



**Catalogo**

# Motorulli

<https://www.dras.it/>  
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# Drives Overview

## SENERGY / SENERGY-Ai



Product type	Motor Roller
Rated voltage	DC24V
Output	50W (Max)
Conveyor speed	1.9 – 295.1 m/min (48.6 mm diameter)

## PGD / PGD-Ai



Product type	Geared Drive
Rated voltage	DC24V
Output	50W (Max)
Rotational speed	8.5 - 645.3 rpm (Output shaft)

## Pallet / Pallet-Ai



Product type	Motor Roller
Rated voltage	DC24V
Output	50W (Max)
Conveyor speed	1.3 – 25.4 m/min (63.5 mm diameter)

# SENERGY



## Introduction



## SENERGY

The unique SENERGY gearbox design and powerful brushless DC motor provides an extremely efficient means of delivering an amazing amount of torque and speed with the smallest amount of energy. Typically used in conveyors for Zero Pressure Accumulation or roller transportation; SENERGY's range and performance characteristics are suitable for speeds between 1.83 m/min (6 ft/min) to 295 m/min (969 ft./min) and starting torque up to an amazing 215 in/lbs. SENERGY Roller speed code selection contains only 11 gearbox combinations to make ordering and keeping an inventory simple and manageable. Because of our advanced Pulseroller control modules, a wide range of performance can be achieved with the same speed code selection without requiring many different roller models on your jobsite.

Regardless of the project, type of conveyor or the weight/speed of the load you really only need one type of roller – SENERGY.

## SENERGY-Ai

SENERGY-Ai is the world's first motor roller using a robust M8-4pin connector. The SENERGY-Ai motor utilizes a patented method to power and digitally encode the Hall-effect signals within the motor to a single communications wire to the external controller. Included with these encoded signals is motor roller specific data available for use and display by the external Pulseroller controller. Individual roller data such as part number, serial number, speed code, tube diameter, etc. are encoded into the motor at the time of manufacture. The external control can read and analyze all this data for multiple functions such as precise speed and positioning control, full diagnostics such as over-temperature, over-current, over-voltage and much more to help with predictive maintenance.







# SENERGY / SENERGY-Ai

## Product Information

### General Information

- Conformance: CE, RoHS, IP54
- Certifications: ETL Listed to UL 1004-1 & UL 1004-6
- Tube Material Options: Zinc Plated Mild Steel, Stainless (SUS304)
- Available Roller Diameters: 48.6 mm (1.9"), 50.0 mm (1.97")  
57.0 mm (2.24"), 60.5 mm (2.38")
- Min. Roller Length<sup>1</sup>: Refer to *Available Minimum Roller Length* table
- Max. Roller Length<sup>1</sup>: 1000 mm
- Cable Length<sup>2</sup>: 600 mm (SENERGY) / 1000 mm (SENERGY-Ai)
- Motor Connection: 9-Pin JST (SENERGY) / 4-Pin M8 (SENERGY-Ai)
- Duty Cycle: 0.5 sec ON / 0.5 sec OFF minimum
- Operation: Continuous at rated load/current without overheating



Compatible Control Technologies	
SENERGY	SENERGY - Ai
 EQUBE	 EQUBE
 EZQUBE	 CONVEYLINX
 CONVEYLINX	 MOTION LINX

### Technical Data

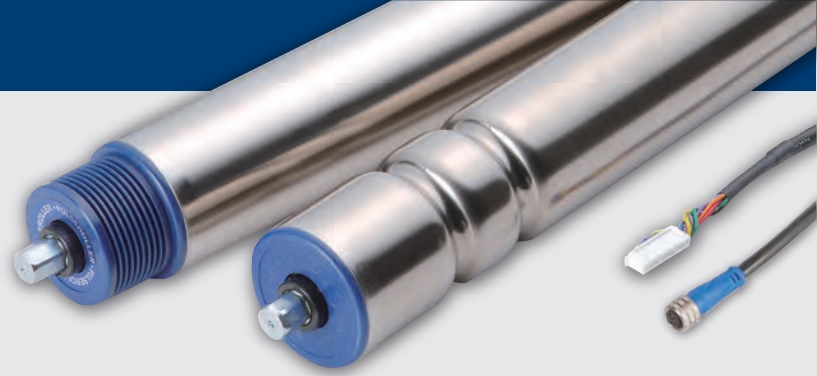
	ECO Mode	BOOST Mode	BOOST-8 Mode
Voltage	DC24V		
Nominal Output	40W	50W	50W
Rated Current	2.5A	3.5A	3.5A
Starting Current	3.0A	5.0A	8.0A
Ambient Temperature	-10 ~ 40°C (14 ~ 104°F)		
Ambient Humidity	10 ~ 90% RH (No condensation)		

### Available Minimum Roller Length<sup>1</sup> (mm)

Motor Type	Speed Code	Interlocking Option			
		Plain Straight	Micro V-Pulley	Round Groove Pulley	Round Groove
SENERGY 48.6 / 50.0	15, 20, 25	325	318	325	357
	35, 45, 60, 75	301	294	301	333
	95, 125, 175, 215	274	267	274	306
SENERGY-Ai 48.6 / 50.0	15, 20, 25	330	323	330	362
	35, 45, 60, 75	306	299	306	338
	95, 125, 175, 215	279	272	279	311

<sup>1</sup> Contact Pulseroller for available non-standard lengths

<sup>2</sup> See Ordering Information on page 61 for Motor Extension Cables



## Approximate Roller Weight (kg)

Roller Diameter	Speed Code	Roller Length (mm)							
		300	400	500	600	700	800	900	1000
48.6 mm	15, 20, 25	2.0	2.1	2.3	2.5	2.6	2.8	2.9	3.1
	35, 45, 60, 75	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9
	95, 125, 175, 215	1.7	1.8	2.0	2.1	2.3	2.5	2.6	2.8
50 mm	15, 20, 25	2.0	2.2	2.4	2.5	2.7	2.9	3.0	3.2
	35, 45, 60, 75	1.8	2.0	2.2	2.4	2.5	2.7	2.9	3.0
	95, 125, 175, 215	1.7	1.9	2.0	2.2	2.4	2.6	2.7	2.9
57 mm	15, 20, 25	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8
	35, 45, 60, 75	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6
	95, 125, 175, 215	2.1	2.3	2.5	2.7	2.8	3.0	3.2	3.4
60.5 mm	15, 20, 25	3.1	3.6	4.0	4.5	4.9	5.3	5.8	6.2
	35, 45, 60, 75	2.9	3.4	3.8	4.3	4.7	5.2	5.6	6.1
	95, 125, 175, 215	2.8	3.2	3.7	4.1	4.6	5.0	5.5	5.9

## Wall Thickness (mm)

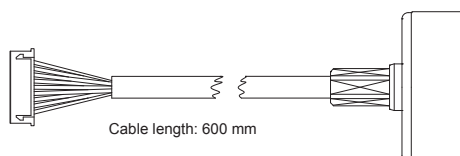
Diameter	48.6	50.0	57.0	60.5
Thickness	1.4	1.5	1.5	3.25

## Center Point Load Capacity (kg)

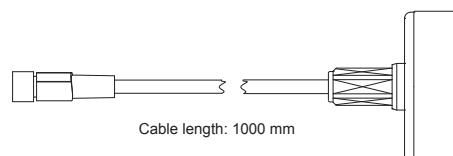
Diameter	Length (mm)	300	400	500	600	700	800	900	1000
		48.6	70	60	50	40	35	30	25
50.0	80	70	60	55	50	45	40	35	
57.0	100	100	80	80	60	60	50	50	
60.5	160	160	130	130	100	100	80	80	

## Connector Versions

SENERGY



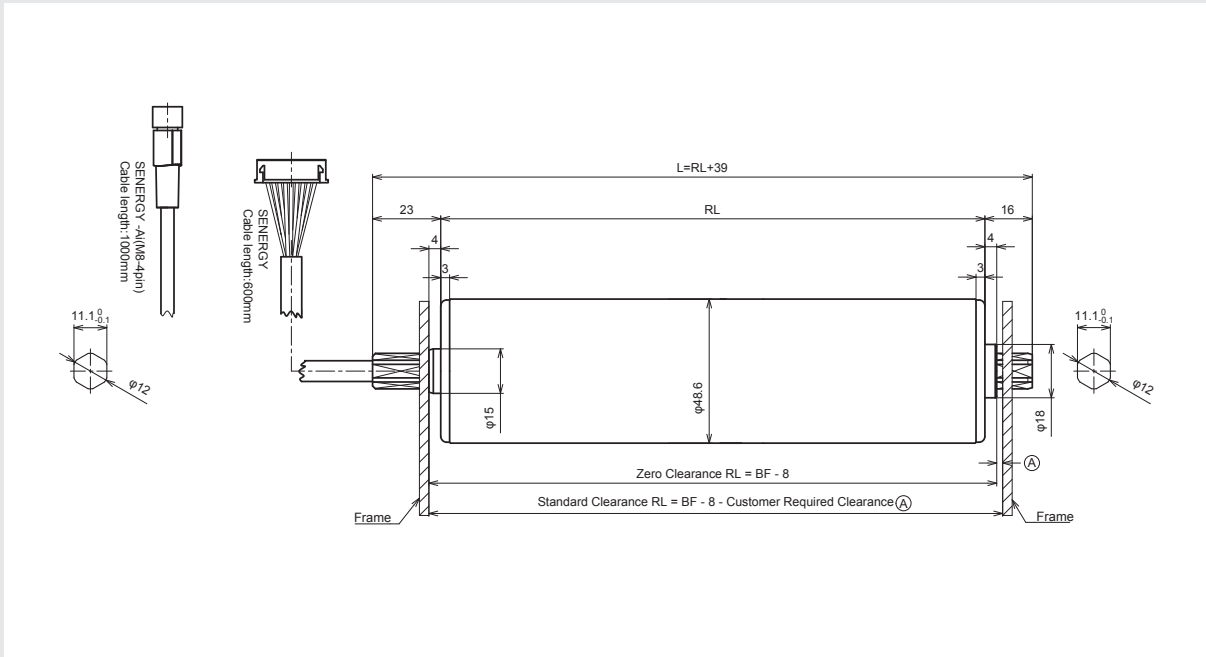
SENERGY-Ai (M8-4pin)



