

ALS/R

Electromechanical screw ram

Design features



Tr screw



Ball screw (Ku)

- **4 different sizes**

with max. dynamic axial loads from

ALS 10: 12.5 kN

ALS 25: 25 kN

ALS 50: 50 kN

ALS 100: 100 kN

- **Standard stroke lengths ALSR:**

ALS 10: 100/200/300/400 mm

ALS 25: 100/200/300/400/500 mm

ALS 50: 200/400/600/800/1000 mm

ALS 100: 300/600/900/1200/1500 mm

- Self-locking trapezoidal screw
- Attachment options for any flange connection capable gear motor in solid or hollow shaft design
- Long-term lubrication by high-quality grease and encapsulated design
- Special screw diameter and pitches possible
- Comprehensive accessories range

- **Possible usage according to directive 2014/34/EU (ATEX)**



ALS/R

Selection table

Selection table ALS/R

Size	Trapezoidal screw						Ball screw (Ku)									
	10	25	50	100	10	25	50	100	10	25	50	100				
Max. tensile / compressive force [kN]	12.5	25	50	100	12.5	25	50	100	12.5	25	50	100	12.5	25	50	100
Screw	Tr24x5*	Tr30x6*	Tr40x7*	Tr50x8	Tr70x12*	Tr80x14	Ku25x5	Ku25x10	Ku32x10	Ku32x20	Ku40x10	Ku40x20	Ku63x10	Ku63x20		
Lift per revolution [mm]	5	6	7	8	12	14	5	10	10	20	10	20	10	20		
Max. drive power at 20% duty cycle [kW]	0.75	1.1	1.5	2.2	4	5.5	Service life calculation (see performance table)									
Max. drive power at 10% duty cycle [kW]	1.1	1.5	2	3	5.5	7.5										
Overall efficiency [%]	34.9	33.9	31.0	29.2	30.6	31.0	78.0	75.0								
Basic weight [kg]	4.5	10	25	25	35	35	4.5	10	25	35	4.5	10	25	35		
Extra weight of ALS per 100 mm stroke [kg]	0.35	0.5	0.8	1.2	2.5	3	0.4	0.5	1	2.5	0.4	0.5	1	2.5		
Extra weight of ALSR per 100 mm stroke [kg]	1.3	2.2	4	4.5	9	9.5	1.3	2.2	4.2	9	1.3	2.2	4.2	9		

*Standard screw sizes are as follow: Tr 24x5 / Tr 30x6 / Tr 40x7 / Tr 70x12

Selection guide for electromechanical screw rams ALS

- Preselection of the size in relation to the maximum permissible tensile/compressive forces using the selection
- With a compressive load, check screw size by means of the buckling diagram
- Determining the size based on the performance tables below with consideration of the lifting capacity and the desired lifting speed and duty cycle



ALS/R

Performance data tables ALS 10/25

Performance table ALS 10 – ALS/R 10 with Tr 24x5

Speed n	Lifting speed		12.5 kN		10 kN		8 kN		6 kN		4 kN		2 kN		1 kN	
	Tr24x5		Tr24x5		Tr24x5		Tr24x5		Tr24x5		Tr24x5		Tr24x5		Tr24x5	
			28.5 Nm		22.8 Nm		18.3 Nm		13.7 Nm		9.1 Nm		4.6 Nm		2.3 Nm	
[1/min]	[m/min]		P [kW]													
750	3.75		2.2		1.8		1.4		1.1		0.7		0.4		0.2	
500	2.5		1.5		1.2		1.0		0.7		0.5		0.2		0.1	
250	1.25		0.7		0.6		0.5		0.4		0.2		0.1		0.1	
100	0.5		0.3		0.2		0.2		0.1		0.1		0.1		0.1	
50	0.25		0.1		0.1		0.1		0.1		0.1		0.1		0.1	

