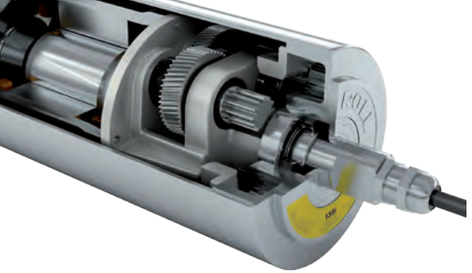


INTERROLL DRUM MOTOR 80i

Compact and robust drive for small feed conveyors with high-duty cycles

Product Description

Applications

The drum motor is perfect for high torque applications with limited space or access.

- ✓ Small feed conveyors with high-duty cycles
- ✓ Packaging equipment
- ✓ Dynamic weighing equipment
- ✓ Metal detectors
- ✓ Pharmaceutical handling
- ✓ Food processing
- ✓ Steel or plastic modular belt applications
- ✓ Dry, wet and wash-down applications

Characteristics

- ✓ Salt-water-resistant aluminium end housings
- ✓ 3-phase AC induction motor
- ✓ Dual voltage
- ✓ Integral thermal motor protection
- ✓ Steel-hardened helical spur gear
- ✓ Low noise
- ✓ Maintenance-free
- ✓ Lifetime lubricated
- ✓ Reversible
- ✓ Reinforced shaft for SL above 543 mm

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) Most international voltages and frequencies can be supplied on request
Frequency	50 Hz
Internal shaft sealing system	Double-lipped, FPM
Protection rate	IP66
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, 3-phase motor for applications with positive drive belts, or without belts (see p 207)	+5 to +25 °C
General technical data	
Max. shell length SL	1,093 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	Techno-polymer
Shell	Crowned		✓	✓		
	Cylindrical		✓	✓		
	Cylindrical + key, for using sprockets		✓	✓		
End housing	Standard	✓		✓		
	With grooves and chain sprockets	✓		✓		
Shaft	Standard			✓		
	Cross-drilled and threaded, M6			✓		
External seal	Galvanised labyrinth		✓			
	Stainless steel Labyrinth			✓		
Electrical connector	Straight connector			✓	✓	
	Elbow connector			✓		✓

Please contact your Interroll customer consultant for further versions.

Options

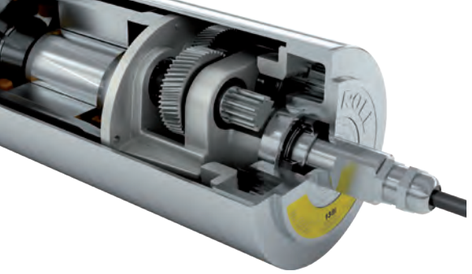
- Lagging for friction drive belts, see p 128
- Lagging for plastic modular belts, see p 134
- Lagging for positive drive solid homogeneous belts, see p 138
- Sprockets for plastic modular belts, see p 142
- Backstops, see p 150
- Balancing, see p 151
- Electromagnetic brakes and rectifiers, see p 152
- Feedback Devices, see p 158
- Food-grade oil (EU, FDA), see p 256
- Low temperature oil, see p 256
- Labyrinth with FPM, see p 248
- cULus safety certifications, see p 251
- Non-horizontal mounting (more than ± 5°), see p 231

Note: Combination of encoder and electromagnetic brake is not possible.

With an encoder, a special Ø 25 x 20 mm shaft is required. This shaft is only possible with a flat face end housing.

Accessories

- Mounting brackets, see p 168
- Idler pulleys, see p 178 to p 183
- Conveyor rollers, see p 188
- IFI - IP55 Frequency Inverter, see p 122



