

DRUM MOTOR 113LS

113.5Ø 0.035kW - 0.55kW, with steel helical gearbox

Product description

This drum motor has been designed specifically for applications that require a strong drive.

Characteristics

- Salt water resistant aluminum bearing housing
- Three phase alternating current induction motor
- 3-phase dual voltage standard
- Integral motor protection
- Hardened steel helical gear type
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation
- Reinforced internal shaft for RL exceeding 800 mm

Applications

- Heavy and frequent use Conveyors
- Conveyors for check-in at airports
- Packaging equipment
- Weighing Machines
- Metal detector
- Pharmaceutical industries
- Food processing
- Plastic or modular belt applications
- Dry, damp and wash down applications

TECHNICAL DATA

Motor Data

Type of Motor	Asynchronous squirrel-cage, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Derated windings (20% power reduction)	On request for applications without belt
Voltage	230/400 V ± 5% (IEC 34/38) single voltage Dual voltage or special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped of nitrile rubber, NBR
Protection rate	IP66
Thermal protection	Bimetallic Contact
Ambient temperature, 3-phase motor	-5°C to + 40°C mineral oil -25°C to + 40°C synthetic oil
General technical data	
Max. Roller length (RL)	1400 mm

All data and values declared in the catalogue refer to operation with a frequency of 50 Hz.



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Materials

The following drum motor components are available in different versions, as shown in the below chart, with further options for the material type as indicated.

Components	Version	Material				
		Aluminium	Steel	Stainless Steel	Brass /Nickel	Polymer
Shell	Crowned		Std	TS8N		
	Cylindrical		Std	TS8N		
	Cylindrical + key (for sprockets)		Std	TS8N		
	Special crowns and grooves		Std	TS8N		
End housing	Standard	Std		TS8N		
	With V-grooves			TS8N		
	With O-grooves			TS8N		
Shaft cap	Standard			Std		
	Cross-drilled and threaded, M6			Std		
Electrical connection	Straight connector			TS8N	Std	
	Elbow connector			TS8N		Std
	Terminal box	Std		TS8N		

Please contact Rulmeca for further versions.

TS8N Version - End Caps in stainless steel with PTFE lip seals.

Options

- Rubber Lagging for standard belts
- Profiled lagging for plastic modular belts
- Profiled lagging for thermoplastic belts
- Sprockets for plastic modular belts
- Backstop / Anti run-back bearing
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than $\pm 5^\circ$)
- Dynamical balancing

Note

The combination of encoder and electromagnetic brake is not possible.

Accessories

- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Shaft caps
- Frequency Converters

