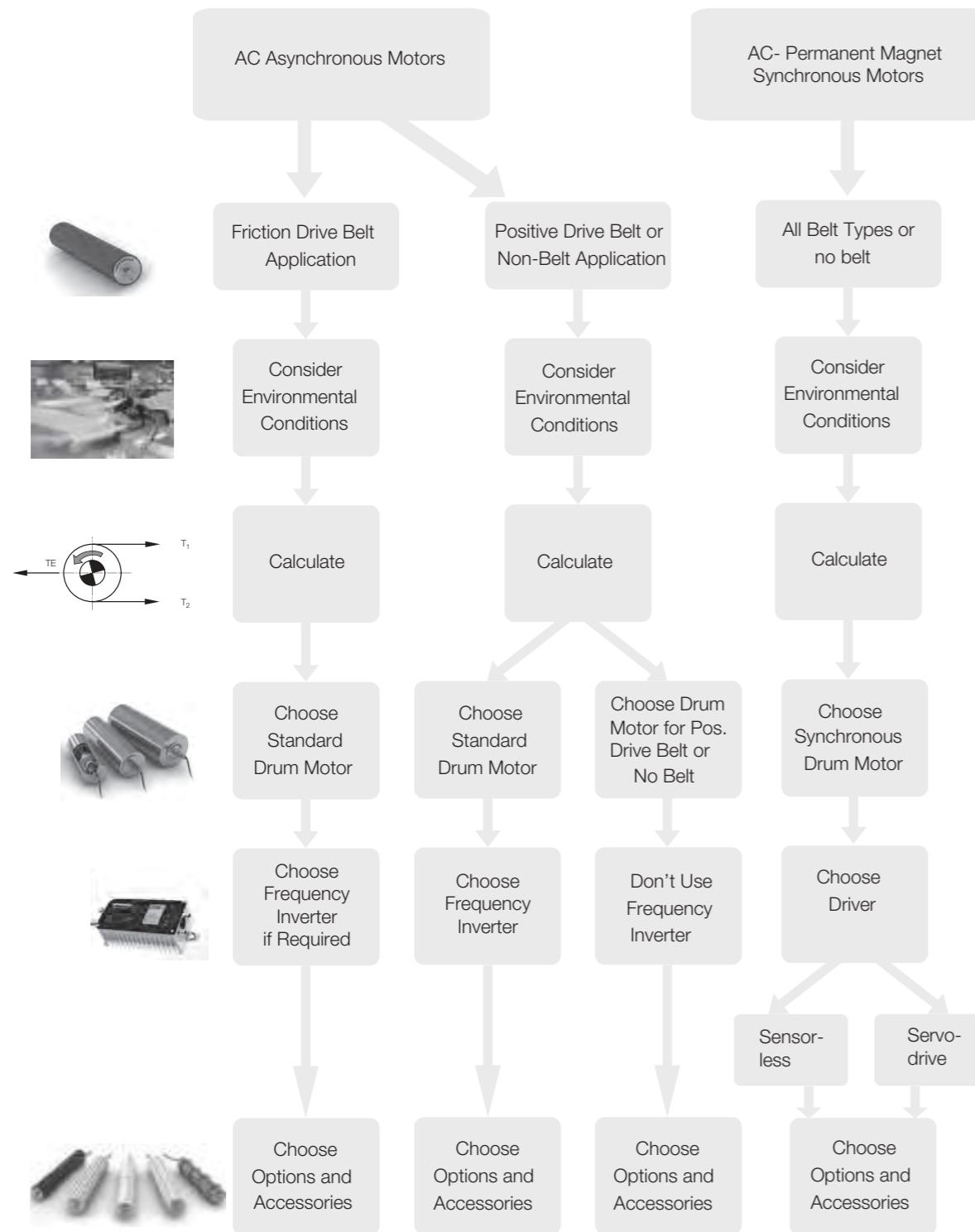




D R U M M O T O R S

TABLE OF CONTENTS

Which drum motor is suitable for your application?

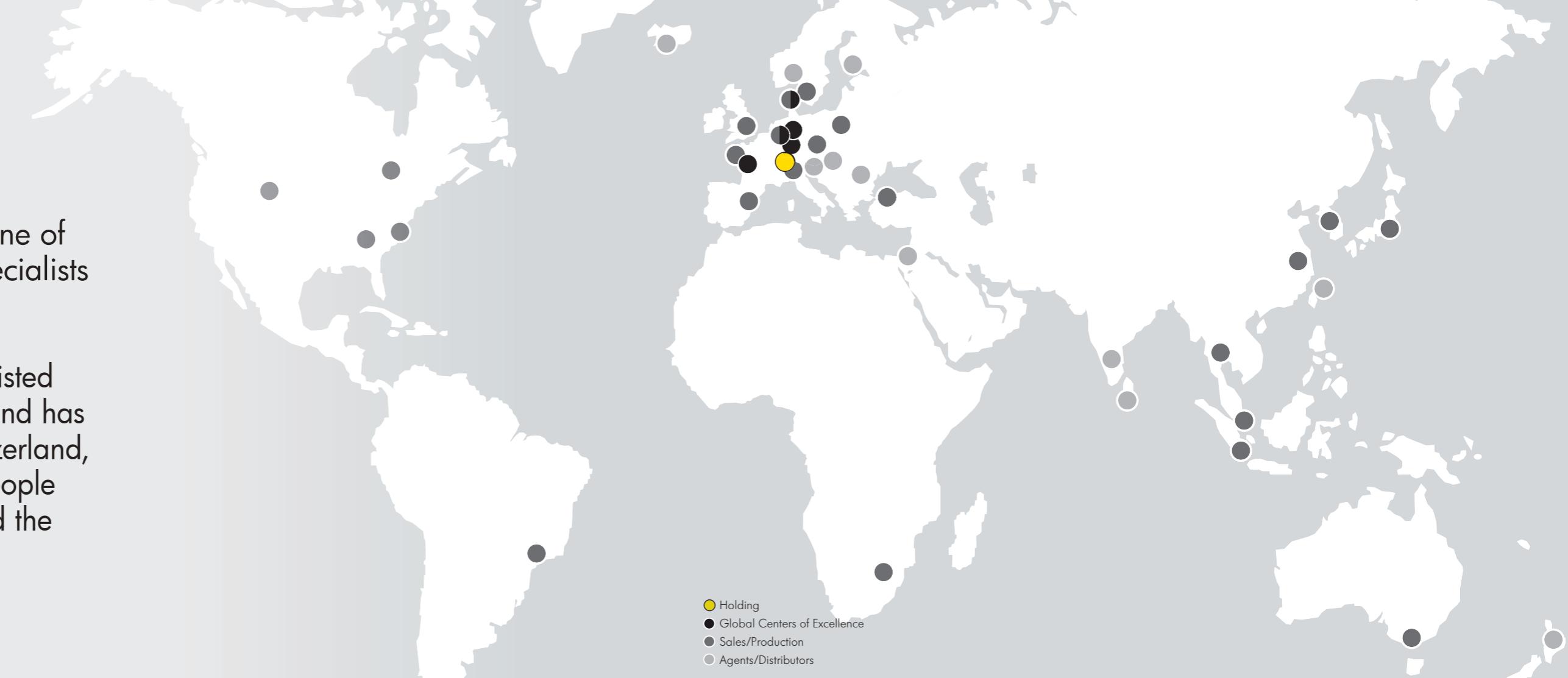


	Page
Interroll Worldwide Group	2
Heart of Intralogistics	5
Interroll Product Overview	6
Introduction to Interroll Drum Motors	8
Applications for Interroll Drum Motors	10
Standard Asynchronous Drum Motors for All Applications	12
80S	14
80i	24
113S	34
113i	44
138i	56
165i	68
217i	80
Standard Synchronous Drum Motors for All Applications	92
80D	94
88D	104
113D	112
IFI – IP55 Interroll Frequency Inverter	120
Options	126
Lagging for Friction Drive Belts	128
Lagging for Positive Drive Belts	134
Lagging for Positive Drive Solid Homogeneous Belts	138
Multiprofile for Positive Drive Solid Homogeneous Belts	140
Sprockets for Plastic Modular Belts	142
Sprockets for plastic modular belts for use with	146
Drum Motor or Idler 88D	
Backstops	150
Dynamic Balancing	151
Electromagnetic Brakes	152
Rectifiers	154
Feedback Devices	158
Accessories	160
Mounting Brackets	164
Idler Pulleys	178
Conveyor Rollers	190
Planning Section	194
Material Specification	244
Connection Diagrams	258

The Worldwide Interroll Group

The Interroll Group is one of the world's leading specialists for in-house logistics.

The company, which is listed on the stock exchange and has its headquarters in Switzerland, employs some 1,600 people in 31 companies around the globe.



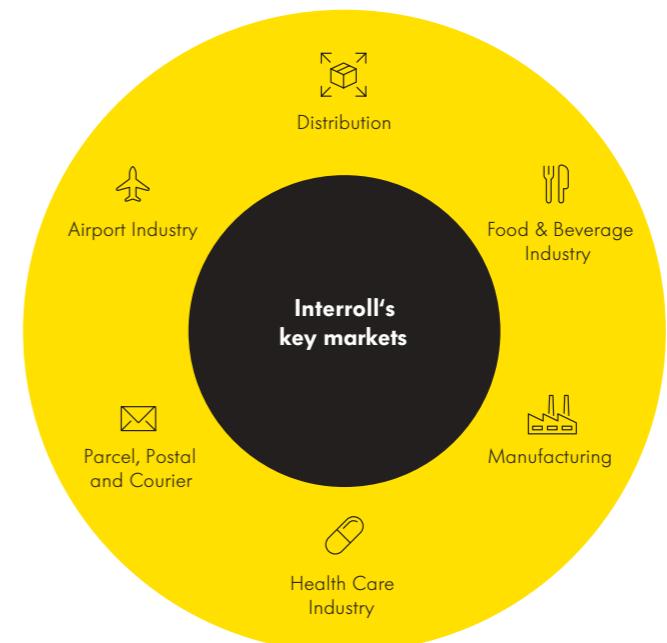
Our products can be found primarily in the food industry, in airport logistics, in the parcel, postal and courier sector, in distribution, and in various branches of the industry. This includes: Easy-to-integrate drive solutions such as drum motors for belt conveyors; conveyor rollers and DC drive rollers for roller conveyors; flow storage modules for compact pallet and container storage in distribution centers; crossbelt sorters, belt curves and other user-friendly conveyor modules for cost-efficient material flow systems.

With the acquisition of Portec in 2013, Interroll increases its customer presence and offers a greater product range in the airport and package sectors.

Among the overall 23,000 Interroll customers are plant constructors, system integrators and equipment manufacturers. Our products are in daily use at brands known throughout the world, such as Amazon, Bosch, Coca-Cola, Coop, DHL, Procter & Gamble, Siemens, Walmart, Yamaha, and Zalando.

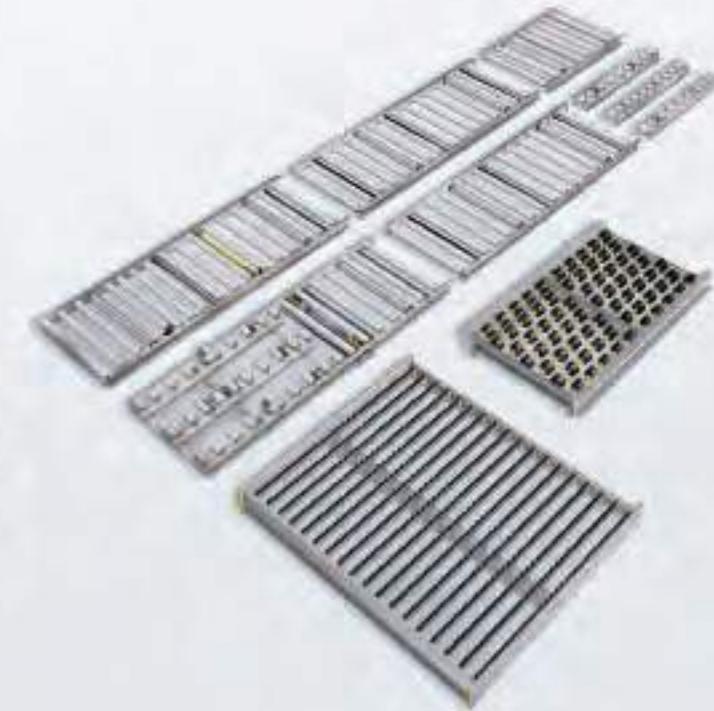
Regional centers of excellence and production, global knowhow, financial stability and a solid market reputation make Interroll the strong business partner and attractive employer.

Furthermore, Interroll initiates global research projects in the area of logistics efficiency and actively supports industry associations in the development of standards and in the more efficient utilization of resources.



The Heart of In-House Logistics

With an experienced eye for the big picture, we offer you the kind of products that are versatile and essential building blocks in the portfolio of any successful planner or developer.



Conveying

Versatile and reliable core products ensure a dynamic, efficient material flow across all continents and in all sectors:

- Conveyor rollers
- Drum motors and return rollers
- 24 V DC Drives (RollerDrives)
- Controllers for RollerDrive and drum motors

They are used to convey, accumulate, feed or remove goods. Powered or with gravity. With or without accumulation pressure. Easy to install drive solutions for new plants or to refurbish existing plants. Excellent products that will pay for themselves and that you can rely on. In every respect.

Transporting and Distributing

Millions of different individual items travel through the world's flow of goods every day and must be delivered on time to the correct destination. This is a trend that requires a performance-based logistics system with efficient material flow solutions. Interroll's innovative conveyor modules and subsystems are always ready for key locations in customers' systems:

- Crossbelt sorters
- Belt curves and belt merges
- Conveyor modules with zero-pressure accumulation
- Roller conveyors
- Belt conveyors

Precisely pre-assembled and rapidly delivered for fast, simple integration into the complete system on site (plug and play). The conveyor modules and subsystems provide users with key assurances: excellent availability whilst being easy to use; outstanding efficiency even at low throughput volumes; efficient investment with a short period of return on investment; adaptability in the event of change.

Storage and Picking

Economical and user-friendly: the dynamic storage solution that operates without energy. It is designed for fast-moving goods (e.g. groceries) that have to be picked and quickly conveyed to consumers. The principle is as simple as it is ingenious. It is known as FIFO, First in – First out, and guarantees that what has been stored first is also picked first. Or LIFO, Last in – First out, when what has been stored last is picked first. It means making maximum use of minimum space. And because the needs of our customers are as diverse as their products, our central and peripheral subsystems offer unlimited design options.

- Pallet Flow
- Carton Flow

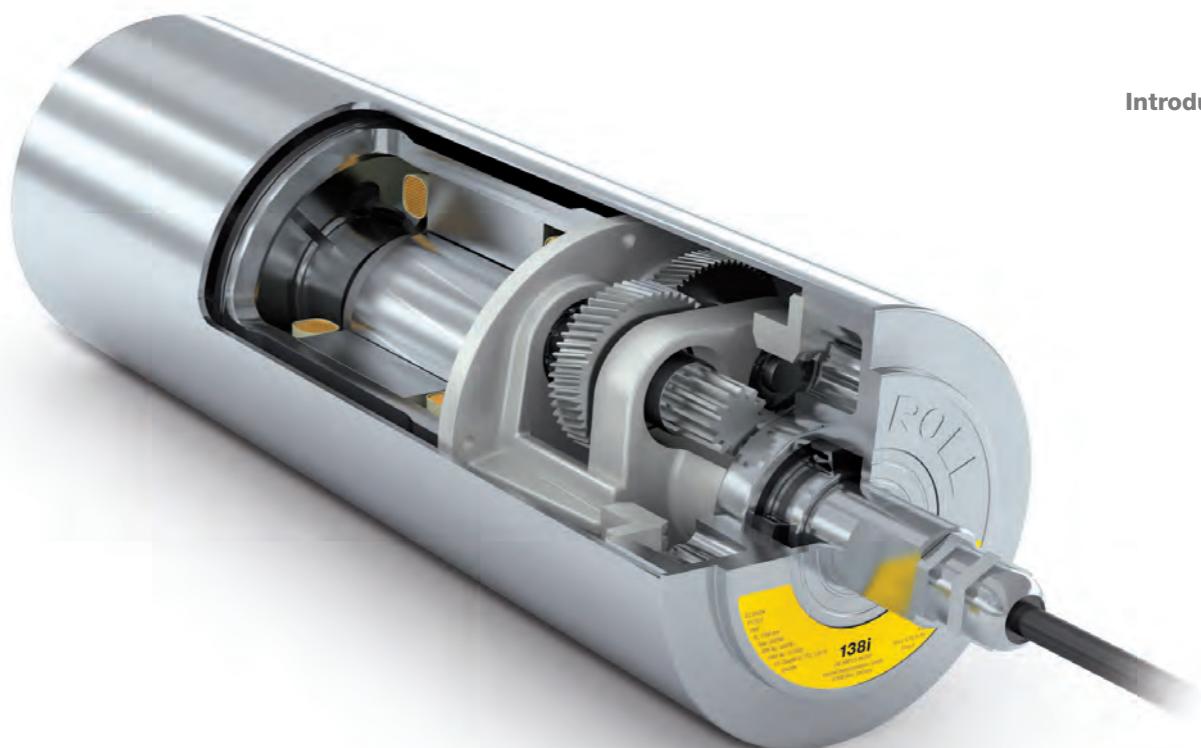
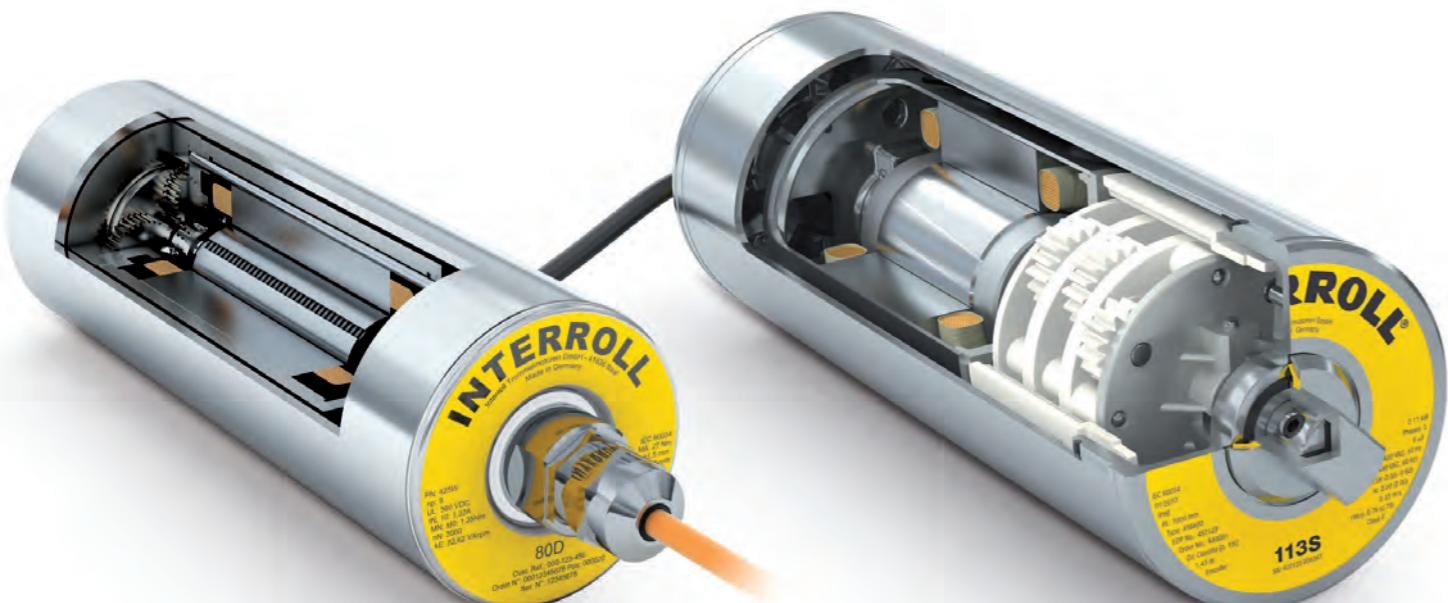
The picking times can scarcely be beaten. The return on investment for the operator is two to three years and is integrated into "Just in Time".

INTERROLL – THE MOST GLOBAL PROVIDER OF KEY PRODUCTS FOR MATERIAL HANDLING SOLUTIONS

- ① FIFO - Pallet flow storage modules (Conveyor Rollers)
- ② LIFO - Pallet flow storage modules (Conveyor Rollers)
- ③ LIFO - Pallet flow storage modules (Cart Pushback)
- ④ Order picking racking with Carton Flow (Roller Track)
- ⑤ Order picking racking with Flex Flow
- ⑥ Drum Motors, Idler Pulleys, brackets
- ⑦ 24 V DC RollerDrives and Controls
- ⑧ Conveyor Rollers and Accessories
- ⑨ Idler Pulleys
- ⑩ Crossbelt Sorters
- ⑪ Belt Curves
- ⑫ Belt Conveyor Modules
- ⑬ Conveyor Modules for zero pressure accumulation (ZPA) Conveyors

Standard Asynchronous Drum Motors	p 12
Standard Synchronous Drum Motors	p 92
Interroll IFI-IP55 Frequency Inverter	p 120
Options	p 126
Accessories	p 160





INTRODUCTION TO INTERROLL DRUM MOTORS

- ✓ **Plug and play**
- ✓ **Hard-wearing**
- ✓ **Hygienic design**
- ✓ **Energy efficient**

Interroll Drum Motors are much quicker and easier to install than conventional drive systems, requiring less than a quarter of the time needed to fit a multi-component drive. Fewer parts mean reduced costs for conveyor design and purchasing of parts.

Interroll Drum Motors will keep operating at 100 % even in harmful environmental conditions, such as water, dust, grit, chemicals, grease, oil and even during high pressure wash-down procedures.

Due to the smooth, stainless steel finish and the hermetically sealed and totally enclosed design, Interroll Drum Motors are much easier to clean and therefore reduce the risk of contamination in food processing.

Our asynchronous drum motors have an efficiency up to 78 % and our synchronous drum motors up to 83 %.

- ✓ **Space-saving**
- ✓ **Safe**
- ✓ **Maintenance-free**
- ✓ **New technology**

Because the motor, gearbox and bearings are mounted within the drum shell, the drum motor takes up much less space.

As a self-contained component without protruding parts and with fixed external shafts, an Interroll Drum Motor is probably the safest drive unit available for state-of-the-art material handling equipment.

The totally enclosed hermetically sealed design ensures, that the internal parts are unaffected by external conditions and maintains trouble free operation for all kinds of applications.

The synchronous drum motor is an energy-efficient drive system. The D-Series product range offers high dynamic torque performance and an eco-friendly energy saving drive solution. The D-Series is suitable for both sensor-less or servo-drive applications.

Friction drive belts

**Positive drive belts:
Plastic modular belts**

**Positive drive belts:
Thermoplastic homogeneous belts**

Non-belt applications

Applications
Driven
Without frequency inverter Standard Drum Motor

Motors for applications with positive drive belts or no belts

Motors for applications with positive drive belts or no belts

Motors for applications with positive drive belts or no belts

With frequency inverter Standard Asynchronous Drum Motor

Standard Asynchronous Drum Motor

Standard Asynchronous Drum Motor

Standard Asynchronous Drum Motor

Sensor-less or Servo Driver Standard Synchronous Drum Motor

Standard Synchronous Drum Motor

Standard Synchronous Drum Motor

Standard Synchronous Drum Motor

APPLICATIONS FOR INTERROLL DRUM MOTORS

✓ Friction drive belts

Applications with friction drive belts use the friction between the Drum Motor shell and belt to drive the belt. Flat belts are one type of friction drive belt. In these applications the motor is cooled by the belt. These belts must be tensioned.

✓ Plastic modular belts

Applications with plastic modular belts are driven positively and need no tension: the profiled lagging or sprockets of the Drum Motor shell fit perfectly into the profile of the plastic modular belt. In order to prevent overheating of the Drum Motor, use either a Drum Motor for applications with positive drive belts or no belts or a Standard Asynchronous Drum Motor with frequency inverter.

✓ Positive drive solid homogeneous belts

The profile of the lower side of the belt fits into the profiled lagging of the Drum Motor shell. Little or no belt tension is applied. In order to prevent overheating of the Drum Motor, use either a Drum Motor for applications with positive drive belts or no belts or a Standard Asynchronous Drum Motor with frequency inverter.

✓ Non-belt applications

Some applications do not use belts. In order to prevent overheating of the Drum Motor, use either a Drum Motor for applications with positive drive belts or no belts or a Standard Asynchronous Drum Motor with frequency inverter.

✓ All Applications

Synchronous drum motors have excellent low running thermal characteristics – they generate significantly less heat loss and are therefore suitable for all the above applications. The fully controlled D-Series excels in high dynamic torque and stop/start applications and, using the appropriate driver, provides precise positioning, high acceleration/deceleration and wide variable speed range.

⇒ Standard Asynchronous Drum Motor without frequency inverter

p 12

- For friction drive belt applications

⇒ Standard Asynchronous Drum Motor with frequency inverter

p 12

- For friction drive belt applications
- For plastic modular belt applications
- For positive drive solid homogeneous belts
- For non-belt applications

⇒ Standard Synchronous Drum Motor

p 92

- For all belt types or no belt using either a sensor-less frequency inverter or servo-driver



OVERVIEW OF STANDARD ASYNCHRONOUS DRUM MOTORS

	80S	80i	113S	113i	138i	165i	217i
Diameter	81.5 mm	81.5 mm	113.3 mm	113.5 mm	138.0 mm	164.0 mm	217.5 mm
Gear material	Technopolymer	Steel	Technopolymer	Steel	Steel	Steel	Steel
Rated power	0.025 to 0.110 kW	0.033 to 0.120 kW	0.040 to 0.330 kW	0.058 to 0.370 kW	0.074 to 1.000 kW	0.306 to 2.200 kW	0.306 to 3.000 kW
Rated torque	3.4 to 21.4 Nm	2.3 to 26.8 Nm	5.5 to 43.8 Nm	7.4 to 86.4 Nm	14.7 to 174.4 Nm	28.1 to 365.2 Nm	28.1 to 533.6 Nm
Belt pull*	84 to 525 N	58 to 657 N	96 to 772 N	132 to 1,522 N	216 to 2,527 N	347 to 4,453 N	261 to 4,907 N
Velocity of the shell*	0.049 to 0.913 m/s	0.100 to 0.980 m/s	0.068 to 1.107 m/s	0.048 to 1.515 m/s	0.041 to 2.005 m/s	0.084 to 2.527 m/s	0.126 to 3.344 m/s
Shell length SL	260 to 952 mm	193 to 1,093 mm	240 to 1,090 mm	250 to 1,400 mm	300 to 1,600 mm	400 to 1,750 mm	400 to 1,750 mm
Friction drive belt	✓	✓	✓	✓	✓	✓	✓
Positive drive belt	✗	✓	✗	✓	✓	✓	✓
Without belt	✗	✓	✗	✓	✓	✓	✓
	p 14	p 24	p 34	p 44	p 56	p 68	p 80

Note: *Values of Belt pull and velocity are given for the shown diameter.



INTERROLL DRUM MOTOR 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
- ✓ Light-duty packaging equipment
- ✓ Cross belt feed conveyors
- ✓ Dry and moist applications
- ✓ 3-phase or 1-phase AC induction motor
- ✓ Lightweight
- ✓ Single-rated voltage
- ✓ Maintenance-free (with aluminium shaft caps)
- ✓ Integral thermal motor protection
- ✓ Lifetime lubricated
- ✓ Technopolymer planetary gearbox
- ✓ Reversible
- ✓ Low noise

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		✓		
Shaft cap	Standard		✓		
	With cable protection		✓		
Electrical connector	Regreasable			✓	
	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



INTERROLL DRUM MOTOR 80S

Compact drive for small light-duty conveyors

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
	2	3	115.20	0.102	23.9	16.8	412	270
			19.20	0.293	68.8	7.5	183	295
			16.00	0.352	82.5	6.2	152	295
	4	2	13.09	0.430	100.8	5.1	125	295
			96.00	0.125	29.4	20.6	505	270
			78.55	0.152	35.6	19.5	479	270
	0.085	2	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
		3	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
		4	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
			63.51	0.185	43.3	20.7	508	285
0.110	2	3	52.92	0.222	52.0	17.2	423	285
			48.79	0.241	56.4	15.9	390	285
			43.30	0.271	63.5	14.1	346	285
	2	2	19.20	0.611	143.2	6.6	162	285
			16.00	0.733	171.9	5.5	135	285
			13.09	0.896	210.1	4.5	110	285

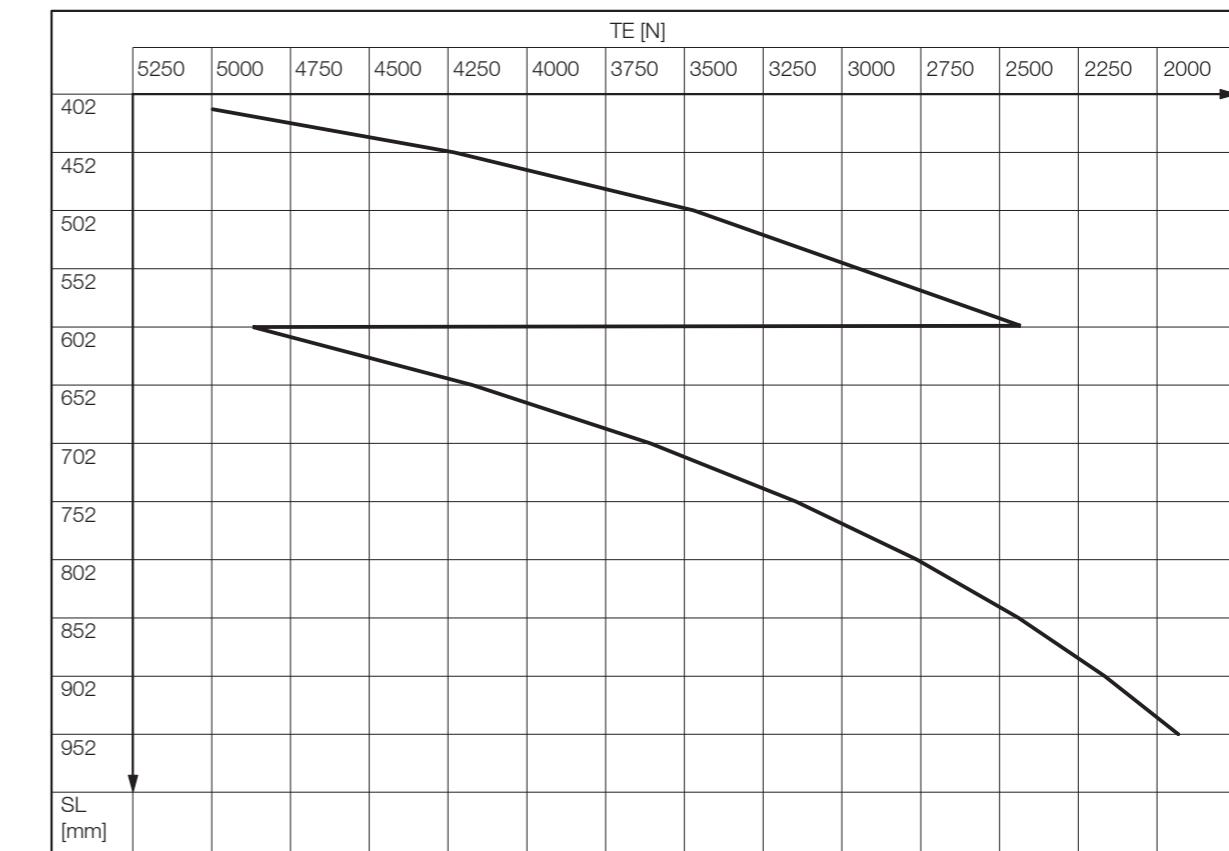
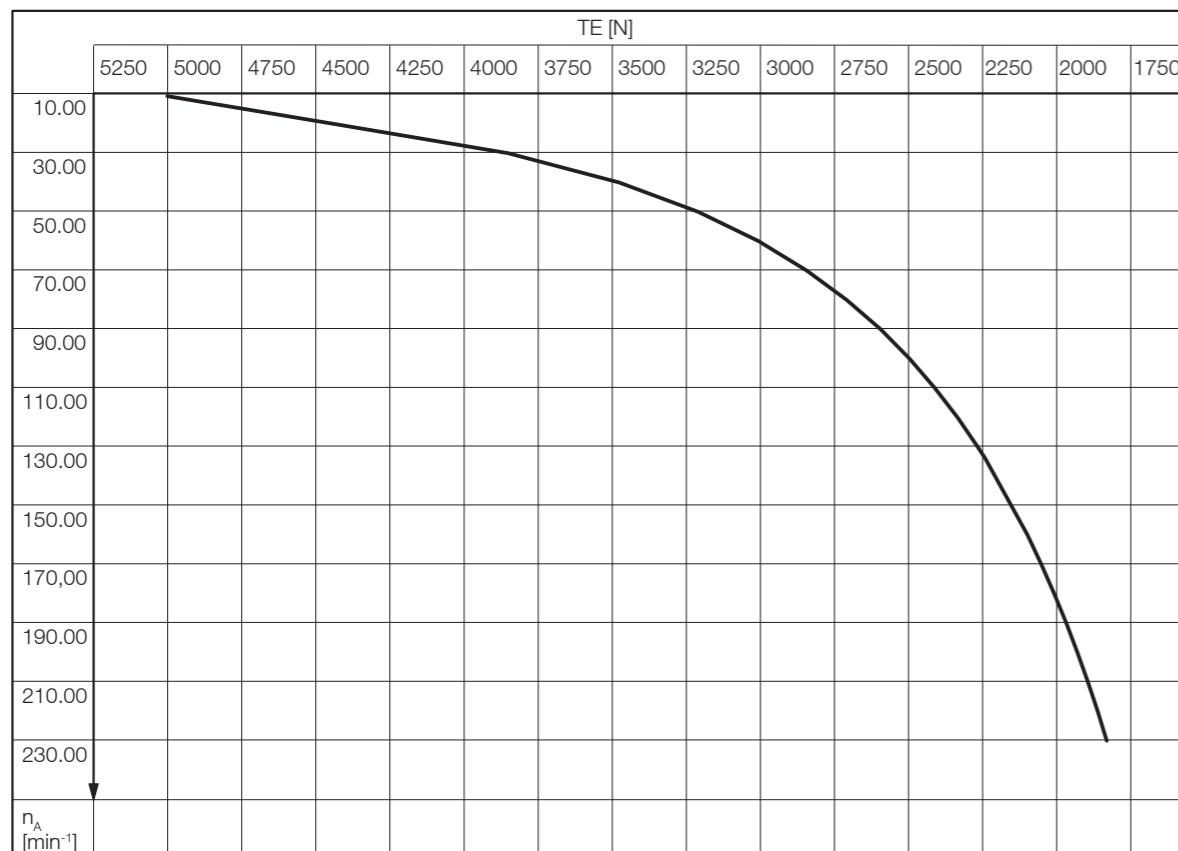
- P_N** Rated power
- np** Number of poles
- gs** Gear stages
- i** Gear ratio
- v** Rated velocity of the shell
- n_A** Rated revolutions of the drum shell
- M_A** Rated torque of drum motor
- F_N** Rated belt pull of drum motor
- SL_{min}** Min. shell length



INTERROLL DRUM MOTOR 80S

Compact drive for small light-duty conveyors

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

n_A
SL

Belt Tension

Rated revolutions of the drum shell
Shell length



INTERROLL DRUM MOTOR 80S

Compact drive for small light-duty conveyors

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 delta} V DC	U _{SH 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
		230	0.79	0.65	0.29	1.0	1.8	1.60	1.60	1.60	156.5	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 ~} 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 delta}	Preheating voltage in delta connection
U _{SH 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.



INTERROLL DRUM MOTOR 80S

Compact drive for small light-duty conveyors

Standard dimensions

Dimensions

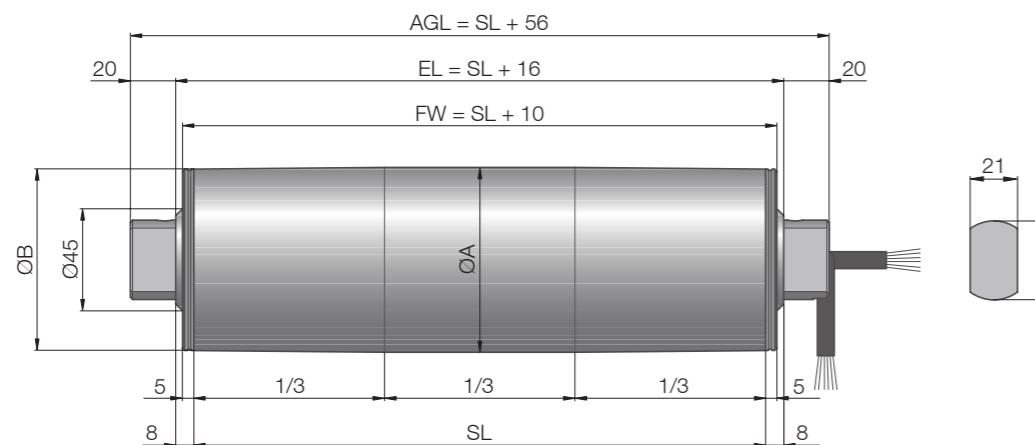


Fig.: Drum motor with shaft cap

Type

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

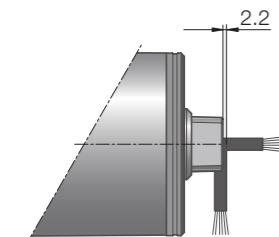


Fig.: Shaft cap, standard,
aluminium

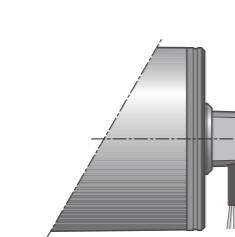


Fig.: Shaft cap with cable
protection, aluminium

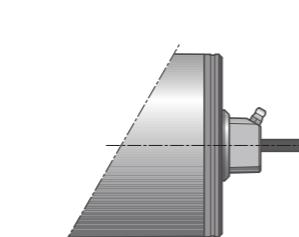


Fig.: Straight connector with
regreasable shaft cap, stainless
steel

Standard length
and weight

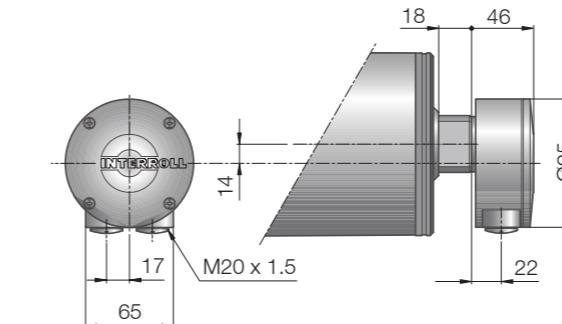


Fig.: Terminal box, aluminium

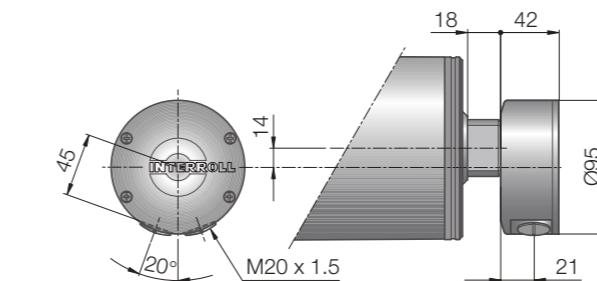


Fig.: Terminal box, stainless steel

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									



INTERROLL DRUM MOTOR 80i

Product Description

Applications

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

- ✓ Small feed conveyors with high-duty cycles
- ✓ Pharmaceutical handling
- ✓ Packaging equipment
- ✓ Food processing
- ✓ Dynamic weighing equipment
- ✓ Steel or plastic modular belt applications
- ✓ Metal detectors
- ✓ Dry, wet and wash-down applications
- ✓ Low noise
- ✓ Maintenance-free
- ✓ Dual voltage
- ✓ Lifetime lubricated
- ✓ Integral thermal motor protection
- ✓ Reversible
- ✓ Steel-hardened helical spur gear
- ✓ Reinforced shaft for SL above 543 mm

Characteristics

- ✓ Salt-water-resistant aluminium end housings
- ✓ 3-phase AC induction motor
- ✓ Dual voltage
- ✓ Integral thermal motor protection
- ✓ Steel-hardened helical spur gear

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..

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

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	✓	✓		
	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

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*
	2	3	12.09	0.488	114.5	3.3	80	193*
			54.73	0.100	23.5	26.8	657	243
			38.18	0.144	33.7	18.7	459	243
		2	31.09	0.177	41.4	15.2	373	243
			21.28	0.258	60.5	10.6	261	243
0.070	4	3	14.85	0.370	86.7	7.4	182	243
			12.09	0.455	106.5	6.0	148	243
		2	54.73	0.217	50.8	12.4	303	193*
			38.18	0.310	72.8	8.6	212	193*
	2	3	31.09	0.381	89.4	7.0	172	193*
			21.28	0.557	130.5	4.9	120	193*
			14.85	0.798	187.1	3.4	84	193*
		2	12.09	0.980	229.8	2.8	68	193*
			54.73	0.217	50.8	21.1	518	243
0.120	2	3	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
	2	3	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.

