

Twiflex

Warner Electric

Power Transmission Solutions for the Elevator Market



Power Transmission Solutions for the Elevator Market

ALTRA MOTION PROVIDES POWER TRANSMISSION SOLUTIONS FOR THE ELEVATOR MARKET

Warner Electric and Twiflex, both part of Altra Motion, are leading designers and manufacturers of intelligent braking technologies for the global elevator and escalator industries.

Altra offers extensive application expertise together with world-class engineering capability. We analyze every application in order to provide efficient, cost-effective solutions to our customers. Altra elevator braking systems have a reputation for exceptional performance and reliability with major elevator OEM's in the US, Europe and China.



A wide range of electrically released brakes and hydraulically-actuated caliper brakes are specifically designed for use on passenger and freight elevators featuring geared and gearless traction machines as well as modernization/retrofit applications. Other custom applications include heavy duty elevators and escalators such as those used in the world's tallest building, deepest mine shaft, and busiest metro stations.

www.AltraElevators.com

WARNER ELECTRIC INNOVATIONS FOR ELEVATOR BRAKES

NEW



WES

Contactless Warner Electric Sensor
Monitoring solution for elevator applications

Pages 3-4

NEW



W134

Friction Material
Advanced friction material technology for elevators

Pages 5-6

THE WARNER ELECTRIC/TWIFLEX FAMILY OF ELEVATOR BRAKES



ERS FENIX 08

Electrically Released Brake
To prevent ascending car overspeed and unintended movement

Pages 7-8



ERS VAR 15

Electrically Released Brake
Modular and redundant brake for gearless machines

Pages 17-18



ERS FENIX 09

Electrically Released Brake
Designed to offer a double braking system

Pages 9-10



ERS VAR 11-01

Electrically Released Brake
Modular and redundant brake for gearless machines

Pages 19-20



ERS FENIX 10

Electrically Released Brake
To prevent ascending car overspeed and unintended movement

Pages 11-12



ERS VAR 12

Electrically Released Brake
Modular and redundant brake for gearless machines

Pages 21-22



ERS VAR 07

Electrically Released Brake
Redundant brake for gearless machines

Pages 13-14



ERS VAR 14

Electrically Released Brake
To prevent ascending car overspeed for retrofit and modernization

Pages 23-24

NEW DESIGN



ERS VAR 07-02

Electrically Released Brake
Redundant brake for gearless machines

Pages 15-16



V-Series

Hydraulically Released Brakes
Caliper braking systems for high rise buildings and heavy duty escalators

Pages 25-26

WES for the Elevator Market



Elevator Applications

- Gearless Motors
- Gear Motors

CONTACTLESS MONITORING SOLUTION FOR ELEVATORS

NEW

Warner Electric Sensor (WES)

The WES is a contactless monitoring solution, providing reliable detection of the smallest strokes, especially on spring applied brakes with noise damping systems. With no sensitive mechanical parts, it outmatches the electromechanical solutions by far regarding functional safety and lifecycle expectancy.

- Compact design
- Accurate sensing :
Hysteresis < 0.05 mm over the
full range of temperature
- NPN output (integrated pull-up resistor)
- NO/NC electrical function compatible with standard
mechanical μ -switches (depending on Voltage and
Current)
- Analog output for wear sensor
- Operating temperature -40°C to 105°C

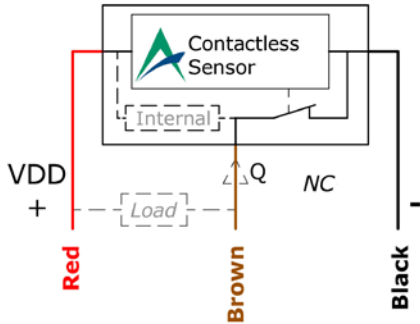


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Altra Industrial Motion

WES

VERSION 1

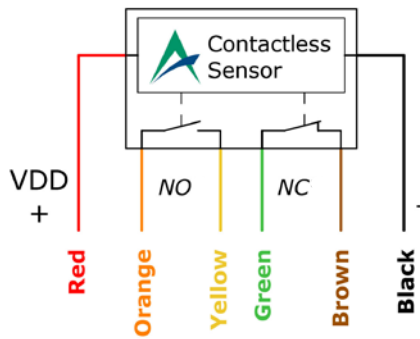


State Detection - NC

NPN Output (Sink) - 3 wires

Parameter	Symbol	Values			Note/Conditions
		Min	Typ	Max	
Supply Voltage	VDD	4 VDC	24 VDC	30 VDC	Reverse Voltage Protected
Supply Current				10 mA	
Operating Temperature		-40 °C		105 °C	
Output Voltage	Q	0.5 VDC	24 VDC	30 VDC	
Output Current	Q	< 1mA		30 mA	DC Current ESD protection to IEC 61000-4-2, level 4
Output Saturation Voltage				0.6 V	
Output Fall Time		50 µs			Depending on Load
Output Rise Time		50 µs			

VERSION 2

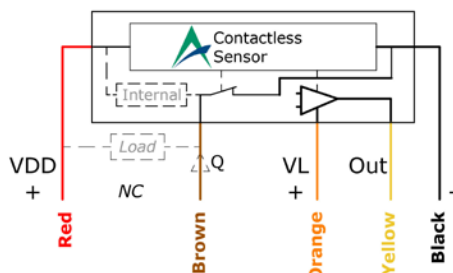


State Detection - NO/NC

SSR Outputs - 6 wires

Parameter	Symbol	Values			Note/Conditions
		Min	Typ	Max	
Supply Voltage	VDD	4 VDC	24 VDC	30 VDC	Reverse Voltage Protected
Supply Current	IDD			25 mA	
Operating Temperature		-40 °C		85 °C	
Output Voltage				60 VDC Peak	AC or DC allowed
Output LOAD Current				100 mA	AC or DC allowed
Output ON Resistance				16Ω	
Output OFF State Leakage Current				1 µA	
Output Fall Time				10 ms	VL = 10V
Output Rise Time				10 ms	

VERSION 3



State Detection - NC + Brake Air Gap Measurement

NPN Output (Sink) - Analog Output - Ratiometric 5 VDC output - 5 wires

Parameter	Symbol	Values			Note/Conditions
		Min	Typ	Max	
Supply Voltage	VDD	4 VDC	24 VDC	30 VDC	Reverse Voltage Protected
Supply Voltage	VL	4.5 VDC	5 VDC	5.5 VDC	Reverse Voltage Protected
Supply Current				10 mA	
Operating Temperature		-40 °C		105 °C	
Output Voltage	Q	0.5 VDC	24 VDC	30 VDC	
Output Current	Q	< 1 mA		30 mA	DC Current ESD protection to IEC 61000-4-2, level 4
Output Voltage	Out	0.375 VDC	2.5 VDC	4.625 VDC	Out(Typ) = -S*Airgap(mm) + 2,5
Output Current	Out			1 mA	
Output Voltage Sensitivity	S	0.95 V/mm	1 V/mm	1.048 V/mm	

W134 for the Elevator Market

FRICION MATERIAL FOR ELEVATORS

NEW

Advanced Friction Material Technology

The Warner Electric engineering team drew on its extensive brake technology knowledge, combined with vast elevator application experience, to develop the new W134 friction material.