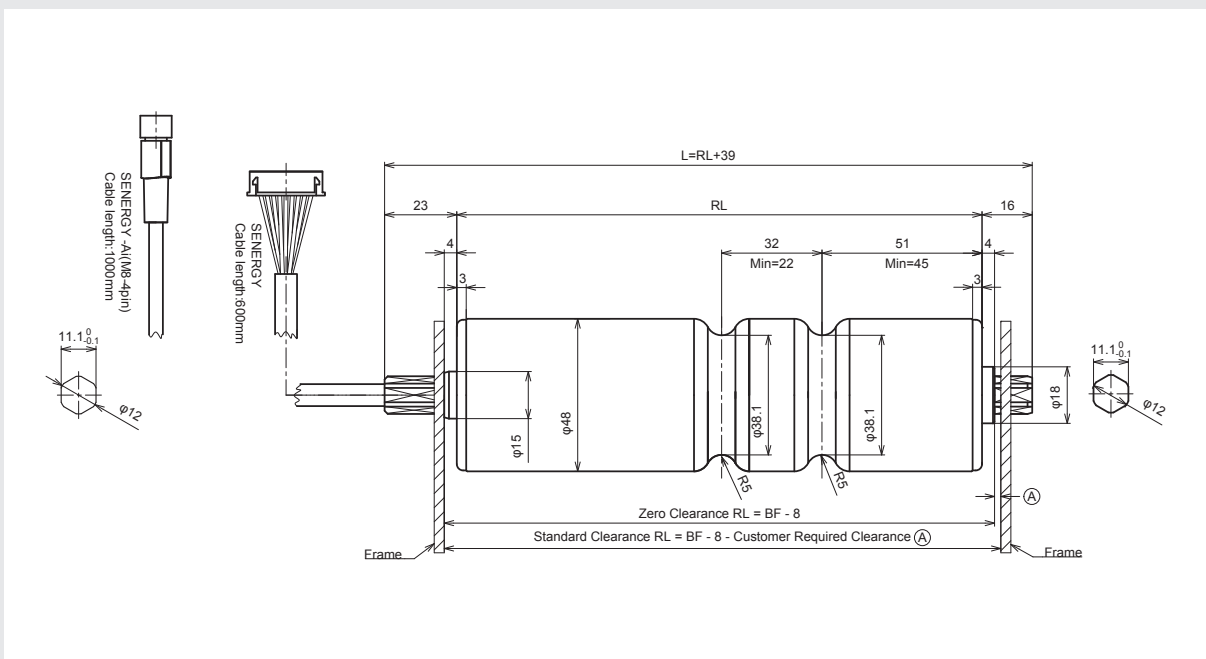
# SENERGY / SENERGY-Ai

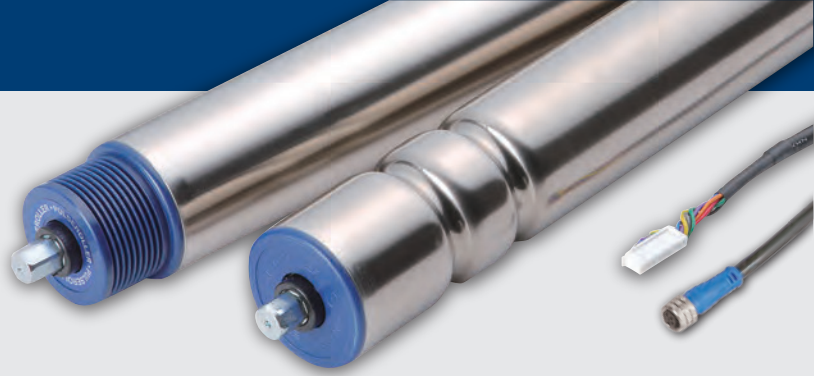
## Dimensions (mm)

### Plain Straight

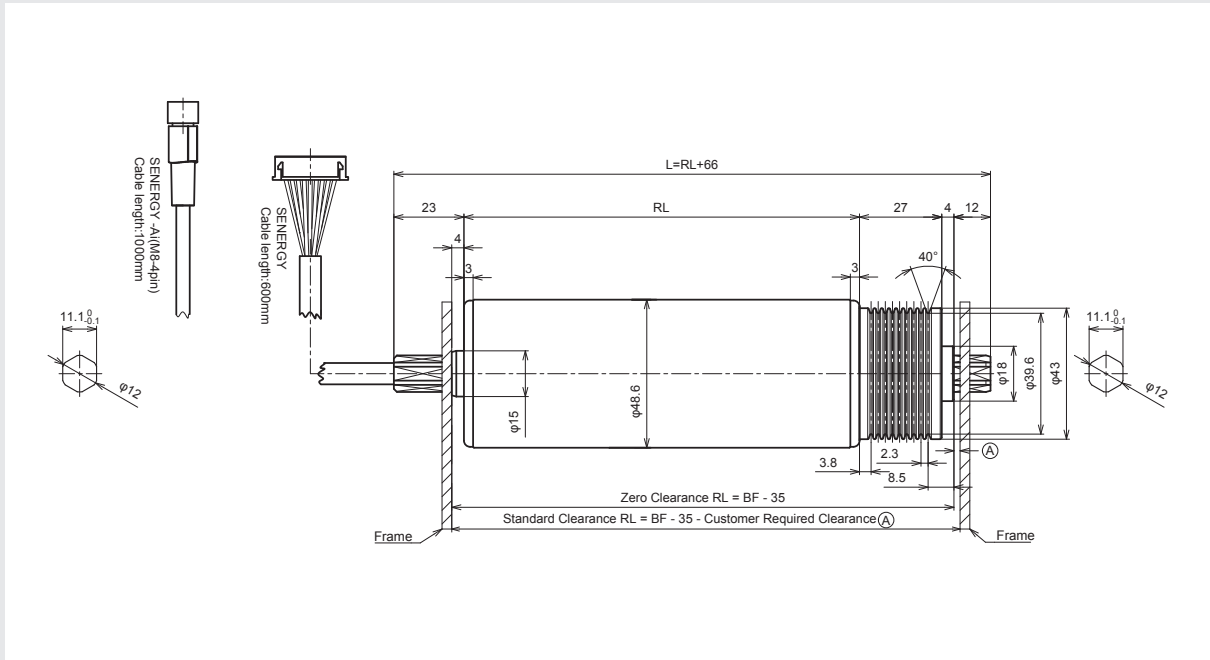


### Round Groove

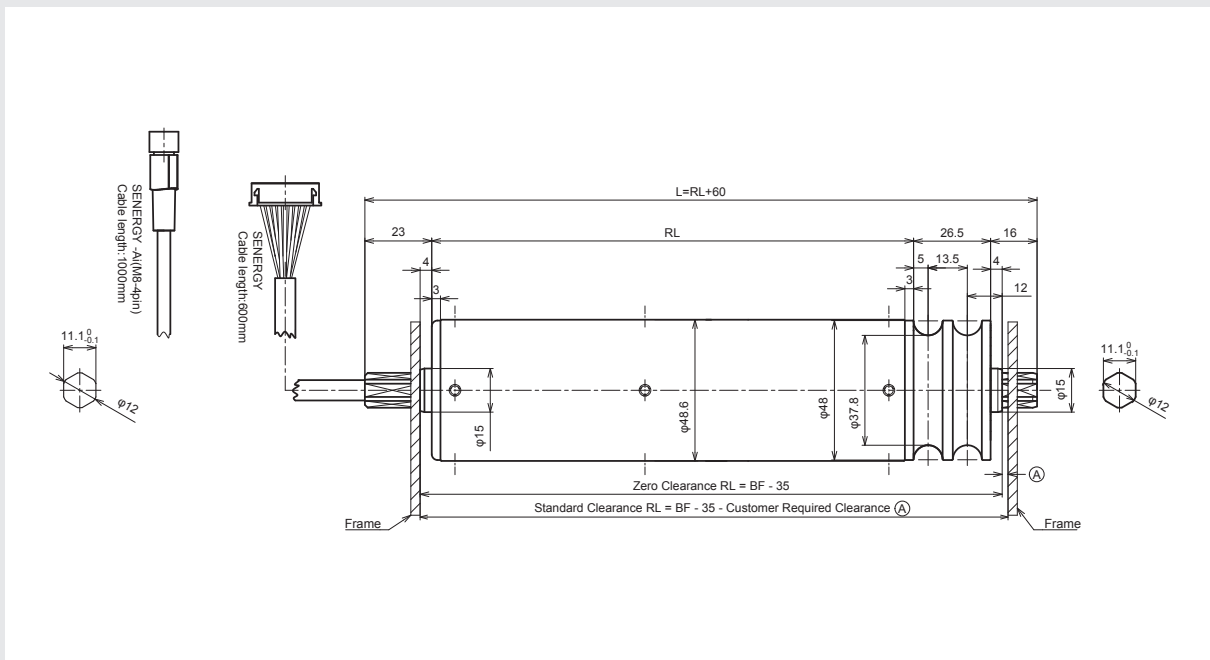




### Micro-V Pulley



### Round Groove Pulley



# SENERGY / SENERGY-Ai

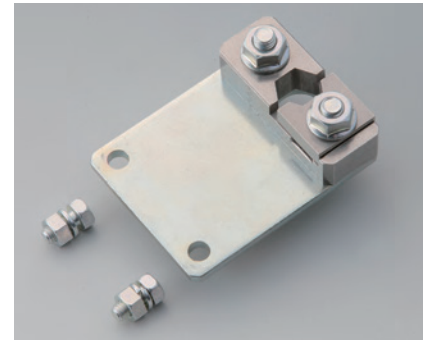
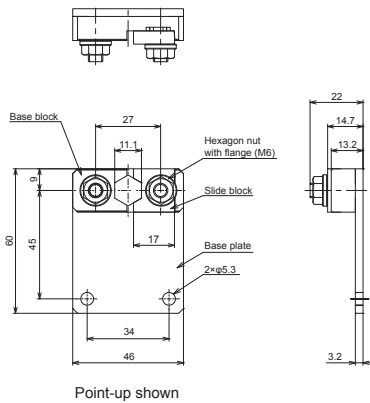
## Motor End Fixing Bracket

- Included with each roller as standard
- Bracket type must be specified at time of order

### Standard Profile

PR-D-30H-PU-N  
(Point-up)

PR-D-30H-FU-N  
(Flat-up)

