

Positioning system ELZ 40, 60, 60S, 80, 80S, 100, 125

Belt drive

Specifications

ATEX 95
 II 2G c IIB T4
 II 3D c IIIB T 125 °C



3.1

Function:

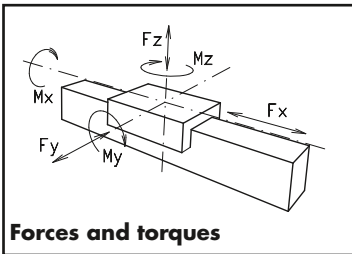
Like ELZ. The positioning system is suitable for use according to the intended purpose in potentially explosive areas (see ATEX 95 marking). An operating manual is included in the scope of delivery. The system is certified for the following areas:

ATEX 95 II 2G c IIB T4:

All application areas except for underground mining. Gas atmosphere category 2, explosion protection category: protection due to secure construction (design security). Equipment group IIB. Temperature class T4=135 °C

ATEX 95 II 3D c IIIB T125 °C:

All application areas except for underground mining. Dust atmosphere category 3. Maximum permissible surface temperature: 125 °C.



Forces and torques

Fitting position:

As required, max. length 6.000 mm.

Carriage mounting:

T-slots

Unit mounting:

By T-slots or tapped holes in the bearing block, mounting sets.

Belt type:

HTD with steel reinforcement, no backlash when changing direction, repeatability: ± 0,1 mm.

Size	ELZex 40		ELZex 60		ELZex 60 S		ELZex 80		ELZex 80 S		ELZex 100		ELZex 125	
	static	dynamic	static	dynamic	statisch	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic
F _x (N)	178	142	312	250	312	250	1083	866	1083	866	1127	902	2067	1654
F _y (N)	517	414	1330	1064	1910	1528	1584	1267	2219	1775	3100	2480	4980	3984
F _z (N)	355	284	742	594	935	748	613	490	1052	842	1292	1034	2190	1752
M _x (Nm)	12	10	36	29	52	41	36	29	67	54	101	81	220	176
M _y (Nm)	13	11	39	32	66	53	39	32	87	70	136	109	280	224
M _z (Nm)	19	15	70	56	137	110	100	81	182	146	326	260	636	509

All forces and torques relate to the following

existing values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$
 table values

No-load torque

Nm	0,3	0,6	0,7	0,9	1,2	1,4	1,8
----	-----	-----	-----	-----	-----	-----	-----

Speed

(m/s) max	1	1	1	1	1	1	1
-----------	---	---	---	---	---	---	---

Tensile force

permanent (N)	178	312	312	1083	1083	1127	2067
---------------	-----	-----	-----	------	------	------	------

Geometrical moments of inertia of aluminium profile

I _x mm ⁴	1,32x10 ⁵	6,79x10 ⁵	6,79x10 ⁵	18,99x10 ⁵	18,99x10 ⁵	44,4x10 ⁵	101,5x10 ⁵
I _y mm ⁴	1,34x10 ⁵	6,97x10 ⁵	6,97x10 ⁵	18,97x10 ⁵	18,97x10 ⁵	44,8x10 ⁵	101,5x10 ⁵
E-Modulus N/mm ²	70000	70000	70000	70000	70000	70000	70000

For life-time calculation of rollers use our homepage.

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

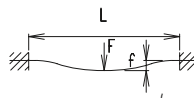
$$P_o = \frac{M_o \cdot n}{9550}$$

- F = force (N)
- P = pulley action perimeter (mm)
- S_i = safety factor 1,2 ... 2
- M_n = no-load torque (Nm)
- n = rpm pulley (min⁻¹)
- M_o = driving torque (Nm)
- P_o = motor power (KW)

Deflection:

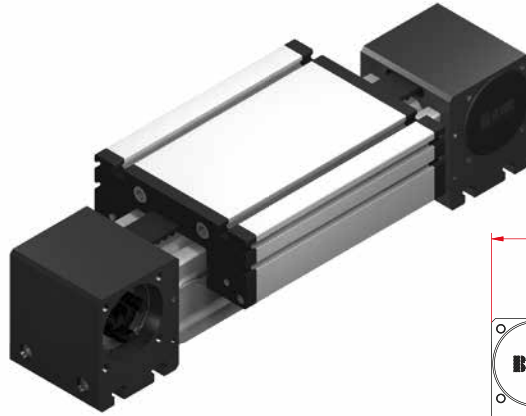
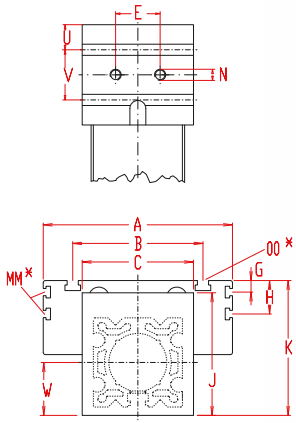
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm²)
- I = second moment of area (mm⁴)

