

INTERROLL DRUM MOTOR 80S



Standard
Asynchronous
Drum Motors
80S

Compact drive for small light-duty conveyors

Product Description

Applications Because of its strength, reliability and zero maintenance, this drum motor is perfect for small infeed conveyors, packaging equipment and transfer conveyors.

- ✓ Small light-duty conveyors
- ✓ Cross belt feed conveyors
- ✓ Light-duty packaging equipment
- ✓ Dry and moist applications

- Characteristics**
- ✓ 3-phase or 1-phase AC induction motor
 - ✓ Single-rated voltage
 - ✓ Integral thermal motor protection
 - ✓ Technopolymer planetary gearbox
 - ✓ Low noise
 - ✓ Lightweight
 - ✓ Maintenance-free (with aluminium shaft caps)
 - ✓ Lifetime lubricated
 - ✓ Reversible

Technical Data

Electrical data	
Motor type	Asynchronous squirrel cage motor, IEC 34 (VDE 0530)
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	230/400 V ±5 % (IEC 34/38)
Frequency	50 Hz
Internal shaft sealing system	Double-lipped, NBR
External shaft sealing system	Deflection seal, NBR
Protection rate	IP66 (with grease nipple)
Thermal protection (see p 245)	Bi-metal switch
Operating modes (see p 230)	S1
Ambient temperature, 3-phase motor (see p 207)	+5 to +40 °C
Ambient temperature, 1-phase motor (see p 207)	+5 to +40 °C
General technical data	
Max. shell length SL	952 mm

Order Information

Please refer to the Configurator at the end of the catalogue..

Material Versions

You can choose the following versions of drum body components and electrical connection. The versions depend on the material of the components.

Component	Version	Material			
		Aluminium	Mild steel	Stainless steel	Brass / Nickel
Shell	Crowned		✓	✓	
	Cylindrical		✓	✓	
End housing	Standard	✓		✓	
Shaft cap	Standard	✓			
	With cable protection	✓			
	Regreasable			✓	
Electrical connector	Straight connector			✓	✓
	Elbow connector			✓	✓
	Terminal box	✓		✓	

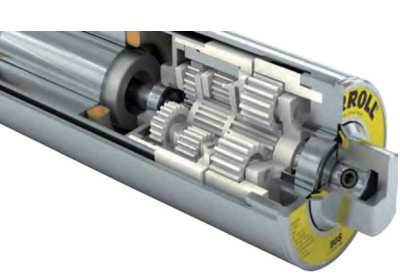
Please contact your Interroll customer consultant for further versions.

Options

- Lagging for friction drive belts, see p 128
- Food-grade oil (EU, FDA), see p 256
- Low temperature oil, see p 256
- cULus safety certifications, see p 251
- Non-horizontal mounting (more than ± 5°), see p 231

Accessories

- Mounting brackets, see p 164
- Idler pulleys, see p 178 to p 183
- Conveyor rollers, see p 188
- IFI - IP55 Frequency Inverter, see p 122



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Product Range

The following tables give an overview of the possible motor versions. When ordering, please specify the version in accordance with the configurator at the end of the catalogue.

All data and values in this catalogue refer to 50 Hz operation.

Motor versions

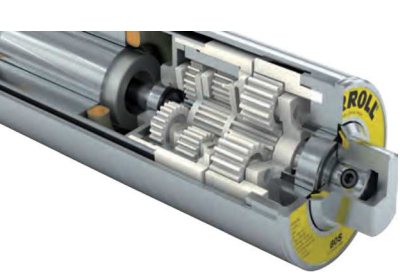
Mechanical data for 3-phase motors

P_N kW	np	gs	i	v m/s	n_A min ⁻¹	M_A Nm	F_N N	SL_{min} mm
0.040	4	3	78.55	0.072	16.8	19.5	479	295
			71.56	0.079	18.4	17.8	437	295
			63.51	0.089	20.8	15.8	387	295
0.050	2	3	115.20	0.102	23.9	16.8	412	270
0.060	4	2	19.20	0.293	68.8	7.5	183	295
			16.00	0.352	82.5	6.2	152	295
			13.09	0.430	100.8	5.1	125	295
0.075	2	3	96.00	0.125	29.4	20.6	505	270
0.085	2	3	78.55	0.152	35.6	19.5	479	270
			71.56	0.167	39.1	17.8	437	270
			63.51	0.188	44.1	15.8	387	270
			52.92	0.226	52.9	13.2	323	270
			48.79	0.245	57.4	12.1	298	270
			43.30	0.276	64.7	10.8	264	270
			19.20	0.622	145.8	5.0	123	270
			16.00	0.747	175.0	4.2	103	270
13.09	0.913	213.9	3.4	84	270			