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

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*
	2	3	12.09	0.485	114.5	2.7	66	193*
			54.73	0.102	23.9	21.8	538	243
			38.18	0.146	34.3	15.2	375	243
		2	31.09	0.179	42.1	12.4	306	243
			21.28	0.261	61.6	8.6	213	243
0.058	4	3	14.85	0.374	88.2	6.0	149	243
			12.09	0.460	108.3	4.9	121	243
		2	54.73	0.213	50.2	10.4	256	193*
			38.18	0.305	72.0	7.2	178	193*
	2	3	31.09	0.375	88.5	5.9	145	193*
			21.28	0.548	129.2	4.1	101	193*
			14.85	0.785	185.2	2.9	71	193*
		2	12.09	0.964	227.4	2.3	58	193*
			54.73	0.211	49.8	17.9	441	243
0.099	2	3	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
	2	3	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.

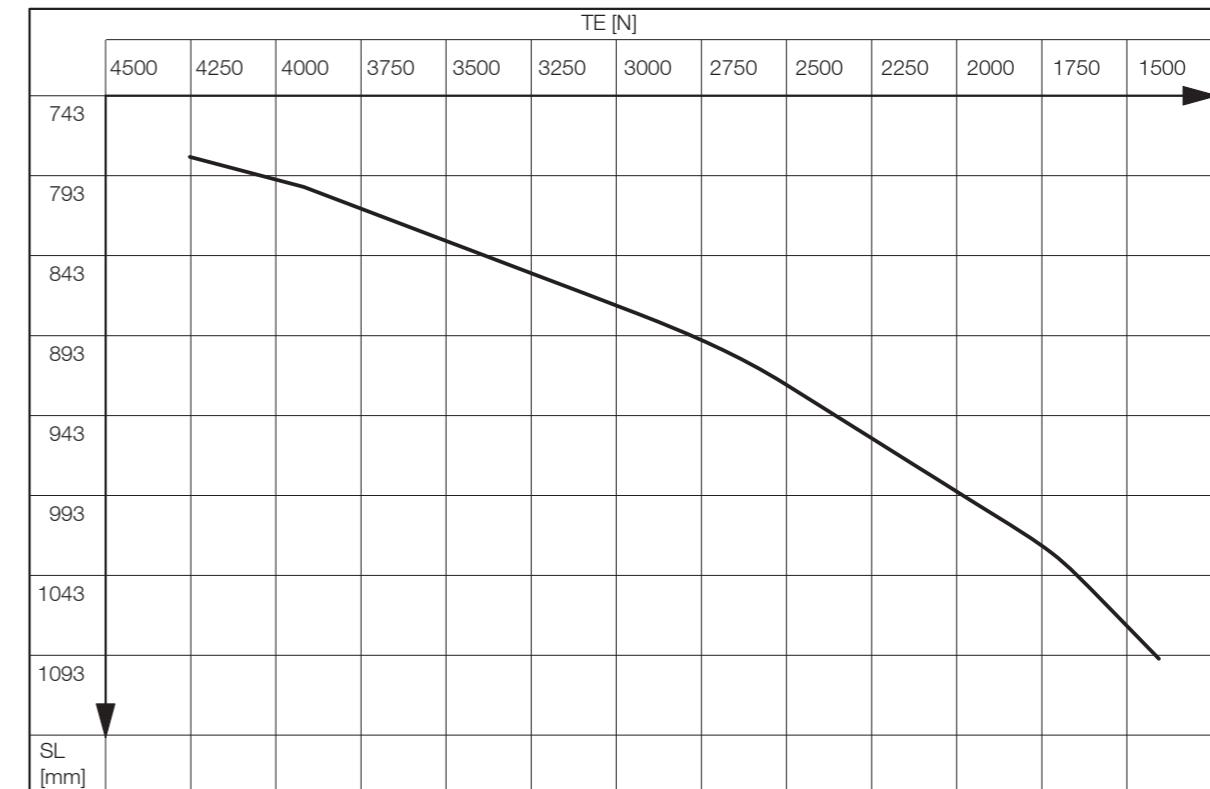
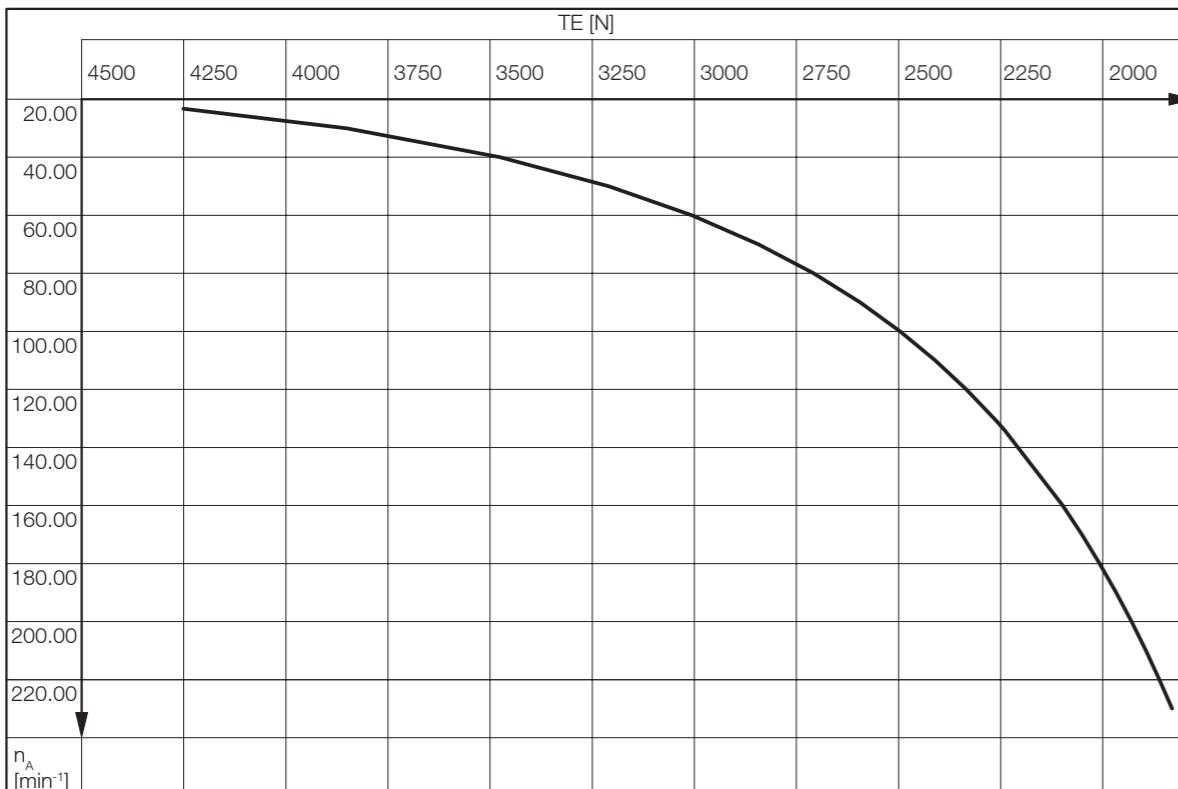
P_N	Rated power
np	Number of poles
gs	Gear stages
i	Gear ratio
v	Rated velocity of the shell
n_A	Rated revolutions of the drum shell
M_A	Rated torque of drum motor
F_N	Rated belt pull of drum motor
SL_{min}	Min. shell length



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

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

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

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.



INTERROLL DRUM MOTOR 80i

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

Standard dimensions

Dimensions

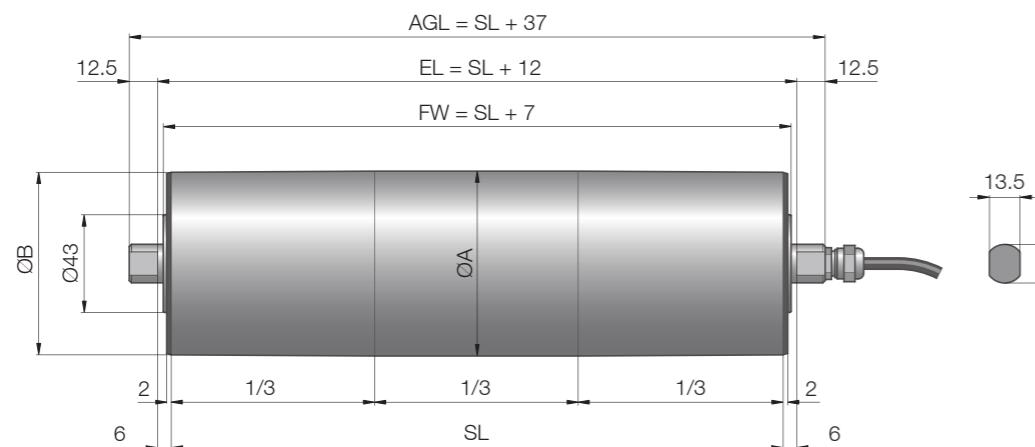


Fig.: Drum motor with straight connector

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

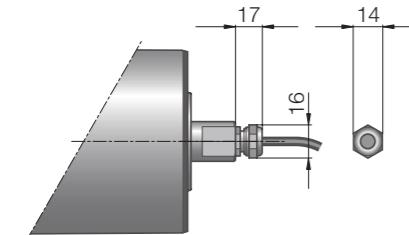


Fig.: Straight connector, brass/nickel

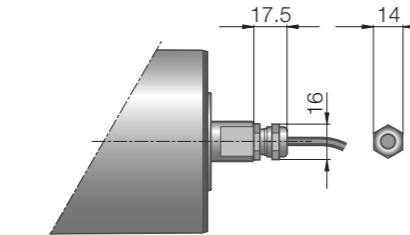


Fig.: Straight connector, stainless steel

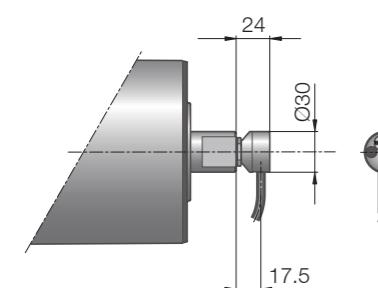


Fig.: Elbow connector, stainless steel

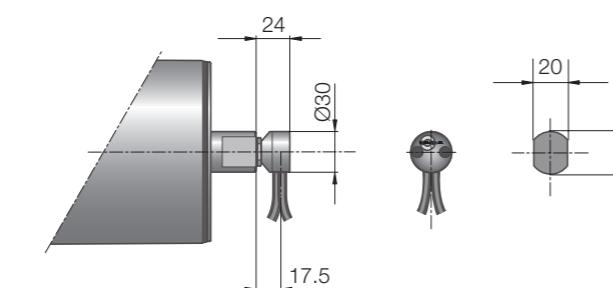


Fig.: Elbow connector / Feedback device, stainless steel

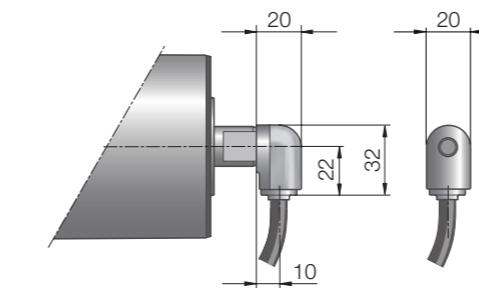


Fig.: Elbow connector, technopolymer

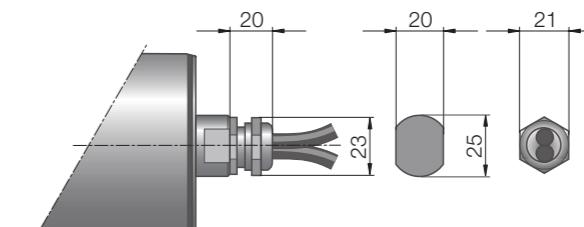


Fig.: Straight connector / Feedback device, brass/nickel

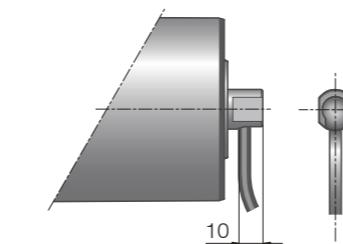


Fig.: Cable slot connector

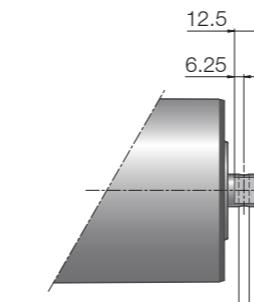


Fig.: Shaft, cross-drilled and threaded

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 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	

Min. length with option for 80i

Standard length and weight



INTERROLL DRUM MOTOR 113S

Compact drive for light-duty conveyors

Product Description

Applications

The drum motor is a perfect drive station for small and medium-duty conveyor systems.

- ✓ Light-duty conveyors
- ✓ Packaging equipment
- ✓ Bottle recycling
- ✓ X-ray security scanning systems
- ✓ Pharmaceutical handling
- ✓ Dry and moist applications
- ✓ Lightweight
- ✓ Maintenance-free (with aluminium shaft caps)
- ✓ Lifetime lubricated
- ✓ Reversible

Characteristics

- ✓ 3-phase or 1-phase AC induction motor
- ✓ Single-rated voltage
- ✓ Integral thermal motor protection
- ✓ Technopolymer planetary gearbox
- ✓ Low noise

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	1,090 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		✓		
Electrical connector	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



INTERROLL DRUM MOTOR 113S

Compact drive for light-duty conveyors

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	8	3	63.00	0.068	11.4	28.6	505	260
			49.29	0.087	14.6	22.4	395	260
			38.51	0.111	18.7	17.5	309	260
0.110	4	3	63.00	0.129	21.7	41.6	734	240
			49.29	0.164	27.7	32.5	574	240
			44.09	0.184	31.0	29.1	514	240
			38.51	0.210	35.4	25.4	449	240
			30.77	0.263	44.4	20.3	359	240
			26.84	0.302	50.9	17.7	313	240
			23.96	0.338	57.0	15.8	279	240
			2	15.00	0.540	91.0	10.4	184
			11.57	0.700	118.0	8.0	142	240
			10.27	0.788	132.9	7.1	126	240
0.160	4	3	8.88	0.912	153.8	6.2	109	240
			7.86	1.031	173.7	5.5	96	240
			44.09	0.182	30.6	42.7	754	260
			38.51	0.209	35.2	41.9	740	275
			30.77	0.261	44.0	33.5	591	275
0.180	4	3	26.84	0.300	50.5	29.2	516	275
			23.96	0.335	56.6	26.1	461	275
			2	15.00	0.536	90.3	17.2	303
			11.57	0.695	117.1	13.3	234	275
			10.27	0.782	131.9	11.8	208	275
			8.88	0.905	152.6	10.2	180	275
			7.86	1.023	172.5	9.0	159	275
			44.09	0.377	63.5	42.7	754	275
			38.51	0.431	72.7	37.3	659	275
			30.77	0.540	91.0	29.8	526	275
0.330	2	3	26.84	0.619	104.3	26.0	459	275
			23.96	0.693	116.9	23.2	410	275
			2	15.00	1.107	186.7	15.3	270
								275

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
0.060	4	3	63.00	0.122	20.6	23.8	420	240
			49.29	0.156	26.4	18.6	328	240
			44.09	0.175	29.5	16.6	294	240
			38.51	0.200	33.8	14.5	256	240
			30.77	0.251	42.3	11.6	205	240
			26.84	0.287	48.4	10.1	179	240
			23.96	0.322	54.3	9.0	160	240
			2	15.00	0.514	86.7	6.0	105
			0.080	6	2	15.00	0.352	240
			11.57	0.456	76.9	9.0	159	275
0.110	4	3	63.00	0.122	20.6	43.8	772	260
			49.29	0.156	26.4	34.2	604	260
			44.09	0.175	29.5	30.6	541	260
			38.51	0.200	33.8	26.7	472	260
			30.77	0.251	42.3	21.4	377	260
			26.84	0.287	48.4	18.6	329	260
			23.96	0.322	54.3	16.6	294	260
			2	15.00	0.514	86.7	11.0	194
			11.57	0.666	112.3	8.5	149	260

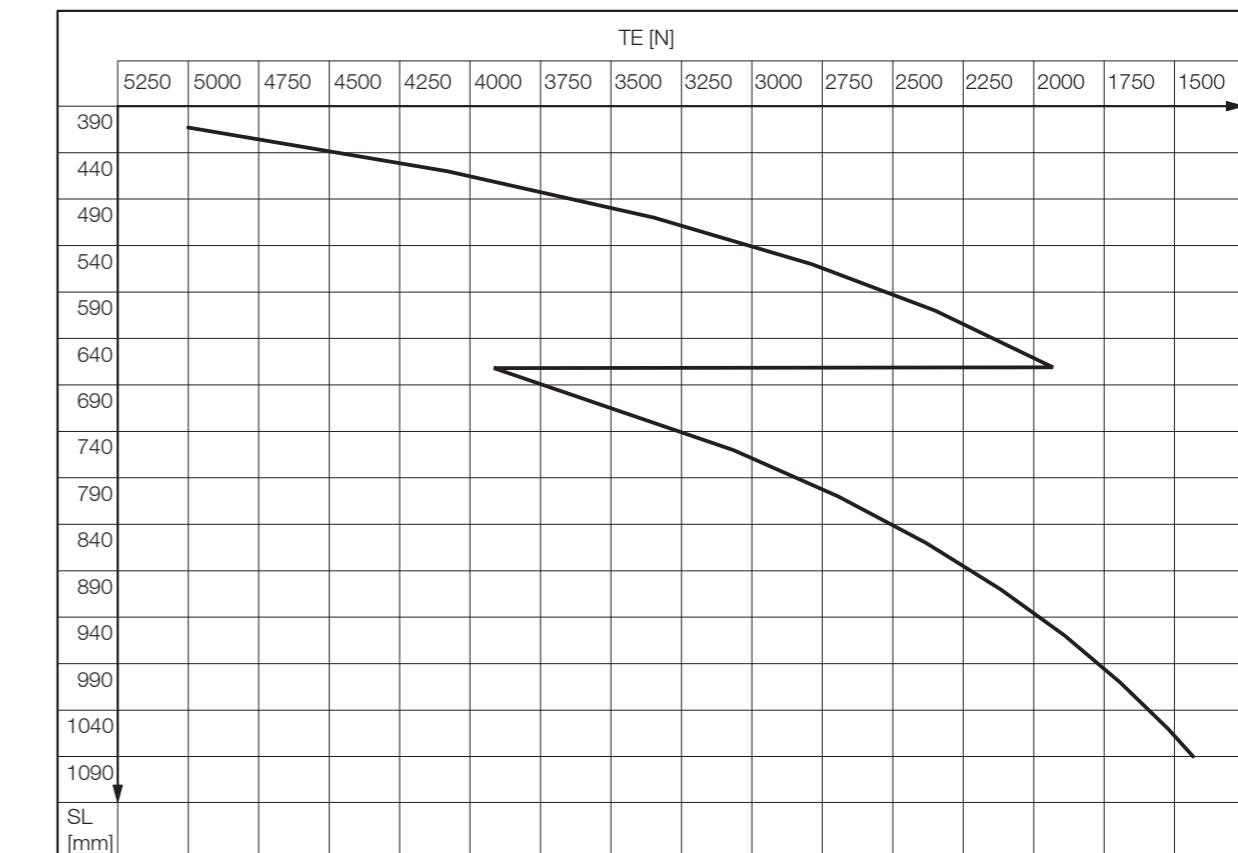
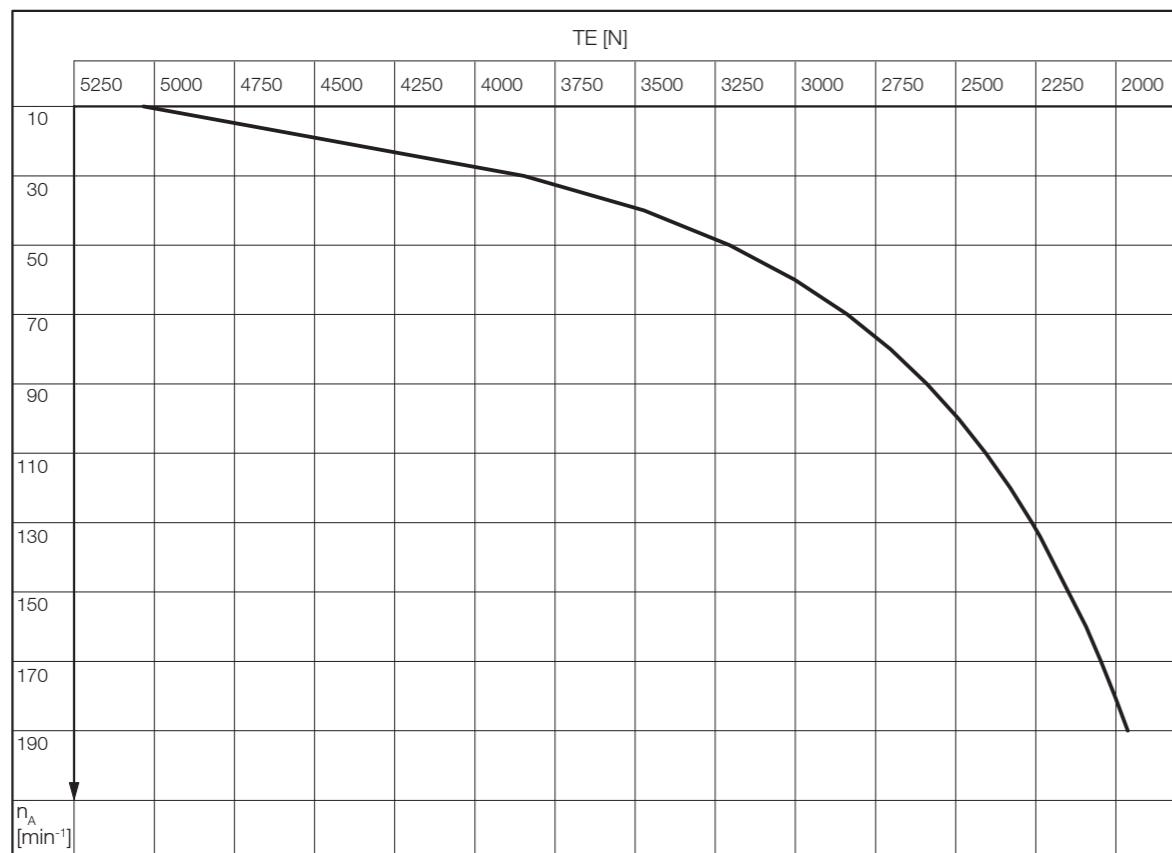
- P_N Rated power
- np Number of poles
- gs Gear stages
- i Gear ratio
- v Rated velocity of the shell
- n_A Rated revolutions of the drum shell
- M_A Rated torque of drum motor
- F_N Rated belt pull of drum motor
- SL_{min} Min. shell length



INTERROLL DRUM MOTOR 113S

Compact drive for light-duty conveyors

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 > 400 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 113S

Compact drive for light-duty conveyors

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 delta} V DC	U _{SH star} V DC
0.040	8	230	0.64	0.58	0.27	3.9	1.5	1.59	1.49	1.59	187.5	35	-
		400	0.37	0.58	0.27	3.9	1.5	1.59	1.49	1.59	187.5	-	60
0.110	4	230	0.80	0.73	0.47	2.3	3.6	3.38	3.38	3.39	84.0	25	-
		400	0.45	0.75	0.47	2.3	3.6	3.41	3.41	3.42	84.0	-	43
0.160	4	230	0.98	0.76	0.54	3.3	4.0	3.22	3.22	3.33	59.2	22	-
		400	0.57	0.75	0.54	3.3	4.0	3.25	3.25	3.35	59.2	-	38
0.180	4	230	1.00	0.77	0.59	4.0	4.4	3.54	3.54	3.74	45.5	18	-
		400	0.62	0.76	0.55	4.0	4.4	3.60	3.60	3.79	45.5	-	32
0.330	2	230	1.74	0.76	0.68	3.3	4.5	3.57	2.62	3.57	21.5	14	-
		400	0.93	0.76	0.68	3.3	4.5	3.57	2.62	3.57	21.5	-	23

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 ~} V DC	C _r μF
0.060	4	230	0.74	0.98	0.36	2.3	2.6	1.29	1.29	2.60	63.5	35	4
0.080	6	230	1.35	0.99	0.26	4.0	1.9	0.70	0.70	1.65	45.9	46	8
0.110	4	230	1.13	0.88	0.48	3.2	2.9	1.06	1.06	2.31	32.5	24	6

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
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.



INTERROLI DRUM MOTOR 113S

Compact drive for light-duty conveyors

The logo consists of the word "INTERROLL" in a bold, black, sans-serif font, enclosed within a thick yellow circle.

Standard dimensions

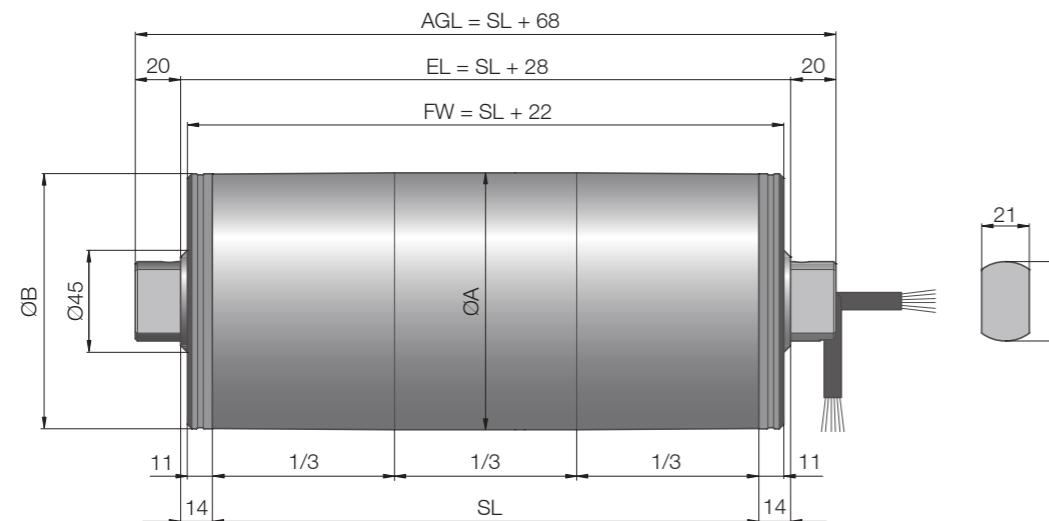
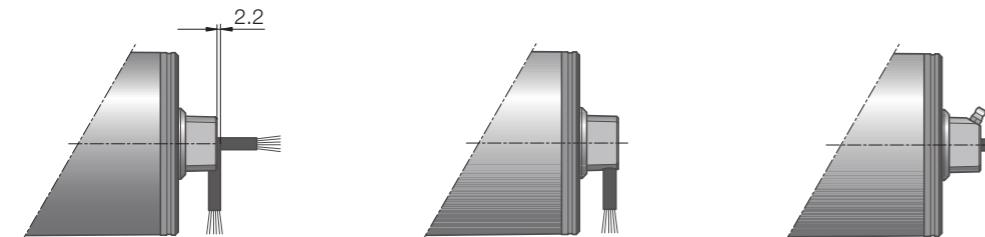


Fig.: Drum motor with shaft cap

Type	Ø A mm	Ø B mm
113S crowned shell	113.3	112.4
113S cylindrical shell	113.0	113.0

Connector dimensions



**Fig.: Shaft cap, standard,
aluminium**

Fig.: Shaft cap with cable protection, aluminium

**Fig.: Straight connector w/
regreasable shaft cap,
stainless steel**

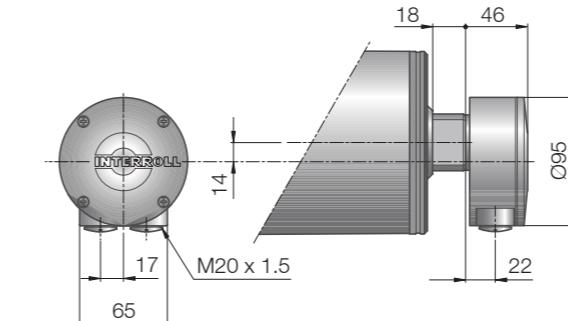


Fig.: Terminal box, aluminium

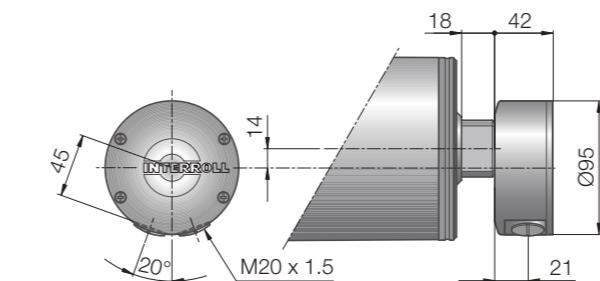


Fig.: Terminal box, stainless steel

Standard drum motor lengths and their weights:

Standard length and weight



INTERROLL DRUM MOTOR 113i

Power-packed drive for small conveyors with high-duty cycles

Product Description

Applications

This drum motor has been developed especially for applications requiring a strong drive.

- ✓ Small conveyors with high-duty cycles
- ✓ Airport check-in conveyors
- ✓ 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
- ✓ Low noise
- ✓ 3-phase AC induction motor
- ✓ Maintenance-free
- ✓ Dual voltage
- ✓ Lifetime lubricated
- ✓ Integral thermal motor protection
- ✓ Reversible
- ✓ Steel-hardened helical spur gear
- ✓ Reinforced shaft for SL above 850 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	1,400 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		✓	✓	
	Cylindrical + key, for using sprockets		✓	✓	
End housing	Standard		✓	✓	
	With grooves or chain sprockets	✓		✓	
Shaft	Standard		✓	✓	
	Cross-drilled thread, M8		✓	✓	
External seal	Galvanised labyrinth	✓			
	Stainless steel labyrinth		✓		
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
- Electromagnetic brakes and rectifiers, see p 152
- Lagging for plastic modular belts, see p 134
- Feedback Devices, see p 158
- Lagging for positive drive solid homogeneous belts, see p 138
- Food-grade oil (EU, FDA), see p 256
- Low temperature oil, see p 256
- Sprockets for plastic modular belts, see p 142
- Labyrinth with FPM, see p 248
- Backstops, see p 150
- cULus safety certifications, see p 251
- Balancing, see p 151
- Non-horizontal mounting (more than ± 5°), see p 231

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

Accessories

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



INTERROLL

DRUM MOTOR 113i

Power-packed drive for small 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
0.070	12*	3	43.49	0.048	8.1	77.4	1,363	300
			37.05	0.057	9.5	65.9	1,161	300
			31.96	0.066	11.0	56.9	1,002	300
	8	3	43.49	0.093	15.6	45.8	808	250
			37.05	0.109	18.4	39.1	688	250
			31.96	0.125	20.0	33.0	793	250
	0.100	6	43.49	0.118	19.9	45.0	793	250
			37.05	0.139	23.3	38.4	676	250
			31.96	0.160	26.7	31.0	1,296	300
		8	43.49	0.184	31.0	43.4	764	250
			31.96	0.251	42.2	31.9	562	250
			28.17	0.285	47.9	28.1	495	250
	0.150	4	43.49	0.334	56.2	23.9	422	250
			24.00	0.387	65.2	20.7	364	250
			20.71	0.387	65.2	20.7	364	250
		2	15.17	0.529	89.0	15.4	272	250
			12.92	0.621	104.5	13.2	232	250
			11.15	0.720	121.1	11.4	200	250
	0.180	6	43.49	0.125	21.0	76.9	1,356	300
			37.05	0.147	24.7	65.6	1,155	300
			21.15	0.488	82.1	20.1	355	300
		2	43.49	0.386	64.9	31.1	548	250
			31.96	0.525	88.3	22.9	403	250
			28.17	0.595	100.1	20.2	355	250
	0.225	2	43.49	0.699	117.5	17.2	303	250
			24.00	0.810	136.2	14.8	261	250
			20.71	1.105	186.0	11.1	195	250
		2	15.17	1.297	218.3	9.4	166	250
			12.92	1.504	253.0	8.1	143	250
			11.15	0.188	31.6	85.1	1,500	300
	0.300	4	43.49	0.256	43.1	62.6	1,103	300
			31.96	0.290	48.8	55.2	972	300
			28.17	0.341	57.3	47.0	828	300
		2	43.49	0.395	66.5	40.5	714	300
			15.17	0.539	90.7	30.3	534	300
			12.92	0.633	106.5	25.8	455	300
	0.370	4	43.49	0.733	123.4	22.3	392	300
			11.15	0.322	54.2	61.4	1,083	300
			20.71	0.373	62.8	53.0	934	300
		2	43.49	0.598	100.7	33.8	595	300
			11.15	0.693	116.7	29.1	513	300
			24.00	0.387	65.2	51.2	901	300
	0.370	2	43.49	0.527	88.7	37.6	663	300
			28.17	0.598	100.6	33.1	584	300
			24.00	0.702	118.1	28.2	498	300
		2	43.49	0.814	136.9	24.4	429	300
			15.17	1.111	186.9	18.2	321	300
			12.92	1.304	219.4	15.5	273	300
	0.370	2	43.49	1.511	254.3	13.4	236	300
			11.15	0.111	186.9	18.2	321	300
			20.71	1.304	219.4	15.5	273	300
		2	43.49	1.511	254.3	13.4	236	300
			11.15	1.511	254.3	13.4	236	300

Note: *Not suitable for all applications. Please contact your Interroll customer consultant.

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

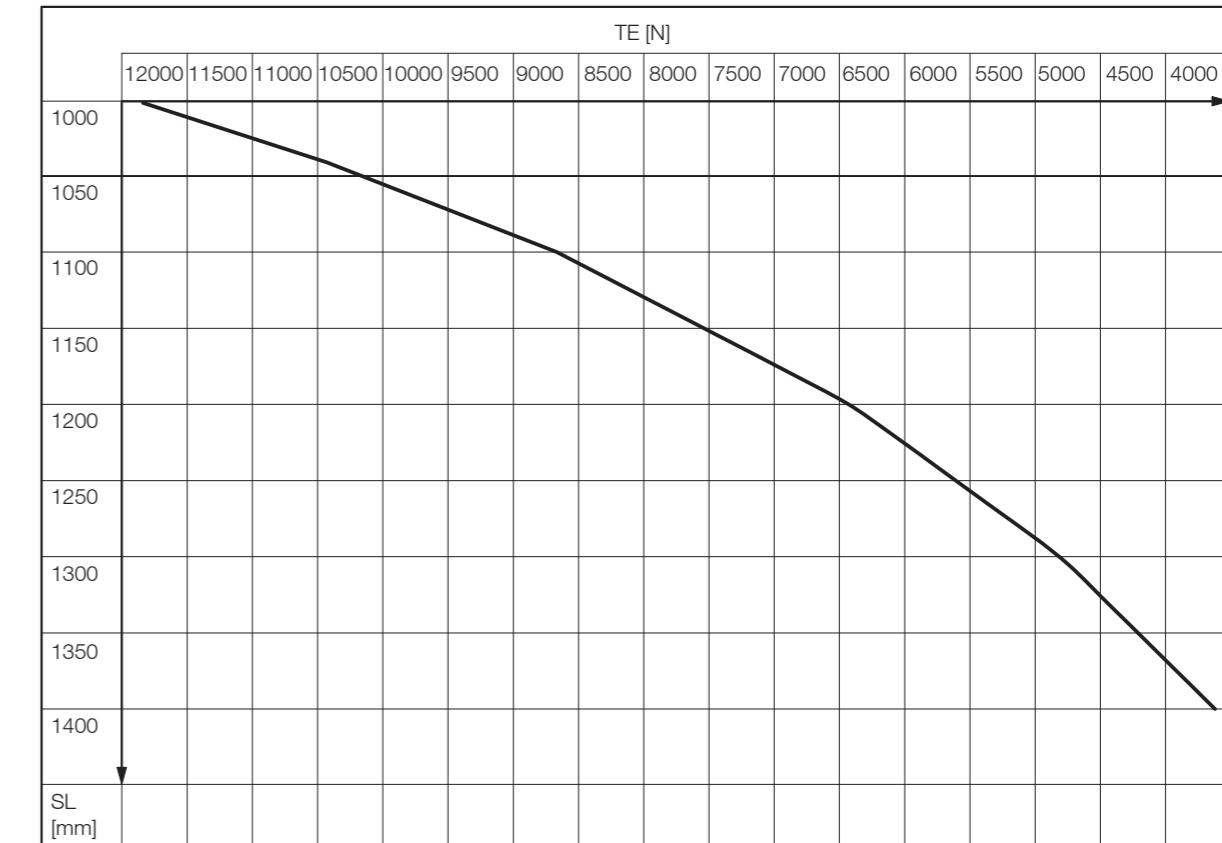
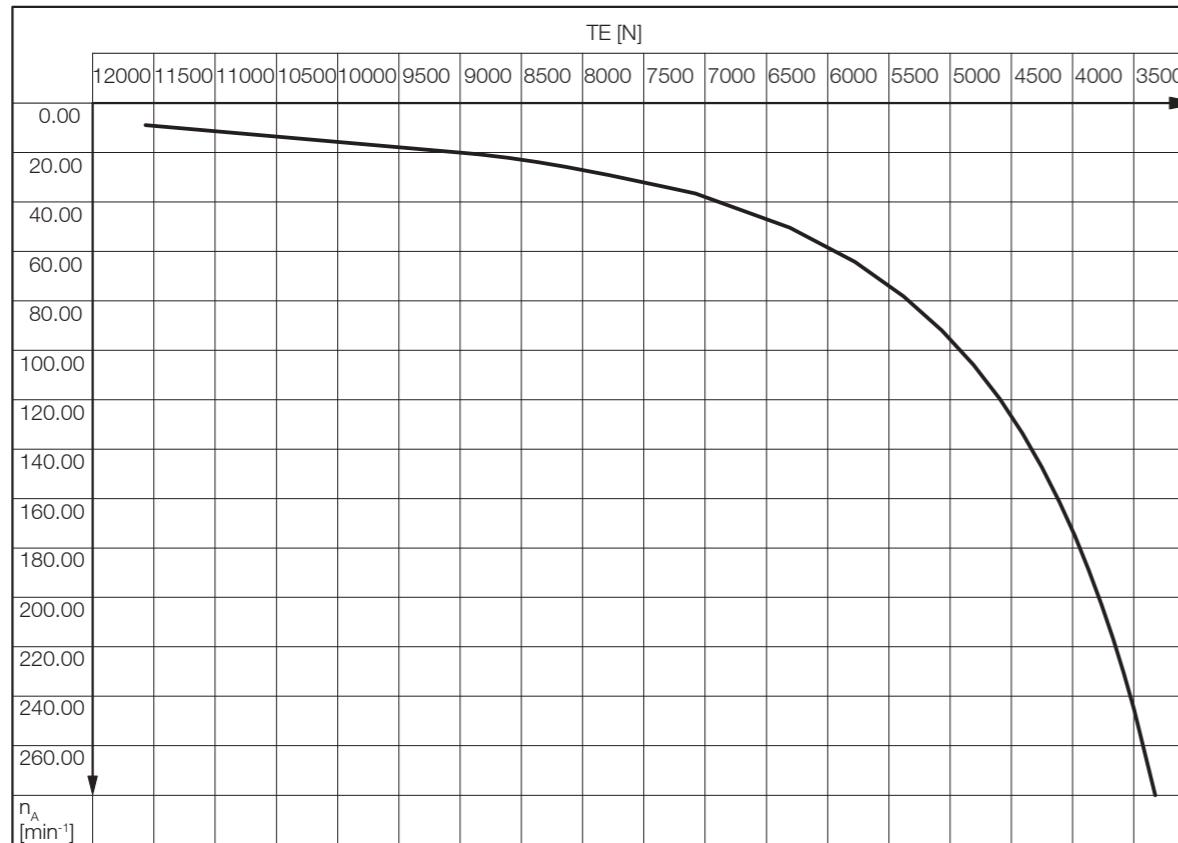
P_N kW	np	gs	i	v m/s	n_A min⁻¹	M_A Nm	F_N N	SL_{min} mm
0.058	12	3	43.49	0.048	8.1	64.2	1,147	300
			31.96	0.065	11.0	47.2	843	300
			28.17	0.073	12.5	41.6	743	300
	8	3	43.49	0.092	15.6	37.9	678	250
			37.05	0.108	18.4	32.3	577	250
			43.49	0.117	19.9	37.5	669	250
	6	3	37.05	0.137	23.3	31.9	570	250
			43.49	0.183	31.3	35.6	637	250
			31.96	0.250	42.5	26.2	468	250
	0.124	8	37.05	0.107	18.3	60.9	1,088	300
			43.49	0.183	31.3	23.1	412	250
			28.17	0.283	48.3	23.1	351	250
		4	24.00	0.332	56.7	19.7	351	250
			20.71	0.385	65.7	17.0	303	250
			15.17	0.526	89.7	12.7	227	250
		2	12.92	0.617	105.2	10.8	193	250
			11.15	0.715	122.0	9.3	1	



INTERROLL DRUM MOTOR 113i

Power-packed drive for small 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 > 1,000 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

n_A
SL

Belt Tension

Rated revolutions of the drum shell
Shell length



INTERROLL DRUM MOTOR 113i

Power-packed drive for small 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 kgcm ²	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
0.070	12	230	1.07	0.60	0.27	5.7	2.0	1.00	1.00	1.30	128.0	41	-
		400	0.62	0.60	0.27	5.7	2.0	1.00	1.00	1.30	128.0	-	71
0.080	8	230	0.69	0.60	0.48	3.3	2.2	1.40	1.40	1.60	164.0	34	-
		400	0.40	0.60	0.48	3.3	2.2	1.40	1.40	1.60	164.0	-	59
0.100	6	230	0.80	0.66	0.47	3.3	2.1	1.80	1.80	2.00	111.4	29	-
		400	0.46	0.66	0.47	3.3	2.1	1.80	1.80	2.00	111.4	-	51
0.150	8	230	1.18	0.62	0.51	5.7	2.2	1.35	1.35	1.50	89.0	33	-
		400	0.68	0.62	0.51	5.7	2.2	1.35	1.35	1.50	89.0	-	56
	4	230	0.94	0.71	0.56	2.1	3.2	1.85	1.85	2.15	71.0	24	-
		400	0.54	0.71	0.56	2.1	3.2	1.85	1.85	2.15	71.0	-	41
0.180	6	230	1.39	0.62	0.52	5.7	2.4	2.80	2.80	3.00	42.8	18	-
		400	0.80	0.62	0.52	5.7	2.4	2.80	2.80	3.00	42.8	-	32
0.225	2	230	1.21	0.71	0.65	1.4	4.6	3.50	3.50	3.70	29.6	13	-
		400	0.70	0.71	0.65	1.4	4.6	3.50	3.50	3.70	29.6	-	22
0.300	4	230	1.58	0.79	0.60	3.8	3.2	1.70	1.70	1.90	41.0	26	-
		400	0.91	0.79	0.60	3.8	3.2	1.70	1.70	1.90	41.0	-	44
0.370	4	230	1.91	0.79	0.62	3.8	3.2	2.40	2.20	2.30	26.4	20	-
		400	1.10	0.79	0.62	3.8	3.2	2.40	2.20	2.30	26.4	-	34
	2	230	1.91	0.79	0.62	2.4	6.1	3.65	3.65	3.90	16.5	12	-
		400	1.10	0.79	0.62	2.4	6.1	3.65	3.65	3.90	16.5	-	22

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 kgcm ²	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
0.058	12	230	0.91	0.60	0.26	5.7	1.9	1.07	0.91	1.16	144.0	39	-
		400	0.53	0.60	0.26	5.7	1.9	1.07	0.91	1.16	144.0	-	69
0.066	8	230	0.55	0.60	0.50	3.3	2.0	1.57	1.74	1.82	190.0	31	-
		400	0.32	0.60	0.50	3.3	2.0	1.57	1.74	1.82	190.0	-	55
0.083	6	230	0.66	0.63	0.50	3.3	1.9	1.82	1.49	1.74	126.4	26	-
		400	0.38	0.63	0.50	3.3	1.9	1.82	1.49	1.74	126.4	-	45
0.124	8	230	0.97	0.62	0.52	5.7	2.0	2.32	2.05	2.18	97.0	29	-
		400	0.56	0.62	0.52	5.7	2.0	2.32	2.05	2.18	97.0	-	51
	4	230	0.65	0.70	0.67	2.1	2.9	1.57	1.32	1.57	86.0	20	-
		400	0.38	0.70	0.67	2.1	2.9	1.57	1.32	1.57	86.0	-	34
0.149	6	230	1.02	0.62	0.59	5.7	2.2	2.81	2.48	2.64	54.8	17	-
		400	0.59	0.62	0.59	5.7	2.2	2.81	2.48	2.64	54.8	-	30
0.207	2	230	1.10	0.71	0.66	1.4	4.2	2.48	2.31	2.56	36.1	14	-
		400	0.64	0.71	0.66	1.4	4.2	2.48	2.31	2.56	36.1	-	25
0.248	4	230	1.02	0.79	0.77	3.8	2.9	2.23	2.07	2.23	49.8	20	-
		400	0.59	0.79	0.77	3.8	2.9	2.23	2.07	2.23	49.8	-	35
0.306	4	230	1.43	0.78	0.68	3.8	2.9	2.23	2.07	2.23	41.5	23	-
		400	0.83	0.78	0.68	3.8	2.9	2.23	2.07	2.23	41.5	-	40
	2	230	1.41	0.79	0.68	2.4	4.2	2.48	2.31	2.56	20.5	11	-
		400	0.82	0.79	0.68	2.4	4.2	2.48	2.31	2.56	20.5	-	20

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

Available length: 1 / 3 / 5 / 10 m

Connection Diagrams

For connection diagrams, see Planning Section on p 260.