Performance table ALS 10 – ALS/R 10 with Ku 25x5 / Ku 25x10

Speed n	Lifting speed		12.5 kN		10 kN		8 kN		6 kN		4 kN		2 kN		1 kN	
	Ku 25x5	Ku 25x10	Ku25x5	Ku25x10	Ku25x5	Ku25x10	Ku25x5	Ku25x10	Ku25x5	Ku25x10	Ku25x5	Ku25x10	Ku25x5	Ku25x10	Ku25x5	Ku25x10
			12.8 Nm	25.5 Nm	10.2 Nm	20.4 Nm	8.2 Nm	16.3 Nm	6.1 Nm	12.2 Nm	4.1 Nm	8.2 Nm	2.0 Nm	4.1 Nm	1.0 Nm	2.0 Nm
[1/min]	[m/min]		P [kW]													
750	3.75	7.5	1.0	2.0	0.8	1.6	0.6	1.3	0.5	1.0	0.3	0.6	0.2	0.3	0.1	0.2
500	2.5	5	0.7	1.3	0.5	1.1	0.4	0.9	0.3	0.6	0.2	0.4	0.1	0.2	0.1	0.1
250	1.25	2.5	0.3	0.7	0.3	0.5	0.2	0.4	0.2	0.3	0.1	0.2	0.1	0.1	0.1	0.1
100	0.5	1	0.1	0.3	0.1	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
50	0.25	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Performance table ALS 25 – ALS/R 25 with Tr 30x6

Speed n	Lifting speed		25 kN		20 kN		16 kN		12 kN		8 kN		4 kN		1 kN	
	Tr30x6		Tr30x6		Tr30x6		Tr30x6		Tr30x6		Tr30x6		Tr30x6		Tr30x6	
			70 Nm		56 Nm		45 Nm		34 Nm		23 Nm		11 Nm		3 Nm	
[1/min]	[m/min]		P [kW]													
700	4.2		5.2		4.1		3.3		2.5		1.7		0.8		0.2	
500	3		3.7		2.9		2.4		1.8		1.2		0.6		0.1	
300	1.8		2.2		1.8		1.4		1.1		0.7		0.4		0.1	
100	0.6		0.7		0.6		0.5		0.4		0.2		0.1		0.1	
50	0.3		0.4		0.3		0.2		0.2		0.1		0.1		0.1	

Performance table ALS 25 – ALS/R 25 with Ku 32x10 / Ku 32x20

Speed n	Lifting speed		25 kN		20 kN		16 kN		12 kN		8 kN		4 kN		1 kN	
	Ku32x10	Ku32x20	Ku32x10	Ku32x20	Ku32x10	Ku32x20	Ku32x10	Ku32x20	Ku32x10	Ku32x20	Ku32x10	Ku32x20	Ku32x10	Ku32x20	Ku32x10	Ku32x20
			53 Nm	106 Nm	42 Nm	85 Nm	34 Nm	68 Nm	25 Nm	51 Nm	17 Nm	34 Nm	8 Nm	17 Nm	2 Nm	4 Nm
[1/min]	[m/min]		P [kW]													
700	7	14	3.9	7.8	3.1	6.2	2.5	5.0	1.9	3.7	1.2	2.5	0.6	1.2	0.2	0.3
500	5	10	2.8	5.6	2.2	4.4	1.8	3.6	1.3	2.7	0.9	1.8	0.4	0.9	0.1	0.2
300	3	6	1.7	3.3	1.3	2.7	1.1	2.1	0.8	1.6	0.5	1.1	0.3	0.5	0.1	0.1
100	1	2	0.6	1.1	0.4	0.9	0.4	0.7	0.3	0.5	0.2	0.4	0.1	0.2	0.1	0.1
50	0.5	1	0.3	0.6	0.2	0.4	0.2	0.4	0.1	0.3	0.1	0.2	0.1	0.1	0.1	0.1

All performance data refer to the dynamic lifting force and a duty cycle of 20% / h or of 30% / 10 min. at 20 ° C ambient temperature.

ALS – ALS/R with Tr: the screw/nut system is overheated in fields highlighted in grey.
 ALS – ALS/R with Ku: the service life falls below 500 hours in the fields highlighted in grey.

