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 ± 5°)
- 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	4550	
			2	15.17	0.35	0.32	59.3	15.3	271		
				12.92	0.41	0.40	69.7	13.0	230		
				11.15	0.48	0.45	80.7	11.2	199		
0.15	8 (630)	1.47/0.85	3	42.66	0.09	0.09	14.8	92.1	1631	6550	min 300 max 1400
				36.35	0.10	0.11	17.3	78.5	1390		
				31.36	0.12	0.13	20.1	67.7	1199		
	4 (1370)	1.02/0.59	3	42.66	0.19	0.18	32.1	42.4	750	6550	min 250 max 1400
				36.35	0.22	0.22	37.7	36.1	639		
				31.36	0.26	0.25	43.7	31.1	551	4550	
				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		
			2	15.17	0.53	0.50	90.3	15.1	267		
				12.92	0.63	0.63	106.0	12.8	227		
				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	4550	
			2	15.17	0.35	0.35	59.0	30.8	544		
				12.92	0.41	0.40	69.3	26.2	464		
				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

DRUM MOTOR 113LS

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

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	3400	
				21.18	0.77	0.80	130.6	16.7	295		
			2	15.17	1.08	1.10	182.3	11.9	211		
				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	4550	
				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		
				12.92	0.64	0.63	107.6	25.3	448		
				11.15	0.74	0.70	124.7	21.8	386	3400	
0.37	4 (1350)	1.94/1.12	3	42.66	0.19	0.18	31.6	106.1	1877	6550	
				36.35	0.22	0.22	37.1	90.4	1600		
				31.36	0.25	0.25	43.0	78.0	1380	4550	
				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		
				12.92	0.62	0.63	104.5	32.1	569		
				11.15	0.72	0.70	121.1	27.7	491	3400	
	2 (2800)	1.56/0.90	3	21.18	0.78	0.80	132.2	25.4	449		
			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		

DRUM MOTOR 113LS

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

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		
			2	15.17	0.53	0.50	89.9	12.1	214		
				12.92	0.62	0.63	105.6	10.3	183		
				11.15	0.72	0.70	122.3	8.9	158	3400	
0.25	4 (1410)	1.14/0.83	3	42.66	0.20	0.20	33.1	68.6	1214	6550	min 300 max 1400
				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		
			2	15.17	0.55	0.50	92.9	24.4	432		
				12.92	0.65	0.63	109.1	20.8	368		
				11.15	0.75	0.70	126.5	17.9	317	3400	
0.31	4 (1380)	1.64/0.95	3	42.66	0.19	0.18	32.3	86.9	1539	6550	
				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		
			2	15.17	0.54	0.50	91.0	30.9	547		
				12.92	0.63	0.63	106.8	26.3	466		
				11.15	0.73	0.70	123.8	22.7	402	3400	
	2 (2800)	1.26/0.73	3	21.18	0.78	0.80	132.2	21.3	377		
			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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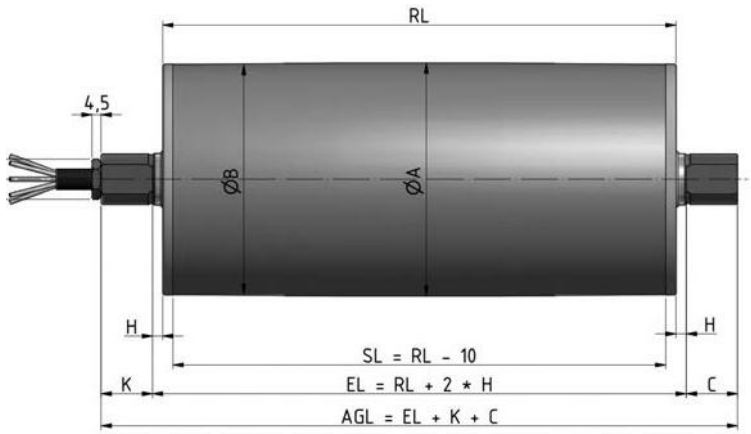
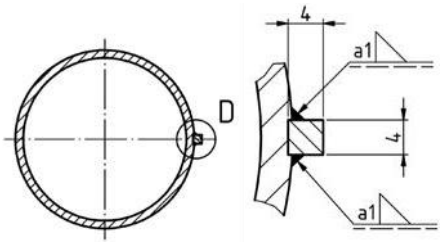