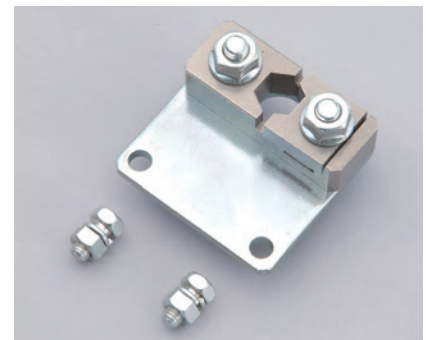
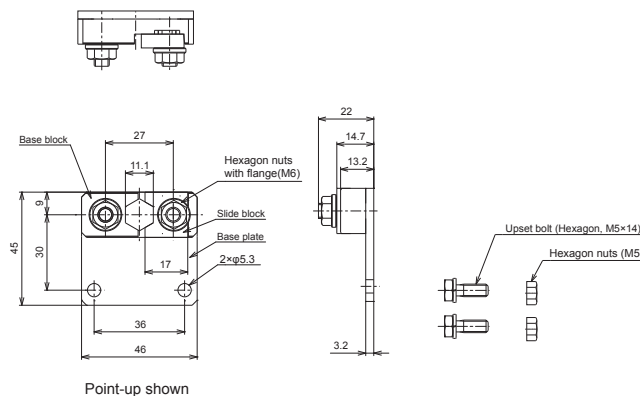


Tightening torque (M6) : 70.8 - 88.5 in-lbf  
Tightening torque (M5) : 20.4 - 30.9 in-lbf

### Short Profile

PR-D-30H-PU-N-ST  
(Point-up)

PR-D-30H-FU-N-ST  
(Flat-up)

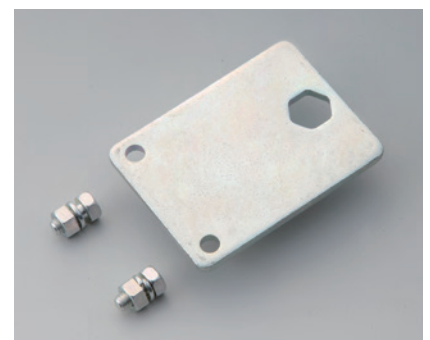
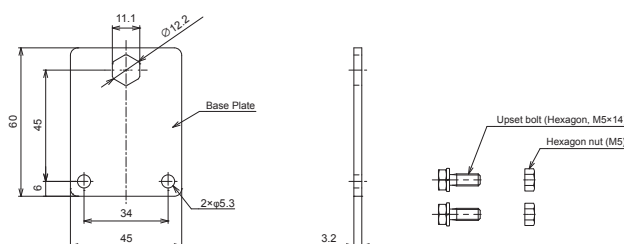


Tightening torque (M6) : 70.8 - 88.5 in-lbf  
Tightening torque (M5) : 20.4 - 30.9 in-lbf

## Idler End Fixing Bracket

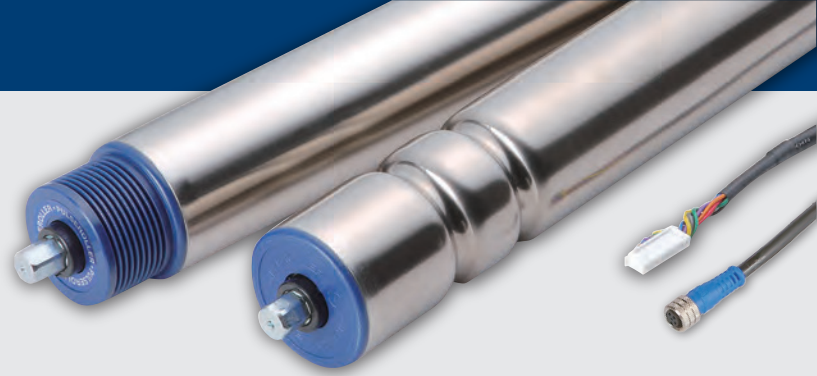
- Optional accessory not included with each roller
- Must be purchased separately
- Available in Point-up configuration only

MR-DC-30P

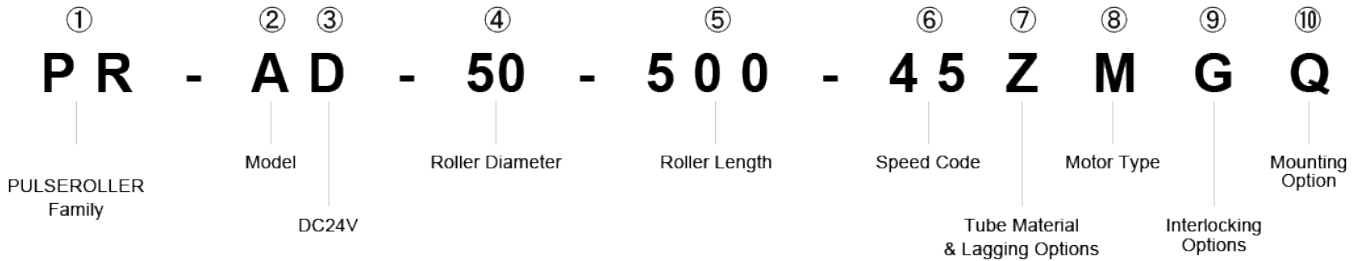


Tightening torque (M5) : 20.4 - 30.9 in-lbf





## Part Number Definition



### ② Model

- |                                      |                             |
|--------------------------------------|-----------------------------|
| <b>A</b> --- Standard                | <b>B</b> --- Built-in Brake |
| <b>D</b> --- Dual Drive              | <b>T</b> --- Taper          |
| <b>W</b> --- Wash-down Rated (IP-66) | <b>Z</b> --- Freezer Rated  |

### ④ Roller Diameter

- |                     |                       |
|---------------------|-----------------------|
| <b>50</b> --- 50 mm | <b>60</b> --- 60.5 mm |
|---------------------|-----------------------|

### ⑤ Roller Length (mm) – Available in 1 mm increments

Formulas for Roller Length (RL) based upon Between Frame (BF) dimension for proper clearance

For Interlocking Options **A** and **G**:  $RL = BF - 9 \text{ mm}$

For Interlocking Option **H**:  $RL = BF - 36 \text{ mm}$

For Interlocking Option **F**:  $RL = BF - 38 \text{ mm}$

### ⑥ Speed code

Select Speed Code from "Available Speed Codes with Performance Data" from Characteristics Data Tab

### ⑦ Tube Material and Lagging Options<sup>1</sup>

- |   |   |
|---|---|
| <b>Z</b> --- Steel, Zinc Plating, No Lagging                                    | <b>R</b> --- 2 mm Black Urethane Sleeve |
| <b>A</b> --- Steel Unichrome Plating, No Lagging (Standard for Model <b>W</b> ) | <b>Y</b> --- Special                    |
| <b>J</b> --- Stainless tube   |   |
| <b>Q</b> --- 2 mm Grey PVC Sleeve   |   |

### ⑧ Motor Type<sup>2</sup>

- |                                      |  |
|--------------------------------------|--|
| <b>S</b> --- SENERGY (JST Connector) | <b>M</b> --- SENERGY-Ai (4 Pin M8 Connector) |
|--------------------------------------|--|

### ⑨ Interlocking Options<sup>1</sup>

- |  |                                  |
|--|----------------------------------|
| <b>A</b> --- Plain Straight, No Interlocking | <b>G</b> --- Round Groove        |
| <b>H</b> --- Micro V-Pulley                  | <b>F</b> --- Round Groove Pulley |
| <b>Y</b> --- Special                         |                                  |

### ⑩ Mounting Option (Motor End / Idler End)

- |  |  |
|--|--|
| <b>Q</b> --- Non-Threaded Hex / Spring Loaded Hex  | <b>P</b> --- M12 Threaded Hex / Spring Loaded Hex  |
| <b>F</b> --- Non-Threaded Hex / M8 Female Threaded | <b>T</b> --- M12 Threaded Hex / M8 Female Threaded |
| <b>Y</b> --- Special                               |  |

<sup>1</sup> Contact Pulseroller for available non-standard lagging and interlocking options

<sup>2</sup> Model **B** not available with SENERGY-Ai Motor Type **M**



# SENERGY / SENERGY-Ai

## Available Speed Codes with Performance Data

Roller Dia: 48.6

Speed Code	Gear Box	Reduction Ratio	ECO-Mode						BOOST & BOOST-8 Mode <sup>1,2</sup>										
			Torque(N-m)		Tangential Force(N)		Current (A)		Speed (m/min)	Torque(N-m)			Tangential Force(N)			Current (A)			
			Rated	Starting	Rated	Starting	Rated (max)	Starting		Rated	BOOST Starting	BOOST-8 Starting	Rated	BOOST Starting	BOOST-8 Starting	Rated (max)	BOOST Starting	BOOST-8 Starting	
15	3 stage	45	2.0 ~ 19.7	2.9	16.3	122.2	674.6	2.5	3.0	2.0 ~ 14.3	5.4	21.3	24.3	222.2	879.6	1000.0	3.5	5.0	8.0
20		33	2.7 ~ 26.9	2.1	12.0	89.4	493.8			2.7 ~ 19.5	3.9	15.6	17.7	162.6	643.8	732.0			
25		27	3.3 ~ 32.8	1.7	9.8	73.3	404.7			3.3 ~ 23.8	3.2	12.8	14.5	133.3	527.7	600.0			
35	2 stage	18.3	4.8 ~ 48.5	1.2	6.6	49.7	274.3			4.8 ~ 35.0	2.1	8.6	9.8	90.3	357.7	406.6			
45		15	5.9 ~ 59.1	0.9	5.4	40.7	224.8			5.9 ~ 42.8	1.8	7.1	8.1	74.0	293.2	333.3			
60		11	8.0 ~ 80.8	0.7	4.0	29.8	164.6			8.1 ~ 58.4	1.3	5.2	5.9	54.2	214.6	244.0			
75	1 stage	9	9.8 ~ 98.5	0.5	3.2	24.4	134.9			9.8 ~ 71.3	1.0	4.2	4.8	44.4	175.9	200.0			
95		6.81	12.9 ~ 130.1	0.4	2.4	18.5	102.2			12.9 ~ 94.1	0.8	3.2	3.6	33.6	133.2	151.5			
125		5	17.6 ~ 177.4	0.3	1.8	13.5	74.9			17.6 ~ 128.3	0.6	2.3	2.7	24.6	97.7	111.1			
175	3.6	24.0 ~ 242.3	0.2	1.3	9.9	54.8	24.0 ~ 175.2			0.4	1.7	1.9	18.0	71.5	81.3				
215	3	29.3 ~ 295.6	0.1	1.0	8.1	44.9	29.3 ~ 213.8			0.3	1.4	1.6	14.8	58.6	66.6				