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TECHNICAL DATA DRUM MOTOR 113LS - 3PHASE - 50HZ - STANDARD RANGE

P_N [kW]	np (rpm)	I_n [A]	gs	i	V_A [m/s]	V_N [m/s]	n_A [min ⁻¹]	M_N [Nm]	F_T [N]	TE [N]	RL [mm]						
0.035	12 (420)	0.88/0.51	3	42.66	0.06	0.05	9.8	32.3	571	6550	min 250 max 1400						
				36.35	0.07	0.06	11.6	27.5	486								
				31.36	0.08	0.07	13.4	23.7	420								
0.07	12 (380)	1.11/0.64	3	42.66	0.05	0.05	8.9	71.3	1262	6550	min 300 max 1400						
				36.35	0.06	0.06	10.5	60.7	1075								
				31.36	0.07	0.07	12.1	52.4	928								
0.08	8 (635)	0.97/0.56	3	42.66	0.09	0.09	14.9	48.8	863	6550	min 250 max 1400						
0.10	6 (900)	0.90/0.52	3	42.66	0.12	0.11	21.1	43.0	761	6550							
				36.35	0.15	0.13	24.8	36.6	648								
				31.36	0.17	0.16	28.7	31.6	559								
				27.32	0.19	0.18	32.9	27.5	487								
				23.99	0.22	0.22	37.5	24.2	428								
				21.18	0.25	0.25	42.5	21.3	378								
2	15.17	0.35	2	12.92	0.41	0.40	69.7	13.0	230	4550							
				11.15	0.48	0.45	80.7	11.2	199								
				42.66	0.09	0.09	14.8	92.1	1631			6550	min 300 max 1400				
0.15	8 (630)	1.47/0.85	3	36.35	0.10	0.11	17.3	78.5	1390								
				31.36	0.12	0.13	20.1	67.7	1199								
				42.66	0.19	0.18	32.1	42.4	750	6550	min 250 max 1400						
4 (1370)	1.02/0.59	3	36.35	0.22	0.22	37.7	36.1	639									
			31.36	0.26	0.25	43.7	31.1	551									
			27.32	0.30	0.30	50.1	27.1	480									
			23.99	0.34	0.32	57.1	23.8	422									
			21.18	0.38	0.38	64.7	21.0	372									
			15.17	0.53	0.50	90.3	15.1	267									
2	12.92	0.63	2	11.15	0.73	0.70	122.9	11.1	196	3400							
				0.20	6 (895)	1.44/0.84	3	42.66	0.12			0.13	21.0	86.5	1531	6550	min 300 max 1400
								36.35	0.15			0.14	24.6	73.7	1304		
31.36	0.17	0.16	28.5					63.6	1125								
27.32	0.19	0.20	32.8					55.4	980								
23.99	0.22	0.22	37.3					48.6	861								
21.18	0.25	0.25	42.3					42.9	760								
2	15.17	0.35	2	12.92	0.41	0.40	69.3	30.8	544	4550							
				11.15	0.47	0.50	80.3	22.6	400								

 P_N Nominal mechanical power**np** Number of poles**rpm** Actual rotor rpm at full load **I_n** Amperage (230/400V) at full load**gs** Gear stages**i** Gear ratio **V_A** Theoretical actual belt (tangential) speed at full load* **V_N** Nominal belt (tangential) speed **n_A** Revolutions of shell at full load* **M_N** Nominal Torque at full load **F_T** Belt pull (tangential force) on shell at full load***TE** Maximum allowable belt tension (radial load)**RL** Reference length

* Valid for unlagged shells/ values can deviate at partly or no load conditions

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TECHNICAL DATA DRUM MOTOR 113LS - 3PHASE - 50HZ - STANDARD RANGE

P_N [kW]	np (rpm)	I_n [A]	gs	i	V_A [m/s]	V_N [m/s]	n_A [min ⁻¹]	M_N [Nm]	F_T [N]	TE [N]	RL [mm]						
0.24	2 (2766)	1.12/0.65	3	42.66	0.38	0.38	64.8	33.6	594	4550	min 250 max 1400						
				36.35	0.45	0.45	76.1	28.6	506								
				31.36	0.52	0.50	88.2	24.7	437								
				27.32	0.60	0.60	101.2	21.5	381								
				23.99	0.68	0.70	115.3	18.9	334								
			21.18	0.77	0.80	130.6	16.7	295									
			2	15.17	1.08	1.10	182.3	11.9	211	3400							
				12.92	1.27	1.25	214.1	10.2	180								
				11.15	1.47	1.50	248.1	8.8	155								
0.30	4 (1390)	1.66/0.96	3	42.66	0.19	0.20	32.6	83.5	1478	6550	min 300 max 1400						
				36.35	0.23	0.22	38.2	71.2	1260								
				31.36	0.26	0.25	44.3	61.4	1087								
				27.32	0.30	0.30	50.9	53.5	947								
				23.99	0.34	0.35	57.9	47.0	831								
			21.18	0.39	0.38	65.6	41.5	734									
			2	15.17	0.54	0.50	91.6	29.7	526	4550							
				12.92	0.64	0.63	107.6	25.3	448								
				11.15	0.74	0.70	124.7	21.8	386								
0.37	4 (1350)	1.94/1.12	3	42.66	0.19	0.18	31.6	106.1	1877	6550	min 300 max 1400						
				36.35	0.22	0.22	37.1	90.4	1600								
				31.36	0.25	0.25	43.0	78.0	1380								
				27.32	0.29	0.30	49.4	67.9	1202								
				23.99	0.33	0.35	56.3	59.6	1056								
			21.18	0.38	0.38	63.7	52.7	932									
			2	15.17	0.53	0.50	89.0	37.7	668	4550							
				12.92	0.62	0.60	104.5	32.1	569								
				11.15	0.72	0.70	121.1	27.7	491								
	2 (2800)	1.56/0.90		3	21.18	0.78	0.80	132.2	25.4	449		3400					
				2	15.17	1.09	1.10	184.6	18.2	322							
					12.92	1.28	1.25	216.7	15.5	274							
					11.15	1.49	1.50	251.1	13.4	237							
				0.55	2 (2790)	2.20/1.27	3	42.66	0.39	0.38			65.4	76.3	1350	4550	min 300 max 1400
								36.35	0.45	0.45			76.8	65.0	1151		
31.36	0.53	0.50	89.0					56.1	993								
27.32	0.60	0.60	102.1					48.9	865								
23.99	0.69	0.70	116.3					42.9	759								
21.18	0.78	0.80	131.7				37.9	670									
2	15.17	1.09	1.10				183.9	27.1	480	3400							
	12.92	1.28	1.25				215.9	23.1	409								
	11.15	1.48	1.50				250.2	19.9	353								