INTERROLL DRUM MOTOR 113i

Power-packed drive for small conveyors with high-duty cycles

Standard dimensions

Dimensions

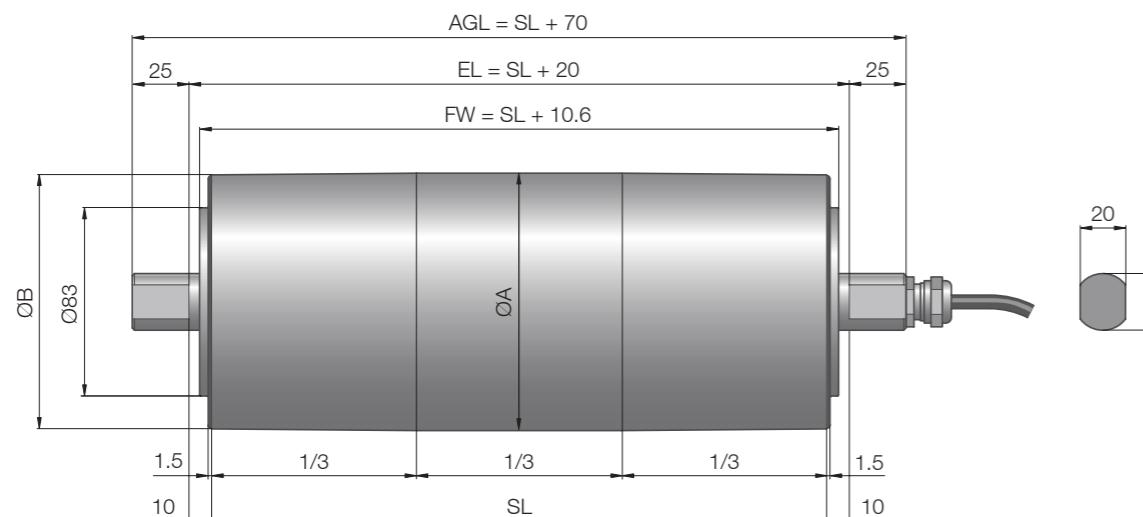


Fig.: Drum motor with straight connector

Type	Ø A mm	Ø B mm
113i crowned shell	113.5	112.0
113i cylindrical shell	112.0	112.0
113i cylindrical shell + key	113.0	113.0

Connector dimensions

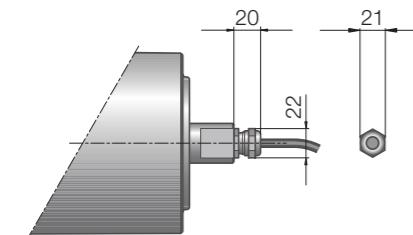


Fig.: Straight connector, brass/nickel

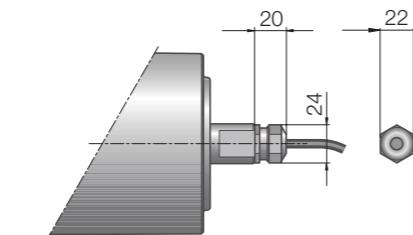


Fig.: Straight connector, stainless steel

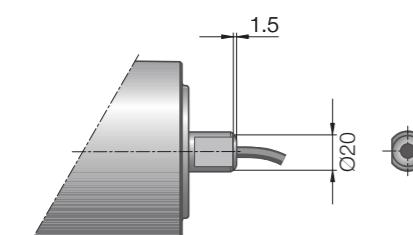


Fig.: Straight cable outlet, PU shaft plug

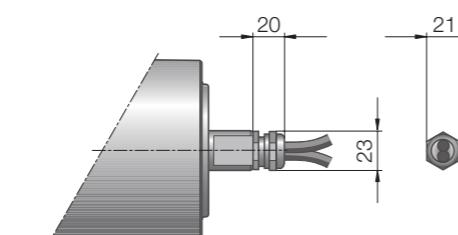


Fig.: Straight connector / Feedback device,
brass/nickel

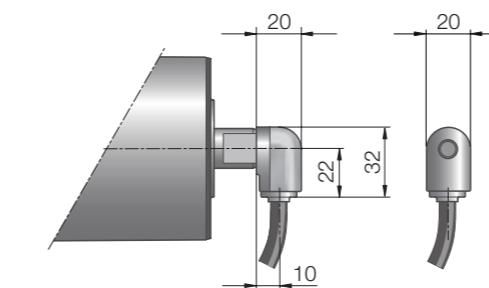


Fig.: Elbow connector, technopolymer

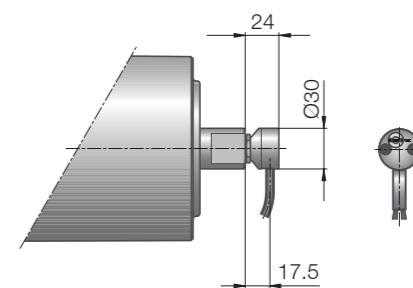


Fig.: Elbow connector, stainless steel

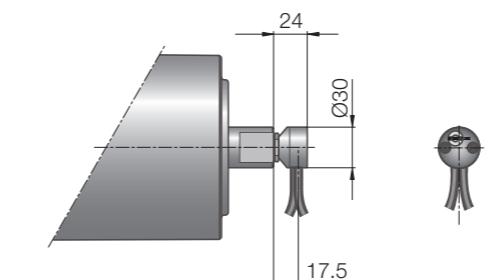


Fig.: Elbow connector / Feedback device,
stainless steel

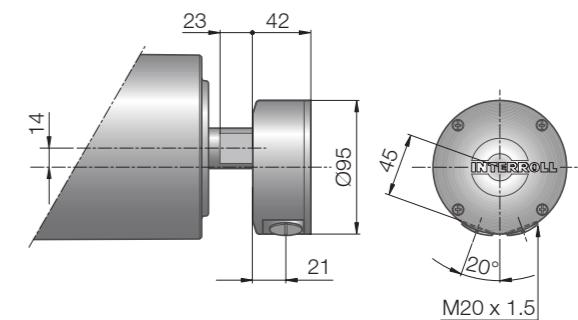


Fig.: Terminal box, stainless steel

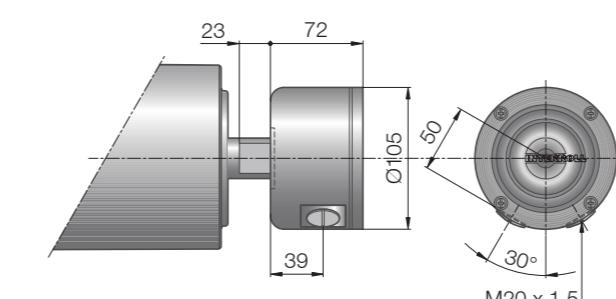


Fig.: Terminal box, technopolymer

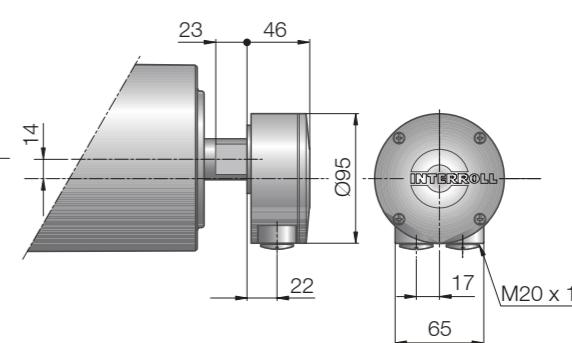


Fig.: Terminal box, aluminium



INTERROLL DRUM MOTOR 113i

Power-packed drive for small conveyors with high-duty cycles

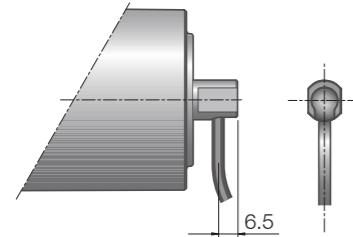


Fig.: Cable slot connector

Shafts for fixing

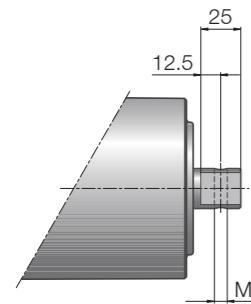


Fig.: Shaft, cross-drilled and threaded

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

Option	Min. SL with option mm	Min. length with option
Brake	Min. SL + 50	
Encoder	Min. SL + 50	
Cable slot connector	Min. SL + 50	

Standard drum motor lengths and their weights:

Shell length SL in mm	250	300	350	400	450	500	550	600	650	700	750	800	850
--------------------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Average weight in kg	8.50	9.15	9.80	10.45	11.10	11.75	12.40	13.05	13.70	14.35	15.0	15.65	17.93
-------------------------	------	------	------	-------	-------	-------	-------	-------	-------	-------	------	-------	-------

Shell length SL in mm	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400
--------------------------	-----	-----	-------	-------	-------	-------	-------	-------	-------	-------	-------

Average weight in kg	18.65	19.36	20.08	20.79	21.51	22.22	22.94	23.65	24.37	25.08	25.80
-------------------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

**Min. length with
option**

**Standard length
and weight**



INTERROLL DRUM MOTOR 138i

Strong powerful drive for conveyors with high-duty cycles

Product Description

Applications

The drum motor is a real all-round component because of its wide power and speed range.

- ✓ Conveyors with high-duty cycles
- ✓ Mobile conveyors
- ✓ Transport conveyors
- ✓ Food processing
- ✓ Logistics applications
- ✓ Steel or plastic modular belt applications
- ✓ Airport check-in conveyors
- ✓ Dry, wet and wash-down applications
- ✓ Low noise
- ✓ Maintenance-free
- ✓ Dual voltage
- ✓ Lifetime lubricated
- ✓ Integral thermal motor protection
- ✓ Reversible
- ✓ Steel-hardened helical spur gear
- ✓ Reinforced shaft for SL above 900 mm

Characteristics

- ✓ Salt-water-resistant aluminium end housings
- ✓ 3-phase AC induction motor
- ✓ Dual voltage
- ✓ Integral thermal motor protection
- ✓ Steel-hardened helical spur gear

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	1,600 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	✓	✓		
	Cylindrical + key, for using sprockets	✓	✓		
End housing	Standard	✓		✓	
	With grooves or chain sprockets	✓		✓	
Shaft	Standard	✓	✓		
	Cross-drilled thread, M8	✓	✓		
External seal	Galvanised labyrinth	✓			
	Stainless steel labyrinth		✓		
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
- Electromagnetic brakes and rectifiers, see p 152
- Lagging for plastic modular belts, see p 134
- Feedback Devices, see p 158
- Lagging for positive drive solid homogeneous belts, see p 138
- Food-grade oil (EU, FDA), see p 256
- Low temperature oil, see p 256
- Multiprofile for positive drive solid homogeneous belts, see p 140
- Labyrinth with FPM, see p 248
- Sprockets for plastic modular belts, see p 142
- cULus safety certifications, see p 251
- Non-horizontal mounting (more than ± 5°), see p 231
- Backstops, see p 150
- Balancing, see p 151

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

Accessories

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



INTERROLL

DRUM MOTOR 138i

Strong powerful drive for 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

P _N kW	np	gs	i	v m/s	n _A min ⁻¹	M _A Nm	F _N N	SL _{min} mm
0.090	12	3	72.55	0.041	5.7	136.7	1,981	300
0.180	8	3	72.55	0.068	9.4	165.8	2,403	300
			40.91	0.121	16.7	96.0	1,391	300
0.250	6	3	72.55	0.091	12.5	173.1	2,508	300
0.370	4	3	72.55	0.133	18.5	174.4	2,527	300
			61.85	0.157	21.7	150.1	2,175	300
			49.64	0.195	27.0	121.4	1,760	300
			40.91	0.237	32.8	100.9	1,463	300
			34.00	0.285	39.4	83.9	1,216	300
			30.55	0.317	43.9	75.4	1,092	300
			25.39	0.381	52.8	62.8	910	300
	2		20.22	0.479	66.3	50.5	732	300
			16.67	0.581	80.4	42.0	608	300
			12.44	0.778	107.7	31.4	455	300
			10.00	0.968	134.0	25.3	366	300
0.550	2	3	72.55	0.281	39.0	122.9	1,780	300
			61.85	0.330	45.7	105.7	1,532	300
			49.64	0.411	56.9	85.6	1,240	300
			40.91	0.499	69.1	71.1	1,031	300
			34.00	0.601	83.1	59.1	856	300
			25.39	0.804	111.3	44.3	641	300
	2		20.22	1.010	139.7	35.6	516	300
			16.67	1.225	169.6	29.6	428	300
			12.44	1.641	227.1	22.1	321	300
			10.00	2.042	282.6	17.8	258	300
0.750	4	3	34.00	0.293	40.6	164.9	2,390	350
			30.55	0.327	45.2	148.1	2,147	350
			25.39	0.393	54.4	123.5	1,790	350
	2		20.22	0.493	68.3	99.3	1,438	350
			16.67	0.599	82.9	82.5	1,195	350
			12.44	0.802	111.0	61.8	895	350
			10.00	0.998	138.1	49.6	719	350
1.000	2	3	49.64	0.404	55.9	158.2	2,293	350
			40.91	0.490	67.8	131.5	1,906	350
			34.00	0.590	81.6	109.3	1,584	350
			25.39	0.790	109.3	81.9	1,186	350
	2		20.22	0.992	137.2	65.8	953	350
			16.67	1.203	166.5	54.7	792	350
			12.44	1.611	223.0	40.9	593	350
			10.00	2.005	277.5	32.9	477	350

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
0.074	12	3	72.55	0.041	5.7	112.5	1,654	300
0.149	8	3	72.55	0.067	9.4	137.4	2,020	300
0.207	6	3	72.55	0.090	12.7	141.9	2,087	300
0.306	4	3	72.55	0.133	18.6	143.0	2,103	300
					49.64	0.194	27.2	99.6
					40.91	0.235	33.0	82.8
					34.00	0.283	39.7	1,012
					30.55	0.315	44.2	61.8
					25.39	0.379	53.2	758
	2				20.22	0.475	66.8	41.4
					16.67	0.577	81.0	34.4
					12.44	0.772	108.5	25.8
0.455	2	3	72.55	0.277	39.0	101.6	1,494	300
					61.85	0.325	45.7	1,286
					49.64	0.405	56.9	1,040
					40.91	0.492	69.1	865
					34.00	0.592	83.1	48.9
	2				25.39	0.793	111.3	36.6
					20.22	0.995	139.7	29.4
					16.67	1.207	169.6	24.4
					12.44	1.617	227.1	18.3
0.620	4	3	34.00	0.292	41.0	134.8	1,983	350
					30.55	0.325	45.7	1,781
					25.39	0.391	55.0	101.0
	2				20.22	0.491	69.0	81.2
					16.67	0.596	83.7	67.4
					12.44	0.798	112.1	50.5
					10.00	0.993	139.5	40.6
0.826	2	3	49.64	0.396	55.6	131.4	1,932	350
					40.91	0.481	67.5	1,606
					34.00	0.578	81.2	1,334
					25.39	0.775	108.8	68.0
	2				20.22	0.973	136.6	54.6
					16.67	1.180	165.7	45.4
					12.44	1.580	221.9	34.0
					10.00	1.967	276.2	402

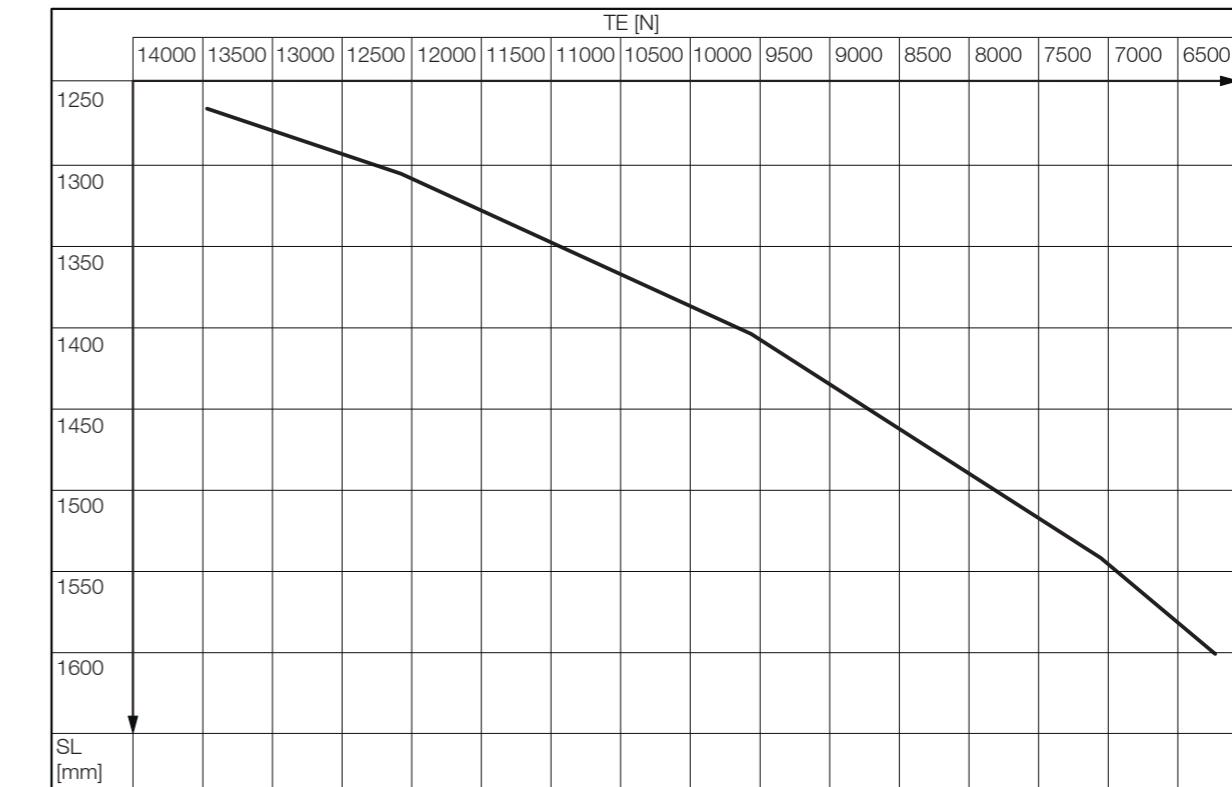
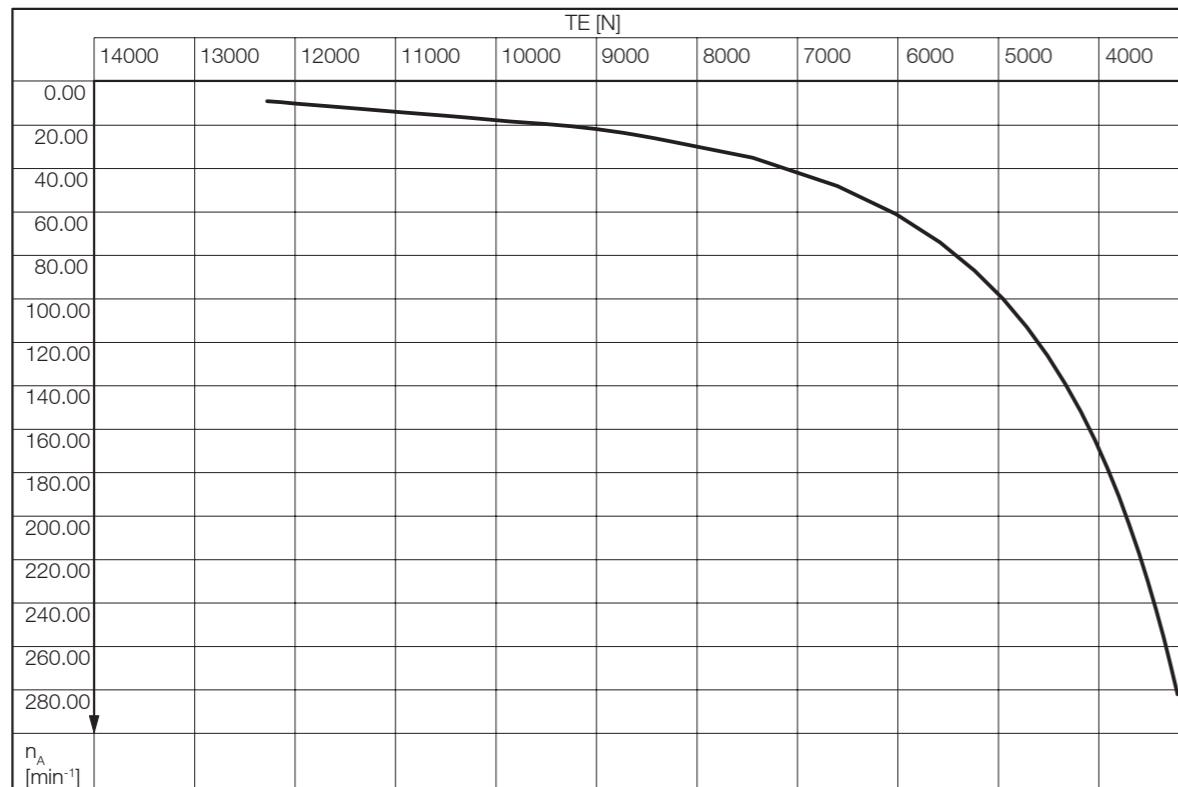
- P_N Rated power
- np Number of poles
- gs Gear stages
- i Gear ratio
- v Rated velocity of the shell
- n_A Rated revolutions of the drum shell
- M_A Rated torque of drum motor
- F_N Rated belt pull of drum motor
- SL_{min} Min. shell length



INTERROLL DRUM MOTOR 138i

Strong powerful drive for 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 > 1,250 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 138i

Strong powerful drive for 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 kgcm ²	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
0.090	12	230	1.14	0.40	0.49	9.3	3.0	1.15	1.15	1.68	92.0	21	-
		400	0.66	0.40	0.49	9.3	3.0	1.15	1.15	1.68	92.0	-	36
0.180	8	230	1.21	0.64	0.58	9.3	2.6	1.10	1.10	1.55	64.0	25	-
		400	0.70	0.64	0.58	9.3	2.6	1.10	1.10	1.55	64.0	-	43
0.250	6	230	1.30	0.72	0.67	9.3	3.0	1.35	1.35	1.75	44.0	21	-
		400	0.75	0.72	0.67	9.3	3.0	1.35	1.35	1.75	44.0	-	36
0.370	4	230	1.68	0.79	0.70	5.6	3.3	1.55	1.55	1.95	26.5	18	-
		400	0.97	0.79	0.70	5.6	3.3	1.55	1.55	1.95	26.5	-	30
0.550	2	230	2.25	0.80	0.76	3.5	5.5	3.20	3.20	3.65	11.4	10	-
		400	1.30	0.80	0.76	3.5	5.5	3.20	3.20	3.65	11.4	-	18
0.750	4	230	3.29	0.80	0.71	9.9	3.4	2.10	2.10	2.45	9.7	13	-
		400	1.90	0.80	0.71	9.9	3.4	2.10	2.10	2.45	9.7	-	22
1.000	2	230	4.16	0.80	0.75	6.2	5.4	3.40	3.40	3.95	5.4	9	-
		400	2.40	0.80	0.75	6.2	5.4	3.40	3.40	3.95	5.4	-	16

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 kgcm ²	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
0.074	12	230	0.94	0.40	0.49	9.3	2.7	1.16	0.99	1.32	110.0	21	-
		400	0.55	0.40	0.49	9.3	2.7	1.16	0.99	1.32	110.0	-	36
0.149	8	230	0.94	0.64	0.61	9.3	2.4	1.32	1.16	1.40	98.0	29	-
		400	0.55	0.64	0.61	9.3	2.4	1.32	1.16	1.40	98.0	-	52
0.207	6	230	1.10	0.68	0.69	9.3	2.7	1.40	1.24	1.40	47.8	18	-
		400	0.64	0.68	0.69	9.3	2.7	1.40	1.24	1.40	47.8	-	31
0.306	4	230	1.26	0.79	0.77	5.6	3.0	1.34	1.16	1.49	33.1	16	-
		400	0.73	0.79	0.77	5.6	3.0	1.34	1.16	1.49	33.1	-	29
0.455	2	230	2.12	0.72	0.74	3.5	5.0	2.38	1.98	2.56	14.1	11	-
		400	1.23	0.72	0.74	3.5	5.0	2.38	1.98	2.56	14.1	-	19
0.620	4	230	2.66	0.79	0.73	9.9	3.1	1.07	1.40	1.24	11.8	12	-
		400	1.55	0.79	0.73	9.9	3.1	1.07	1.40	1.24	11.8	-	22
0.826	2	230	3.13	0.81	0.81	6.2	4.9	1.90	1.74	2.07	6.8	9	-
		400	1.82	0.81	0.81	6.2	4.9	1.90	1.74	2.07	6.8	-	15

P _N kW	Rated power
np	Number of poles
U _N V	Rated voltage
I _N A	Rated current
cos φ	Power factor
η	Efficiency
J _R kgcm ²	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 Ω	Phase resistance
U _{SH delta} V DC	Preheating voltage in delta connection
U _{SH star} V DC	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.



INTERROLL DRUM MOTOR 138i

Strong powerful drive for conveyors with high-duty cycles

Standard dimensions

Dimensions

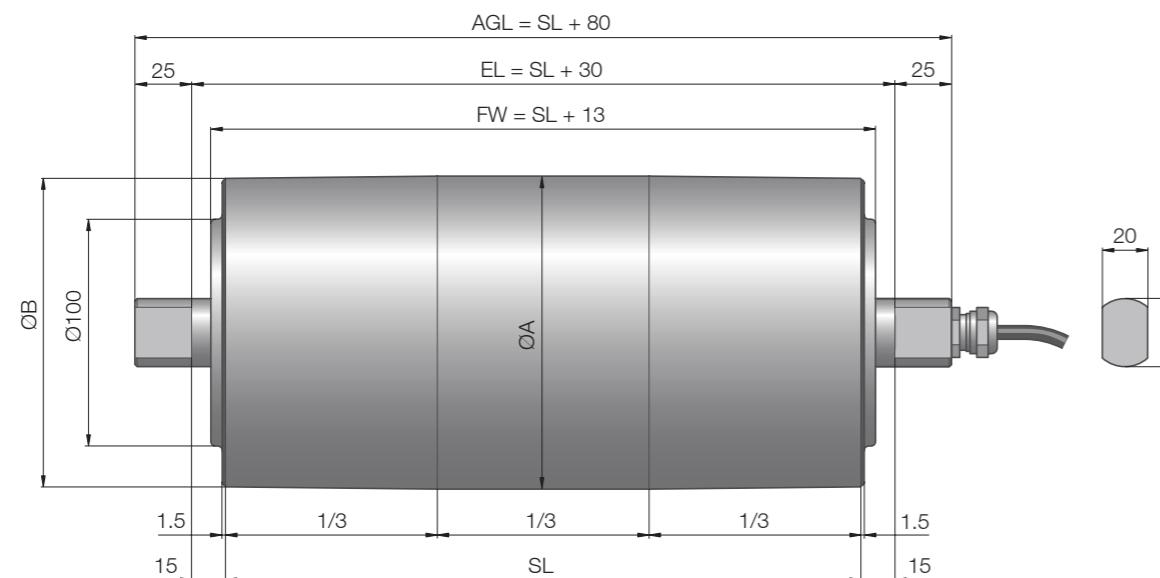


Fig.: Drum motor with straight connector

Type	Ø A mm	Ø B mm
138i crowned shell	138.0	136.0
138i cylindrical shell	136.0	136.0
138i cylindrical shell + key	137.0	137.0

Connector dimensions

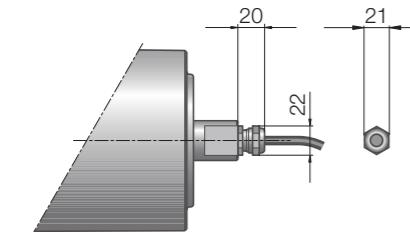


Fig.: Straight connector, brass/nickel

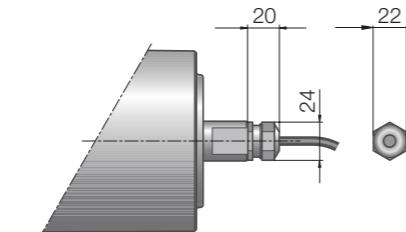


Fig.: Straight connector, stainless steel

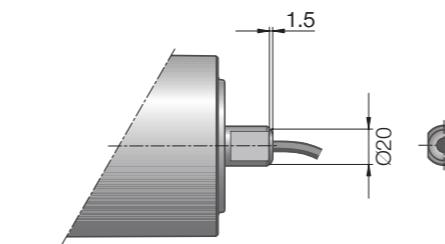


Fig.: Straight cable outlet, PU shaft plug

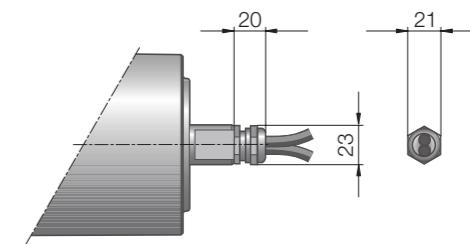


Fig.: Straight connector / Feedback device, brass/nickel

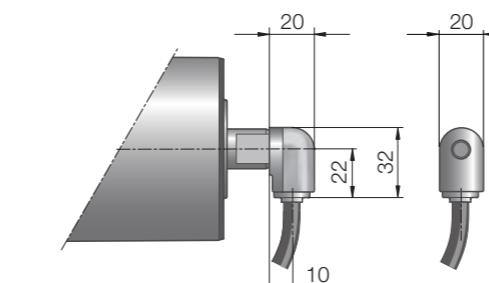


Fig.: Elbow connector, technopolymer

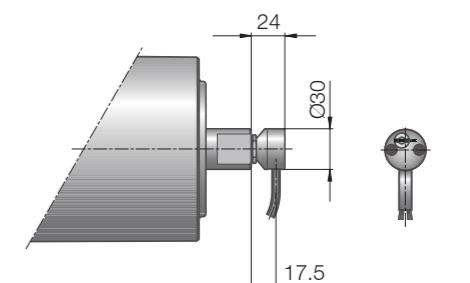


Fig.: Elbow connector, stainless steel

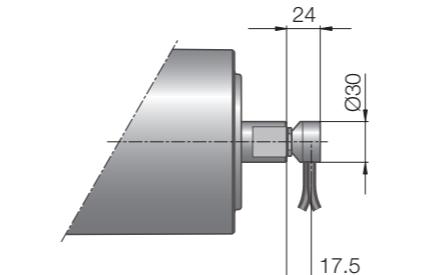


Fig.: Elbow connector / Feedback device, stainless steel

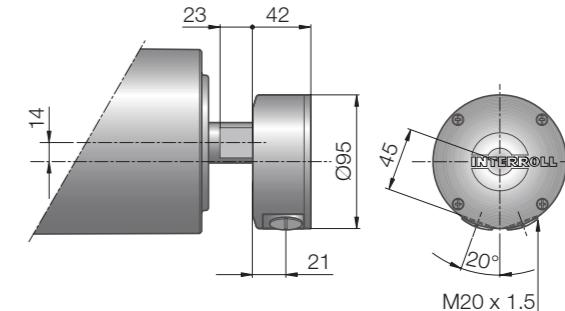


Fig.: Terminal box, stainless steel



INTERROLL DRUM MOTOR 138i

Strong powerful drive for conveyors with high-duty cycles

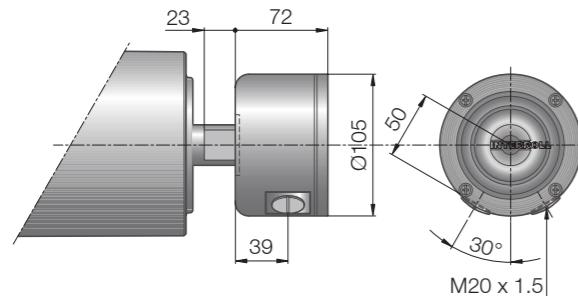


Fig.: Terminal box, technopolymer

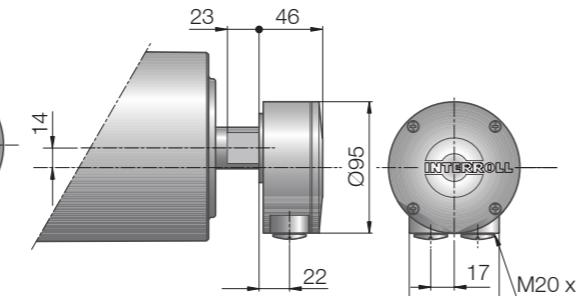


Fig.: Terminal box, aluminium

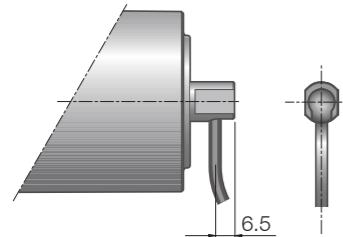


Fig.: Cable slot connector

Shafts for fixing

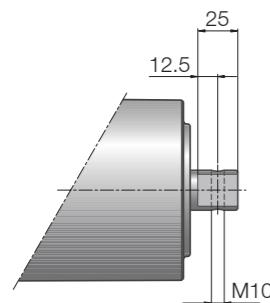


Fig.: Shaft, cross-drilled and threaded

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

Option	Min. SL with option mm	Min. length with option
Brake	Min. SL + 50	
Encoder	Min. SL + 50	
Cable slot connector	Min. SL + 50	

Standard drum motor lengths and their weights:

Shell length SL in mm	300	350	400	450	500	550	600	650	700	750	800	850
Average weight in kg	14.50	15.70	16.90	18.10	19.30	20.50	21.70	22.90	24.10	25.30	26.50	27.70

Shell length SL in mm	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450
Average weight in kg	28.90	33.11	34.43	35.75	37.07	38.39	39.71	41.03	42.35	43.67	44.99	46.31

Shell length SL in mm	1,500	1,550	1,600
Average weight in kg	47.63	48.95	50.27

**Min. length with
option**

**Standard length
and weight**



INTERROLL DRUM MOTOR 165i

High-torque compact drive for conveyors with high-duty cycles

Product Description

Applications

- The drum motor is outstandingly robust with a strong torque and can take a high radial load.
- ✓ Conveyors with high-duty cycles
 - ✓ Agricultural plants
 - ✓ Logistics applications
 - ✓ Food processing
 - ✓ Airport and postal conveyors
 - ✓ Steel or plastic modular belt applications
 - ✓ Warehouse loading conveyors
 - ✓ Dry, wet and wash-down applications
 - ✓ Telescopic conveyors

Characteristics

- ✓ Salt-water-resistant aluminium end housings
- ✓ Low noise
- ✓ 3-phase AC induction motor
- ✓ Maintenance-free
- ✓ Dual voltage
- ✓ Lifetime lubricated
- ✓ Integral thermal motor protection
- ✓ Reversible
- ✓ Reinforced shaft for SL above 1,000 mm
- ✓ Steel-hardened helical spur gear

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	1,750 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		✓	✓	
	Cylindrical + key, for using sprockets		✓	✓	
End housing	Standard		✓	✓	
	With grooves and chain sprockets	✓		✓	
Shaft	Standard		✓	✓	
	Cross-drilled thread, M10		✓	✓	
External seal	Galvanised labyrinth	✓			
	Stainless steel Labyrinth		✓		
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
- Electromagnetic brakes and rectifiers, see p 152
- Lagging for plastic modular belts, see p 134
- Feedback Devices, see p 158
- Lagging for positive drive solid homogeneous belts, see p 138
- Food-grade oil (EU, FDA), see p 256
- Low temperature oil, see p 256
- Sprockets for plastic modular belts, see p 142
- Labyrinth with FPM, see p 248
- Backstops, see p 150
- cULus safety certifications, see p 251
- Balancing, see p 151
- Non-horizontal mounting (more than ± 5°), see p 231