ALS – ALS/R with Tr: only static (dynamic not allowed)

ALS/R

Performance data tables ALS 50/100

Performance table ALS 50 – ALS/R 50 with Tr 40x7 / Tr 50x8

Speed n	Lifting speed		50 kN		40 kN		30 kN		25 kN		20 kN		10 kN		5 kN	
	Tr40x7	Tr50x8	Tr40x7	Tr50x8	Tr40x7	Tr50x8	Tr40x7	Tr50x8	Tr40x7	Tr50x8	Tr40x7	Tr50x8	Tr40x7	Tr50x8	Tr40x7	Tr50x8
			180 Nm	218 Nm	144 Nm	175 Nm	108 Nm	131 Nm	90 Nm	109 Nm	72 Nm	87 Nm	36 Nm	44 Nm	18 Nm	22 Nm
[1/min]	[m/min]		P [kW]													
500	3.5	4	9.4	11.4	7.5	9.1	5.6	6.9	4.7	5.7	3.8	4.6	1.9	2.3	0.9	1.1
400	2.8	3.2	7.5	9.1	6.0	7.3	4.5	5.5	3.8	4.6	3.0	3.7	1.5	1.8	0.8	0.9
300	2.1	2.4	5.6	6.9	4.5	5.5	3.4	4.1	2.8	3.4	2.3	2.7	1.1	1.4	0.6	0.7
100	0.7	0.8	1.9	2.3	1.5	1.8	1.1	1.4	0.9	1.1	0.8	0.9	0.4	0.5	0.2	0.2
50	0.35	0.4	0.9	1.1	0.8	0.9	0.6	0.7	0.5	0.6	0.4	0.5	0.2	0.2	0.1	0.1

Performance table ALS 50 – ALS/R 50 with Ku 40x10 / Ku 40x20

Speed n	Lifting speed		50 kN		40 kN		30 kN		25 kN		20 kN		10 kN		5 kN	
	Ku40x10	Ku40x20	Ku40x10	Ku40x20	Ku40x10	Ku40x20	Ku40x10	Ku40x20	Ku40x10	Ku40x20	Ku40x10	Ku40x20	Ku40x10	Ku40x20	Ku40x10	Ku40x20
			106 Nm	212 Nm	85 Nm	170 Nm	64 Nm	127 Nm	53 Nm	106 Nm	42 Nm	85 Nm	21 Nm	42 Nm	11 Nm	21 Nm
[1/min]	[m/min]		P [kW]													
500	5	10	5.6	11.1	4.4	8.9	3.3	6.7	2.8	5.6	2.2	4.4	1.1	2.2	0.6	1.1
400	4	8	4.4	8.9	3.6	7.1	2.7	5.3	2.2	4.4	1.8	3.6	0.9	1.8	0.4	0.9
300	3	6	3.3	6.7	2.7	5.3	2.0	4.0	1.7	3.3	1.3	2.7	0.7	1.3	0.3	0.7
100	1	2	1.1	2.2	0.9	1.8	0.7	1.3	0.6	1.1	0.4	0.9	0.2	0.4	0.1	0.2
50	0.5	1	0.6	1.1	0.4	0.9	0.3	0.7	0.3	0.6	0.2	0.4	0.1	0.2	0.1	0.1

Performance table ALS 100 – ALS/R 100 with Tr 70x12 / Tr 80x14

Speed n	Lifting speed		100 kN		80 kN		60 kN		50 kN		40 kN		20 kN		10 kN	
	Tr70x12	Tr80x14	Tr70x12	Tr80x14	Tr70x12	Tr80x14	Tr70x12	Tr80x14	Tr70x12	Tr80x14	Tr70x12	Tr80x14	Tr70x12	Tr80x14	Tr70x12	Tr80x14
			624 Nm	718 Nm	499 Nm	574 Nm	375 Nm	431 Nm	312 Nm	359 Nm	250 Nm	287 Nm	125 Nm	144 Nm	62 Nm	72 Nm
[1/min]	[m/min]		P [kW]													
375	4.5	5.25	24.5	28.2	19.6	22.6	14.7	16.9	12.3	14.1	9.8	11.3	4.9	5.6	2.5	2.8
200	2.4	2.8	13.1	15.0	10.5	12.0	7.8	9.0	6.5	7.5	5.2	6.0	2.6	3.0	1.3	1.5
125	1.5	1.75	8.2	9.4	6.5	7.5	4.9	5.6	4.1	4.7	3.3	3.8	1.6	1.9	0.8	0.9
75	0.9	1.05	4.9	5.6	3.9	4.5	2.9	3.4	2.5	2.8	2.0	2.3	1.0	1.1	0.5	0.6
25	0.3	0.35	1.6	1.9	1.3	1.5	1.0	1.1	0.8	0.9	0.7	0.8	0.3	0.4	0.2	0.2

