DRUM MOTOR 80LS
81.5Ø 0.035kW - 0.16kW, with steel helical gearbox

Product description
This drum motor is perfect for high torque applications with limited space or access.

Characteristics
- Salt water resistant aluminum bearing housings
- Three phase AC induction motor
- 3-phase dual voltage is standard
- Integral motor protection
- Hardened steel helical gear box
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation
- Reinforced internal shaft for RL exceeding 500 mm

Applications
- Small conveyors for feeding materials with frequent cycle
- Packaging equipment
- Dynamic weighing equipment
- Metal detectors
- Ideal for pharmaceutical industry
- Meat processing
- Steel or plastic modular belts applications
- Dry, humid 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) Special voltage on request
Frequency	50/60 Hz
Internal shaft sealing system	Double-lipped FPM or nitrile; NBR
Protection rate	IP66, IP69 in TS8N Version
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)	1000 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	Standard			Std		
	Cross-drilled and threaded, M6			Std		
Electrical connection	Straight connector			TS8N	Std	
	Elbow connector			TS8N		Std
	Terminal box*	Std		TS8N		

* Shaft cap version.
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°)
- Dynamic balancing

Note
The combination of encoder and electromagnetic brake is not possible.

Accessories
- Mounting brackets
- Idler Pulleys
- Rollers for conveyors
- Shaft cap
- Frequency Converters

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TECHNICAL DATA DRUM MOTOR 80LS - 3PHASE - 50HZ - STANDARD RANGE

P_N [kW]	np (rpm)	I_f [A]	gs	i	V_A [m/s]	V_N [m/s]	n_A [min^{-1}]	M_N [Nm]	F_T [N]	RL [mm]
0.035	4 (1390)	0.49/0.28	3	53.89	0.11	0.11	25.8	12.3	303.9	min 200 max 1000
				37.78	0.16	0.14	36.8	8.6	213.1	
				30.88	0.19	0.18	45.0	7.1	174.2	
			2	21.23	0.28	0.25	65.5	4.8	119.7	
0.07	4 (1360)	0.75/0.43	3	53.89	0.11	0.10	25.2	25.2	621.3	min 250 max 1000
				37.78	0.15	0.14	36.0	17.6	435.6	
				30.88	0.19	0.18	44.0	14.4	356.0	
			2	21.23	0.27	0.25	64.1	9.9	244.8	
				14.88	0.39	0.38	91.4	6.9	171.6	
				12.16	0.47	0.45	111.8	5.7	140.2	
	2 (2650)	0.54/0.31	3	53.89	0.21	0.22	49.2	12.9	318.9	min 200 max 1000
				37.78	0.30	0.32	70.1	9.1	223.5	
				30.88	0.36	0.38	85.8	7.4	182.7	
			2	21.23	0.53	0.55	124.8	5.1	125.6	
0.12	2 (2690)	0.69/0.39	3	53.89	0.21	0.22	49.9	21.8	538.5	min 250 max 1000
				37.78	0.30	0.32	71.2	15.3	377.5	
				30.88	0.37	0.38	87.1	12.5	308.6	
			2	21.23	0.54	0.55	126.7	8.6	212.1	
				14.88	0.77	0.80	180.8	6.0	148.7	
				12.16	0.94	1.00	221.2	4.9	121.5	
0.16	2 (2650)	0.88/0.51	3	53.89	0.21	0.22	49.3	29.5	728.8	min 300 max 1000
				37.78	0.30	0.32	70.0	20.7	510.9	
				30.88	0.36	0.38	85.8	16.9	417.6	
			2	21.23	0.53	0.55	124.7	11.6	287.1	
				14.88	0.76	0.80	178.0	8.2	201.2	
				12.16	0.92	1.00	217.9	6.7	164.5	

