

# DRUM MOTOR 165LS

165.0Ø 0.11kW - 2.20kW, with steel helical gearbox

## Product description

The drum motor 165LS is able to provide high torques and withstand high radial loads.

### Characteristics

- Salt water resistant aluminum bearing housing
- Induction motor three phases alternating current
- Dual voltage
- Integral motor protection
- Steel- hardened helical spur gear
- Low noise operation
- Maintenance free
- Lifetime lubrication
- Reversible operation

### Applications

- Conveyors for heavy and frequent use
- Logistics applications
- Airport and postal conveyors
- Warehouse loading conveyors
- Telescopic conveyors
- Agricultural plants
- Manufacturing of food processes
- Modular belts, steel or plastic applications
- Dry, damp and frequent wash 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
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, M10		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 bearings
- Electromagnetic brake
- Rectifiers
- Encoder
- Food-grade Oil (EU, FDA and USDA)
- Non-horizontal mounting (more than  $\pm 5^\circ$ )
- Dual speed motor
- Version TS7N - as TS8N but with re-greasable labyrinth seals

## 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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TECHNICAL DATA DRUM MOTOR 165LS - 3PHASE - 50HZ - STANDARD

$P_N$ [kW]	np (rpm)	$I_f$ [A]	gs	i	$V_A$ [m/s]	$V_N$ [m/s]	$n_A$ [min <sup>-1</sup> ]	$M_N$ [Nm]	$F_T$ [N]	TE [N]	RL [mm]	
0.11	12 (470)	1.7/0.98	3	75.03	0.05	0.05	6	159	1934	11000	min 400 max 2000	
				61.56	0.07	0.06	8	131	1587			
			49.75	0.08	0.08	9	106	1282				
			2	37.93	0.11	0.10	12	81	978			
0.37	6 (920)	2.35/1.35	3	75.03	0.11	0.10	12	274	3323	19000	min 400 max 2000	
				61.56	0.13	0.13	15	225	2727			
				49.75	0.16	0.16	18	182	2203			
	4 (1375)	1.9/1.1	3	61.56	0.19	0.20	22	150	1824	11000	min 3500 max 2000	
				49.75	0.24	0.25	28	121	1474			
				37.93	0.31	0.32	36	93	1124			
				30.05	0.39	0.40	46	73	891			
				23.76	0.50	0.50	58	58	704			
				19.20	0.62	0.63	72	47	569			
			2	14.64	0.81	0.80	94	36	434			
				11.60	1.02	1.00	119	28	344			7600
				7600								
0.75	6 (945)	4.65/2.7	3	61.56	0.13	0.13	16	437	5299	19000	min 400 max 2000	
				46.23	0.18	0.16	20	333	4041			
	4 (1405)	3.5/2.0	3	61.56	0.20	0.20	23	298	3619	11000	min 400 max 2000	
				49.75	0.24	0.25	28	241	2925			
				37.93	0.32	0.32	37	184	2230			
				30.05	0.40	0.40	47	146	1767			
				23.76	0.51	0.50	59	115	1397			
				19.20	0.63	0.63	73	93	1129			
			2	14.64	0.83	0.80	96	71	861			
				11.60	1.04	1.00	121	56	682			7600
				7600								
	1.10	4 (1420)	4.7/2.7	3	61.56	0.20	0.20	23	433	5252	11000	min 400 max 2000
					46.23	0.26	0.25	31	325	3944		
					37.93	0.32	0.32	37	267	3236		
2 (2830)		4.1/2.35	3	61.56	0.40	0.40	46	217	2635	7600	min 400 max 2000	
				49.75	0.49	0.50	57	175	2130			
				37.93	0.64	0.63	75	134	1624			
				30.05	0.81	0.80	94	106	1286			
				23.76	1.03	1.00	119	84	1017			
				19.20	1.27	1.25	147	68	822			
			2	14.64	1.67	1.60	193	52	627			
				11.60	2.10	2.00	244	41	497			
				9.43	2.59	2.50	300	33	404			

$P_N$  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\*

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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## 165.0Ø 0.11kW - 2.20kW, with steel helical gearbox