<sup>1</sup>Rated Torque and Tangential Force values are the same for BOOST and BOOST-8

<sup>2</sup>BOOST-8 performance only available with EZ-24HTB, ConveyLinX-HTF, ConveyLinX-Ai2, and MotionLinX-Ai controllers

### Useful Conversion Formulas

$$Ft/min = m/min \times 3.28$$

$$in-lbf = N-m \times 8.85$$

$$lbf = N \times 0.225$$

# SENERGY / SENERGY-Ai

## Optional Model

### Built-in Brake

- Description: Includes electro-mechanical holding brake, failsafe operation, energize to release
- Availability: Not available for SENERGY-Ai models
- Conformance: CE, RoHS, IP54
- Certifications: ETL Listed to UL 1004-1 & UL 1004-6
- Tube Material Options: Zinc Plated Mild Steel, Stainless (SUS304)
- Available Roller Diameters: 48.6 mm (1.9"), 50.0 mm (1.97")  
57.0 mm (2.24"), 60.5 mm (2.38")
- Min. Roller Length<sup>2</sup>: Refer to *Available Minimum Roller Length* table
- Max. Roller Length<sup>2</sup>: 1000 mm
- Cable Length<sup>3</sup>: 600 mm
- Motor Connection: 9-Pin JST
- Duty Cycle: 0.5 sec ON / 0.5 sec OFF minimum
- Operation: Continuous at rated load/current without overheating

Compatible Control Technologies <sup>1</sup>



## Part Number Definition

**P R - B D - 4 8 - 5 0 0 - 4 5 Z S A Q**

B for Built-in Brake Model

## Available Minimum Roller Length<sup>2</sup> (mm)

Motor Type	Speed Code	Interlocking Option			
		Plain Straight	Micro V-Pulley	Round Groove Pulley	Round Groove
SENERGY 48.6 / 50.0	15, 20, 25	394	387	394	426
	35, 45, 60, 75	371	364	371	403
	95, 125, 175, 215	343	336	343	376

## Holding Torque (N-m)

Speed Code	15	20	25	35	45	60	75	95	125	175	215
Holding Torque	11.2	8.2	6.7	4.5	3.7	2.7	2.2	1.7	1.2	0.9	0.7

<sup>1</sup> For EZ-24 Family controls, Built-in Brake function only available on EZ-24HTB and EZ-24HTBs

<sup>2</sup> Contact Pulseroller for available non-standard lengths

<sup>3</sup> See Ordering Information on page 61 for Motor Extension Cables

# SENERGY / SENERGY-Ai

## Optional Model

### Dual Drive

- Description: Includes 2 motors in single roller tube
- Conformance: CE, RoHS, IP54
- Certifications: ETL Listed to UL 1004-1 & UL 1004-6
- Tube Material Options: Zinc Plated Mild Steel, Stainless (SUS304)
- Available Roller Diameters: 48.6 mm (1.9"), 50.0 mm (1.97")  
57.0 mm (2.24"), 60.5 mm (2.38")
- Min. Roller Length<sup>1</sup>: Refer to *Available Minimum Roller Length* table
- Max. Roller Length<sup>1</sup>: 1200 mm
- Cable Length<sup>2</sup>: 600 mm (SENERGY) / 1000 mm (SENERGY-Ai)
- Motor Connection: 9-Pin JST (SENERGY) / 4-Pin M8 (SENERGY-Ai)
- Duty Cycle: 0.5 sec ON / 0.5 sec OFF minimum
- Operation: Continuous at rated load/current without overheating
- Requirements: ConveyLinx Master/Slave control mode
- Exclusions: Not to be controlled by individual Simple Drive Controls (E-Qube, EZ-Qube, EZ-24)

#### Compatible Control Technologies

SENERGY



SENERGY - Ai



## Part Number Definition

**P R - D D - 4 8 - 5 0 0 - 4 5 Z S A Q**

D for Dual Drive Model

## Available Minimum Roller Length<sup>1</sup> (mm)

Motor Type	Speed Code	Plain Straight
SENERGY 48.6 / 50.0	15, 20, 25	483
	35, 45, 60, 75	438
SENERGY-Ai 48.6 / 50.0	15, 20, 25	493
	35, 45, 60, 75	448

<sup>1</sup> Contact Pulseroller for available non-standard lengths

<sup>2</sup> See Ordering Information on page 61 for Motor Extension Cables



# SENERGY / SENERGY-Ai

## Optional Model

### Freezer Rated

- Temperature Range : From 0°C (32°F) to -30°C (-22°F)
- Conformance: CE, RoHS, IP54
- Certifications: ETL Listed to UL 1004-1 & UL 1004-6
- Tube Material Options: Zinc Plated Mild Steel, Stainless (SUS304)
- Side Plate Material: Aluminum
- Available Roller Diameters: 48.6 mm (1.9"), 50.0 mm (1.97")  
57.0 mm (2.24"), 60.5 mm (2.38")
- Min. Roller Length<sup>2</sup>: Refer to *Available Minimum Roller Length* table
- Max. Roller Length<sup>2</sup>: 1000 mm
- Cable Length<sup>3</sup>: 600 mm (SENERGY) / 1000 mm (SENERGY-Ai)
- Motor Connection: 9-Pin JST (SENERGY) / 4-Pin M8 (SENERGY-Ai)
- Duty Cycle: 0.5 sec ON / 0.5 sec OFF minimum
- Operation: Continuous at rated load/current without overheating

Compatible Control Technologies <sup>1</sup>



## Part Number Definition

**P R - Z D - 4 8 - 5 0 0 - 4 5 Z S A Q**

Z for Freezer Rated Model

## Available Minimum Roller Length<sup>2</sup> (mm)

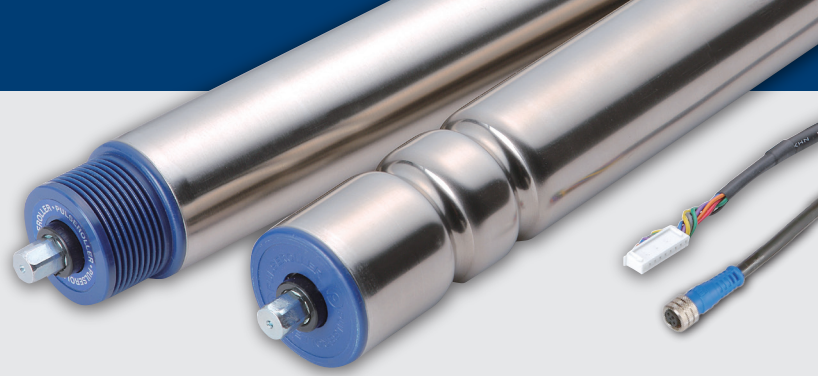
Motor Type	Speed Code	Interlocking Option			
		Plain Straight	Micro V-Pulley	Round Groove Pulley	Round Groove
SENERGY 48.6 / 50.0	15, 20, 25	326	311	311	357
	35, 45, 60, 75	302	287	287	333
	95, 125, 175, 215	275	260	260	306
SENERGY-Ai 48.6 / 50.0	15, 20, 25	332	317	317	363
	35, 45, 60, 75	308	293	293	339
	95, 125, 175, 215	281	266	266	312

<sup>1</sup> Only ConveyLinX-HTF and ConveyLinX-Ai2-F available for freezer control

<sup>2</sup> Contact Pulseroller for available non-standard lengths

<sup>3</sup> See Ordering Information on page 61 for Motor Extension Cables

<sup>4</sup> Controls must be mounted in an appropriate enclosure to achieve IP66 rating



## Optional Model

### Wash-Down Rated

- Conformance: CE, RoHS
- Certifications: ETL Listed to UL 1004-1 & UL 1004-6
- IP Rating: IP66 Environmental Rating
- Material: All Stainless Construction for Tube (SUS304) and Bearings & Shaft (SUS303)
- Available Roller Diameters: 48.6 mm (1.9"), 50.0 mm (1.97")  
57.0 mm (2.24"), 60.5 mm (2.38")
- Min. Roller Length<sup>2</sup>: Refer to *Available Minimum Roller Length* table
- Max. Roller Length<sup>2</sup>: 1000 mm
- Cable Length<sup>3</sup>: 600 mm (SENERGY) / 1000 mm (SENERGY-Ai)
- Motor Connection: 9-Pin JST (SENERGY) / 4-Pin M8 (SENERGY-Ai)
- Duty Cycle: 0.5 sec ON / 0.5 sec OFF minimum
- Operation: Continuous at rated load/current without overheating

#### Compatible Control Technologies <sup>4</sup>

SENERGY



EQUBE



EZQUBE



CONVEYLINX

SENERGY - Ai



EQUBE



CONVEYLINX



MOTIONLINX

## Part Number Definition

**P R - W D - 4 8 - 5 0 0 - 4 5 A S A Q**

W for Wash-down Rated Model

A for Wash-Down Rated Model

## Available Minimum Roller Length<sup>2</sup> (mm)

Motor Type	Speed Code	Interlocking Option			
		Plain Straight	Micro V-Pulley	Round Groove Pulley	Round Groove
SENERGY 48.6 / 50.0	15, 20, 25	368	352	359	382
	35, 45, 60, 75	344	328	335	358
	95, 125, 175, 215	317	301	308	331
SENERGY-Ai 48.6 / 50.0	15, 20, 25	348	332	339	362
	35, 45, 60, 75	324	308	315	338
	95, 125, 175, 215	297	281	288	311

# PGD / PGD-Ai -Pulse Geared Drive-

## Product Information

### General Information

- Conformance: CE, RoHS, IP54
- Certifications: ETL Listed to UL 1004-1 & UL 1004-6
- Mounting: M5 x 7 mm
- Shaft Diameter: 16 mm
- Key: 5 x 5 x 25 mm
- Cable Length<sup>1</sup>: 600 mm (SENERGY) / 1000 mm (SENERGY-Ai)
- Motor Connection: 9-Pin JST (SENERGY) / 4-Pin M8 (SENERGY-Ai)
- Duty Cycle: 0.5 sec ON / 0.5 sec OFF minimum
- Operation: Continuous at rated load/current without overheating



### Compatible Control Technologies

SENERGY



EQUBE



EZQUBE



CONVEYLINX

SENERGY - Ai



EQUBE



CONVEYLINX



MOTIONLINX

### Technical Data

	ECO Mode	BOOST Mode	BOOST-8 Mode
Voltage	DC24V		
Nominal Output	40W	50W	50W
Rated Current	2.5A	3.5A	3.5A
Starting Current	3.0A	5.0A	8.0A
Ambient Temperature	-10 ~ 40°C (14 ~ 104°F) (No condensation)		
Ambient Humidity	10 ~ 90% RH (No condensation)		