INTERROLL DRUM MOTOR 80i

Compact and robust drive for small feed conveyors with high-duty cycles

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 (Standard 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	54.73	0.108	25.3	14.4	354	193*
			38.18	0.155	36.2	10.1	247	193*
			31.09	0.190	44.5	8.2	201	193*
		2	21.28	0.277	65.0	5.7	140	193*
			14.85	0.398	93.2	4.0	98	193*
			12.09	0.488	114.5	3.3	80	193*
0.070	4	3	54.73	0.100	23.5	26.8	657	243
			38.18	0.144	33.7	18.7	459	243
			31.09	0.177	41.4	15.2	373	243
		2	21.28	0.258	60.5	10.6	261	243
			14.85	0.370	86.7	7.4	182	243
			12.09	0.455	106.5	6.0	148	243
	2	3	54.73	0.217	50.8	12.4	303	193*
			38.18	0.310	72.8	8.6	212	193*
			31.09	0.381	89.4	7.0	172	193*
		2	21.28	0.557	130.5	4.9	120	193*
			14.85	0.798	187.1	3.4	84	193*
			12.09	0.980	229.8	2.8	68	193*
0.120	2	3	54.73	0.217	50.8	21.1	518	243
			38.18	0.310	72.8	14.7	362	243
			31.09	0.381	89.4	12.0	294	243
		2	21.28	0.557	130.5	8.4	206	243
			14.85	0.798	187.1	5.8	143	243
			12.09	0.980	229.8	4.8	117	243

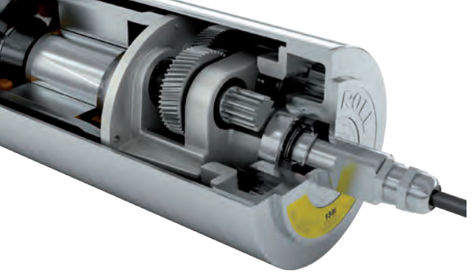
Note: *The maximum SL for this motors is 273 mm and only single voltage is available.

Mechanical data for 3-phase motors (Motors for applications with positive drive belts or no belts)

P_N kW	np	gs	i	v m/s	n_A min^{-1}	M_A Nm	F_N N	SL_{min} mm
0.033	4	3	54.73	0.107	25.3	11.8	293	193*
			38.18	0.154	36.2	8.3	204	193*
			31.09	0.189	44.5	6.7	166	193*
		2	21.28	0.276	65.0	4.7	116	193*
			14.85	0.395	93.2	3.3	81	193*
			12.09	0.485	114.5	2.7	66	193*
0.058	4	3	54.73	0.102	23.9	21.8	538	243
			38.18	0.146	34.3	15.2	375	243
			31.09	0.179	42.1	12.4	306	243
		2	21.28	0.261	61.6	8.6	213	243
			14.85	0.374	88.2	6.0	149	243
			12.09	0.460	108.3	4.9	121	243
	2	3	54.73	0.213	50.2	10.4	256	193*
			38.18	0.305	72.0	7.2	178	193*
			31.09	0.375	88.5	5.9	145	193*
		2	21.28	0.548	129.2	4.1	101	193*
			14.85	0.785	185.2	2.9	71	193*
			12.09	0.964	227.4	2.3	58	193*
0.099	2	3	54.73	0.211	49.8	17.9	441	243
			38.18	0.303	71.4	12.5	308	243
			31.09	0.372	87.7	10.2	251	243
		2	21.28	0.543	128.1	7.1	175	243
			14.85	0.779	183.7	4.9	122	243
			12.09	0.957	225.5	4.0	99	243

Note: *The maximum SL for this motors is 273 mm and only single voltage is available.