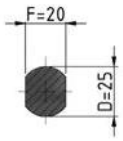
Drum motor with straight connector in stainless steel

Drum shell shape	ØA [mm]	ØB [mm]
Crowned	115.0	113.0
Cylindrical	112.0	112.0
Cylindrical with key	113.0	113.0

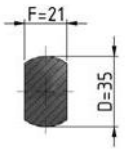
Shaft dimension	Width across flats [mm]	H [mm]	K [mm]	C [mm]
Ø25mm	20	5	25	25
Ø35mm	21	3	20	20



Drum motor with key 4x4



Standard shaft



Shaft cap

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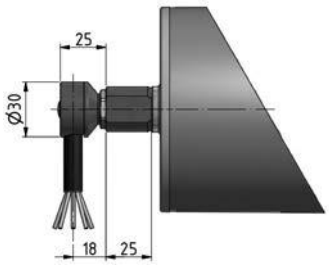
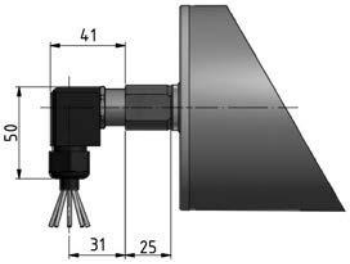
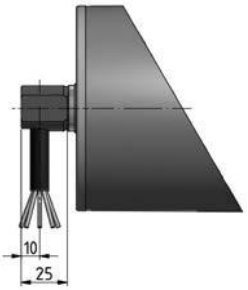


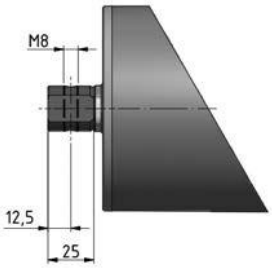
Elbow connector in stainless steel



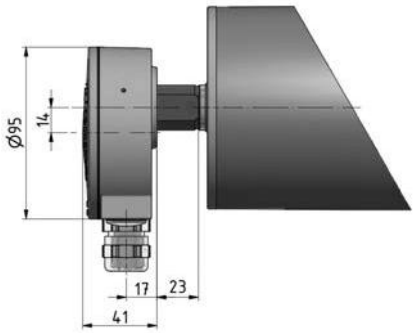
Elbow connector in polyamide



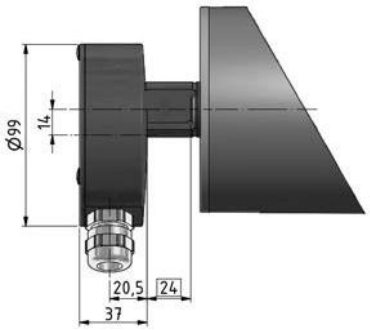
Cable connector 90° with threaded shaft



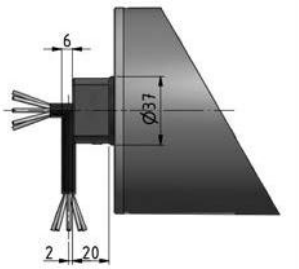
Cross-drilled and threaded shaft



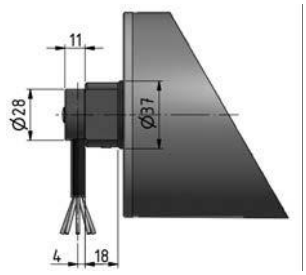
Terminal box in aluminium



Terminal box in stainless steel



Straight/Elbow connector with shaft cap in stainless steel



Elbow connector with shaft cap in stainless steel