### Weight Table (kg)

Gear Box	Reduction Ratio	Weight
3 stage	67, 45, 33, 27	1.5
2 stage	18, 15, 11, 9	1.2

<sup>1</sup> See Ordering Information on page 61 for Motor Extension Cables



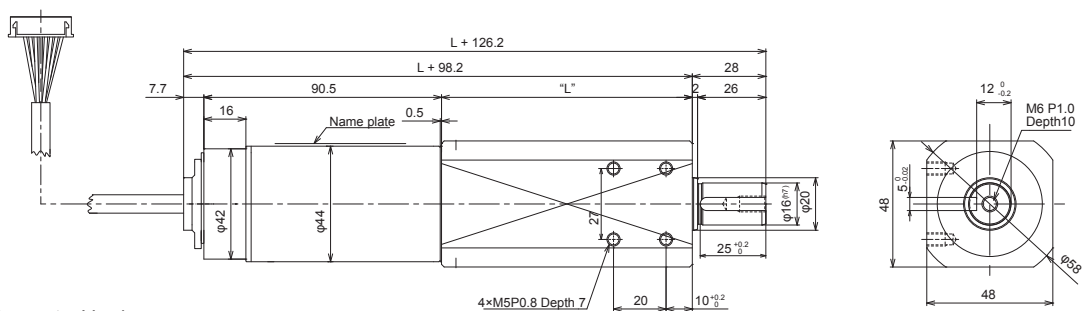
## Characteristics Data

Nominal Gear Ratio	Actual Gear Ratio	Gear Box	ECO Mode				BOOST & BOOST-8 Mode <sup>1,2</sup>							
			Output Shaft Speed (rpm)	Torque(N-m)		Current (A)		Output Shaft Speed (rpm)	Torque(N-m)			Current (A)		
				Rated	Starting	Rated (max)	Starting		Rated	BOOST Starting	BOOST-8 Starting	Rated (max)	BOOST Starting	BOOST-8 Starting
67	67.2	3 stage	8.5 ~ 86.7	4.4	24.4	2.5	3.0	8.5 ~ 62.7	8.0	31.8	36.1	3.5	5.0	8.0
45	45		12.8 ~ 129.0	2.9	16.3			12.8 ~ 93.3	5.4	21.3	24.3			
33	33		17.4 ~ 176.3	2.1	12.0			17.4 ~ 127.5	3.9	15.6	17.7			
27	27		21.3 ~ 215.1	1.7	9.8			21.3 ~ 155.5	3.2	12.8	14.5			
18	18.3	2 stage	31.4 ~ 317.3	1.2	6.6			31.4 ~ 229.5	2.1	8.6	9.8			
15	15		38.4 ~ 387.2	0.9	5.4			38.4 ~ 280.0	1.8	7.1	8.1			
11	11		52.4 ~ 528.9	0.7	4.0			52.4 ~ 382.5	1.3	5.2	5.9			
9	9		64.0 ~ 645.3	0.5	3.2			64.0 ~ 466.6	1.0	4.2	4.8			

<sup>1</sup> Rated Torque and Tangential Force values are the same for BOOST and BOOST-8

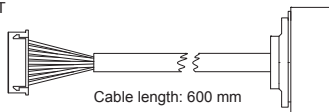
<sup>2</sup> BOOST-8 performance only available with EZ-24HTB, ConveyLinX-HTF, ConveyLinX-Ai2, and MotionLinX-Ai controllers

## Dimensions (mm)

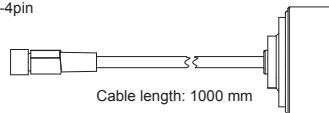


### Connector Versions

SENERGY  
JST

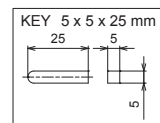


SENERGY-Ai  
M8-4pin



"L" dimension

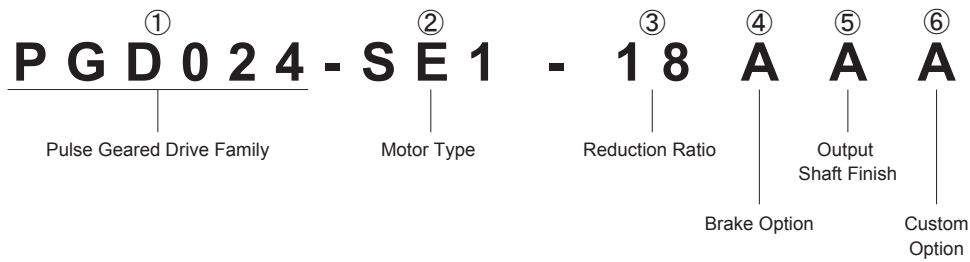
2-stage	93.5 mm
3-stage	116.9 mm





# PGD / PGD-Ai -Pulse Geared Drive-

## Part Number Definition



### ② Motor Type

**SE1** --- PGD (JST connector)

**SE2** --- PGD-Ai (M8-4pin connector, ETL)

### ③ Reduction Ratio

Selection of gear ratio \*See Characteristics data table for available gear ratios.

### ④ Brake Option

**A** --- Standard

**B** --- Brake

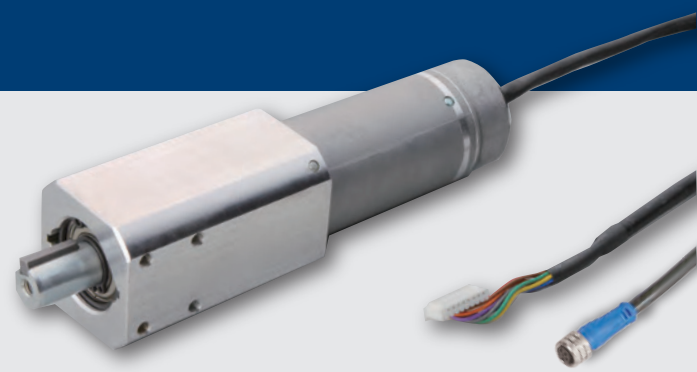
### ⑤ Output Shaft Finish

**A** --- Standard key-way shaft (No attachment)

### ⑥ Custom Option

**A** --- Standard

**Y** --- Special



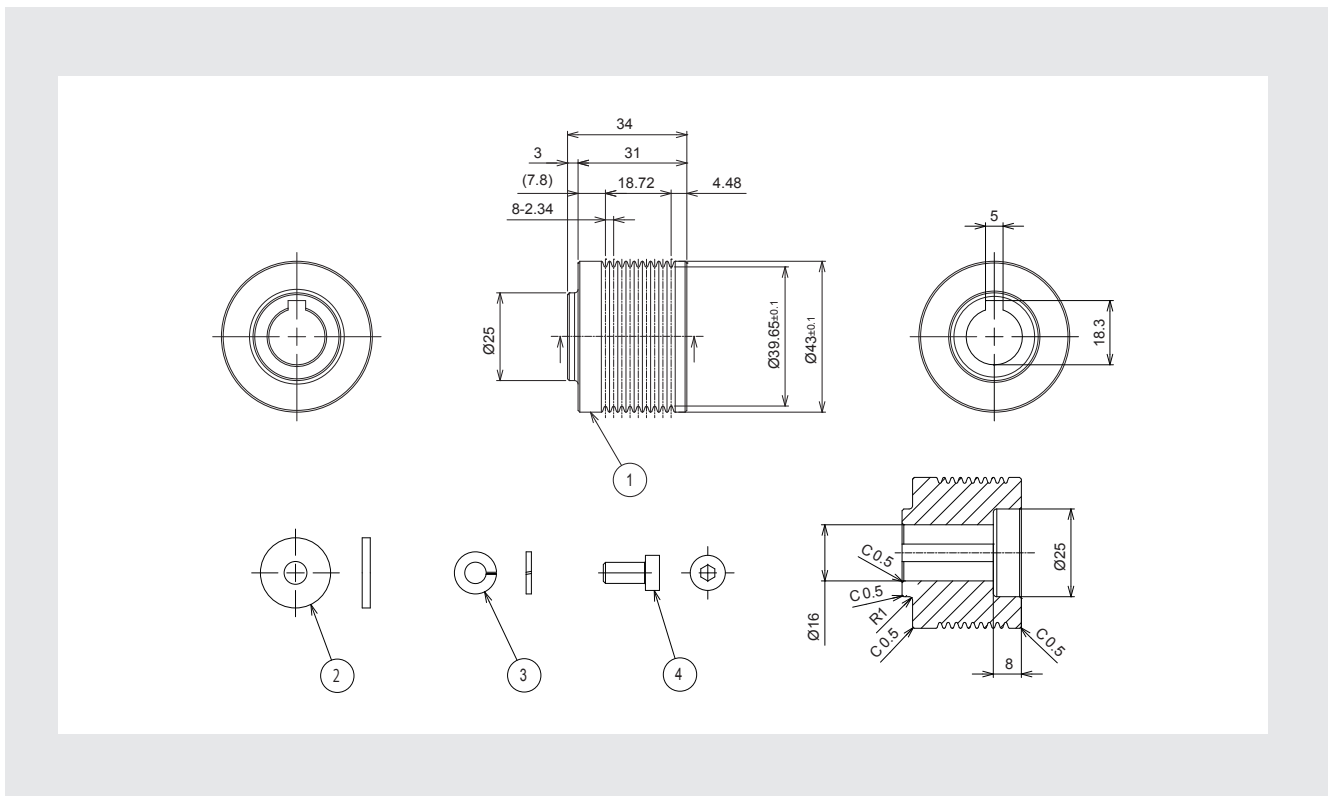
## Accessory

### Micro V-Pulley Kit for PGD Output Shaft

#### Part Number Definition

**P G D - 0 6 - 0 0 1**

#### Dimensions (mm)



#### PGD-06-001 KIT ITEMS

ITEM	DRAWING	DESCRIPTION	QTY
1	PGD-6-MVP-SNG-M	MICRO-V PULLEY HUB	1
2	PWB-20-6.5-2.3	PLAIN WASHER	1
3	SWB-M6	SPRING WASHER	1
4	LHB-M6-12	LOW HEAD HEXAGON SOCKET CAP SCREW	1