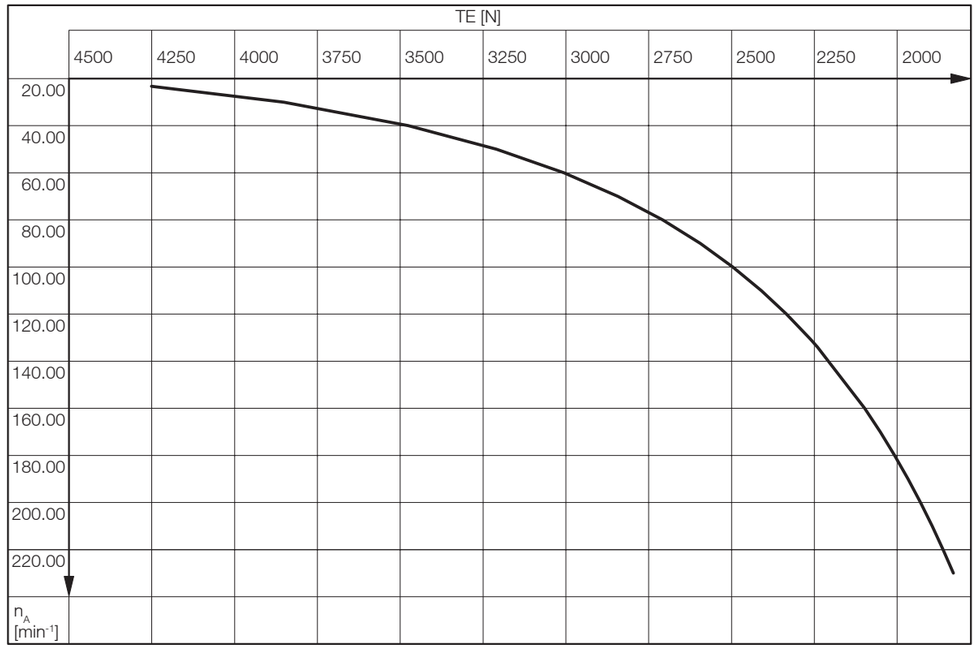
P_N	Rated power
np	Number of poles
gs	Gear stages
i	Gear ratio
v	Rated velocity of the shell
n_A	Rated revolutions of the drum shell
M_A	Rated torque of drum motor
F_N	Rated belt pull of drum motor
SL_{min}	Min. shell length

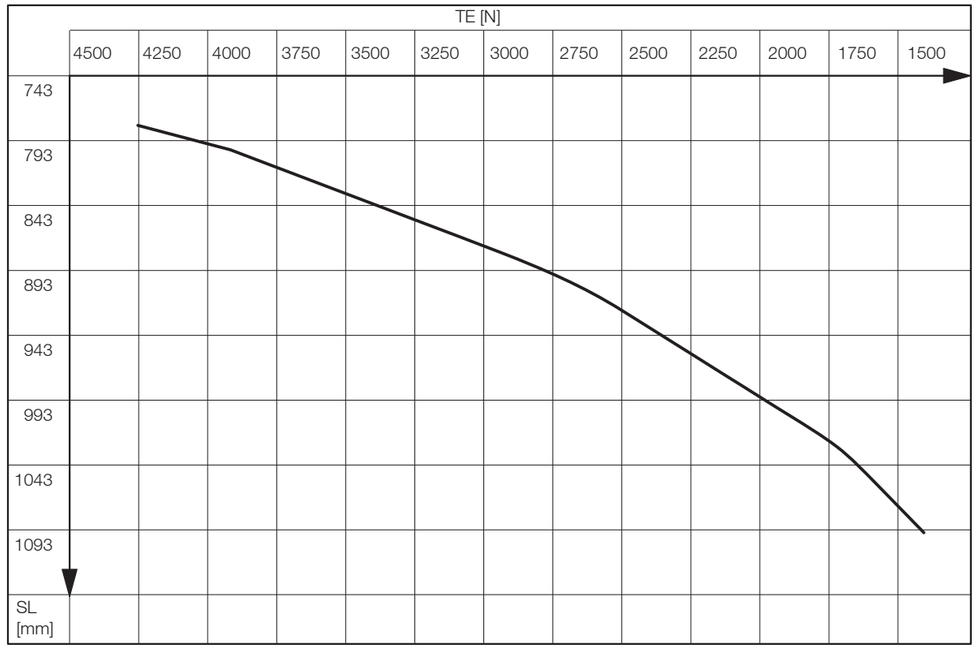


INTERROLL DRUM MOTOR 80i

Compact and robust drive for small feed conveyors with high-duty cycles

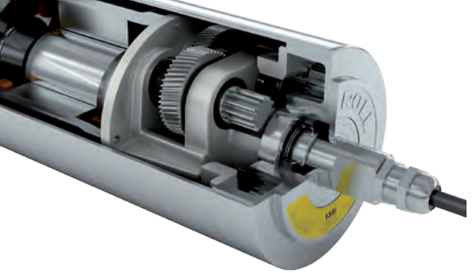
Belt Tension





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 > 750 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



