

# POWERROLLER

AM200



## ABOUT

Seaparks has adhered to a key principle: top quality, low price, energy saving, and high efficiency since established in 2002. Seaparks has specialized in innovative design and lean manufacturing of drum motors for over 20 years. More than one million “AMROLL” drum motors are operating well in various conveying equipment worldwide.

Our “AMROLL” drum motors have been exported to more than 40 countries and regions, and widely applied to the fields of airport baggage handling, security inspection machines, postal, parcel, food processing, pharmaceutical handling, warehousing and so on. Seaparks has become a truly world-class supplier of key power transmission components for the conveyor industry.

## CORPORATE MISSION

Focusing on the challenges and innovation requirements customers concerned

Providing competitive solutions and services for conveyor equipment transmission

Continuing to create maximum value for customers



## **Application area**

Designed for driving unit handling conveyor systems, such as transporting cartons, bins, containers, tires, or light pallets under normal ambient temperatures. Suitable for straight conveyors, curved conveyors, and especially zero-pressure accumulation conveyors. Widely applied in e-commerce, express delivery, supermarkets, footwear & apparel, food, pharmaceuticals, intelligent manufacturing and other fields.

## **Product Advantages**

### **Compact Design**

The motor and gearbox are integrated into the tube, enabling a more space-saving conveyor system design compared to traditional externally mounted drives.

### **Flexible Applications**

The AM200 series offers multiple models suitable for various conveyor systems. Depending on the application, power transmission can be achieved using PolyVee belts, sprockets, round belts, or timing belts. A full range of gear ratios allows optimal speed and torque matching.

### **Energy-Efficient Operation**

Equipped with a brushless DC permanent magnet synchronous motor, the AM200 delivers higher efficiency than traditional AC induction motors. Each power roller can be individually controlled, ensuring operation only when needed—enhancing energy savings.

### **Low Noise**

Precision-engineered gears and optimized motor design ensure quiet operation.

### **High Starting Torque**

Advanced control algorithms enhance static starting capability, supporting frequent start-stop cycles for broader conveyor applications.

### **Safe & Reliable**

Operates at a safe voltage of 24V or 48V DC.

### **Maintenance-Free & Easy Installation**

The AM200 is an oil-free roller requiring zero maintenance. Built-in overload protection prevents damage from overheating or blockages. A reliable pin-type quick-connect ensures effortless motor cable installation.

**Φ50mm, IP54, temperature range 0~40°C**

## Technical specifications

Rated voltage	24V DC		48V DC	
Power	35W	50W	35W	50W
Rated current	2.4A	3.4A	1.2A	1.7A
Starting current	5.5A	7.5A	2.8A	3.8A
Cable length	500mm			
Max. reference length	Cylindrical: 1500mm, Conical: 1100mm			
Ambient temperature	0~40°C			
Protection level	IP54			
Motor shaft	Stainless steel, 11mm HEX, Thread M12x1			
Anti-static	Yes(<10 <sup>6</sup> Ω)			
Tube diameter	50mm			
Tube wall thickness	1.5mm			
Tube material	Zinc-plated steel, stainless steel			
Tube sleeving	PVC tube sleeve 2mm, 5mm PU tube sleeve 2mm Lagging 2 to 5mm			
Tapered cones	1.8° in gray and black (antistatic)			

## Maximum load capacity

The maximum load capacity of the PR50 depends on the drive head and drum length.

Length of PR50	≤1000mm	1100mm	1200mm	1300mm	1400mm	1500mm
Max. load capacity per PR50 without drive head	1100N	925N	750N	650N	550N	475N
Max. load capacity per PR50 with drive head (Polyamide PolyVee, sprocket, round or timing belt)	350N					
Max. load capacity per PR50 with drive head (Steel PolyVee, sprocket)	1100N					
Max. load capacity per PR50 with tapered sleeve	550N					



## Performance specifications

### 35W

Gear ratio	Min. conveying speed[m/s]	Max. conveying speed[m/s]	Rated torque [Nm]	Starting torque [Nm]
9:1	0.13	2.01	0.44	1.32
13:1	0.09	1.39	0.64	1.92
18:1	0.07	1.00	0.89	2.67
21:1	0.06	0.86	1.04	3.12
30:1	0.04	0.60	1.49	4.47
42:1	0.03	0.43	2.07	6.21
49:1	0.02	0.37	2.42	7.26
78:1	0.02	0.23	3.55	10.65
108:1	0.01	0.17	4.95	14.85

### 50W

Gear ratio	Min. conveying speed [m/s]	Max. conveying speed [m/s]	Rated torque [Nm]	Starting torque [Nm]
9:1	0.13	2.01	0.63	1.89
13:1	0.09	1.39	0.91	2.73
18:1	0.07	1.00	1.27	3.81
21:1	0.06	0.86	1.48	4.44
30:1	0.04	0.60	2.13	6.39
42:1	0.03	0.43	2.96	8.88
49:1	0.02	0.37	3.45	10.35
78:1	0.02	0.23	5.07	15.21
108:1	0.01	0.17	7.07	16.70

(95% of the numerical deviations fall within the range of  $\pm 10\%$ )

## Taper sleeve specification (Conicity: 1.8°)

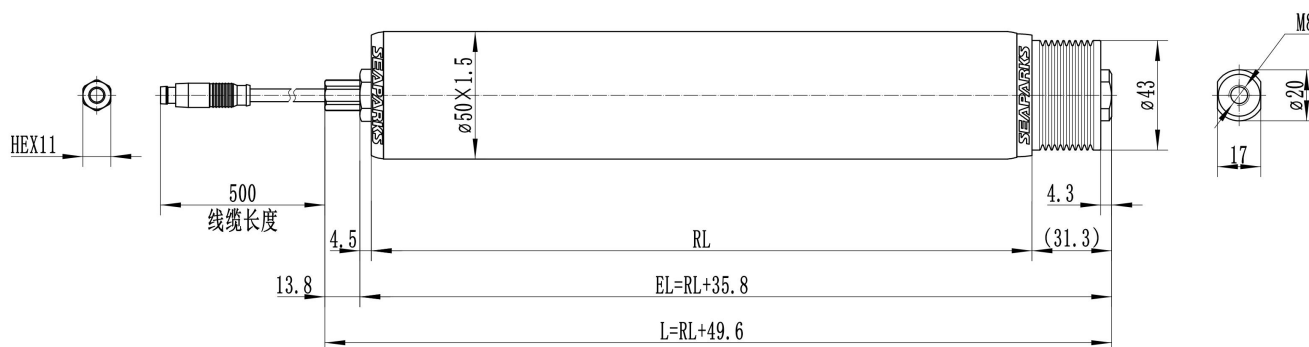
Tube length [mm]	Tapered rated length WT [mm]	Min.Diameter D1[mm]	Max.Diameter D2 [mm]
300~349	300	56.06	74.79
350~399	350	52.89	74.79
400~449	400	56.06	81.08
450~499	450	52.89	81.08
500~549	500	56.06	87.36
550~599	550	52.89	87.36
600~649	600	56.06	93.65
650~699	650	52.89	93.65
700~749	700	56.06	99.93
750~799	750	52.89	99.93
800~849	800	56.06	106.22
850~899	850	52.89	106.22
900~949	900	56.06	112.50
950~1000	950	52.89	112.50