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TECHNICAL DATA DRUM MOTOR 113LS - 3PHASE - 50HZ - DERATED RANGE

P_N [kW]	np (rpm)	I_n [A]	gs	i	V_A [m/s]	V_N [m/s]	n_A [min ⁻¹]	M_N [Nm]	F_T [N]	TE [N]	RL [mm]	
0.12	4 (1364)	0.73/0.42	3	42.66	0.19	0.18	32.0	34.0	603	6550	min 250 max 1400	
				36.35	0.22	0.22	37.5	29.0	513			
				31.36	0.26	0.25	43.5	25.0	443	4550		
				27.32	0.30	0.30	49.9	21.8	386			
				23.99	0.34	0.32	56.9	19.1	339			
			21.18	0.38	0.38	64.4	16.9	299				
			15.17	0.53	0.50	89.9	12.1	214				
			2	12.92	0.62	0.63	105.6	10.3	183	3400		
				11.15	0.72	0.70	122.3	8.9	158			
			0.25	4 (1410)	1.14/0.83	3	42.66	0.20	0.20	33.1		68.6
36.35	0.23	0.22					38.8	58.5	1035			
31.36	0.27	0.25					45.0	50.4	893	4550		
27.32	0.31	0.30					51.6	43.9	778			
23.99	0.35	0.35					58.8	38.6	683			
21.18	0.39	0.38				66.6	34.1	603				
15.17	0.55	0.50				92.9	24.4	432				
2	12.92	0.65				0.63	109.1	20.8	368	3400		
	11.15	0.75				0.70	126.5	17.9	317			
0.31	4 (1380)	1.64/0.95				3	42.66	0.19	0.18	32.3	86.9	1539
			36.35	0.22	0.22		38.0	74.1	1311			
			31.36	0.26	0.25		44.0	63.9	1131	4550		
			27.32	0.30	0.30		50.5	55.7	985			
			23.99	0.34	0.35		57.5	48.9	865			
			21.18	0.39	0.38	65.2	43.2	764				
			15.17	0.54	0.50	91.0	30.9	547				
	2	12.92	0.63	0.63	106.8	26.3	466	3400				
		11.15	0.73	0.70	123.8	22.7	402					
	2 (2800)	1.26/0.73	2	3	21.18	0.78	0.80	132.2	21.3	377	3400	
				2	15.17	1.09	1.10	184.6	15.2	270		
				12.92	1.28	1.25	216.7	13.0	230			
					11.15	1.49	1.50	251.1	11.2	198		