Performance table ALS 100 – ALS/R 100 with Ku 63x10 / Ku 63x20

Speed n	Lifting speed		100 kN		80 kN		60 kN		50 kN		40 kN		20 kN		10 kN	
	Ku63x10	Ku63x20	Ku63x10	Ku63x20	Ku63x10	Ku63x20	Ku63x10	Ku63x20	Ku63x10	Ku63x20	Ku63x10	Ku63x20	Ku63x10	Ku63x20	Ku63x10	Ku63x20
			212 Nm	424 Nm	170 Nm	340 Nm	127 Nm	255 Nm	106 Nm	212 Nm	85 Nm	170 Nm	42 Nm	85 Nm	21 Nm	42 Nm
[1/min]	[m/min]		P [kW]													
375	3.75	7.5	8.3	16.7	6.7	13.3	5.0	10.0	4.2	8.3	3.3	6.7	1.7	3.3	0.8	1.7
200	2	4	4.4	8.9	3.6	7.1	2.7	5.3	2.2	4.4	1.8	3.6	0.9	1.8	0.4	0.9
125	1.25	2.5	2.8	5.6	2.2	4.4	1.7	3.3	1.4	2.8	1.1	2.2	0.6	1.1	0.3	0.6
75	0.75	1.5	1.7	3.3	1.3	2.7	1.0	2.0	0.8	1.7	0.7	1.3	0.3	0.7	0.2	0.3
25	0.25	0.5	0.6	1.1	0.4	0.9	0.3	0.7	0.3	0.6	0.2	0.4	0.1	0.2	0.1	0.1

All performance data refer to the dynamic lifting force and a duty cycle of 20% / h or of 30% / 10 min. at 20 ° C ambient temperature.

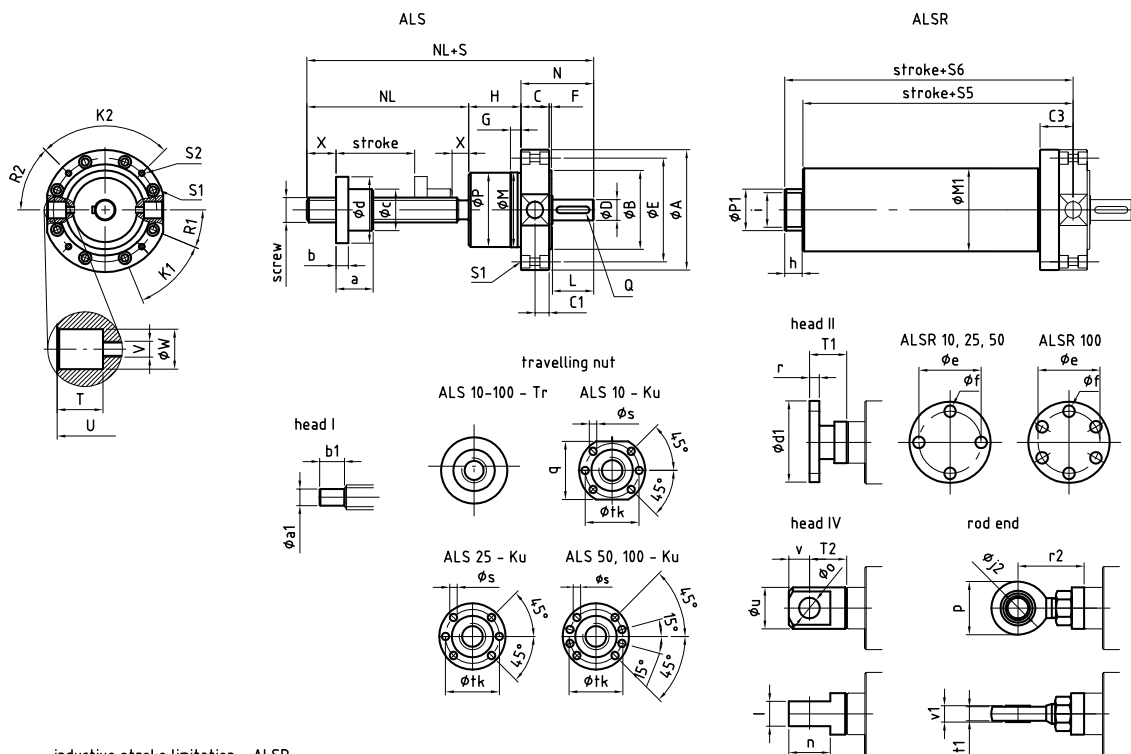
ALS – ALS/R with Tr: the screw/nut system is overheated in fields highlighted in grey.
ALS – ALS/R with Ku: the service life falls below 500 hours in the fields highlighted in grey.