## Dimensional Drawing

### Cylindrical

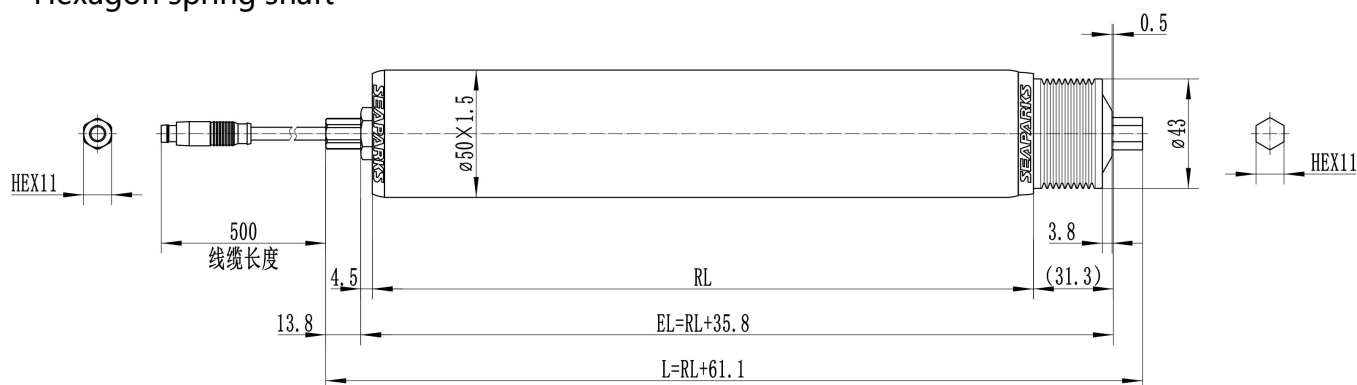
PolyVee drive head-Polyamide

M8 Internal Thread



PolyVee drive head-Polyamide

Hexagon spring shaft



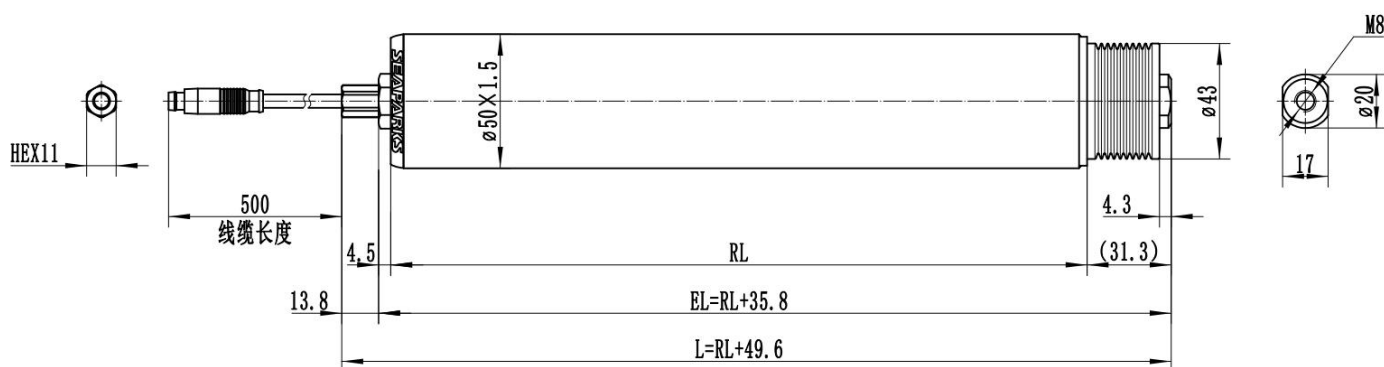
### Min. EL length [mm]

Diameter	Gear ratio							M8 Internal Thread	Hexagon spring shaft
$\phi 50$	9	13	18	21	30	42	49	270	286
	others							284	300

## Dimensional Drawing

### Cylindrical

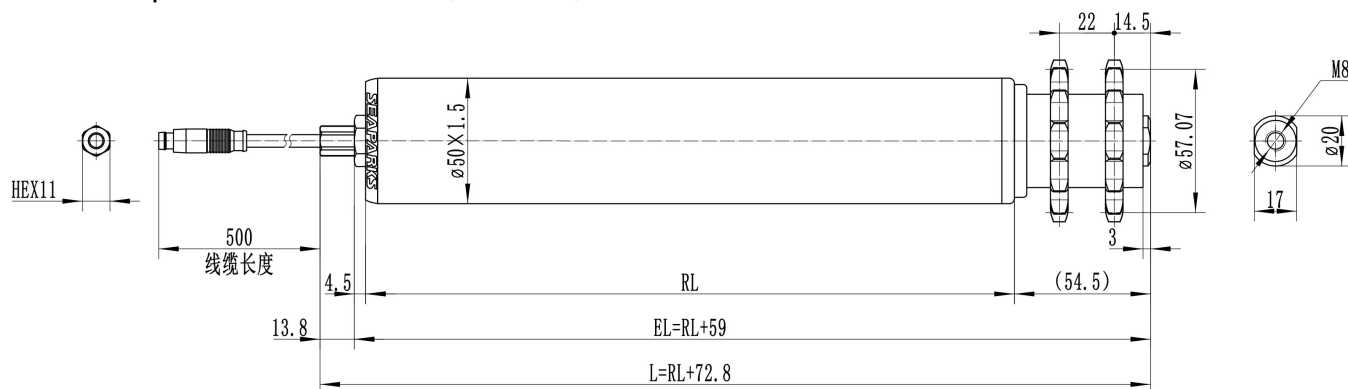
PolyVee drive head -Steel M8 internal thread



### Min. EL length [mm]

Diameter	Gear ratio							M8 Internal Thread
φ50	9	13	18	21	30	42	49	239
	others							253

Double sprockets drive head (08B-14T) -Steel M8 internal thread



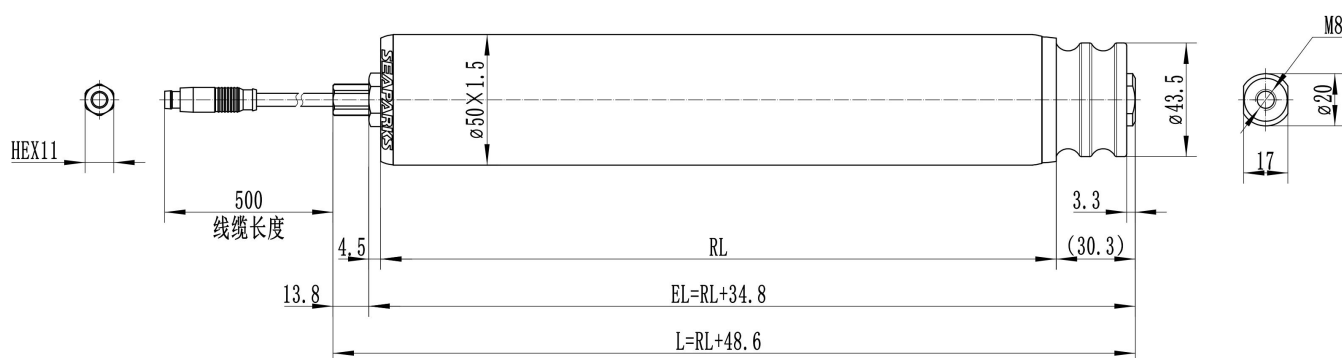
### Min. EL length [mm]

Diameter	Gear ratio							M8 Internal Thread
φ50	9	13	18	21	30	42	49	268
	others							282