INTERROLL DRUM MOTOR 80i

Compact and robust drive for small feed conveyors with high-duty cycles

Electrical data for 3-phase motors (Standard motors)

P_N kW	np	U_N V	I_N A	cos φ	η	J_R kgcm²	I_S/I_N	M_S/M_N	M_P/M_N	M_B/M_N	R_M Ω	$U_{SH\ delta}$ V DC	$U_{SH\ star}$ V DC
0.040	4	230	0.37	0.68	0.41	0.4	1.9	1.80	1.80	2.00	240.0	30	-
		400	0.21	0.68	0.41	0.4	1.9	1.80	1.80	2.00	240.0	-	51
0.070	4	230	0.48	0.68	0.53	0.6	1.4	1.66	1.66	1.75	156.0	25	-
		400	0.28	0.68	0.53	0.6	1.4	1.66	1.66	1.75	156.0	-	45
	2	230	0.38	0.82	0.56	0.4	2.6	1.90	1.90	2.00	190.0	30	-
		400	0.22	0.82	0.56	0.4	2.6	1.90	1.90	2.00	190.0	-	51
0.120	2	230	0.59	0.78	0.65	0.6	2.6	2.00	2.00	2.10	89.0	20	-
		400	0.34	0.78	0.65	0.6	2.6	2.00	2.00	2.10	89.0	-	35

Electrical data for 3-phase motors (Motors for applications with positive drive belts or no belts)

P_N kW	np	U_N V	I_N A	cos φ	η	J_R kgcm²	I_S/I_N	M_S/M_N	M_P/M_N	M_B/M_N	R_M Ω	$U_{SH\ delta}$ V DC	$U_{SH\ star}$ V DC
0.033	4	230	0.30	0.62	0.45	0.4	1.7	2.73	2.48	2.74	286.5	27	-
		400	0.17	0.62	0.45	0.4	1.7	2.73	2.48	2.74	286.5	-	45
0.058	4	230	0.39	0.68	0.54	0.6	2.4	2.31	2.15	2.31	106.4	14	-
		400	0.23	0.68	0.54	0.6	2.4	2.31	2.15	2.31	106.4	-	25
	2	230	0.26	0.78	0.71	0.4	2.4	2.15	1.90	2.26	183.5	19	-
		400	0.15	0.78	0.71	0.4	2.4	2.15	1.90	2.26	183.5	-	32
0.099	2	230	0.45	0.78	0.71	0.6	2.4	2.31	2.15	2.31	106.4	19	-
		400	0.26	0.78	0.71	0.6	2.4	2.31	2.15	2.31	106.4	-	32

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
$U_{SH\ delta}$	Preheating voltage in delta connection
$U_{SH\ star}$	Preheating voltage in star connection

Cable Specifications

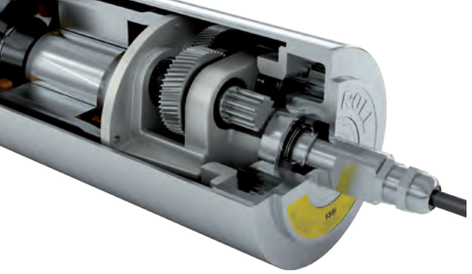
Available cables for connectors (see also p 252):

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

Available length: 1 / 3 / 5 / 10 m

Connection Diagrams

For connection diagrams, see Planning Section on p 260.



