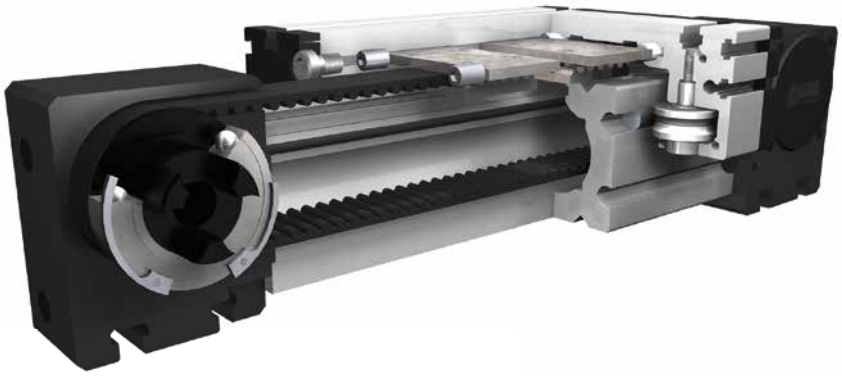
Positioning system ELZ 40, 60, 60S, 80, 80S, 100, 125

Belt drive



Specifications

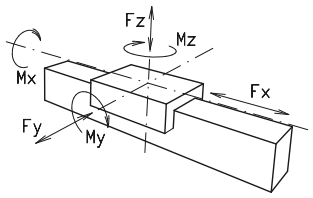
ATEX 2014/34/EU
II 2G Ex h IIB T4 Gb
II 3D Ex h IIIB T125 °C Dc

3.1

Function:
Like ELZ. The positioning system is suitable for use according to the intended purpose in potentially explosive areas (see ATEX 2014/34/EU marking). An operating manual is included in the scope of delivery. The system is certified for the following areas:

ATEX 2014/34/EU II 2G EX h IIB T4 Gb:
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, EPL Gb.

ATEX 2014/34/EU II 3D EX h IIIB T125 °C Dc:
All application areas except for underground mining. Dust atmosphere category 3. Maximum permissible surface temperature: 125°C, EPL Dc.



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	
Forces/Torques	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 / table values $\frac{Fy}{Fy_{dyn}} + \frac{Fz}{Fz_{dyn}} + \frac{Mx}{Mx_{dyn}} + \frac{My}{My_{dyn}} + \frac{Mz}{Mz_{dyn}} \leq 1$														
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 mm⁴	$1,32x10^5$		$6,79x10^5$		$6,79x10^5$		$18,99x10^5$		$18,99x10^5$		$44,4x10^5$		$101,5x10^5$	
I_y mm⁴	$1,34x10^5$		$6,97x10^5$		$6,97x10^5$		$18,97x10^5$		$18,97x10^5$		$44,8x10^5$		$101,5x10^5$	
E-Modulus N/mm²	70000		70000		70000		70000		70000		70000		70000	

For life-time calculation of rollers use our homepage.

Driving torque:

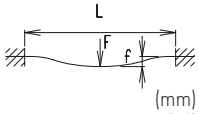
$$M_a = \frac{F * P * S_i}{2000 * \pi} + M_n$$

$$P_a = \frac{M_a * n}{9550}$$

F = force (N)
P = pulley action perimeter (mm)
Si = safety factor 1,2 ... 2
M_n = no-load torque (Nm)
n = rpm pulley (min^{-1})
M_a = driving torque (Nm)
P_a = motor power (KW)

Deflection:

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

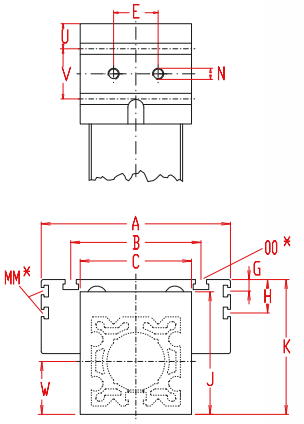


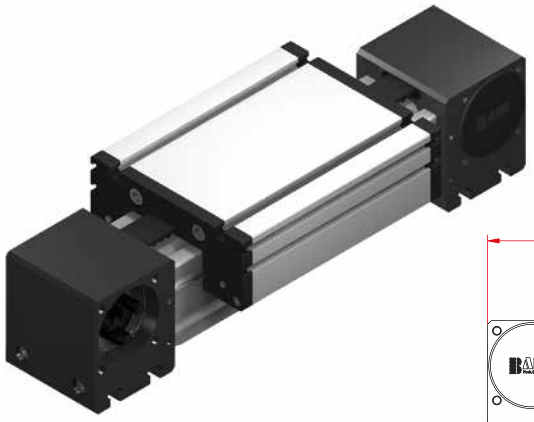
f = deflection (mm)
F = load (N)
L = free length (mm)
E = elastic modulus 70000 (N/mm^2)
I = second moment of area (mm^4)

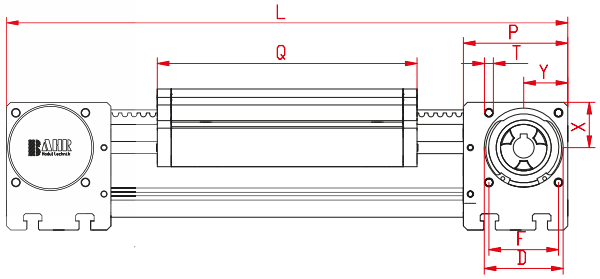
Positioning system ELZ 40, 60, 60S, 80, 80S, 100, 125

Dimensions (mm)

ATEX 2014/34/EU
II 2G Ex h IIB T4 Gb
II 3D Ex h IIIB T125 °C Dc







*For slide nuts refer to chapter 2.2 page 2

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

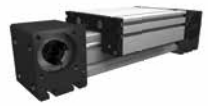
Size ❐	Basic length L	A	B	C	D -0,05	E	F	G	H	J	K	MM for	N	OO for	P	Q	T	U	V	W	X	Y	Basic weight	Weight per 100 mm
ELZex 40	225	100	66	58	37	18	32	-	-	58	64	-	M 6	M 6	49	122	M 5	12,5	24	29	20,5	20,5	1,9 kg	0,24 kg
ELZex 60	290	144	96	80	47	30	42	-	-	82	90	-	M 8	M 8	59	168	M 6	15	30	41	27	26	4,8 kg	0,62 kg
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

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

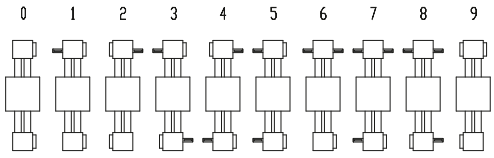
0 **Choice of carriages:**

(0)



(1)

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 ø 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
Pos.		1	2	3	4	5	6	7	

For combination kits and connecting elements refer to chapter 2.2

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