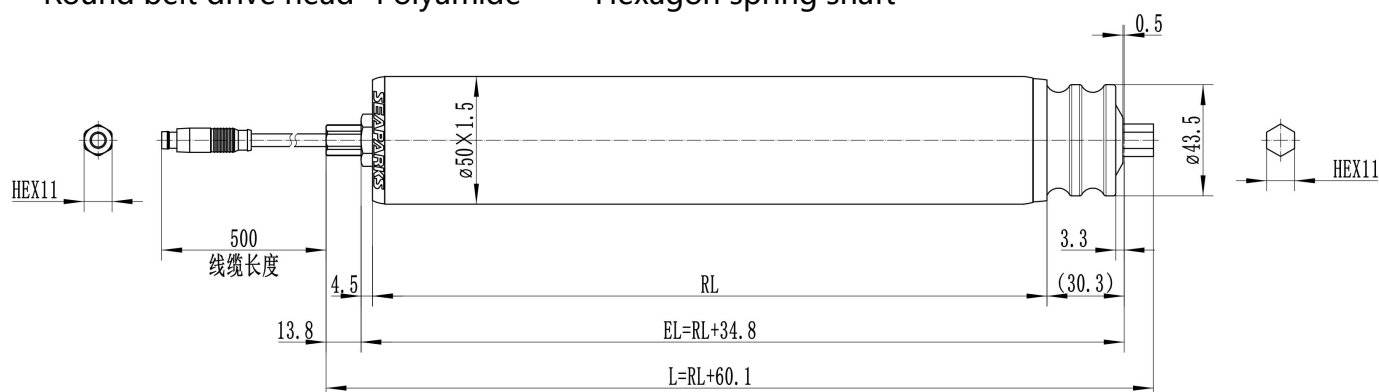
## Dimensional Drawing

### Cylindrical

Round belt drive head -Polyamide M8 internal thread



Round belt drive head -Polyamide Hexagon spring shaft



### Min. EL length [mm]

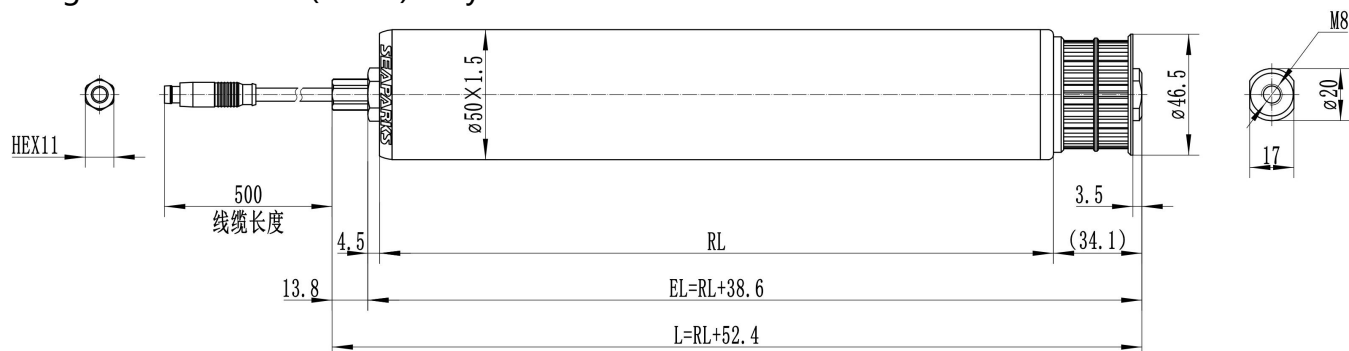
Diameter	Gear ratio							M8 Internal Thread	Hexagon spring shaft
φ50	9	13	18	21	30	42	49	259	271
	others							273	285



## Dimensional Drawing

### Cylindrical

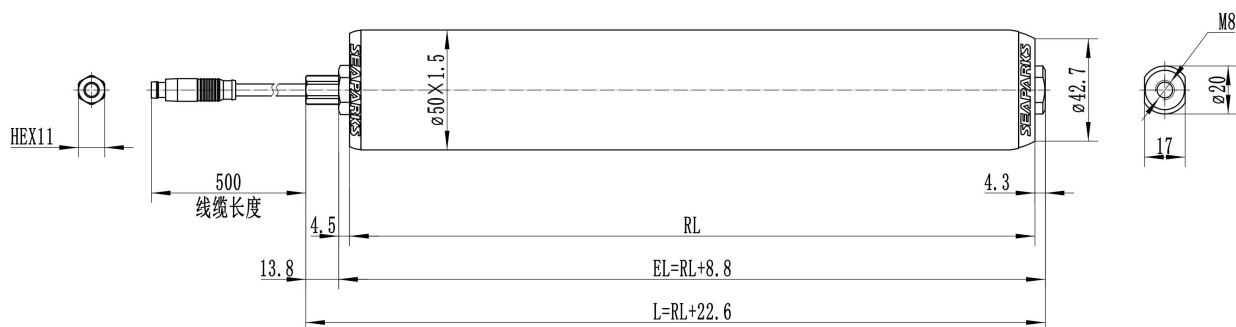
Timing belt drive head (T5-26)-Polyamide M8 internal thread



### Min. EL length [mm]

Diameter	Gear ratio							M8 Internal Thread
φ50	9	13	18	21	30	42	49	265
	others							279

Without drive head M8 internal thread



### Min. EL length [mm]

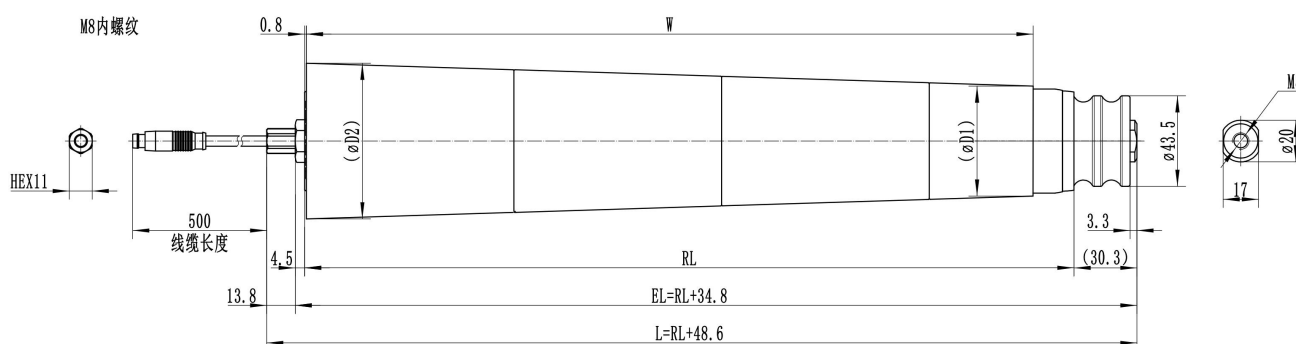
Diameter	Gear ratio							M8 Internal Thread
φ50	9	13	18	21	30	42	49	226
	others							240