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

Accessories

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



INTERROLL DRUM MOTOR 165i

High-torque compact drive for 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
0.370	12	3	46.56	0.084	9.8	339.6	4,142	450
		3	62.37	0.100	11.1	300.6	3,666	400
		3	46.56	0.127	14.8	224.4	2,736	400
	4	3	62.37	0.189	22.0	158.5	1,933	400
		3	46.56	0.254	29.5	118.3	1,443	400
		3	39.31	0.300	35.0	99.9	1,218	400
		3	31.56	0.374	43.6	80.2	978	400
		3	24.60	0.480	55.9	62.5	762	400
		2	19.64	0.601	70.0	50.9	621	400
		2	14.66	0.806	93.8	38.0	464	400
		2	12.38	0.954	111.1	32.1	391	400
		6	62.37	0.116	13.5	365.2	4,453	400
		6	46.56	0.156	18.1	272.6	3,324	400
0.750	6	3	46.56	0.156	18.1	371.6	4,532	450
		3	62.37	0.187	21.7	310.6	3,787	400
		3	46.56	0.250	29.1	231.8	2,827	400
	4	3	39.31	0.296	34.5	195.7	2,387	400
		3	31.56	0.369	42.9	157.1	1,916	400
		3	24.60	0.473	55.1	122.5	1,494	400
		2	19.64	0.593	69.0	99.8	1,217	400
		2	14.66	0.794	92.4	74.5	908	400
		2	12.38	0.940	109.5	62.9	767	400
		6	46.56	0.243	28.4	348.8	4,254	400
		6	39.31	0.288	33.6	294.5	3,591	400
		6	31.56	0.359	41.8	236.4	2,883	400
		6	24.60	0.461	53.7	184.3	2,248	400
1.100	4	3	19.64	0.577	67.2	150.1	1,831	400
		3	14.66	0.773	90.1	112.1	1,366	400
		3	12.38	0.916	106.7	94.6	1,154	400
	2	3	46.56	0.525	61.1	161.7	1,972	400
		3	39.31	0.621	72.4	136.5	1,665	400
		3	24.60	0.993	115.7	85.4	1,042	400
		2	19.64	1.244	144.9	69.6	849	400
		2	14.66	1.667	194.1	51.9	633	400
		2	12.38	1.974	229.9	43.9	535	400
		2	9.65	2.532	294.8	34.2	417	400
		4	31.56	0.379	44.1	305.3	3,723	450
		4	24.60	0.486	56.6	238.0	2,903	450
1.500	2	3	19.64	0.609	70.9	193.9	2,364	450
		3	14.66	0.816	95.0	144.7	1,765	450
		3	12.38	0.967	112.6	122.2	1,490	450
	2	3	46.56	0.524	61.0	324.3	3,954	450
		3	39.31	0.620	72.2	273.8	3,339	450
		3	31.56	0.773	90.0	219.8	2,680	450
		3	24.60	0.991	115.4	171.3	2,089	450
		2	19.64	1.242	144.6	139.6	1,702	450
		2	14.66	1.664	193.8	104.2	1,270	450
		2	12.38	1.971	229.5	87.9	1,073	450
		2	9.65	2.527	294.3	68.6	836	450

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

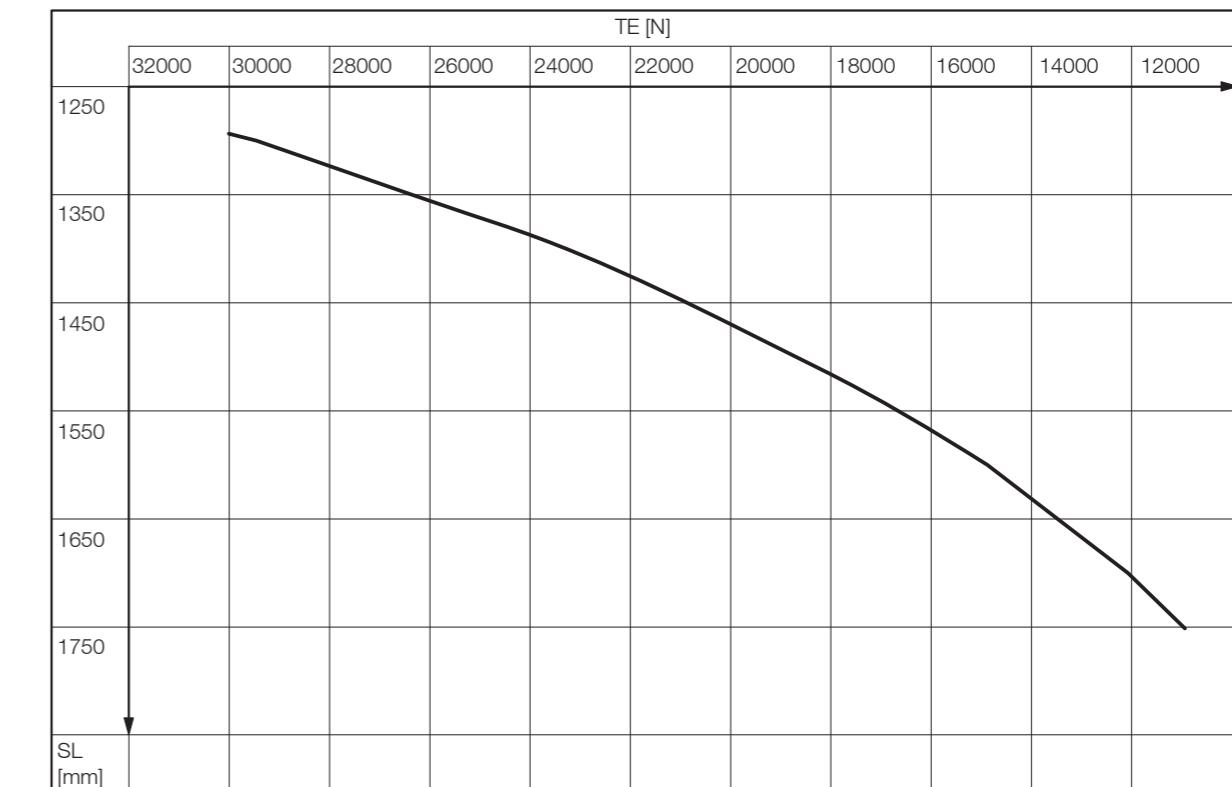
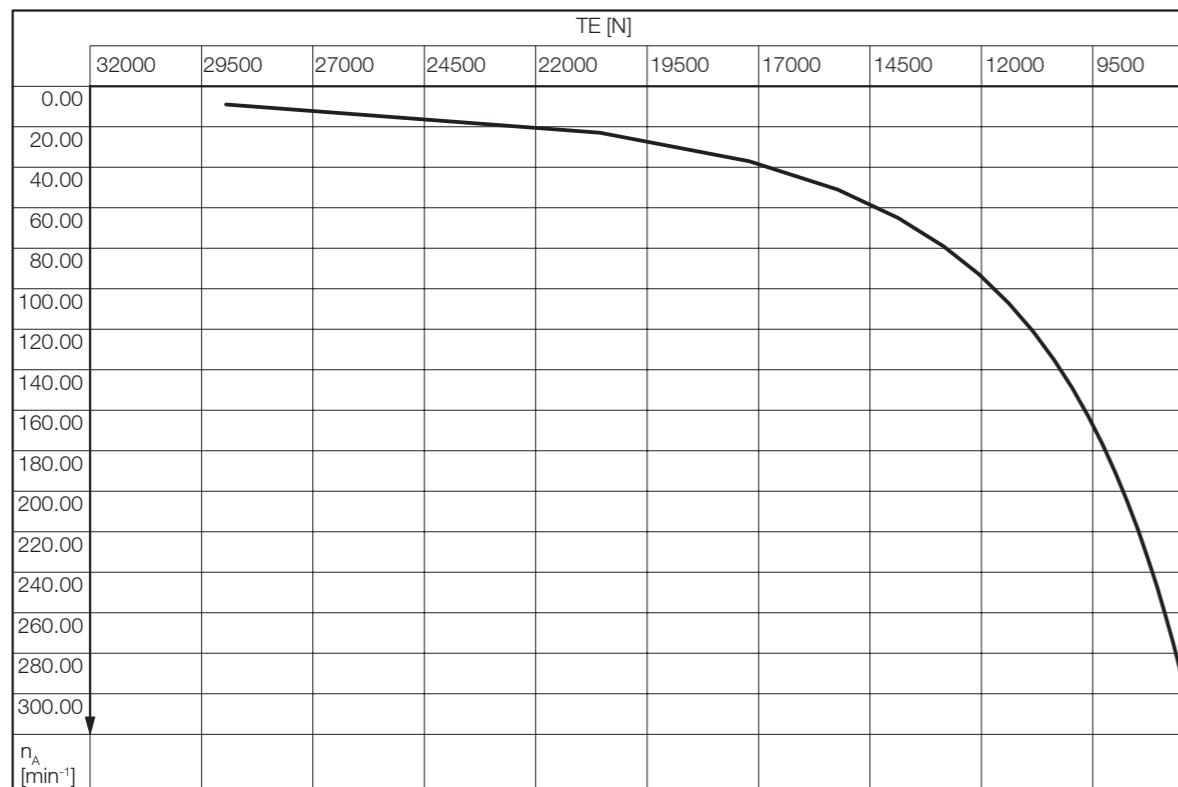
P _N kW	np	gs	i	v m/s	n _A min ⁻¹	M _A Nm	F _N N	SL _{min} mm
0.306	12	3	46.56	0.083	9.8	280.8	3,467	450
		3	62.37	0.100	13.5	204.2	2,521	400
	6	3	62.37	0.115	13.5	301.9	3,727	400
		3	46.56	0.154	18.1	225.3	2,782	400
	6	3	46.56	0.158	18.6	299.9	3,703	450
		3	62.37	0.187	22.1	252.3	3,114	400
		3	46.56	0.251	29.6	188.3	2,325	400
		3	39.31	0.297	35.1	159.0	1,963	400
	2	3	31.56	0.370	43.7	127.6	1,576	400
		3	24.60	0.475	56.0	99.5	1,228	400
		2	19.64	0.595	70.2	81.0	1,000	400
		2	14.66	0.797	94.0	60.5	747	400
	4	3	12.38	0.945	111.4	51.1	630	400
		3	46.56	0.240	28.4	288.2	3,558	400
		3	39.31	0.285	33.6	243.3	3,004	400
		3	31.56	0.355	41.8	195.3	2,411	400
0.455	2	3	24.60	0.455	53.7	152.3	1,880	400
		2	19.64	0.570	67.2	124.0	1,531	400
		2	14.66	0.764	90.1	92.6	1,143	400
		2	12.38	0.905	106.7	78.2	965	400
	2	3	46.56	0.521	61.4	133.0	1,642	400
		3	39.31	0.617	72.8	112.3	1,386	400
		3	24.60	0.986	116.3	70.3	868	400
		2	19.64	1.235	145.6	57.2	707	400
	2	3	14.66	1.655	195.1	42.7	527	400
		2	12.38	1.96				



INTERROLL DRUM MOTOR 165i

High-torque compact drive for conveyors with high-duty cycles

Belt Tension



TE

Belt Tension

n_A

Rated revolutions of the drum shell

SL

Shell length

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 > 1,300 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.



INTERROLL DRUM MOTOR 165i

High-torque compact drive for 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 kgcm ²	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
0.370	12	230	2.77	0.63	0.53	35.1	2.0	1.20	1.20	1.50	19.4	17	-
		400	1.60	0.63	0.53	35.1	2.0	1.20	1.20	1.50	19.4	-	29
	8	230	2.42	0.62	0.57	22.6	2.9	1.90	1.90	2.35	22.0	17	-
		400	1.50	0.62	0.57	22.6	2.9	1.90	1.90	2.35	22.0	-	31
	4	230	1.90	0.77	0.66	11.3	3.2	1.60	1.60	1.80	29.2	21	-
		400	1.10	0.77	0.66	11.3	3.2	1.60	1.60	1.80	29.2	-	37
	0.550	230	2.77	0.69	0.72	22.6	3.4	1.40	1.40	1.65	19.5	19	-
		400	1.60	0.69	0.72	22.6	3.4	1.40	1.40	1.65	19.5	-	32
0.750	6	230	3.64	0.81	0.64	22.6	3.5	1.75	1.75	2.00	6.2	9	-
		400	2.10	0.81	0.64	22.6	3.5	1.75	1.75	2.00	6.2	-	16
	4	230	3.12	0.80	0.75	11.3	3.5	1.53	1.30	1.80	23.9	30	-
		400	1.80	0.80	0.75	11.3	3.5	1.53	1.30	1.80	23.9	-	52
1.100	4	230	4.85	0.82	0.69	11.3	3.5	1.50	1.30	1.70	7.2	14	-
		400	2.80	0.82	0.69	11.3	3.5	1.50	1.30	1.70	7.2	-	25
	2	230	4.16	0.86	0.77	7.6	5.2	3.15	2.10	3.42	2.9	5	-
		400	2.40	0.86	0.77	7.6	5.2	3.15	2.10	3.42	2.9	-	9
1.500	4	230	6.06	0.87	0.71	19.8	3.8	1.55	1.55	2.10	5.2	14	-
		400	3.50	0.87	0.71	19.8	3.8	1.55	1.55	2.10	5.2	-	24
2.200	2	230	7.88	0.86	0.81	7.6	5.3	2.60	2.60	3.20	6.2	21	-
		400	4.55	0.86	0.81	7.6	5.3	2.60	2.60	3.20	6.2	-	36

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 kgcm ²	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
0.306	12	230	2.51	0.62	0.49	35.1	1.8	1.74	1.57	1.98	22.4	17	-
		400	1.45	0.62	0.49	35.1	1.8	1.74	1.57	1.98	22.4	-	30
	8	230	1.97	0.62	0.62	22.6	2.9	1.24	1.16	1.40	28.0	17	-
		400	1.15	0.62	0.62	22.6	2.9	1.24	1.16	1.40	28.0	-	30
	0.455	230	2.04	0.75	0.74	22.6	3.1	1.07	1.07	1.07	25.0	19	-
		400	1.18	0.75	0.74	22.6	3.1	1.07	1.07	1.07	25.0	-	33
	0.620	230	3.30	0.78	0.60	22.6	3.2	1.17	1.16	1.20	6.2	8	-
		400	1.91	0.78	0.60	22.6	3.2	1.17	1.16	1.20	6.2	-	14
0.909	4	230	2.55	0.80	0.76	11.3	3.6	1.26	1.07	1.49	14.4	15	-
		400	1.48	0.80	0.76	11.3	3.6	1.26	1.07	1.49	14.4	-	26
	2	230	3.92	0.84	0.69	11.3	3.7	1.16	1.07	1.24	8.3	14	-
		400	2.27	0.84	0.69	11.3	3.7	1.16	1.07	1.24	8.3	-	24
1.240	2	230	3.30	0.86	0.80	7.3	4.6	2.48	1.74	2.64	6.2	9	-
		400	1.91	0.86	0.80	7.3	4.6	2.48	1.74	2.64	6.2	-	15
	4	230	4.94	0.80	0.78	19.8	3.5	1.18	1.07	1.21	6.2	12	-
		400	2.86	0.80	0.78	19.8	3.5	1.18	1.07	1.21	6.2	-	21
1.818	2	230	6.43	0.85	0.83	7.6	4.8	2.07	1.65	2.31	6.2	17	-
		400	3.73	0.85	0.83	7.6	4.8	2.07	1.65	2.31	6.2	-	29

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.



INTERROLL DRUM MOTOR 165i

High-torque compact drive for conveyors with high-duty cycles

Standard dimensions

Dimensions

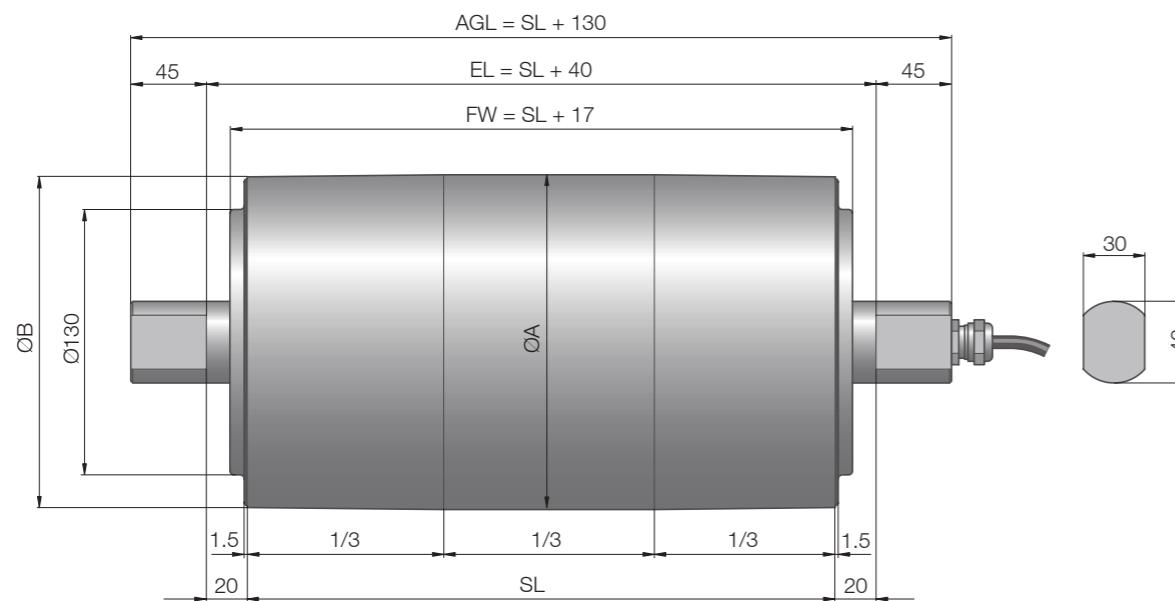


Fig.: Drum motor with straight connector

Type	Ø A mm	Ø B mm
165i crowned shell	164.0	162.0
165i cylindrical shell	162.0	162.0
165i cylindrical shell + key	162.0	162.0

Connector dimensions

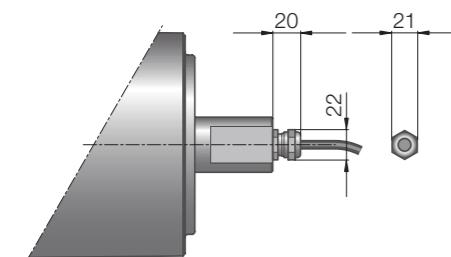


Fig.: Straight connector, brass/nickel

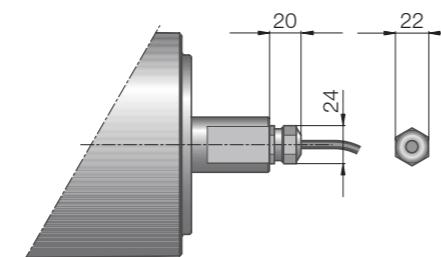


Fig.: Straight connector, stainless steel

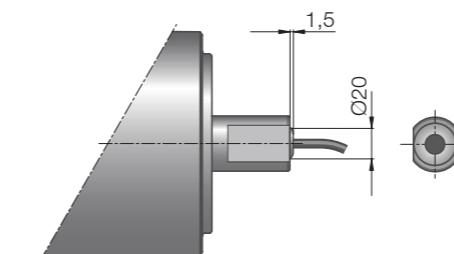


Fig.: Straight cable outlet, PU shaft plug

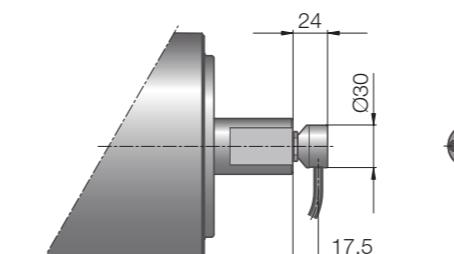


Fig.: Elbow connector, stainless steel

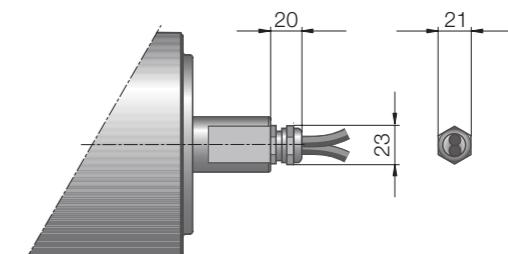


Fig.: Straight connector / Feedback device, brass/nickel

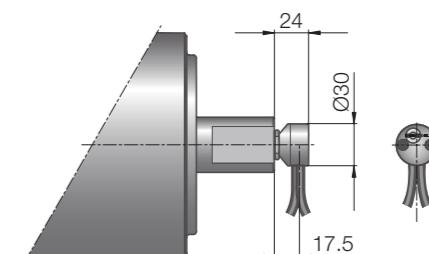


Fig.: Elbow connector / Feedback device, stainless steel

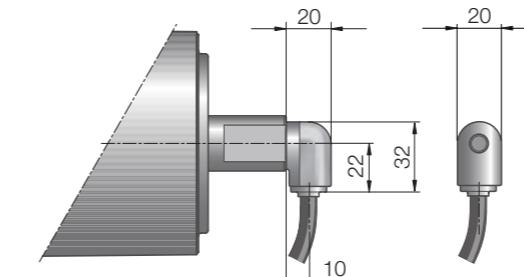


Fig.: Elbow connector, technopolymer

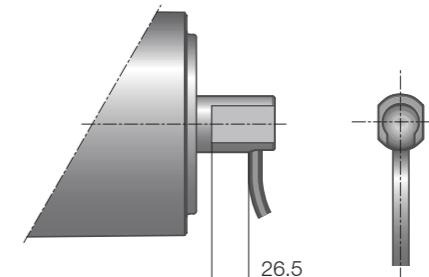


Fig.: Cable slot connector



INTERROLL DRUM MOTOR 165i

High-torque compact drive for conveyors with high-duty cycles

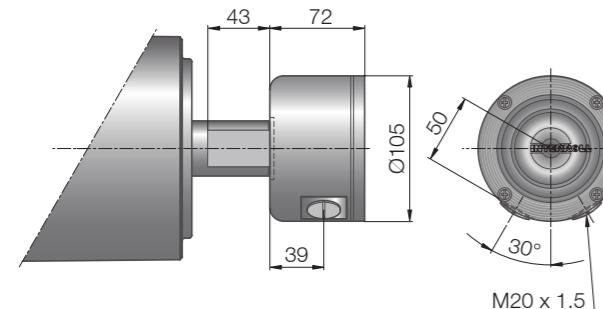


Fig.: Terminal box, technopolymer

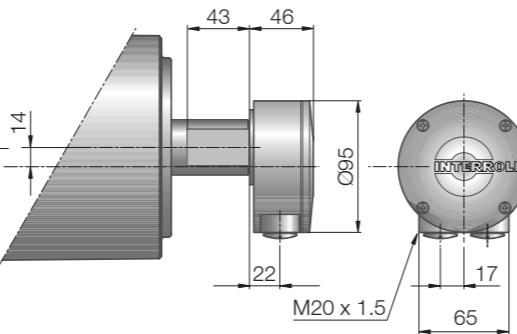


Fig.: Terminal box, aluminium

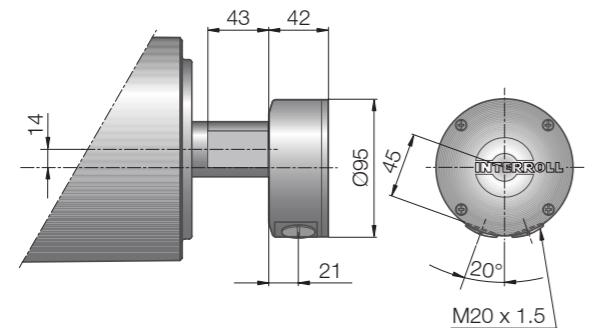


Fig.: Terminal box, stainless steel

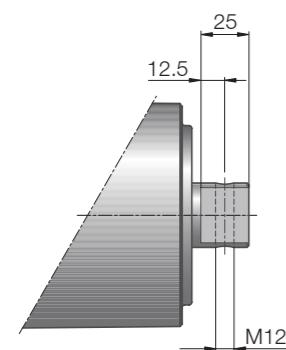


Fig.: Shaft, cross-drilled and threaded

For cross-drilled and threaded hole the shaft flat length is reduced from 45 to 25 mm.

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

Option	Min. SL with option mm	Min. length with option
Brake	Min. SL + 50	
Encoder	Min. SL + 50	
Cable slot connector	Min. SL + 50	

Standard drum motor lengths and their weights:

Shell length SL in mm	400	450	500	550	600	650	700	750	800	850	900
--------------------------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Average weight in kg	35.00	36.90	38.80	40.70	42.60	44.50	46.40	48.30	50.20	52.10	54.00
-------------------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Shell length SL in mm	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450
--------------------------	-----	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Average weight in kg	55.90	57.80	65.67	67.76	69.85	71.94	74.03	76.12	78.21	80.30	82.39
-------------------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Shell length SL in mm	1,500	1,550	1,600	1,650	1,700	1,750
--------------------------	-------	-------	-------	-------	-------	-------

Average weight in kg	84.48	86.57	88.66	90.75	92.84	94.93
-------------------------	-------	-------	-------	-------	-------	-------

Min. length with
option

Standard length
and weight

Shafts for fixing

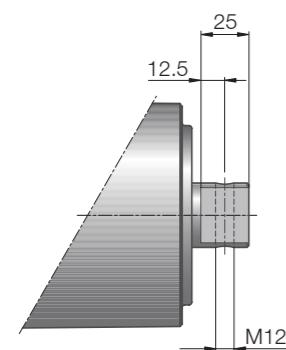


Fig.: Shaft, cross-drilled and threaded

For cross-drilled and threaded hole the shaft flat length is reduced from 45 to 25 mm.



INTERROLL DRUM MOTOR 217i

High torque compact drive for heavy-duty conveyors

Product Description

Applications

This drum motor is typically used for heavy-duty handling applications.

- ✓ Conveyors with heavy loads
- ✓ Belts with side walls or cross cleats
- ✓ Logistics applications
- ✓ Airport and postal conveyors
- ✓ Warehouse loading conveyors
- ✓ Telescopic conveyors
- ✓ Agricultural plants
- ✓ Food processing
- ✓ Dry, wet and wash-down applications

Characteristics

- ✓ Salt-water-resistant aluminium end housings
- ✓ Low noise
- ✓ 3-phase AC induction motor
- ✓ Maintenance-free
- ✓ Dual voltage
- ✓ Lifetime lubricated
- ✓ Integral thermal motor protection
- ✓ Reversible
- ✓ Steel-hardened helical spur gear
- ✓ Reinforced shaft for SL above 1,200 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	1,750 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		✓	✓	
	With grooves and chain sprockets			✓	
Shaft	Standard		✓	✓	
	Cross-drilled thread, M10		✓	✓	
External seal	Galvanised labyrinth		✓		
	Stainless steel Labyrinth			✓	
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
- 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.

Accessories

- Mounting brackets, see p 168
- Idler pulleys, see p 178 to p 183
- Conveyor rollers, see p 188



INTERROLL DRUM MOTOR 217i

High torque compact drive for heavy-duty conveyors

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
0.370	8	3	62.37	0.126	11.1	300.6	2,764	400
0.550	6	3	62.37	0.154	13.5	365.2	3,358	400
			46.56	0.207	18.1	272.6	2,506	400
0.750	4	3	62.37	0.247	21.7	310.6	2,856	400
1.100	8	2	31.11	0.254	22.3	451.8	4,154	500
	4	3	46.56	0.323	28.4	348.8	3,207	400
			39.31	0.382	33.6	294.5	2,708	400
			31.56	0.476	41.8	236.4	2,174	400
			24.60	0.611	53.7	184.3	1,695	400
	2		19.64	0.766	67.2	150.1	1,380	400
			14.66	1.026	90.1	112.1	1,030	400
			12.38	1.215	106.7	94.6	870	400
	2	3	24.60	1.317	115.7	85.4	786	400
		2	19.64	1.650	144.9	69.6	640	400
			14.66	2.211	194.1	51.9	478	400
			12.38	2.618	229.9	43.9	403	400
			9.65	3.357	294.8	34.2	314	400
1.500	6	2	27.53	0.397	34.9	394.5	3,628	500
			20.10	0.544	47.8	288.1	2,649	500
			16.80	0.651	57.1	240.7	2,214	500
	4	2	31.11	0.516	45.3	303.6	2,791	550
			27.53	0.583	51.2	268.7	2,470	500
			20.10	0.799	70.1	196.2	1,804	500
			16.80	0.956	83.9	163.9	1,507	500
			12.53	1.281	112.5	122.3	1,124	500
2.200	6	2	16.80	0.633	55.6	362.9	3,337	500
	4	2	31.11	0.520	45.6	442.2	4,066	500
			27.53	0.587	51.6	391.4	3,599	500
			20.10	0.804	70.6	285.7	2,627	500
			16.80	0.963	84.5	238.8	2,196	500
			12.53	1.290	113.3	178.1	1,638	500
	2	2	27.53	1.156	101.5	198.9	1,829	500
			20.10	1.583	139.0	145.2	1,335	500
			16.80	1.894	166.3	121.3	1,116	500
			12.53	2.539	223.0	90.5	832	500
3.000	4	2	27.53	0.587	51.6	533.6	4,907	500
			20.10	0.804	70.6	389.6	3,583	500
			16.80	0.963	84.5	325.6	2,994	500
			12.53	1.290	113.3	242.9	2,233	500
	2	2	27.53	1.163	102.1	269.5	2,478	500
			20.10	1.593	139.9	196.7	1,809	500
			16.80	1.906	167.4	164.4	1,512	500
			12.53	2.555	224.4	122.6	1,128	500

Note: Motors with a SL_{min} of 500 or 550 mm may also be used for applications with positive drive belts or no belts.

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
0.306	8	3	62.37	0.152	13.5	204.2	1,895	400
0.455	6	3	62.37	0.153	13.5	301.9	2,802	400
			46.56	0.205	18.1	225.3	2,091	400
0.620	4	3	62.37	0.249	22.1	252.3	2,341	400
0.909	4	3	46.56	0.320	28.4	288.2	2,674	400
			39.31	0.379	33.6	243.3	2,258	400
			31.56	0.472	41.8	195.3	1,813	400
			24.60	0.605	53.7	152.3	1,413	400
	2		19.64	0.759	67.2	124.0	1,151	400
			14.66	1.016	90.1	92.6	859	400
			12.38	1.204	106.7	78.2	725	400
	2	3	24.60	1.312	116.3	70.3	652	400
		2	19.64	1.643	145.6	57.2	531	400
			14.66	2.202	195.1	42.7	396	400
			12.38	2.608	231.1	36.1	335	400
			9.65	3.344	296.4	28.1	261	400

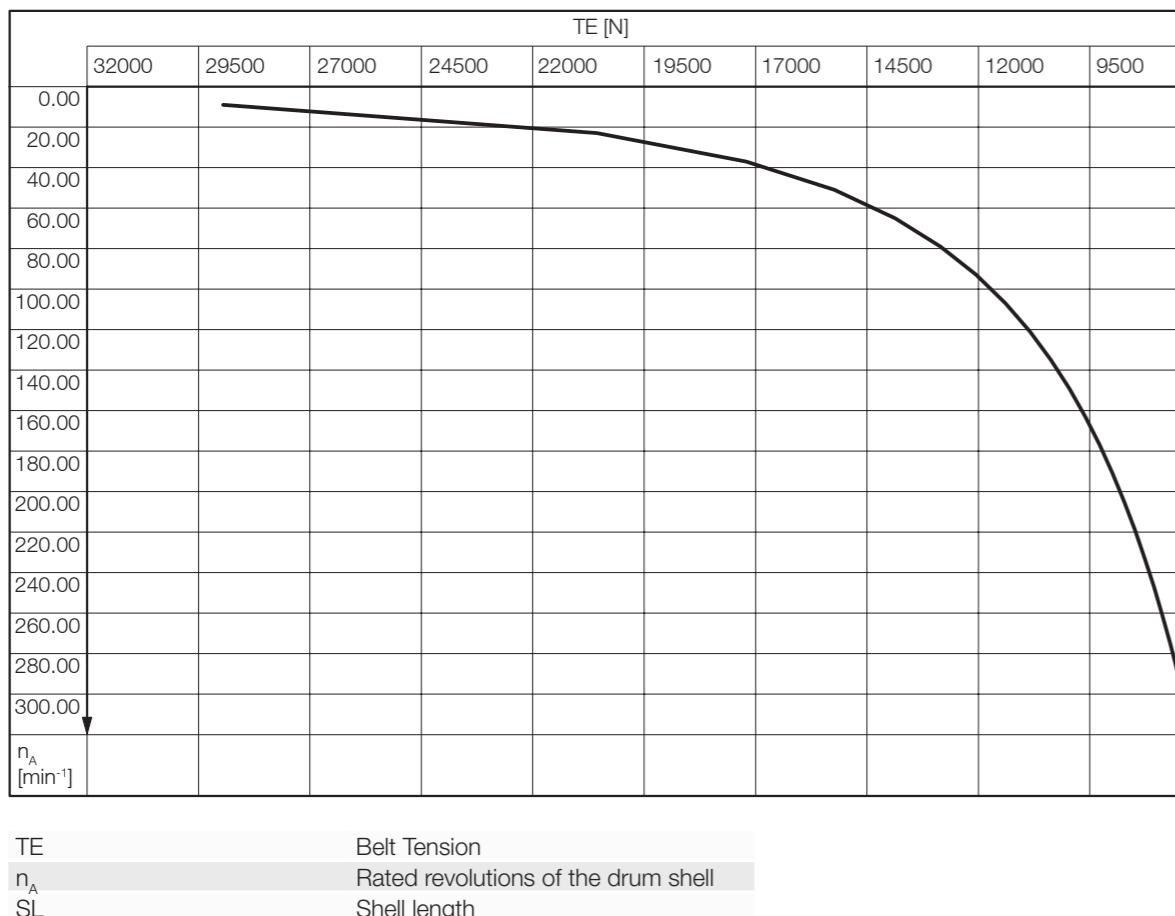
P_N	Rated power
np	Number of poles
gs	Gear stages
i	Gear ratio
v	Rated velocity of the shell
n_A	Rated revolutions of the drum shell
M_A	Rated torque of drum motor
F_N	Rated belt pull of drum motor
SL_{min}	Min. shell length



INTERROLL DRUM MOTOR 217i

High torque compact drive for heavy-duty conveyors

Belt Tension



Note: To get the right value of the maximum allowed belt tension, find the maximum allowed TE value for the drum motor RPM. The TE value for SL does not need to be considered for standard 217i.

Electrical data for 3-phase motors (Standard 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 delta} V DC	U _{SH star} V DC
0.370	8	230	2.42	0.62	0.57	22.6	2.9	1.90	1.90	2.35	22.0	17	-
		400	1.50	0.62	0.57	22.6	2.9	1.90	1.90	2.35	22.0	-	31
0.550	6	230	2.77	0.69	0.72	22.6	3.4	1.40	1.40	1.65	19.5	19	-
		400	1.60	0.69	0.72	22.6	3.4	1.40	1.40	1.65	19.5	-	32
0.750	4	230	3.12	0.80	0.75	11.3	3.5	1.53	1.30	1.80	23.9	30	-
		400	1.80	0.80	0.75	11.3	3.5	1.53	1.30	1.80	23.9	-	52
1.100	8	230	5.54	0.81	0.61	86.0	4.5	1.80	1.70	2.20	6.3	14	-
		400	3.20	0.81	0.61	86.0	4.5	1.80	1.70	2.20	6.3	-	24
	4	230	4.85	0.82	0.69	11.3	3.5	1.50	1.30	1.70	7.2	14	-
		400	2.80	0.82	0.69	11.3	3.5	1.50	1.30	1.70	7.2	-	25
	2	230	4.16	0.86	0.77	7.6	5.2	3.15	2.10	3.42	2.9	5	-
		400	2.40	0.86	0.77	7.6	5.2	3.15	2.10	3.42	2.9	-	9
	6	230	6.93	0.82	0.66	86.0	4.8	2.10	1.90	2.50	4.3	12	-
		400	4.00	0.82	0.66	86.0	4.8	2.10	1.90	2.50	4.3	-	21
1.500	4	230	6.41	0.87	0.67	49.6	5.5	2.20	1.80	2.50	3.6	10	-
		400	3.70	0.87	0.67	49.6	5.5	2.20	1.80	2.50	3.6	-	17
	6	230	9.87	0.80	0.70	86.0	5.0	2.10	1.90	2.50	3.6	14	-
		400	5.70	0.80	0.70	86.0	5.0	2.10	1.90	2.50	3.6	-	25
2.200	4	230	9.01	0.87	0.70	60.0	5.9	2.40	2.30	2.90	3.5	14	-
		400	5.20	0.87	0.70	60.0	5.9	2.40	2.30	2.90	3.5	-	24
	6	230	8.83	0.88	0.71	26.0	6.4	2.60	2.30	3.02	3.0	11	-
		400	5.10	0.88	0.71	26.0	6.4	2.60	2.30	3.02	3.0	-	20
3.000	4	230	12.12	0.82	0.76	46.9	5.0	2.40	2.30	2.90	1.9	9	-
		400	7.00	0.82	0.76	46.9	5.0	2.40	2.30	2.90	1.9	-	16
	2	230	11.52	0.82	0.80	38.1	6.5	2.60	2.40	3.40	1.6	7	-
		400	6.65	0.82	0.80	38.1	6.5	2.60	2.40	3.40	1.6	-	13



INTERROLL DRUM MOTOR 217i

High torque compact drive for heavy-duty conveyors

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 kgcm ²	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
0.306	8	230	1.97	0.62	0.62	22.6	2.9	1.24	1.16	1.40	28.0	17	-
		400	1.15	0.62	0.62	22.6	2.9	1.24	1.16	1.40	28.0	-	30
0.455	6	230	2.04	0.75	0.74	22.6	3.1	1.07	1.07	1.07	25.0	19	-
		400	1.18	0.75	0.74	22.6	3.1	1.07	1.07	1.07	25.0	-	33
0.620	4	230	2.55	0.80	0.76	11.3	3.6	1.26	1.07	1.49	14.4	15	-
		400	1.48	0.80	0.76	11.3	3.6	1.26	1.07	1.49	14.4	-	26
0.909	4	230	3.92	0.84	0.69	11.3	3.7	1.16	1.07	1.24	8.3	14	-
		400	2.27	0.84	0.69	11.3	3.7	1.16	1.07	1.24	8.3	-	24
	2	230	3.30	0.86	0.80	7.3	4.6	2.48	1.74	2.64	6.2	9	-
		400	1.91	0.86	0.80	7.3	4.6	2.48	1.74	2.64	6.2	-	15

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.