# Wash-Down Rated PGD-Ai

## Product Information

### General Information

- Conformance: CE, RoHS, IP66
- Certifications: ETL Listed to UL 1004-1 & UL 1004-6
- Material: All stainless made: (Tube: SUS304, Shaft: SUS303)
- Mounting: M6 x 5 mm
- Shaft Diameter: 16 mm
- Key: 5 x 5 x 25 mm
- Cable Length<sup>1</sup>: 1000 mm
- Motor Connection: 4-Pin M8 (SENERGY-Ai)
- Duty Cycle: 0.5 sec ON / 0.5 sec OFF minimum
- Operation: Continuous at rated load/current without overheating

### Compatible Control Technologies

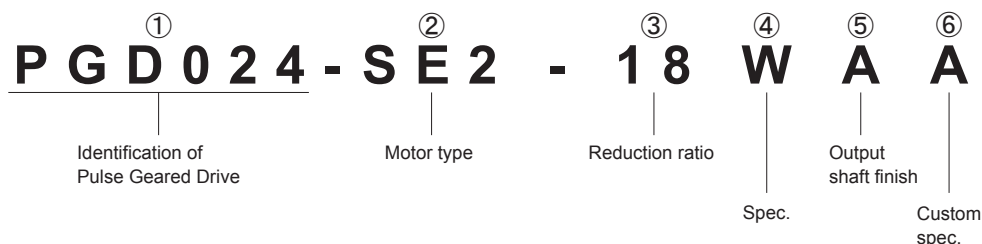
SENERGY - Ai



### Technical Data

	ECO Mode	BOOST Mode	BOOST-8 Mode
Voltage	DC24V		
Nominal Output	40W	50W	50W
Rated Current	2.5A	3.5A	3.5A
Starting Current	3.0A	5.0A	8.0A
Ambient Temperature	-10 ~ 40°C (14 ~ 104°F) (No condensation)		
Ambient Humidity	10 ~ 90% RH (No condensation)		

### Part number definition



- ② Motor type  
**SE2** --- PGD-Ai (M8-4pin connector, ETL)
- ③ Reduction ratio  
Selection of gear ratio \*See Characteristics data table for available gear ratios.
- ④ Spec.  
**W** --- Wash-down rated
- ⑤ Output shaft finish  
**A** --- Standard key-way shaft (No attachment)      **H** --- Micro V pulley
- ⑥ Custom spec.  
**A** --- Standard      **Y** --- Special

<sup>1</sup> See Ordering Information on page 61 for Motor Extension Cables



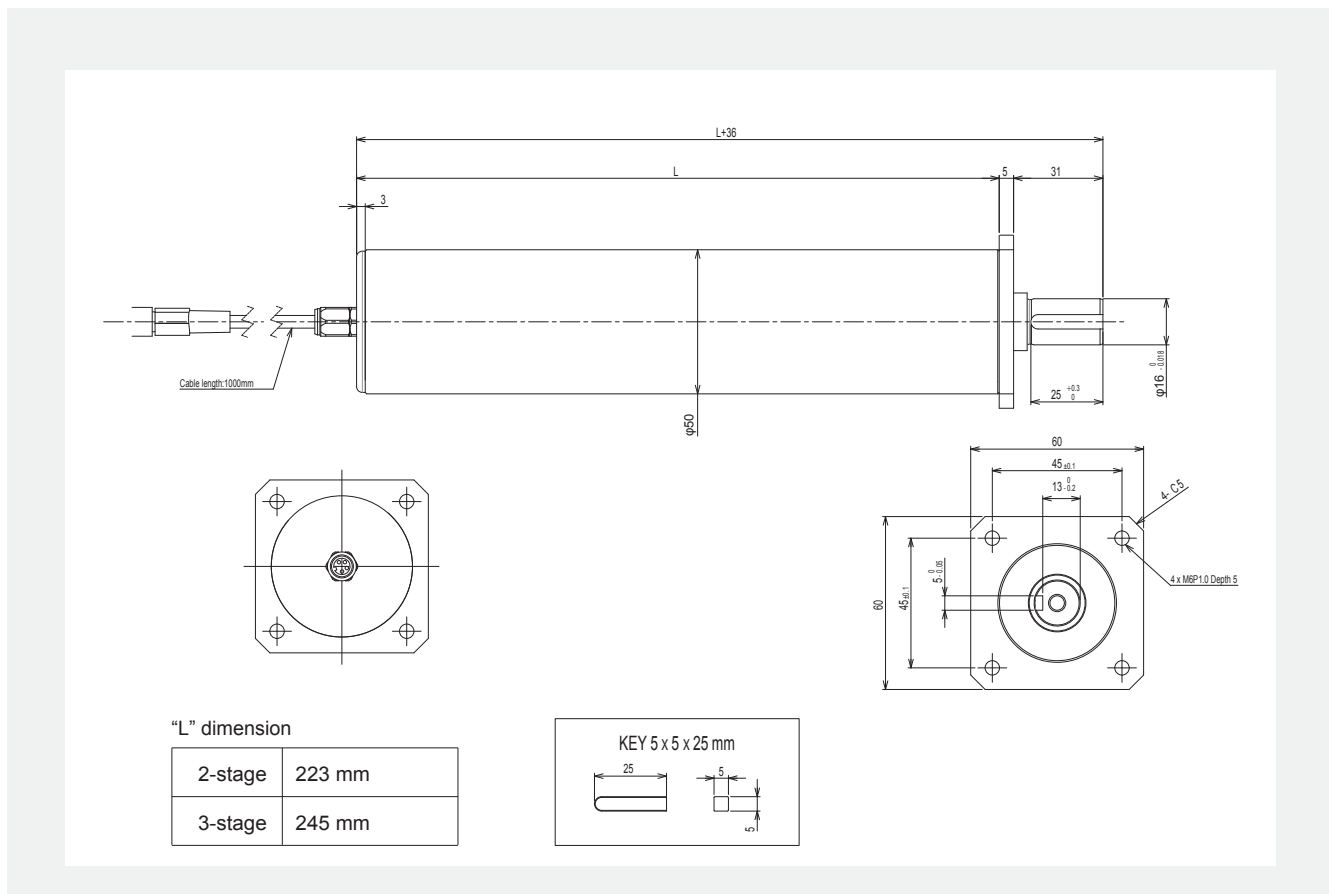
## Characteristics Data

Nominal Gear Ratio	Actual Gear Ratio	Gear Box	ECO Mode				BOOST & BOOST-8 Mode <sup>1, 2</sup>							
			Output Shaft Speed (rpm)	Torque(N-m)		Current (A)		Output Shaft Speed (rpm)	Torque(N-m)			Current (A)		
				Rated	Starting	Rated (max)	Starting		Rated	BOOST Starting	BOOST-8 Starting	Rated (max)	BOOST Starting	BOOST-8 Starting
45	45	3 stage	12.8 ~ 129.0	2.9	16.3	2.5	3.0	12.8 ~ 93.3	5.4	21.3	24.3	3.5	5.0	8.0
33	33		17.4 ~ 176.3	2.1	12.0			17.4 ~ 127.5	3.9	15.6	17.7			
27	27		21.3 ~ 215.1	1.7	9.8			21.3 ~ 155.5	3.2	12.8	14.5			
18	18.3	2 stage	31.4 ~ 317.3	1.2	6.6			31.4 ~ 229.5	2.1	8.6	9.8			
15	15		38.4 ~ 387.2	0.9	5.4			38.4 ~ 280.0	1.8	7.1	8.1			
11	11		52.4 ~ 528.9	0.7	4.0			52.4 ~ 382.5	1.3	5.2	5.9			
9	9		64.0 ~ 645.3	0.5	3.2	64.0 ~ 466.6	1.0	4.2	4.8					

<sup>1</sup> Rated Torque and Tangential Force values are the same for BOOST and BOOST-8

<sup>2</sup> BOOST-8 performance only available with ConveyLinX-Ai2, and MotionLinX-Ai controllers

## Dimensions (mm)



# Pallet / Pallet-Ai

## Product Information

### General Information

- Conformance: CE, RoHS, IP54
- Certifications: ETL Listed to UL 1004-1 & UL 1004-6
- Tube Material Options<sup>1</sup>: Zinc Plated Mild Steel, Stainless (SUS304)
- Available Roller Diameters: 60.5 mm (2.38"), 63.5 mm (2.5")
- Min. Tube Length: 450 mm
- Max. Tube Length: 1800 mm
- Cable Length<sup>2</sup>: 600 mm (SENERGY) / 1000 mm (SENERGY-Ai)
- Motor Connection: 9-Pin JST (SENERGY) / 4-Pin M8 (SENERGY-Ai)
- Duty Cycle: 1.0 sec ON / 1.0 sec OFF minimum
- Operation: Continuous at rated load/current without overheating  
Boost-8 Mode Recommended



### Compatible Control Technologies <sup>3</sup>

SENERGY



SENERGY - Ai



### Technical Data

Voltage	DC24V
Nominal Output	50W
Rated Current	3.5A (Boost and Boost-8)
Starting Current	5.0A (Boost), 8.0A (Boost-8)
Ambient Temperature	-10 ~ 40°C (14 ~ 104°F) (No condensation)
Ambient Humidity	10 ~ 90% RH (No condensation)

### Roller Weight Table<sup>4</sup> (kg)

Diameter (mm)	Roller Length (mm)										
	500	600	700	800	900	1000	1100	1200	1300	1400	1500
60.5	8.1	8.6	9.0	9.5	9.9	10.4	10.8	11.2	11.7	12.1	12.6
63.5	8.6	9.1	9.6	10.1	10.7	11.2	11.7	12.2	12.7	13.2	13.8

