



Committed to the development of intelligent conveying and distribution
to become a global supplier of core drive components.

Power Roller Product Specification

Committed to the development of intelligent conveying and distribution
To become a global supplier of core drive components



Shenzhen Zhaowei Machinery & Electronics Co., Ltd.

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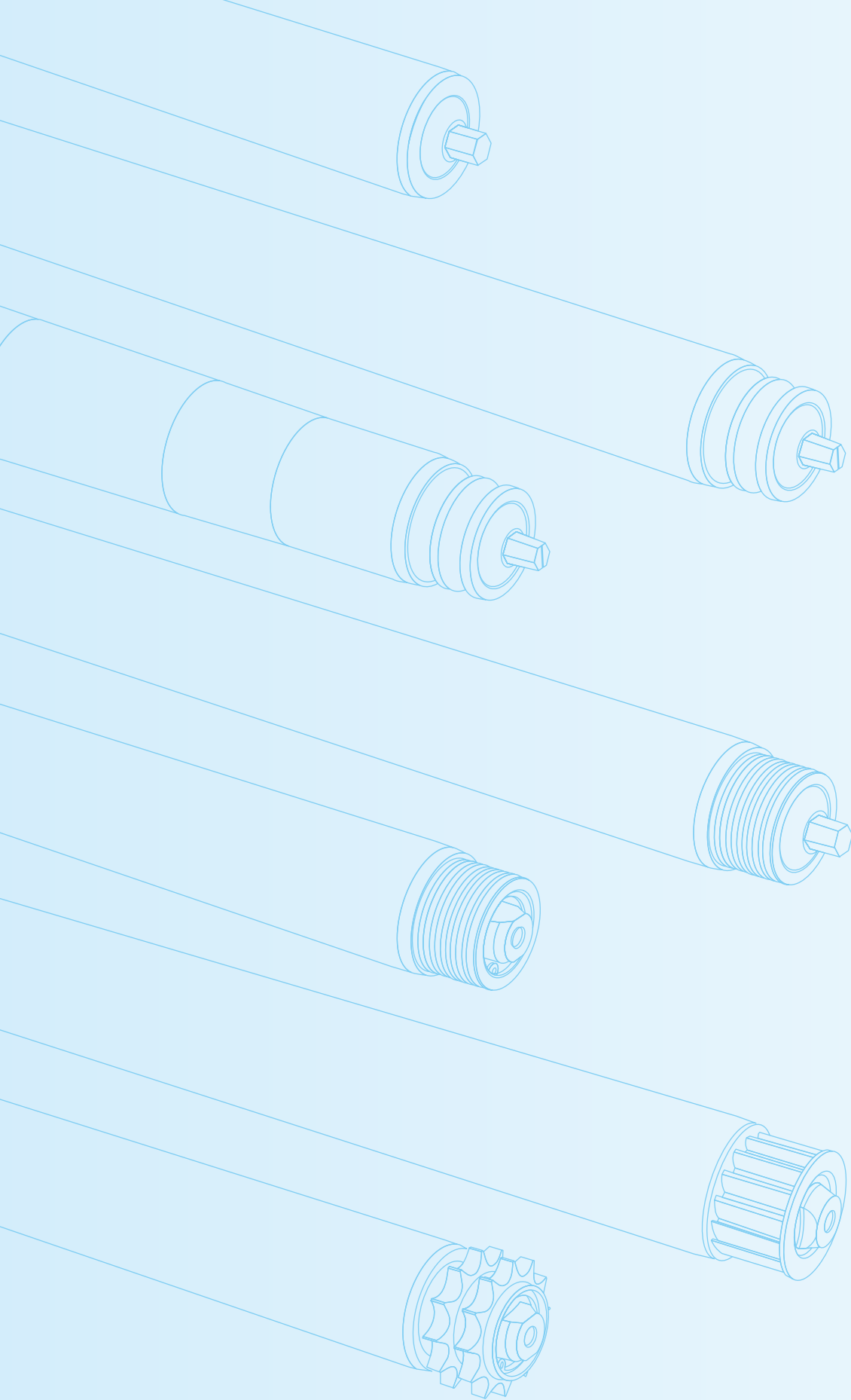
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About ZHAOWEI



Suzhou Zhaowei Industrial Technology Co.,Ltd. is a subsidiary of ZHAOWEI. It is committed to the field of intelligent transportation, providing customers with cost-effective DC electric roller modules. The company focuses on the R&D, design, and production of the core drive parts of intelligent transportation, specializes in the independent development of the entire industry chain. ZHAOWEI industrial DC power roller solutions mainly serve the automated transportation of goods in ecommerce, airports, pharmaceuticals, factories and other fields, aiming to improve operational efficiency and reduce logistics costs.

Shenzhen Zhaowei Machinery & Electronics Co.,Ltd is a micro-drive system manufacturer that designs, develops and manufactures precision transmission systems. ZHAOWEI was listed on the Shenzhen Stock Exchange in 2020. Headquartered in the beautiful coastal city of Shenzhen, we have established branches and offices in Dongguan, Suzhou, HongKong, Germany, Shanghai, and the United States, strategically expanding Zhaowei global presence.



National Enterprise
Technology Center



Individual Championship
For National Manufacturing Industry



Micro drive Industry
China Industry Awards (CIA)



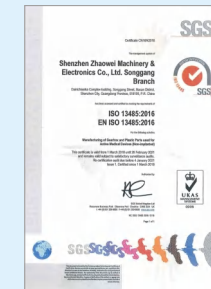
China Patent Award
Outstanding Award

Quality Managemnt System

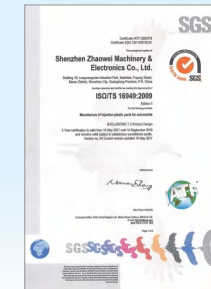
- The management system of Zhaowei serves as the core component of the enterprise's operational framework. All Zhaowei employees strictly adhere to the ISO management system, ensuring that every process—from product design and research & development (R&D) to manufacturing—is conducted in strict compliance with the established system standards.
- We are committed to controlling product risks to enhance reliability under harsh and demanding environmental conditions.
- Our mission is to provide clients with innovative products tailored to their needs.

Product
Certification

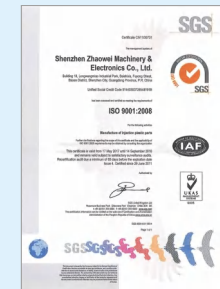
CE RoHS Ex



ISO13485 (CN18/42018)



IATF16949 (CN11/30730.01)



ISO9001:2015 (CN11/30731)



ISO14001 (U006616E0153R3M)

Award and Honors

700+

Intellectual Property Applied

150+
Patent for
Invention Applied

72+
Enterprise
Trademark

42+
Software
Copyright

24+
PCT



01 National Enterprise
Technology Center

02 Individual Championship For
National Manufacturing Industry

03 National Science and
Technology Award
Second Prize

04 Guangdong Science and
Technology Award Top Prize

05 National Intellectual Property
Advantageous Enterprise

06 Science and Technology of
China's Machinery Industry
Grand Prize

07 Shenzhen Engineering
Technology Research Center

08 Robot Industry in Guangdong
Backbone Enterprise

09 China Patent Award
Excellence Award

10 China Grand Awards for
Industry Commendation Award

11 Strategic Emerging Industries
Seed Enterprise

12 China Good Design (CGD)
Gold Award



Power Roller Model Number Description

No.	Z	W	G	T	2	4	5	0	-	0	3	0	0	-	1	0	8	-	C	1	-	A	0	-	P	1	-	T	1	-	H	1
ZHAOWEI																																
Conveying Field																																
Product Type R / S / Q / A / B / T																																
Rated Voltage 24: 24V、48: 48V、AC: 220V AC、AD: 380V AC																																
Diameter(mm) Φ50 / Φ60 / Φ76 / Φ80 / Φ89																																
RL Roll Surface Length 250~1500 mm(RL)																																
Ratio 5 / 7 / 13 / 18 / 24 / 25 / 30 / 42 / 54 / 65 / 72 / 78 / 90 / 96 / 108																																
Rated Output Power C: Magnetic Coding、D: Hall、E: Non-inductive 1: 35W、2: 50W、3: 80W、4: 220W、5: 255W、6: 450W、7: 750W																																
Tube Material A: Carbon Steel (default galvanized)、B: 304 Stainless Steel、F: 201 Stainless Steel 0: No treatment、1: Knurling、2: Grooving、3: Drum shape、4: Cover with 2mm PVC、5: Cover with 5mm PVC、6: Cover with 2mm PU、7: Rubber coating、8: PP tapered sleeve、9: Roller shoulder guard (50~ 70mm/60~ 90mm/76~96mm)																																
Drive Mode Z: Direct-drive(Hex 11)、P: Poly-V、O:Round belt、N: Timing Belt、L: Single Sprocket(08B11T/08B14T/10A13T)、M: Cam U: Double Sprocket(10B17T)、Y: Double Sprocket(10B19T)、W: Double Sprocket(10B21T)、X: (Non-standard) 1: Plastic、2: Carbon steel metal galvanized、3: Carbon steel metal blackened、4: Stainless steel metal、5: Aluminum alloy、6: Powder metallurgy、7: Carbon steel metal chromed																																
Power End Installation Options T1: M12*HEX、T2: HEX11、T3: Double D、T4: Fixed hexagonal shaft、TX: Customized																																
Drive End Installation Options H: Galvanized Carbon Steel、K: Stainless Steel、M: Carbon Steel Black Oxide 1: Spring return Hex11、2: Fixed Hex11、3: M8 female thread、4: M10 female thread (60MM)、5: M12 female thread (76MM)、6: Double D																																

Example: ZWGR2450-520-18-C3-B0-P1-T1-H1

ZWG: SUZHOU ZHAOWEI、R: Standard products、24:24V DC、50:Dia.50mm、520: RL520mm、18: Ratio 18、C3:Rated Output Power 80W、Magnetic Coding、B: SUS304、P1: PolyVee Belt Drive Mode、T1: M12*HEX-Power End Installation、H1: Drive End Installation-Spring return HEX11

Drive Controller Model Number Description

No.	Z	W	G	2	4	-	C	3	-	P	1	-	A	1
SUZHOU ZHAOWEI														
Supply Voltage 24: 24V、48: 48V、AC: 220V AC、AD: 380V AC														
Drive Mode C:Magnetic Coding、D: Hall、E: Non-inductive														
Power 1: 35W、2: 50W、3: 80W、4: 220W、5: 450W、6: 750W														
Protection Class N: IP20、P: IP66														
Number of Driveable 1: 1V1、2: 1V2、4: 1V4														
Communication A: Manual speed control、B: IO、C: RS485、D: Pronet、F: Ethercat、G: Ethernet、H: Modbus(Can) 0: None、1: Digital PNP、2: Digital NPN、3: Analog PNP、4: Analog NPN														

Example: ZWG24-C3-N1-B1

ZWG: SUZHOU ZHAOWEI PRODUCT、24: 24V Power Supply、C3: Magnetic Coding 80W、N1: IP20/1V1、B1: IO-Digital PNP

Box Conveying Power Roller Series

Intelligent Conveying Solution

ZHAOWEI Group has launched a new power roller platform ZWG, using self-developed high-performance gearboxes, micromotors and controllers to bring customers stable and efficient power roller solutions. Moreover, ZHAOWEI R&D integrates R&D, design and sales, which effectively address conveying needs.



