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## ELECTROHYDRAULIC RELEASES

# ZE



## Applications

Its operation consists in advance of the piston rod with appropriate force and to specific stroke. Releases are used mainly in brakes to disengage (open) expansion and disc brakes. Thanks to the built-in springs, not only they disengage brakes, but also induce the braking moment. Releases may be used wherever reciprocating work is needed, e.g. to engage/disengage dampers and valves, to open and close flaps, doors, to raise and lower barriers, to move levers and links, etc.

Releases are driven by inductive three-phase cage motors, installed inside the release housing, which can be rated up to 500 V AC and 50 Hz.

The release can be used both for continuous operation S1 as well as for periodically interrupted operation S3 with relative loading time up to 100% and number of actuations up to 2000 c / h.

## Identification of releases

**ZE** - denotes the basic version of the release.

**ZEW** - denotes a release version with built-in mechanical link, which can be used for indication of piston rod raising to its top position.

**ZEM** - denotes a release version with integrated solenoid, intended to keep the piston rod in its top position and to allow the release motor to be switched off (a mechanical link, built inside is used to control the motor switching on and off)<sup>1)</sup>.

The release can be fitted with valve delaying:

- lowering of piston rod (ZE...O),<sup>1)</sup>
- raising of piston rod (ZE...P),<sup>1)</sup>
- raising and lowering, viz. damping valve (ZE...T)<sup>1)</sup>

## Version

Normal N/1 – intended for outdoor operation, in moderate climatic conditions.

The release has an oil-tight enclosure with terminal box of protection rating IP 65 according to PN-EN 60529:2003.

The release in the standard version is intended for operation in upright position and at 30° angle. Special versions, intended for horizontal operation (Lv) can also be manufactured.

Ambient temperature:

-25 °C to +40 °C (electro-insulating transformer oil)

-40 °C to +50 °C (DOW CORNING Fluid 200 – 10 cSt silicon oil)