INTERROLL DRUM MOTOR 217i

High torque compact drive for heavy-duty conveyors

Standard dimensions

Dimensions

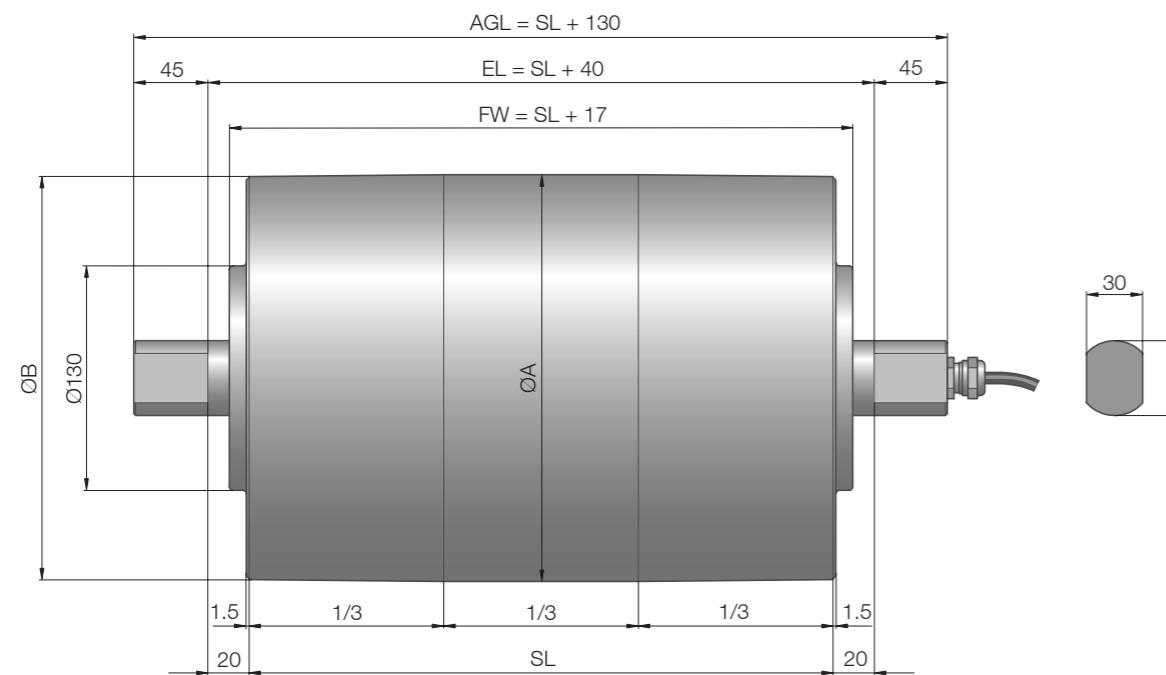


Fig.: Drum motor with straight connector

Type	Ø A mm	Ø B mm
217i crowned shell	217.5	215.5
217i cylindrical shell	215.5	215.5

Connector dimensions

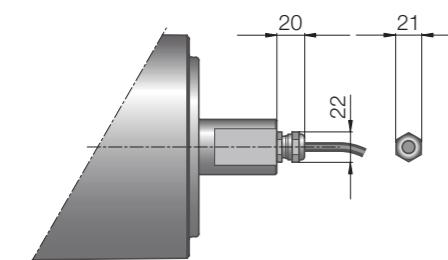


Fig.: Straight connector, brass/nickel

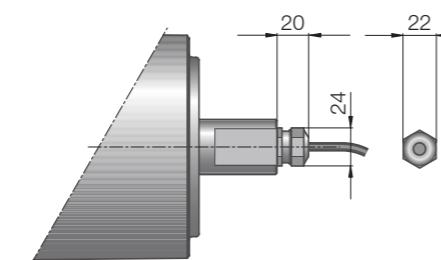


Fig.: Straight connector, stainless steel

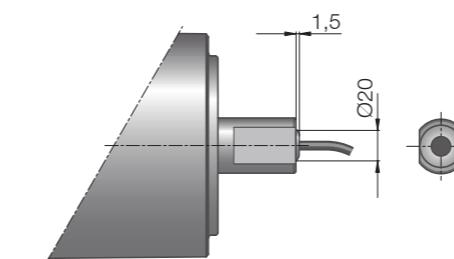


Fig.: Straight cable outlet, PU shaft plug

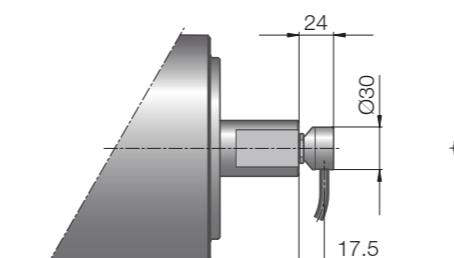


Fig.: Elbow connector, stainless steel

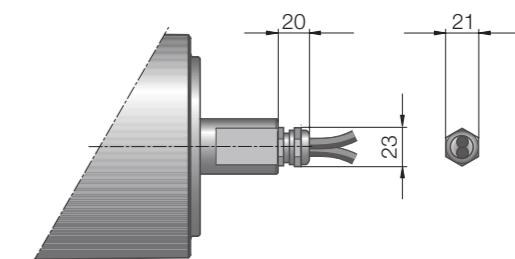


Fig.: Straight connector / Feedback device, brass/nickel

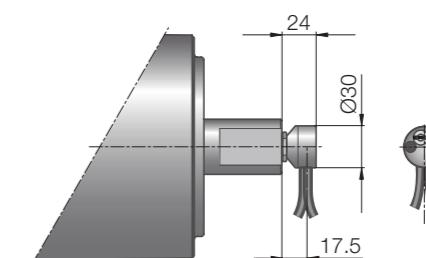


Fig.: Elbow connector / Feedback device, stainless steel

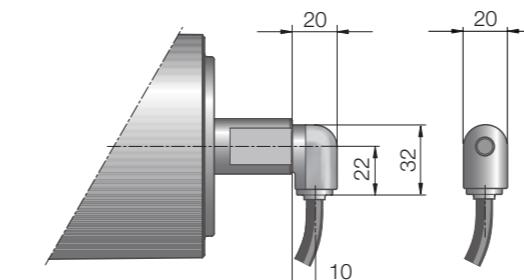


Fig.: Elbow connector, technopolymer

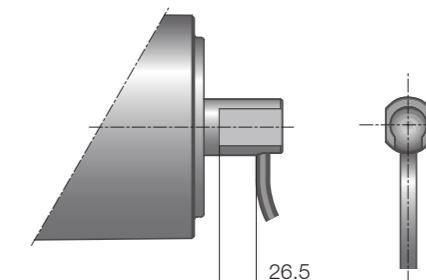


Fig.: Cable slot connector



INTERROLL DRUM MOTOR 217i

High torque compact drive for heavy-duty conveyors

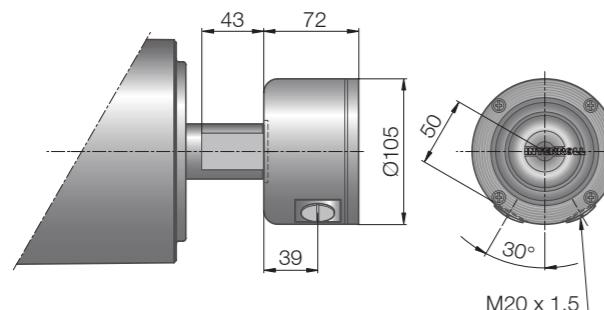


Fig.: Terminal box, technopolymer

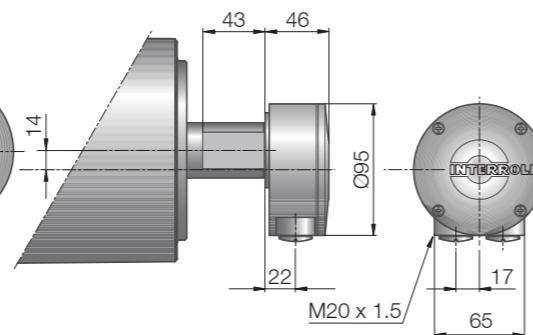


Fig.: Terminal box, aluminium

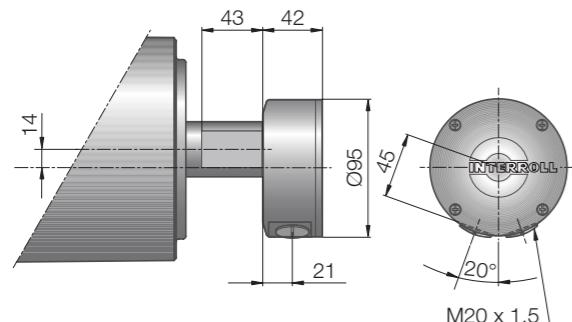


Fig.: Terminal box, stainless steel

Shafts for fixing

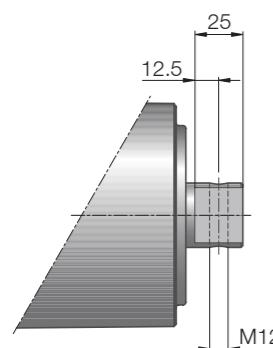


Fig.: Shaft, cross-drilled and threaded

For cross-drilled and threaded hole the shaft flat length is reduced from 45 to 25 mm.

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

Option	Min. SL with option mm	Min. length with option
Brake	Min. SL + 50	
Encoder	Min. SL + 50	
Cable slot connector	Min. SL + 50	

Standard drum motor lengths and their weights:

Shell length SL in mm	400	450	500	550	600	650	700	750	800	850	900
Average weight in kg	46.50	47.80	65.00	70.00	72.00	74.00	76.00	78.00	80.00	82.00	84.00

Shell length SL in mm	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450
Average weight in kg	86.00	88.00	99.00	101.20	103.40	105.60	107.80	110.00	112.20	114.40	116.60

Shell length SL in mm	1,500	1,550	1,600	1,650	1,700	1,750
Average weight in kg	118.80	121.00	123.20	125.40	127.60	129.80

**Min. length with
option**

**Standard length
and weight**



OVERVIEW OF STANDARD SYNCHRONOUS DRUM MOTORS

	80D	88D	113D
Diameter	81.5 mm	88 mm	113.5 mm
Gear material	Steel	Steel	Steel
Rated power	0.145 to 0.425 kW	0.145 to 0.425 kW	0.145 to 0.425 kW
Rated torque	1.8 to 60 Nm	1.8 to 60 Nm	1.8 to 60 Nm
Belt pull	43 to 1,472 N	39 to 1,364 N	31 to 1,062 N
Velocity of the shell	0.040 to 1.600 m/s	0.043 to 1.728 m/s	0.055 to 2.219 m/s
Shell length SL	210 to 900 mm	210 to 600 mm	210 to 900 mm
Friction drive belt	✓		✓
Positive drive belt	✓	✓	✓
Without belt	✓	✓	✓
	p 94	p 104	p 112



INTERROLL DRUM MOTOR 80D

Compact and robust drive for smart belt conveyors with high dynamics

Product Description

Applications

The drum motor is perfect for high dynamic applications, food conveyors, smart belt and many servo conveyor belt applications.

- ✓ Small feed conveyors with high-duty cycles
- ✓ High performance packaging conveyors
- ✓ Dynamic weighing equipment
- ✓ Smart belts
- ✓ Pick and place applications
- ✓ Food processing (EHEDG)
- ✓ Dry, wet and wash-down applications

Characteristics

- ✓ Stainless steel housings
- ✓ Wide variable speed range
- ✓ 3-phase AC synchronous permanent magnet motor
- ✓ Maintenance-free
- ✓ High torque
- ✓ Lifetime lubricated
- ✓ Integral motor protection
- ✓ High efficiency
- ✓ Steel-hardened planetary gear

Note: Synchronous drum motors must be connected to a drive controller and not directly to the mains supply. For sensor-less drive operation use the Interroll IFI-IP55 Frequency inverter. For feedback or positioning applications use a servo-driver.

Technical Data

Electrical data

Motor type	AC Synchronous permanent magnet motor
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	230/400 V
	Special voltage on request
Internal shaft sealing system	Double-lipped, FPM
Protection rate	IP69K
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
General technical data	
Max. shell length SL	900 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			Techno-polymer
		Mild steel	Stainless steel	Brass / Nickel	
Shell	Crowned	✓	✓		
	Cylindrical	✓	✓		
	Cylindrical + key, for using sprockets	✓	✓		
End housing	Standard		✓		
Shaft	Standard		✓		
External seal	PTFE				
Electrical connector	Straight connector		✓	✓	
	Straight cable outlet			✓	
	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 belts, see p 138
- Sprockets for plastic modular belts, see p 142
- Feedback devices, see p 158
- 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

- Plummer block bracket, see p 176
- Idler pulleys, see p 178 to p 183
- Conveyor rollers, see p 188
- IFI - IP55 Frequency Inverter, see p 122
- Drive control options, see p 198



INTERROLL DRUM MOTOR 80D

Compact and robust drive for smart belt conveyors with high dynamics

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 200 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
0.145	8	3	160	0.080	18.8	59.8	1,468	215
			120	0.107	25.0	44.9	1,101	215
		2	100	0.128	30	41.1	1,008	215
		2	80	0.160	37.5	32.9	806	215
		2	60	0.213	50.0	24.6	605	215
		2	40	0.320	75.0	17.0	417	200
		2	32	0.400	93.8	13.6	333	200
	2	2	25	0.512	120.0	10.6	261	200
		2	20	0.640	150.0	8.5	261	200
		2	16	0.800	187.5	6.8	167	200
		2	12	1.067	250.0	5.1	125	200
		2	1	1.600	375.0	3.5	86	185
	0.298	3	60	0.213	50.0	50.7	1,243	265
			40	0.320	75.0	34.9	857	250
		2	32	0.400	93.8	27.9	685	250
		2	25	0.512	120.0	21.8	535	250
		2	20	0.640	150.0	17.5	428	250
		2	16	0.800	187.5	14.0	343	250
		2	12	1.067	250.0	10.5	257	250
		2	1	1.600	375.0	7.2	177	235
	0.425	2	40	0.320	75.0	49.8	1,222	265
			32	0.400	93.8	39.8	977	265
		2	25	0.512	120.0	31.1	764	265
		2	20	0.640	150.0	24.9	611	265
		2	16	0.800	187.5	19.9	489	265
		2	12	1.067	250.0	14.9	367	265
		2	1	1.600	375.0	10.3	252	250

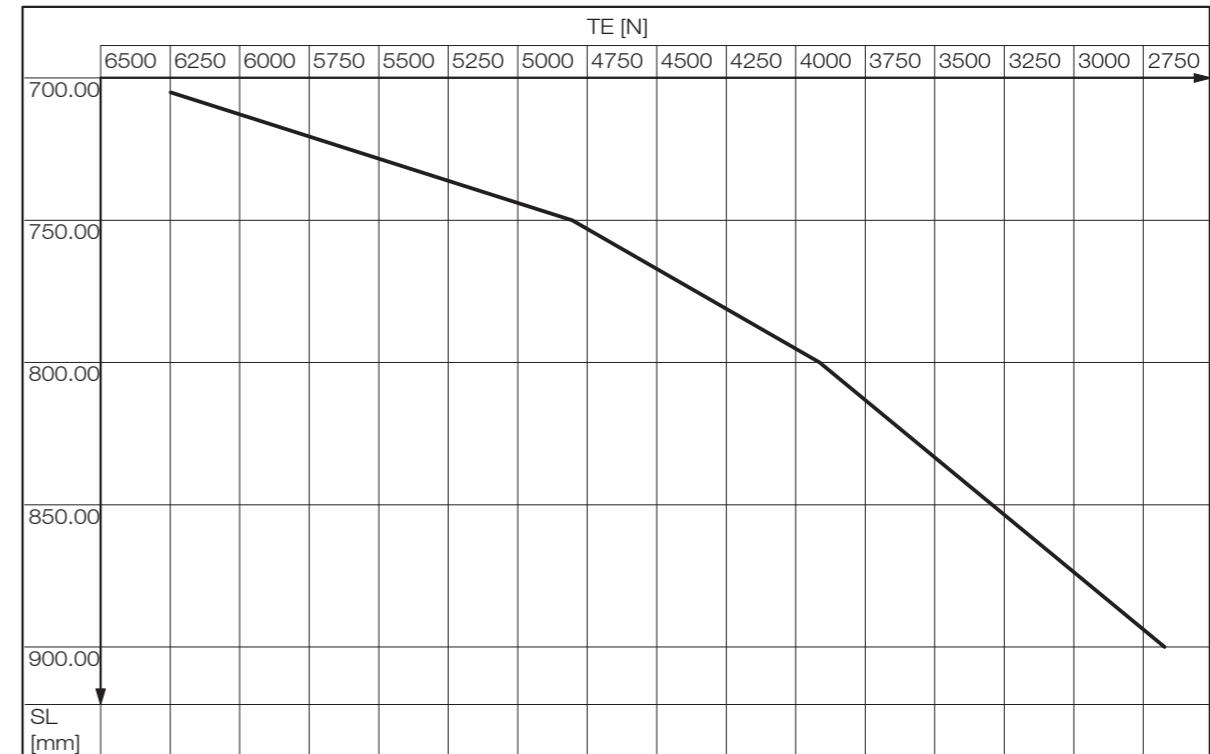
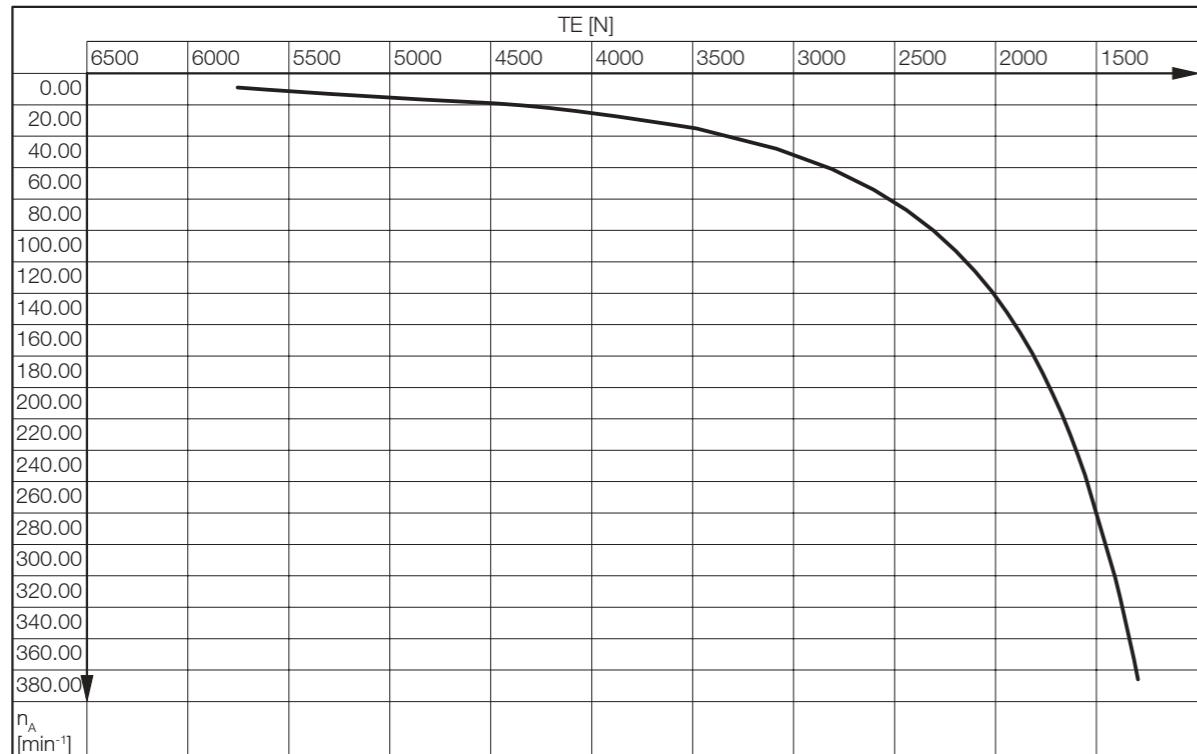
P _N	Rated power
np	Number of poles
gs	Gear stages
i	Gear ratio
v	Rated velocity of the shell
n _A	Rated revolutions of the drum shell
M _A	Rated torque of drum motor
F _N	Rated belt pull of drum motor
SL _{min}	Min. shell length



INTERROLL DRUM MOTOR 80D

Compact and robust drive for smart belt conveyors with high dynamics

Belt Tension



TE

Belt Tension

n_A

Rated revolutions of the drum shell

SL

Shell length

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.



INTERROLL DRUM MOTOR 80D

Compact and robust drive for smart belt conveyors with high dynamics

Electrical data for 3-phase motors

P_N kW	U_N V	np	U_L V DC	I_N A	M_N Nm	η	f_N Hz	n_N min ⁻¹	T_e ms	K_E V/krpm	K_{TN} Nm/A	I_0 A	M_0 Nm	I_{MAX} A	M_{MAX} Nm	J_R kgcm ²	R_{M20} Ω	R_{M75} Ω	L_{sd} mH	L_{sq} mH
0.145	400	8	560	0.47	0.46	0.83	200	3,000	4.41	72.23	0.98	0.47	0.46	1.41	1.38	0.1413	62.54	75.95	130.7	138.0
										41.57	0.57	0.81	0.46	2.43	1.38	0.1413	21.62	26.26	45.60	53.70
0.298	400	8	560	0.78	0.95	0.87	200	3,000	6.48	83.09	1.22	0.78	0.95	2.34	2.85	0.2826	29.06	35.29	81.90	94.10
										47.46	0.73	1.30	0.95	3.90	2.85	0.2826	10.20	12.39	27.80	29.30
0.425	400	8	560	1.32	1.35	0.86	200	3,000	6.70	80.80	1.02	1.32	1.35	3.96	4.05	0.4239	17.60	21.38	49.80	59.00
										45.81	0.59	2.30	1.35	6.90	4.05	0.4239	5.66	6.87	16.26	19.42

P_N	Rated power
np	Number of poles
U_N	Rated voltage
U_L	DC link voltage
I_N	Rated current
M_N	Rated torque of rotor
η	Efficiency
f_N	Rated frequency
n_N	Rated speed of rotor
T_e	Electrical time constant
k_e	BEMF (Back Electromotive Force) constant: effective phase to phase
k_{TN}	Torque constant
I_0	Standstill current
M_0	Standstill torque
I_{MAX}	Maximum current
M_{MAX}	Maximum torque
J_R	Rotor moment of inertia
R_{M20}	Phase to phase resistance at 20 °C
R_{M75}	Phase to phase resistance at 75 °C
L_{sd}	d-axis inductance
L_{sq}	q-axis inductance

Cable Specifications

Available cables for connectors (see also p 252):

- Standard, screened
- Halogen-free, screened

Available length: 1 / 3 / 5 / 10 m

Note: A maximum cable length of 2 m between the motor and the IFI-IP55 should not be exceeded in order to ensure compliance with the EMC Cat C2 requirements.

Connection Diagrams

For connection diagrams, see Planning Section on p 261.



INTERROLL DRUM MOTOR 80D

Compact and robust drive for smart belt conveyors with high dynamics

Standard dimensions

Dimensions

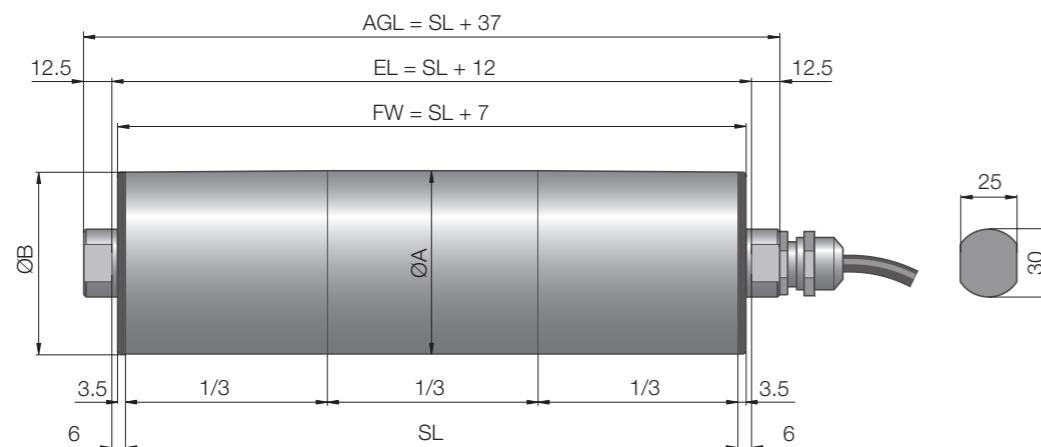


Fig.: Drum motor with straight connector

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

Connector dimensions

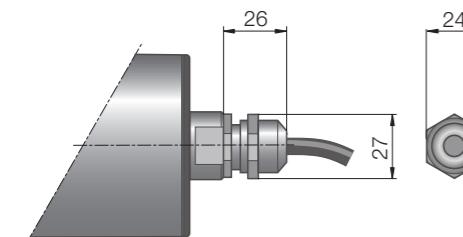


Fig.: Straight connector,
brass/nickel or stainless steel

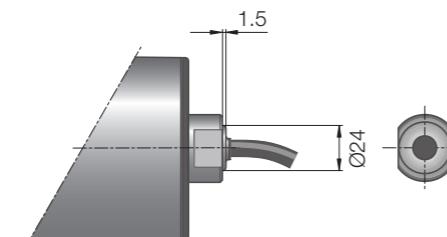


Fig.: Straight cable outlet, PU shaft plug

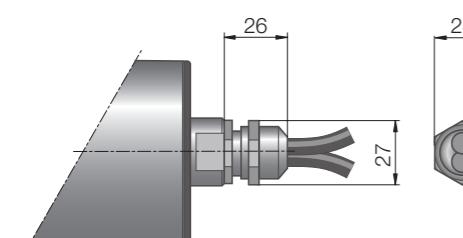


Fig.: Straight connector / Feedback device,
brass/nickel or stainless steel

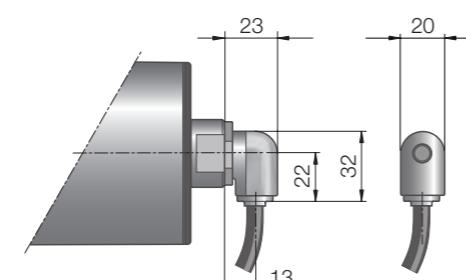


Fig.: Elbow connector, technopolymer

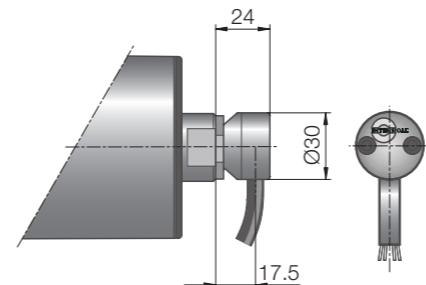


Fig.: Elbow connector, stainless steel

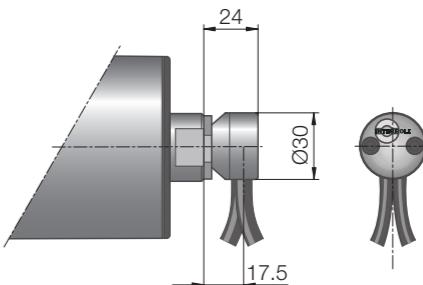


Fig.: Elbow connector / Feedback device,
stainless steel

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

Option	Min. SL with option mm
Feedback device	Min. SL + 50 (SL + 75 for Hiperface feedback option)

Standard drum motor lengths and their weights:

Shell length SL in mm	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Average weight in kg	6.6	7.0	7.4	7.9	8.7	9.1	9.6	10.0	10.5	10.9	11.4	11.8	12.3	12.7	13.2

Min. length with
option

Standard length
and weight



INTERROLL DRUM MOTOR 88D

Product Description

Applications

The drum motor is perfect for high dynamic applications, food conveyors, smart belt and many servo conveyor belt applications. It is supplied with a hexagonal shell enabling easy fitting of sprockets, pulleys and wheels.

- ✓ Small feed conveyors with high-duty cycles
- ✓ High performance packaging conveyors
- ✓ Dynamic weighing equipment
- ✓ Smart belts
- ✓ Pick and place applications
- ✓ Food processing (EHEDG)
- ✓ Dry, wet and wash-down applications

Characteristics

- ✓ Stainless steel end housings
- ✓ Wide variable speed range
- ✓ 3-phase AC synchronous permanent magnet motor
- ✓ Maintenance-free
- ✓ High torque
- ✓ Lifetime lubricated
- ✓ Integral thermal motor protection
- ✓ High efficiency
- ✓ Steel-hardened planetary gear
- ✓ Hexagonal shell

Note: Synchronous drum motors must be connected to a drive controller and not directly to the mains supply. For sensor-less drive operation use the Interroll IFI-IP55 Frequency inverter. For feedback or positioning applications use a servo-driver.

Technical Data

Electrical data

Motor type	AC Synchronous permanent magnet motor
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	230/400 V
	Special voltage on request
Internal shaft sealing system	Double-lipped, FPM
Protection rate	IP69K
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
General technical data	
Max. shell length SL	600 mm

Order Information

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

Compact and robust drive for smart belt conveyors with high dynamics

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		
		Mild steel	Stainless steel	Brass / Nickel
Shell	Hexagonal	✓	✓	
End housing	Standard		✓	
Shaft	Standard		✓	
External seal	PTFE			
Electrical connector	Straight connector	✓	✓	
	Straight cable outlet			✓
	Elbow connector	✓		✓

Please contact your Interroll customer consultant for further versions.

Options

- Sprockets for plastic modular belts, see p 142
- Feedback devices, see p 156
- 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

- Plummer block bracket, see p 176
- Idler pulleys, see p 178 to p 183
- Conveyor rollers, see p 188
- IFI - IP55 Frequency Inverter, see p 122
- Drive control options, see p 198



INTERROLL DRUM MOTOR 88D

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 200 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
0.145	8	3	160	0.080	18.8	59.8	1468	215
			120	0.115	25.0	44.9	1,020	215
			100	0.138	30.0	41.1	934	215
			80	0.173	38.0	32.9	747	215
			60	0.230	50.0	24.6	560	215
		2	40	0.346	75.0	17.0	386	200
			32	0.432	93.8	13.6	309	200
			25	0.553	120.0	10.6	241	200
			20	0.691	150.0	8.5	193	200
			16	0.864	187.5	6.8	154	200
			12	1.152	250.0	5.1	116	200
			1	8	1.728	375.0	3.5	185
		0.298	3	60	0.230	50.0	50.7	1,151
			2	40	0.346	75.0	34.9	793
			32	0.432	93.8	27.9	635	250
			25	0.553	120.0	21.8	496	250
			20	0.691	150.0	17.5	397	250
			16	0.864	187.5	14.0	317	250
			12	1.152	250.0	10.5	238	250
			1	8	1.728	375.0	7.2	164
0.425	8	2	40	0.346	75.0	49.8	1,131	265
			32	0.432	93.8	39.8	905	265
			25	0.553	120.0	31.1	707	265
			20	0.691	150.0	24.9	566	265
			16	0.864	187.5	19.9	453	265
			12	1.152	250.0	14.9	339	265
			1	8	1.728	375.0	10.3	234
								250

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

Compact and robust drive for smart belt conveyors with high dynamics

Belt Tension



TE

Belt Tension

n_A

Rated revolutions of the drum shell

SL

Shell length

Note: To get the right value of the maximum allowed belt tension, find the maximum allowed TE value for the drum motor RPM. The TE value for SL does not need to be considered for standard 88D.



INTERROLL DRUM MOTOR 88D

Compact and robust drive for smart belt conveyors with high dynamics

Electrical data for 3-phase motors

P_N kW	U_N V	np	U_L V DC	I_N A	M_N Nm	η	f_N Hz	n_N min ⁻¹	T_e ms	K_E V/krpm	K_{TN} Nm/A	I_0 A	M_0 Nm	I_{MAX} A	M_{MAX} Nm	J_R kgcm ²	R_{M20} Ω	R_{M75} Ω	L_{sd} mH	L_{sq} mH
0.145	400	8	560	0.47	0.46	0.83	200	3,000	4.41	72.23	0.98	0.47	0.46	1.41	1.38	0.1413	62.54	75.95	130.7	138.0
										41.57	0.57	0.81	0.46	2.43	1.38	0.1413	21.62	26.26	45.60	53.70
0.298	400	8	560	0.78	0.95	0.87	200	3,000	6.48	83.09	1.22	0.78	0.95	2.34	2.85	0.2826	29.06	35.29	81.90	94.10
										47.46	0.73	1.30	0.95	3.90	2.85	0.2826	10.20	12.39	27.80	29.30
0.425	400	8	560	1.32	1.35	0.86	200	3,000	6.70	80.80	1.02	1.32	1.35	3.96	4.05	0.4239	17.60	21.38	49.80	59.00
										45.81	0.59	2.30	1.35	6.90	4.05	0.4239	5.66	6.87	16.26	19.42

P_N Rated power

np Number of poles

U_N Rated voltage

U_L DC link voltage

I_N Rated current

M_N Rated torque of rotor

η Efficiency

f_N Rated frequency

n_N Rated speed of rotor

T_e Electrical time constant

k_e BEMF (Back Electromotive Force) constant: effective phase to phase

k_{TN} Torque constant

I_0 Standstill current

M_0 Standstill torque

I_{MAX} Maximum current

M_{MAX} Maximum torque

J_R Rotor moment of inertia

R_{M20} Phase to phase resistance at 20 °C

R_{M75} Phase to phase resistance at 75 °C

L_{sd} d-axis inductance

L_{sq} q-axis inductance

Cable Specifications

Available cables for connectors (see also p 252):

- Standard, screened
- Halogen-free, screened

Available length: 1 / 3 / 5 / 10 m

Note: A maximum cable length of 2 m between the motor and the IFI-IP55 should not be exceeded in order to ensure compliance with the EMC Cat C2 requirements.

Connection Diagrams

For connection diagrams, see Planning Section on p 261.



INTERROLL DRUM MOTOR 88D

Compact and robust drive for smart belt conveyors with high dynamics

Standard dimensions

Dimensions

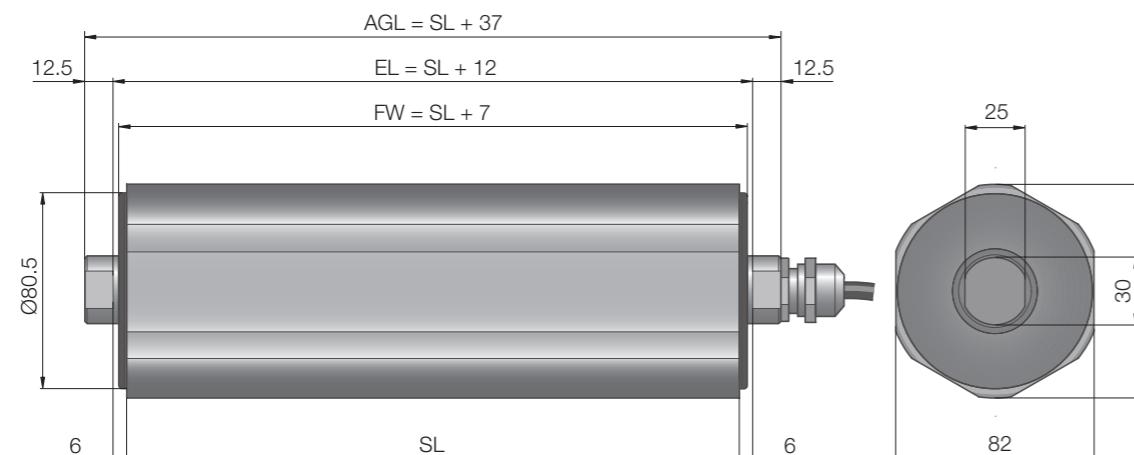


Fig.: Drum motor with straight connector

Connector dimensions

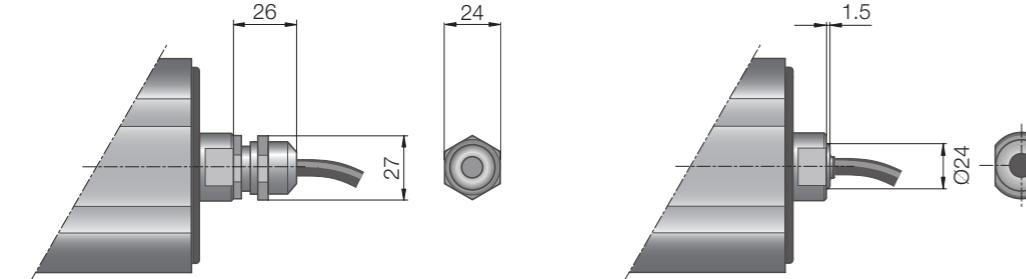


Fig.: Straight connector, brass/nickel or stainless steel Fig.: Straight cable outlet, PU shaft plug

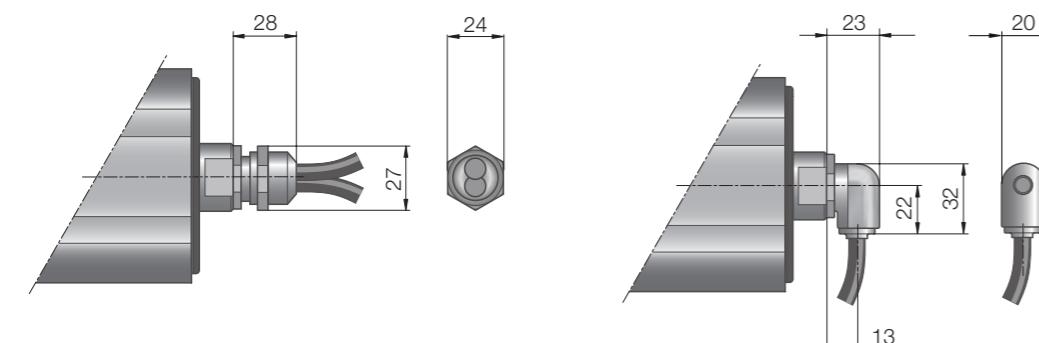


Fig.: Straight connector / Feedback device, brass/
nickel or stainless steel Fig.: Elbow connector, technopolymer

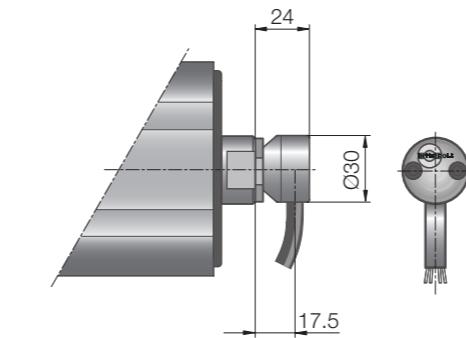


Fig.: Elbow connector, stainless steel

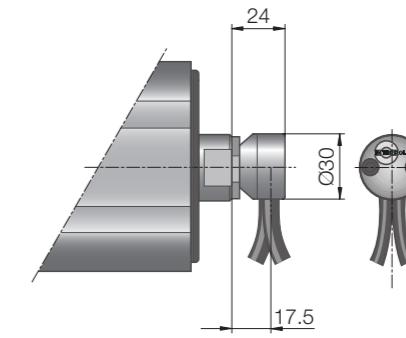


Fig.: Elbow connector / Feedback device,
stainless steel

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

Option

Min. SL with option mm

Feedback device

Min. SL + 50 (SL + 75 for Hiperface feedback option)

Standard drum motor lengths and their weights:

Shell length SL in mm	200	250	300	350	400	450	500	550	600
Average weight in kg	7.1	7.8	8.5	9.1	10.5	10.9	11.6	12.4	13.1

Min. length with option

Standard length and weight



INTERROLL DRUM MOTOR 113D

Product Description

Applications

The drum motor is perfect for high dynamic applications, food conveyors, smart belt and many servo conveyor belt applications.

- ✓ Small feed conveyors with high-duty cycles
- ✓ High performance packaging conveyors
- ✓ Dynamic weighing equipment
- ✓ Smart belts
- ✓ Pick and place applications
- ✓ Food processing (EHEDG)
- ✓ Dry, wet and wash-down applications

Characteristics

- ✓ Stainless steel end housings
- ✓ Wide variable speed range
- ✓ 3-phase AC synchronous permanent magnet motor
- ✓ Maintenance-free
- ✓ High Torque
- ✓ Lifetime lubricated
- ✓ Integral motor protection
- ✓ Steel-hardened planetary gear
- ✓ High efficiency

Note: Synchronous drum motors must be connected to a drive controller and not directly to the mains supply. For sensor-less drive operation use the Interroll IFI-IP55 Frequency inverter. For feedback or positioning applications use a servo-driver.

Technical Data

Electrical data

Motor type	AC Synchronous permanent magnet motor
Insulation class of motor windings	Class F, IEC 34 (VDE 0530)
Voltage	Special voltage on request 230/400 V
Internal shaft sealing system	Double-lipped, FPM
Protection rate	IP69K
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
General technical data	
Max. shell length SL	900 mm

Order Information

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

Compact and robust drive for smart belt conveyors with high dynamics

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			Techno-polymer
		Mild steel	Stainless steel	Brass / Nickel	
Shell	Crowned	✓	✓		
	Cylindrical	✓	✓		
	Cylindrical + key, for using sprockets	✓	✓		
End housing	Standard		✓		
Shaft	Standard		✓		
External seal	PTFE				
Electrical connector	Straight connector	✓	✓		
	Straight cable outlet			✓	
	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 belts, see p 138
- Sprockets for plastic modular belts, see p 142
- Feedback devices, see p 158
- 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

- Plummer block bracket, see p 176
- Idler pulleys, see p 178 to p 183
- Conveyor rollers, see p 188
- IFI - IP55 Frequency Inverter, see p 122
- Drive control options, see p 198



INTERROLL DRUM MOTOR 113D

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 200 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
0.145	8	3	160	0.111	18.8	59.8	1,059	215
			120	0.148	25.0	44.9	794	215
			100	0.177	30.0	41.1	727	215
			80	0.222	37.5	32.9	582	215
			60	0.296	50.0	24.6	436	215
		2	40	0.444	75.0	17.0	301	200
			32	0.555	93.8	13.6	240	200
			25	0.710	120.0	10.6	188	200
			20	0.887	150.0	8.5	150	200
			16	1.109	187.5	6.8	120	200
			12	1.479	250.0	5.1	90	200
	0.298	1	8	2.219	375.0	3.5	62	185
		3	60	0.296	50.0	50.7	897	265
			40	0.444	75.0	34.9	618	250
		2	32	0.555	93.8	27.9	494	250
			25	0.710	120.0	21.8	386	250
			20	0.887	150.0	17.5	309	250
			16	1.109	187.5	14.0	247	250
			12	1.479	250.0	10.5	185	250
			1	8	2.219	375.0	7.2	128
0.425	8	2	40	0.444	75.0	49.8	881	265
			32	0.555	93.8	39.8	705	265
			25	0.710	120.0	31.1	551	265
			20	0.887	150.0	24.9	441	265
			16	1.109	187.5	19.9	352	265
			12	1.479	250.0	14.9	264	265
			1	8	2.219	375.0	10.3	182

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

Compact and robust drive for smart belt conveyors with high dynamics

Belt Tension



Note: To get the right value of the maximum allowed belt tension, find the maximum allowed TE value for the drum motor RPM. The TE value for SL does not need to be considered for standard 113D.