Box Conveying Power Roller

Zhaowei Industry is a global manufacturer of advanced micro drive solution, specializing in the research and development as well as production of miniature and electric rollers and precision reducers. ZWG products contribute to the transformation and upgrading of the Intralogistics and production automation of enterprises.



Drive Controller :

ZWG offers a wide range of drive controllers to satisfy customers' diverse application scenarios.

High-Load Conveying

ZWG Products adopt self-developed tensioning sleeve

- 50mm Metal Tensioning Structure >150N.m
- 60mm Metal Tensioning Structure >180N.m
- 76/80/89mm Metal Tensioning Structure >300N.m

Chinese Utility Model Patent Number: ZL2023202977237

Installation and Control

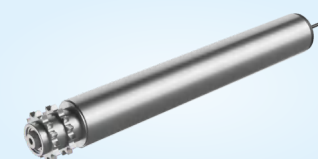
- Diversity and flexibility, widely compatible with common conveyor lines.
- All-in-one integration. Easy to assemble & disassemble.

Efficiency Conveying

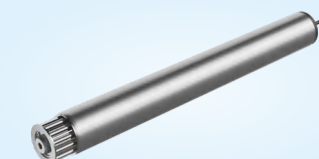
- Inner gear parts of the gear box are processed by high-precision technology, and the unipolar efficiency reaches more than 97%.
- Product efficiency is achieved at a leading global level.
- More power options: 10W - 250W
- Motor design life improved: from 20K+ hours to 30K+ hours.

ZWG Power Roller Quick View

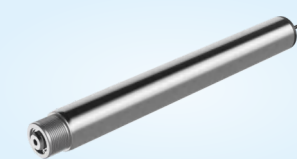
Power Roller Series



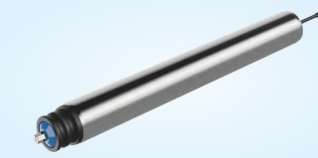
Dia 50, Cylinder
Temp. range -40 °C to 55 °C
Page 08



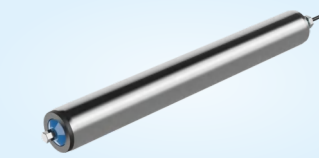
Dia 50, Cylinder
Temp. range -40 °C to 55 °C
Page 08



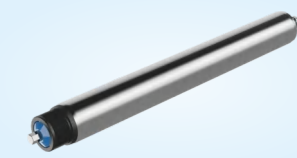
Dia 50, Cylinder
Temp. range -40 °C to 55 °C
Page 08



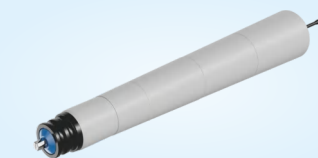
Dia 50, Cylinder
Temp. range -40 °C to 55 °C
Page 08



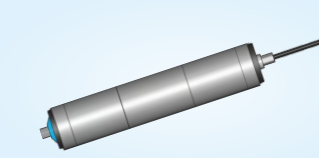
Dia 50, Cylinder
Temp. range -40 °C to 55 °C
Page 08



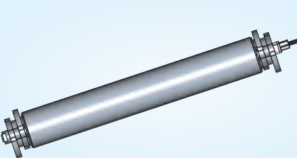
Dia 50, Cylinder
Temp. range -40 °C to 55 °C
Page 08



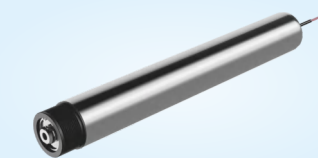
Dia 50, Cone
Temp. range -40 °C to 55 °C
Page 08



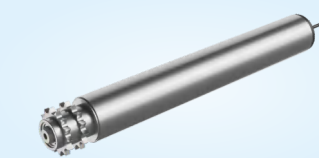
Dia 50, Drum
Temp. range --40 °C to 55 °C
Page 12



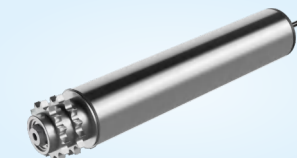
For right angle transfer, Cylinder
Temp. range -40 °C to 55 °C
Page 14



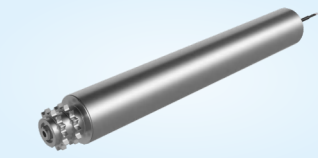
Dia 60, Cylinder
Temp. range -40 °C to 55 °C
Page 16



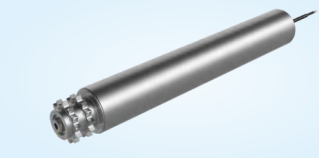
Dia 60, Cylinder
Temp. range -40 °C to 55 °C
Page 16



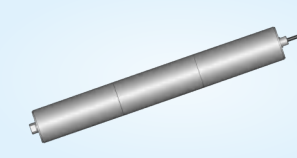
Dia 76, Cylinder
Temp. range -40 °C to 55 °C
Page 18



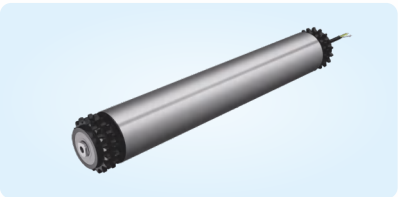
Dia 80, Cylinder
Temp. range -40 °C to 55 °C
Page 18



Dia 89, Cylinder
Temp. range -40 °C to 55 °C
Page 18



Dia 80, Drum
Temp. range -40 °C to 55 °C
Page 20



Power Roller-Driving Chain Machine
Temp. range -40 °C to 55 °C
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Drive Controller Series



φ 50 Drive Controller- Hall
Page 25



50 / 60 Drive Controller- IO
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Drive Controller- RS485
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Drive Controller- IP54
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φ 76/80/89 Drive Controller-IP54
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Drive Controller-250W Magnetic Encode
Page 30



Drive Controller-450W Magnetic Encode
Page 31



BUS Controller-IP66
Page 32



1 Drive 2 (External Motor Control) ECT
Bus Controller
Page 33



1 Drive 4 (Internal Motor Control) ECT
Bus Controller
Page 34



1 Drive 4 (Internal Motor Control) PN
Bus Controller
Page 35

Φ50mm Series



Applications

For box conveyor lines such as cartons, bins, platens or tires. Suitable for linear conveyors, small belt conveyors, especially zero pressure accumulation conveyors.Also for shuttle systems, mating conveyor sections or transplanters with other conveyors.

Performance Benefits

- ① **Energy-saving and Efficiency** : Based on the outstanding overall design, the efficiency of the whole power roller is higher than that of competing products.
- ② **Flexibility and Diversity** : Supports regular Poly-V, round belt and timing belt or sprockets. the motor and gearbox are optimized and upgraded with 11 speed ratios to be available to satisfy more application scenarios.
- ③ **Quiet** : Achieve a noise level (50dB) lower than that of competing products (55dB), ensuring the quietness and stability at the usage site.

Basic Parameter

Rated Voltage	24V			48V		
Rated Current (A)	2.2	3.1	4.5	1.1	1.5	2.3
Start-up Current (A)	5.5	7.8	11.3	2.8	3.8	5.8
Rated Power (W)	35	50	80	35	50	80
Maximum Noise	50dB					
Cable Length	500mm(Supports extension cables up to 2M)					
Protection Class	IP54/IP66					
Tube Material	Galvanized Steel, Stainless Steel					
Tube Size	φ50x1.5mm					
Shafts	M12 male thread hex , Hex 11 , Double D					
Operating Temperature	-40℃ ~ 55℃					

Φ50mm Performance Options Table

80 W

Speed Code	Ratio	Rated Output (rpm)	Rated Line Speed (m/s)	Rated Turque (N.m)	Start-up Turque (N.m)	Playload* (μ=0.05)KG
S1	5	1380	3.61	0.60	1.49	30
S2	7	986	2.58	0.84	2.09	40
S3	13	531	1.39	1.55	3.88	75
S4	18	383	1.00	2.10	5.24	100
S5	25	276	0.72	2.91	7.28	140
S6	30	230	0.60	3.49	8.73	170
S7	42	164	0.43	4.89	12.22	240
S8	65	106	0.28	7.35	14.71	360
S9	78	88	0.23	8.85	17.70	360
S10	90	77	0.20	10.21	18.00	360
S11	108	64	0.17	12.26	18.00	360

50 W

Speed Code	Ratio	Rated Output (rpm)	Rated Line Speed (m/s)	Rated Turque (N.m)	Start-up Turque (N.m)	Playload* (μ=0.05)KG
S1	5	1380	3.61	0.36	0.90	20
S2	7	986	2.58	0.49	1.23	30
S3	13	531	1.39	0.91	2.28	50
S4	18	383	1.00	1.27	3.18	70
S5	25	276	0.72	1.76	4.40	100
S6	30	230	0.60	2.13	5.33	115
S7	42	164	0.43	2.96	7.40	160
S8	65	106	0.28	4.58	11.45	250
S9	78	88	0.23	5.07	12.68	275
S10	90	77	0.20	5.89	14.73	320
S11	108	64	0.17	7.07	17.68	360

*The drive loads are reference values, the exact values need to be calculated in conjunction with the actual application.

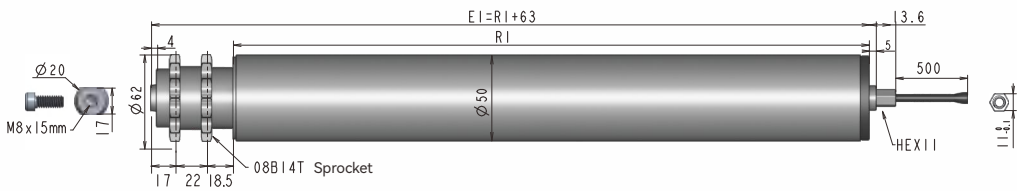
35 W

Speed Code	Ratio	Rated Output (rpm)	Rated Line Speed (m/s)	Rated Turque (N.m)	Start-up Turque (N.m)	Playload* (μ=0.05)KG
S1	5	1380	3.61	0.26	0.65	10
S2	7	986	2.58	0.34	0.85	15
S3	13	531	1.39	0.64	1.60	35
S4	18	383	1.00	0.89	2.23	50
S5	25	276	0.72	1.24	3.10	70
S6	30	230	0.60	1.49	3.73	80
S7	42	164	0.43	2.07	5.18	110
S8	65	106	0.28	2.95	7.38	160
S9	78	88	0.23	3.55	8.88	200
S10	90	77	0.20	4.10	10.25	220
S11	108	64	0.17	4.95	12.38	270

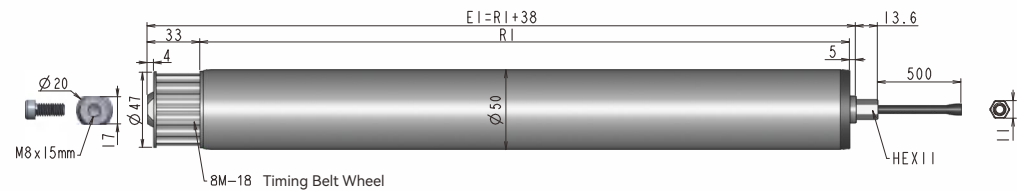
*The drive loads are reference values, the exact values need to be calculated in conjunction with the actual application.

