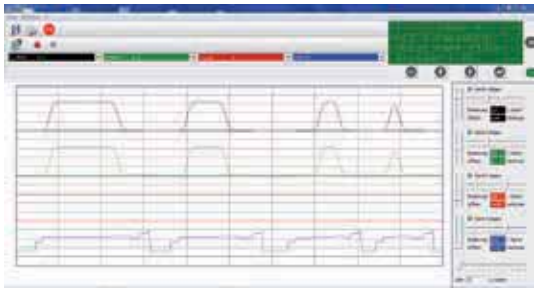
- 4 analogue measuring channels
- 1 digital measuring channel
- Free assignment of the measuring channels with measuring functions
- Back-up of recordings
- Comparison of measurements
- FFT analysis
- Mathematic analysis functions



Module “Parameters”

Management of parameter

- Clear display of menus and parameters
- Editing of parameters in real time
- Saving parameters
- Printing of parameter lists
- Printing of error lists
- Loading of saved parameter sets into the frequency inverter or recuperation unit
- Comparison of parameters
- Loading installation and motor data from calculations created in the ZAlift calculation software



“Oszi” module

Realtime recording of travel curves for diagnosis purposes

- 4 analogue measurement channels
- Free assignment of measurement channels with measurement functions
- Save the Oszi-recordings

ZAmon is available as a free of charge download on the ZIEHL-ABEGG homepage. Periodic updates of the software always keep you at the cutting edge.

ZIEHL-ABEGG Germany

Field representatives

ZIEHL-ABEGG SE
ZA Künzelsau | Headquarters
Heinz-Ziehl-Straße
74653 Künzelsau
Phone +49 (0) 7940 16-0
info@ziehl-abegg.com
www.ziehl-abegg.com

ZIEHL-ABEGG SE
ZA Kupferzell | Subsidiary plant
Drive Technology
Günther-Ziehl-Straße 1
74635 Kupferzell
Phone +49 (0) 7940 16-100
drives@ziehl-abegg.com
www.ziehl-abegg.com

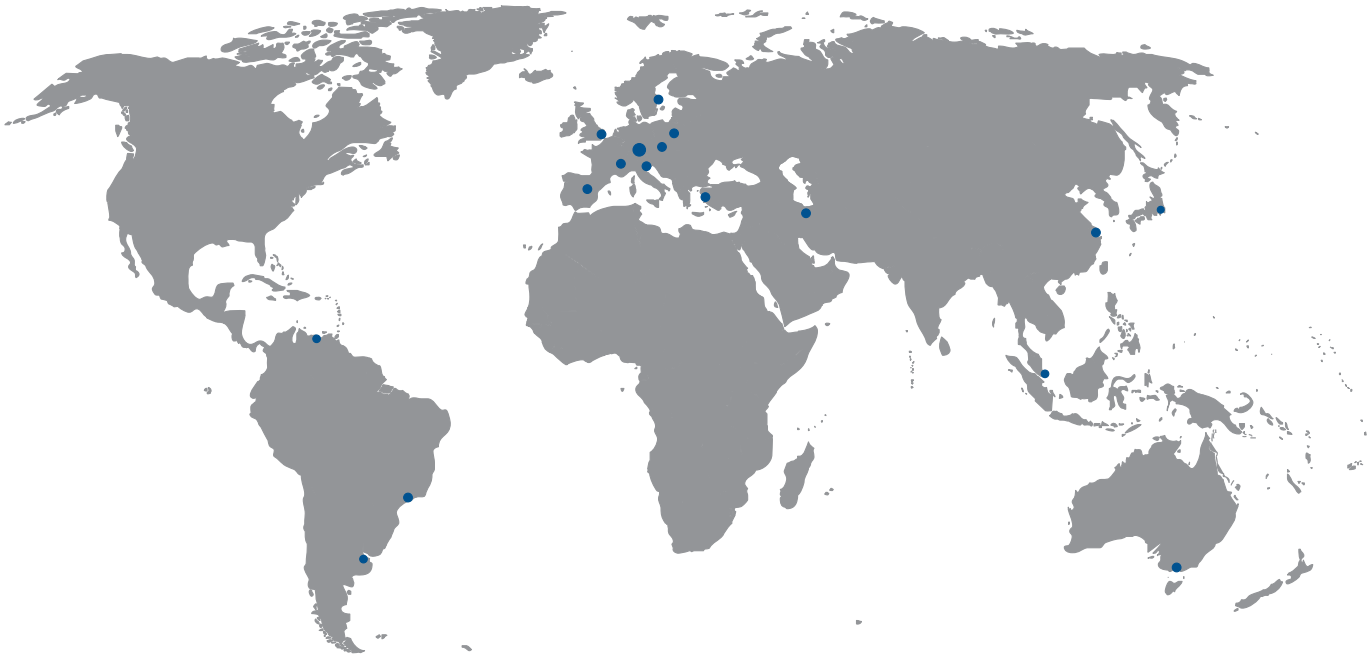
North-East Germany
Thomas Rapkiewicz
Berlin office
Tel. +49 30 / 70170977
Mobil +49 171 / 302 31 28
thomas.rapkiewicz@ziehl-abegg.de