The new addition to the Warner Electric friction material family is designed to maintain consistent torque during both static braking and dynamic braking over a large range of rotation speeds with no torque overshoot at braking engagement. Consistent torque stability is also maintained in extreme temperatures and other challenging environmental conditions.

The W134 friction material is suitable for use in all elevator technologies, including belt-driven systems where torque stability is a critical concern.

The friction material was put through a rigorous battery of in-house testing to ensure that it's best-in-class performance is well-suited for a wide range of electrified powertrain applications.

Elevator Applications

- Gearless Motors
- Gear Motors

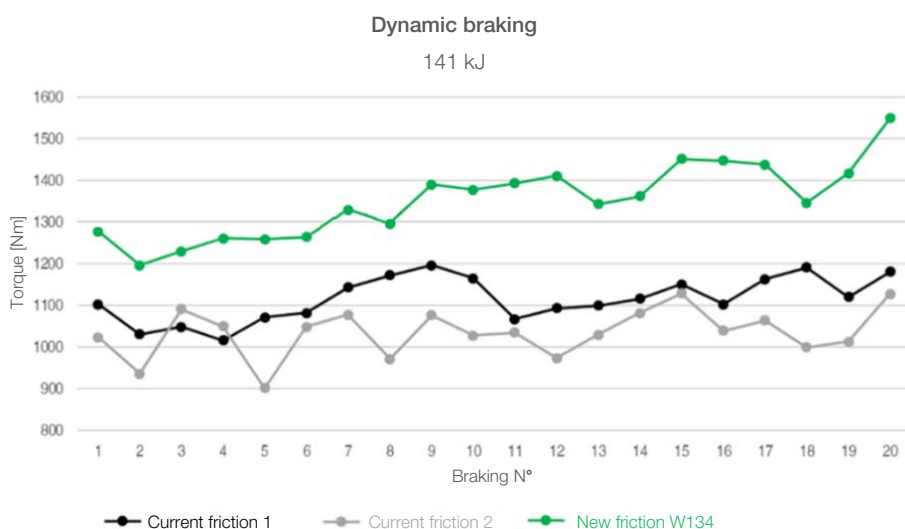
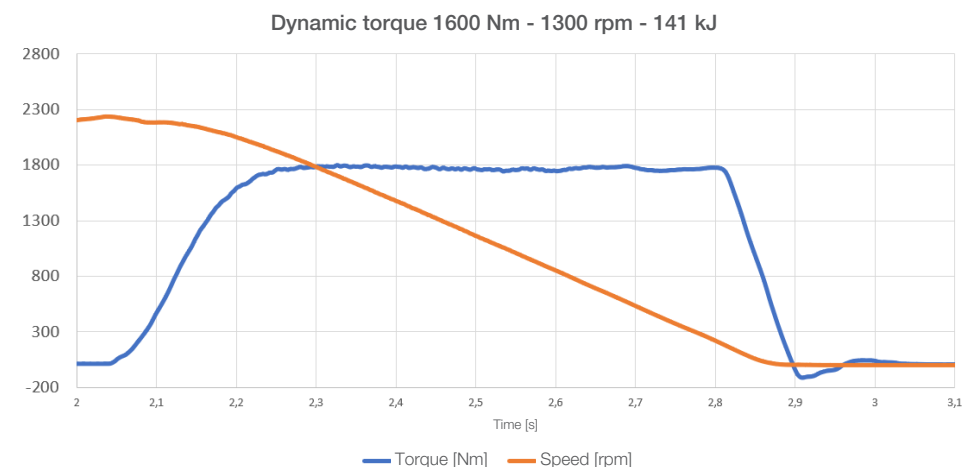
	Current Lining	New Friction W134
Energy per disc	57 kJ max	190 kJ
Max speed	900 rpm	1300 rpm
Max torque < 160%	100% adjusted brake	No adjustment
Holding torque	-10% / -15%	None
Climate	10% impact	None
Day + 1	Stability Recheck Warner	None

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W134

- Superior torque stability during both static braking and dynamic braking
- Torque stability is maintained in extreme temperatures and other challenging environmental conditions
- Suitable for all elevator technologies, including belt-driven systems where torque stability is critical
- 100% organic-based, non-metallic add-ons
- Excellent energy dissipation



ERS FENIX 08 for the Elevator Market



Elevator Applications

- Gearless Motors
- Gear Motors

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

Electrically Released Brake

The ERS FENIX 08 is an electrically released brake that is intended to prevent ascending car overspeed and unintended movement. The ERS FENIX 08 is suitable for new build gear motors to meet EN81-20&50 conformity.

- Complies with Directive 2014/33/EU
- Compact design with torque from 5Nm up to 2300Nm
- Single magnet and single friction disc
- Available with optional dustcover and hand release
- Low noise operation through the life of the brake
- Very easy installation
- Micro switch equipped
- Nearly maintenance free (further information in our service manual)
- Overexcitation (dual voltage) or single voltage

Customer drawing available on request

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ERS FENIX

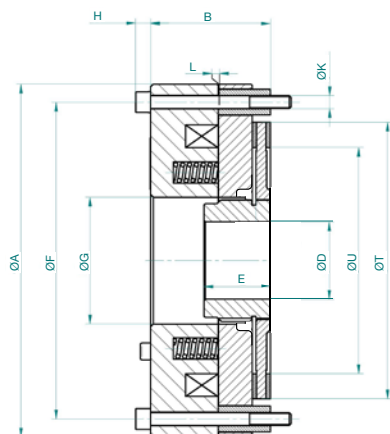
ERS FENIX

Brake Configuration		Nominal Torque of Brake size / 100		Real Selling Torque of Bake	
08	1 Magnet & 1 Disc	0.05	5 Nm	06	600 Nm
09	2 Magnets & 2 Discs	0.10	10 Nm	10	1000 Nm
10	1 Magnet & 2 Discs	0.20	20 Nm	12	1200 Nm
		0.35	35 Nm	15	1500 Nm
		0.60	60 Nm	20	2000 Nm
		01	100 Nm	23	2300 Nm
		02	200 Nm	30	3000 Nm
		03	300 Nm	46	4600 Nm
		04	400 Nm		

Example of name: **ERS FENIX 08 10-1000**

(Brake with 1 magnets, 1 disc, nominal torque of size = 1000Nm, real torque of size = 1000Nm)