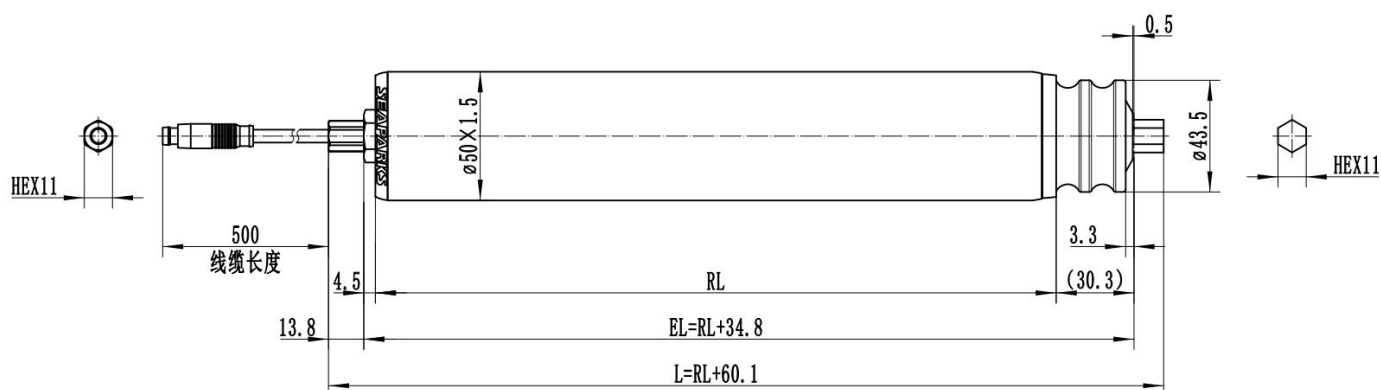
## Dimensional Drawing

### Tapered

Round belt drive head (R5) -Polyamide M8 Internal Thread



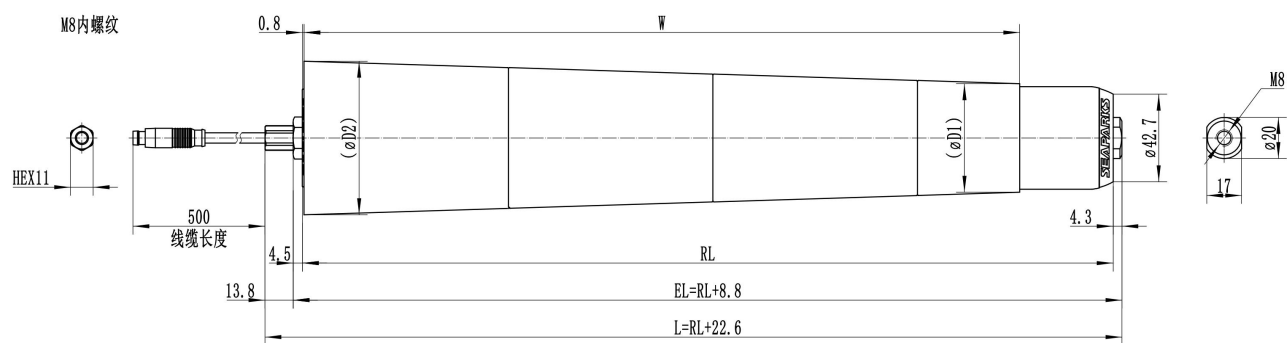
Round belt drive head (R5) -Polyamide Hexagon spring shaft



Dimensional Drawing

Tapered

Without drive head    M8 internal thread



Min. EL length [mm]

Diameter	PolyVee head Polyamide	PolyVee head Steel	Round belt head Polyamide	Without drive head Polyamide
φ50	352	342	350	326

**Φ60mm, IP54, temperature range 0~40°C**

## Technical specifications

Rated voltage	24V	48V
Power	50W	50W
Rated current	3.4A	1.7A
Starting current	7.5A	3.8A
Cable length	500mm	
Max. reference length	Cylindrical: 1500mm	
Ambient temperature	0~40°C	
Protection level	IP54	
Motor shaft	Stainless steel, 11mm HEX, Thread M12x1	
Anti-static	Yes(<10 <sup>6</sup> Ω)	
Tube diameter	60mm	
Tube wall thickness	2.0mm	
Tube material	Zinc-plated steel, stainless steel	
Tube sleeving	PVC tube sleeve 2mm PU tube sleeve 2mm Lagging 2 mm	
Tapered cones	1.8° in gray and black (antistatic)	

## Maximum load capacity

The maximum load capacity of the PR50 depends on the drive head and drum length.

Length of PR50	≤1000mm	1100mm	1200mm	1300mm	1400mm	1500mm
Max. load capacity per PR50 without drive head	1100N	925N	750N	650N	550N	475N
Max. load capacity per PR50 with drive head (Steel PolyVee, sprocket)	1100N					



## Performance specifications

### 50W

Gear ratio	Min. conveying speed [m/s]	Max. conveying speed [m/s]	Rated torque [Nm]	Starting torque [Nm]
9:1	0.16	2.41	0.63	1.89
13:1	0.11	1.67	0.91	2.73
18:1	0.08	1.20	1.27	3.81
21:1	0.07	1.03	1.48	4.44
30:1	0.05	0.72	2.13	6.39
42:1	0.03	0.52	2.96	8.88
49:1	0.03	0.44	3.45	10.35
78:1	0.02	0.28	5.07	15.21
108:1	0.01	0.20	7.07	16.70

(95% of the numerical deviations fall within the range of  $\pm 10\%$ )

## Cylindrical

[illegible]

Diameter	Gear ratio							M8 Internal Thread
Φ60	9	13	18	21	30	42	49	244
	others							258

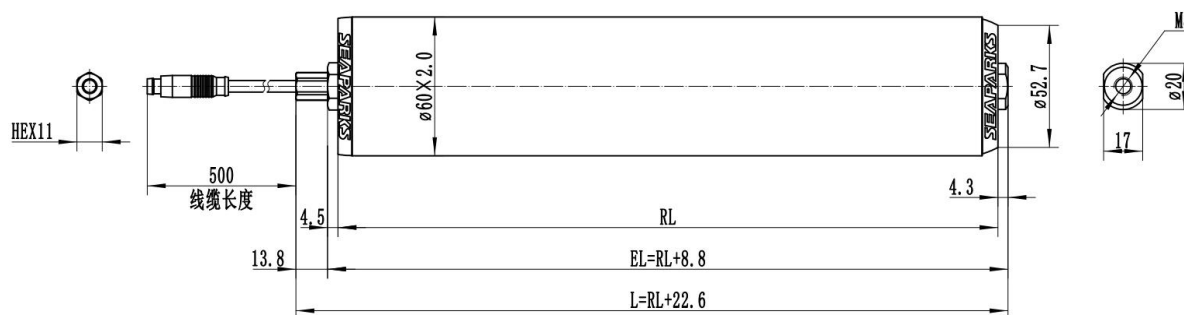
Figure 1: Cable gland assembly drawing. The drawing shows a side view and a top view. The side view includes dimensions: cable length (500), gland body length (4.5), gland body diameter (ø60 x 2.0), gland body length (13.8), gland body length (RL), gland body length (EL=RL+62), gland body length (L=RL+75.8), gland body length (57.5), gland body length (5), gland body length (17), gland body length (22), and gland body length (17). The top view shows the gland body diameter (ø20) and the gland body length (17). The drawing is labeled 'HEX11' and 'M8'.

Diameter	Gear ratio							M8 Internal Thread
Φ60	9	13	18	21	30	42	49	268
	others							282

## Dimensional Drawing

### Cylindrical

Without drive head M8 Internal Thread



### Min. EL length [mm]

Diameter	Gear ratio							M8 Internal Thread
Φ60	9	13	18	21	30	42	49	232
	others							246

**Φ50mm, IP66, temperature range 0~40°C**

## Technical specifications

Rated voltage	24V DC		48V DC	
Power	35W	50W	35W	50W
Rated current	2.4A	3.4A	1.2A	1.7A
Starting current	5.5A	7.5A	2.8A	3.8A
Cable length	500mm			
Max. reference length	Cylindrical: 1500mm			
Ambient temperature	0~40°C			
Protection level	IP66			
Motor shaft	Stainless steel, 11mm HEX, Thread M12x1			
Anti-static	Yes(<10 <sup>6</sup> Ω)			
Tube diameter	50mm			
Tube wall thickness	1.5mm			
Tube material	Stainless steel			
Tube sleeving	PVC tube sleeve 2mm, 5mm PU tube sleeve 2mm Lagging 2 to 5mm			

## Maximum load capacity

The maximum load capacity of the PR50 depends on the drive head and drum length.