Germany West
Ludwig Semmler
41238 Mönchengladbach
Phone +49 2166 / 13 94 22
Mobile +49 160 / 74 23 631
Fax +49 2166 / 13 94 33
ludwig.semmler@ziehl-abegg.de

Germany South
Michael Hase
74257 Untereisesheim
Phone +49 7132 / 34 13 8 51
Mobile +49 171 / 725 46 33
Fax +49 7132 / 34 13 856
michael.hase@ziehl-abegg.de

ZIEHL-ABEGG global

Subsidiaries, sales partners



Argentina
supported by
ZIEHL-ABEGG do Brasil Imp.
BRASIL

Australia
ZIEHL-ABEGG Australia Pty. Ltd.
181 Calarco Drive
Derrimut Victoria 3030
AUSTRALIA
Phone +61 399 310 899
Fax +61 399 310 499
www.ziehl-abegg.com.au
steve.chaplin@ziehl-abegg.com.au

Austria
supported by
sales representative
Michael Hase
74257 Untereisesheim
GERMANY
Phone +49 7132 34 13 851
Fax +49 7132 34 13 856
Mobile +49 171 725 46 33
www.ziehl-abegg.de
michael.hase@ziehl-abegg.de

Belgium
supported by
sales representative
Ludwig Semmler
41238 Mönchengladbach
GERMANY
Phone +49 2166 139 422
Fax +49 2166 139 433
Mobile +49 160 742 363 1
www.ziehl-abegg.de
ludwig.semmler@ziehl-abegg.de

Brasil
Ziehl-Abegg do Brasil Imp., Exp. e Com. de Equipamentos de Ventilação Ltda.
Rua Osasco, 1.295
Centro Empresarial Anhanguera
Cajamar - S.P. - CEP 07753-040
BRASIL
Phone +55 11 2872 2042
Mobile +55 11 97691 2194
www.ziehl-abegg.com.br
gustavo.binotti@ziehl-abegg.com.br

China
ZIEHL-ABEGG Mechanical and Electrical
Equipment (Shanghai) Co. Ltd.
No. 65 Hong Mu Dan Road
Xinbang Industry Zone
Songjiang District
Shanghai 201605
CHINA
Phone +86 159 2135 8323
Fax +86 21 678 91037
www.ziehl-abegg.cn
williamwang@ziehl-abegg.com.cn

Chile
supported by
ZIEHL-ABEGG do Brasil Imp.,
BRASIL

Colombia
supported by
ZIEHL-ABEGG do Brasil Imp.
BRASIL

Czech Republic
ZIEHL-ABEGG s.r.o.
Skrobárenská 484/8
617 00 BRNO
Czech REPUBLIC
Phone +420 545 421 694
Fax +420 545 421 699
www.ziehl-abegg.cz
tomas.riha@ziehl-abegg.cz

Denmark
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

Finland
supported by
ZIEHL-ABEGG Sverige AB
SWEDEN

France
ZIEHL-ABEGG France S.A.R.L.
Rue de la gare
01800 VILLIEU
FRANCE
Phone +33 474 463 494
Fax +33 970 612 038
www.ziehl-abegg.fr
p.valette@ziehl-abegg.fr

Great Britain
ZIEHL-ABEGG UK Ltd.
Springfield Business Park
Lonebarn Link, Unit 1
CHELMSFORD
ESSEX CM2 5AR
GREAT BRITAIN
Phone +44 1245 4490-10
Fax +44 1245 4490-11
www.ziehl-abegg.co.uk
tony.moss@ziehl-abegg.co.uk

Hungary
supported by
ZIEHL-ABEGG s.r.o.
Czech REPUBLIC

Iran
Sigma Elevator Co. Ltd.
Unit 101, No. 3, 19th Alley,
Southern Gandhi St.
Teheran 15178-65311
Islamic Republic of Iran
IRAN
Phone +98 21 88 67 69 12
Fax +98 21 88 19 07 65
http://www.sigma-elevator.ir
commercial@sigma-elevator.ir

Iraq
ALSORROR ELEVATORS CO.LTD
AL jazair Street, Municipalities intersection
61030 BASRA
Republic of IRAQ
Phone +962 7755 557 33
www.alsorrorelevators.com
manager@alsorrorelevators.com

ZIEHL-ABEGG global

Subsidiaries, sales partners

Ireland
supported by
ZIEHL-ABEGG UK Ltd.
GREAT BRITAIN

Italy
ZIEHL-ABEGG Italia S.r.l.
Via Primo Maggio 10
30031 Dolo (VE)
ITALY
Phone +39 035 248 082
Fax +39 041 5130 324
www.ziehl-abegg.it
giovanni.rolla@ziehl-abegg.it

