

MAPEC

M O V I N G S O L U T I O N S



DRUM MOTOR 138LS

138.5Ø 0.10kW - 1.00kW, with steel helical gearbox

Product description

The drum motor 138LS is a very flexible component thanks to the wide range of powers and speeds.

Characteristics

- Salt water resistant aluminum bearing housing
- Three phase AC induction motor
- Dual voltage
- Integral motor protection
- Steel- hardened helical spur gear
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation
- Reinforced shaft for RL greater than 800 mm

Applications

- Conveyors for heavy and frequent use
- Conveyors for transportation of packages
- Logistics applications
- Check-in desks at airports
- Conveyors for furniture manufacture
- Manufacturing of food processes
- Modular belts, steel or plastic applications
- Dry, damp and frequent 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) Special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped FPM or nitrile rubber, NBR
Protection rate	IP66, IP69 in TS8N Version
Thermal protection	Bimetallic Contact
Ambient temperature, 3-phase motor	-25 to +40 °C
General technical data	
Max. Roller length (RL)	1800 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		Std	TS8N		
	With O-grooves		Std	TS8N		
	With chain sprockets		Std	TS8N		
Shaft	Standard		Std	TS8N		
	Cross-drilled and threaded, M8		Std	TS8N		
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 $\pm 5^\circ$)
- TS8N with mild steel shell is possible
- Dynamic balancing

Note

The combination of encoder and electromagnetic brake is not possible.

Accessories

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

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P _N [kW]	np (rpm)	I _t [A]	gs	i	V _A [m/s]	V _N [m/s]	n _A [min ⁻¹]	M _N [Nm]	F _t [N]	RL [mm]	
0.10	12 (440)	1.3/0.75	3	78.40	0.04	0.04	6	162	2360	min 300 max 1800	
				66.00	0.05	0.05	7	136	1987		
			2	52.96	0.06	0.06	8	109	1594		
				29.56	0.11	0.10	15	61	890		
0.18	8 (670)	2.0/1.15	3	66.00	0.07	0.08	10	160	2331	min 300 max 1800	
				52.96	0.09	0.10	13	128	1870		
				43.65	0.11	0.13	15	106	1542		
			2	29.56	0.16	0.16	23	72	1044		
				25.20	0.19	0.20	26	61	890		
0.24	6 (920)	1.55/0.9	3	66.00	0.10	0.10	14	156	2280	min 300 max 1800	
				52.96	0.12	0.13	17	125	1830		
				43.65	0.15	0.16	21	103	1508		
			2	29.56	0.22	0.20	31	70	1021		
				25.20	0.26	0.25	36	60	871		
				20.22	0.33	0.32	45	48	699		
0.37	6 (935)	2.25/1.3	3	51.85	0.13	0.13	17	190	2776	min 320 max 1800	
	4 (1400)	2.1/1.2	3	66.00	0.15	0.16	21	158	2310	min 300 max 1800	
				52.96	0.19	0.20	26	127	1854		
				43.65	0.23	0.25	32	105	1528		
			2	29.56	0.34	0.32	47	71	1035		
				25.20	0.40	0.40	55	60	882		
				20.22	0.50	0.50	68	48	708		
				16.67	0.60	0.63	83	40	583		
				12.44	0.81	0.80	111	30	435		
0.55	2 (2730)	2.3/1.3	3	77.41	0.25	0.25	35	141	2065	min 300 max 1800	
				66.00	0.30	0.32	41	121	1761		
				52.96	0.37	0.40	51	97	1413		
				43.65	0.45	0.50	62	80	1165		
			2	29.56	0.66	0.63	91	54	789		
				25.20	0.78	0.80	107	46	672		
				20.22	0.97	1.00	134	37	539		
				16.67	1.17	1.25	162	30	445		
				12.44	1.57	1.60	217	23	332		
0.75	4 (1365)	3.6/2.1	3	38.72	0.25	0.25	35	193	2818	min 320 max 1800	
				32.59	0.30	0.32	41	162	2371		
			2	25.20	0.39	0.40	54	126	1834		
				20.22	0.48	0.50	67	101	1471		
	2 (2845)	3.1/1.8	2	16.67	0.59	0.63	81	83	1213		
				25.20	0.81	0.80	112	60	880		
				20.22	1.01	1.00	139	48	706		
				16.67	1.22	1.25	169	40	582		
				12.44	1.64	1.60	226	30	434		
1.0	2 (2810)	4.1/2.35	3	43.65	0.46	0.50	64	141	2057	min 350 max 1800	
				32.59	0.68	0.63	94	95	1393		
			2	25.20	0.80	0.80	110	81	1188		
				20.22	1.00	1.00	137	65	953		
				16.67	1.21	1.25	167	54	786		
				12.44	1.62	1.60	223	40	586		
				10.00	2.02	2.00	278	32	471		