ERS FENIX 08

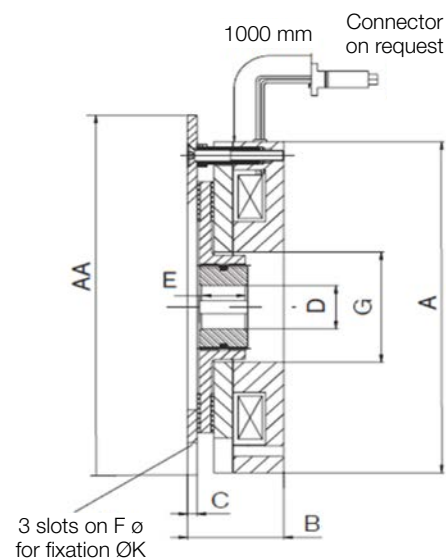


Voltage (VDC)

With Overexcitation		Without Overexcitation
Holding Voltage	Overexcitation Voltage	Single Voltage
24	48	24
52	103.5	103.5
103.5	207	207
ED=50%		

Size		01	02	03	06	10	15	23							
High Speed High Energy	Nm	70	130	150	250	200	400	575	800	900	1350	1500	2000	1700	2500
Cert. Max Speed	RPM	3000	1200	2800	1000	2200	800	1900	600	1500	500	1400	400	1200	400
A	mm	166		194		234		274		332		365		395	
B	mm	75		81		78		98		91		113		125	
D Standard H7	mm	Can vary depending on customer specifications													
E	mm														
F	mm	145		170		214		250		303		330		360	
G	mm	59		70		80		98		145		145		188	
H	mm	9.4		9.4		9.4		13.1		13.1		17.3		17.3	
K	-	3xM8		3xM8		6xM8		3xM12		4xM12		4xM16		4xM16	
T	mm	125		150		194		222		275		296		325	
U	mm	90		116		145		175		230		230		210	
Hand- Release	-	OPTION													
Weight	Kg	10		14		21		34		41		69		85	

Size		0.05		0.10		0.20		0.35		0.60	
High Speed High Energy	Nm	5	7.5	10	15	20	30	35	50	60	75
Cert. Max Speed	RPM	5000	2000	5000	2000	4600	1700	4000	1500	3500	1200
A	mm	86		98		133		153		164	
B	mm	53		54		52		52		60	
C	mm	3.2		3.2		6		6		6	
D	mm	Can vary depending on customer specifications									
E	mm										
F	mm	72		90		112		132		145	
G	mm	26		31		43.5		51		52	
ØK	mm	3xM4		3xM5		3xM5		3xM6		3xM8	
AA	mm	86		98		133		153		164	
T	mm	60		77		96		116		125	
U	mm	48		60		68		80		90.5	
Hand release	-	OPTION									
Weight	Kg	1.7		2		4		5.4		6.7	



ERS FENIX 09 for the Elevator Market



Elevator Applications

- Gearless Motors
- Gear Motors

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

Electrically Released Failsafe Brake

The ERS FENIX 09 is an electrically released failsafe brake that operates in static and emergency stops that is designed to offer a double braking system. The ERS FENIX 09 is particularly suitable for gearless motors to meet EN81-20&50 conformity.

- Complies with Directive 2014/33/EU
- Standard torque capacity from 2x5Nm up to 2x2300Nm
- 2 magnets and 2 friction discs
- Available with optional dustcover and hand release
- Low noise operation through the life of the brake
- Very easy installation
- Micro switch equipped
- Nearly maintenance free (further information in our service manual)
- Overexcitation (dual voltage) or single voltage

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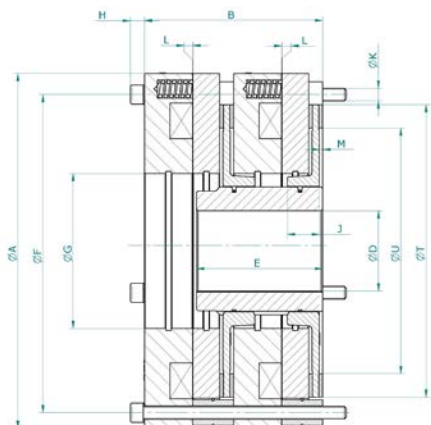
ERS FENIX

Brake Configuration		Nominal Torque of Brake size / 100		Real Selling Torque of Brake
Code	Description	Code	Value	
08	1 Magnet & 1 Disc	0.05	5 Nm	
09	2 Magnets & 2 Discs	0.10	10 Nm	
10	1 Magnet & 2 Discs	0.20	20 Nm	
		0.35	35 Nm	
		0.60	60 Nm	
		01	100 Nm	
		02	200 Nm	
		03	300 Nm	
		04	400 Nm	
		06	600 Nm	
		10	1000 Nm	
		12	1200 Nm	
		15	1500 Nm	
		20	2000 Nm	
		23	2300 Nm	
		30	3000 Nm	
		46	4600 Nm	

Example of name: **ERS FENIX 09 10-1000**

(Brake with 2 magnets, 2 disc, nominal torque of size = 1000Nm, real torque of size = 1000Nm)

ERS FENIX 09

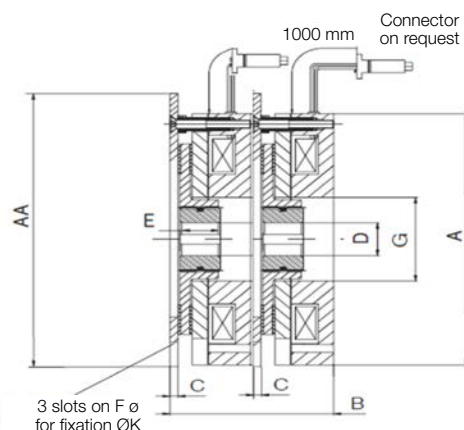


Voltage (VDC)

With Overexcitation		Without Overexcitation
Holding Voltage	Overexcitation Voltage	Single Voltage
24	48	24
52	103.5	103.5
103.5	207	207
ED=50%		

Size		01	02	03	06	10	15	23							
High Speed I High Energy	Nm	2x 70	2x 130	2x 150	2x 250	2x 200	2x 400	2x 575	2x 800	2x 900	2x 1350	2x 1500	2x 2000	2x 1700	2x 2500
Cert. Max Speed	RPM	3000	1200	2800	1000	2200	800	1300	600	1500	500	1400	400	1200	400
A	mm	166	194	234	274	332	365	395							
B	mm	151	162	156	196	182	226	250							
D Standard H7	mm	Can vary depending on customer specifications													
E	mm														
F	mm	145	170	214	250	303	330	360							
G	mm	59	70	80	98	145	145	188							
H	mm	9.4	9.4	9.4	13.1	13.1	17.3	17.3							
J	mm	13	13	13	30	30	30	28.5							
K	-	3xM8	3xM8	6xM8	3xM12	4xM12	4xM16	4xM16							
T	mm	125	150	194	222	275	296	325							
U	mm	90	116	145	175	230	230	210							
Hand- Release	-	OPTION													
Weight	Kg	20	28	42	68	82	138	170							