Standard dimensions

Dimensions

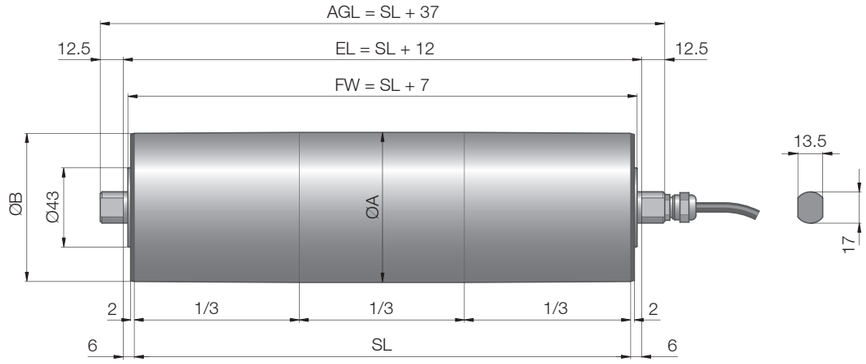


Fig.: Drum motor with straight connector

Type	Ø A mm	Ø B mm
80i crowned shell	81.5	80.5
80i cylindrical shell	81.0	81.0
80i cylindrical shell + key	81.7	81.7

Connector dimensions

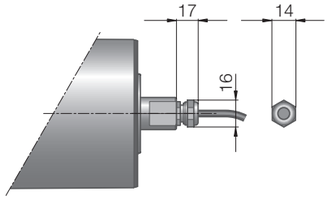


Fig.: Straight connector, brass/nickel

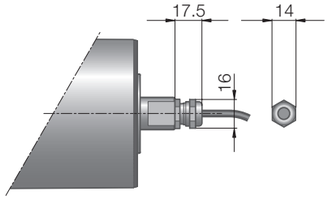


Fig.: Straight connector, stainless steel

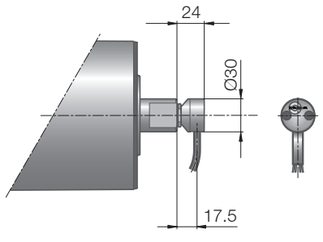


Fig.: Elbow connector, stainless steel

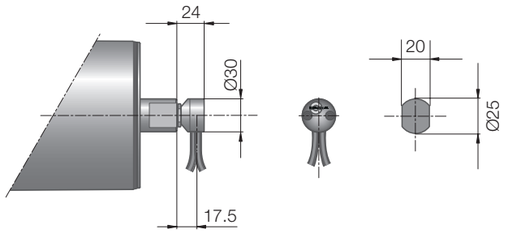


Fig.: Elbow connector / Feedback device, stainless steel

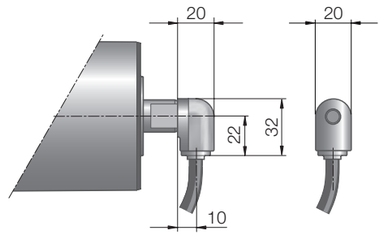


Fig.: Elbow connector, technopolymer

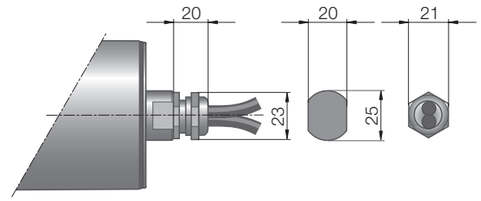


Fig.: Straight connector / Feedback device, brass/nickel

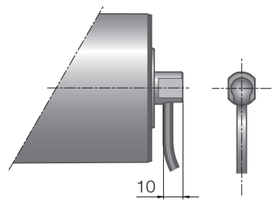


Fig.: Cable slot connector

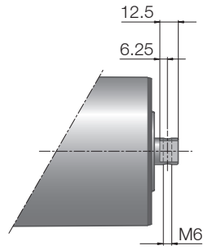


Fig.: Shaft, cross-drilled and threaded

Shafts for fixing

Min. length with option for 80i

The following options increase the minimum length of the drum motor.

Option	Min. SL with option mm
Brake	Min. 193 + 70; Min. 243 + 50
Encoder	Min. 193 + 70; Min. 243 + 50
Backstop	Min. 193 + 50; Min. 243 + 30
Cable slot connector	Min. SL + 50

Standard length and weight

Standard drum motor lengths and their weights:

Shell length SL in mm	193	243	293	343	393	443	493	543	593	643
Average weight in kg	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00	9.35	8.80

Shell length SL in mm	693	743	793	843	893	943	993	1,043	1,093
Average weight in kg	9.35	9.90	10.45	11.00	11.55	12.10	12.65	13.20	13.75