 P_N Nominal mechanical power

np Number of poles

rpm Actual rotor rpm at full load

 I_n Amperage (230/400V) at full load

gs Gear stages

i Gear ratio

 V_A Theoretical actual belt (tangential) speed at full load* V_N Nominal belt (tangential) speed n_A Revolutions of shell at full load* M_N Nominal Torque at full load F_T Belt pull (tangential force) on shell at full load*

TE Maximum allowable belt tension (radial load)

RL Reference length

* Valid for unlagged shells/ values can deviate at partly or no load conditions

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Standard weights for drum motor 113LS

P _N [kW]	np	Standard weight [kg] for standard RL [mm]														
		250	260	300	310	360	410	460	510	560	610	660	710	810	910	1010
0.04	12	7.20	7.35	7.95	8.10	8.85	9.60	10.35	11.10	11.85	12.60	13.35	14.10	18.80	20.30	21.80
0.07	12	---	---	10.10	10.25	11.00	11.75	12.50	13.25	14.00	14.75	15.50	16.25	20.95	22.45	23.95
0.08	8	7.20	7.35	7.95	8.10	8.85	9.60	10.35	11.10	11.85	12.60	13.35	14.10	18.80	20.30	21.80
0.10	6	7.20	7.35	7.95	8.10	8.85	9.60	10.35	11.10	11.85	12.60	13.35	14.10	18.80	20.30	21.80
0.15	8	---	---	10.10	10.25	11.00	11.75	12.50	13.25	14.00	14.75	15.50	16.25	20.95	22.45	23.95
	4	7.20	7.35	7.95	8.10	8.85	9.60	10.35	11.10	11.85	12.60	13.35	14.10	18.80	20.30	21.80
0.20	6	---	---	7.95	8.10	8.85	9.60	10.35	11.10	11.85	12.60	13.35	14.10	18.80	20.30	21.80
0.24	2	7.20	7.35	7.95	8.10	8.85	9.60	10.35	11.10	11.85	12.60	13.35	14.10	18.80	20.30	21.80
0.30	4	---	---	10.10	10.25	11.00	11.75	12.50	13.25	14.00	14.75	15.50	16.25	20.95	22.45	23.95
0.37	4	---	---	10.10	10.25	11.00	11.75	12.50	13.25	14.00	14.75	15.50	16.25	20.95	22.45	23.95
	2	---	---	10.10	10.25	11.00	11.75	12.50	13.25	14.00	14.75	15.50	16.25	20.95	22.45	23.95
IDLER (UT113LS)	-	5.35	6.10	6.85	7.60	8.35	9.10	9.85	10.60	11.35	12.10	12.85	13.60	14.35	15.10	16.60

Other RL dimension within the min & max RL available on request.

Cable specification

Available cable options:

- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available lengths: 1/3/5 m.

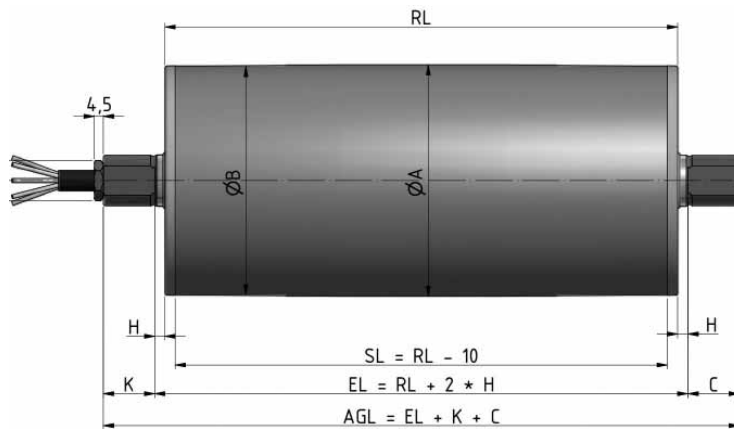
Min. length with option

The following options increase the minimum length of the drum motor

Option	RL min with option mm
Brake	RL min + 50 mm
Encoder SKF	RL min + 0 mm
Encoder RLS	RL min +50 mm