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TECHNICAL DATA DRUM MOTOR 138LS - 3PHASE - 50HZ - DERATED

P_N [kW]	np (rpm)	I_L [A]	gs	i	V_A [m/s]	V_N [m/s]	n_A [min ⁻¹]	M_N [Nm]	F_T [N]	RL [mm]
0.21	6 (930)	1.15/0.65	3	66.00	0.10	0.10	13.9	135	1974	min 300 max 1800
				52.96	0.13	0.13	17.4	108	1584	
				43.65	0.15	0.16	21.1	89	1305	
			2	29.56	0.23	0.20	31.1	61	884	
				25.20	0.26	0.25	36.5	52	754	
				20.22	0.33	0.32	45.5	41	605	
0.31	4 (1380)	1.4/0.8	3	66.00	0.15	0.16	20.7	134	1964	min 300 max 1800
				52.96	0.19	0.20	25.8	108	1576	
				43.65	0.23	0.25	31.3	89	1299	
			2	29.56	0.33	0.32	46.2	60	879	
				25.20	0.39	0.40	54.2	51	750	
				20.22	0.49	0.50	67.5	41	602	
				16.67	0.59	0.63	81.9	34	496	
				12.44	0.80	0.80	109.7	25	370	
0.45	2 (2740)	1.7/1.0	3	77.41	0.25	0.25	35.0	115	1684	min 300 max 1800
				66.00	0.30	0.32	41.1	98	1436	
				52.96	0.37	0.40	51.2	79	1152	
				43.65	0.45	0.50	62.1	65	949	
			2	29.56	0.66	0.63	91.7	44	643	
				25.20	0.78	0.80	107.6	38	548	
				20.22	0.97	1.00	134.0	30	440	
				16.67	1.18	1.25	162.6	25	363	
0.62	4 (1415)	2.7/1.55	3	38.72	0.26	0.25	36.1	154	2247	min 320 max 1800
				32.59	0.31	0.32	42.9	130	1891	
			2	25.20	0.40	0.40	55.5	100	1462	
				20.22	0.50	0.50	69.2	80	1173	
				16.67	0.61	0.63	84.0	66	967	

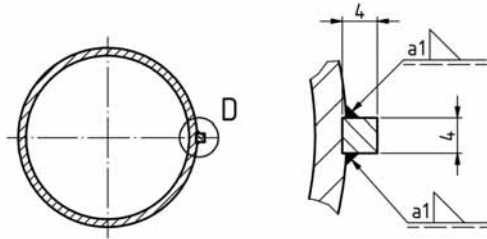
Derated motors are used in applications, where standard windings tend to overheat, typically in applications with no belt as modular belting, in hot environments or when thick lagging is required on shell. To gain the full benefit of the deration, the drum motor has to be operated close to or at full load. Derated motors should not be used together with Frequency Converters. In case of doubts Rulmeca offers technical support to order the optimal motor setup for the application.