ALS – ALS/R with Tr: only static (dynamic not allowed)

ALS/R

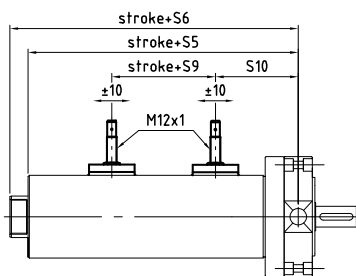
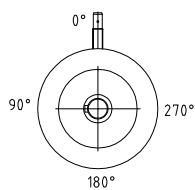
Technical drawings

Technical drawings

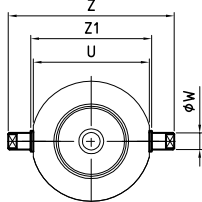


inductive stroke limitation - ALSR

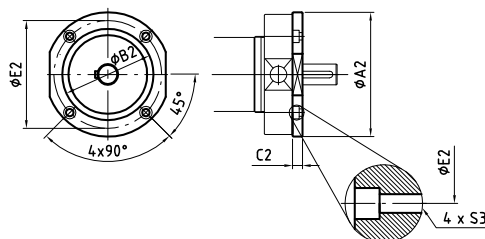
position of the inductive stroke limitation



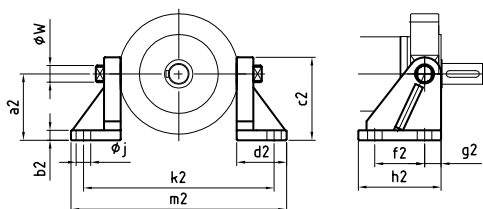
trunnion pins



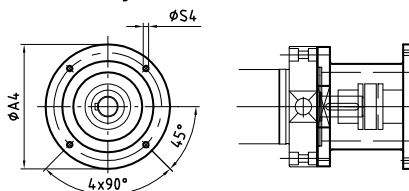
IEC flange



pillow blocks



IEC bell housing



CAD & go



ALS/R

Dimensions

ALS/R Dimensions														
Size Dim. [mm]	ALS 10 - ALS/R 10			ALS 25 - ALS/R 25			ALS 50 - ALS/R 50				ALS 100 - ALS/R 100			
	Tr screw	Ball screw (Ku)		Tr screw	Ball screw (Ku)		Tr screw		Ball screw (Ku)		Tr screw		Ball screw (Ku)	
	Tr 24x5*	Ku 25x5	Ku 25x10	Tr 30x6*	Ku 32x10	Ku 32x20	Tr 40x7*	Tr 50x8	Ku 40x10	Ku 40x20	Tr 70x12*	Tr 80x14	Ku 63x10	Ku 63x20
Ø A	100			145			175				250			
Ø B j6	60			95			110				180			
C	24			34			38				52			
C 1	12			17			19				26			
C 3	30			40			47				61			
Ø D j6	16			25			30				40			
Ø E ± 0.2	82			125			155				215			
F	2			3			4				5			
G	16			13			15				26			
H	56			63			85				111			
h	20			40			62				54			
i	M 33x2			M 42x2			M 60x2				M 95x3			
K 1	8 x 45 °			8 x 45 °			6 x 60 °				8 x 45 °			
K 2	4 x 90 °			4 x 90 °			6 x 60 °				4 x 90 °			
L	40			50			60				90			
Ø M f7	60			90			115				150			
Ø M 1	70			100			130				170			
N	68			88			106				150			
NL	Stroke + 85	Stroke + 91	Stroke + 96	Stroke + 85	Stroke + 130	Stroke + 170	Stroke + 120		Stroke + 176	Stroke + 191	Stroke + 205		Stroke + 216	Stroke + 250
Ø P	59.5			89.5			114				149			
Ø P 1	40			50			70				110			
Q - DIN 6885A	5 x 5 x 20			8 x 7 x 40			8 x 7 x 50				12 x 8 x 80			
R 1	22.5 °			22.5 °			30 °				22.5 °			
R 2	45 °			45 °			15 °				45 °			
S	124			151			191				261			
S 1 for DIN 6912/8.8	8x Ø12x8 / Ø6.6 for M6			8x Ø15x11 / Ø9 for M8			6x Ø15x11 / Ø9 for M8				6x Ø24x16 / Ø13.5 for M12			
S 2	4 x M6			4 x M8			6 x M8				6 x M12			
S 5	225			276			336				486			
S 6	245			298			374				514			
T	10			23			25				42			
U	90 -0.3			140 -0.3			170 -0.3				240 -0.4			
V	M6			M8			M10				M12x1			
Ø W H7	16			20			25				35			
X	20			20	40	60	30		50	70	40		50	70