Length of PR50	≤1000mm	1100mm	1200mm	1300mm	1400mm	1500mm
Max. load capacity per PR50 without drive head	1100N	925N	750N	650N	550N	475N
Max. load capacity per PR50 with drive head (Polyamide PolyVee)	350N					

## Performance specifications

### 35W

Gear ratio	Min. conveying speed[m/s]	Max. conveying speed[m/s]	Rated torque [Nm]	Starting torque [Nm]
18:1	0.07	1.00	0.89	2.67
21:1	0.06	0.86	1.04	3.12
30:1	0.04	0.60	1.49	4.47
42:1	0.03	0.43	2.07	6.21
49:1	0.02	0.37	2.42	7.26
78:1	0.02	0.23	3.55	10.65
108:1	0.01	0.17	4.95	14.85

### 50W

Gear ratio	Min. conveying speed [m/s]	Max. conveying speed [m/s]	Rated torque [Nm]	Starting torque [Nm]
18:1	0.07	1.00	1.27	3.81
21:1	0.06	0.86	1.48	4.44
30:1	0.04	0.60	2.13	6.39
42:1	0.03	0.43	2.96	8.88
49:1	0.02	0.37	3.45	10.35
78:1	0.02	0.23	5.07	15.21
108:1	0.01	0.17	7.07	16.70

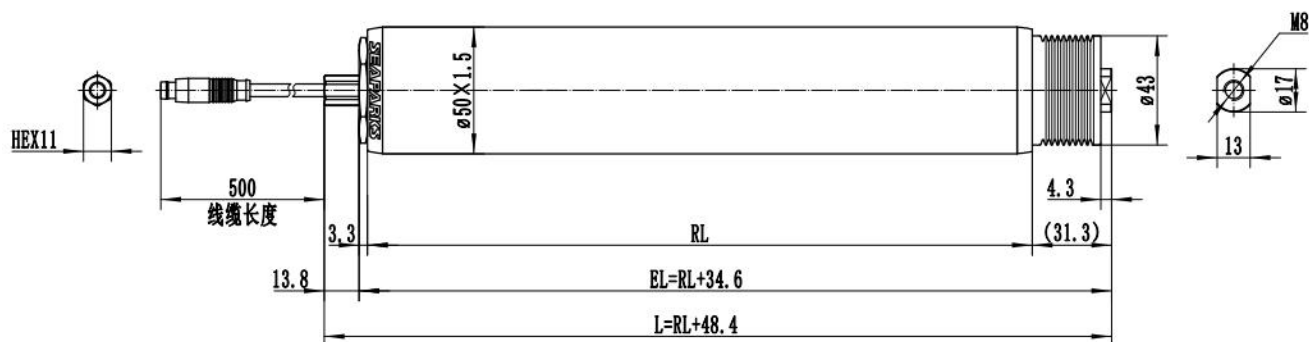
(95% of the numerical deviations fall within the range of  $\pm 10\%$ )



## Dimensional Drawing

### Cylindrical

PolyVee drive head-Steel M8 Internal Thread



### Min. EL length [mm]

Diameter	Gear ratio					M8 Internal Thread
Φ50	18	21	30	42	49	279
	others					293

**Φ50mm, IP54, temperature range 0~40°C**

**Double Cam Power Roller – For Lifting and Transfer**

### Technical specifications

Rated voltage	24V DC	48V DC
Power	50W	50W
Rated current	3.4A	1.7A
Starting current	7.5A	3.8A
Cable length	500mm	
Max. reference length	Cylindrical: 1500mm	
Ambient temperature	0~40°C	
Protection level	IP54	
Max. Load capacity	1100N	
Motor shaft	Stainless steel, 11mm HEX	
Anti-static	Yes(<10 <sup>6</sup> Ω)	
Tube diameter	50mm	
Tube wall thickness	1.5mm	
Tube material	Zinc-plated steel, Stainless steel	

### Performance specifications

#### 50W

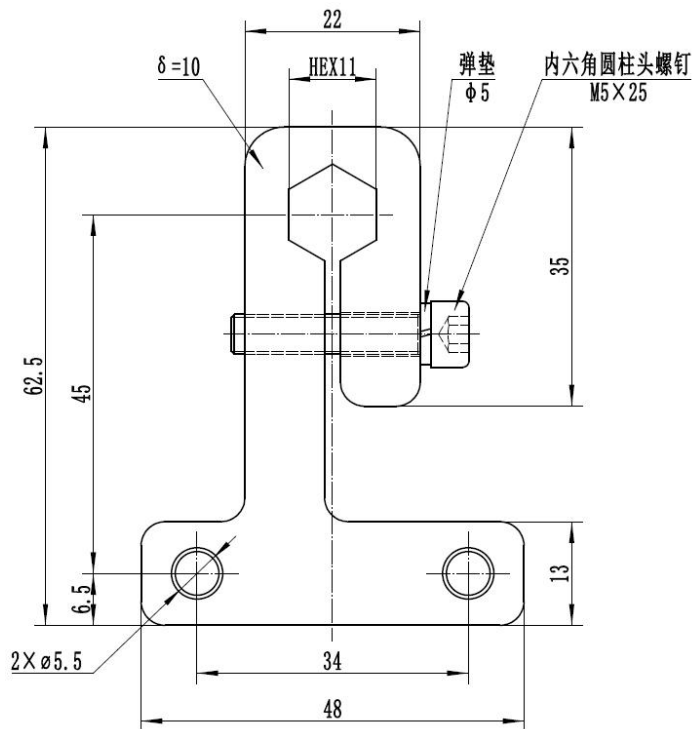
Gear ratio	Min. conveying speed [m/s]	Max. conveying speed [m/s]	Rated torque [Nm]	Starting torque [Nm]	Load (weight of lifting ) [Nm]	Max. efficiency
78:1	0.02	0.23	5.07	15.21	30	40Pcs/min
108:1	0.01	0.17	7.07	16.70	50	

(95% of the numerical deviations fall within the range of ± 10%)

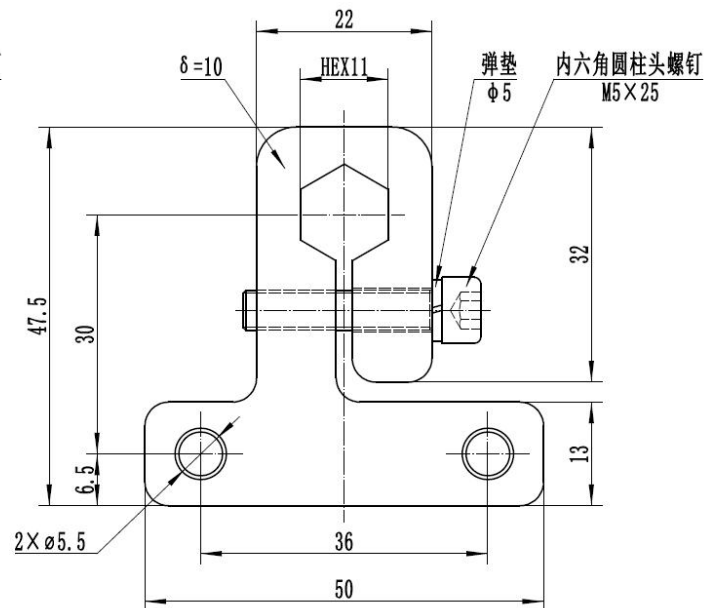


## Mounting bracket (applicable to HEX11)

**Long bracket(galvanized steel)**



**Short bracket(galvanized steel)**



### Installation Instructions for Bracket Mounting:

**Align the Hexagonal Hole:** Slide the bracket's hexagonal hole onto the HEX11 shaft of the power roller, which must already be inserted through the conveyor frame.

**Secure with Screw:** Tighten the M5 hex socket head cap screw to fix the bracket in place.

**Mount to Frame:** The bracket must be fastened to the conveyor frame's side profile using two  $\phi 5.5$  mounting holes to ensure stability.

**Final Check:** Confirm that the power roller's shaft is firmly secured before operation.

### Installation Notice:

#### 1.Cable Routing Precautions:

- When passing cables through the conveyor frame holes or metal bracket mounting holes, take care to **avoid damaging the cables**.

## 2. Proper Bracket Usage:

- Use **only the manufacturer-specified metal brackets** to securely fasten the power roller's **cable-end shaft**.

**Failure to properly secure the shaft** may result in:

- Abnormal noise or idling within the frame holes.
- Cable twisting/ breakage or motor damage.