TECHNICAL DATA DRUM MOTOR 165LS - 3PHASE - 50HZ - STANDARD

$P_N$ [kW]	np (rpm)	$I_f$ [A]	gs	i	$V_A$ [m/s]	$V_N$ [m/s]	$n_A$ [min <sup>-1</sup> ]	$M_N$ [Nm]	$F_T$ [N]	TE [N]	RL [mm]
1.50	2 (2850)	5.8/3.35	3	61.56	0.40	0.40	46	294	3568	11000	min 400 max 2000
				46.23	0.53	0.50	62	221	2680		
				37.93	0.65	0.63	75	181	2199		
				30.05	0.82	0.80	95	143	1742		
			2	23.76	1.03	1.00	120	113	1377	7600	
				19.20	1.28	1.25	148	92	1113		
				14.64	1.68	1.60	195	70	849		
				11.60	2.12	2.00	246	55	672		
				9.43	2.61	2.50	302	45	547		
				7.80	3.15	3.15	365	37	452		
				7100							
				7100							
2.20	2 (2860)	8.15/4.7	3	46.23	0.53	0.50	62	323	3916	11000	min 430 max 2000
				37.93	0.65	0.63	75	265	3213		
				30.05	0.82	0.80	95	210	2546		
				24.43	1.01	1.00	117	170	2070		
			2	20.21	1.22	1.25	142	141	1712	7600	
				14.64	1.69	1.60	195	102	1240		
				11.60	2.13	2.00	247	81	983		
				9.43	2.62	2.50	303	66	799		
				7.80	3.16	3.15	367	54	661		
				7100							
				7100							
				7100							

$P_N$  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\*  
 TE Maximum allowable belt tension (radial load)  
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Standard weight data drum motor 165LS

P <sub>N</sub>	np	Standard weight [kg] for standard RL [mm]													
		350	400	450	500	550	600	650	700	750	800	850	900	950	1000
0.11	12	---	30.0	31.5	33.0	34.0	35.0	36.0	37.5	39.0	40.0	41.0	42.5	44.0	45.0
0.37	6	---	30.0	31.5	33.0	34.0	35.0	36.0	37.5	39.0	40.0	41.0	42.5	44.0	45.0
	4	26.0	28.0	29.5	31.0	32.0	33.0	34.0	35.5	37.0	38.0	39.0	40.5	42.0	43.0
0.75	6	---	33.0	34.5	36.0	37.0	38.0	39.0	40.5	42.0	43.0	44.0	45.5	47.0	48.0
	4	---	31.0	32.5	34.0	35.0	36.0	37.0	38.5	40.0	41.0	42.0	43.5	45.0	46.0
1.10	4	---	34.0	35.5	37.0	38.0	39.0	40.0	41.5	43.0	44.0	45.0	46.5	48.0	49.0
	2	---	33.0	34.5	36.0	37.0	38.0	39.0	40.5	42.0	43.0	44.0	45.5	47.0	48.0
1.50	2	---	34.0	35.5	37.0	38.0	39.0	40.0	41.5	43.0	44.0	45.0	46.5	48.0	49.0
2.20	2	---	37.0	37.5	38.0	39.0	40.0	41.0	42.5	44.0	45.0	46.0	47.5	49.0	50.0
idler (UT165LS)	-	12.5	14.0	15.5	17.0	18.5	20.0	21.5	23.0	24.5	26.0	27.5	29.0	30.5	32.0

### Cable specification

Available cable options:

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

Available lengths: 1/3/5 m.