Φ50mm Series External Dimensions

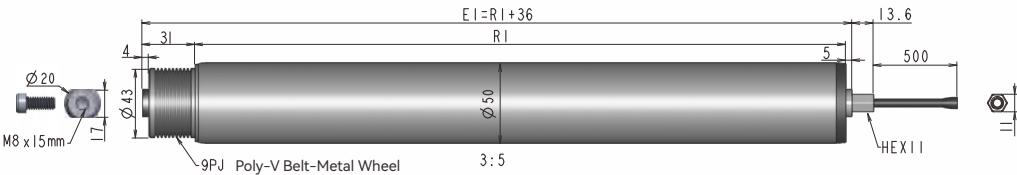
L: Sprocket



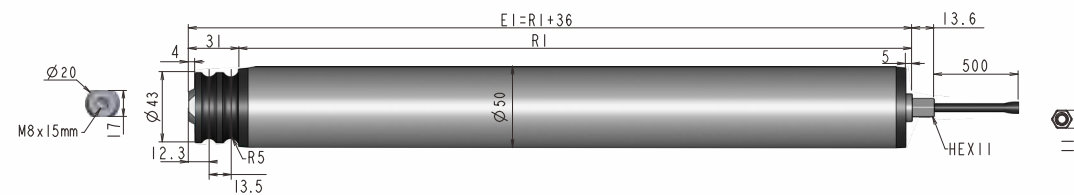
N: Timing Belt



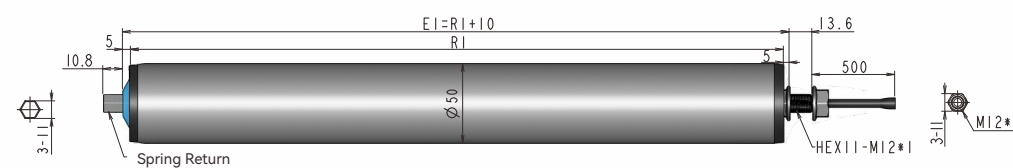
M: Poly-V Belt Drive-Metal Wheel



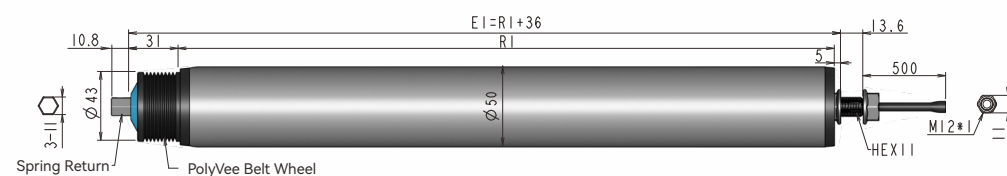
O: Rong Belt



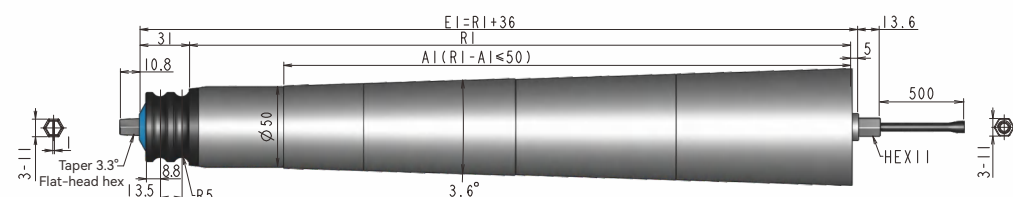
Z: Direct-Drive Hex11



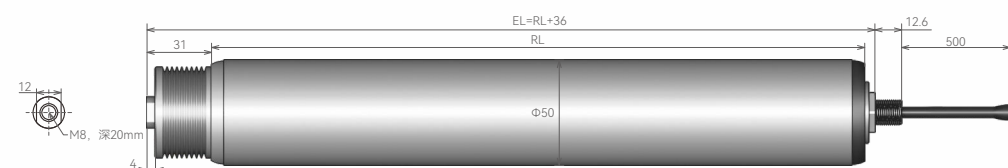
P: PolyVee Belt



Tapered:



IP66:



Tapered Reference Dimensions

Length	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
Min. Dia.	52.5	55.6	52.5	55.6	52.5	55.6	52.5	55.6	52.5	55.6	52.5	55.6	52.5	55.6	52.5
Max. Dia.	71.2	77.6	77.6	84.0	84.0	90.4	90.4	96.8	96.8	103.2	103.2	109.9	109.9	116.0	116.0

Φ50mm Drum Series



Applications

Application for small and medium-sized belt conveyors with 50-diameter drum Power Roller. Flexible and efficient in bulk lines with irregular sizes of goods

Performance Benefits

- ① **Energy-saving and Efficiency** : Based on the outstanding overall design, the efficiency of the whole power roller is higher than that of competing products.
- ② **Drum**: Drum-shaped steel tube design ensures belt tension and friction for precise and stable conveying.
- ③ **Flexibility**: Motor and gearbox are optimized and upgraded with 11 speed ratios to be available to satisfy more application scenarios.
- ④ **Quiet** : Achieve a noise level (50dB) lower than that of competing products (55dB), ensuring the quietness and stability at the usage site.

Basic Parameter

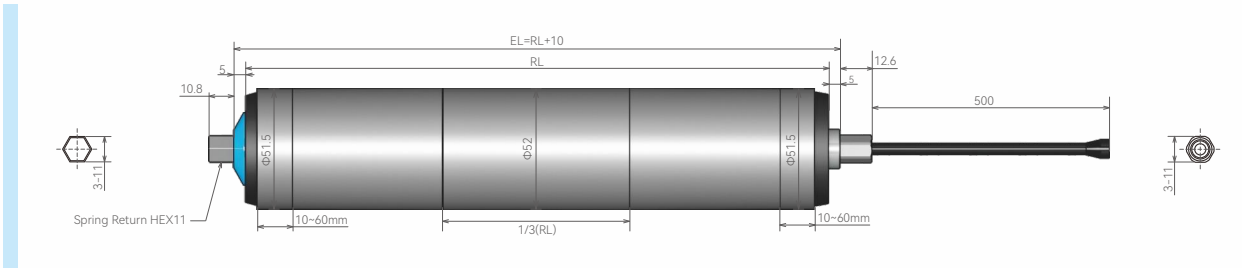
Rated Voltage	24V			48V		
Rated Current (A)	2.2	3.1	4.5	1.1	1.5	2.3
Start-up Current (A)	5.5	7.8	11.3	2.8	3.8	5.8
Rated Power (W)	35	50	80	35	50	80
Maximum Noise	50dB					
Cable Length	1m(Supports extension cables up to 1m)					
Protection Class	IP54/IP66					
Tube Material	Galvanized Steel, Stainless Steel					
Tube Size	φ52x2.5mm					
Shafts	M12 male thread hex , Hex 11 , Double D					
Operating Temperature	-40℃ ~ 55℃					

Φ50mm Drum Series Performance Options Table

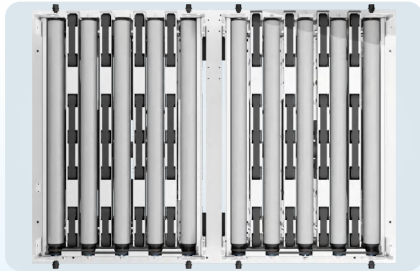
80 W					
Speed Code	Ratio	Rated Output (rpm)	Rated Line Speed (m/s)	Rated Turque (N.m)	Start-up Turque (N.m)
S1	5	1380	3.75	0.56	1.39
S2	7	986	2.68	0.84	2.09
S3	13	531	1.45	1.55	3.88
S4	18	383	1.04	2.01	5.01
S5	25	276	0.75	2.91	7.28
S6	30	230	0.62	3.49	8.36
S7	42	164	0.45	4.89	12.22
S8	65	106	0.29	7.35	18.05
S9	78	88	0.24	8.85	17.7
S10	90	76	0.21	10.03	25.07
S11	108	63	0.18	12.03	30.09

50 W					
Speed Code	Ratio	Rated Output (rpm)	Rated Line Speed (m/s)	Rated Turque (N.m)	Start-up Turque (N.m)
S1	5	1380	3.75	0.36	0.9
S2	7	986	2.68	0.49	1.23
S3	13	531	1.45	0.91	2.28
S4	18	383	1.04	1.27	3.18
S5	25	276	0.75	1.76	4.4
S6	30	230	0.62	2.13	5.33
S7	42	164	0.45	2.96	7.4
S8	65	106	0.29	4.58	11.45
S9	78	88	0.24	5.07	12.68
S10	90	76	0.21	5.89	14.73
S11	108	63	0.18	7.07	17.68

Φ50mm Drum Series External Dimensions



Power Roller-Right Angle Transfer



Applications

Suitable for box conveying, used in conjunction with jacking trans planters, capable of rotating 90° in a single stroke with precision. Efficient connection between different conveyor lines is realized.

Performance Benefits

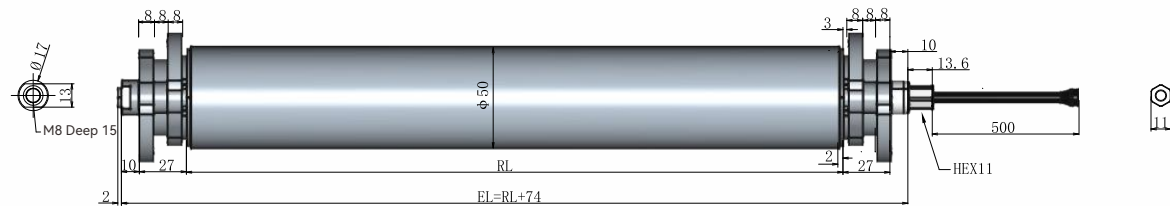
- ① **Efficient and precise:** Based on the double cam structure, it is able to rotate 90° in a single stroke, making the work rhythm fast and precise.
- ② **Smooth operation:** the design of the cam curve, the jacking process is smooth as silk, no shock bumps.
- ③ **Compact design:** the overall height of the transfer machine is effectively compressed to as low as 180mm, flexibly adapting to a variety of limited space transportation scenarios.
- ④ **Durable:** The cam material is oil-containing material, self-lubricating during operation, high stability in long-time operation and long service life.