P_N Nominal mechanical power
 np Number of poles
 rpm Actual rotor rpm at full load
 I_L 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*

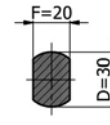
M_N Nominal Torque at full load
 F_T Belt pull (tangential force) on shell at full load*
 RL Reference length
 * Valid for unlagged shells/ values can deviate at partly or no load conditions

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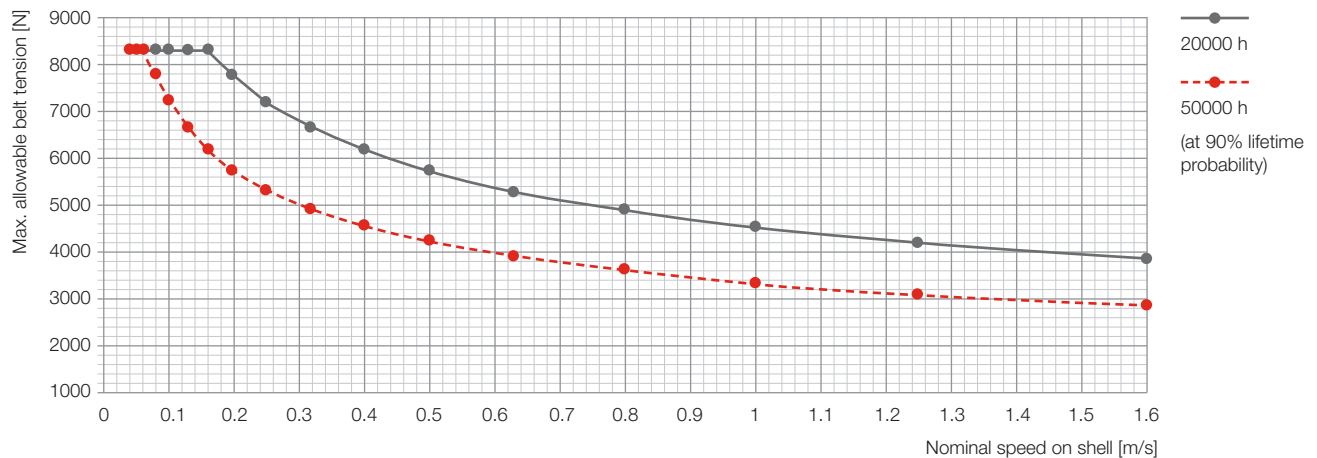


Drum motor with key 4x4



Standard shaft

Belt tension diagrams



For the right allowable belt tension value please check the accordant nominal speed on the drum motor shell.

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STANDARD WEIGHT DATA DRUM MOTOR 138LS

P _N	np	Standard weight [kg] for standard RL [mm]													
		300	320	350	400	450	500	550	600	650	700	750	800	900	1000
0.10	12	14.0	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.5	23.0	24.0	25.0	27.0	29.0
0.18	8	14.0	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.5	23.0	24.0	25.0	27.0	29.0
0.24	6	14.0	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.5	23.0	24.0	25.0	27.0	29.0
0.37	6	---	15.0	15.6	16.5	17.5	18.5	19.5	20.5	22.0	23.5	24.5	25.5	27.5	29.5
	4	14.0	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.5	23.0	24.0	25.0	27.0	29.0
0.55	2	14.0	14.5	15.0	16.0	17.0	18.0	19.0	20.0	21.5	23.0	24.0	25.0	27.0	29.0
0.75	4	---	15.0	15.6	16.5	17.5	18.5	19.5	20.5	22.0	23.5	24.5	25.5	27.5	29.5
	2	---	---	18.0	19.0	20.0	21.0	22.0	23.0	24.5	26.0	27.0	28.0	30.0	32.0
1.0 idler (UT138LS)	-	6.5	7.0	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	19.5	21.5

Cable specification

Available cable options:

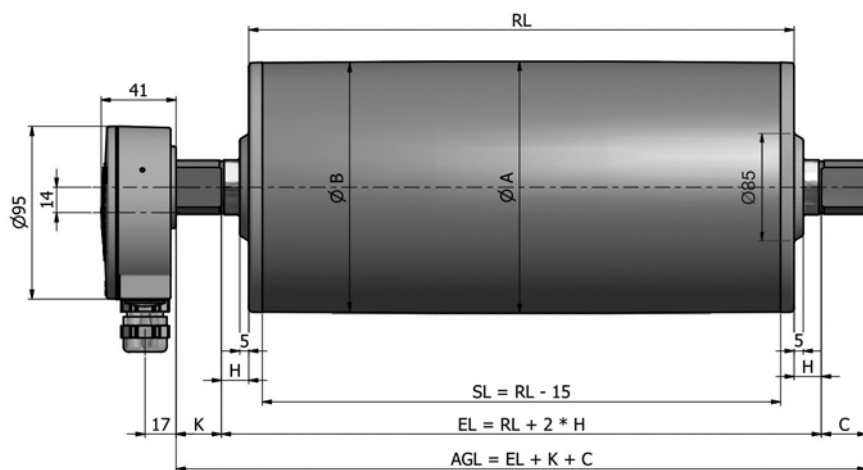
- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

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



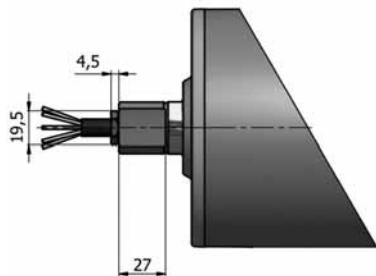
Drum motor with terminal box in aluminium

Drum shell shape	ØA [mm]	ØB [mm]
Crowned	138.5	137.0
Cylindrical	138.25	138.25
Cylindrical with key	137.0	137.0

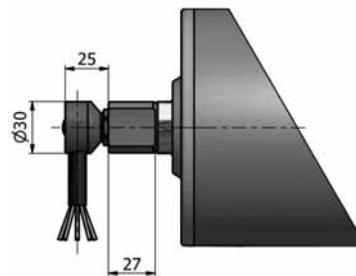
Shaft dimension	Width across flats [mm]	H [mm]	K [mm]	C [mm]
Ø30mm	20.0	15.0	27.0	25.0

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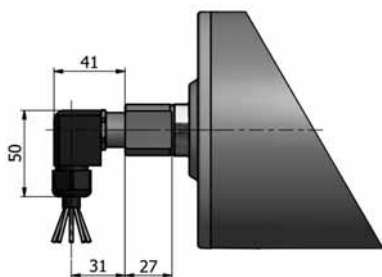
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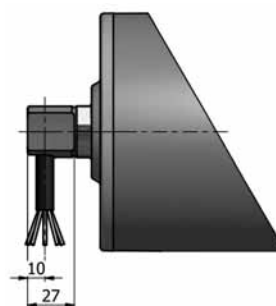
Straight connector in brass or stainless steel



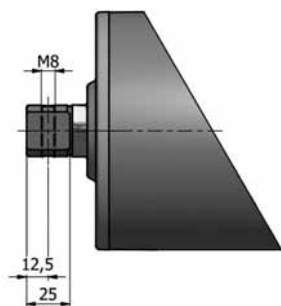
Elbow connector in stainless steel



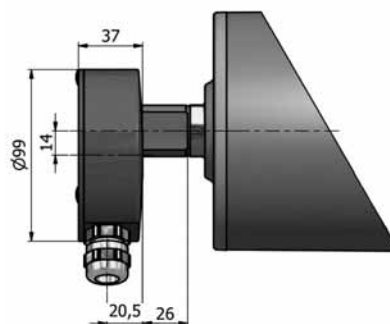
Elbow connector in polyamide



Cable slot 90° with threaded shaft



Cross-drilled and threaded shaft



Terminal box in stainless steel

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