INTERROLL DRUM MOTOR 113D

Compact and robust drive for smart belt conveyors with high dynamics

Electrical data for 3-phase motors

P _N kW	U _N V	np	U _L V DC	I _N A	M _N Nm	η	f _N Hz	n _N min ⁻¹	T _e ms	K _E V/krpm	K _{TN} Nm/A	I _o A	M ₀ Nm	I _{MAX} A	M _{MAX} Nm	J _R kgcm ²	R _{M20} Ω	R _{M75} Ω	L _{sd} mH	L _{sq} mH
0.145	400	8	560	0.47	0.46	0.83	200	3,000	4.41	72.23	0.98	0.47	0.46	1.41	1.38	0.1413	62.54	75.95	130.7	138.0
	230	8	325	0.81	0.46	0.85	200	3,000	4.97	41.57	0.57	0.81	0.46	2.43	1.38	0.1413	21.62	26.26	45.60	53.70
0.298	400	8	560	0.78	0.95	0.87	200	3,000	6.48	83.09	1.22	0.78	0.95	2.34	2.85	0.2826	29.06	35.29	81.90	94.10
	230	8	325	1.30	0.95	0.86	200	3,000	5.75	47.46	0.73	1.30	0.95	3.90	2.85	0.2826	10.20	12.39	27.80	29.30
0.425	400	8	560	1.32	1.35	0.86	200	3,000	6.70	80.80	1.02	1.32	1.35	3.96	4.05	0.4239	17.60	21.38	49.80	59.00
	230	8	325	2.30	1.35	0.87	200	3,000	6.86	45.81	0.59	2.30	1.35	6.90	4.05	0.4239	5.66	6.87	16.26	19.42

P _N	Rated power
np	Number of poles
U _N	Rated voltage
U _L	DC link voltage
I _N	Rated current
M _N	Rated torque of rotor
η	Efficiency
f _N	Rated frequency
n _N	Rated speed of rotor
T _e	Electrical time constant
k _e	BEMF (Back Electromotive Force) constant: effective phase to phase
k _{TN}	Torque constant
I _o	Standstill current
M ₀	Standstill torque
I _{MAX}	Maximum current
M _{MAX}	Maximum torque
J _R	Rotor moment of inertia
R _{M20}	Phase to phase resistance at 20 °C
R _{M75}	Phase to phase resistance at 75 °C
L _{sd}	d-axis inductance
L _{sq}	q-axis inductance

Cable Specifications

Available cables for connectors (see also p 252):

- Standard, screened
- Halogen-free, screened

Available length: 1 / 3 / 5 / 10 m

Note: A maximum cable length of 2 m between the motor and the IFI-IP55 should not be exceeded in order to ensure compliance with the EMC Cat C2 requirements.

Connection Diagrams

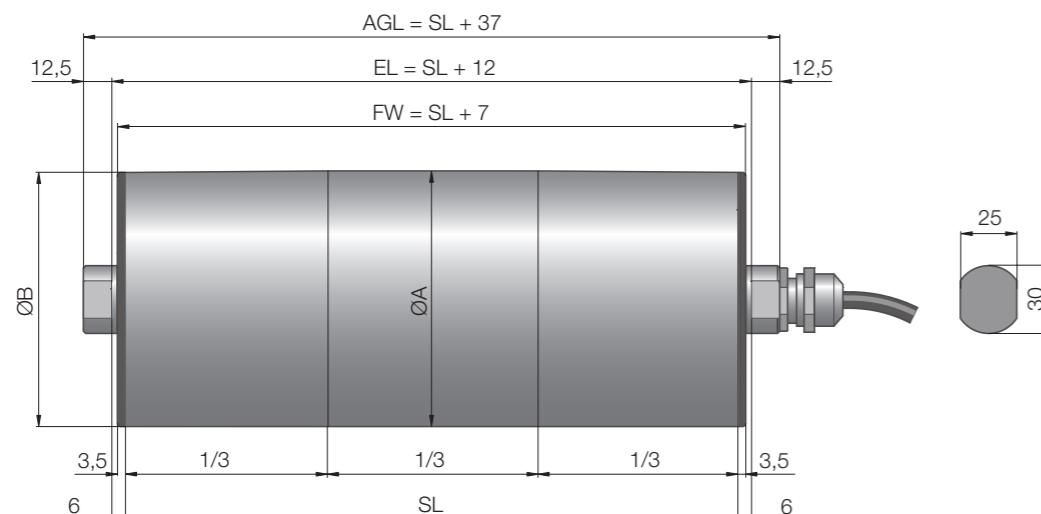
For connection diagrams, see Planning Section on p 261.



INTERROLL DRUM MOTOR 113D

Standard dimensions

Dimensions



Type	Ø A mm	Ø B mm
113D crowned shell	113.5	112.0
113D cylindrical shell	112.0	112.0
113D cylindrical shell + key	113.0	113.0

Connector dimensions

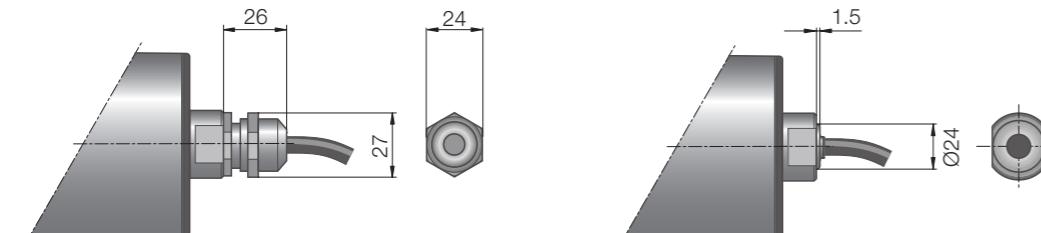


Fig.: Straight connector, brass/nickel or stainless steel

Fig.: Straight cable outlet, PU shaft plug

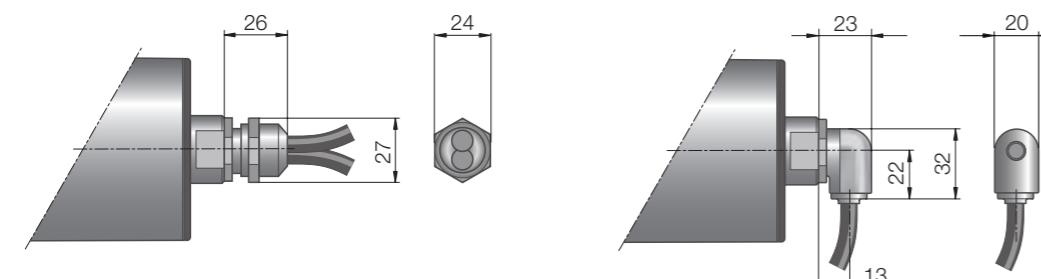


Fig.: Straight connector / Feedback device, brass/nickel or stainless steel

Fig.: Elbow connector, technopolymer

Compact and robust drive for smart belt conveyors with high dynamics

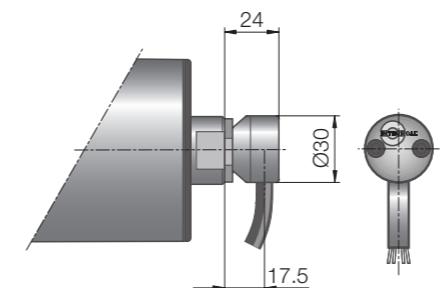


Fig.: Elbow connector, stainless steel

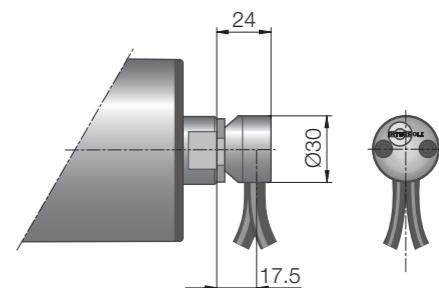


Fig.: Elbow connector / Feedback device, stainless steel

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

Option	Min. SL with option mm
Feedback device	Min. SL + 50 (SL + 75 for Hiperface feedback option)

Standard drum motor lengths and their weights:

Shell length SL in mm	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
Average weight in kg	9.8	10.6	11.3	12.0	12.8	13.5	14.3	15.0	15.7	16.4	17.1	17.9	18.6	19.3	20.0

Min. length with option

Standard length and weight



OVERVIEW OF IFI – IP 55 INTERROLL FREQUENCY INVERTER

	PD - A- 400 - 1A5 - 55	PD - A- 230 - 2A5 - 55
INPUT		
Voltage	380 - 480 V ± 10 % 3 Phase	200 - 240 V ± 10 % 1 Phase
Frequency	50 / 60 Hz	50 / 60 Hz
Rated current	2.0 A	6.5 A
Main filter	Built-in (RFI C2)	Built-in (RFI C2)
OUTPUT		
Rated current	1.5 A	2.5 A
Overload capacity	200 % rated output current for 2 s	200 % rated output current for 2 s
PWM frequency	4 to 16 kHz	4 to 16 kHz
EMC category	C 2 & C 3 (screened cable required)	C 2 & C 4 (screened cable required)
I/O Power supply for external sensors	24 V, max. 100 mA	24 V, max. 100 mA
AS-Interface	Version 3.0 extended address range	Version 3.0 extended address range
	p 122	p 122



IFI - IP55 FREQUENCY INVERTER

Product Description

Applications

- ✓ For operating synchronous drum motors
- ✓ For operating asynchronous drum motors
- ✓ Sensorless vector control
- ✓ Monitoring of motor/drive status

Characteristics

- ✓ Quick and easy installation
- ✓ Integrated thermal control function
- ✓ Integrated current protection
- ✓ Increasing of start/stop capacity compared to a direct power supply motor connection
- ✓ Can replace single phase motors and increase efficiency

- ✓ Distribution logistics and airports
- ✓ Non wash-down food processing, beverage industry
- ✓ Non-servo packaging applications
- ✓ Energy saving on start/stop/run applications by optimising power usage
- ✓ Ideal for high performance conveying systems in the industrial environment where a de-centralised drive and communication is necessary

Note: All motor power cables can also be equipped with M23 connectors for connection to IFI-IP55 inverter. The IFI-IP55 is Interroll's sensor-less frequency inverter for asynchronous and synchronous drum motors. The decentralized IFI meets all user requirements: compact design with easy-to-use connectors for fast and simple installation. This product is the perfect driver to control speed of the highly efficient synchronous Drum Motor series. The AS-Interface of the driver offers a full integration into the system.

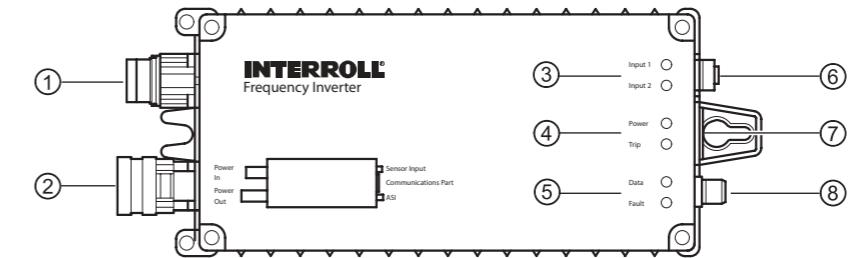
Technical Data

	PD - A- 400 - 1A5 - 55	PD - A- 230 - 2A5 - 55
INPUT		
Voltage	380 - 480 V ± 10 % 3 Phase	200 - 240 V ± 10 % 1 Phase
Frequency	50 / 60 Hz	50 / 60 Hz
Rated current	2.0 A	6.5 A
Main filter	Built-in (RFI C2)	Built-in (RFI C2)
OUTPUT		
Rated current	1.5 A	2.5 A
Overload capacity	200 % rated output current for 2s	200 % rated output current for 2 s
PWM frequency	4 to 16 kHz	4 to 16 kHz
EMC category	C 2 & C 3 (screened cable required)	C 2 & C 4 (screened cable required)
I/O Power supply for external sensors	24 V, max. 100 mA	24 V, max. 100 mA
AS-Interface	Version 3.0 extended address range	Version 3.0 extended address range

Note: A maximum cable length of 2 m between the motor and inverter should not be exceeded in order to ensure compliance with the EMC Cat C2 requirements. If C2 is not necessary, the maximum cable length is 20 m.

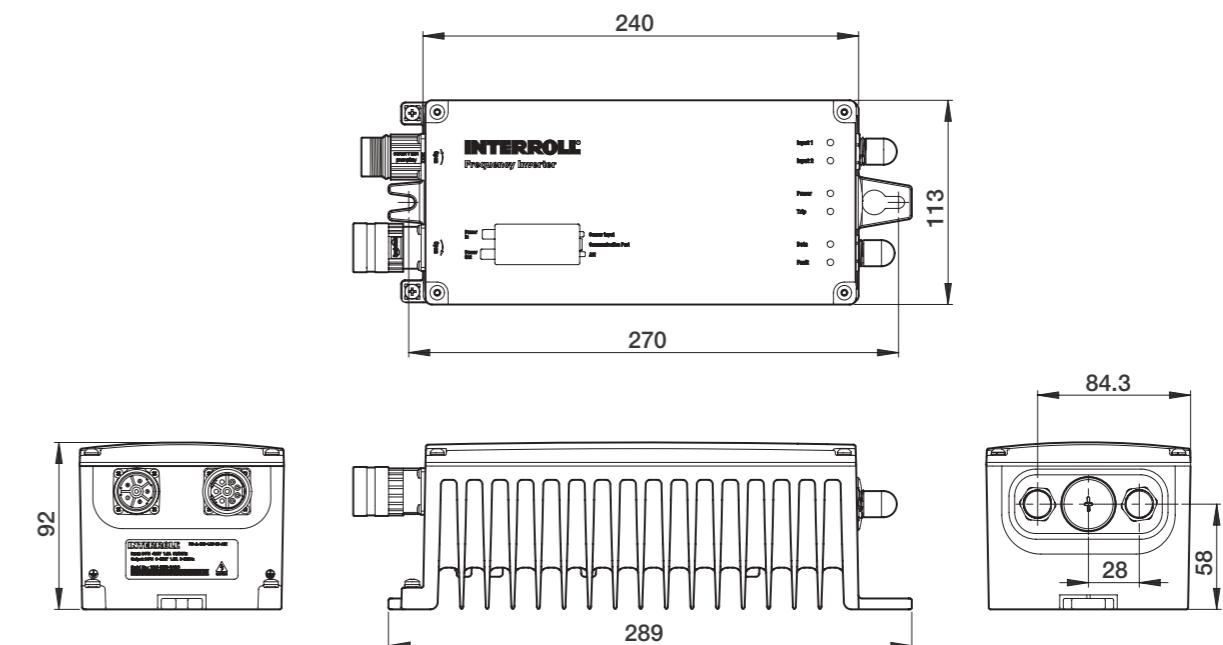
Note: Further details can be found in the IFI-IP55 User Manual.

Interroll's sensor-less frequency inverter drive for synchronous and asynchronous drum motors.



- | | |
|------------------------------|------------------------------|
| 1. Power supply connection | 5. ASi interface status LEDs |
| 2. Motor connection | 6. Digital inputs connection |
| 3. Digital input status LEDs | 7. Serial interface |
| 4. IFI Status | 8. ASi interface |

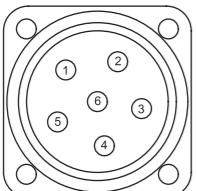
Dimensions



Connection Diagram

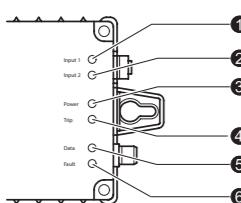


IFI - IP55 ACCESSORIES

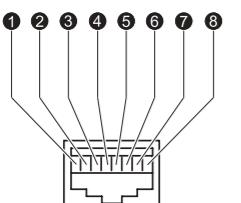
**Connections for
power supply
and motor**

Fig.: 1) Power supply connection M23 socket male
PD-A-400-1A5-55 PD-A-230-2A5-55

- | | |
|-------------|------------------------|
| 1. Phase L1 | 1. Phase L |
| 2. Phase L2 | 2. - |
| 3. PE | 3. PE |
| 4. Phase L3 | 4. - |
| 5. - | 5. - |
| 6. - | 6. Neutral conductor N |

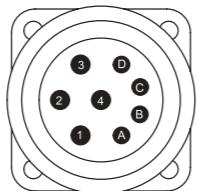
Reference: Interroll supplier is AMPHENOL.

The plug is assembled of : MB3CGS1, MB1CKN0600,
SC000014 (x4)

Fig.: 3) 4) 5) Status LEDs

- | | |
|---|--|
| 1. Input 1: yellow LED for digital input 1 status display | 4. Trip: red LED for frequency inverter status display |
| 2. Input 2: yellow LED for digital input 2 status display | 5. Data: green LED for ASi interface status display |
| 3. Power: green LED for frequency inverter/power status display | 6. Fault: red LED for ASi interface status display |

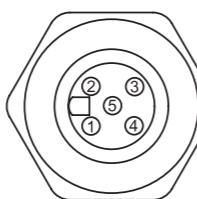

**Serial interface
and
ASi interface**
Fig.: 7) Serial interface, RJ45 socket

- | | |
|---------------------|------------------------|
| 1. - | 5. Optibus (RS485+) |
| 2. - | 6. +24 V DC output |
| 3. 0 V | 7. Modbus RTU (RS485-) |
| 4. Optibus (RS485-) | 8. Modbus RTU (RS485+) |

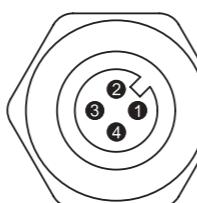

Fig.: 2) Motor connection M23 socket female

- | | |
|-----------------|---------------------------------------|
| 1. Motor line U | D - |
| 2. Motor PE | C Thermal cut motor protection switch |
| 3. Motor line W | B Thermal cut motor protection switch |
| 4. Motor line V | A - |

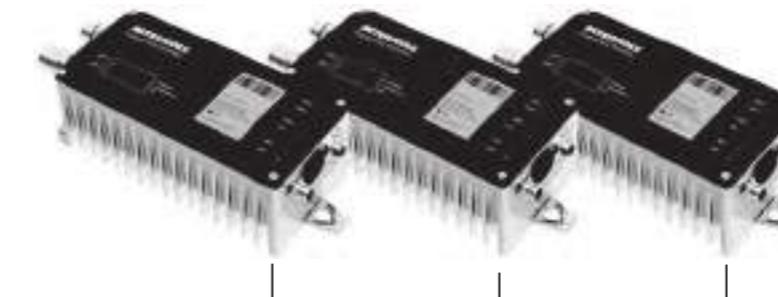
Note: Pins B and C have high voltage potential also.

Reference: Interroll supplier is AMPHENOL.
The plug is assembled of : MB3CGS1 , MB1JJN0800 ,
SC000035 (x2), SC000036 (x4)

**Fig.: 6) Digital input connection, standard M12
socket male**

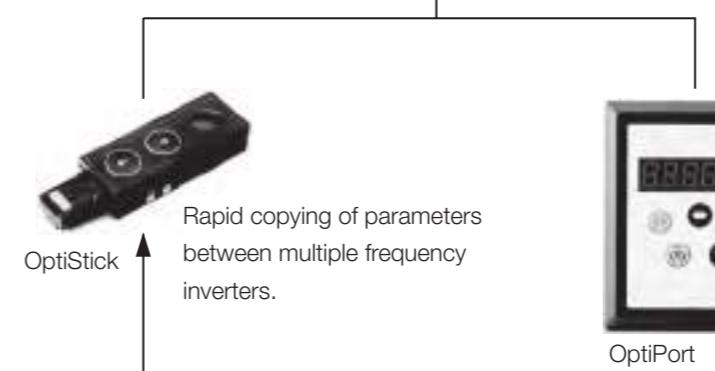
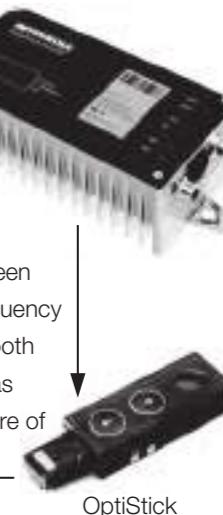
- | | | |
|---|---|--|
| 1. Input 1: yellow LED for digital input 1 status display | 4. +24 V DC output (max. 100 mA) | 4. Digital input 1 (sensor or control input) |
| 2. Input 2: yellow LED for digital input 2 status display | 5. Data: green LED for ASi interface status display | 5. - |
| 3. Power: green LED for frequency inverter/power status display | 6. Fault: red LED for ASi interface status display | 3. 0 V |


Fig.: 8) ASi interface, Standard M12 socket female

- | | |
|---|---|
| 1. ASi+ or external supply voltage (+ pole) | 3. ASi- or external supply voltage (- pole) |
| 2. - | 4. - |



Rapid copying of parameters between PC/OptiStick/frequency inverter via Bluetooth interface as well as backup and restore of drive parameters.



Rapid copying of parameters between multiple frequency inverters.



The OptiPort is used to display real-time information, to access and exit parameter edit mode and to store parameter changes.

Used in real-time mode it enables functions such as stop, start, reverse, re-set and increase or decrease speed etc.

Bluetooth®

Bluetooth wireless connection


Powerful PC Software
IFI OptiTools Studio: PC commissioning & diagnostic software

- Real-time parameter editing
- Parameter upload, download and compare functions
- The OptiTools Studio Software is available for free download on www.interroll.com

Note: In case of using PC for commissioning the inverter with OptiTools Studio, a suitable connection must be used. The PC must not be connected to the inverter by using Ethernet PC port. The PC can be connected by using the Bluetooth connection via OptiStick or by using Interroll cable transformer RS485 <-> USB.

Refer to the Planning Section from p 194 for help with planning and design



OPTIONS

- ✓ Interroll's focus is optimum customisation for your application when developing options for Interroll Drum Motors.
- ✓ This chapter includes options which are integral to the Interroll Drum Motor when it is delivered.

⊖ Lagging for Friction Drive Belts

p 128

⊖ Lagging for Positive Drive Belts

p 134

Lagging for plastic modular belts

p 138

Lagging for positive drive solid homogeneous belts

p 140

Multiprofile for positive drive solid homogeneous belts

p 142

⊖ Sprockets for Plastic Modular Belts

p 146

⊖ Sprockets for Plastic Modular Belts for use with Drum Motor or Idler 88D

p 150

⊖ Control Options for Drum Motors

p 151

Backstops

p 152

Dynamic balancing

p 154

Electromagnetic brakes

p 158

Rectifiers

Feedback Devices



LAGGING FOR FRICTION DRIVE BELTS

Smooth or specially grooved lagging to increase friction between drum motor shell and conveyor belt

Product Description

Applications	✓ Wet applications ✓ For standard drum motors
Characteristics	<ul style="list-style-type: none"> ✓ High resistance to oil, fuel and other chemicals ✓ Lagging increases friction between drum motor shell and conveyor belt ✓ Lagging prevents slip between drum motor shell and conveyor belt ✓ Longitudinal grooved lagging reduces liquids between belt and shell

Note: Lagging has an influence on the outer diameter of the drum motor and on the velocity. Belt pull and speed of the drum motor must be recalculated according to the increased diameter.

Technical Data

Material	Hot or cold vulcanised NBR Other materials on request
Ambient temperature	-40 to +120 °C
Shore hardness	65 to 70 ± 5 Shore A

Product Range

Cold vulcanisation

Lagging profile	Colour	Characteristics	Shore hardness	Thickness mm
Smooth	Black	Oil- and fat-resistant	65 ± 5 Shore A	3, 4
	White	FDA food approved	70 ± 5 Shore A	
Longitudinal grooves	White	FDA food approved	70 ± 5 Shore A	8
Diamond patterned	Black	Oil- and fat-resistant	70 ± 5 Shore A	8

Hot vulcanisation

Lagging profile	Colour	Characteristics	Shore hardness	Thickness mm
Smooth	Black	Oil- and fat-resistant	65 ± 5 Shore A	2, 3, 4, 5, 6, 8, 10, 12, 14, 16
	White/Blue	FDA food approved EC1935/2004 approved	70 ± 5 Shore A	
Longitudinal grooves	Black	Oil- and fat-resistant	65 ± 5 Shore A	6, 8, 10, 12, 14, 16
	White/Blue	FDA food approved EC1935/2004 approved	70 ± 5 Shore A	
Diamond patterned	Black	Oil- and fat-resistant	65 ± 5 Shore A	6, 8, 10, 12, 14, 16
	White/Blue	FDA food approved EC1935/2004 approved	70 ± 5 Shore A	
V-groove	Black	Oil- and fat-resistant	65 ± 5 Shore A	6, 8, 10, 12, 14, 16
	White/Blue	FDA food approved EC1935/2004 approved	70 ± 5 Shore A	



LAGGING FOR FRICTION DRIVE BELTS

Dimensions

Smooth

Cold and hot vulcanisation

Please refer to the following table for standard crowning of rubber lagging.

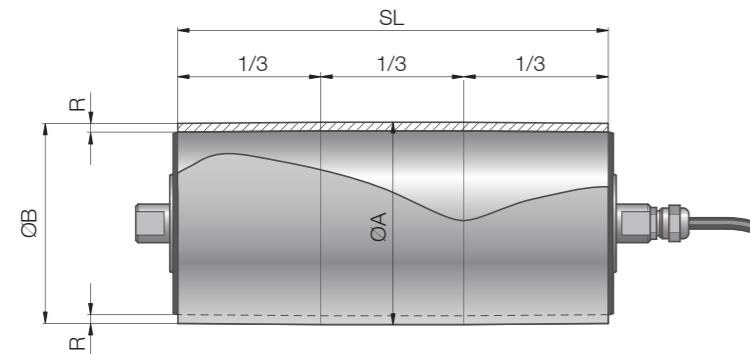


Fig.: Smooth lagging

Drum motor	Shell Ø mm	Cold vulcanisation			Hot vulcanisation		
		Min./max. R mm	Ø A mm	Ø B mm	Min./max. R mm	Ø A mm	Ø B mm
80S	81.5	3	87.5	86.0	2	85.5	84.0
		4	89.5	88.0	6	93.5	92.0
80i	81.5	3	87.5	86.5	2	85.5	84.5
		4	89.5	88.5	16	113.5	112.5
80D	81.5				2	85.5	84.5
					16	113.5	112.5
113S	113.3	3	119.3	117.8	2	117.3	115.8
		4	121.3	119.8	6	125.3	123.8
113i	113.5	3	119.5	118.0	2	117.5	116.0
		4	121.5	120.0	16	145.5	144.0
113D	113.5				2	117.5	116.0
					16	145.5	144.0
138i	138.0	3	144.0	142.0	2	142.0	140.0
		4	146.0	144.0	16	170.0	168.0
165i	164.0	3	170.0	168.0	2	168.0	166.0
		4	172.0	170.0	16	196.0	194.0
217i	217.5	3	223.5	221.5	2	221.5	219.5
		4	225.5	223.5	16	249.5	247.5

Smooth or specially grooved lagging to increase friction between drum motor shell and conveyor belt

Cold and hot vulcanisation

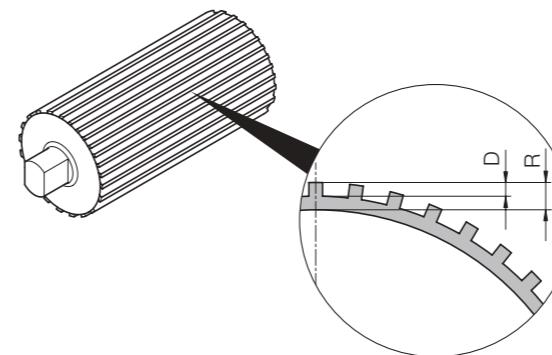


Fig.: Longitudinal grooved lagging

D mm	R , cold vulcanisation mm	R , hot vulcanisation mm
4	8	6, 8, 10, 12, 14, 16

Note: Only possible for i- and D-Types

Cold and hot vulcanisation

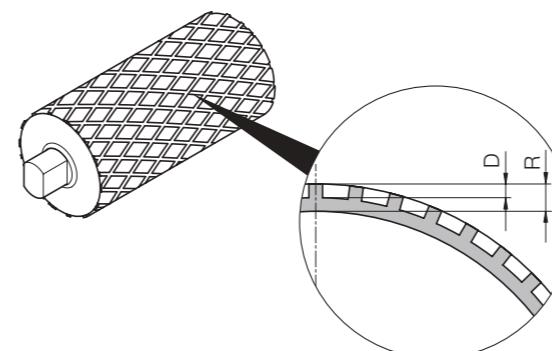


Fig.: Diamond patterned lagging

D mm	R , cold vulcanisation mm	R , hot vulcanisation mm
4	8	6, 8, 10, 12, 14, 16

Note: Only possible for i- and D-Types

Diamond patterned



LAGGING FOR FRICTION DRIVE BELTS

Smooth or specially grooved lagging to increase friction between drum motor shell and conveyor belt

V-grooved Hot vulcanisation

A centered V-groove in the lagging enables the use of conveyor belts fitted with a tracking profile on the underside of the belt which helps to prevent belt wander. The drum lagging groove should not be used to guide the belt. The actual tracking and guiding of the belt should be made using a conveyor slide bed or roller bed with built in tracking grooves.

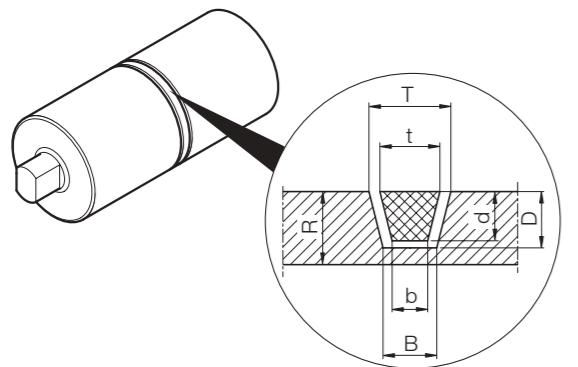


Fig.: V-grooved lagging

Groove	R Standard mm	R Option mm	Groove			Belt		
			T mm	B mm	D mm	t mm	b mm	d mm
K6	8	6	10	8	5	6	4	4
K8	8	6	12	8	6	8	5	5
K10	10	8	14	10	7	10	6	6
K13	12	10	17	11	9	13	7.5	8
K15	12	10	19	13	9	15	9.5	8
K17	14	12	21	13	12	17	9.5	11



LAGGING FOR PLASTIC MODULAR BELTS

Specially produced lagging based on the specification of plastic modular belt manufacturers

Product Description

Applications

- ✓ Food and hygienic applications
- ✓ For driving most common plastic modular belts
- ✓ For Motors for applications with positive drive belts or no belts
- ✓ For standard asynchronous drum motors with frequency inverter. The frequency inverter should be set up to reduce the power by 18 %.
- ✓ For synchronous drum motors (see p 92)

Note: Where possible, avoid using 8 and 12 pole motors with rubber lagging as they can reach high operating temperatures and may cause thermal overload. For further advice please contact your Interroll customer consultant.

Characteristics

- ✓ Resistant to abrasion
- ✓ Quiet operation
- ✓ Reduced wear on belt
- ✓ Easy to clean
- ✓ High resistance to oil, fat and chemicals

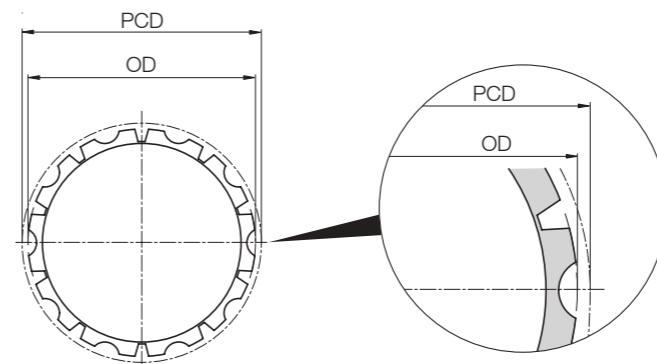
Note: Lagging has an influence on the outer diameter of the drum motor and on the velocity. The belt pull and speed of the drum motor must be recalculated according to the increased diameter. Refer to the velocity factor (Vf) in the table below.

Technical Data

Material	Hot vulcanised NBR		
Temperature range	-40 to +120 °C		
Shore hardness	70 ± 5 Shore A		
Colours	White / Blue		
Approvals	FDA / EC 1935/2004		

Plastic modular belt manufacturer	Series	Lagging 80i / 80D				113i / 113D				138i				165i				217i			
		Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf
Ammeraal Beltech / Uni-Chains	HDS60500	24	98.5	97.3	1.21	32	131.0	129.6	1.14	38	155.2	153.8	1.11	19	156.6	154.3	1.12	10	160.5	161.8	1.17
	HDS61000	12	99.0	98.1	1.22	16	132.0	130.2	1.15	19	155.5	154.9	1.12	12	193.0	193.3	1.18	12	190.0	196.3	1.20
	HDS62000	7	110.8	114.1	1.42	9	144.2	146.2	1.29	10	156.6	164.4	1.19	15	239.0	244.3	1.12	19	155.5	154.9	1.17
	CNB	12	98.0	98.5	1.22	16	131.0	130.7	1.15	10	160.0	161.8	1.17	20	165.0	164.9	1.19	24	198.0	199.0	1.21
	MPB	7	105.5	117.1	1.45	9	140.0	148.5	1.31	10	155.5	161.8	1.17	12	190.0	196.3	1.20	12	193.0	193.3	1.18
	OPB-4					9	144.0	146.2	1.29	10	155.5	161.8	1.17	15	239.0	244.3	1.12	19	155.5	154.9	1.21
	OPB-8					9	139.5	146.2	1.29	10	160.0	161.8	1.17	20	165.0	164.9	1.19	24	198.0	199.0	1.21
	S-MPB	12	97.9	100.1	1.24	16	132.0	132.3	1.17	10	154.0	161.8	1.17	12	187.0	193.2	1.18	12	193.0	193.3	1.18
	UNI QNB					16	131.2	130.7	1.15	10	165.0	164.9	1.19	15	239.0	244.3	1.12	19	155.5	154.9	1.21
	X-MPB					8	152.0	165.9	1.46	10	160.0	161.8	1.17	20	165.0	164.9	1.19	24	198.0	199.0	1.21
Eurobelt	B50									10	154.0	161.8	1.17	12	187.0	193.2	1.18	12	193.0	193.3	1.18

Product Range



Z Number of teeth
 OD Outer diameter in mm
 PCD Pitch circle diameter in mm
 Vf Velocity factor



LAGGING FOR PLASTIC MODULAR BELTS

Specially produced lagging based on the specification of plastic modular belt manufacturers

Plastic modular belt manufacturer	Series	Lagging								138i								165i										
		80i / 80D				113i / 113D				138i				165i				217i				217i						
		Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf			
HabasitLINK																												
	M1200 PE/AC	24	92.5	97.3	1.21	32	125.0	129.6	1.14					38	149.5	153.8	1.11											
	M1200 PP	24	96.0	101.0	1.25	32	128.0	132.6	1.17					38	154.0	158.6	1.15											
	M2500	12	99.4	99.0	1.23	16	132.8	131.6	1.16					20	165.0	163.5	1.18	23	190.5	189.7	1.16							
	M5000					9	140.0	149.0	1.31					10	156.6	164.4	1.19	12	190.5	197.2	1.20							
Intralox																												
	800	7	105.5	116.5	1.45	9	140.1	148.5	1.31					10	156.8	164.4	1.19	12	190.0	196.3	1.20	15	239.0	244.3	1.12			
	850					9	143.6	148.5	1.31									12	187.0	196.3	1.20							
	1600	13	105.8	105.8	1.31	16	130.5	130.2	1.15					20	163.0	162.4	1.18	23	187.4	186.5	1.14	30	244.3	243.0	1.12			
	1650	13	104.9	105.8	1.31	16	129.3	130.2	1.15					20	162.0	162.4	1.18	23	186.3	186.4	1.14							
	1800					8	152.0	165.9	1.46					9	174.0	185.7	1.35											
	1100 FG PE/AC	20	91.0	98.9	1.23	26	120.6	128.4	1.13					32	150.0	157.8	1.14											
	1100 FG PP	20	91.5	99.5	1.24	26	121.4	129.1	1.14					32	151.0	158.8	1.15											
	1100 FT PE/AC	20	93.5	97.3	1.21	27	128.0	131.0	1.15					32	152.6	156.00	1.13											
	1100 FT PP	20	94.0	98.3	1.22	26	124.0	127.6	1.12					32	153.0	156.9	1.14	38	184.0	186.2	1.14							
Rexnord																												
	1010	12	97.5	98.1	1.22	16	130.0	130.2	1.15																			
	2010					9	138.8	147.9	1.30					10	156.8	165.0	1.20											
Scandbelt																												
	S.25-100 & 600	12	92.2	98.7	1.23	16	123.0	128.2	1.13					19	146.5	151.9	1.10											
	S.25-800	12	93.6	96.8	1.20	16	125.8	128.3	1.13					20	157.8	159.8	1.16											
	S.50-100 & 600					9	131.2	146.8	1.29					11	164.5	178.2	1.29	12	179.0	193.0	1.18	16	244.0	256.3	1.18			
	S.50-800					9	136.0	146.2	1.29					10	155.2	163.9	1.19	12	185.0	193.2	1.18	15	233.5	240.5	1.11			
	S.50-801					9	138.0	139.0	1.22					10	155.0	164.0	1.19	12	185.0	195.6	1.19							
Forbo-Siegling																												
	LM14 Series 4	21	93.0	95.3	1.18																							
	LM25 Series 2	13	107.0	107.0	1.33	16	131.5	131.5	1.16																			
	LM50 Series 3					9	140.0	146.2	1.29					10	157.0	161.8	1.17	12	189.0	193.2	1.18	16	251.5	256.3	1.18			
	LM50 Series 6	7	107.5	116.2	1.44	9	137.5	146.2	1.29					11	170.6	180.0	1.30	13	205.0	208.9	1.27							

Note on order information, see p 146.

If you didn't find your belt type or belt supplier please see updated list on www.interroll.com



LAGGING FOR POSITIVE DRIVE SOLID HOMOGENEOUS BELTS

Product Description

Applications

- ✓ Food and hygienic applications
- ✓ For driving most common positive drive solid homogeneous belts
- ✓ For Motors for applications with positive drive belts
- ✓ For standard asynchronous drum motors with frequency inverter (see p 242). The frequency inverter should be set up to reduce the power by 18 %.
- ✓ For synchronous drum motors (see p 92)

Note: Where possible, avoid using 8 and 12 pole motors with rubber lagging as they can reach high operating temperatures and may cause thermal overload. For further advice please contact your Interroll customer consultant.

Characteristics

- ✓ High resistance to oil, fuel and other chemicals
- ✓ Resistant to abrasion
- ✓ Quiet operation
- ✓ Reduced wear on belt
- ✓ Easy to clean
- ✓ Low friction

Note: Lagging has an influence on the outer diameter of the drum motor and on the velocity. The belt pull and speed of the drum motor must be recalculated based on the increased diameter. Refer to the velocity factor (Vf) in the table below.

Technical Data

Material	Interroll Premium Hygienic PU
Temperature range	- 40 to + 80 °C
Shore hardness	82 ± 5

Belt Manufacturer	Series	Lagging 80i / 80D								113i / 113D								138i								165i							
		Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf	Z	OD mm	PCD mm	Vf				
Intralox Thermodrive*	TD 8026 PU	13	105.4	108.6	1.33	18	145.8	149.7	1.32	138i	191.1	193.2	1.18	13	164.3	165.9	1.20	165i	191.1	193.2	1.18	12	191.1	193.2	1.18	13	164.3	165.9	1.20				
	TD 8050 PU					9	143.0	146.2	1.29																								
	TD 8050 PU/XT**					11	139.3	140.9	1.42																								
Volta	FH-3 Super Drive																																

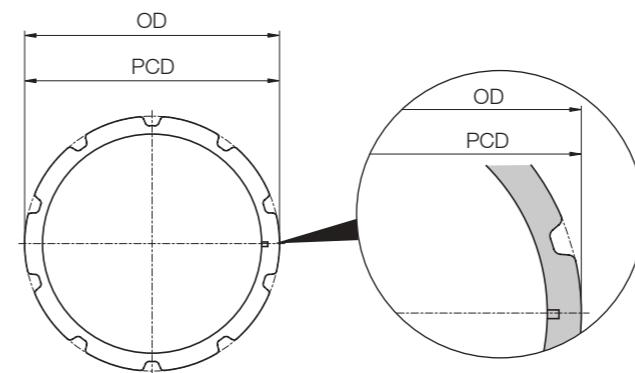
Note: * Not compatible with thermo lace / hinge versions!

** XT minimum PCD of 165 mm required

Note on order information, see p 146.

Specially produced lagging based on the specification of positive drive solid homogeneous belt manufacturers

Product Range



- Z Number of teeth
 OD Outer diameter in mm
 PCD Pitch circle diameter in mm
 Vf Velocity factor
 ! Information on request

If you didn't find your belt type or belt supplier please see updated list on www.interroll.com



MULTIPROFILE FOR POSITIVE DRIVE SOLID HOMOGENEOUS BELTS

Product Description

Applications

- ✓ Food and hygienic applications
- ✓ For driving most common positive drive solid homogeneous belts
- ✓ For motors for applications with positive drive belts
- ✓ For standard asynchronous drum motors with frequency inverter (see p 242). The frequency inverter should be set up to reduce the power by 18 %
- ✓ For synchronous drum motors (see p 92)

Note: Where possible, avoid using 8 and 12 pole motors with multiprofile as they can reach high operating temperatures and may cause thermal overload. For further advice please contact your Interroll customer consultant.