Mechanical data for 1-phase motors

P_N kW	np	gs	i	v m/s	n_A min ⁻¹	M_A Nm	F_N N	SL_{min} mm
0.025	4	3	115.20	0.049	11.5	17.8	436	285
			96.00	0.059	13.8	14.8	364	285
			78.55	0.072	16.8	12.1	297	285
			71.56	0.079	18.4	11.0	271	285
0.075	2	3	96.00	0.122	28.6	21.4	525	270
			78.55	0.149	35.0	17.5	430	270
			71.56	0.164	38.4	16.0	391	270
			63.51	0.185	43.3	14.2	347	270
0.085	2	3	78.55	0.149	35.0	20.2	496	285
			71.56	0.164	38.4	18.4	452	285
			63.51	0.185	43.3	16.3	401	285
			52.92	0.222	52.0	14.2	423	285
0.110	2	3	63.51	0.185	43.3	20.7	508	285
			48.79	0.241	56.4	15.9	390	285
			43.30	0.271	63.5	14.1	346	285
			19.20	0.611	143.2	6.6	162	285
		2	16.00	0.733	171.9	5.5	135	285
			13.09	0.896	210.1	4.5	110	285

P_N	Rated power
np	Number of poles
gs	Gear stages
i	Gear ratio
v	Rated velocity of the shell
n_A	Rated revolutions of the drum shell
M_A	Rated torque of drum motor
F_N	Rated belt pull of drum motor
SL_{min}	Min. shell length



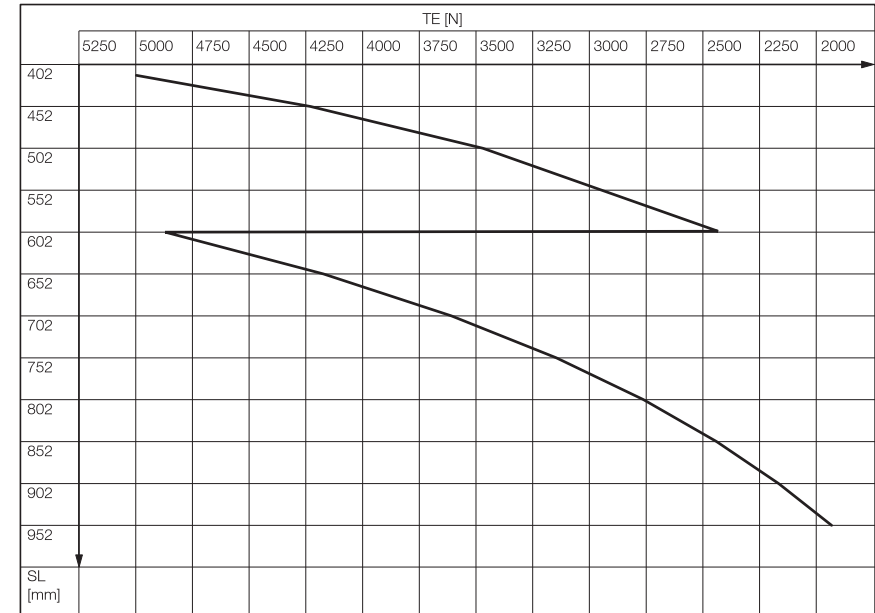
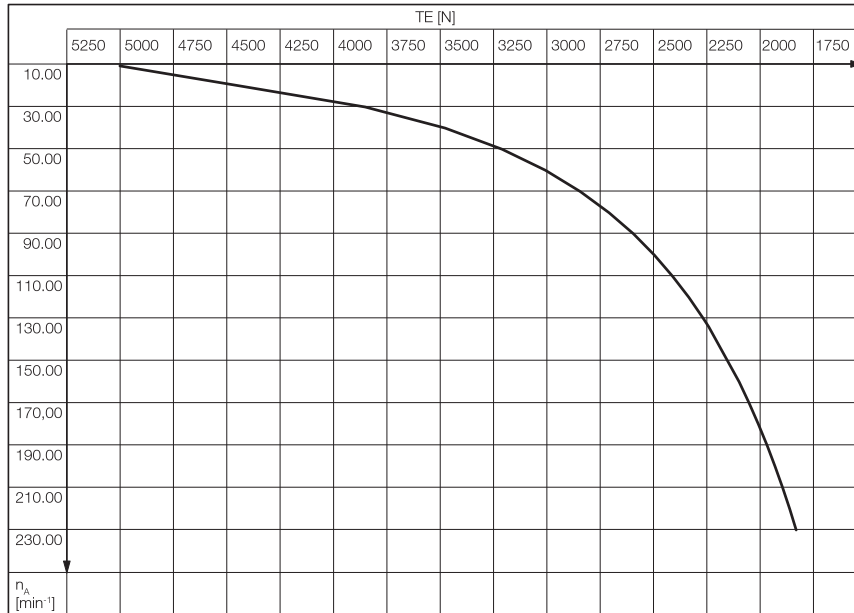
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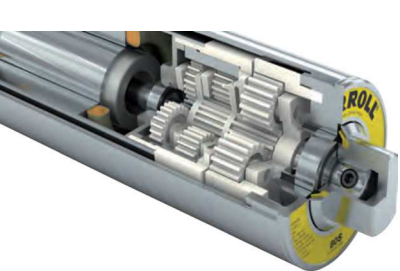
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Belt Tension