*Standard



ALS/R

Dimensions

ALS/R Dimensions														
Size Dim. [mm]	ALS 10 - ALS/R 10			ALS 25 - ALS/R 25			ALS 50 - ALS/R 50				ALS 100 - ALS/R 100			
	Tr screw	Ball screw (Ku)		Tr screw	Ball screw (Ku)		Tr screw		Ball screw (Ku)		Tr screw		Ball screw (Ku)	
	Tr 24x5*	Ku 25x5	Ku 25x10	Tr 30x6*	Ku 32x10	Ku 32x20	Tr 40x7*	Tr 50x8	Ku 40x10	Ku 40x20	Tr 70x12*	Tr 80x14	Ku 63x10	Ku 63x20
Travelling nut														
a	45	51	56	45	50		60	76	51	125		116	110	
b	10			15	12		18	14		30	20			
Ø c	35 h9	40 g6		50 h9	50 g6		70 h9	63 g6		120 h9	95 g6			
Ø d	50	62		80			87	93		155	135			
q	-	48		-	-		-	-		-	-			
Ø s	-	6.6		-	9		-	9		-	13.5			
Ø tk	-	51		-	65		-	78		-	115			
Head type I														
Ø a1 j6	15			20			30				50			
b1	24			30			50				60			
Head type II														
T 1	37			45			65				55			
Ø d1	72			98			122				182			
Ø e	50			75			85				135			
Ø f	9			14			17				26			
r	10			12			18				25			
Head type IV														
T 2	40			45			65				90			
l-0.2	25			30			40				75			
n	40			50			70				120			
Ø o H7	20			25			35				60			
Ø u	40			50			65				110			
v	20			25			35				60			
Rod end														
p	46			64			82				135			
Ø j2	17 - 0.010			25 - 0.010			35 - 0.012				60 - 0.015			
r2	60			80			125				158			
v1	14			20			25				44			
t1	11			17			21				38			
Inductive stroke limitation														
S 9	25			55			73				170			
S 10	88			100			124				171			
Trunnion pins														
Z	136			200			250				330			
Z1	96			146			176				250			