Characteristics

- ✓ One profile for 9 different belts
- ✓ Quiet operation
- ✓ Changing the belt without changing the drum motor
- ✓ Requires no belt tension which will increase the bearing lifetime of the drum motor
- ✓ Resistant to abrasion
- ✓ Low friction between belt and multiprofile
- ✓ Ultra hygienic and easy to clean
- ✓ Reduced wear on belt
- ✓ Contributes to stock reduction

Note: Multiprofile has an influence on the outer diameter of the drum motor and on the velocity. The belt pull and speed of the drum motor must be recalculated based on the increased diameter. Refer to the velocity factor (Vf) in the table below.

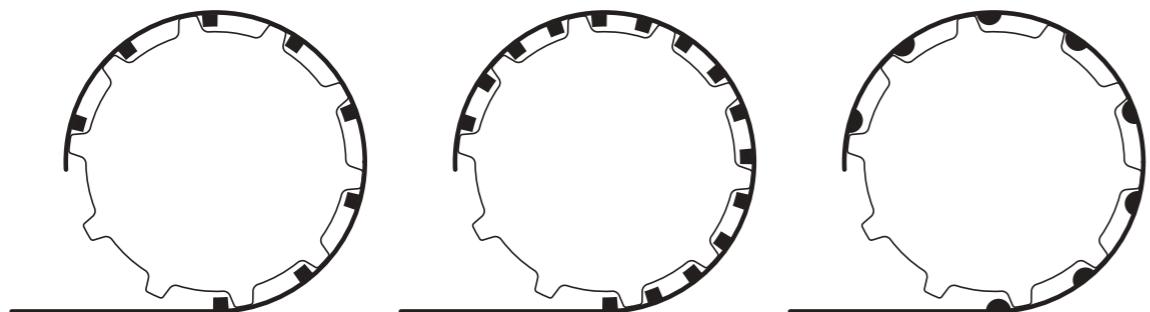


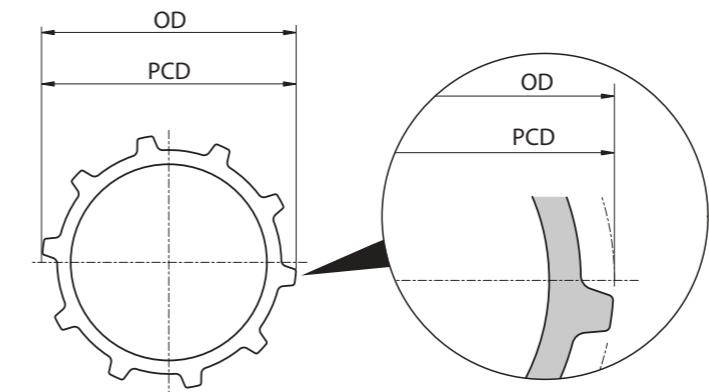
Fig.: Driving various types of positive drive solid homogeneous belts

Technical Data

Material	Interroll Premium Hygienic PU
Temperature range	- 40 to + 80 °C
Shore hardness	82 ± 5
Max. allowed shell length of drum motor	1,200 mm

Specially produced multiprofile based on the specification of positive drive solid homogeneous belt manufacturers

Product Range



Z Number of teeth
OD Outer diameter in mm
PCD Pitch circle diameter in mm
Vf Velocity factor

Belt Manufacturer	Series	Multiprofile 138i			
		Z	OD mm	PCD mm	Vf
Ammeraal Beltech	SoliFlex PRO 2"				
HabasitLINK	Cleandrive M50				
Intralox Thermodrive	TD8050 Thermolace / Hinge				
	TD8050 Endless				
	TD8026 Thermolace / Hinge	10	162.0	162.0	1.18
	TD8026 Endless				
Volta	DualDrive 3 mm				
Gates Mectrol	PosiClean PC10				
	PosiClean PC20				

Note on order information, see p 146.

If you didn't find your belt type or belt supplier please see updated list on www.interroll.com



SPROCKETS FOR PLASTIC MODULAR BELTS

Special sprockets based on the specification of modular belt manufacturers

Product Description

Applications

- ✓ For driving most common plastic modular belts
- ✓ For standard asynchronous drum motors with frequency inverter (see p 242). The frequency inverter should be set up to reduce the power by 18 %.
- ✓ For Motors for applications with positive drive belts or no belts
- ✓ For drum motors with cylindrical shell and key
- ✓ For food processing applications
- ✓ For synchronous drum motors (see p 92)
- ✓ Rust-free with stainless steel sprockets

Characteristics

- ✓ Laser cut for excellent fitting accuracy

Note: The sprockets have an influence on the outer diameter of the drum motor and on the velocity. The belt pull and speed of the drum motor must be recalculated according to the increased diameter. Refer to the velocity factor (Vf) in the table below.

Fixed sprockets are available on request. Only one fixed sprocket per drum motor should be fitted to allow for belt expansion.

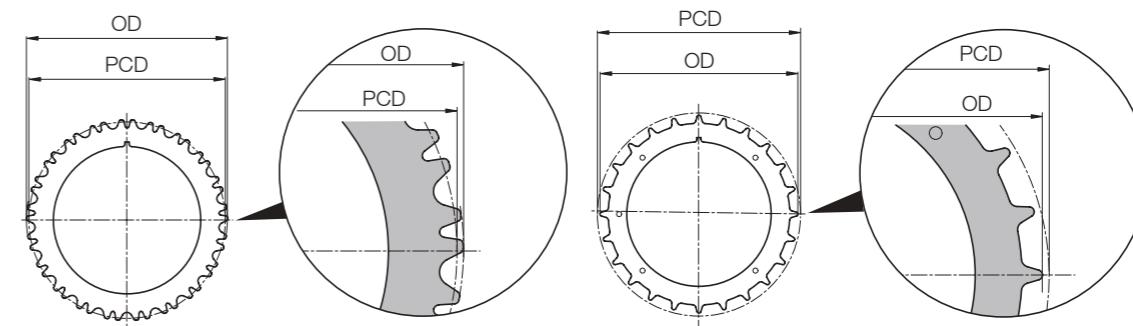
Technical Data

Material	Stainless steel, Mild steel			
Temperature range	-30 to + 120 °C			

Modular belt manufacturer	Series	Rev.	Sprocket												113i / 113D												138i												165i											
			80i / 80D				113i / 113D				138i				165i				138i				165i				138i				165i																			
			Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.																		
HabasitLINK			M11XX	✓	26	111.9	107.1	1.33	8	1004345	32	136.3	131.6	1.16	6	1100024																																		
			M12XX	✓	25	103.7	101.0	1.25	3	1001631	36	150.2	149.8	1.32	3	1001638	40	166.9	162.0	1.18	3	1100310																												
			M25XX	✓	15	123.9	122.7	1.52	12	61008303	20	165.1	164.0	1.45	12	61100812																																		
					15	123.9	122.7	1.52	12	1004342	20	165.1	164.0	1.45	4	1000302	20	165.5	164.0	1.19	6	1001648	24	198.6	196.0	1.20	6	1001653																						
			M50XX	✓							10	157.2	164.0	1.45	5	1100644	11	174.3	171.3	1.24	5	1100645	12	190.4	197.2	1.20	8	1100762																						
											10	157.0	164.0	1.45	6	1100647	11	173.8	180.0	1.30	5	1100646																												

Product Range

To use sprockets, drum motors have to be ordered with cylindrical shell and with key.



Z Number of teeth

OD Outer diameter in mm

PCD Pitch circle diameter in mm

Vf Velocity factor

B Width of sprocket in mm

Rev. Reversible sprocket

Art. No. Article number



SPROCKETS FOR PLASTIC MODULAR BELTS

Special sprockets based on the specification of modular belt manufacturers

Modular belt manufacturer	Series	Rev.	Sprocket										Belt										Sprocket												
			80i / 80D					113i / 113D					138i					165i																	
			Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.									
Intralox	200														12	197.6	196.0	1.42	4	1003373															
	400	✓													12	194.2	198.0	1.43	3	1100688															
	800	✓	8	124.2	132.0	1.64	6	1101295	10	158.3	164.0	1.45		6	1001642	12	190.0	196.0	1.42	6	1001647	13	206.3	212.0	1.30	6	1100684								
	900	✓	12	107.0	105.0	1.30	3	1001603	15	135.0	131.0	1.16		3	1001608	20	178.0	174.0	1.26	3	1001621	22	194.3	191.0	1.17	3	1001628								
	1000	✓	22	112.0	107.0	1.33	4	1100381																											
	1100	✓	24	118.5	116.0	1.44	18	61101976	30	147.9	145.0	1.28		18	61100509																				
			24	118.5	116.0	1.44	6	1001632	30	147.9	145.0	1.28		6	1001643	35	172.5	170.0	1.23	4	1001626										197.1	194.0	1.18	4	1100648
	1400	✓														21	173.7	170.0	1.23	6	1100649														
	1500	✓	28	118.8	113.0	1.40	6	1001637	36	152.8	146.0	1.29		6	1001643	42	173.7	170.0	1.23	6	1100650														
	1600	✓	14	111.8	114.0	1.42	8	1003371	17	135.3	138.0	1.22		8	1001640	20	162.2	162.0	1.17	8	1001623	24	191.4	193.1	1.18	8	61010643								
	2000	✓							16	149.3	165.0	1.46		8	1100652																				
	2200															16	198.0	195.0	1.41	8	1100293														
	2400	✓	14	114.2	113.8	1.41	12	61104059								6	1001613	24	195.0	195.0	1.41	6	1001625	26	211.6	211.0	1.29	6	1001629						
			14	114.2	113.8	1.41	6	1100682	19	154.6	154.0	1.36																							
Rexnord	880	✓							25	154.20	155.0	1.37		8	1100686	15	184.3	183.0	1.33	10	1100658														
	1010		16	131.5	130.0	1.61	8	1100657																											
Scanbelt	S.12-400	✓	28	117.9	112.0	1.39	4	1100659	36	149.8	143.9	1.27		4	1100257																				
	S.25-100		14	113.1	112.0	1.39	4	1100441																											
	S.25-400	✓	13	105.0	104.0	1.29	4	1100138	17	139.2	136.0	1.2		4	1100136	20	163.4	160.0	1.16	4	1100660														
	S.25-830	✓														20	156.8	160.0	1.16	8	1100134														
	S.50-100	✓														12	187.6	195.0	1.41	4	1100160														
	S.50-808	✓							10	164.0	164.0	1.45		8	61010638	12	192.9	189.0	1.37	4	1100160														
	S.50-908	✓																												13	216.4	209.0	1.27	8	1100661
	CM 25	✓	13	108.1	110.0	1.37	3	1100662																											
Forbo-Siegling	LM 25	✓							17	139.4	136.0	1.20		3	1100663	20	163.5	160.0	1.16	3	1100664														
	LM 50	✓																												12	186.0	195.0	1.19	6	1100665
	S5	✓																												23	192.4	185.2	1.13	4	1100685
	CM 50	✓																												13	216.4	209.0	1.27	8	1100661



SPROCKETS FOR PLASTIC MODULAR BELTS

Special sprockets based on the specification of modular belt manufacturers

Modular belt manufacturer	Series	Rev.	Sprocket 80i / 80D										113i / 113D										138i										165i									
			Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.	Z	OD mm	PCD mm	Vf	B mm	Art. No.																
Ammeraal Beltech / Uni-Chains	SNB	✓	13	107.8	106.0	1.32	3	1100677	18	146.1	146.0	1.29		3	1001610	20	162.3	162.4	1.18	3	1100242	24	194.8	195.0	1.19	3	1100668															
	Flex ONE								13	163.6	163.6	1.4		6	61010644																											
	Light	✓	17	105.0	104.0	1.29	4	1100027	24	147.3	146.0	1.29		4	1100670	27	165.7	219.0	1.59	4	1100679																					
	Light EP	✓	9	110.6	111.0	1.38	8	1100673	12	147.1	147.2	1.30		8	1100389	14	171.4	171.0	1.24	8	1100671	16	195.8	195.0	1.19	8	1100672															
	MPB	✓							9	142.5	149.0	1.32		8	1001644	11	174.2	180.3	1.31	8	1001656	13	205.8	212.0	1.29	8	61100180															
	M-SNB & M-QNB	✓	24	99.5	97.0	1.20	5	1001607								44	181.2	178.1	1.29	6	1100380																					
	M-SNB	✓														38	156.5	156.4	1.13	5	1001627																					
	OPB	✓							10	160.1	169.0	1.5		8	1100674																											
	QNB	✓	15	121.50	122.0	1.52	6	1001606	17	137.5	138.0	1.2		6	1001609	21	170.1	170.0	1.23	6	1001650	24	194.4	195.0	1.19	6	1100675															
	S-MPB															20	163.8	162.4	1.18	6	1100585																					
	SNB M1	✓							18	148.7	146.0	1.29		3	1100676																											
	SNB M2	✓	14	119.2	114.0	1.42	3	1100681	17	144.4	138.0	1.22		3	1003093	20	165.7	162.0	1.17	3	1001622	24	199.0	195.0	1.19	3	1004089															

Order Information

Different belt variants and materials for standard belt series may affect the operational characteristics and engagement of the belt and drive profile. Although Interroll tries to show the most popular basic profile options in this catalogue, manufacturers are offering new variations of their standard belt series. If you are unable to find the required profiled lagging or sprocket you need, or if you have some doubts, please answer the following questions and send them to Interroll with your enquiry:

- Lagging or sprockets preferred?
- Drum motor diameter?
- Required belt speed?
- Belt manufacturer?
- Belt series?
- Belt type and variant?
- Belt material?
- Number of teeth?
- Reversible, yes or no?
- Outside diameter (D) in mm?
- Pitch circle diameter (PCD) in mm?
- Sprocket thickness (B) in mm?

If you didn't find your belt type or belt supplier please see updated list on www.interroll.com



SPROCKETS FOR PLASTIC MODULAR BELTS FOR USE WITH DRUM MOTOR OR IDLER 88D

Product Description

Applications

- ✓ For Synchronous Drum Motor 88D (see p 104)
- ✓ For food processing and hygienic applications
- ✓ For driving plastic modular belts

Characteristics

- ✓ High resistance to cleaning chemicals in food processing
- ✓ Resistant to abrasion
- ✓ Quiet operation
- ✓ Easy to clean and replace
- ✓ Low friction

Note: The sprockets have an influence on the outer diameter of the drum motor and on the velocity. The belt pull and speed of the drum motor must be recalculated according to the increased diameter. Refer to the velocity factor (Vf) in the table below.

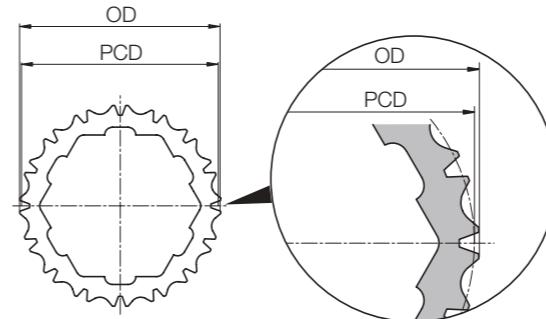
Technical Data

Material	Stainless steel		
Options	All common belt manufacturers' sprockets available to order		
Temperature range	Electropolished to hygienic surface roughness ($R_a \leq 0.8 \mu\text{m}$) on request -30 to +120 °C		

Special sprockets based on the specification of modular belt manufacturers

Product Range

To use these sprockets, D-series Drum Motors or Idlers must be ordered with hexagonal (6 sided) shell (see p 104)



Z	Number of teeth
OD	Outer diameter in mm
PCD	Pitch circle diameter in mm
Vf	Velocity factor
B	Width of sprocket in mm
Rev.	Reversible sprocket
Art. No.	Article number

Modular belt manufacturer	Series	Rev.	Sprocket 88D					Art. No.
			Z	OD mm	PCD mm	Vf	B mm	
Intralox	1600	✓	16	128.55	128.55	1.26	10.00	1100711

BACKSTOPS AND BALANCING

Backstops

Product Description

Backstops prevent roll-back of the belt and load.

- ✓ Single direction inclined belt conveyors ✓ For i-Series drum motors only

- ✓ For preventing run-back of the belt and load when the power supply is off

- | | |
|--------------------------------------|---|
| ✓ Bearing runs only in one direction | ✓ No electrical connection necessary |
| ✓ Fitted to the rotor shaft | ✓ Higher holding torque than an electromagnetic brake |

The rotational direction of the drum motor with backstop is indicated by an arrow on the bearing housing on the electrical connection side.

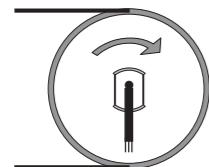


Fig.: Rotation arrow

Product Range

Rotational direction looking from the connector side	Clockwise (standard)
	Counter-clockwise

Balancing

Product Description

Static or dynamic balancing of the drum motor reduces vibration and out of balance running for sensitive high speed or dynamic weighing applications. Static balancing is applied to the drum motor shell only and the effective result must be tested for each application. Dynamic balancing includes the drum motor rotor, shell and end housings and the effective balance is given in the table below.

- | | |
|------------------------|---------------------------------------|
| ✓ High-speed conveyors | ✓ Dynamic Balancing only for i-Series |
| ✓ Weighing equipment | ✓ Not for AC-PM synchronous motors |

Note: Any external modifications, like fixtures, lagging or sprockets, have an impact on the imbalance.

Note: For dynamic balancing please choose only i-series drum motors with stainless steel end housings.

Note: For S-series drum motors only static balancing is possible.

Applications

Technical Data

Dynamic balancing	3 g, 5 g, 8 g, 10 g
Tolerance	±2 g
End housing	Solid stainless steel
80i end housing	1 oil plug only supplied
Shell lagging material	Only hot vulcanised NBR may be used

Note: Max. balancing length SL ≤ 800 mm.

ELECTROMAGNETIC BRAKES

Product Description

Holds a load according to the stated belt pull.

Applications

- ✓ For reversible inclined and declined conveyors
- ✓ For approximate positioning *
- ✓ For reduced stopping times *
- ✓ For asynchronous drum motors only
- ✓ For stopping and holding loads

* For faster stopping times and accurate positioning, please use a frequency inverter with braking function and if necessary an encoder with feedback control.

- ✓ Low-noise
- ✓ Applied to the drum motor's rotor shaft
- ✓ Low-wear
- ✓ When power to the motor is disrupted the brake will close (the brake is naturally closed)
- ✓ Operated by rectifier (see p 154)

The brake opening and closing response time can vary substantially depending on the following:

- Type and viscosity of the oil
- Level of oil in the drum motor
- Ambient temperature
- Internal motor working temperature
- Switching at input (AC-switching) or at output (DC-switching)

The difference between AC switching and DC switching is shown in the following table:

	AC switching	DC switching
Closing response time	slow	fast
Brake voltage	approx. 1 V	approx. 500 V

Note: For DC-switching, the switching contacts must be protected against damage due to high voltage.

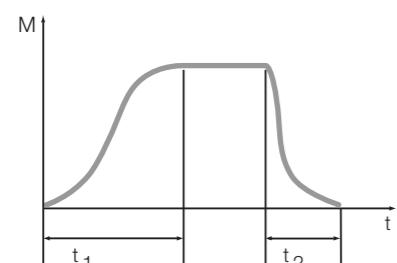


Fig.: Closing and opening response time

t₁ Closing response time

t₂ Opening response time

Reduction of brake torque

The rated brake torque is strongly influenced by the operating conditions within the drum motor (operation in oil at high temperatures) and the ambient temperature. To calculate the holding torque limit on the drum shell, you need to multiply the rated torque of the break with the gear ratio of the drum motor. For safety reasons, the calculated brake torque has to be at least 25% higher than the needed load torque.

Product Range

Drum Motor	Rated torque M Nm	Rated power W	Rated voltage V DC	Rated current A	DC switching t1 ms	AC switching t1 ms	Opening delay time t2 ms
113i	1.5	24	24	1.00	26	200	30
138i	2.9	24	24	1.00	26	200	30
165i	5.95	33	24	1.38	46	260	40
217i*	5.95	33	24	1.38	46	260	40
80i	0.7	12	24	0.5	13	80	20
113i	1.5	24	104	0.23	26	200	30
138i	2.9	24	104	0.23	26	200	30
165i	5.95	33	104	0.32	46	260	40
217i	12	50	104	0.48	46	260	40
217i*	5.95	33	104	0.32	60	500	60
80i	0.7	12	104	0.12	13	80	20
113i	1.5	24	207	0.12	26	200	30
138i	2.9	24	207	0.12	26	200	30
165i	5.95	33	207	0.16	46	260	40
217i	12	50	207	0.24	46	260	40
217i*	5.95	33	207	0.16	60	500	60

Note: 217i* = Brake for 217i with min SL= 400 mm.

RECTIFIERS

Options
Rectifiers

Product Description

Applications

- ✓ For Drum motors with electromagnetic brake (see p 152)
- ✓ Half-wave and bridge rectifier for standard applications

Characteristics

- ✓ External component must be covered or installed in a control box as close to the brake as possible.

Product Range

Input voltage V AC	Brake voltage V DC	Starting voltage V DC	Holding voltage V DC	Version	Application	Art. No.
115	104	104	52	Fast acting rectifier	A B	61011343
230	207	207	104	Fast acting rectifier	A B	61011343
230	104	104	104	Half wave rectifier Bridge rectifier	A B	1001440
230	104	190	52	Phase rectifier	A	1001442
400	104	180	104	Multiswitch	A B	1003326
460	104	180	104	Multiswitch	A	1003326
460	207	207	207	Half wave rectifier Bridge rectifier	A B	1001441

A Continuous running application

B Frequent start/stop application

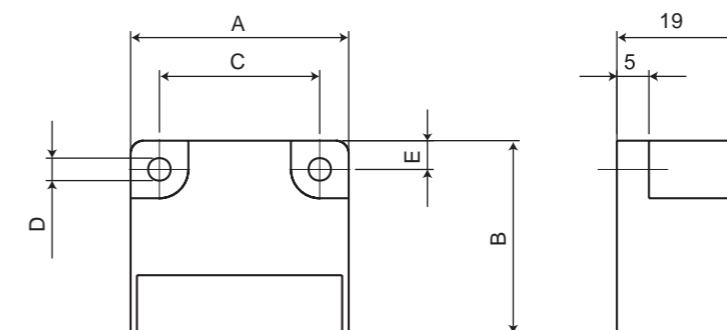
Using a fast acting rectifier or a phase rectifier will save energy because the holding voltage is lower than the starting voltage.

Screened cables should be used to protect against EMC.

The rectifier operates the electromagnetic brake

Dimensions

Half-wave rectifier and bridge rectifier



Art. No.	A mm	B mm	C mm	D mm	E mm
1001440	34	30	25	3.5	4.5
1001441	64	30	54	4.5	5

Phase rectifier

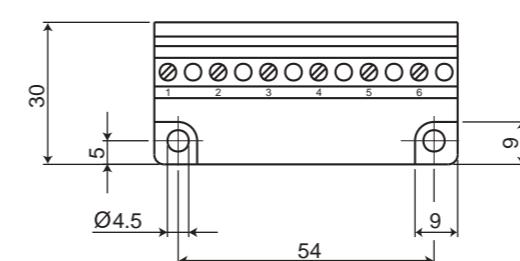
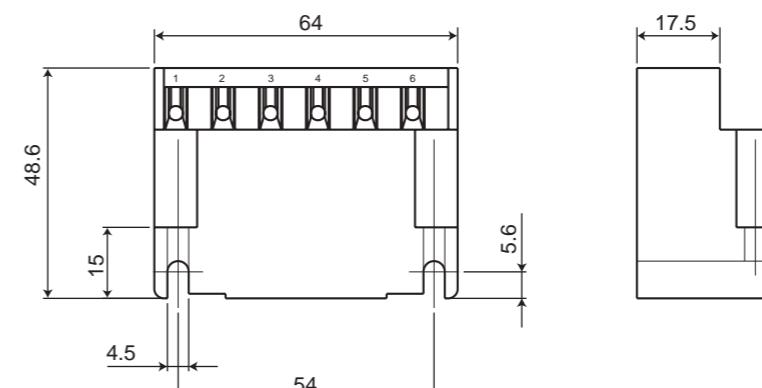


Fig.: 1001442

RECTIFIERS

Options
Rectifiers

Fast acting rectifier

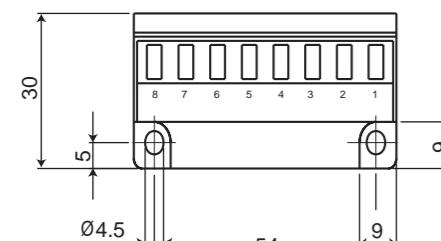
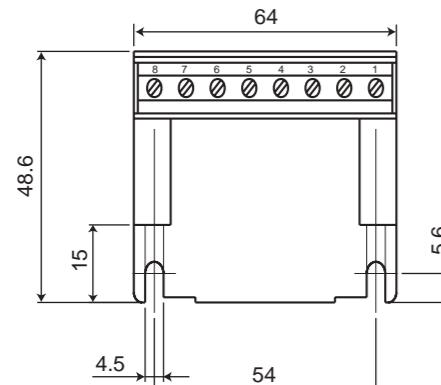


Fig.: 61011343

Multiswitch

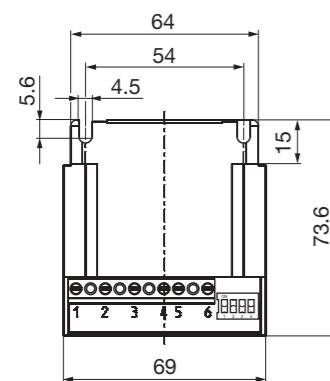
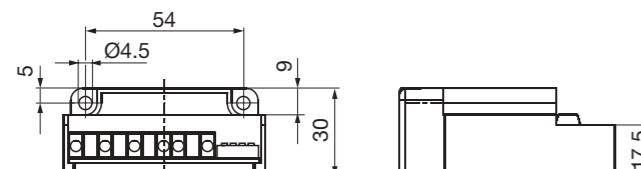


Fig.: 1003326

The rectifier operates the electromagnetic brake

Connection Diagram

Interroll recommends installing a switch between (3) and (4) for fast brake release.

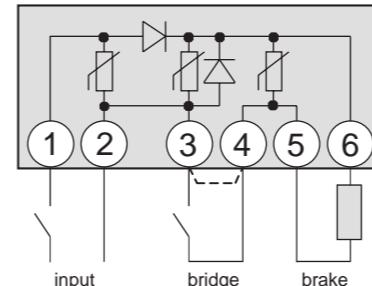


Fig.: Half-wave rectifier

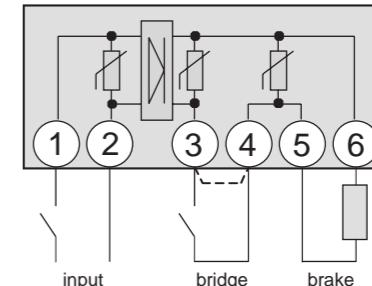


Fig.: Bridge rectifier

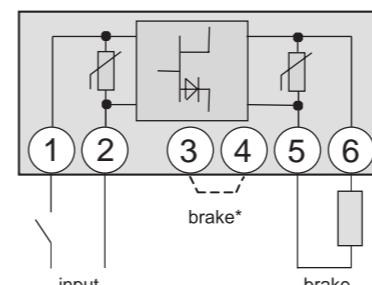


Fig.: Phase rectifier

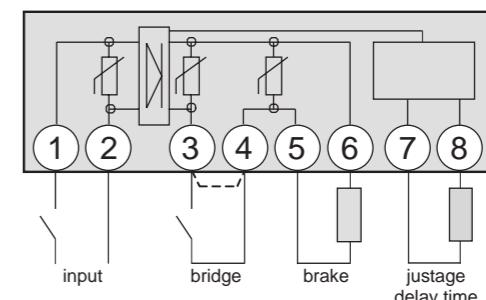


Fig.: Fast acting rectifier

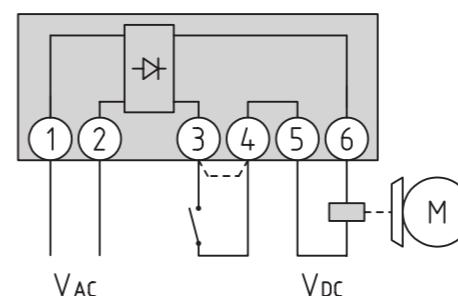


Fig.: Multiswitch

FEEDBACK DEVICES

Accurate monitoring of conveying data

Product Description

- Application**
- ✓ For applications which require control and monitoring of speed, direction, and position of the drum motor belt or load
 - ✓ For i-series and D-series only

- Characteristics**
- ✓ Cannot be combined with a brake or backstop option
 - ✓ Enables closed loop system control
 - ✓ Supplies low to high resolution signals to an external control unit
 - ✓ Incremental or absolute encoders
 - ✓ Coupled to rotor shaft or embedded in the rotor bearing

Note: Not available for i-Series with dual voltage

Product Range

All resolutions and speeds given in the following product range are referring to the rotor shaft. The drum motor gear ratio must be considered to find the values related to the drum shell.

Encoder types		Asynchronous Drum Motors					Synchronous Drum Motors	Connection diagram references (see p 264)	
		80i	113i	138i	165i	217i	80D	88D	
SKF 32 incremental encoder *	32 pulses	✓	✓	✓					70
SKF 48 incremental encoder	48 pulses			✓	✓				70
RLS incremental encoder *	64 to 1,024 pulses	✓	✓	✓	✓	✓	✓	✓	71
LTN Resolver	2 poles resolver		✓			✓	✓	✓	72
SKS36 Hiperface	single turn absolute hiperface high resolution				✓	✓	✓		73

Note: *For 80i with encoder the drum motor will be supplied with 25 mm diameter shafts and one supply voltage.

Other feedback devices and resolutions on request

SKF 32 or 48 incremental encoder

Power supply	$V_{dd} = 5$ to 24 V
Power consumption	max. 20 mA
Electrical interface	Open collector NPN
Output increments	A, B
Increments resolution	32 or 48 pulses / revolution
Necessary Pull-up resistor	270 to 1,500 Ω (see connection diagram section)
max. cable length	10 m

RLS incremental encoder

Power supply	$V_{dd} = 5 \text{ V} \pm 5 \%$
Power consumption	35 mA
Electrical interface	RS422
Output increments	A, B, Z, /A, /B, /Z
Increments resolution	64; 512; 1,024 pulses / revolution
max. cable length	2,048 pulses / revolution (max speed 2,500 rotor rpm) 5 m

Note: Interroll recommends the use of an opto-coupler for the following reasons:

- To protect the encoder
- To enable connection to other levels such as PNP
- To get the maximum potential between high and low signal

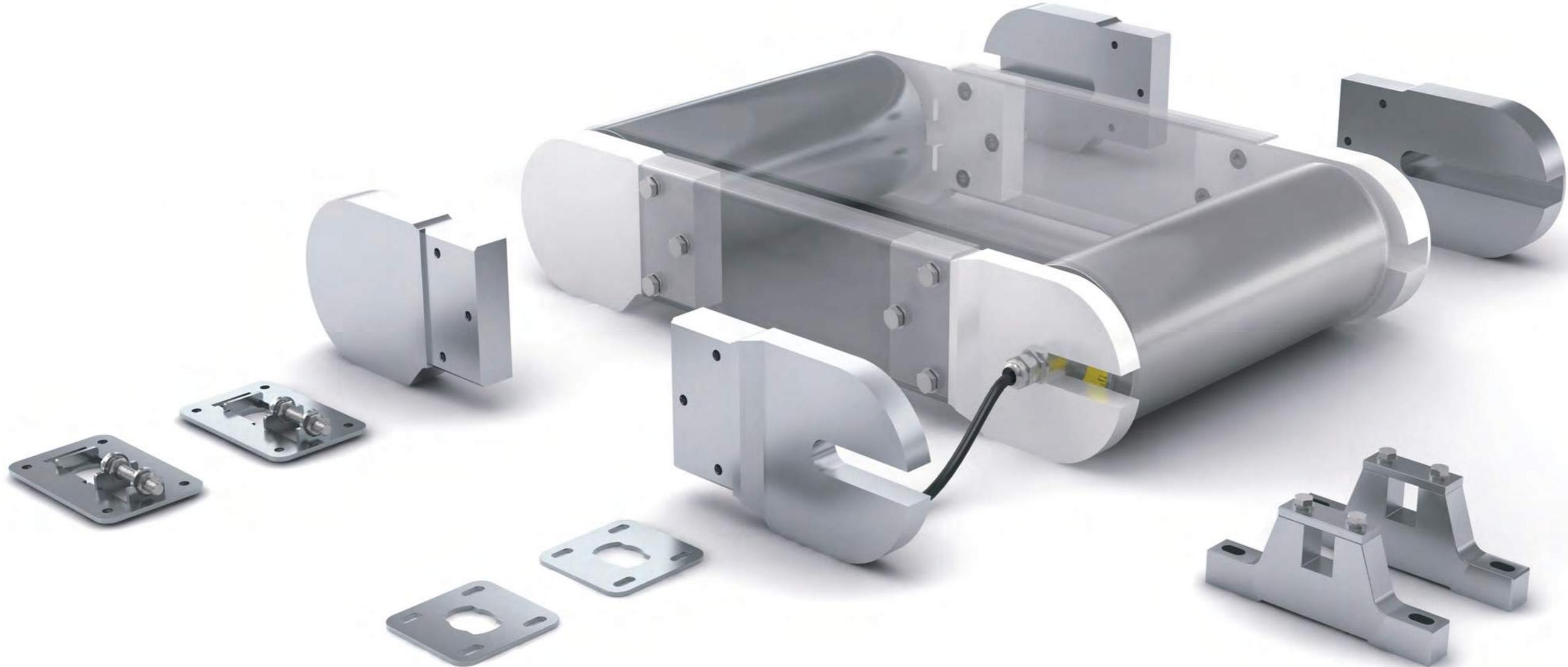
LTN Resolver

Input voltage and current range	7 V
Input frequency range	5 kHz / 10 kHz
Input current	58 mA / 36 mA
Number of poles	2
Transformation ratio	0.5 % \pm -10 %
max. cable length	10 m

SKS36 hiperface (Sick/Stegman) *

Power supply	7 to 12 V (recommended 8 V)
Power consumption	max. 60 mA
Data transfer	Hiperface
Serial data	RS485
Single turn resolution	4,096 positions / revolution
Sine/cosine periods per revolution	128
max. cable length	10 m

Note: *For SKS36 hiperface (Sick/Stegman) Please contact your Interroll customer consultant.



ACCESSORIES

- ✓ Accessories help you integrate the Interroll Drum Motor into your material handling system quickly and efficiently.
- ✓ This chapter includes external accessories which can be added to the Interroll Drum Motor during or after installation.

⌚ Mounting Brackets

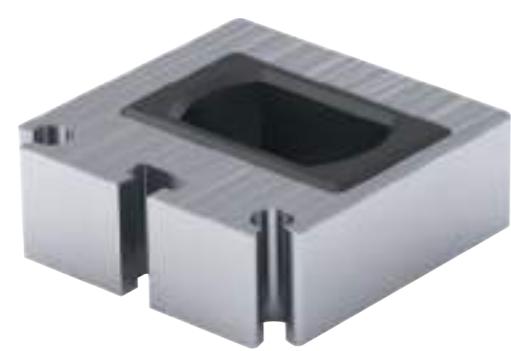
Anti-vibration bracket	p 162
Light-duty flanged bracket for drum motor	p 164
Light-duty flanged bracket for idler pulley	p 166
Heavy-duty flanged bracket, Aluminium	p 168
Heavy-duty flanged bracket, PE	p 172
Plummer block for drum motor and idler	p 176

⌚ Idler Pulleys

Idler pulley with integral bearing	p 178
Idler pulley without bearing Series 7000	p 184
Idler pulley with bearing Series 7000	p 186

⌚ Conveyor Rollers

Conveyor Roller Series 1450	p 188
Universal Conveyor Roller Series 1700	p 190



ANTI-VIBRATION BRACKETS

Interroll bracket mounting system

Product Description

Application

- ✓ For Interroll Drum Motor 80S, 113S
- ✓ Anti-vibration bracket with rubber insulation part for reduction of noise and vibration
- ✓ The bracket is designed, so that the drum motor shaft is secured should the rubber become damaged

Reference Number

Article	Art. No.
Anti-vibration Brackets	61103929
Rubber	1000455

Dimensions

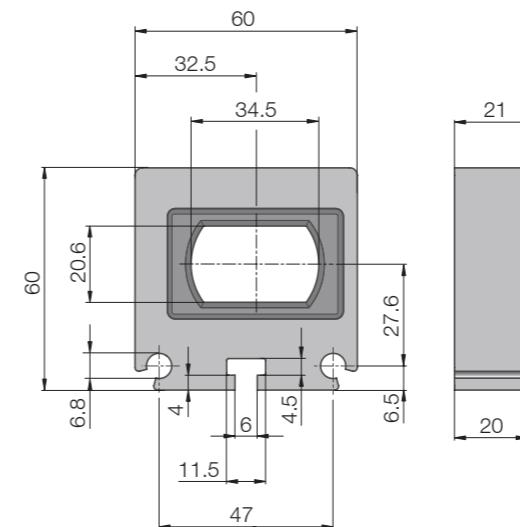


Fig.: Anti-vibration Brackets

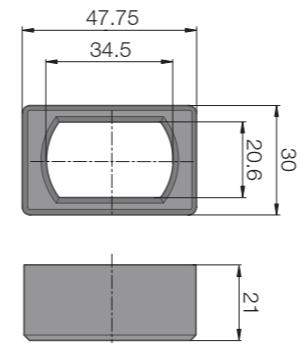


Fig.: Rubber



LIGHT DUTY FLANGED BRACKET FOR DRUM MOTOR

Set of brackets for mounting a drum motor

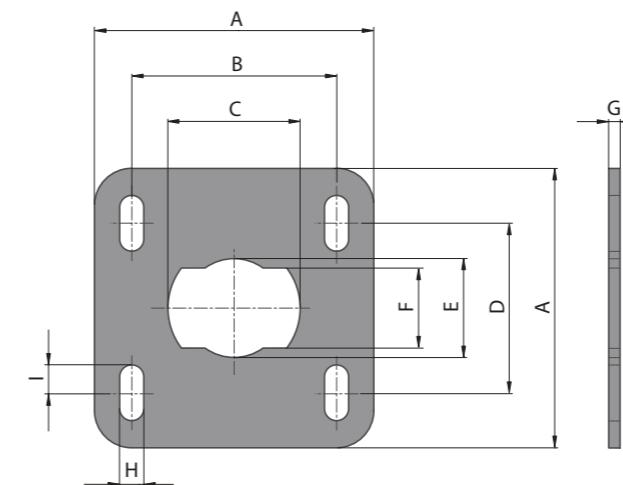
Product Description

Application ✓ For Interroll Drum Motor 80S, 113S

Product Range

Article	Shaft mm	Material	Art. No.
80S / 113S	21 x 35	Stainless steel	61103896

Dimensions



Shaft mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm
21.0 x 35.0	75.0	55.0	35.5	45.5	26.5	21.5	3.0	6.5	15.0



LIGHT DUTY FLANGED BRACKET FOR IDLER PULLEY

Set of brackets for mounting an idler pulley

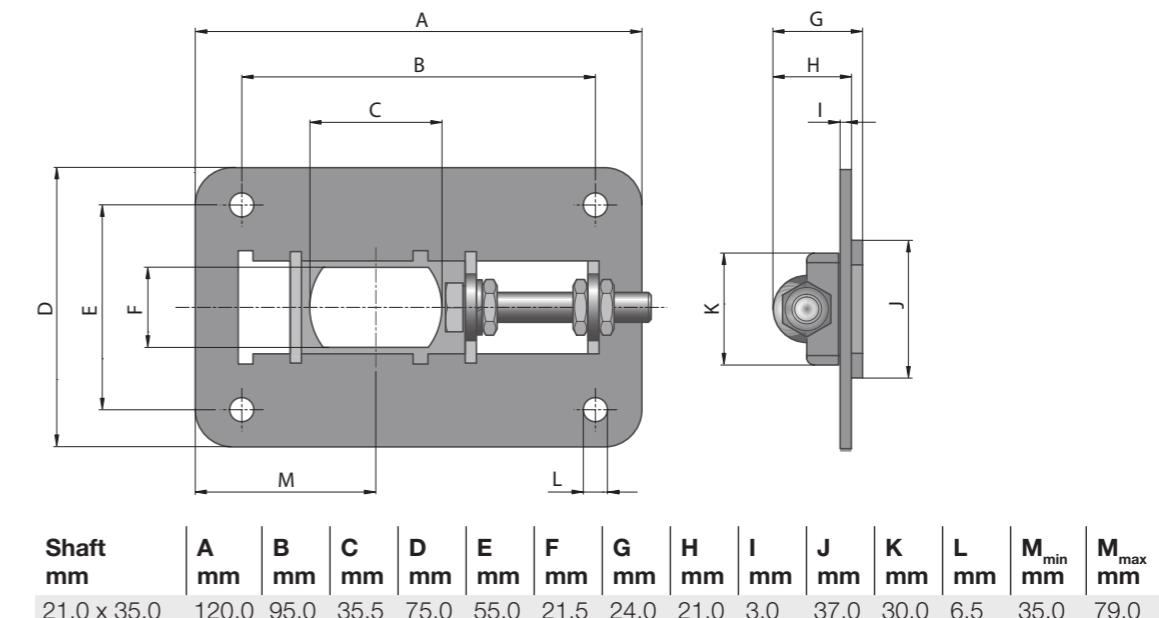
Product Description

Application ✓ For Interroll Idler Pulley 80S, 113S

Product Range

Article	Shaft mm	Material	Art. No.
80S / 113S	21 x 35	Stainless steel	61103898

Dimensions





HEAVY DUTY FLANGED BRACKET ALUMINIUM

Product Description

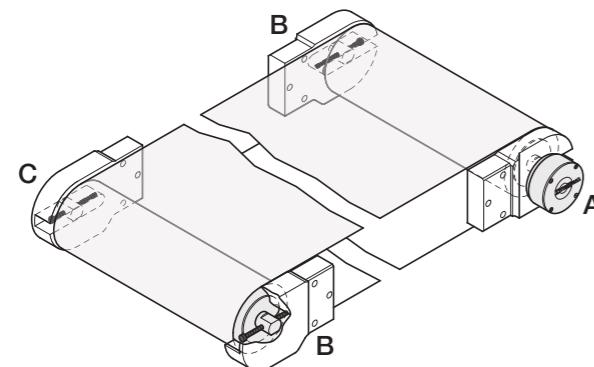
Application

- ✓ For Interroll Drum Motors 80i, 113i, 138i, 165i and corresponding idler pulleys
- ✓ Only for drum motors with a cross drill thread in the front shaft (non cable / terminal box side)
- ✓ For drum motors with cable connectors or terminal box
- ✓ Only for idler pulleys with a threaded hole in each shaft end

Note: For threaded shaft dimensions refer to the dimensional drawings for the respective drum motor.