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

DRUM MOTOR 80LS

81.5Ø 0.035kW - 0.16kW, with steel helical gearbox

TECHNICAL DATA DRUM MOTOR 80LS - 3PHASE - 50HZ - *DERATED* RANGE

P_N [kW]	np (rpm)	I_f [A]	gs	i	V_A [m/s]	V_N [m/s]	n_A [min^{-1}]	M_N [Nm]	F_T [N]	RL [mm]
0.06	4 (1380)	0.59/0.34	3	53.89	0.11	0.10	25.6	21.3	525	min 250 max 1000
				37.78	0.15	0.14	36.5	14.9	368	
				30.88	0.19	0.18	44.7	12.2	301	
			2	21.23	0.28	0.25	65.0	8.4	207	
				14.88	0.39	0.38	92.7	5.9	145	
				12.16	0.48	0.45	113.5	4.8	118	
	2 (2730)	0.35/0.20	3	53.89	0.21	0.22	50.7	10.7	265	min 200 max 1000
				37.78	0.31	0.32	72.3	7.5	186	
				30.88	0.37	0.38	88.4	6.2	152	
			2	21.23	0.55	0.55	128.6	4.2	105	
0.1	2 (2730)	0.59/0.34	3	53.89	0.21	0.22	50.7	17.9	442	min 250 max 1000
				37.78	0.31	0.32	72.3	12.6	310	
				30.88	0.37	0.38	88.4	10.3	253	
			2	21.23	0.55	0.55	128.6	7.1	174	
				14.88	0.78	0.80	183.5	4.9	122	
				12.16	0.95	1.00	224.5	4.0	100	

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_f 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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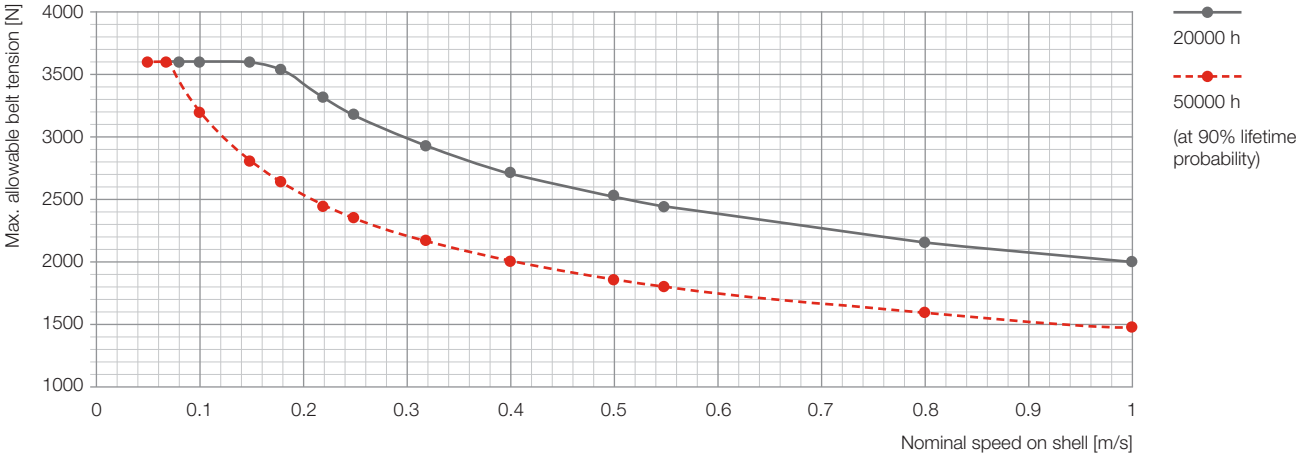
Belt tension diagram



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

Standard weights for drum motor & idler type 80LS															
PN [kW]	np	Standard weight [kg] for standard RL [mm]													
		200	250	300	350	400	450	500	550	600	650	700	800	900	1000
0.035	4	2.80	3.25	3.70	4.15	4.60	5.05	5.50	5.95	6.40	6.85	7.30	8.20	9.10	10.00
0.07	4	---	3.40	3.85	4.30	4.75	5.20	5.65	6.10	6.55	7.00	7.45	8.35	9.25	10.15
	2	2.80	3.25	3.70	4.15	4.60	5.05	5.50	5.95	6.40	6.85	7.30	8.20	9.10	10.00
0.12	2	---	3.40	3.85	4.30	4.75	5.20	5.65	6.10	6.55	7.00	7.45	8.35	9.25	10.15
0.16	2	---	---	3.85	4.30	4.75	5.20	5.65	6.10	6.55	7.00	7.45	8.35	9.25	10.15
idler (UT80LS)	-	2.30	2.85	3.40	3.95	4.50	5.05	5.60	6.15	6.70	7.25	7.80	8.90	10.00	11.10