## Application examples

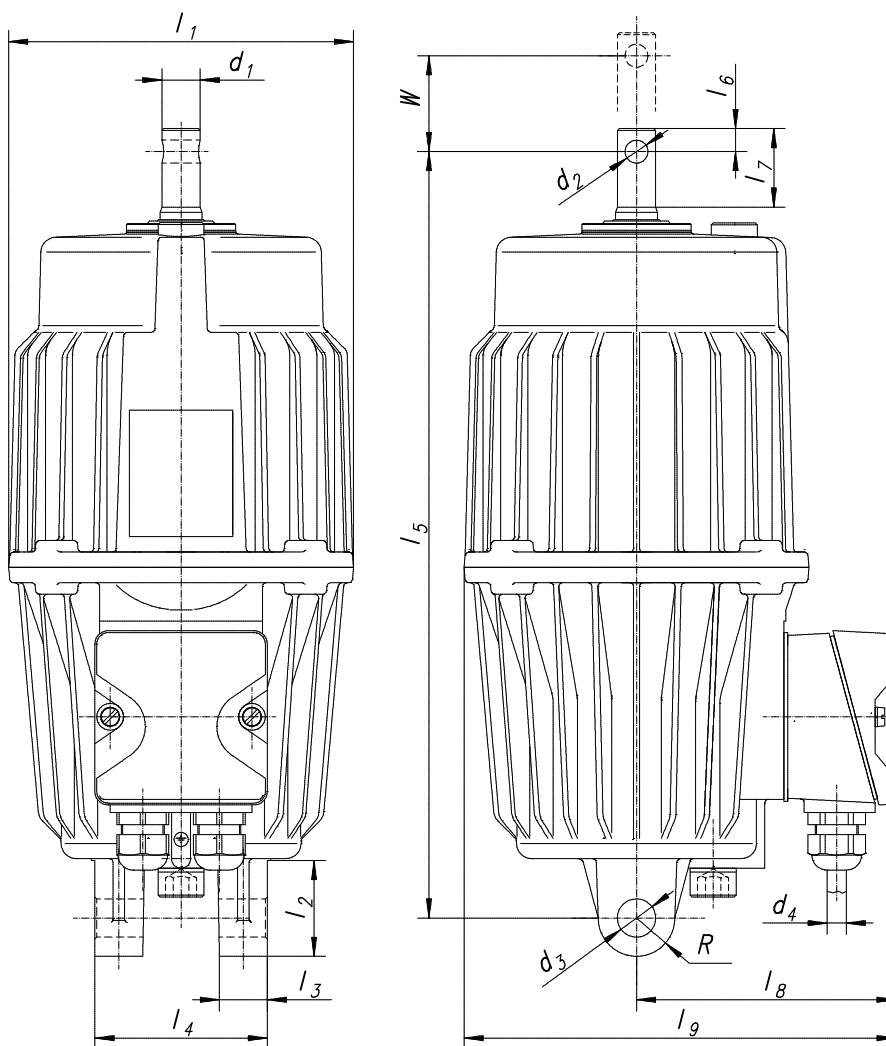


Disk brakes type ATZ  
produced by FENA Katowice  
(with release ZE)



Shoe brakes type AHH  
produced by FENA Katowice  
(with release ZE)

## Physical dimensions



Dimensions [ mm ]	ZE 200 / 50	ZE 500 / 50	ZE 800 / 60	ZE 1250 / 60	ZE 1500 / 60	ZE 800 / 75	ZE 1250 / 75	ZE 1500 / 75	ZE 800 / 120	ZE 1250 / 120	ZE 1500 / 120	ZE 800 / 160	ZE 1250 / 160	ZE 1500 / 160	ZE 2000 / 80	ZE 2000 / 120	ZE 2500 / 60	ZE 2500 / 120	ZE 2500 / 160	ZE 3200 / 60	ZE 3200 / 80	ZE 3200 / 100	ZE 3200 / 120
$l_1$	150	180	210									254											
$l_2$	50											55											
$l_3$	20										25												
$l_{4\pm 0,3}$	80										90												
$l_5$	380	400	458	485	530	573	530	573	549	620	660	620	660										
$l_6$	17	12	16									20											
$l_7$	38	41	48,5									58											
$l_8$	130	135	143									152											
$l_9$	205	225	248									279											
$d_1$ e8	20		26									34											
$d_2$ F9	12		16									20											
$d_3$ D11	20												25										
$d_4$	9÷14																						
$R$	20											25											
$W$	50	60		75	120	160	80	120	60	120	160	60	80	100	120								

## Technical data

Release	Piston rod stroke	Rated force of piston rod advance <sup>2)</sup>	Version with spring	Return force of piston rod to 1/3 stroke $\pm 10\%$	Motor			Electromagnet <sup>4)</sup>		Weight without oil (basic version)	Weight oil
					Supply voltage at 50 Hz <sup>3)</sup>	Current intensity	Rated power	Supply voltage <sup>3)</sup>	Current intensity		
	W[mm]	F <sub>z</sub> [N]		F <sub>s</sub> [N]	U[V]	I[A]	P[W]	U <sub>e</sub> [VDC]	I <sub>e</sub> [A]	m[kg]	m <sub>o</sub> [kg]
<b>ZE 200/50</b>	50	200	S 120	120	3x230 3x400 3x500	0,95 0,55 0,45	180	38	0,42	9,3	1,7
			S 200	200							
			S 270	270							
<b>ZE 500/50</b>	50	500	S 180	180	3x230 3x400 3x500	1,20 0,65 0,52	250	38	0,40	11,5	3,5
			S 320	320							
			S 500	500							
<b>ZE 800/60</b>	60	800	S 450	450	3x230 3x400 3x500	2,10 1,20 0,90	450	38	0,45	20	4
<b>ZE 800/75</b>	75	800	S 450	450						20,5	4,5
<b>ZE 800/120</b>	120	800	S 450	450						21	5,5
<b>ZE 800/160</b>	160	800	S 450	450						21,5	6,5
<b>ZE 1250/60</b>	60	1250	S 450	450						20	4
<b>ZE 1250/75</b>	75	1250	S 450	450						20,5	4,5
<b>ZE 1250/120</b>	120	1250	S 450	450						21	5,5
<b>ZE 1250/160</b>	160	1250	S 450	450						21,5	6,5
<b>ZE 1500/60</b>	60	1500	S 450	450						20	4
<b>ZE 1500/75</b>	75	1500	S 450	450						20,5	4,5
<b>ZE 1500/120</b>	120	1500	S 450	450	21	5,5					
<b>ZE 1500/160</b>	160	1500	S 450	450	21,5	6,5					
			S 800	800							
			S 800	800							
			S 1250 <sup>5)</sup>	1250							