### Tube Wall Thickness (mm)

Diameter	60.5	63.5
Thickness	3.25	3.00

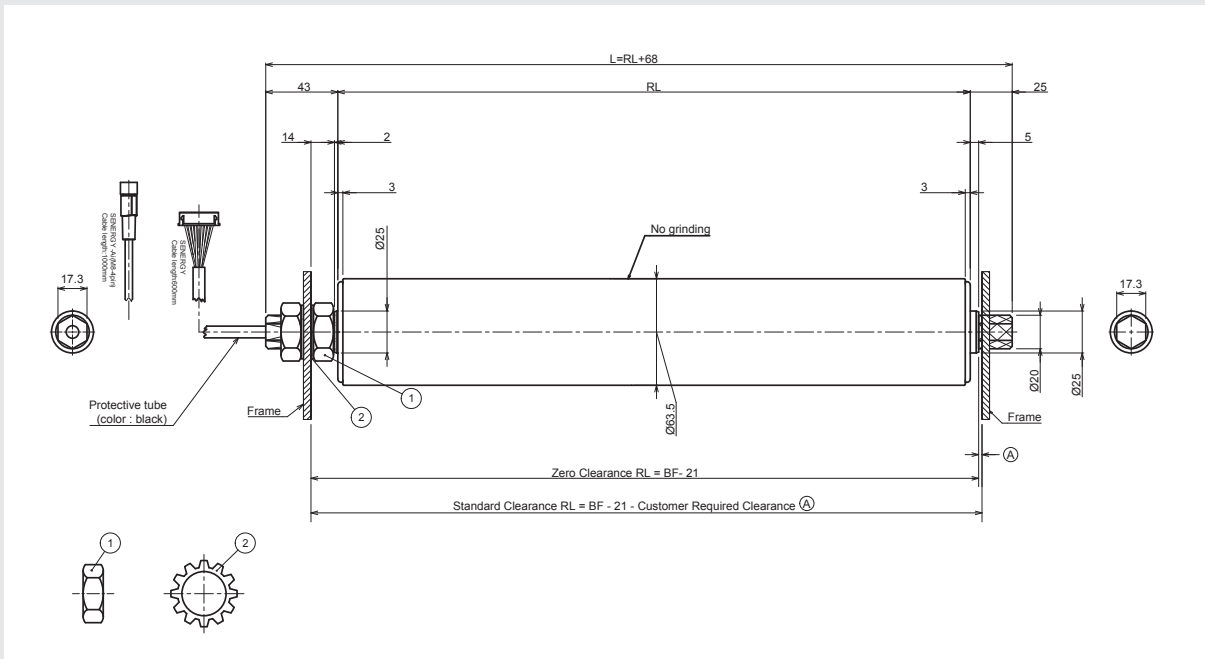
### Static Load Capacity<sup>5</sup> (kg)

Diameter (mm)	Roller Length (mm)										
	500	600	700	800	900	1000	1100	1200	1300	1400	1500
60.5	300	280	250	220	190	150	120	90	60	50	40
63.5	300	300	270	240	210	170	130	100	80	60	50

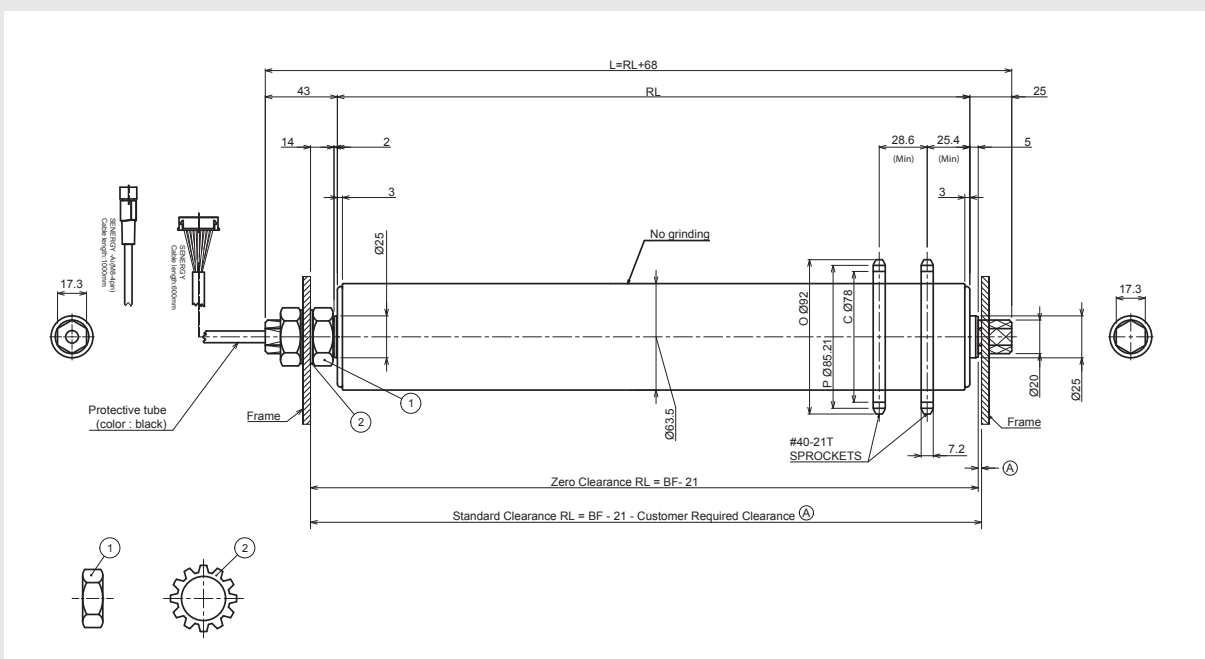
# Pallet / Pallet-Ai

## Dimensions (mm)

### Straight

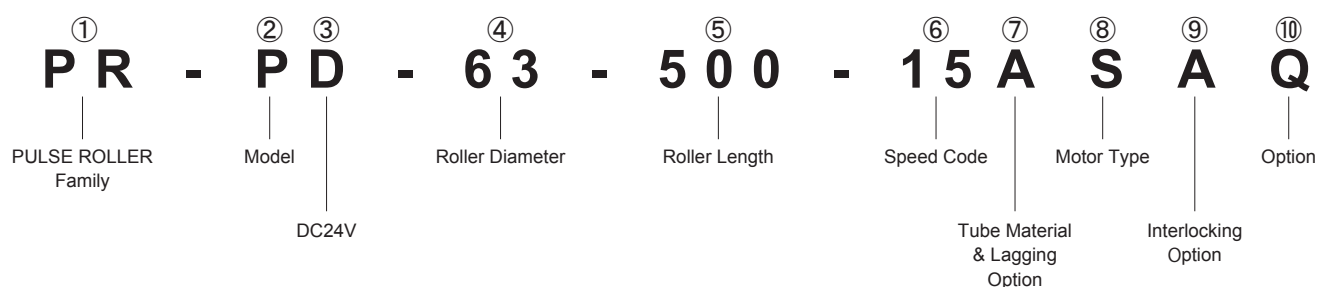


### Dual Sprockets



# Pallet / Pallet-Ai

## Part Number Definition



### ② Model

**P** --- Pallet Handling

**M** --- Pallet Handling + Wash down rated (IP-66)<sup>1</sup>

### ④ Roller Diameter

**60** --- 60.5 mm (2.38")

**63** --- 63.5 mm (2.5")

### ⑤ Roller Length (mm) – Available in 1 mm increments

Formula for Roller Length (RL) is based upon Between Frame (BF) dimension for proper clearance

$RL = BF - 21mm - \text{Customer Required Clearance}$

For most conveyor applications, Customer Required Clearance = 2mm

### ⑥ Speed Code

Selection of speed range \*See Characteristics data table for available speed codes.

### ⑦ Tube Material & Lagging Option

**A** --- Standard, Mild steel, Zinc plating

**J** --- Stainless<sup>1</sup>

**B** --- 3 mm Black rubber lagging

**W** --- 3 mm Urethane lagging

### ⑧ Motor Type

**S** --- Pallet (JST connector)

**M** --- Pallet-Ai (M8-4pin connector)

### ⑨ Interlocking Option

**A** --- Plain straight, No interlocking

**D** --- Dual sprockets

### ⑩ Custom Option

**Q** --- Standard

**Y** --- Special

<sup>1</sup> Stainless option not available for 63.5 mm Roller Diameter

<sup>2</sup> For Standard SENERGY (JST Connector), Boost-8 Mode only available on EZ-24HTB, EZ-24HTBs, and ConveyLinX-HTF



## Characteristics Data

**Roller Dia: 60.5 (2.38")**

Speed Code	Gearbox	Gear Ratio	Speed (m/min)	Torque (N-m)			Tangential Force (N)			Current (A)		
				Rated	Boost Starting	Boost-8 Starting	Rated	Boost Starting	Boost-8 Starting	Rated (max)	Boost Starting	Boost-8 Starting <sup>2</sup>
8	Reinforced 3 stage	91.6̄	1.2 ~ 8.7	10.9	43.3	49.3	362.3	1434.1	1630.3	3.5	5.0	8.0
10		67.2̄	1.6 ~ 11.9	8.0	31.8	36.1	265.6	1051.7	1195.6			
15		45	2.4 ~ 17.7	5.4	21.3	24.3	178.5	706.6	803.3			
20		33	3.3 ~ 24.2	3.9	15.6	17.7	130.6	517.2	588.0			

**Roller Dia: 63.5 (2.5")**

Speed Code	Gearbox	Gear Ratio	Speed (m/min)	Torque (N-m)			Tangential Force (N)			Current (A)		
				Rated	Boost Starting	Boost-8 Starting	Rated	Boost Starting	Boost-8 Starting	Rated (max)	Boost Starting	Boost-8 Starting <sup>2</sup>
8	Reinforced 3 stage	91.6̄	1.3 ~ 9.2	10.9	43.3	49.3	345.1	1366.3	1553.3	3.5	5.0	8.0
10		67.2̄	1.7 ~ 12.5	8.0	31.8	36.1	253.1	1002.0	1139.1			
15		45	2.6 ~ 18.6	5.4	21.3	24.3	170.0	673.2	765.3			
20		33	3.5 ~ 25.4	3.9	15.6	17.7	124.4	492.8	560.2			

### Useful Conversion Formulas

$$\text{Ft/min} = \text{m/min} \times 3.28$$

$$\text{in-lbf} = \text{N-m} \times 8.85$$

$$\text{lbf} = \text{N} \times 0.225$$



# PDU-90 -Pulse Divert Unit 90 degrees-

## Product Information

### Features

- CE compliant, RoHS compliant
- Low profile design
- Easy installation by mounting directly underneath conveyor frame
- Easy maintenance
- 2 SENERGY rollers for belt drive and lift up & down (No pneumatics)
- Customizable (W, L dimensions and number of belt units)
- Strong and oversized mechanical design