*Standard

ALS/R

Dimensions

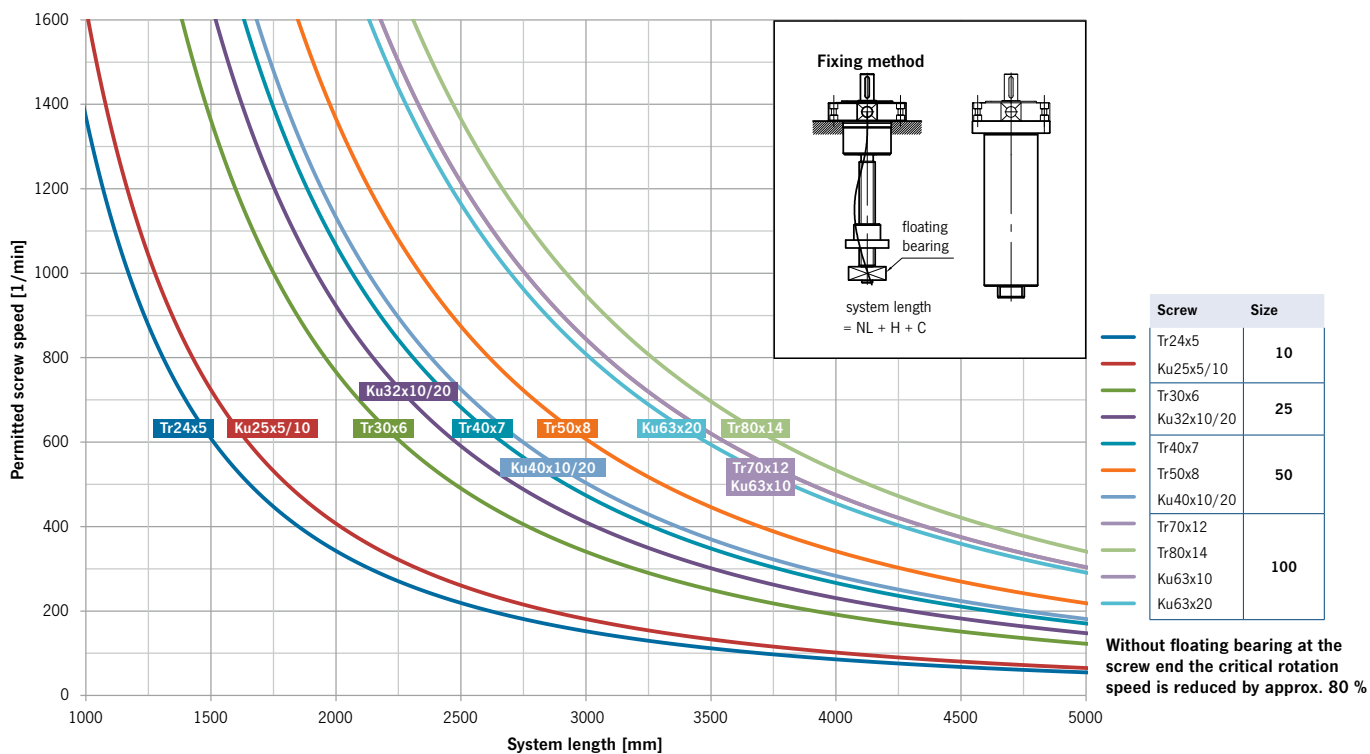
ALS/R Dimensions															
Size Dim. [mm]	ALS 10 - ALS/R 10			ALS 25 - ALS/R 25			ALS 50 - ALS/R 50				ALS 100 - ALS/R 100				
	Tr screw		Ball screw (Ku)	Tr screw		Ball screw (Ku)		Tr screw		Ball screw (Ku)		Tr screw		Ball screw (Ku)	
	Tr	Ku	Ku	Tr	Ku	Ku	Tr	Tr	Ku	Ku	Tr	Tr	Ku	Ku	
	24x5*	25x5	25x10	30x6*	32x10	32x20	40x7*	50x8	40x10	40x20	70x12*	80x14	63x10	63x20	
Pillow blocks															
a2	60			80			100				140				
b2	9			12			20				25				
c2	75			100			125				170				
d2	45			60			75				100				
f2	45			60			95				130				
g2	15			20			25				30				
h2	75			100			140				200				
Ø j	13			17.5			22				26				
k2	150			230			270				370				
m2	180			260			320				440				
IEC flange															
Ø A 2	120			150			175				250				
Ø B 2	80 H7			110 H7			110 H7				180 H8				
C 2	20			12			17				25				
Ø E 2 ±0.2	100			130			130				215				
S 3 for DIN 6912/8.8	Ø12x6 / Ø6.6 for M6			Ø15x8 / Ø9 for M8			Ø15x11 / Ø9 for M8				Ø24x6 / Ø13.5 for M8				
IEC bell housing															
Ø A 4	Dimensions according to offer or customer request														
Ø S 4	Dimensions according to offer or customer request														