Size		0.05	0.10	0.20	0.35	0.60					
High Speed I High Energy	Nm	5	7.5	10	15	20	30	35	50	60	75
Cert. Max Speed	RPM	5000	2000	5000	2000	4600	1700	4000	1500	3500	1200
A	mm	86		98		133		153		164	
B	mm	106		108		104		104		120	
C	mm	3.2		3.2		6		6		6	
D	mm	Can vary depending on customer specifications									
E	mm										
F	mm	72		90		112		132		145	
G	mm	26		31		43.5		51		52	
ØK	mm	3xM4		3xM5		3xM5		3xM6		3xM8	
AA	mm	86		98		133		153		164	
T	mm	60		77		96		116		125	
U	mm	48		60		68		80		90.5	
Hand release	-	OPTION									
Weight	Kg	3.4		4		8		10.8		13.4	



ERS FENIX 10 for the Elevator Market



Elevator Applications

- Gearless Motors
- Gear Motors

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

Electrically Released Brake

The ERS FENIX 10 is an electrically released brake that is intended to prevent ascending car overspeed and unintended movement. The ERS FENIX 10 is suitable for new build gear motors to meet EN81-20&50 conformity.

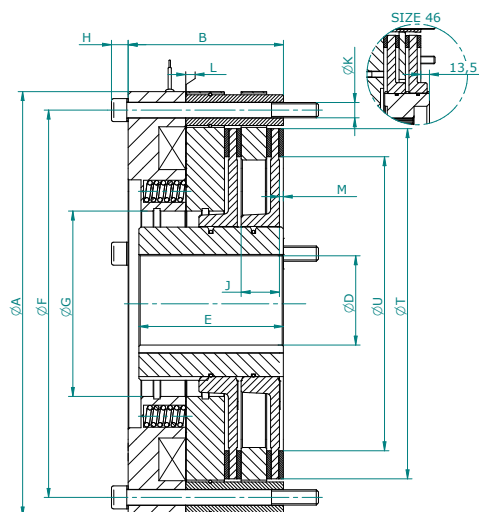
- Complies with Directive 2014/33/EU
- Compact design with torque from 200Nm up to 4600Nm
- Single magnet and two friction disc
- Available with optional dustcover and hand release
- Low noise operation through the life of the brake
- Very easy installation
- Micro switch equipped
- Nearly maintenance free (further information in our service manual)
- Overexcitation (dual voltage) or single voltage

Customer drawing available on request

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ERS FENIX 10



Voltage (VDC)

With Overexcitation		Without Overexcitation
Holding Voltage	Overexcitation Voltage	Single Voltage
24	48	24
52	103.5	103.5
103.5	207	207
ED=50%		

Size		02		04		06		12		20		30		46	
High Speed / High Energy	Nm	140	260	300	500	400	800	1150	1600	1800	2700	3000	4000	3400	5000
Cert. Max Speed	RPM	2600	1200	2800	1000	2200	800	1900	600	1500	500	1400	400	1200	400
A	mm	166		194		234		274		332		365		395	
B	mm	98		103		109		124		121		151		170	
D Standard H7	mm	Can vary depending on customer specifications													
E	mm														
F	mm	145		170		214		250		303		330		360	
G	mm	59		70		80		98		145		145		188	
H	mm	9.4		9.4		9.4		13.1		13.1		17.3		17.3	
J	mm	16		13		13		30		30		30		28.5	
K	mm	3xM8		3xM8		6xM8		3xM12		4xM12		4xM16		4xM16	
L Nominal	mm	0.4		0.4		0.4		0.4		0.4		0.5		0.5	
T	mm	125		150		194		222		275		296		325	
U	-	90		116		145		175		230		230		210	
Hand-Release	mm	OPTION													
Weight	kg	12		17.3		25.2		38		50		76		104	

ERS FENIX

Brake Configuration	Nominal Torque of Brake size / 100	Real Selling Torque of Brake
08 1 Magnet & 1 Disc	0.05 5 Nm	
09 2 Magnets & 2 Discs	0.10 10 Nm	
10 1 Magnet & 2 Discs	0.20 20 Nm	
	0.35 35 Nm	
	0.60 60 Nm	
	01 100 Nm	
	02 200 Nm	
	03 300 Nm	
	04 400 Nm	
	06 600 Nm	
	10 1000 Nm	
	12 1200 Nm	
	15 1500 Nm	
	20 2000 Nm	
	23 2300 Nm	
	30 3000 Nm	
	46 4600 Nm	

Example of name: **ERS FENIX 10 12-1200**

(Brake with 1 magnets, 2 discs, nominal torque of size = 1200Nm, real torque of size = 1200Nm)

ERS VAR 07 for the Elevator Market

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

Electrically Released Failsafe Brake

The ERS VAR 07, an electrically released failsafe brake that operates in static and emergency stops, is designed to offer a double braking system in a very compact dimension. The VAR 07 is particularly suitable for gearless motors with limited space

- Redundant system in accordance with EN 81-20/50
- Complies with Directive 2014/33/EU
- Extremely compact, round design
- Compact design with torque from 300Nm up to 900Nm
- Optional hand-release, mountable by customer
- Available with optional dustcover
- 1 shell / 2 independent braking circuits / 1 disc
- Low noise operation through the life of the brake
- Very easy installation
- Micro switch equipped
- Nearly maintenance free (further information in our service manual)
- Overexcitation (dual voltage) or single voltage

Customer drawing available on request



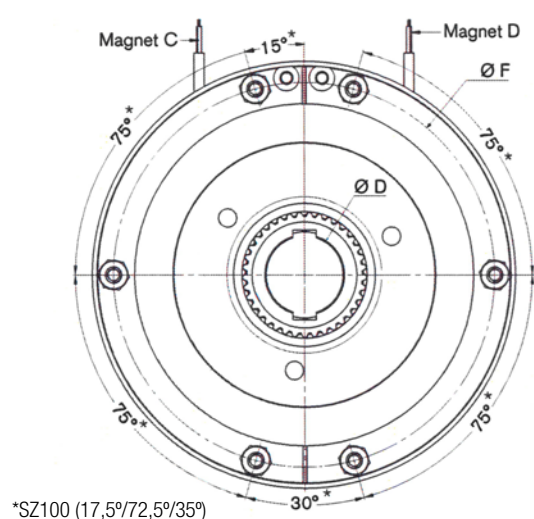
Elevator Applications

- Gearless Motors

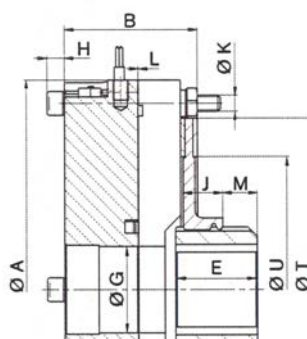
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ERS VAR 07