## Product Model Description

**Example: PR 50-Y-35-18-24-500-1 PA-A-IP54-ST- 2mm Gray PVC sleeving Stainless**

**1 2 3 4 5 6 7 8 9 10 11 12 13 14**

### steel- Customization Notes

**15**

No.	Project	Content	Options
1	Model code	PR	Power Roller
2	Drum diameter	50	50mm or 60mm
3	Drum type	Y	Y: Cylindrical Z: Taper
4	Power	35	35W or 50W
5	Gear ratio	18	18:1(9 speed ratios)
6	Voltage	24	24V or 48V DC
7	Installation dimensions	500	EL Value
8	Drive head	1	1: PolyVee drive head 2: Sprocket drive head 3: Round belt drive head 4: Timing belt drive head 5: Double cam drive head 8: Without drive head 9: Other
9	Drive head material	PA	PA: Polyamide SS: Stainless steel ZP: Zinc-plated steel XX: Other
10	Installation method	A	Installation Method (Non-Lead Side): A - M8 Internal Thread B - S11 Hexagonal Spring loaded C - Milled Flat Z - Other
11	Protection level	IP54	IP54 or IP66

## Product Model Description

Example: PR 50-Y-35-18-24-500-1 PA-A-IP54-ST- 2mm Gray PVC sleeving Stainless

1 2 3 4 5 6 7 8 9 10 11 12

13

14

steel- Customization Notes

15

No.	Project	Content	Options
12	Ambient Temperature	ST	ST: Standard (0°C to 40°C) LT: Low-Temperature (-30°C to 0°C)
13	Sleeving/lagging	2mm Gray PVC sleeving	<p>1. Sleeve Specifications: Must be described in written form or illustrated with supporting diagrams.</p> <p>2. Lagging Components: Require detailed technical drawings indicating:</p> <ul style="list-style-type: none"> <li>a. Casting thickness</li> <li>b. Color parameters</li> <li>c. Material composition</li> <li>d. Hardness</li> <li>e. Dimensional information</li> </ul> <p>Supporting textual descriptions must be included in the Custom Specifications section.</p>
14	Tube material	Stainless steel	Zinc-plated steel or Stainless steel
15	Customization notes	Consult SEAPARKS	<p>1. Custom Cable Options:</p> <ul style="list-style-type: none"> <li>a. Dual-Ended Extension Cables: Available in male-to-female configurations as required</li> <li>b. Custom-Length Cables: Single cables can be produced to specified lengths</li> </ul> <p>2. Other Customizations.</p>

## MRC 2410 Controller

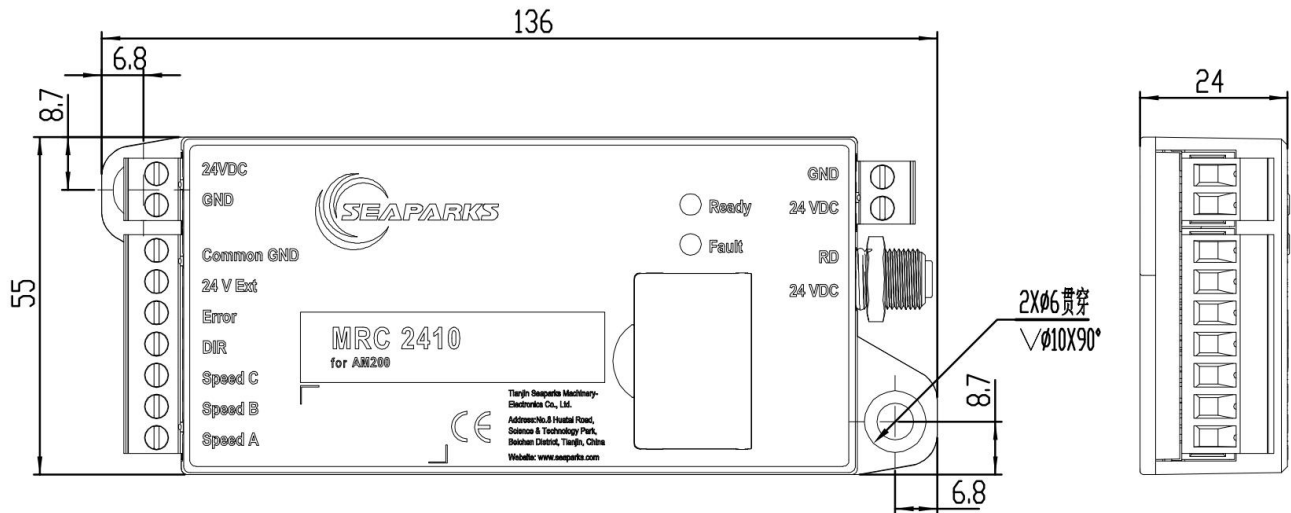
### Key Features

- **Ultra-wide input voltage range:** 18V – 26V DC.
- **Built-in braking resistor** with over-temperature protection, combining overvoltage suppression and hardware protection.
- **Supports both NPN and PNP** wiring modes.
- **Speed adjustment:** 15-position DIP switch, 7-level I/O terminal control.
- **Reverse polarity protection** to prevent damage from accidental miswiring.
- **Comprehensive protection functions:** Overcurrent, overvoltage, overheating, overload, and undervoltage.
- **Self-recovery capability** under fault conditions (stall, speed anomaly, overheating, overvoltage, etc).
- **Motor drive method:** Sensor-based FOC (Field-Oriented Control) with encoder feedback.
- **Speed reference signal:** Analog input.

### Application Environment

Operating environment temperature	Operating environment humidity	Vibration
-10℃~+40℃	10-70%RH ( No condensation )	<2G

## Dimensional Drawing



## External Interface Descriptions



No.	Function	Description
1	24 VDC	<ul style="list-style-type: none"> <li>24V Power input interface: composed of two terminals, 24VDC and GND</li> <li>Terminals ①② are internally connected.</li> </ul>
2	GND	
3	Common GND	<p>External Power Supply Connections:</p> <ul style="list-style-type: none"> <li>Error Terminal Usage: <ul style="list-style-type: none"> <li>a. Requires external 24V DC power supply</li> <li>b. Must be connected to the [24V_Ext] terminal</li> </ul> </li> <li>Non-Isolated Power Input Option: <ul style="list-style-type: none"> <li>a. When isolation is not required</li> <li>b. May utilize terminals ① and ② for power input</li> </ul> </li> </ul>
4	24V Ext	
5	Error	DO terminal (fault output)-The 6th DIP switch setting determines high-level or low-level fault output.
6	DIR	DI terminal (steering control input) - Matching the DIP switch state = CCW; mismatch = CW.
7	Speed C	DI terminal (external speed input) - DIP switch configures high/low level active.
8	Speed B	
9	Speed A	

## Error Terminal Wiring Guide:

### 1. When the 6th DIP switch (DO NPN terminal) is OFF:

- **Error terminal** and **Common GND** operate in **NPN mode**.
- **Normal operation (no fault)**: Outputs **high level (24V signal)** between Error and Common GND.

- **Fault triggered:** Outputs **low level (0V signal)** between Error and Common GND.
2. When the 6th DIP switch (DO NPN terminal) is ON:
- **Error terminal and Common GND** operate in **PNP mode**.
  - **Normal operation (no fault):** Outputs **low level (0V signal)** between Error and Common GND.
  - **Fault triggered:** Outputs **high level (24V signal)** between Error and Common GND.