*Standard

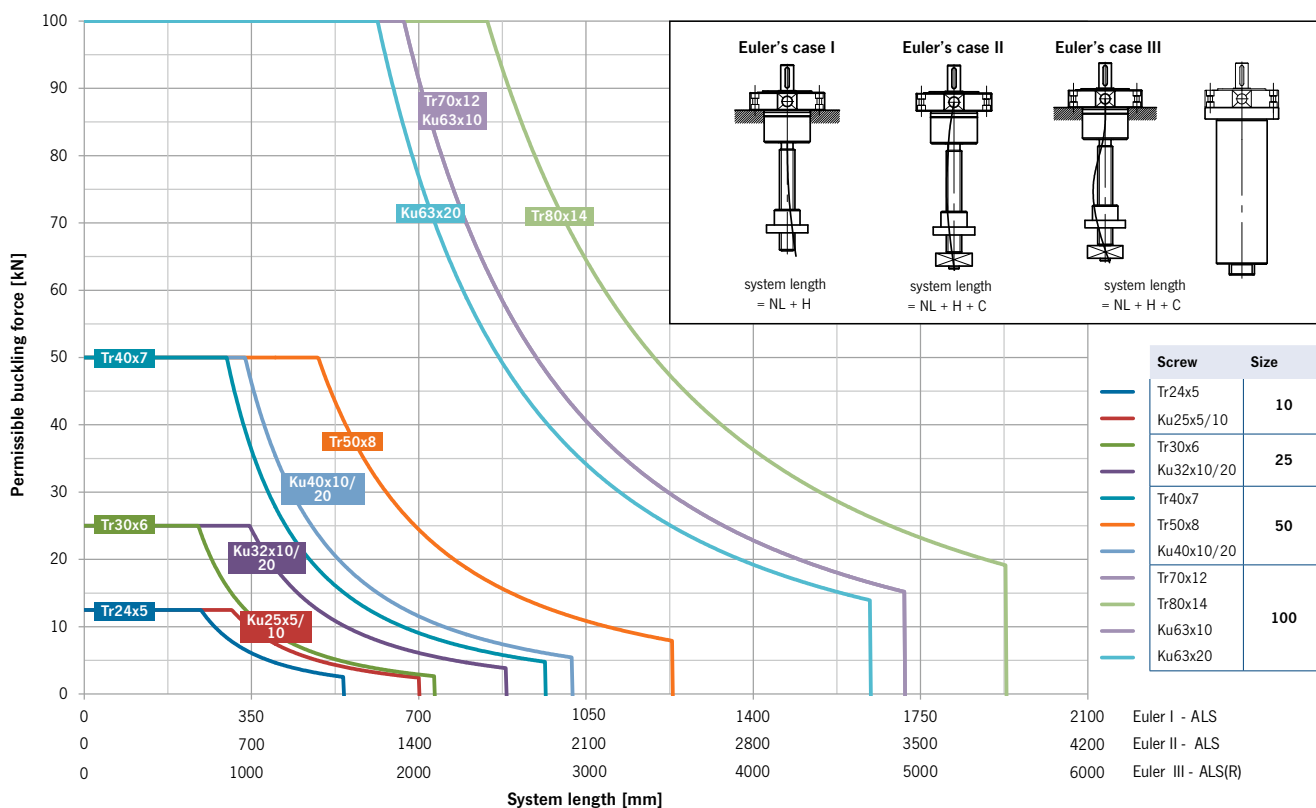


ALS/R Diagrams

Critical screw speed ALS/R



Buckling ALS/R



ALS/R

Order code

A **L** **S** - - - - x - - - - -

1 2 3 4 5 6 7 8 9 10 11

No.	Explanation	
1	Series	ALS
2	Version	R = with cylinder version 0 = Standard (without cylinder construction)
3	Size	10 / 25 / 50 / 100
4	Screw	Tr = Trapezoidal screw Ku = Ball screw (Ku)
5	Screw diameter in mm	
6	Pitch in mm	
7	Stroke in mm	
8	NL in mm	(only ALS)
9	Head	I = Cylindrical rotation (only ALS) II = Head plate III = Metric thread (only ALS) IV = Rod end
10	Input shaft	01 = Standard 02 = Special
11	Accessories	01 = Trunnion pins 02 = Swiveling mounting base 03 = Inductive limit switch [only ALS/R] 04 = Anti-turn device [only ALS/R] 05 = IEC bell housing 06 = IEC flange