*SZ300 (15°/75°/82.5°/15°/82.5°/75°)
 *SZ500 (15°/57°/100.5°/15°/64.5°/93°)



Voltage (VDC)

With Overexcitation		Without Overexcitation
Holding Voltage	Overexcitation Voltage	Single Voltage
24	48	24
52	103.5	103.5
103.5	207	207
ED=50%		

Size		300		420		600		800	
Standard Torque	Nm	2x315	2x350	2x350	2x450	2x500	2x600	2x800	2x900
Cert. Max Speed	RPM	600	300	600	300	600	300	500	300
A	mm	254		273		303		315	
B	mm	79		86		95		101	
D Standard H7	mm	Can vary depending on customer specifications							
E	mm								
M	mm								
F	mm	236		255		275		288	
G	mm	65		65		65		65	
H	mm	9.4		9.4		11.6		13.1	
J	mm	34		25		30		32.5	
K	-	6xM8		6xM8		6xM10		6xM12	
L Nominal	mm	0.4		0.4		0.4		0.4	
T	mm	210		233		243		258	
U	mm	175		190		200		200	
Hand- Release	-	OPTION							
Weight	Kg	25		32		42		54	
Inertia	kgcm								
Connection	-	On Request							

ERS VAR 07-02 for the Elevator Market

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

**NEW
DESIGN**

Electrically Released Failsafe Brake

The ERS VAR 07-02, an electrically released failsafe brake that operates in static and emergency stops, is designed to offer a double braking system in a very compact dimension. The VAR 07-02 is particularly suitable for gearless motors with limited space.

- Redundant system in accordance with EN 81-20/50
- Complies with Directive 2014/33/EU
- Extremely compact, round design
- Compact design with torque from 300Nm up to 900Nm
- Optional hand-release, mountable by customer
- Available with optional dustcover
- 1 shell / 2 independent braking circuits / 1 disc
- Low noise operation through the life of the brake
- Very easy installation
- Micro switch equipped
- Nearly maintenance free (further information in our service manual)
- WES sensor integrated with air gap measurement option
- Available with new high energy friction
- Nominal airgap increased
- New PCD



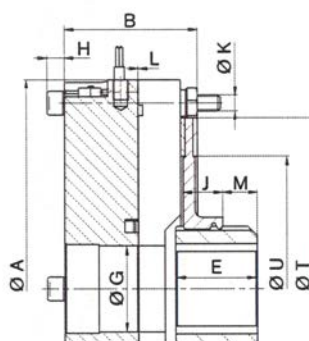
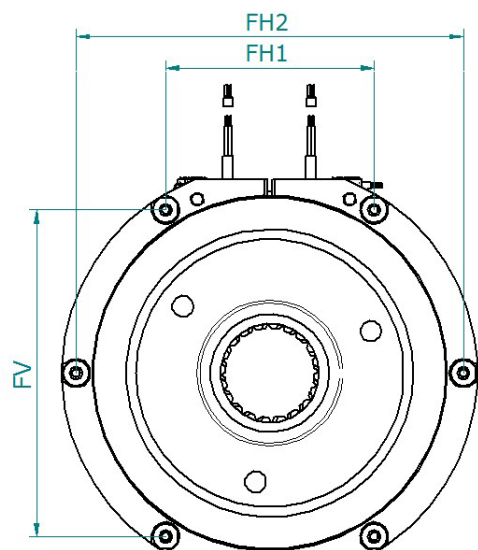
Elevator Applications

- Gearless Motors

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ERS VAR 07-02



Voltage (VDC)

With Overexcitation		Without Overexcitation
Holding Voltage	Overexcitation Voltage	Single Voltage
24	48	24
52	103.5	103.5
103.5	207	207
ED=50%		

Size		2x 200		2x 400	2x 600
Standard Torque	Nm	2x 200	2x 280	In progress	
Cert. Max Speed	RPM	1900			
A	mm	275			
B	mm	83.5			
D Standard H7	mm	On Request			
E	mm				
M	mm				
FH1	mm	138			
FH2	mm	x	256.3		
FV	mm	216			
G	mm	67			
H	mm	9			
J	mm	6			
K	mm	4x M8	6x M8		
L Nominal	mm	0.5			
T	mm	233			
U	mm	190			
Hand-Release	-	OPTION			
Weight	Kg	36			

In progress

ERS VAR 15 for the Elevator Market



Elevator Applications

- Gearless Motors

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

Electrically Released Safety Brake

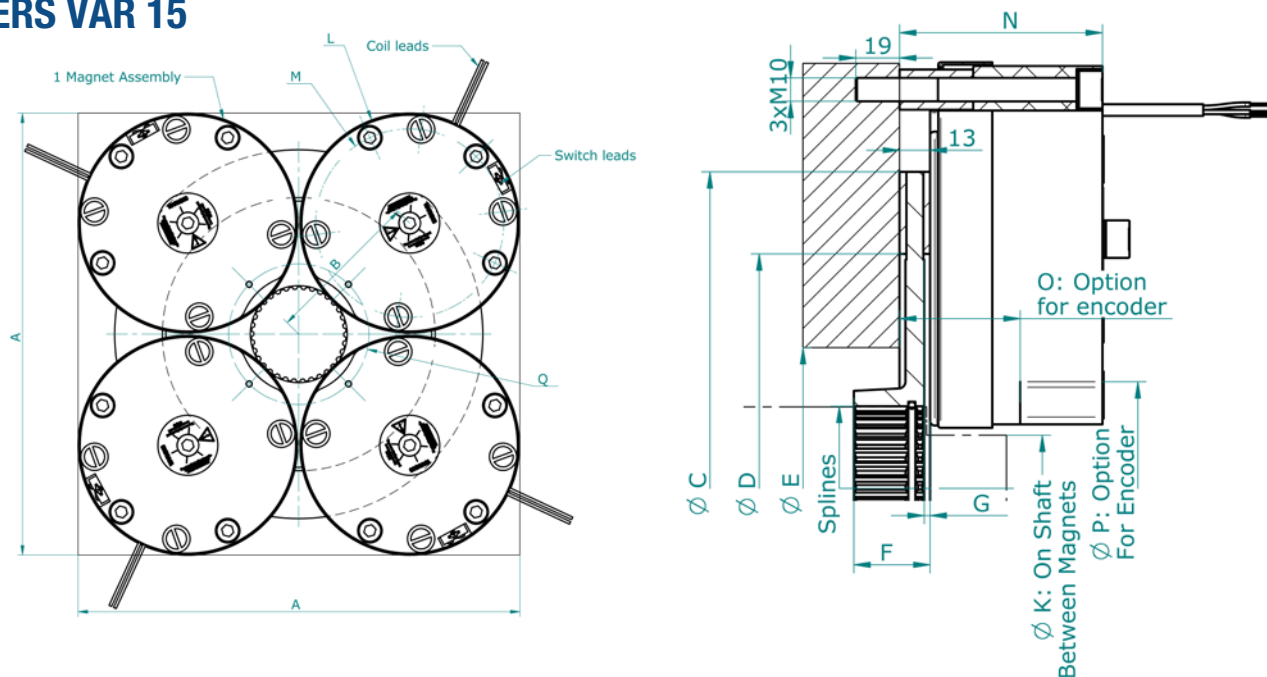
The ERS VAR 15, an electrically released safety brake with fixed magnets and a floating friction disc, is a highly modular braking system for gearless motors.