Mounting Overview

Brackets must be mounted in the following way:



Product Range

Drum Motor	Idler Pulley	Bracket set	Material	Electrical connector	Art. No.
113i		A + B	Aluminium	Elbow connector Straight connector Terminal box	61008698
113i		A + B	Aluminium	Cable slot connector	61008699
138i		A + B	Aluminium	Elbow connector Straight connector Terminal box	61008704
138i		A + B	Aluminium	Cable slot connector	61103900
165i		A + B	Aluminium	Elbow connector Straight connector Terminal box	61008707
165i		A + B	Aluminium	Cable slot connector	61103901
80i		A + B	Aluminium	Elbow connector Straight connector Terminal box	61008694
80i	B + C	Aluminium			61008696
113i	B + C	Aluminium			61008701
138i	B + C	Aluminium			61008706
165i	B + C	Aluminium			61008708

Note: 165i only with key flat length of 25 mm (must be ordered specially)

Dimensions

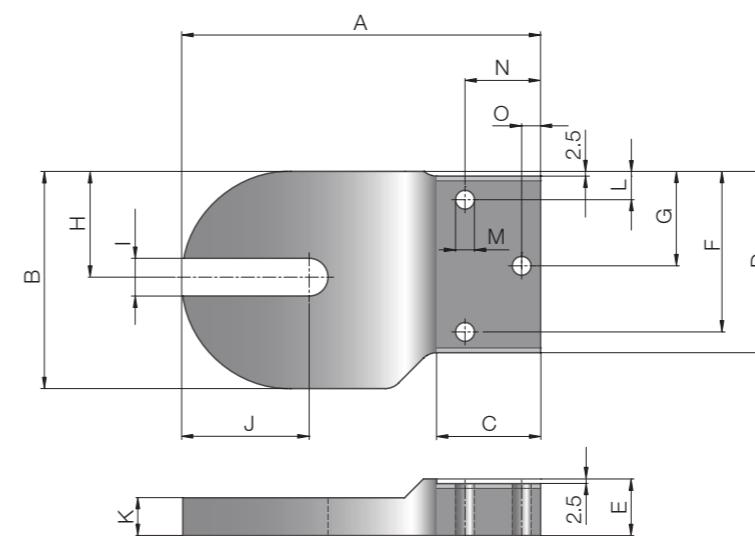


Fig.: Right-hand side bracket (A) for drum motor with elbow connector, straight connector or terminal box

Drum Motor	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M	N mm	O mm
80i	120.0	85.0	25.0	62.5	20.0	50.0	-	40.0	13.5	47.5	9.0	15.0	M8	10.0	-
113i	190.0	115.0	55.0	96.0	30.0	85.0	50.0	56.0	20.0	67.5	20.0	15.0	M8	40.0	10.0
138i	200.0	140.0	55.0	121.0	30.0	110.0	62.5	67.0	20.0	80.0	20.0	15.0	M10	40.0	10.0
165i	240.0	170.0	55.0	146.0	30.0	122.5	75.0	81.0	30.0	100.0	20.0	27.5	M10	40.0	10.0



HEAVY DUTY FLANGED BRACKET ALUMINIUM

Set of brackets for mounting a drum motor or an idler pulley

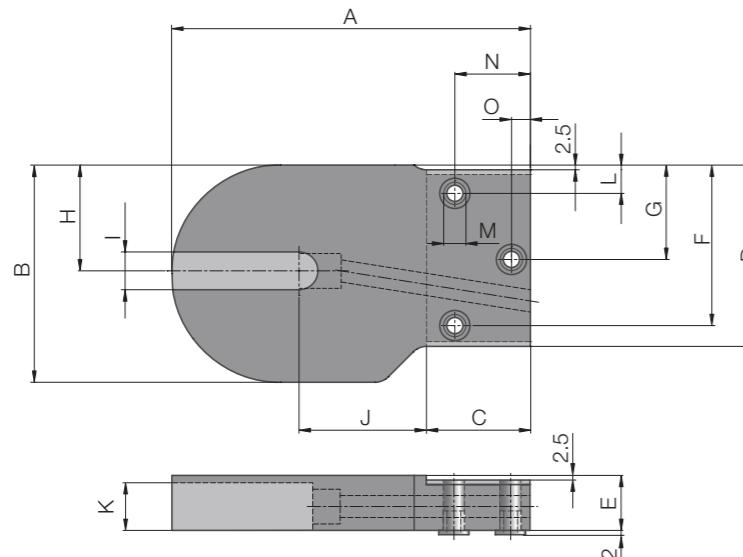


Fig.: Right-hand side bracket (A) for drum motor with cable slot connector

Drum Motor	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M	N mm	O mm
113i	190.0	115.0	55.0	96.0	30.0	85.0	50.0	56.0	20.0	67.5	26.0	15.0	M8	40.0	10.0
138i	200.0	140.0	55.0	121.0	30.0	110.0	62.5	67.0	20.0	80.0	26.0	15.0	M10	40.0	10.0
165i	240.0	170.0	55.0	146.0	30.0	122.5	75.0	81.0	30.0	100.0	26.0	27.5	M10	40.0	10.0

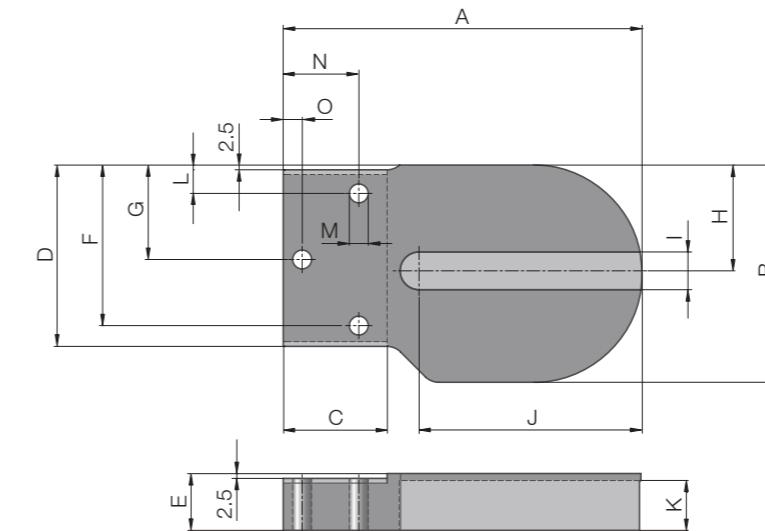


Fig.: Left-hand side bracket (B) for drum motor and idler pulley

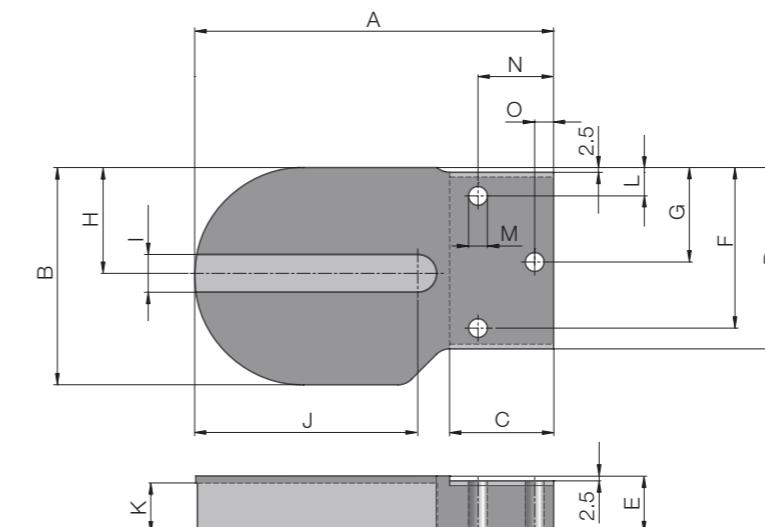


Fig.: Right-hand side bracket (C) for idler pulley

Drum Motor	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M	N mm	O mm
80i	120.0	85.0	25.0	62.5	20.0	50.0	-	40.0	13.5	85.0	13.0	15.0	M8	10.0	-
113i	190.0	115.0	55.0	96.0	30.0	85.0	50.0	56.0	20.0	120.0	26.0	15.0	M8	40.0	10.0
138i	200.0	140.0	55.0	121.0	30.0	110.0	62.5	67.0	20.0	130.0	26.0	15.0	M10	40.0	10.0
165i	240.0	170.0	55.0	146.0	30.0	122.5	75.0	81.0	30.0	165.0	26.0	27.5	M10	40.0	10.0



HEAVY DUTY FLANGED BRACKET PE

Set of brackets for mounting a drum motor or an idler pulley

Product Description

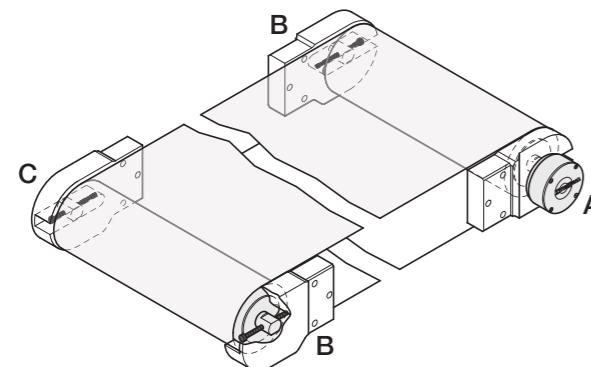
Application

- ✓ For drum motors 80i, 113i, 138i, 165i and corresponding idler pulleys
- ✓ Only for drum motors with a cross drill thread in the front shaft (non cable / terminal box side)
- ✓ For drum motors with cable connectors or terminal box
- ✓ Only for idler pulleys with a threaded hole in each shaft end

Note: For threaded shaft dimensions refer to the dimensional drawings for the respective drum motor.

Mounting Overview

Brackets must be mounted in the following way:



Product Range

One set of brackets comprises of one left-hand bracket and one right-hand bracket.

Drum Motor	Idler Pulley	Bracket set	Material	Electrical connector	Art. No.
113i		A + B	PE	Elbow connector Straight connector Terminal box	61006805
113i		A + B	PE	Cable slot connector	61008697
138i		A + B	PE	Elbow connector Straight connector Terminal box	61008702
138i		A + B	PE	Cable slot connector	61100570
80i		A + B	PE	Elbow connector Straight connector Terminal box	61008693
80i	B + C	PE			61008695
113i	B + C	PE			61008700
138i	B + C	PE			61008705

Dimensions

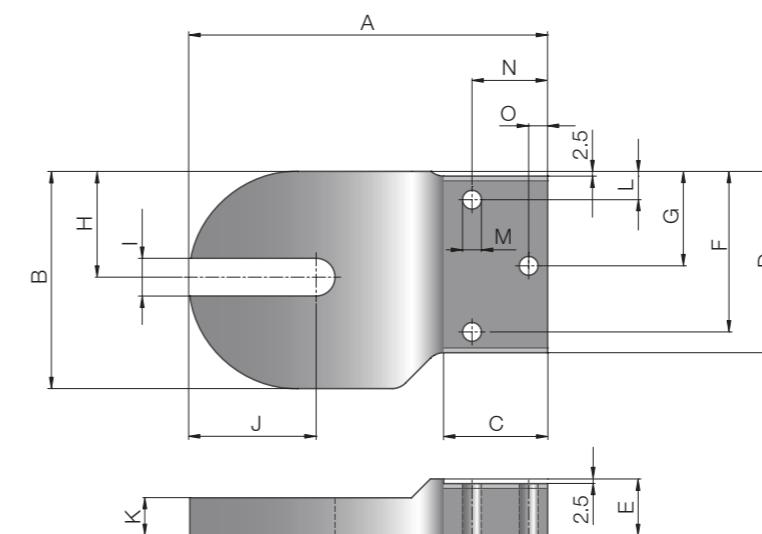


Fig.: Right-hand side bracket (A) for drum motor with elbow connector, straight connector or terminal box

Drum Motor	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M	N mm	O mm
80i	120.0	85.0	25.0	62.5	20.0	50.0	-	40.0	13.5	47.5	9.0	15.0	M8	10.0	-
113i	190.0	115.0	55.0	96.0	30.0	85.0	50.0	56.0	20.0	67.5	20.0	15.0	M8	40.0	10.0
138i	200.0	140.0	55.0	121.0	30.0	110.0	62.5	67.0	20.0	80.0	20.0	15.0	M10	40.0	10.0



HEAVY DUTY FLANGED BRACKET PE

Set of brackets for mounting a drum motor or an idler pulley

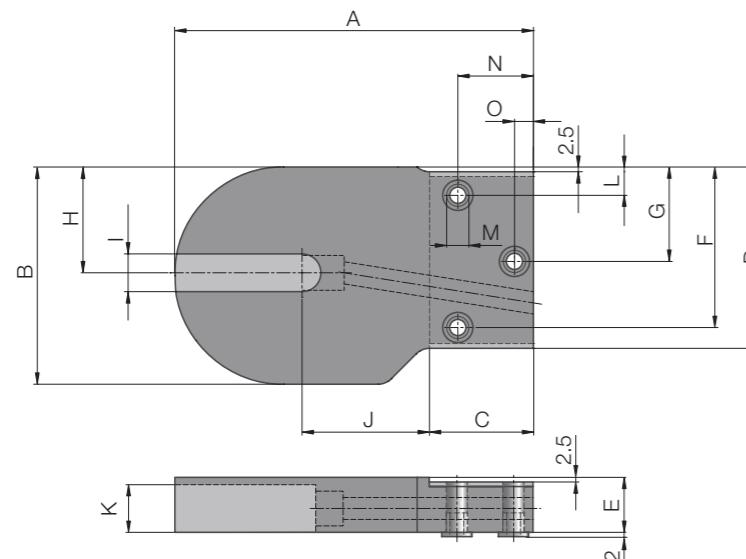


Fig.: Right-hand side bracket (A) for drum motor with cable slot connector

Drum Motor	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	M	N mm	O mm
113i	190.0	115.0	55.0	96.0	30.0	85.0	50.0	56.0	20.0	67.5	26.0	M8	40.0	10.0
138i	200.0	140.0	55.0	121.0	30.0	110.0	62.5	67.0	20.0	65.0	26.0	M10	40.0	10.0

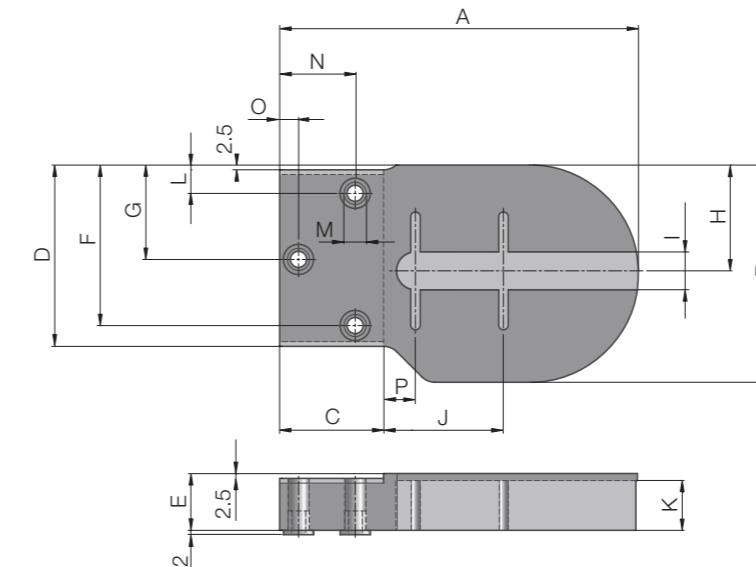


Fig.: Left-hand side bracket (B) for drum motor and idler pulley

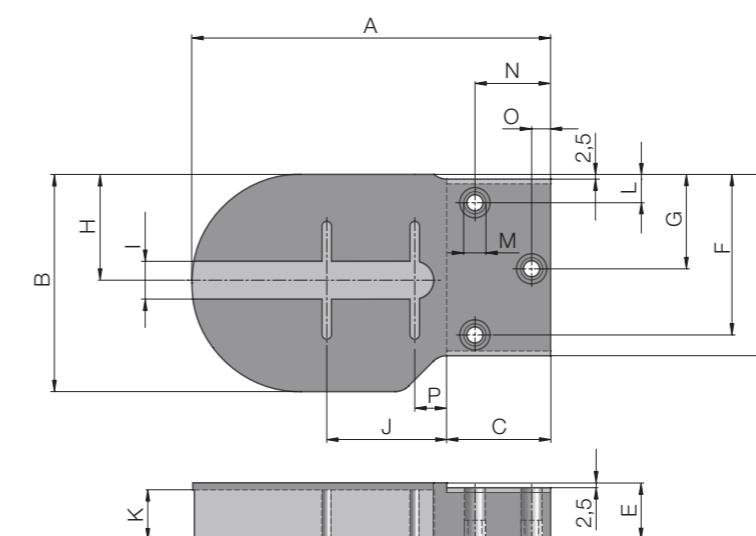


Fig.: Right-hand side bracket (C) for idler pulley

Drum Motor / Idler Pulley	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M	N mm	O mm	P mm
80i	120.0	85.0	25.0	62.5	20.0	50.0	-	40.0	13.5	42.5	9.0	15.0	M8	10.0	-	12.5
113i	190.0	115.0	55.0	96.0	30.0	85.0	50.0	56.0	20.0	60.0	20.0	15.0	M8	40.0	10.0	17.5
138i	200.0	140.0	55.0	121.0	30.0	110.0	62.5	67.0	20.0	60.0	20.0	15.0	M10	40.0	10.0	15.0



PLUMMER BLOCK BRACKET FOR DRUM MOTOR AND IDLER PULLEY

Set of brackets for mounting an idler pulley

Product Description

Application

- ✓ For Drum Motors and Idler Pulleys 80i, 113i, 138i, 165i and 217i
- ✓ For Drum Motors and Idler Pulleys 80D, 88D and 113D

 Brackets for
Synchronous
Motors

Product Range

Drum Motor	Material	Art. No.
80i	Aluminum	61008580
113i	Aluminum	61008581
138i	Aluminum	61008582
165i/217i	Cast iron	61009983
	Stainless steel	61100431
80D	Aluminium	61010381
88D/113D	Aluminium	61010382

Brackets for Asynchronous Motors

Dimensions

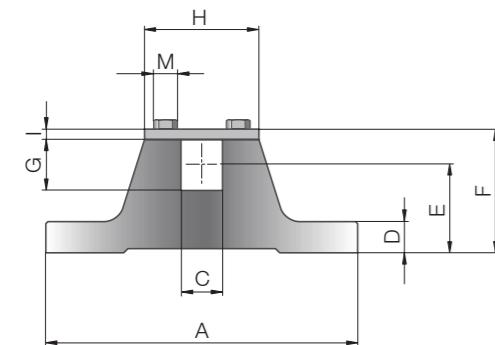
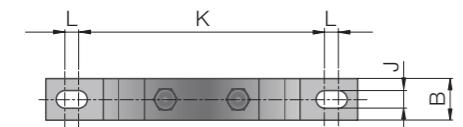


Fig.: Bracket 80i - 217i

Drum Motor	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M	Material	Weight kg
80i	100.0	10.0	13.5	12.0	35.0	47.5	16.5	35.0	4.0	6.5	72.5	7.5	M6	Alu	0.14
113i	150.0	20.0	20.0	15.0	42.0	59.5	24.5	55.0	5.0	8.5	118.5	6.5	M6	Alu	0.50
138i	150.0	20.0	20.0	15.0	44.5	64.5	29.5	55.0	5.0	8.5	118.5	6.5	M6	Alu	0.52
165i/217i	170.0	20.0	30.0	20.0	50.0	75.0	39.5	70.0	5.0	11.0	116.0	14.0	M8	Stainless steel	0.80
165i/217i	187.0	40.0	30.0	22.0	50.0	75.0	36.0	72.0	5.0	14.0	110.0	20.0	M10	Cast iron	1.30

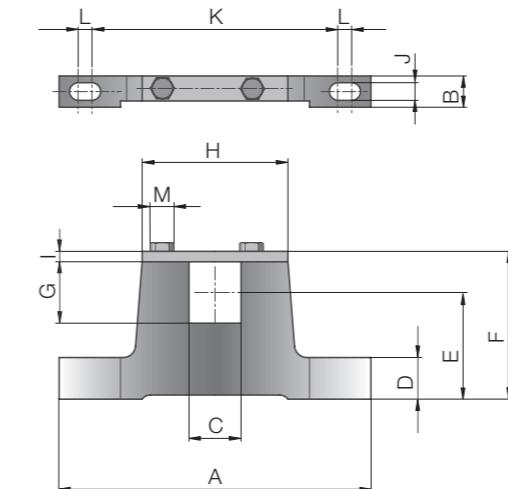


Fig.: Bracket 80D, 88D, 113D

Drum Motor	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M	Material	Weight kg
80D	150.0	15.0	25.0	20.0	51.0	71.0	29.5	70.0	5.0	8.5	108.0	12	M6	Alu	0.20
88D/113D	150.0	15.0	25.0	20.0	66.5	101.0	29.5	70.0	5.0	13.0	108.0	12	M6	Alu	5.0

IDLER PULLEY WITH INTEGRAL BEARINGS



Idler pulley for unit-load conveyors

Accessories
Idler Pulleys

Product Description

Characteristics

- ✓ Static shaft
- ✓ Precision-machined shell
- ✓ Integral bearings
- ✓ Dimensions match drum motors

Technical Data

Protection rate	IP66 / IP69k (only for D-Series)
Max. belt tension	See equivalent drum motor
Max. belt speed	See equivalent drum motor
Shell length	See equivalent drum motor
Internal shaft sealing system	Lip seal FPM
External shaft sealing system S-series	Deflection seal, NBR
External shaft sealing system i-series	Labyrinth
External shaft sealing system D-series	Deflection seal PTFE (for IP69K)

Versions

For idler pulleys you can choose the following versions of drum body components:

Component	Option	Series	Material			PTFE
			Aluminium	Mild steel	Stainless steel	
Shell	Crowned	S + i +D		✓	✓	
	Cylindrical	S + i +D		✓	✓	
	Cylindrical + key for using sprockets	i + D		✓	✓	
End housing	Standard	S + i	✓		✓	
		D		✓		
Shaft cap	With grooves and chain sprockets	i only	✓		✓	
	Standard	S	✓			
Shaft	Regreasable	S		✓		
	Standard	i		✓	✓	
External seal	D		✓	✓		
	Cross-drilled thread	i + D	✓	✓		
	Galvanised labyrinth	i		✓		
	Labyrinth	i		✓		
	Labyrinth with FPM	i		✓		
	Deflection seal in PTFE (for IP69k)	D			✓	

Note: For cross-drilled and threaded shaft dimensions refer to the dimensional drawings of the respective drum motor.

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 (use cylindrical shell with key), see p 142

IDLER PULLEY WITH INTEGRAL BEARINGS

Idler pulley for unit-load conveyors

Accessories
Idler Pulleys

Dimensions

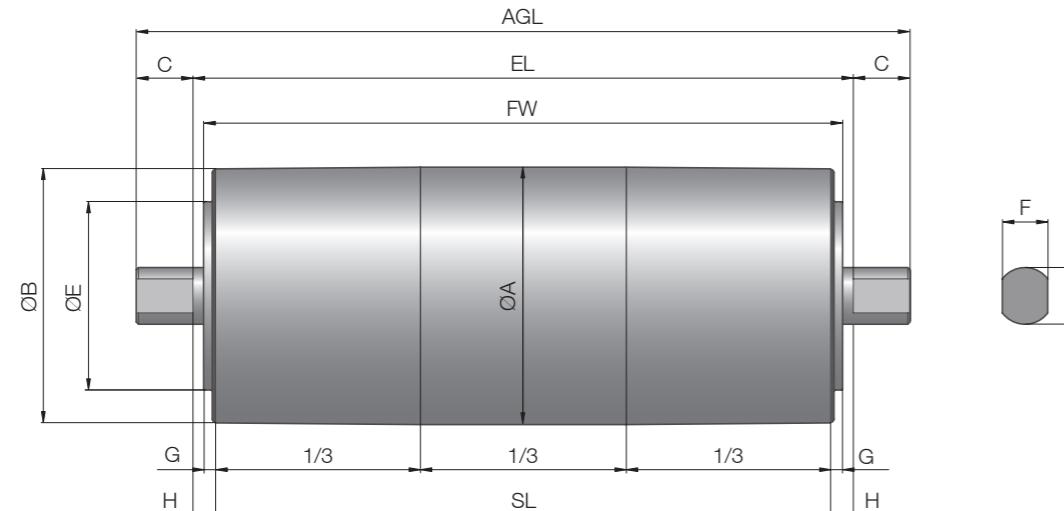


Fig.: Idler i-series

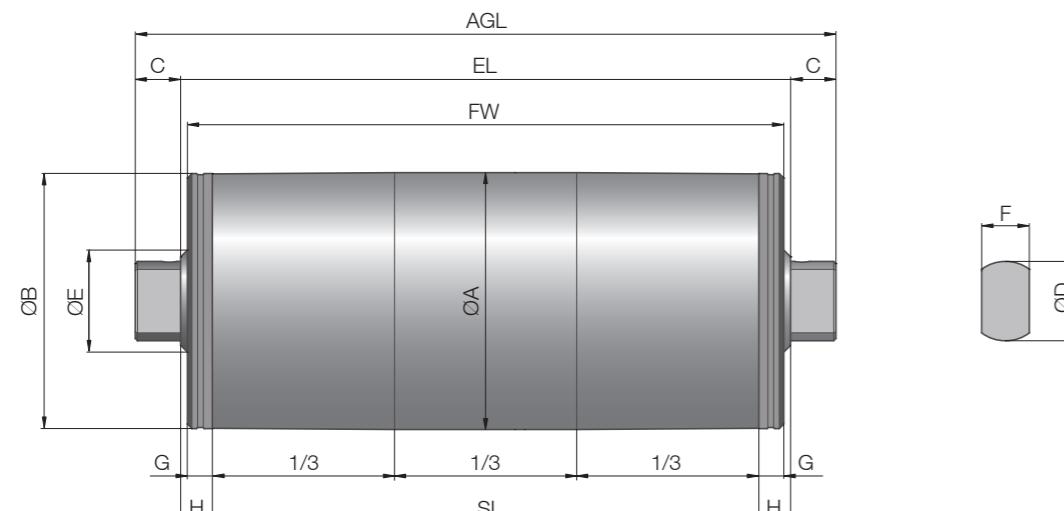


Fig.: Idler S-series

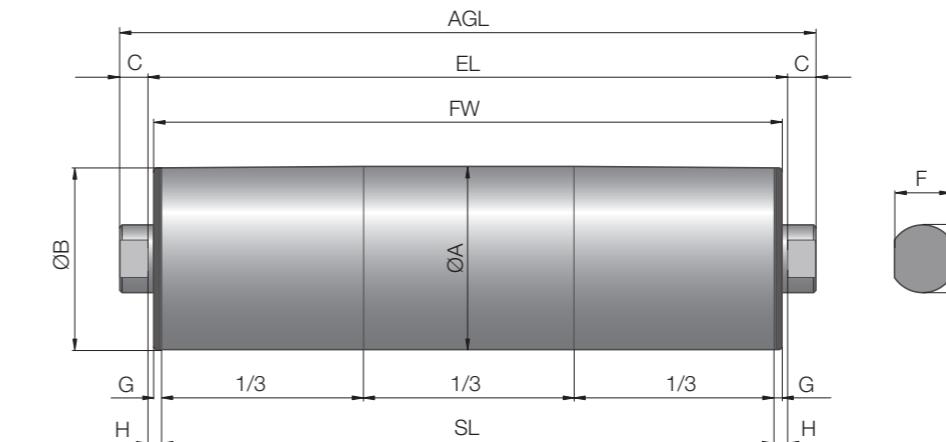


Fig.: Idler D-Series (80D, 113D)

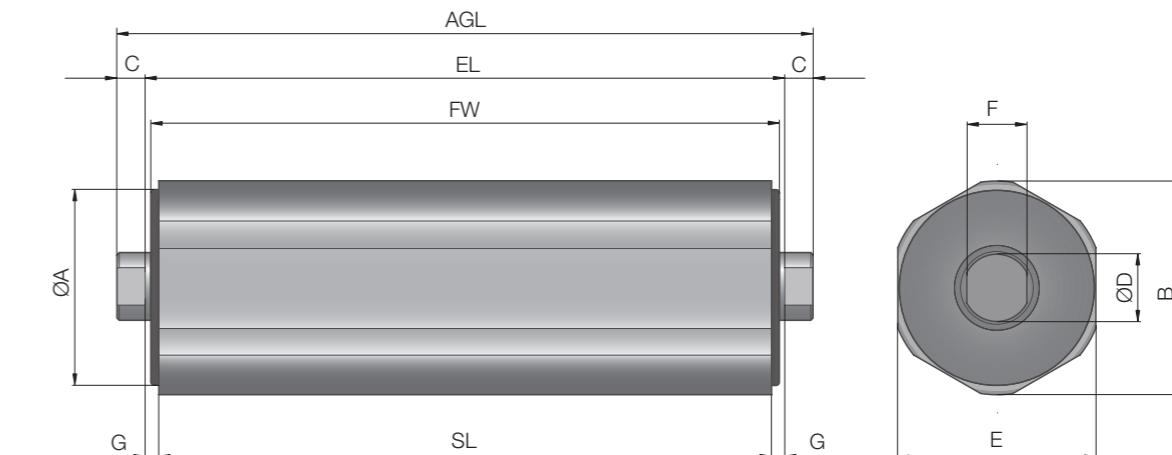


Fig.: Idler D-Series (88D)

Idler pulley, crowned shell	Ø A mm	Ø B mm	C mm	Ø D mm	Ø E mm	F mm	G mm	H mm
80S with SL 260 mm to 602 mm	81.5	80	20	35	45	21	5	8
80S with SL 603 mm to 952 mm	83	81	20	35	45	21	5	8
80i	81.5	80.5	12.5	17	43	13.5	3.5	6
113S	113.3	112.3	20	35	45	21	11	14
113i	113.5	112	25	25	83	20	5.3	10
138i	138	136	25	30	100	20	6.5	15
165i	164	162	45	40	130	30	8.5	20
217i	217.5	215.5	45	40	120	30	8.5	20
80D	81.5	80.5	12.5	30		25	3.5	6
88D	80.5	88	12.5	30	90	25	6	6
113D	113.5	112	12.5	30		25	3.5	6



IDLER PULLEY WITH INTEGRAL BEARINGS

Accessories
Idler Pulleys

Idler pulley for unit-load conveyors

**Standard length
and weight**

The idler pulleys weight depends on its length.

80S

Shell length SL in mm	260	270	285	302	352	402	452	502	552	602	652	702	752
Average weight in kg	2.2	2.3	2.4	2.5	2.85	3.2	3.55	3.9	4.25	4.6	7.0	7.5	8.0
Shell length SL in mm	802	852	902	952									
Average weight in kg	8.5	9.0	9.5	10.0									

80i

Shell length SL in mm	193	243	293	343	393	443	493	543	593	643	693	743	793
Average weight in kg	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.5	5.1	5.7	6.3	6.9
Shell length SL in mm	843	893	943	993	1,043	1,093							
Average weight in kg	7.5	8.1	8.7	9.3	9.9	10.5							

113S

Shell length SL in mm	240	290	340	390	440	490	540	590	640	690	740	790	840
Average weight in kg	3	3.4	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.4	7.8
Shell length SL in mm	890	940	990	1,040	1,090								
Average weight in kg	8.2	8.6	9.0	9.4	9.8								

113i

Shell length SL in mm	250	300	350	400	450	500	550	600	650	700	750	800	850
Average weight in kg	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5
Shell length SL in mm	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400		
Average weight in kg	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5		

138i

Shell length SL in mm	300	350	400	450	500	550	600	650	700	750	800	850
Average weight in kg	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0
Shell length SL in mm	900	950	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450
Average weight in kg	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5
Shell length SL in mm	1,500	1,550	1,600									
Average weight in kg	24.5	25.5	26.5									

165i

Shell length SL in mm	400	450	500	550	600	650	700	750	800	850	900	950
Average weight in kg	14	15.5	17.0	18.5	20.0	21.5	23.0	24.5	26.0	27.5	29.0	30.5
Shell length SL in mm	1,000	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450	1,500	1,550
Average weight in kg	32.0	35.0	38.0	41.0	44.0	47.0	50.0	53.0	56.0	59.0	62.0	65.0
Shell length SL in mm	1,600	1,650	1,700	1,750								
Average weight in kg	68.0	71.0	74.0	77.0								

217i

Shell length SL in mm	500	550	600	650	700	750	800	850	900	950	1,000
Average weight in kg	23	25	27	29	31	33	35	37	39	41	43
Shell length SL in mm	1,050	1,100	1,150	1,200	1,250	1,300	1,350	1,400	1,450		



IDLER PULLEY WITHOUT BEARINGS SERIES 7000

Alternative idler pulley

Product Description

Characteristics

- ✓ Shrink-fit mounting of bearings on the axle journal
- ✓ Precision-machined items with steel journals and aluminium profile
- ✓ Reduced rotating mass, compared with conventional steel units

Technical Data

Shell material	Aluminium
Max. belt speed	2 m/s
Max. load capacity	Type of bearing related N
Ambient temperature	-5 to +60 °C
Shaft pin	Steel

Maximum load capacity

When ordering an idler pulley without bearings the max. load has to be calculated by the customer.

- Max. allowed tube deflection 0.7 mm
 - Ø 62.5 mm: $I_x = 503,000 \text{ N/mm}^4$
 - Ø 79.5 mm: $I_x = 1,070,000 \text{ N/mm}^4$
 - Ø 91 mm: $I_x = 1,500,000 \text{ N/mm}^4$
- Allowed stress: 17.4 N/mm²
- Lifetime calculation followed by the recommendations of the bearing manufacturer.

Product Range

Ø mm	Art. No.
62.5	MI-07160A
79.5	MI-07180A
91.0	MI-07190A

Dimensions

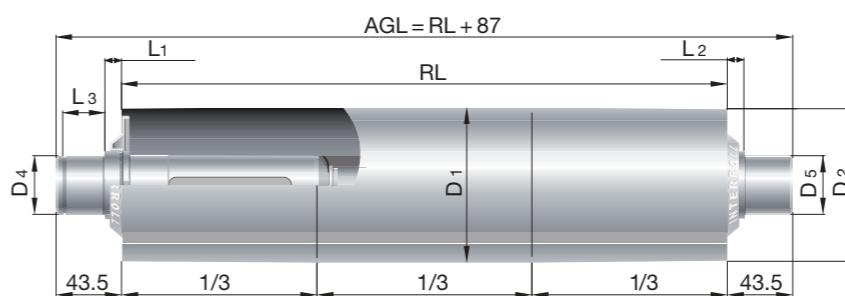


Fig.: Idler series 7000

Ø D1 mm	Ø D2 mm	IT Class mm
62.5	61.1	7
79.5	78.1	7
91.0	89.6	7

The single-side locking recess provides axial fixing of the bearing to provide for a fixed-point side.

Please indicate all other dimensions for drive journals or extensions. Please indicate the values for shaft diameter values D4 and D5 and length dimensions L1 to L3. Only when this information is provided, together with the reference number and reference length RL, is an order complete and only then can it be processed.

 Order
information

IDLER PULLEY WITH BEARINGS SERIES 7000



Accessories
Idler Pulleys

Alternative idler pulley

Product Description

- | Characteristics | ✓ Standard interface with bearing housings provided with inside thread for attachment to belt section profile or to tensioning stations | ✓ Precision-machined items with steel journals and aluminium profile |
|-----------------|---|--|
| | ✓ Shrink-fit mounting of bearings on the axle journal | ✓ Reduced rotating mass, compared with conventional steel units |
| | | ✓ Allowed stress 17.4 N/mm ² |

Technical Data

Shell material	Aluminium
Max. belt speed	2 m/s
Max. load capacity	4,300 N
Ambient temperature	-5 to +60 °C
Shaft pin	Steel
Ball bearing	Steel, 2205 2RS / Steel, 2206 2RS
Bearing housing	Steel, burnished

Max. dynamic load capacity in N

RL	Ø 62.5 mm							
	Rpm	150	200	250	300	350	400	450
in m/s	0.50	0.66	0.82	1.00	1.15	1.32	1.50	
300	4,000	3,700	3,400	3,200	3,000	2,900	2,800	
500	3,800	3,400	3,100	2,900	2,800	2,600	2,500	
700	3,000	2,600	2,300	2,100	2,000	1,800	1,700	
1,000	2,400	2,000	1,700	1,500	1,400	1,200	1,100	

RL	Ø 79.5 mm							
	Rpm	150	200	250	300	350	400	450
in m/s	0.50	0.66	0.82	1.00	1.15	1.32	1.50	
300	4,300	3,900	3,650	3,450	3,250	3,100	3,000	
500	3,950	3,550	3,300	3,100	2,900	2,750	2,650	
700	3,500	3,100	2,850	2,600	2,450	2,300	2,200	
1,000	3,150	2,750	2,500	2,250	2,100	1,950	1,850	

Ø 91.0 mm

RL	Rpm					
	150 in m/s	200	250	300	350	400
300	0.50	0.66	0.82	1.00	1.15	1.32
500						
700						
1,000						

The maximum static load resulting from preset belt tensioning is as follows:

- Ø 62.5 mm = 6,000 N
- Ø 79.5 mm = 8,000 N
- Ø 91.0 mm = 8,000 N

Product Range

Ø mm	Art. No.
62.5	MI-07160B
79.5	MI-07180B
91.0	MI-07190B

Dimensions

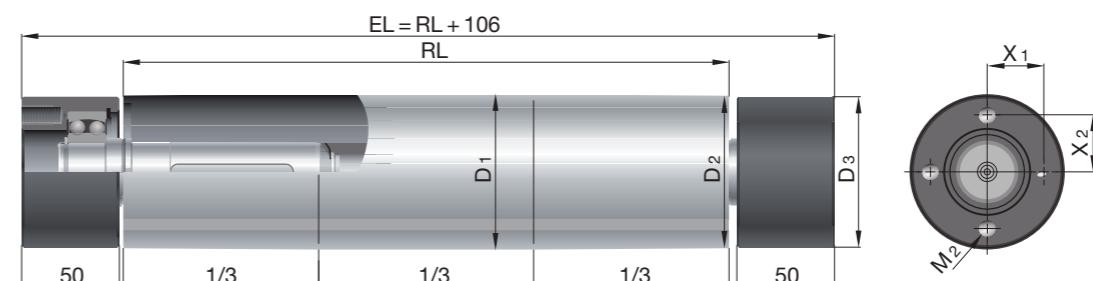


Fig.: Idler series 7000

Ø D1 mm	Ø D2 mm	Ø D3 Bearing housing mm	X1 / X2 mm	M2
62.5	61.1	59.0	23.0	M8
79.5	78.1	75.0	29.0	M10
91.0	89.6	88.6	35.0	M10