## DIP switch settings



No.	Function	Description
1	DIR	Rotation Direction Command: OFF: CCW( Counterclockwise ) ON: CW( Clockwise )
2	Speed A	Internal speed control has <b>priority</b> - When any SPEED A/B/C/D DIP switch is ON, Power Roller runs at <b>preset</b> internal speed, ignoring external inputs.
3	Speed B	
4	Speed C	
5	Speed D	
6	DO NPN	External Fault Output Selection Switch OFF: Normally outputs high level, faults output low level ON: Normally outputs low level, faults output high level
7	DI NPN	Digital Input Active-Level Selection Switch When using external digital inputs: Either switch 7 or 8 must be ON (mutually exclusive) Switch 7 ON: Low-level active (0V = valid input) Switch 8 ON: High-level active (24V = valid input)
8	DI PNP	

## Drive speed setting method

### DIP Switch Internal Speed Setting

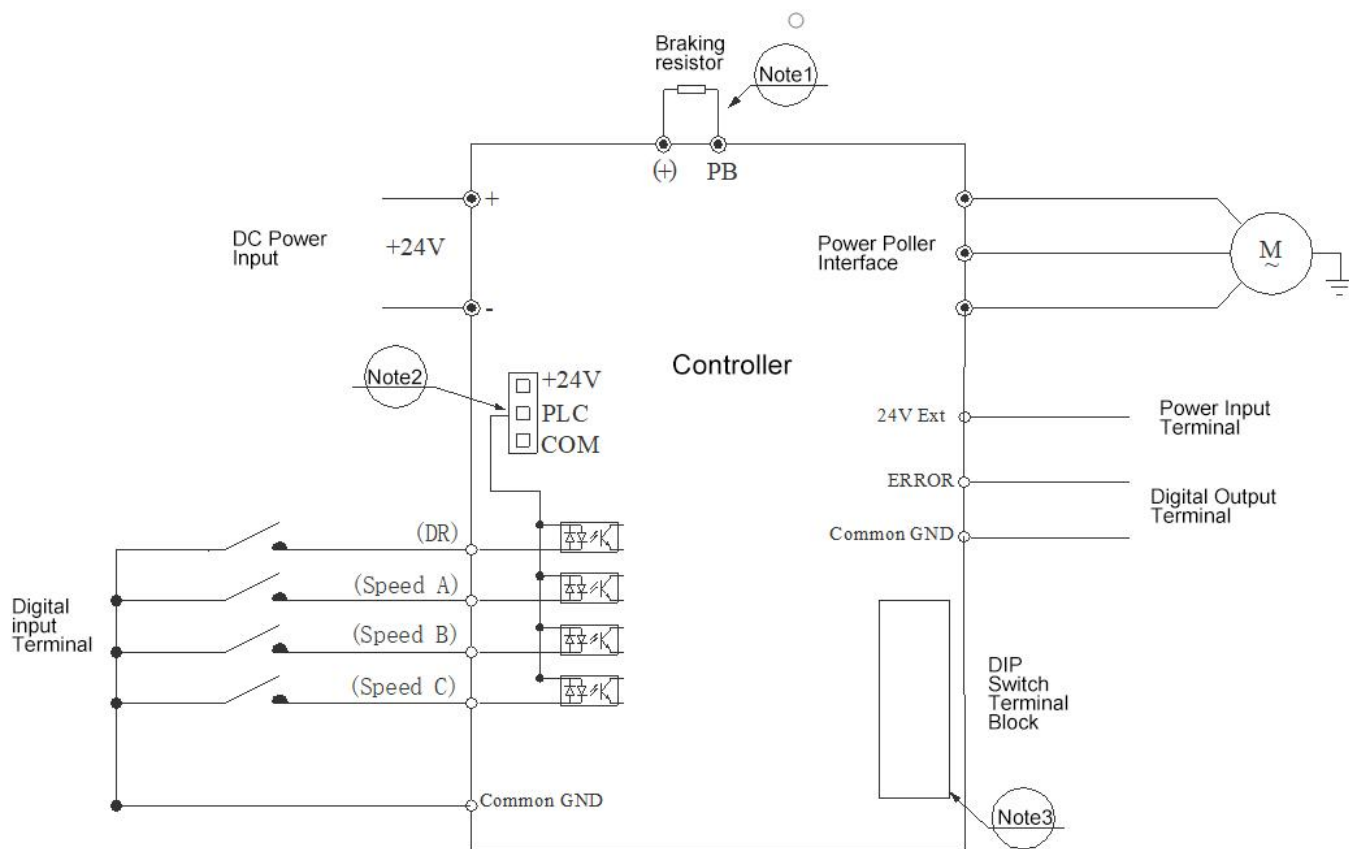
16-Speed							
DIP Switch Setting (Priority)	Spd A	Spd B	Spd C	Spd D	Step	Freq./Hz	RPM
	OFF	OFF	OFF	OFF	0	0	0
	OFF	OFF	OFF	ON	1	23	460
	OFF	OFF	ON	OFF	2	46	920
	OFF	OFF	ON	ON	3	69	1380
	OFF	ON	OFF	OFF	4	92	1840
	OFF	ON	OFF	ON	5	115	2300
	OFF	ON	ON	OFF	6	138	2760
	OFF	ON	ON	ON	7	161	3220
	ON	OFF	OFF	OFF	8	184	3680
	ON	OFF	OFF	ON	9	207	4140
	ON	OFF	ON	OFF	10	230	4600
	ON	OFF	ON	ON	11	253	5060
	ON	ON	OFF	OFF	12	276	5520
	ON	ON	OFF	ON	13	299	5980
	ON	ON	ON	OFF	14	322	6440
	ON	ON	ON	ON	15	345	6900

### External Speed Setting via Digital Input Terminal Wiring

8-Speed						
External terminal input	Spd A	Spd B	Spd C	Step	Freq./Hz	RPM
	OFF	OFF	OFF	0	0	0
	OFF	OFF	ON	1	50	1000
	OFF	ON	OFF	2	100	2000
	OFF	ON	ON	3	150	3000
	ON	OFF	OFF	4	200	4000
	ON	OFF	ON	5	250	5000
	ON	ON	OFF	6	300	6000
	ON	ON	ON	7	345	6900



## Wiring diagram



- **Note 1:** This BLDC controller has a built-in braking resistor and requires no external connection.
- **Note 2:** The digital input/output terminals can be configured via DIP switches to support either NPN or PNP logic. The default setting is NPN wiring.
- **Note 3:** The DIP switch settings take priority over the digital input terminals.

## MRC 2048 Controller

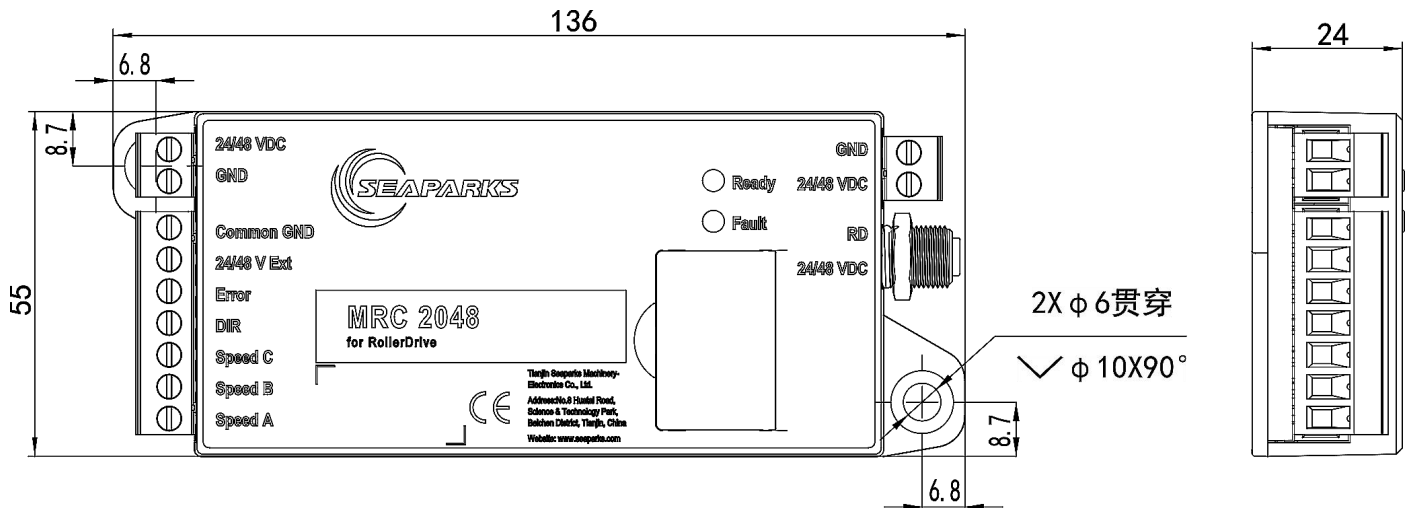
### Key Features

- Input Voltage & Range: 24V DC (19-26V range), 48V DC (39-55V range)
- Built-in Braking Resistor with: over-temperature protection, overvoltage suppression, hardware protection
- Wiring Mode: supports PNP logic only
- Speed Adjustment Methods: 15-position rotary DIP switch, 7-speed I/O terminal control
- Reverse Polarity Protection to prevent damage from incorrect wiring
- Protection Features: overcurrent / overvoltage / overtemperature / overload / undervoltage
- Self-Recovery Capability under fault conditions: stall / speed anomaly / overtemperature / overvoltage
- Motor Drive Method: sensor-based FOC (Field-Oriented Control) with encoder feedback
- Speed Command Signal: analog input (0-10V / 4-20mA)