Basic Parameter

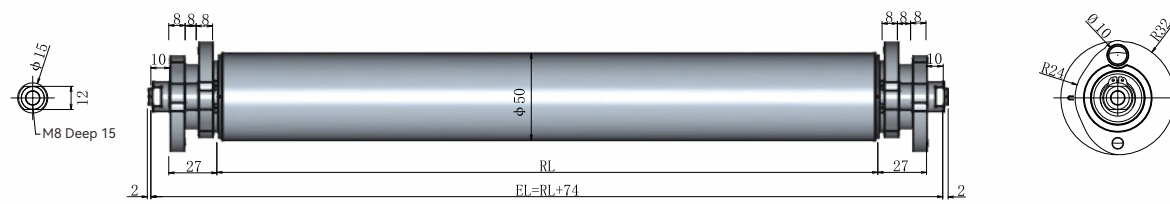
Rated Voltage	24V			48V		
Rated Current (A)	2.2	3.1	4.5	1.1	1.5	2.3
Start-up Current (A)	5.5	7.8	11.3	2.8	3.8	5.8
Rated Power (W)	35	50	80	35	50	80
Maximum Noise	50dB					
Cable Length	1m(Supports extension cables up to 1m)					
Protection Class	IP54					
Tube Material	Galvanized Steel, Stainless Steel					
Tube Size	φ50x1.5mm					
Shafts	Hex 11					
Operating Temperature	-40℃ ~ 55℃					

Power Roller-Right Angle Transfer Series External Dimensions

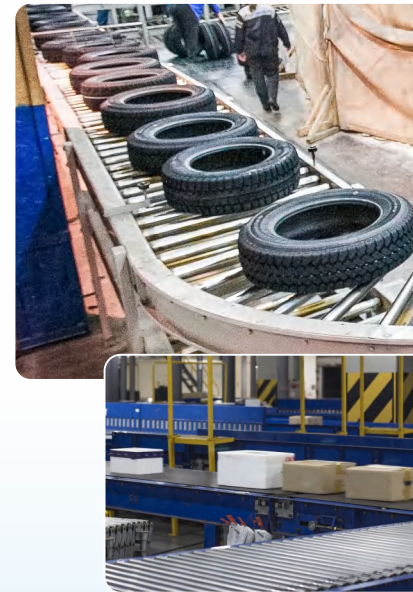
Power Roller



Free Roller



Φ60mm Series



Applications

Medium sized pallet conveyor with up to 600KG load. Industry excellence in white goods, truck tires, EV, and other areas of the industry.

Performance Benefits

- ① **Energy-saving and Efficiency** : Based on the outstanding overall design,the efficiency of the whole power roller is higher than that of competing products.
- ② **Similar Designs**: From the same platform as the ZWG 50mm RollerMotor,both 50mm and 60mm series can be controlled by the sametype of controller.
- ③ **Flexibility and Diversity**: Supports regular Poly-V, round belt and timing belt or sprockets. the motor and gearbox are optimized and upgraded with 11 speed ratios to be available to satisfy more application.
- ④ **Quiet**: Achieve a noise level (50dB) lower than that of competing products (55dB), ensuring the quietness and stability at the usage site.

Basic Parameter

Rated Voltage	24V			48V		
Rated Current (A)	2.2	3.1	4.5	1.1	1.5	2.3
Start-up Current (A)	5.5	7.8	11.3	2.8	3.8	5.8
Rated Power (W)	35	50	80	35	50	80
Maximum Noise	50dB					
Cable Length	500mm(Supports extension cables up to 2M)					
Protection Class	IP54/IP66					
Tube Material	Galvanized Steel, Stainless Steel					
Tube Size	φ60x2mm					
Shafts	M12 male thread hex , Hex 11 , Double D					
Operating Temperature	-40℃ ~ 55℃					

Φ60mm Series Performance Options Table

Speed Code	Ratio	Rated Output (rpm)	Rated Line Speed (m/s)	Rated Turque (N.m)	Start-up Turque (N.m)	Playload* (μ=0.05)KG
S1	5	1380	4.34	0.60	1.49	25
S2	7	986	3.10	0.84	2.09	35
S3	13	531	1.67	1.55	3.88	65
S4	18	383	1.20	2.10	5.24	85
S5	25	276	0.87	2.91	7.28	120
S6	30	230	0.72	3.49	8.73	145
S7	42	164	0.52	4.89	12.22	200
S8	65	106	0.33	7.35	14.71	300
S9	78	88	0.28	8.85	17.70	360
S10	90	77	0.24	10.21	18.00	420
S11	108	64	0.20	12.26	18.00	500

*The drive loads are reference values, the exact values need to be calculated in conjunction with the actual application.

Φ60mm Series External Dimensions



Φ76/80/89mm Series

Applications

Focused on pallet conveyor applications, it can support payloads up to 1500KG, making it easier to design and install drive pallet conveyors. The simple integrated design combined with low power consumption provides customers with efficient space and energy utilization solutions.



Performance Benefits

- ① **High Efficiency & Energy Saving:** Equipped with a 48V brushless motor combined with a high-performance gearbox, delivering higher efficiency and torque.
- ② **Flexibility:** Controller supports free speed regulation function, which can be used in conjunction with the electric roller to meet the customer's flexible trial needs.
- ③ **Quiet :** Achieve a noise level (50dB) lower than that of competing products (55dB), ensuring the quietness and stability at the usage site.
- ④ **Easy Installation:** Visually identical to idler roller, making installation more convenient.

Basic Parameter

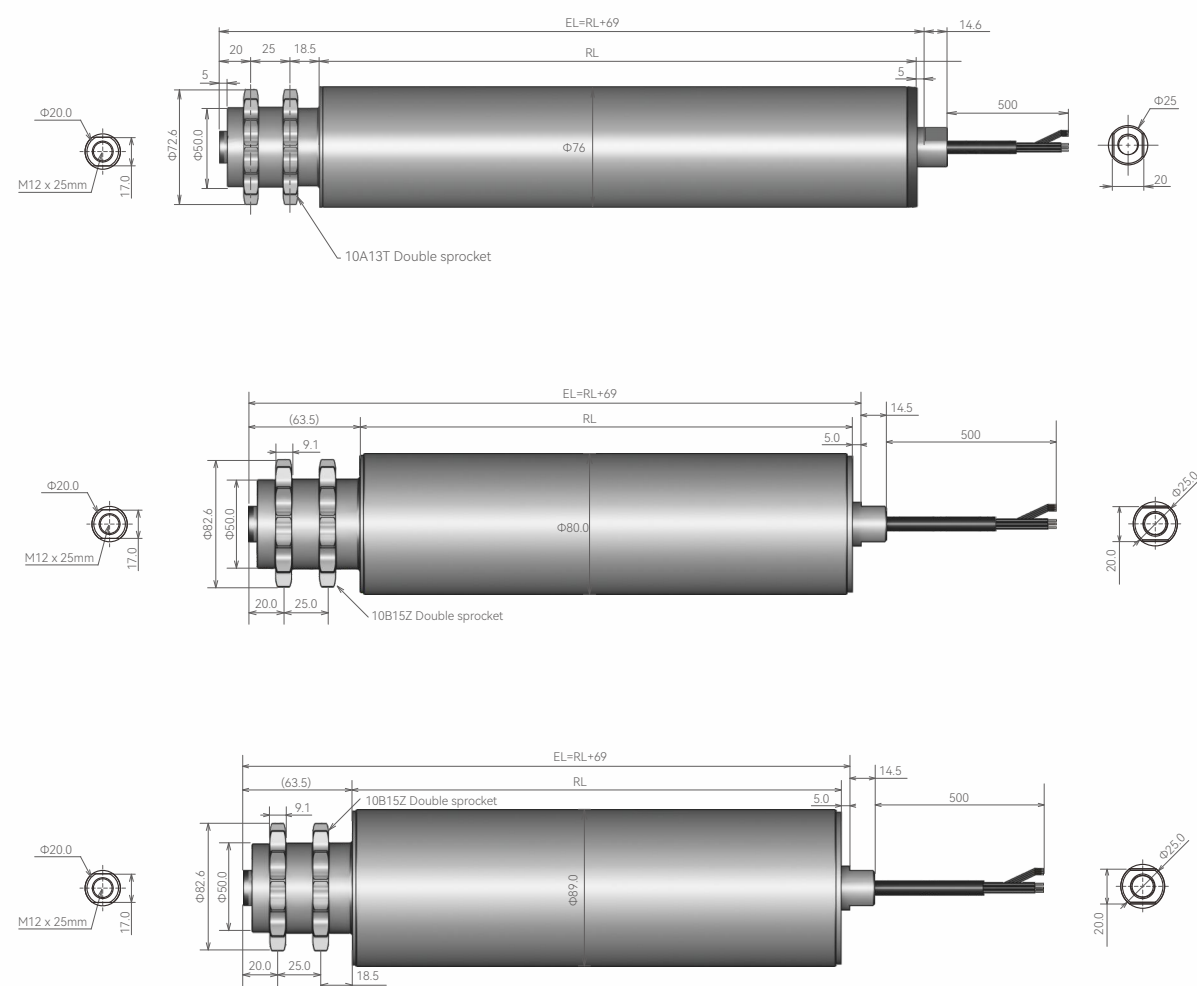
Rated Voltage	48V		
Rated Current (A)	6		
Start-up Current (A)	15.0		
Rated Power (W)	220		
Maximum Noise	50dB (1m)		
Cable Length	1m		
Protection Class	IP54/IP66		
Tube Material	Carbon Steel Galvanized, Carbon Steel Chrome Plated, Stainless Steel		
Tube Size	φ76x3mm	φ80x3mm	φ89x3mm
Shafts	Double D(φ25X20)		
Operating Temperature	-40℃ ~ 55℃		

Φ76/80/89mm Series Performance Options Table

Dia.	Speed Code	Ratio	Rated Output (rpm)	Rated Line Speed (m/s)	Rated Turque (N.m)	Start-up Turque (N.m)	Playload* (μ=0.05)KG
Φ76 (220W)	S1	17	265	1.05	8.48	21.21	350
	S2	70	64	0.26	34.2	85.6	1500
Φ80 (220W)	S1	17	265	1.11	8.48	21.21	333
	S2	70	64	0.27	34.2	85.6	1400
Φ89 (220W)	S1	17	265	1.23	8.48	21.21	284
	S2	70	64	0.3	34.2	85.6	1200

*The drive loads are reference values, the exact values need to be calculated in conjunction with the actual application.