## Technical data

Release	Piston rod stroke	Rated force of piston rod advance <sup>2)</sup>	Version with spring	Return force of piston rod to 1/3 stroke $\pm 10\%$	Motor			Electromagnet <sup>4)</sup>		Weight without oil (basic version)	Weight oil
					Supply voltage at 50 Hz <sup>3)</sup>	Current intensity	Rated power	Supply voltage <sup>3)</sup>	Current intensity		
	W[mm]	F <sub>z</sub> [N]		F <sub>s</sub> [N]	U[V]	I[A]	P[W]	U <sub>e</sub> [VDC]	I <sub>e</sub> [A]	m[kg]	m <sub>o</sub> [kg]
<b>ZE 2000/80</b>	80	2000	S 800 S 1250 <sup>5)</sup>	800 1250	3x230 3x400 3x500	2,10 1,20 0,90	450	38	0,45	22,5	5
<b>ZE 2000/120</b>	120	2000	S 800 S 1250 <sup>5)</sup>	800 1250						23	6
<b>ZE 2500/60</b>	60	2500	S 700 S 1300 S 2000	700 1300 2000	3x230 3x400 3x500	2,35 1,45 1,05	550	38	0,8	28	8
<b>ZE 2500/120</b>	120	2500	S 700 S 1300	700 1300						30	10
<b>ZE 2500/160</b>	160	2500	S 700 S 1300	700 1300						33	11
<b>ZE 3200/60</b>	60	3200	S 1300 S 2000 S 2500	1300 2000 2500						31	9
<b>ZE 3200/80</b>	80	3200	S 1300 S 2000 S 2500	1300 2000 2500	31	9					
<b>ZE 3200/100</b>	100	3200	S 1300 S 2000	1300 2000	34	10					
<b>ZE 3200/120</b>	120	3200	S 1300 S 2000	1300 2000	34	10					

### Notes:

- 1) In case of ZEM releases and releases equipped with retardant valves, the operation mode is limited to S1 and S3 40% 600 c/h
- 2) In case of releases with return spring, the required extension force is assumed as 10% of the rated force
- 3) Other voltage versions can also be manufactured.
- 4) Electric specifications of the ZEM version
- 5) The spring with the stated parameters is only available in the ZE and ZEW version

\* Piston rod extension and retraction times depend on the external loading force and on the force of the internal return spring used (we will provide these values on customer's request)

### Ordering information

<b>ZE</b>	[ ]	[ ]	[ ]	/	[ ]	[ ]	-	[ ]	.	[ ]
<b>Version</b>		<b>Basic</b>		<b>With switch</b>		<b>With electromagnet</b>		<b>Operating voltage/frequency</b>		
				<b>W</b>		<b>M</b>		<b>230, 400, 500 VAC / 50 Hz</b>		
								Possibility of other voltage variations		
<b>Version with delay valves</b>		<b>Raising</b>		<b>Lowering</b>		<b>Raising and lowering (damping valve)</b>		<b>Operating position</b>		
		<b>P</b>		<b>O</b>		<b>T</b>		Upright ±30°		
								<b>Lv</b> Horizontal		
<b>Mechanical size</b>								Standard version (with transformer oil)		
<b>200, 500, 800, 1250, 1500, 2000, 2500, 3200</b>								<b>SIL</b> Special version (with silicon oil)		
<b>Piston rod stroke</b>								Basic version		
		ZE 200, ZE 500		<b>50</b>				<b>S120, S180, S200, S270, S320, S450, S500, S700, S800, S1250, S1300, S2000, S2500</b> Version with spring		
		ZE 800, ZE 1250, ZE 1500, ZE 2500, ZE 3200		<b>60</b>						
		ZE 800, ZE 1250, ZE 1500		<b>75</b>						
		ZE 2000, ZE 3200		<b>80</b>						
		ZE 3200		<b>100</b>						
		ZE 800, ZE 1250, ZE 1500, ZE 2000, ZE2500, ZE 3200		<b>120</b>						
		ZE 800, ZE 1250, ZE 1500, ZE 2500		<b>160</b>						

**Sample order:**  
 ZEM 500/50 S180.500 VAC/50Hz  
 ZE 2000/120 S1250.400 VAC/50Hz  
 ZEW 1250/60 .400 VAC/50Hz  
 ZE 1250/60 S450 SIL-Lv .400 VAC/50Hz

**The producer reserves the right to modify as a result of developing the product.  
 It is possible to realize special versions.**