- Redundant system in accordance with EN 81-20/50 when two or more magnets are used
- Complies with Directive 2014/33/EU
- Compact and modular design: From 2 up to 4 magnets in standard configuration
- Torque Capacity in accordance with diameter of friction disc and number of magnets
- Available with optional hand release
- Low noise operation through the life of the brake
- Very easy installation
- Install directly on the drive housing or additional flange
- Micro switch equipped
- Nearly maintenance free (further information in our service manual)
- Overexcitation (dual voltage) or single voltage

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ERS VAR 15



Characteristics for 1 Magnet Assembly

Size		ERS VAR15-02				ERS VAR15-11			
Friction Disc Ø	mm	237	270	237	270	237	270	237	270
Standard Torque Per Magnet	Nm	250	320	300	350	300**	400**	350	500
Cert. Max. Speed	m/s	6.5	3.25	6.5	3.25	6.15	3.69	6.15	3.69
Cert. Max. Speed	rpm	600	300	500	250	500	300	500	300
A	mm	290	305	292	324				
B	mm	103	112	93	115				
C	mm	237	270	237	270				
D	mm	177	200	177	200				
Emin	mm	100	100	100	100				
F	mm	30	30	30	30				
G	mm	3	3	3	3				
K	mm	59	78	25	69				
L Nominal	mm	143	161						
M	mm	124	138						
N	mm	101	101	86	86				
O (*)	mm	40	40	51	51				
P(*)	mm	83	105	50	90				
Q(*)	-	90	108	59	103				
Hand Release	-	Option							
Weight	Kg	10	11						

(*) Option For Encoder

(**) 2 Magnets Maximum

Voltage (VDC)

With Overexcitation

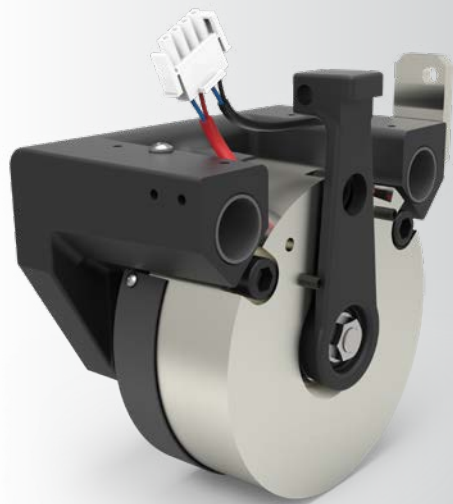
Holding Voltage	Overexcitation Voltage
103.5	207

Without Overexcitation

Single Voltage
207
103.5
24

Tolerances on the supply voltage at the brake terminals +5% / -10% (NF C 79-300).

ERS VAR 11-01 for the Elevator Market



Elevator Applications

- Gearless Motors
- Gear Motors

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

Electrically Released Failsafe Brake Caliper

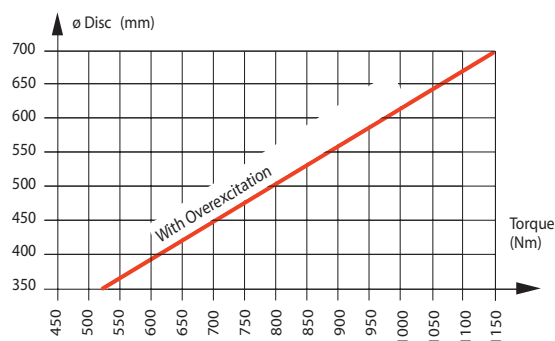
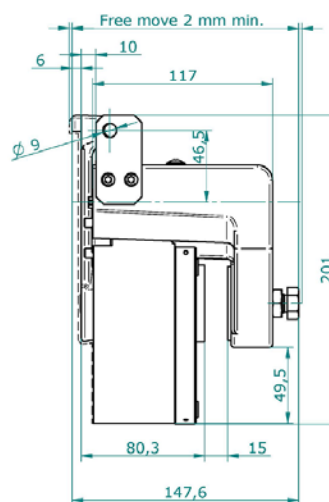
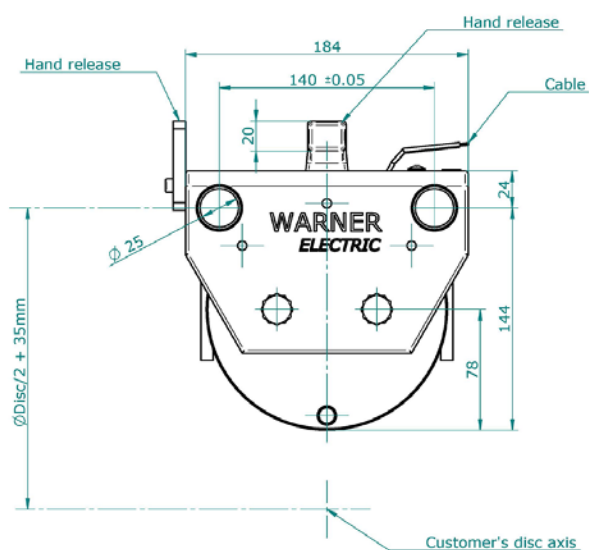
The VAR 11-01 is a highly modular braking system for modern elevators that is particularly suitable for flat gearless motors. The VAR 11-01 operates in static and/or emergency stops.

- Torque according to disc diameter and number of calipers
- Floating magnet and fixed disc
- Complies with Directive 2014/33/EU
- Hand release equipped
- Redundant capability according EN81-20/50 when two or more brakes are used
- Overexcitation (dual voltage)
- Microswitch equipped
- Very easy installation
- Nearly maintenance free (further information in our service manual)
- No airgap adjustment required

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ERS VAR 11-01



Linear speed (outer diameter of disc):
standard up to 15 m/s

Friction material: Steel or grey cast iron

Subject to alteration without prior notice.

