

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

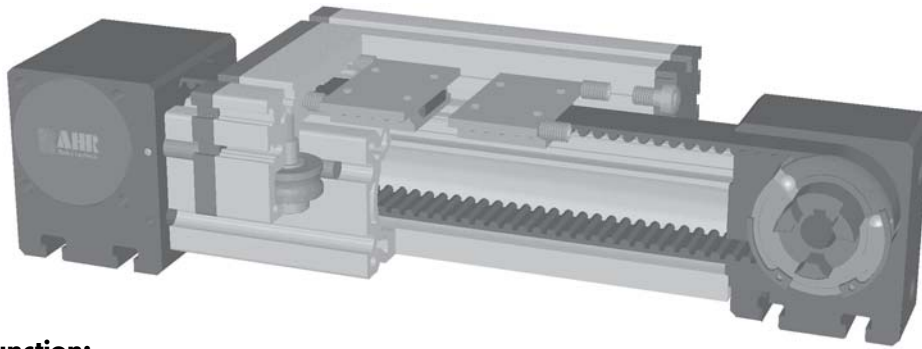
Belt drive

Specifications

ATEX 95

Ex II 2G EEx c II B T4

Ex II 3D EEx c T125°C



3.1

Function:

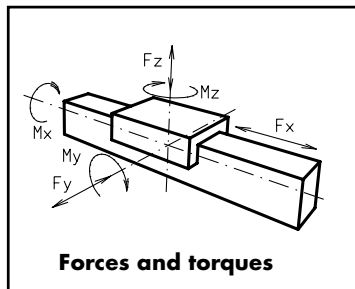
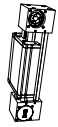
Like ELZ. The positioning system is suitable for use according to the intended purpose in potentially explosive areas (see ATEX 95 marking). An operating manual is included in the scope of delivery. The system is certified for the following areas:

ATEX 95 II 2G EEx 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 T125°C:

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



- Fitting position:**
- Carriage mounting:**
- Unit mounting:**
- Belt type:**

As required, max. length without joints = 6,000 mm.
 T-slots
 By T-slots or tapped holes in the bearing block, mounting sets.
 HTD with steel reinforcement, no backlash when changing direction, repeatability: ± 0,1 mm.

Size	ELZex 40		ELZex 60		ELZex 80		ELZex 80 S		ELZex 100		ELZex 125	
	static	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic
Forces/Torques												
F_x (N)	178	142	312	250	1083	866	1083	866	1127	902	2067	1654
F_y (N)	517	414	1330	1064	1584	1267	2219	1775	3100	2480	4980	3984
F_z (N)	355	284	742	594	613	490	1052	842	1292	1034	2190	1752
M_x (Nm)	12	10	36	29	36	29	67	54	101	81	220	176
M_y (Nm)	13	11	39	32	39	32	87	70	136	109	280	224
M_z (Nm)	19	15	70	56	100	81	182	146	326	260	636	509
All forces and torques relate to the following:												
existing values	$\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$											
values of table												
No-load torque												
Nm	0,3		0,6		0,9		1,2		1,4		1,8	
Speed												
(m/sec) max	1		1		1		1		1		1	
Tensile force												
permanent (N)	178		312		1083		1083		1127		2067	
Geometrical moments of inertia of aluminium profile												
I_x mm ⁴	1,32x10 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		18,97x10 ⁵		18,97x10 ⁵		44,8x10 ⁵		101,5x10 ⁵	
E-Modulus N/mm ²	70000		70000		70000		70000		70000		70000	

For life-time calculation of rollers use our CD-ROM or homepage!

Formula: ELZex

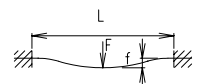
Driving torque:

$$M_o = \frac{F * P * S}{2000 * \pi} + M_{leer}$$

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

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

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

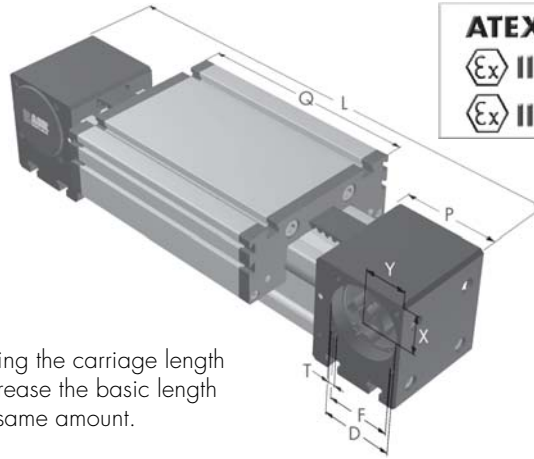
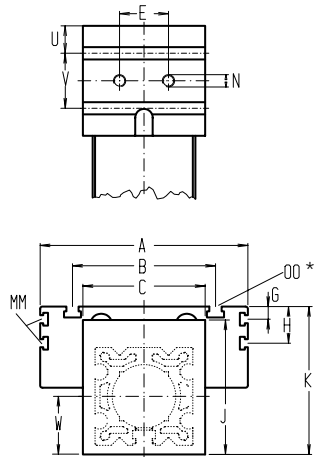


- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm²)
- I = second moment of area (mm⁴)



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

Dimensions (mm)



ATEX 95
 II 2G EEx c II B T4
 II 3D EEx c T125°C

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



*For slide-nuts refer to chapter 2.2 page 2

Size	Basic length L	A	B	C	D	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 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 80S	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

Choice of guide body profile:

- 0** (0) Standard (1) stainless guide rods (2) stainless guide rods and screws

Choice of carriages:

0

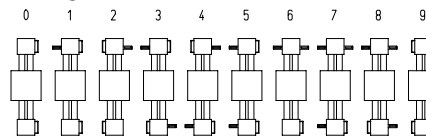


For standard carriage length see 'Q' in table. The carriages can be delivered in any non-standard length upon request; the longer the carriage, the greater the load capacity.

Top and bottom carriages are rigidly joined, thus enabling higher loads to be applied. This increases the basic length by 16 - 24 mm. For thickness of jointing plate refer to chapter 1.2 page 6.

Coupling - shaft mounting:

0



Version 8 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 in the pulley bore and securing 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	5M25	130	26
0 7	80 (S)	8M30	192	24
0 9	100	8M50	256	32
1 0	125	8M70	304	38

Shaft dimensions

Size	Shaft ϕ h6 x length	Key
40	10 x 27	3x3x25
60	14 x 35	5x5x28
80 (S)	18 x 45	6x6x40
100	22 x 45	6x6x40
125	30 x 55	8x7x40

Basic length + stroke = total length

ELZex 40 1 0 0 0 0 3 1 01500

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.

For combination kits and connecting elements refer to chapter 2.2