Note: To get the right value of the maximum allowed belt tension, first find the maximum allowed TE value for the drum motor RPM. For motors with SL > 402 mm, check if the maximum allowed TE value for the SL is lower. In this case, use the lower value as maximum allowed TE value.

TE	Belt Tension
n_A	Rated revolutions of the drum shell
SL	Shell length



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Electrical data for 3-phase motors

P_N kW	np	U_N V	I_N A	cos φ	η	J_R kgcm ²	I_s/I_N	M_s/M_N	M_p/M_N	M_b/M_N	R_M Ω	$U_{SH \text{ delta}}$ V DC	$U_{SH \text{ star}}$ V DC
0.040	4	230	0.71	0.65	0.21	1.0	1.8	1.60	1.60	1.60	156.5	36	-
		400	0.43	0.65	0.21	1.0	1.8	1.60	1.60	1.60	156.5	-	66
0.050	2	400	0.22	0.71	0.45	1.0	4.4	2.35	2.35	2.35	171.0	-	40
0.060	4	230	0.79	0.65	0.29	1.0	1.8	1.60	1.60	1.60	156.5	40	-
		400	0.46	0.65	0.29	1.0	1.8	1.60	1.60	1.60	156.5	-	70
0.075	2	230	0.51	0.69	0.53	1.0	4.6	2.50	2.50	2.50	111.3	20	-
		400	0.30	0.70	0.51	1.0	4.5	2.50	2.50	2.50	113.0	-	36
0.085	2	230	0.53	0.73	0.55	1.0	4.6	2.24	2.24	2.24	111.3	22	-
		400	0.32	0.74	0.52	1.0	4.5	2.24	2.24	2.24	113.0	-	40

Electrical data for 1-phase motors

P_N kW	np	U_N V	I_N A	cos φ	η	J_R kgcm ²	I_s/I_N	M_s/M_N	M_p/M_N	M_b/M_N	R_M Ω	$U_{SH \sim}$ V DC	C_r μF
0.025	4	230	0.39	1.00	0.28	1.2	2.2	1.11	1.11	1.37	150.0	44	3
0.075	2	230	0.68	1.00	0.48	1.0	3.2	0.74	0.74	1.37	66.0	34	4
0.085	2	230	0.73	0.98	0.53	1.3	5.2	0.93	0.93	1.60	52.0	28	6
0.110	2	230	0.94	1.00	0.51	1.2	2.0	0.73	0.73	1.15	51.0	36	8

P_N	Rated power
np	Number of poles
U_N	Rated voltage
I_N	Rated current
cos φ	Power factor
η	Efficiency
J_R	Rotor moment of inertia
I_s/I_N	Ratio of starting current to rated current
M_s/M_N	Ratio of starting torque to rated torque
M_p/M_N	Ratio of pull-up torque to rated torque
M_b/M_N	Ratio of break-down torque to rated torque
R_M	Phase resistance
$U_{SH \text{ delta}}$	Preheating voltage in delta connection
$U_{SH \text{ star}}$	Preheating voltage in star connection
U_{SH}	Preheating voltage in single phase
C_r	Capacitor size