Cable specification

Available cable options:
- Standard, Screened
- Standard, Unscreened
- 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**
Electromagnetic brake	RL min. + 50 mm
Encoder	RL min. + 50 mm

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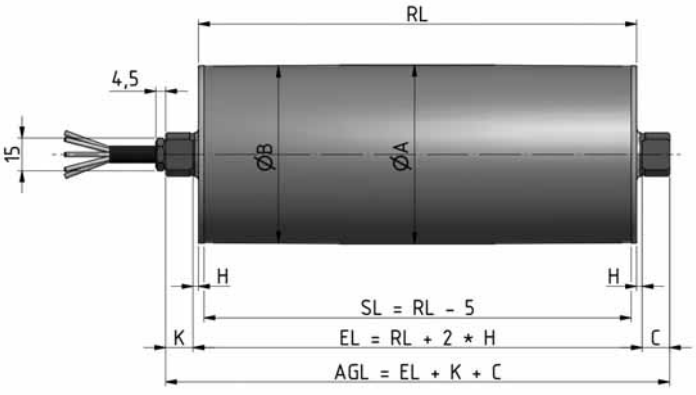
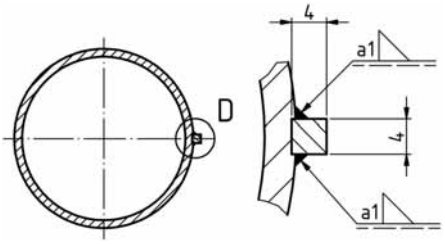


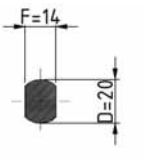
Drum motor with straight connector in stainless steel

Drum shell shape	ØA [mm]	ØB [mm]
Crowned	81.5	80.5
Cylindrical	81.0	81.0
Cylindrical with key	81.7	81.7

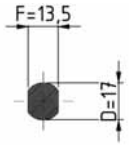
Shaft dimension	Width across flats [mm]	H [mm]	K [mm]	C [mm]
Ø17mm	13.5	2.5	12.5	12.5
Ø20mm standard	14.0	2.5	12.5	12.5
Ø35mm	21.0	3	20.0	20.0



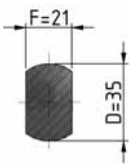
Drum motor with key 4x4



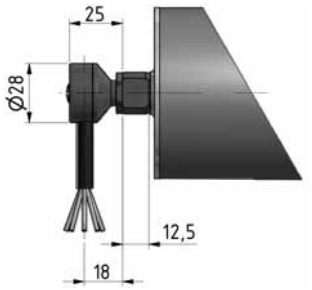
Standard shaft



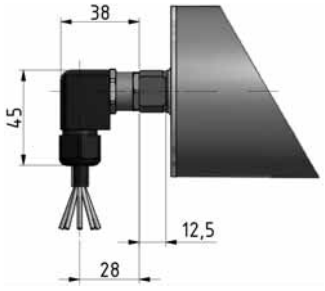
Alternative shaft



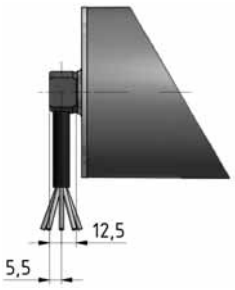
Shaft cap



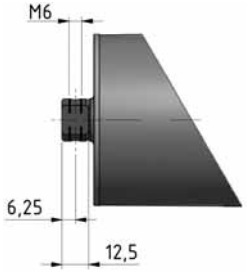
Elbow connector in stainless steel



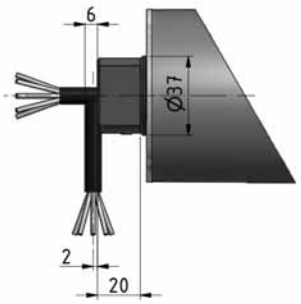
Elbow connector in polyamide



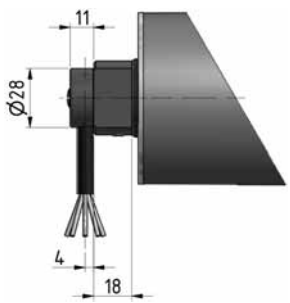
Cable slot 90° with threaded shaft



Cross-drilled and threaded shaft



Shaft cap Uni in stainless steel



Elbow Connector
with shaft cap in stainless steel