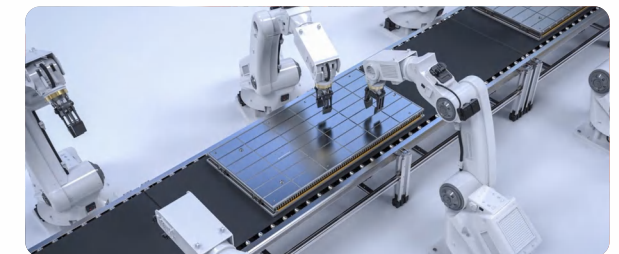
Φ76/80/89mm Series External Dimensions



Φ80mm Drum Power Roller Series

Applications

Application for large and medium-sized belt conveyors with 80-diameter drum power rollers. Flexible and efficient in bulk lines with irregular sizes of goods.



Performance Benefits

- ① **Energy-saving and Efficiency:** Based on the outstanding overall design, the efficiency of the whole power roller is higher than that of competing products.
- ② **Drum:** Drum-shaped steel tube design ensures belt tension and friction for precise and stable conveying.
- ③ **Flexibility:** Motor and gearbox are optimized and upgraded with 11 speed ratios to be available to satisfy more application scenarios.
- ④ **Quiet:** Achieve a noise level (50dB) lower than that of competing products (55dB), ensuring the quietness and stability at the usage site.

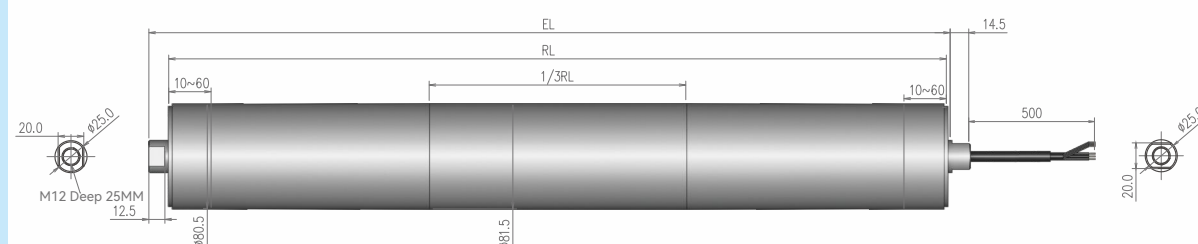
Basic Parameter

Rated Voltage	48V
Rated Current (A)	6
Start-up Current (A)	15.0
Rated Power (W)	220
Maximum Noise	50dB
Cable Length	500mm(Supports extension cables up to 2M)
Protection Class	IP54/IP66
Tube Material	Carbon Steel Galvanized, Carbon Steel Chrome Plated, Stainless Steel
Tube Size	φ81.5x3.75mm
Shafts	Double D(φ25X20)
Operating Temperature	-40°C ~ 55°C

Φ80 Drum Series Performance Options Table

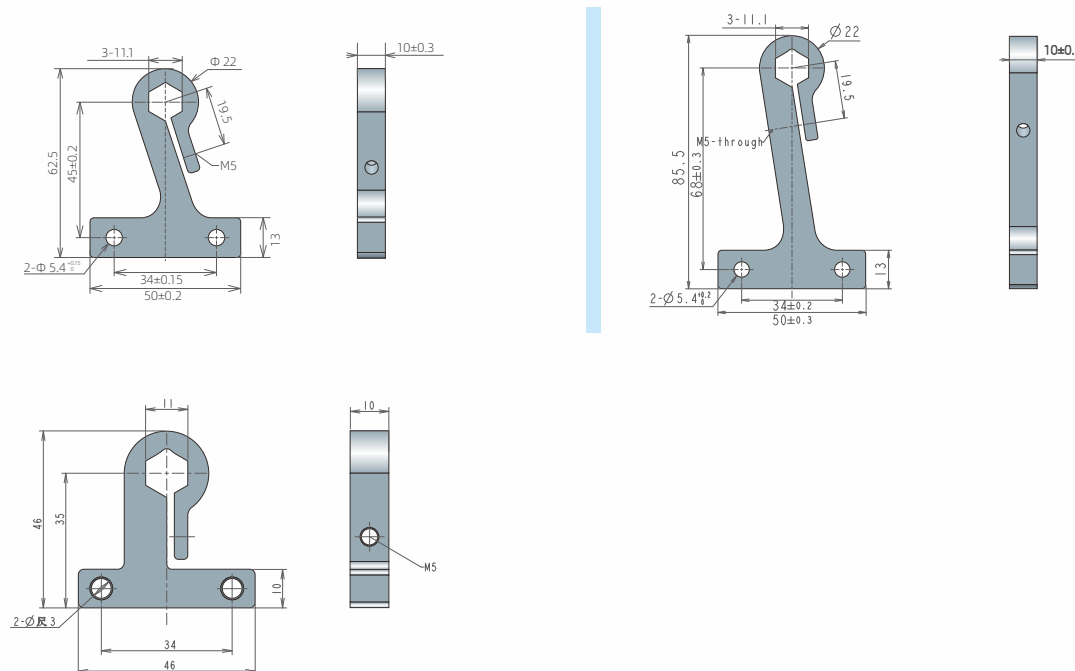
Speed Code	Ratio	Rated Output (rpm)	Rated Line Speed (m/s)	Rated Torque (N.m)	Start-up Torque (N.m)
S1	17	265	1.11	8.48	21.21
S2	70	64	0.27	34.2	85.6

Φ80 Drum Series External Dimensions

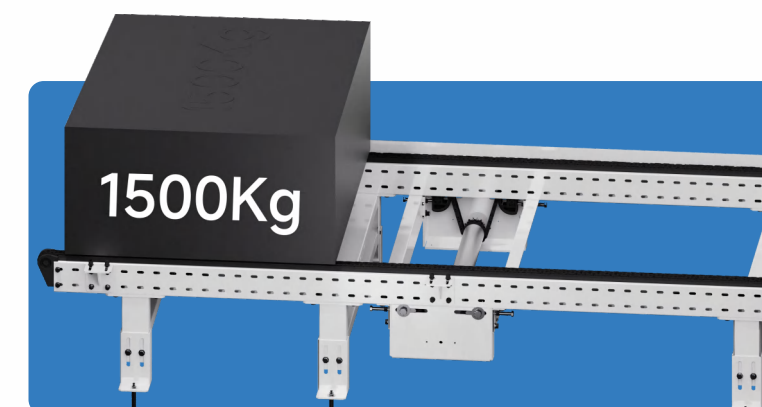


Fixed Accessories

We also provide our customers with fixed accessories to assist in the installation of power roller, which are used to hold the roller in place if the nut cannot be installed.



Power Roller-Driving Chain Machine



Applications

Double sprocket structure design at both ends, with the use of chain machine, suitable for pallet conveying, can realize heavy-duty cargo conveyance.

Performance Benefits

- ① **Space-saving Quick Installation:** Highly integrated design with no redundant structure ensures easy and time-saving installation, while reducing equipment height and saving space layout.
- ② **Zero Maintenance Efficiency:** The power roller requires no lubrication or maintenance, combined with Class 1 energy efficiency design, significantly reducing long-term maintenance and energy costs.
- ③ **Low Noise & High Load Capacity:** Noise level below 50dB, maximum load capacity up to 1.5T.
- ④ **Durability:** Designed for low-speed heavy-load, high-temperature, oil/water exposure, and low-temperature cold chain (IP66 protection) conditions, ensuring reliability and service life in complex working environments.
- ⑤ **Intelligent Precision Control:** Supports constant speed/fixed speed/stepless speed regulation; equipped with high-precision braking and magnetic encoder semi-servo control for precise start-stop.

Basic Parameter

Rated Voltage	48V		
Rated Current (A)	12		
Start-up Current (A)	25		
Rated Power (W)	450		
Maximum Noise	55dB		
Cable Length	1000mm (Supports extension cables can up to 2M)		
Protection Class	IP66		
Tube Material	Carbon Steel Galvanized, Stainless Steel		
Tube Size	φ76x3mm	φ80x3mm	φ89x3mm
Shafts	φ25*20mm(Cable Outlet End)、M12 Thread(Drive End)		
Operating Temperature	-40℃ ~ 55℃		

Dimension

Φ76mm

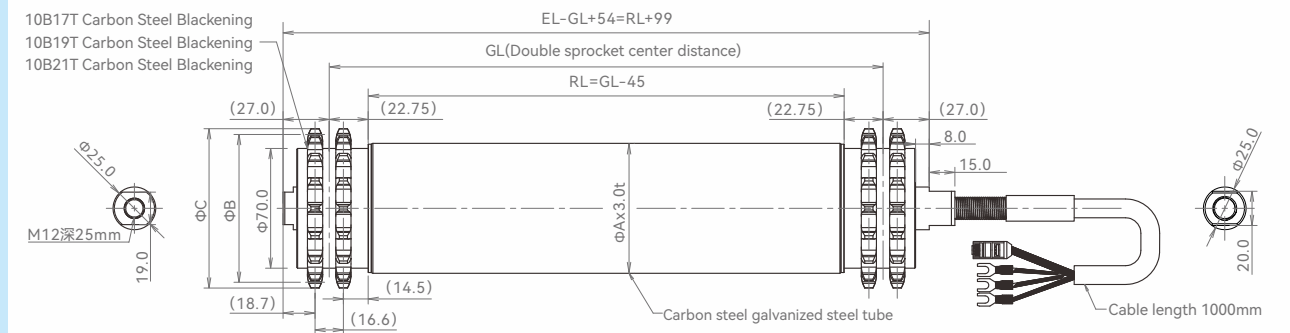
Power	Ratio	Rated Output (rpm)	Rated Output Speed (m/min)	Rated Torque (N.m)	Voltage 48V Max.current(A)	Start-up Current (A)
220W	17	264.71	63.21	8.48	6.00	12
	70	64.29	15.35	34.20	6.00	12
255W	18	300.00	71.64	8.98	7.00	14
	24	225.00	53.73	11.73	7.00	14
	54	100.00	23.88	26.94	7.00	14
	72	75.00	17.91	35.18	7.00	14
	96	56.25	13.43	47.89	7.00	14
	54	92.59	22.11	50.87	12.27	24
450W	72	69.44	16.58	67.82	12.27	24
	96	52.08	12.44	90.43	12.27	24

Φ80mm

Power	Ratio	Rated Output (rpm)	Rated Output Speed (m/min)	Rated Torque (N.m)	Voltage 48V Max.current(A)	Start-up Current (A)
220W	17	264.71	66.54	8.48	6.00	12
	70	64.29	16.16	34.20	6.00	12
255W	18	300.00	71.64	8.98	7.00	14
	24	225.00	53.73	11.73	7.00	14
	54	100.00	23.88	26.94	7.00	14
	72	75.00	17.90	35.18	7.00	14
	96	56.25	13.43	47.89	7.00	14
	54	92.59	22.11	50.87	12.27	24
450W	72	69.44	16.58	67.82	12.27	24
	96	52.08	12.44	90.43	12.27	24