Japan
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

Mexico
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

Netherlands
supported by
sales representative
Ludwig Semmler
41238 Mönchengladbach
GERMANY
Phone +49 2166 / 13 94 22
Mobile +49 160 / 74 23 631
Fax +49 2166 / 13 94 33
www.ziehl-abegg.de
ludwig.semmler@ziehl-abegg.de

North Africa
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

Norway
supported by
ZIEHL-ABEGG Sverige AB
SWEDEN

Peru
supported by
ZIEHL-ABEGG do Brasil Imp.,
BRASIL

Poland
ZIEHL-ABEGG Polska Sp.z.o.o.
Wojska Polskiego 7
05-850 Macierzysz
POLAND
Phone +48 22 24 52 99 0
Fax +48 22 66 40 134
www.ziehl-abegg.pl
michal.kurylek@ziehl-abegg.pl

Portugal
supported by
ZIEHL-ABEGG Ibérica S.L.
SPAIN

Russia
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

Saudi Arabia
Abdulrahim Alsalmi Elevators
P.O. Box 11430
21453 Jeddah
KINGDOM OF SAUDI ARABIA
Phone +966 5047 197 63
Mobile +966 5547 799 79
www.eitasa.com
alsalmi@eitasa.com

Singapore
ZIEHL-ABEGG SEA Pte. Ltd.
57 Ubi Avenue 1
#05-04 Ubi Centre
Singapore 408936
SINGAPORE
Phone +65 67 48 25 87
Fax +65 67 48 73 57
www.ziehl-abegg.sg
philippe.chiang@ziehl-abegg.sg

Slovakia
supported by
ZIEHL-ABEGG s.r.o.
Czech REPUBLIC

Slovenia
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

South Africa
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

South Korea
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

Spain
ZIEHL-ABEGG Ibérica S.L.
C/Calidad 58
Poligono Industrial Los Olivos
28906 GETAFE (MADRID)
SPAIN
Phone +34 91 295 6278
Fax +34 91 295 3014
www.ziehl-abegg.es
javier.garcia@ziehl-abegg.es

Sweden
ZIEHL-ABEGG Sverige AB
Kvartsgatan 11
749 40 Enköping
SWEDEN
Phone +46 171 8588-0
Fax +46 171 8588-1
www.ziehl-abegg.se
niklas.kling@ziehl-abegg.se

Switzerland
supported by
sales representative
Michael Hase
74257 Untereisesheim
GERMANY
Phone +49 7132 / 34 13 8 51
Mobile +49 171 / 725 46 33
Fax +49 7132 / 34 13 856
www.ziehl-abegg.de
michael.hase@ziehl-abegg.de

Taiwan
supported by
ZIEHL-ABEGG Mechanical and
Electrical Equipment (Shanghai)
Co. Ltd.
CHINA

Turkey
ZIEHL-ABEGG Vantilator ve
Motor
San ve Tic. Ltd. Sti.
Atatürk Mah. Firat Bulvari
Gardenya-3 Plaza
Kat:3 Ofis:D17
34758 ATAŞEHIR-İSTANBUL
TURKEY
Phone +90 216 580 82 50
Mobil +90 532 308 96 74
Fax +90 216 580 9530
www.ziehl-abegg.com.tr
hakan.yuksel@ziehl-abegg.
com.tr

Ukraine
supported by
ZIEHL-ABEGG Polska Sp. Z.o.o.
u.
POLAND

USA
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

Venezuela
ZIEHL-ABEGG SE
Günther-Ziehl-Straße 1
74635 Kupferzell
GERMANY
Phone +49 7940 16-100
www.ziehl-abegg.de
drives@ziehl-abegg.de

General notes

The information and data contained in the catalogue have been compiled according to our best knowledge and do not release you from your obligation to check the products contained therein for their actual suitability for your intended application.

ZIEHL-ABEGG SE reserve the right to change dimensions and designs in the interests of technical progress. Necessary corrections to the catalogue data will be updated continuously on our Web site.

The customer is obliged to provide the supplier with general data about the purpose, installation type, operating conditions and other conditions to be observed if he does not refer to catalogue data in the order.

Copyright

ZIEHL-ABEGG SE reserves in its entirety the copyright of this catalogue. The catalogue is intended for proper use as intended and neither the catalogue, its content nor extracts may be passed on to third parties without our express written consent.

The Royal League

© ZIEHL-ABEGG SE - 00703468 - MA - 10/2015 - 3.000 - Maurer Druck - Subject to technical modifications

ZIEHL-ABEGG

ZIEHL-ABEGG SE Heinz-Ziehl-Straße D-74653 Künzelsau +49 (0) 79 40 / 16 - 0 info@ziehl-abegg.com ziehl-abegg.com