### Application Environment

Operating environment temperature	Operating environment humidity	Vibration
-10℃~+40℃	10-70%RH ( No condensation )	<2G

## Dimensional Drawing



## External Interface Descriptions



No.	Function	Description
1	24/48 VDC	<ul style="list-style-type: none"> <li>Supports dual-voltage input: 24V DC /48V DC</li> <li>Terminal configuration: ① and ② are internally connected (common positive) GND terminal provides negative return path</li> </ul>
2	GND	
3	Common GND	<p>External Power Port Configuration:</p> <ul style="list-style-type: none"> <li>When using the Error terminal: Required: External 24V/48V DC power must be supplied via the 24/48V Ext terminal.</li> </ul>
4	24V Ext	<ul style="list-style-type: none"> <li>Non-isolated power option: Power may alternatively be input through terminals ① &amp; ② when isolation is not required.</li> </ul>
5	Error	DO Terminal (Fault Output) - PNP Characteristics
6	DIR	DI Terminal (Direction Control Input) Steering logic generation with rotary DIP switch
7	Speed C	DI Terminal (External Speed Control Input) - PNP Characteristics
8	Speed B	
9	Speed A	

## Error Terminal Connection Guide

### 1. Error Terminal Specifications

Polarity: PNP

Signal Behavior:

- Normal Operation (No Fault):

Error and Common GND output 0V (Low Level).

- Fault Condition:

Error and Common GND output 24V (High Level).

### 2. DIR/Speed Terminal Connection Guide

- Terminal Specifications

Terminals: DIR/ Speed A/ Speed B/ Speed C

Type: DI (Digital Input) terminals

Polarity: PNP

- Wiring & Activation Logic

24V Ext Terminal: Must be used together with DI terminals.

Activation Condition:

DI Terminal Active: When connected to 24V Ext.

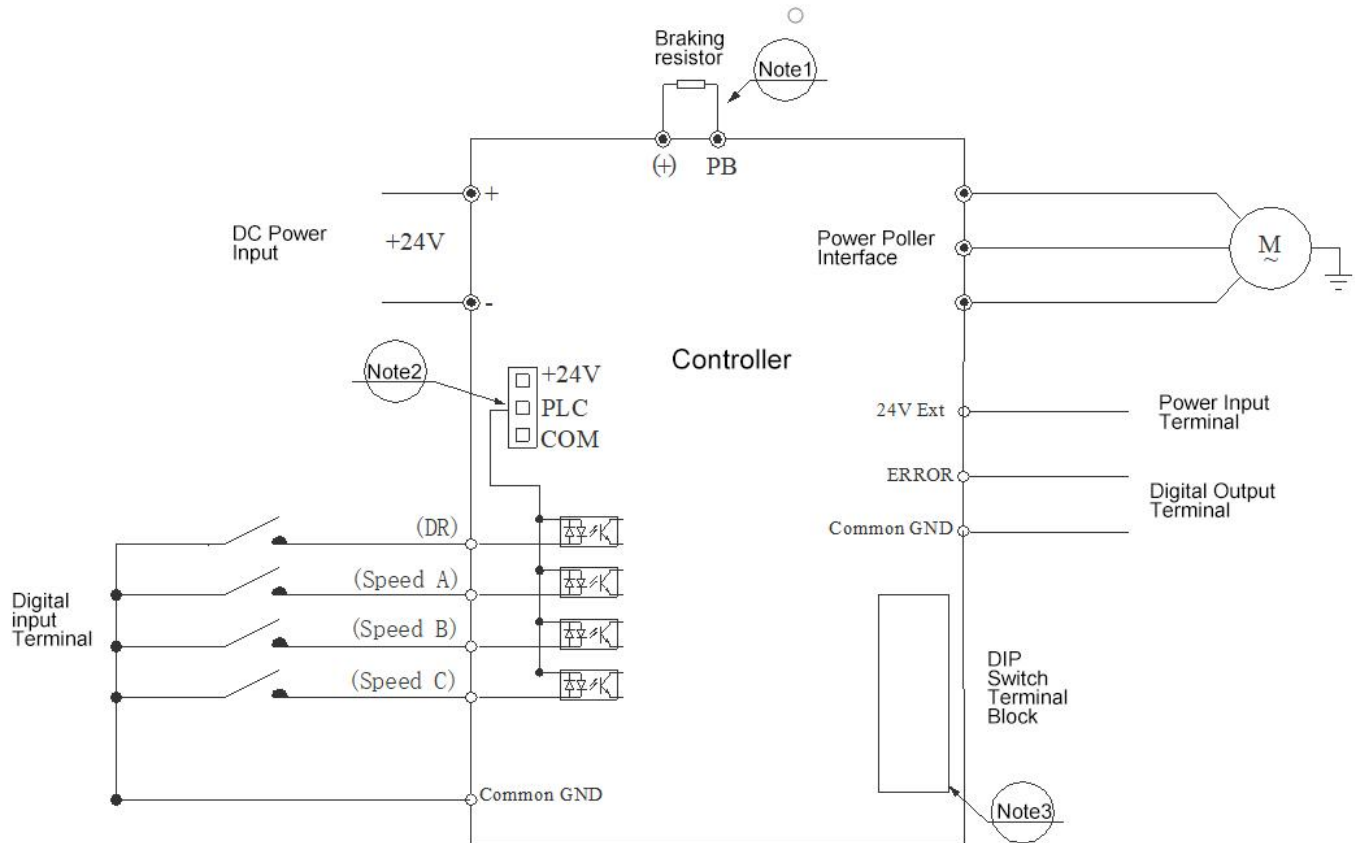
DI Terminal Inactive: When disconnected from 24V Ext.

## DIP switch settings



DIP switch position	Switch 1 (rotation speed)	Switch 2 (acceleration/ deceleration time)
0	0	Forward rotation, 0s
1	460	Forward rotation, 0.2s
2	840	Forward rotation, 0.3s
3	1320	Forward rotation, 0.45s
4	1800	Forward rotation, 0.675s
5	2240	Forward rotation, 1s
6	2720	Forward rotation, 1.5s
7	3200	Forward rotation, 2s
8	3680	Reverse rotation, 0s
9	4140	Reverse rotation, 0.2s
A	4620	Reverse rotation, 0.3s
B	5100	Reverse rotation, 0.45s
C	5560	Reverse rotation, 0.675s
D	6020	Reverse rotation, 1s
E	6500	Reverse rotation, 1.5s
F	6900	Reverse rotation, 2s

## Wiring diagram



- **Note 1:** This BLDC controller has a built-in braking resistor, eliminating the need for external connection.
- **Note 2:** Both digital input (DI) and digital output (DO) terminals feature PNP logic.
- **Note 3:** The rotary DIP switch settings take precedence over digital input terminals. For detailed DIP switch functions, refer to "**DIP Switch Settings**".

## Enhance conveying **Efficiency** And **Simplicity**



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