Φ89mm

Power	Ratio	Rated Output (rpm)	Rated Output Speed (m/min)	Rated Torque (N.m)	Voltage 48V Max.current(A)	Start-up Current (A)
220W	17	264.71	74.02	8.48	6.00	12
	70	64.29	17.98	34.20	6.00	12
255W	18	300.00	83.89	8.98	7.00	14
	24	225.00	62.92	11.73	7.00	14
	54	100.00	27.96	26.94	7.00	14
	72	75.00	20.97	35.18	7.00	14
	96	56.25	15.73	47.89	7.00	14
	54	92.59	25.89	50.87	12.27	24
450W	72	69.44	19.42	67.82	12.27	24
	96	52.08	14.56	90.43	12.27	24



Φ50 Drive Controller – Hall

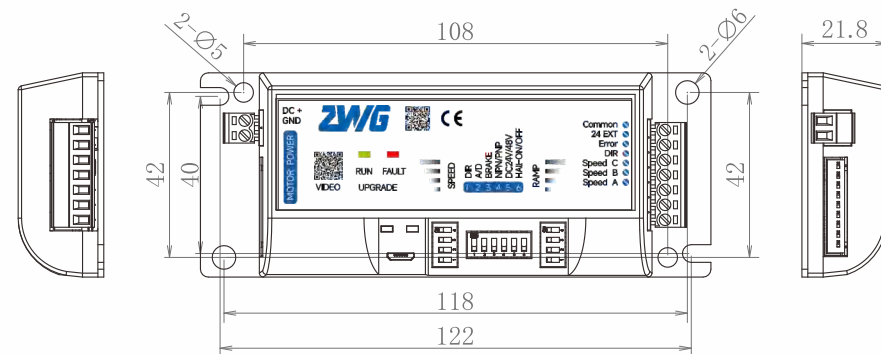


Feature

1. Speed Closed-Loop Control
2. 15-Speed DIP Switch Adjustment
3. Stepless Speed Control(2.3~10VAnalogInput)
4. 4-Step Digital Speed Preset
5. 15-StepAccel/Decel Time Adjustment
6. 2-Wire Forward/Reverse Operation
7. Sensorless Operation Support
8. Electronic Brake(Switchable via DIP: Servo/Brake Mode)
9. Dual LED Status Indicators
10. Fault Signal Output
11. Built-In Braking Resistor (Zero-Pressure Release)
12. PNP/NPN Switchable IO Inputs
13. 24V/48VQuick Voltage Switching
14. Speed Priority Hierarchy: DIP Switch > Analog Input > Digital Preset

The IO drive controller features two sets of dip switches, enabling the setting of 15 speed levels with distinct start/stop ramp acceleration and deceleration for each level. It also provides digital inputs and outputs to receive control signals from external PLC.

Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	External drive (50 Power Roller)
Rated Input Voltage DC	Rated Voltage 24V: 20~26V DC
	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	IO
Protection Class	IP20
Operating Temp. Range	-40°C~55°C
Ambient Humidity	85% Below

50 / 60 Drive Controller– IO

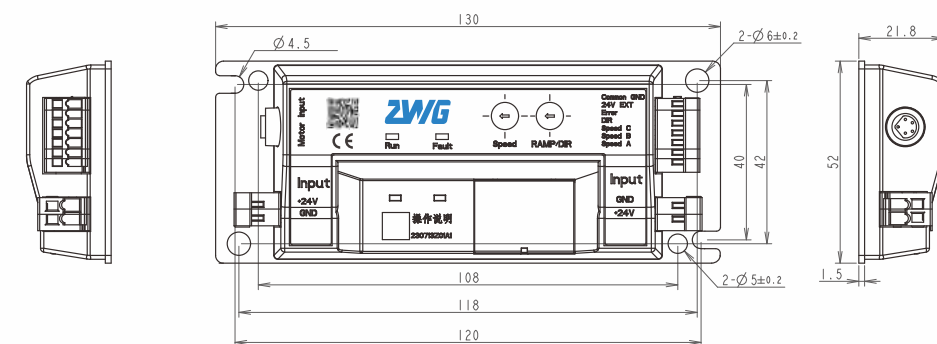


Feature

1. Speed Setting (Rotary switch code-15 gears, IO input-7 gears)
2. Rotation Direction Options(Rotary switchcode / IO Input)
3. Acceleration and Braking Ramp Adjustment
4. Switch between NPN and PNP
5. Switch between Digital to Analog
6. LED Light Status Indicator
7. Braking Resistor
8. RS485 Communication

The IO controller is equipped with 2 rotary code switches, which can be used to set the rotation direction, 8 different start-stop ramps, and 15 levels of speed. It also provides digital inputs and outputs, which can receive signals for external PLC control.

Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	Internal (50/60 Power Roller)/ external (76/80/89 Power Roller)
Rated Input Voltage	Rated Voltage 24V: 20~26V DC
	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	IO
Protection Class	IP20
Operating Temp. Range	-40°C~55°C
Ambient Humidity	85% Below

485 Drive Controller

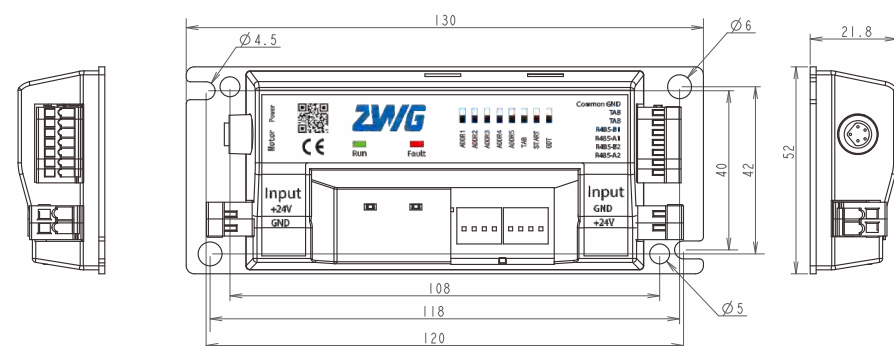


Feature

1. LED light status display
2. Support RS485 communication
3. Supports multiple controllers in series

The DIP switch supports 32 physical address configurations, features a 120Ω terminal resistor, enables offline debugging, and supports both RS-485 communication serial connection and NPN/PNP activation.

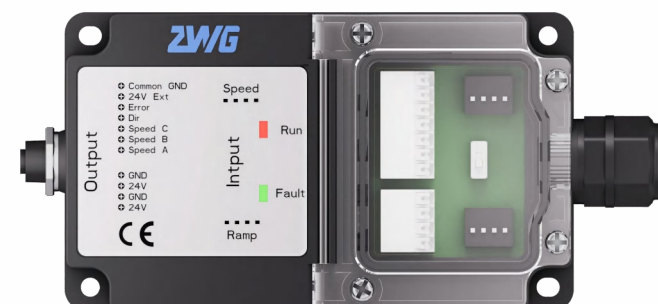
Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	Internal Drive (50/60 Power Roller) / External Drive (76/80/89 Power Roller)
Rated Input Voltage	Rated Voltage 24V: 20~26V DC
	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	IO
Protection Class	IP20
Operating Temp. Range	-40°C~55°C
Ambient Humidity	85% Below

Drive Controller – IP54

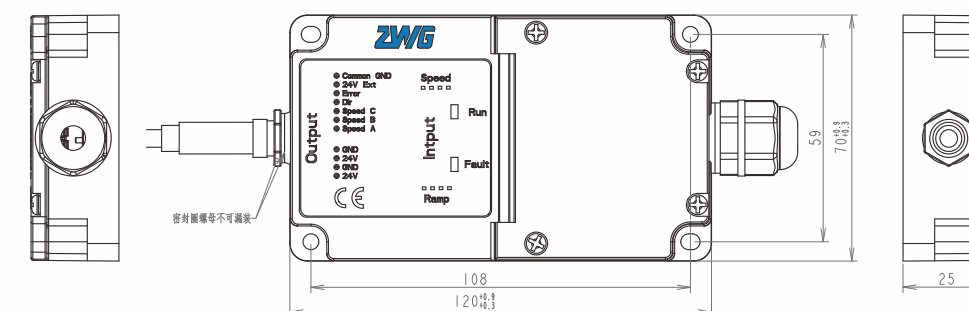


Feature

1. Speed Setting(DIP switch -15 gears, IO input-7 gears)
2. Rotation Direction Control (DIP switch / IO Input)
3. Acceleration and Braking Ramp Adjustment
4. LED Light Status Indicator
5. Braking Resistor

The IO controller has two DIP switches that are used to set the rotation direction, 8 different start-stop ramps, and 15 speed levels. It also provides digital inputs and outputs, which can receive signals for external PLC control. With an IP54 rating, it is suitable for humid or ultra-low temperature environments.

Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	Internal Drive(50/60 Power Roller)
Rated Input Voltage (DC)	Rated Voltage 24V: 20~26V DC
	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	IO
Protection Class	IP54
Operating Temp. Range	-40°C ~ 55°C
Ambient Humidity	85% Below

Φ76/80/89mm Drive Controller - IP54

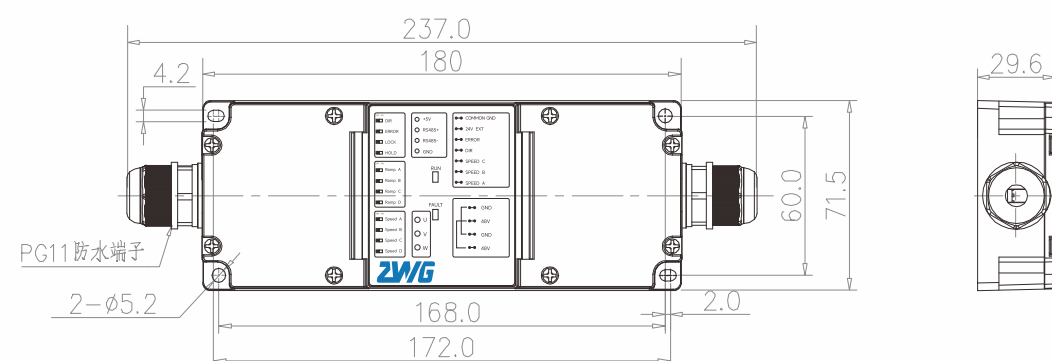


The IO controller features DIP code switches for setting rotation direction, 16 start-stop ramps, and 15 speed levels. With digital inputs/outputs, it accepts signals for external PLC control. Rated IP54, it suits humid environments or ultra-low temperature conditions.