Cable Specifications

Available cables for connectors (see also p 254):

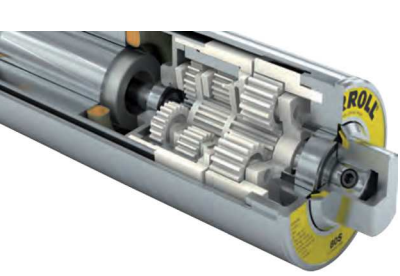
- Standard, screened
- Standard, unscreened
- Halogen-free, screened
- Halogen-free, unscreened

Available length: 1 / 3 / 5 m

Note: Only single voltage available with Halogen-free, screened cables.

Connection Diagrams

For connection diagrams, see Planning Section on p 258.



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Standard
dimensions

Dimensions

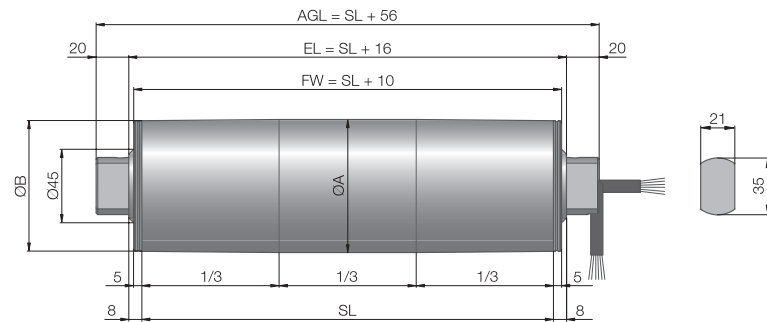


Fig.: Drum motor with shaft cap

Type	Ø A mm	Ø B mm
80S crowned shell length SL 260 to 602 mm	81.5	80.0
80S crowned mild steel shell length SL 603 to 952 mm	82.7	81.0
80S crowned stainless steel shell length SL 603 to 952 mm	83.0	80.0
80S cylindrical shell length SL 260 to 602 mm	80.5	80.5
80S cylindrical stainless steel shell length SL 603 to 952 mm	83.0	83.0
80S cylindrical mild steel shell* length SL 603 to 952 mm	82.7	82.7

Note: *The mild steel shell has a thin zinc layer additional to the 82.7 mm outer diameter.

Connector
dimensions

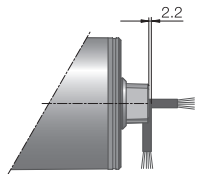


Fig.: Shaft cap, standard, aluminium

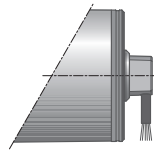


Fig.: Shaft cap with cable protection, aluminium

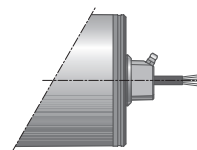


Fig.: Straight connector with regreasable shaft cap, stainless steel

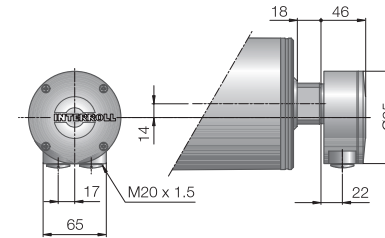


Fig.: Terminal box, aluminium

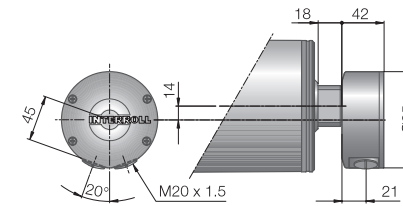


Fig.: Terminal box, stainless steel

Standard drum motor lengths and their weights:

Shell length SL in mm	260	270	285	302	352	402	452	502	552	602	652	702	752
Average weight in kg	4.6	4.7	5.2	5.3	5.7	6.1	6.5	6.9	7.3	7.7	10	10.5	11
Shell length SL in mm	802	852	902	952									
Average weight in kg	11.5	12	12.5	13									

Standard length
and weight