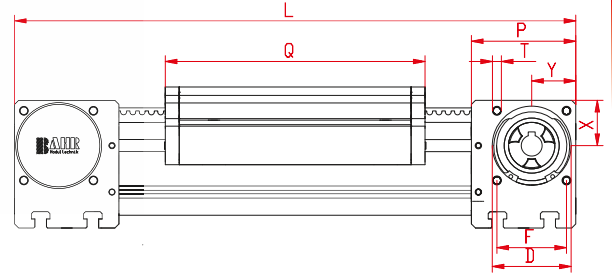


Positioning system ELZ 40, 60, 60S, 80, 80S, 100, 125

Dimensions (mm)



ATEX 95
 II 2G c IIB T4
 II 3D c IIB T 125 °C



3.1

*For slide nuts refer to chapter 2.2 page 2

Increasing the carriage length will increase the basic length by the same amount.

Size	Basic length L	A	B	C	D -0,05	E	F	G	H	J	K	MM for	N	OO for	P	Q	T	U	V	W	X	Y	Basic weight	Weight per 100 mm
ELZex 40	225	100	66	58	37	18	32	-	-	58	64	-	M 6	M 6	49	122	M 5	12,5	24	29	20,5	20,5	1,9 kg	0,24 kg
ELZex 60	290	144	96	80	47	30	42	-	-	82	90	-	M 8	M 8	59	168	M 6	15	30	41	27	26	4,8 kg	0,62 kg
ELZex 60 S	315	170	108	80	47	30	42	-	-	82	94	-	M 8	M 8	59	194	M 6	15	30	41	27	26	5,8 kg	0,62 kg
ELZex 80	375	170	117	100	68	40	60	10	30	110	121	M 6	M 10	M 10	90	194	M 8	22,5	45	51	39	38	10,0 kg	1,00 kg
ELZex 80 S	395	190	126	100	68	40	60	12,5	30	110	122	M 6	M 10	M 8	90	214	M 8	22,5	45	51	39	38	11,0 kg	1,00 kg
ELZex 100	530	230	155	130	90	50	80	-	29	135	154	M 10	M 12	M 10	110	300	M 10	23	64	65	50	50	24,0 kg	1,60 kg
ELZex 125	625	295	200	160	110	60	100	-	30	167	191	M 10	M 12	M 12	130	365	M 10	38	50	82	60	60	37,0 kg	2,10 kg

0 Choice of guide body profile:

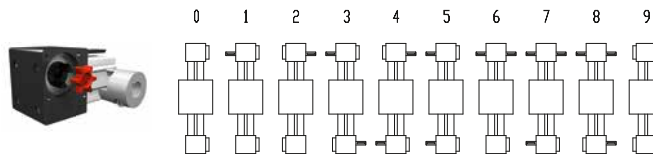
- (0) Standard (2) corrosion-protected guide rods and screws
- (4) expanded corrosion-protected version (depending on the availability of components)

0 Choice of carriages:



Size	Version 1	
	Q	L
40	138	241
60	184	306
60S	214	335
80	210	391
80S	234	415
100	316	546
125	389	649

0 Drive version:



Version 9 is the same as 0, but with double sided coupling claw.

The standard version is supplied without shaft. A shaft can be retrofitted by inserting it into the pulley bore and securing it with 2 locking rings or tension sets (size 100 and 125).

Belt table

Code No.	Size	Belt	mm/rev.	Number of teeth
0 3	40	5M15	100	20
0 4	60 (S)	5M25	130	26
0 7	80 (S)	8M30	192	24
0 9	100	8M50	256	32
1 0	125	8M70	304	38

Shaft dimensions / Coupling claw

Size	Shaft \varnothing h6 x length	Key	Coupling
40	10 x 27	3x3x25	9
60 (S)	14 x 35	5x5x28	14
80 (S)	18 x 45	6x6x40	19
100	22 x 45	6x6x40	24
125	30 x 55	8x7x50	28

Basic length + stroke = total length

ELZex 40 1 0 0 0 0 3 1 01500

For combination kits and connecting elements refer to chapter 2.2

Pos. 1 2 3 4 5 6 7

Sample ordering code:

ELZex 40, standard body profile, standard carriage, coupling claw on one side, 1275 mm stroke.