Voltage (VDC)

With Overexcitation

Holding Voltage	Overexcitation Voltage
24	48
52	103.5
103.5	207

ED=50%

Tolerances on the supply voltage at the brake terminals
+5% / -10% (NF C 79-300).

ERS VAR 12 for the Elevator Market



Elevator Applications

- Gearless Motors

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

Electrically Released Single Surface Brake

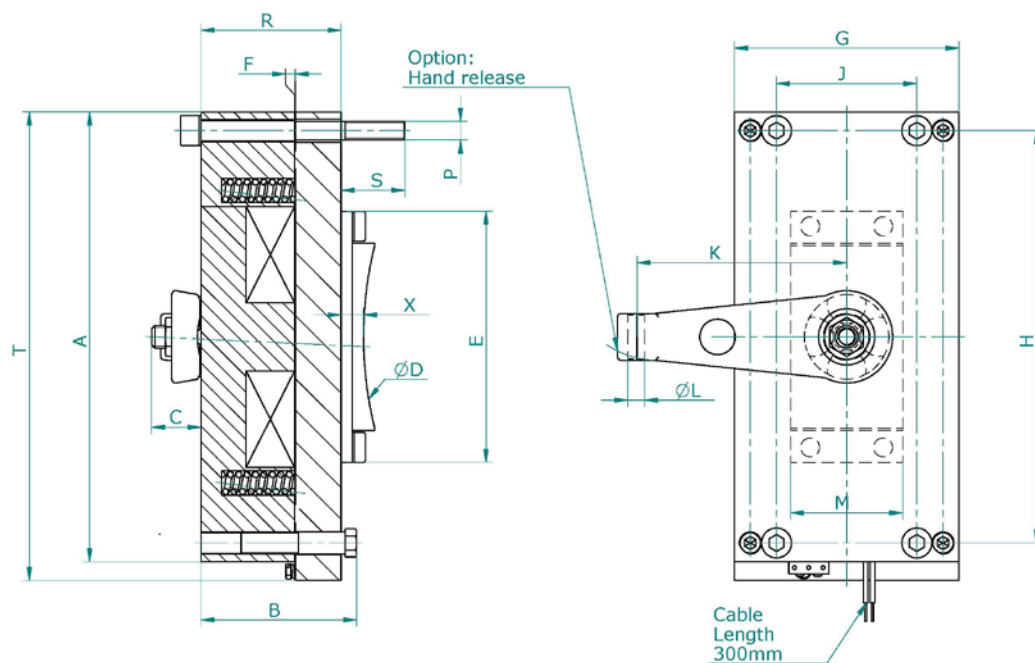
The VAR 12 is a highly modular braking system for modern elevators. With 2 brakes, the braking system complies with EN81-20&50 and protects the elevator against ascending overspeed and unintended movement.

- Complies with Directive 2014/33/EU
- Torque capacity according to drum diameter
- Single voltage
- Hand release upon request
- Redundant capability according EN81-20/50 when two or more brakes are used
- Large braking torques can be achieved by using several brakes
- Very easy installation
- Nearly maintenance free (further information in our service manual)
- Microswitch equipped

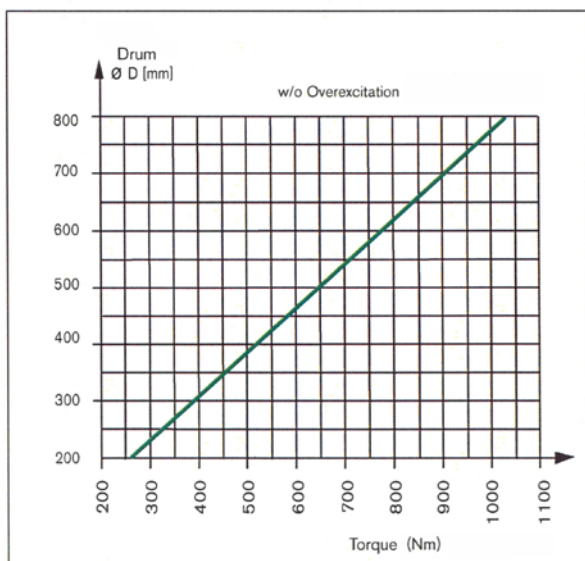
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ERS VAR 12



Tolerances on the supply voltage at the brake terminals =5% / -10% (NFC 79-300).



Linear speed (outer diameter of disc): standard up to 5 m/s
Friction material: Steel

Subject to alteration without prior notice.

VAR		12-03	12-04
A	mm	210	240
B	mm	93	83
C	mm	26	27
E	mm	100	134
F Nominal	mm	0,3	0,3
G	mm	120	120
H	mm	170	220
J	mm	85	75
K	mm	112,5	112,5
L	mm	9	9
M	mm	60	60
P	mm	4 X M10 X 1,5-6G	
R	mm	85	75
S	mm	25	35
T	mm	220	250
X	mm	8	12
Voltage*	VDC	24/207	24/207
ED	%	40	40
Weight	KG	16,5	16,8
Connection		Cable	Cable

Note: D has to be given by the customer.

*Single voltage

ERS VAR 14 for the Elevator Market



Elevator Applications

- Modernization

ELECTRICALLY RELEASED BRAKE FOR ELEVATORS

Sheave-Grip Modular Braking System

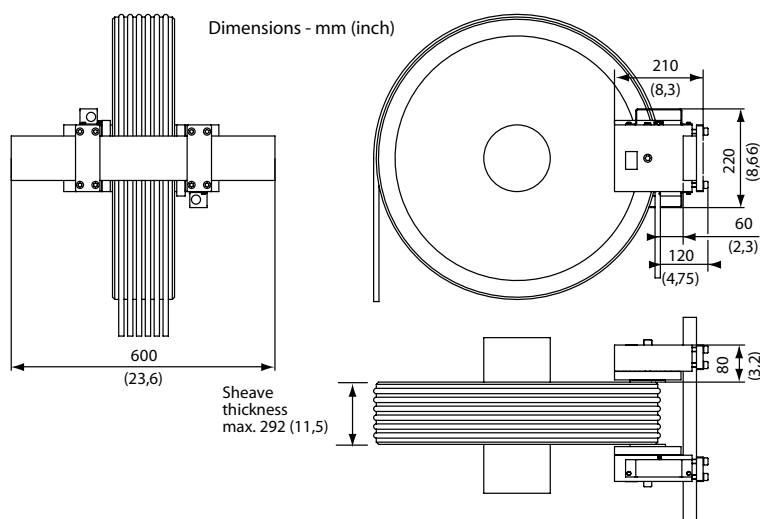
The VAR 14 electrically released brake is designed for modernization of gear motors and operates in static and emergency stops. It has been designed to prevent ascending car overspeed and unintended movement and complies with Section 2.19 ASME A.17.1 and EN81-20&50.