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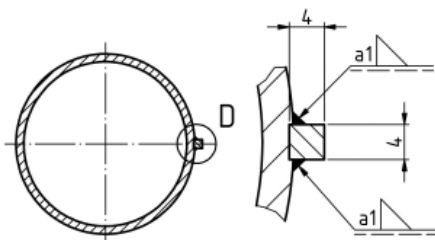
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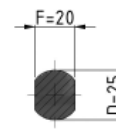
Drum motor with straight connector in stainless steel

Drum shell shape	ØA [mm]	ØB [mm]
Crowned	113.0	111.5
Cylindrical	112.0	112.0
Cylindrical with key	113.0	113.0

Shaft dimension	Width across flats [mm]	H [mm]	K [mm]	C [mm]
Ø25mm	20	5	25	25
Ø35mm	21	3	20	20



Drum motor with key 4x4



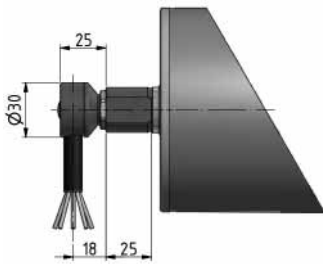
Standard shaft



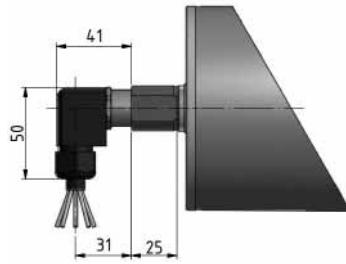
Shaft cap

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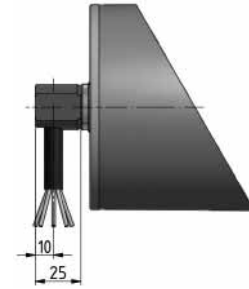
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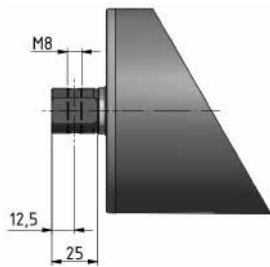
Elbow connector in stainless steel



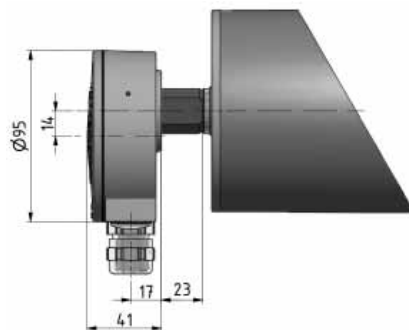
Elbow connector in polyamide



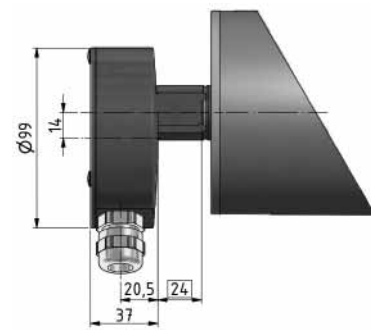
Cable connector 90° with threaded shaft



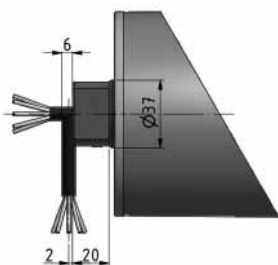
Cross-drilled and threaded shaft



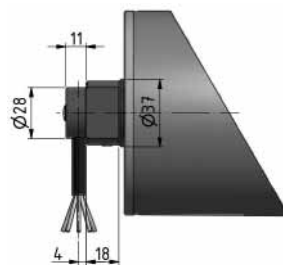
Terminal box in aluminium



Terminal box in stainless steel



Straight/Elbow connector with shaft cap
in stainless steel



Elbow connector with shaft cap
in stainless steel