Feature

1. Speed Setting(DIP switch-15 gears, IO input-7 gears)
2. Rotation Direction Control (DIP switch/ IO input)
3. Acceleration and Braking Ramp Adjustment
4. LED Light Status Indicator
5. Braking Resistor
6. E-brake activation
7. Switch between NPN and PNP
8. Switch between Digital and Analog

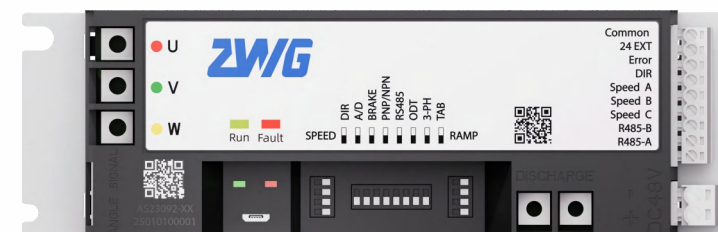
Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	Internal Drive (76/80/89 Power Roller)
Rated Input Voltage (DC)	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	IO
Protection Class	IP54
Operating Temp. Range	-40°C ~ 55°C
Ambient Humidity	85% Below

Drive Controller-250W Magnetic Encode

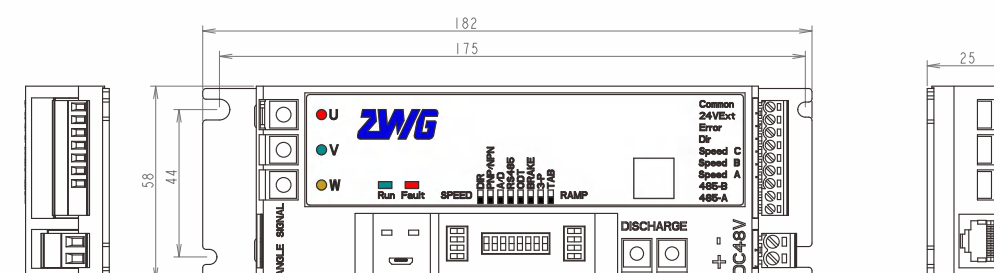


Feature

1. Speed Setting(DIP switch-15 gears, IO Input-7 gears)
2. Rotation Direction Control (IO input)
3. Acceleration and Braking Ramp Adjustment(8-step DIP switch)
4. LED Light Status Indicator
5. Braking Resistor

The IO controller features two DIP switches for setting 15 different start-stop ramps and 15 speed levels. It also provides digital inputs and outputs to receive signals for external PLC control.

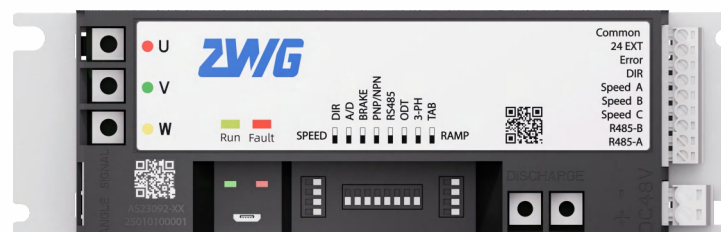
Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	Internal Drive (76/80/89 Power Roller)
Rated Input Voltage DC	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	IO
Protection Class	IP20
Operating Temp. Range	-40°C ~ 55°C
Ambient Humidity	85% Below

Drive Controller-450W Magnetic Encode

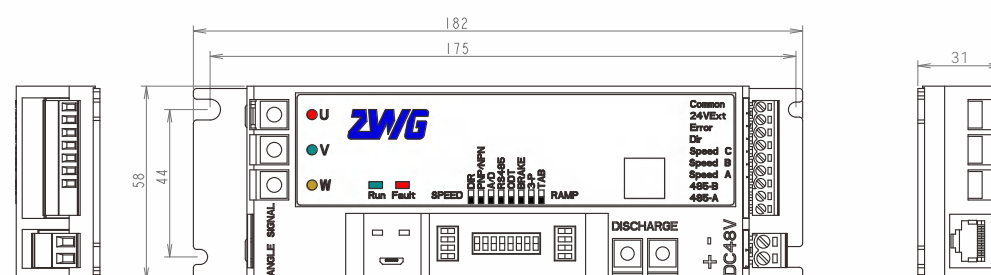


The IO controller is equipped with two DIP switches for setting 15 start-stop ramps and 15 speed levels. It provides digital inputs/outputs to accept control signals from external PLC.

Feature

1. Speed Closed-Loop Control
2. 15-Step DIP Switch Speed Adjustment
3. Stepless Speed Control via 2-10V Analog Input
4. 4-Step Digital Speed Preset
5. 8-Step Accel/Decel Time Adjustment
6. T2-Wire Forward/Reverse Operation
7. Electronic Brake Function
8. Dual LED Status Indicators
9. Fault Output Signal
10. PNP/NPN Switchable IO Inputs
11. 48V Power Supply(Withstands>60V)
12. Speed Priority Hierarchy:DIP Switch> Analog Input>Digital Preset
13. RS485 Communication
14. Sensorless Operation

Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	Internal Drive (76/80/89 Power Roller)
Rated Input Voltage DC	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	IO
Protection Class	IP20
Operating Temp. Range	-40~55°C
Ambient Humidity	85% Below

Bus Controller - IP66



Supports multiple communication protocols: PROFINET, EtherCat, and CANOPEN.

With separate power supply for control and power circuits, Power Roller enables safe shutdown while maintaining bus communication and sensor functionality.

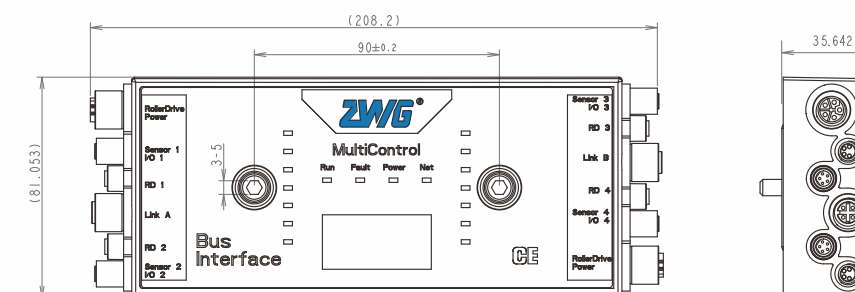
Addressing and naming can be configured via PLC software, and a teaching tool enables automatic addressing and configuration for all multi-function control cards.

Feature

Efficient & User-Friendly: A single control card seamlessly supports the Siemens PROFINET industrial communication protocol, enabling rapid integration and stable interconnection.

1. Separate power supply for Power Roller
2. Plug and use after replacement, no addressing or configuration required
3. LED Light Status Indicator for all function
4. Integrated logic for zero-pressure accumulation conveyance
5. Clamp voltage through braking chopper
6. Functional grounding connection of the shielding layer of the communication line
7. Reverse polarity protection for voltage supply
8. Short-circuit protection design for input and output voltage supply

Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	Internal Drive (50/60 Power Roller)
Rated Input Voltage DC	Rated Voltage 24V: 20~26V DC
Drive Communication Mode	IO
Protection Class	IP66
Operating Temp. Range	-40 ~ 55°C
Ambient Humidity	85% Below

1 Drive 2 (External Motor Control) ECT Bus Controller

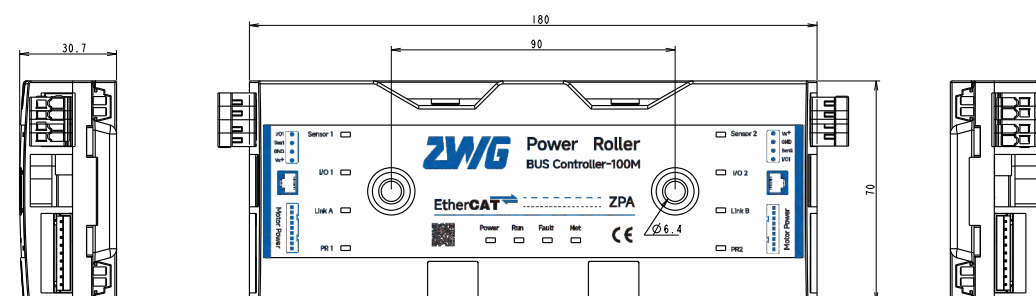


Supports EtherCAT communication and ZPA offline function. It allows for motor operation debugging without damaging the drive controller and motor drives. It is easy to use with one-stop configuration, No need to adjust parameters.

Feature

1. Plug and use after replacement, no addressing or configuration required
2. LED light status indicator for all function
3. Integrated logic for zero-pressure accumulation conveyance
4. Configuration via PLC, PC tools (Currently developed models of power roller)
5. Built-in 100M Ethernet switch
6. Clamp voltage through braking chopper
7. Functional grounding connection of the shielding layer of the communication line
8. Reverse polarity protection for input and output voltage supply
9. Speed closed-loop Control

Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	External Drive (50/60 Power Roller)
Rated Input Voltage DC	Rated Voltage 24V: 20~26V DC
	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	EtherCAT
Protection Class	IP20
Operating Temp. Range	-40°C~55°C
Ambient Humidity	85% Below

1 Drive 4 (Internal Motor Control) ECT Bus Controller



Supports EtherCAT communication and ZPA offline function.

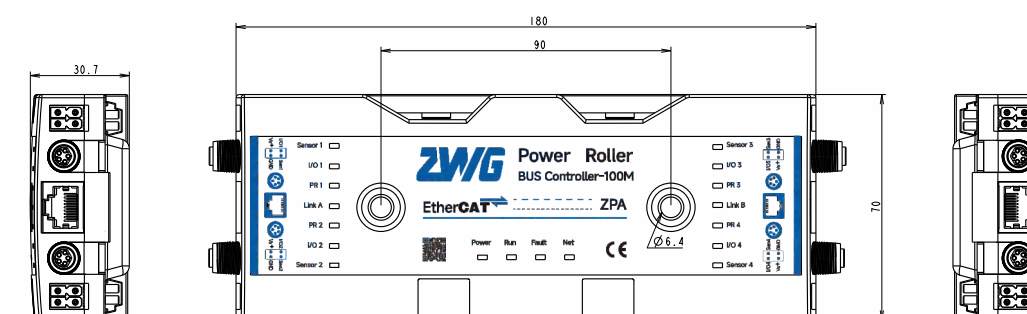
It can work without PLC control, and control the operation of the roller through photoelectric sensor signals.

The control circuit and power circuit are powered separately, enabling the power roller to be shut down safely while still allowing the use of bus communication and sensors.