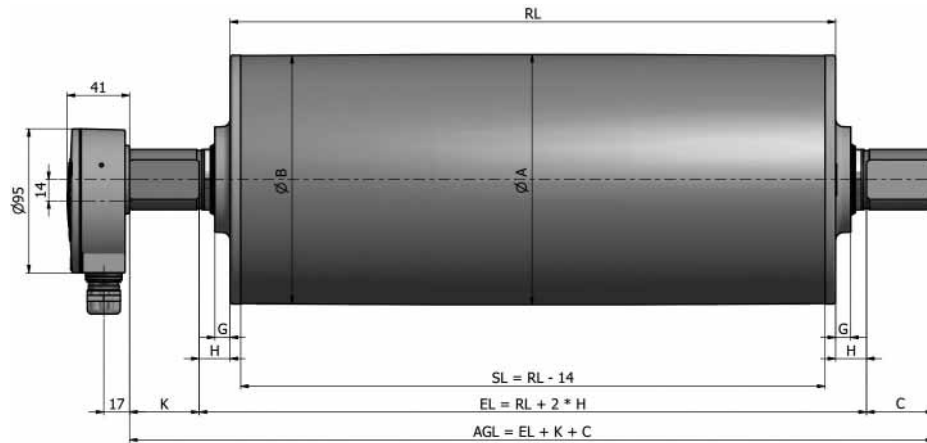
### Min. length with option

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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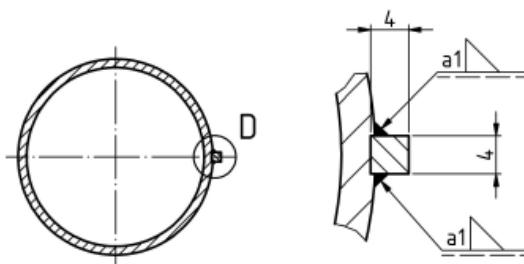
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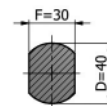
Drum motor with terminal box in aluminium

Drum shell shape	ØA [mm]	ØB [mm]
Crowned	165.0	163.5
Cylindrical	164.75	164.75
Cylindrical with key	162.0	162.0

Shaft dimension	Width across flats [mm]	H [mm]	K [mm]	C [mm]
Ø40mm	30	20	45	45



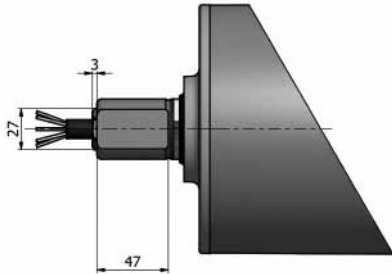
Drum motor with key 4x4



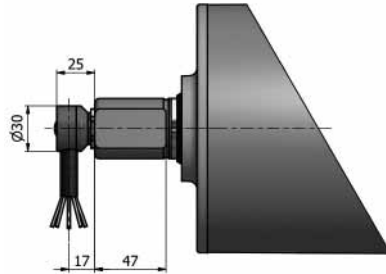
Standard shaft

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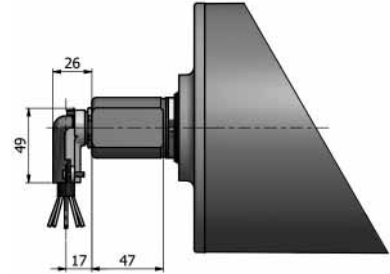
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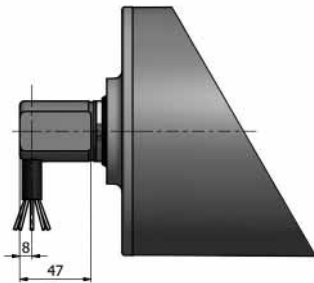
Straight connector in brass or stainless steel



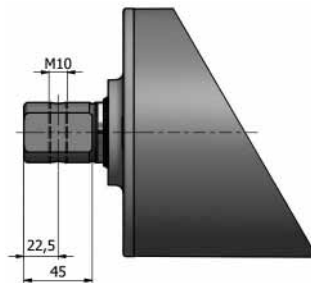
Elbow connector in stainless steel



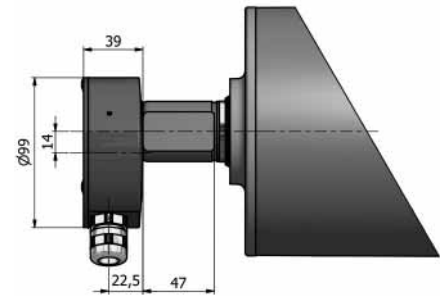
Elbow connector in aluminium



Cable connector 90° with threaded shaft



Cross-drilled and threaded shaft



Terminal box in stainless steel