- Complies with Directive 2014/33/EU
- High modular braking system
- Standard braking force up to 6000 N
- Torque according to your sheave diameter
- Acting directly on traction sheave
- Basic configuration : 2 magnets
- Easy to install
- Microswitch equipped
- Nearly maintenance free (further information in our service manual)
- Overexcitation (dual voltage)

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ERS VAR 14



2 Magnets Silent				2 Magnets			
Model	ERS VAR 14-01-S			ERS VAR 14-01			
Part Number	1 12 106842	1 12 106843	1 12 106844	1 12 106847	1 12 106848	1 12 106849	1 12 106850
106850							
Braking Force (magnet A&B)	5000 N	4000 N	3000 N	6000 N	5200 N	4300 N	3500 N
OPTION: Electric connection on the CBC140-5 power supply / Serial connection of the 2 magnets – Part # 2 12 095515							
Nominal voltage	+5%/ - 10%	230 VAC		Dependant on Application			
Nominal current	(holding)	2,2 A					
Overexcitation	(1,5 s)	4,4 A					
Power 20°C	(holding)	116 W					
Overexcitation	(1,5 s)	464 W					
OPTION: Electric connection on the CBC140-5 power supply / Parallel connection of the 2 magnets – Part # 2 12 095516							
Nominal voltage	+5%/ - 10%	115 VAC		Dependant on Application			
Nominal current	(holding)	2,2 A					
Overexcitation	(1,5 s)	4,4 A					
Power 20°C	(holding)	116 W					
Overexcitation	(1,5 s)	464 W					
Electric connection directly on the magnets (data for 1 magnet)							
Nominal voltage	+5%/ - 10%	52 VDC		52 VDC			
Overexcitation	(1,5 s)	103,5 VDC					
Nominal current	(holding)	1,1 A		1,1 A			
Overexcitation	(1,5 s)	2,2 A		4,5 A			
Power 20°C	(holding)	58 W		58 W			
Overexcitation	(1,5 s)	232 W					
ED		50%		100%			
Mass		31 kg (w/o connection rail)		31 kg (w/o connection rail)			
Airgap		0,4 mm		1 mm			
Temperature range	(ambient)	0°C to +40°C		0°C to +40°C			
Magnet insulation		Class F 155°C		Class F 155°C			
Maximum speed		5 m/s (outer sheave dia.)		5 m/s (outer sheave dia.)			
Switch voltage		24 VDC		24 VDC			
Switch current		10 - 100 mA		10 - 100 mA			

Subject to alteration without prior notice.

Twiflex V-Series Disc Brakes for the Elevator Market



Elevator Applications

- Modular Disc Brakes



HYDRAULICALLY RELEASED CALIPER BRAKES FOR ELEVATORS

Hydraulically Released Brakes

The Twiflex V-Series range of caliper braking systems are design for applications within high-rise/high-speed elevator drives and long-travel/mass-transit duty escalators.

- For passenger elevators, they protect against ascending overspeed and unintended movement
- For escalators, they ensure smooth and safe deceleration in the event of power failure or other emergency stop event
- Braking force for spring applied units extends from 17 kN to 119, and beyond
- The modular designs accommodate all disc size options - greater braking torques achievable with multiple units
- Floating versions of each design minimize space-claim and accept large axial disc movements
- Standard and custom hydraulic power supply units available
- 'Soft braking' controllers enhance passenger comfort and safety, achieving consistent deceleration rates regardless of load variation

VCS MK3

Caliper Type	Braking Force kN	Release Pressure bar	Minimum Pressure for Full Retraction bar	Air Gap in. (mm)
VCS62	62	127	159	.079 (2.0)
VCS50	50	101	135	.079 (2.0)
VCS47	47	95	110	.079 (2.0)
VCS41	41	84	99	.079 (2.0)
VCS33	33	68	78	.079 (2.0)
VCS30	30	62	76	.079 (2.0)
VCS23	23	46	54	.079 (2.0)
VCS17	17	35	43	.079 (2.0)

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 **Twiflex®**
Altra Industrial Motion



VCSD

Caliper Type	Braking Force kN	Release Pressure bar	Minimum Pressure for Full Retraction bar	Air Gap in. (mm)
VCSD60	61	124	138	.079 (2.0)
VCSD50	46	94	100	.079 (2.0)
VCSD40	39	80	88	.079 (2.0)
VCSD30	29	59	65	.079 (2.0)
VCSD25	25	52	56	.079 (2.0)
VCSD20	21	44	49	.079 (2.0)
VCSD15	16	32	35	.079 (2.0)
VCSD10	11	22	24	.079 (2.0)

Hydraulically Released Brakes

Application

The V-Series (modular) disc brake range is designed for both static holding and dynamic (emergency) stopping duty. Braking force is applied by springs located in each module and released by hydraulic pressure. Depending on the individual brake model and rating selected a maximum braking force of 119kN can be achieved per brake unit. Should higher forces be needed, multiple calipers or larger units (VSD, VMS) may be used.

Description

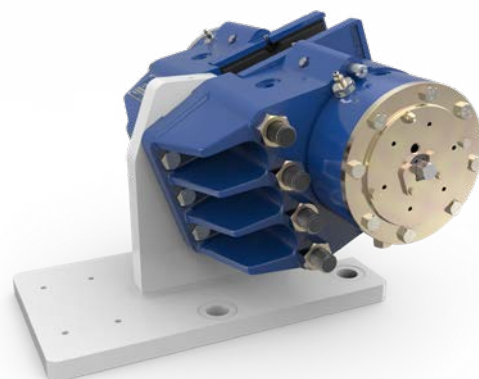
Standard calipers comprising two spring modules are usually mounted each side of a supporting bracket. 'Floating' calipers comprising a single module and reactive half, may be introduced when the available space envelope is limited or to accommodate axial disc movement. Should high power dissipation be required, large-pad versions increase the units' heat capacity. While the VCS brake's unique compact design makes it more suited to static holding, both the VCSD and VKSD are specifically rated for high cyclic duty applications.

Special Features

- Modular construction for ease of installation and maintenance – no special tools required
- Industry proven compact and rugged designs for reliable service
- Easily integrated with Twiflex HPU's and 'soft braking' control systems
- Special finishes and custom designs on request
- Multiple status monitoring and wear sensor options

VKSD

Caliper Type	Braking Force kN	Release Pressure bar	Minimum Pressure for Full Retraction bar	Air Gap in. (mm)
VKSD119	119	124	138	.079 (2.0)
VKSD112	112	116	131	.079 (2.0)
VKSD104	104	108	124	.079 (2.0)
VKSD96	96	100	116	.079 (2.0)
VKSD88	88	92	108	.079 (2.0)
VKSD80	80	83	100	.079 (2.0)
VKSD71	71	75	92	.079 (2.0)
VKSD62	62	65	83	.079 (2.0)



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Elevator Brakes

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