Feature

1. Plug and use after replacement, no addressing or configuration required
2. LED light status indicator for all function
3. Integrated logic for zero-pressure accumulation conveyance
4. Configuration via PLC, PC tools (Currently developed models of power roller)
5. Built-in 100M Ethernet switch
6. Clamp voltage through braking chopper
7. Functional grounding connection of the shielding layer of the communication line
8. Reverse polarity protection for input and output voltage supply
9. Speed closed-loop Control

Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	External Drive (50/60 Power Roller)
Rated Input Voltage DC	Rated Voltage 24V: 20~26V DC
	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	EtherCAT
Protection Class	IP20
Operating Temp. Range	-40°C~55°C
Ambient Humidity	85% Below

1 Drive 4 (Internal Motor Control) PN Bus Controller



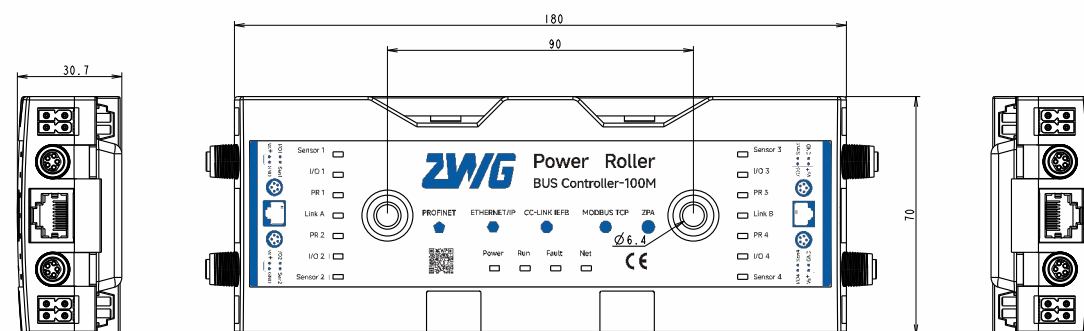
Supports PROFINET IO, EtherNet/IP, CC-Link IEFB, and Modbus TCP bus communication protocols. It can control up to 4 power rollers.

It supports offline operation with built-in ZPA logic. It allows for motor operation debugging without damaging the drive controller and motor drives.

Feature

1. Plug and use after replacement, no addressing or configuration required
2. LED light status indicator for all function
3. Integrated logic for zero-pressure accumulation conveyance
4. Configuration via PLC, PC tools (Currently developed models of power roller)
5. Built-in 100M Ethernet switch
6. Clamp voltage through braking chopper
7. Functional grounding connection of the shielding layer of the communication line
8. Reverse polarity protection for input and output voltage supply
9. Speed closed-loop Control

Drive Controller Dimension Drawing



Basic Parameters

Item	Specification
Drive Type	External Drive (50/60 Power Roller)
Rated Input Voltage DC	Rated Voltage 24V: 20~26V DC
	Rated Voltage 48V: 42~52V DC
Drive Communication Mode	PROFINET IO, EtherNet/IP, CC-Link IEFB, Modbus TCP
Protection Class	IP20
Operating Temp. Range	-40°C~55°C
Ambient Humidity	85% Below

Belt Conveying Power Roller Series

Product Overview

Zhaowei power roller series is a new-generation conveying component featuring an internally integrated brushless DC motor, gearbox, and electronic control system. Compared with traditional geared motors used in belt conveyors, it offers significant advantages: simple structure, easy installation, stepless speed regulation, and high operational efficiency. Built on a 50mm power roller platform, it is available with diverse roller surface treatments—including sleeved rubber, rubber coating, knurling, and tapered sleeves—to adapt to various application scenarios. With standard lengths of 300/400/500mm, it meets the requirements of most conveyor line setups, making it widely applicable in the packaging industry, assembly lines, automated manufacturing, and other industrial environments.

Product Feature

Speed Control

Enable speed regulation via the I/O interface. Through the external knob controller card, realize the function of direction change and infinitely variable speed regulation.

Constant Speed

Constant speed drive function can be achieved under rated load.

Rotation Control

Control the product forward and reverse by industrial controller or wiring.

Closed-Loop Control

Closed-loop speed control with high stability

Protection

Overload protection through built-in control

Model Number Description

ZWGA2450-300-34-C3-A1-Z1-T3-H6-01

ZWG: SUZHOU ZHAOWEI; A: Plastic Gear IP54; 2 4: 24V DC; 50: Dia. 50mm; 300: RL 300mm (Standard Length 300mm, 400mm, 500mm); 34: Ratio 34; C3: Rated Output Power 80W, Magnetic Code; A: Carbon steel knurled galvanized; Z: Hex11; T3: Double D; H6: Double D

Drive Controller Description

1. IO Interface

Dir reversing signal line: 0-24V high and low level to realize direction switching.

Speed signal line: 2-10V analog voltage speed regulation.

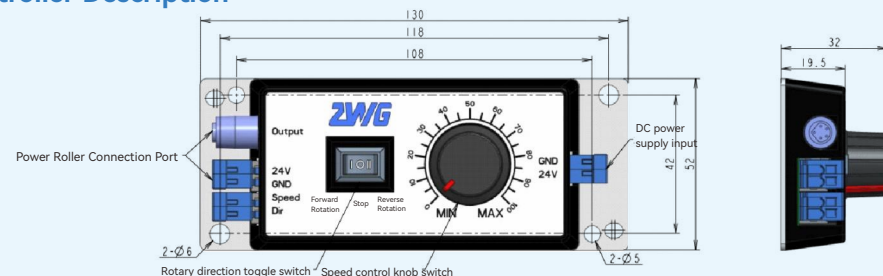
2. Function Coverage

Motor type: BLDC motor.

Working mode: constant speed operation, forward and reverse direction operation, infinitely variable speed regulation and other functions;

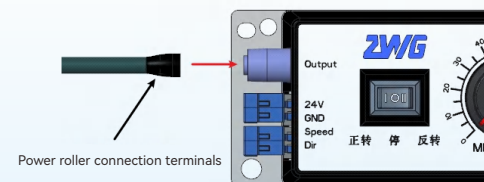
Fault protection: under-voltage, over-voltage, over-current, blocked rotation.

3. Controller Description

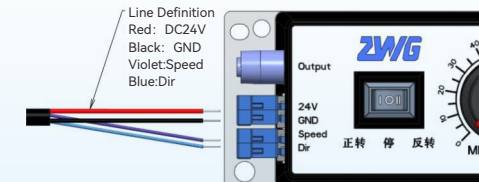


4. Wiring Instructions

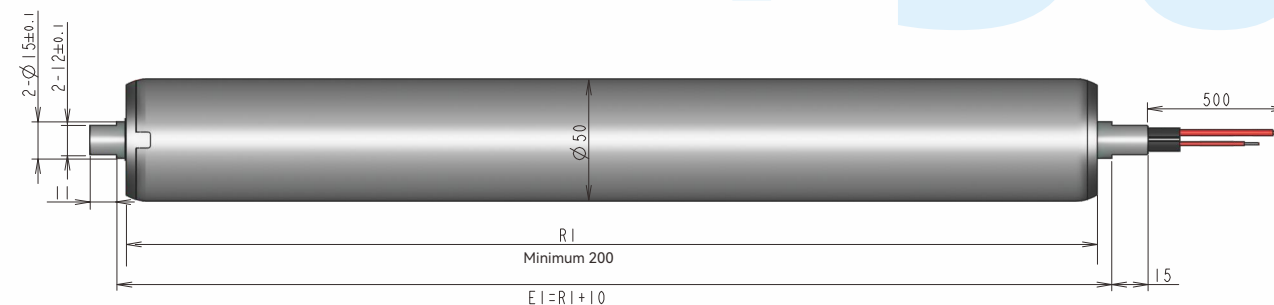
● Connector Terminal



● Discrete - wire Terminal



Φ50mm Series



Basic Parameters:

Rated Voltage: 24V

Rated Current: 4.5A

Start-up Current: 11A

Rated Power: 80W

Maximum Noise: 50dB

Cable Length: 500mm

Protection Class: IP54

Tube Materials: Galvanized steel

Tube Size: 50x1.5mm

Gluing Form: PVC 2mm, 5mm PU 2mm (TAB)

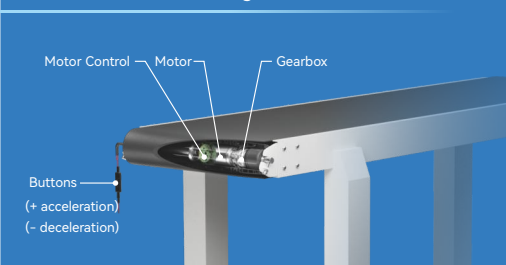
Tapered Option: Standard roller (plastic taper sleeve)

Shate: Double D

Operating Temp.: 0°C~40°C/-30°C~0°C

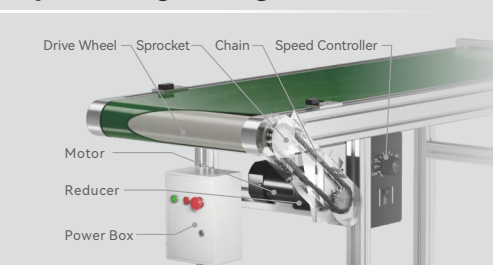
Advantages of Zhaowei Power Roller Compared to Traditional Speed-Regulating Motors

ZWG Belt Conveyor Power Roller



VS

Speed-Regulating Motors



✓ Compact Mechanism

All in one, integrates complex core components directly into the Power Roller.

Product Structure

✗ Complex Mechanisms

Assembled from a large motor, gearbox, chain wheel, free roller, protective cover, speed controller, and power supply.

✓ Easy Installation

Can be used with fixed brackets at both ends. Good sealing performance.

Installation

✗ Complex Installation

The product occupies a significant space with a bulky size, making assembly and debugging of multiple components challenging and not conducive to operation.

✓ Stepless Speed Regulation

Speed control can be connected for coordinated operation with automated equipment.

Speed Control

✗ Stepwise Speed Control

The drive settings are complex with four-speed steps: 20 Hz low speed, 30 Hz medium speed, 40 Hz high speed, and 50 Hz custom zable.

✓ High Efficiency

62%-70%, 24% high efficiency than traditional speed control motors (under the same load conditions).

Efficiency

✗ Low Efficiency

45%-50% Low precision within the multiple transmission components, leading to low efficiency.

Product Code:	RL mm	Ratio	Power W	Torque N.m	Rated rpm	Torque N.m	Starting Load (Kg)	Starting Current(A)	Line Speed m/min
ZWGA2450-0200-006-C3-A0-Z1-T3-H6	200	6	80	0.5	1205	1.2	6	≤11	189
ZWGA2450-0200-017-C3-A0-Z1-T3-H6		17	80	1.5	402	3.6	15	≤11	63
ZWGA2450-0200-034-C3-A0-Z1-T3-H6		34	80	2.9	201	7	30	≤11	31.5
ZWGA2450-0200-072-C3-A0-Z1-T3-H6		72	80	6.2	95	15	60	≤11	15
ZWGA2450-0200-102-C3-A0-Z1-T3-H6		102	80	8.7	67	22	80	≤11	10.5
ZWGA2450-0200-145-C3-A0-Z1-T3-H6		145	80	12.4	47	31	100	≤11	7.5