### Compatible Control Technologies

SENERGY

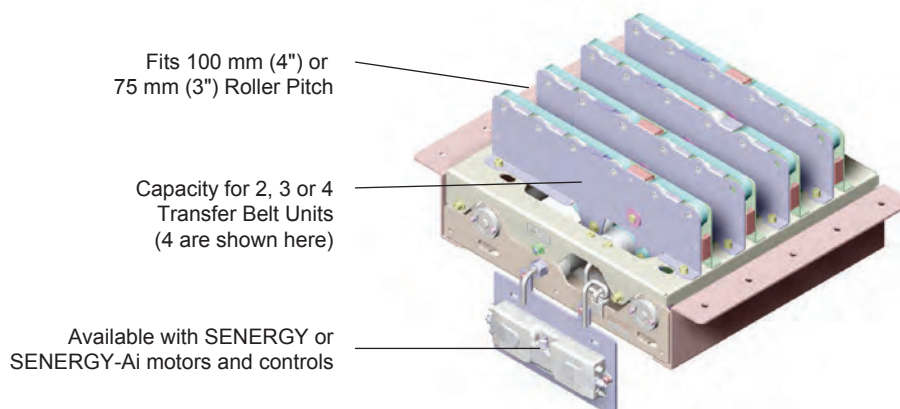


SENERGY - Ai



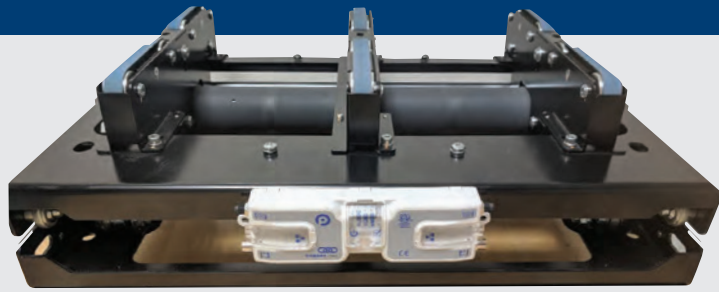
### Technical Data

Voltage	DC24V
Roller Pitch Options <sup>1</sup>	75 mm and 100 mm
Max Load	50 kg
Belt Speed	60 m/min
Lift-up Stroke	15 mm
Through-put <sup>2</sup>	1500 / h
Minimum Dimensions	W360 x L380 (For BF 380 mm)
Maximum Dimensions	W960 x L800 (For BF 820 mm)
Ambient Temperature	-10°C ~ 40°C (14 ~ 104°F) (No condensation)
Ambient Humidity	10 ~ 90% RH (No condensation)



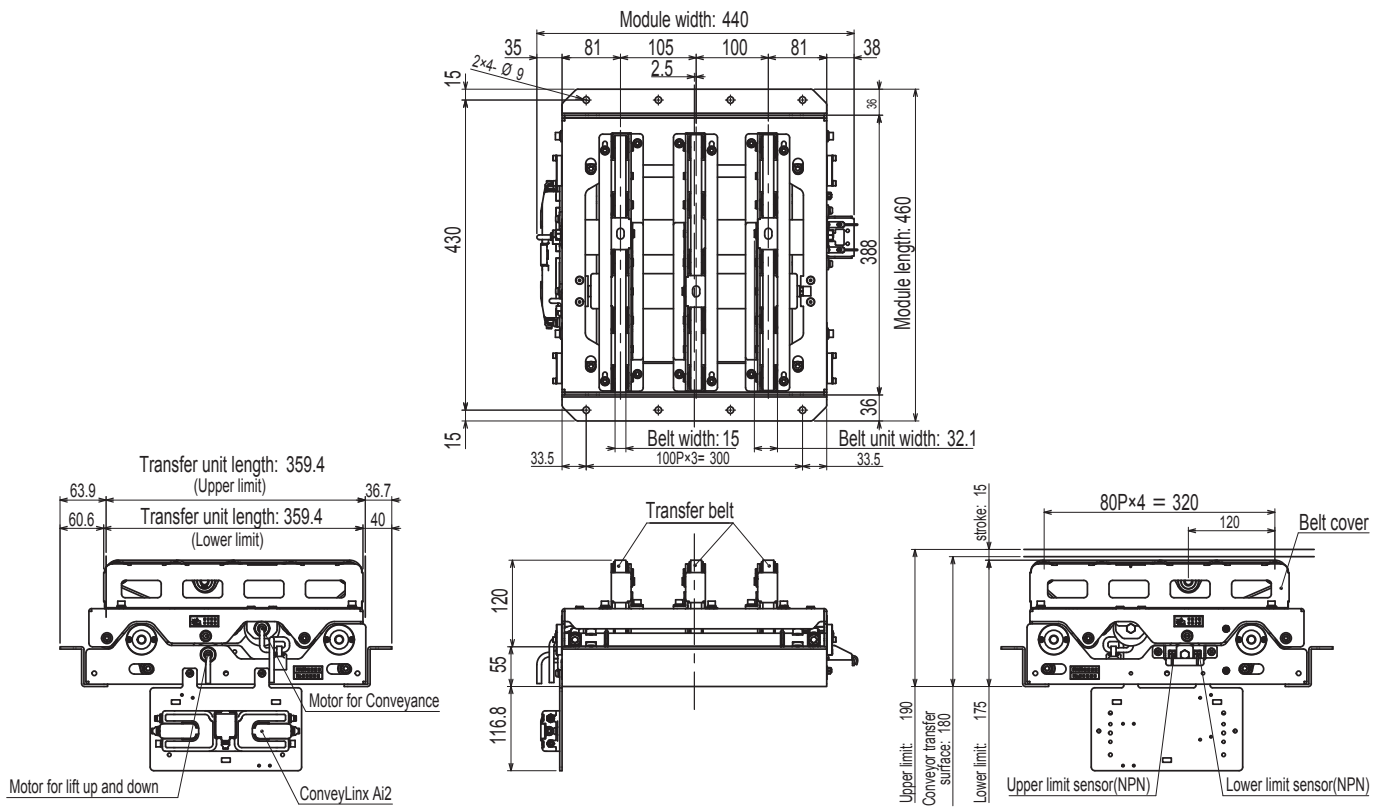
<sup>1</sup> Contact PulseRoller for irregular or non standard roller pitch

<sup>2</sup> Through-put can vary depending upon product size and control algorithm

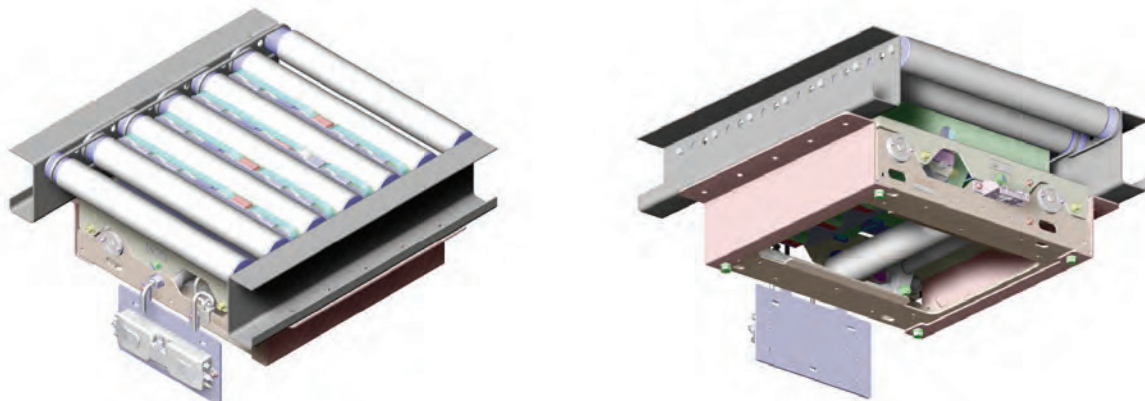


## Dimensions

( Reference drawing for BF 400 mm conveyor)



Top and Bottom Views when Assembled to Conveyor



# PDU-90 -Pulse Divert Unit 90 degrees-

## How to Order a PDU-90

PDU-90 Units are made to order to fit your specific conveyor dimensions. When you contact Pulseroller for a quote or to place an order we will need to know the following dimensions and information:

### Conveyor Dimensions (refer to Drawing on page 35)

(Please give all dimensions in mm)

- A** – Roller Pitch of either 75 mm (3") or 100 mm (4")<sup>1</sup>
- B** – Conveyor Between Frame (BF)
- C** – Height of Side Frame
- D** – Width of Bottom Flange of Side Frame
- E** – Top of Side Frame to Top of Roller
- F** – Length of Zone
- G** – Roller Diameter of either 48.6 mm or 50 mm

### Other Options:

- H** – Transfer Belt Units – specify whether you want 2, 3, or 4
- J** – Interlocking – Specify whether your conveyor has Micro-V or Grooves with O-Bands. If using O-Bands, specify the dimension from the end of the roller to the centerline of the first groove and the dimension between groove centerlines.
- K** – Motor/Control – Specify SENERGY (9 Pin JST) or SENERGY-Ai (4 Pin M8)<sup>2</sup>

### Mounting Considerations:

- M**<sup>3</sup> – 

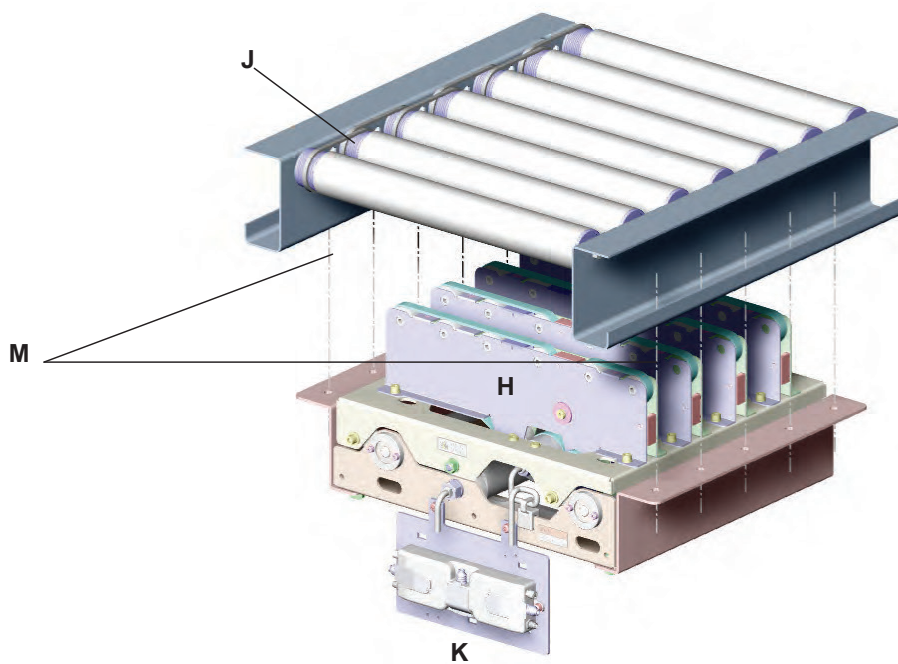
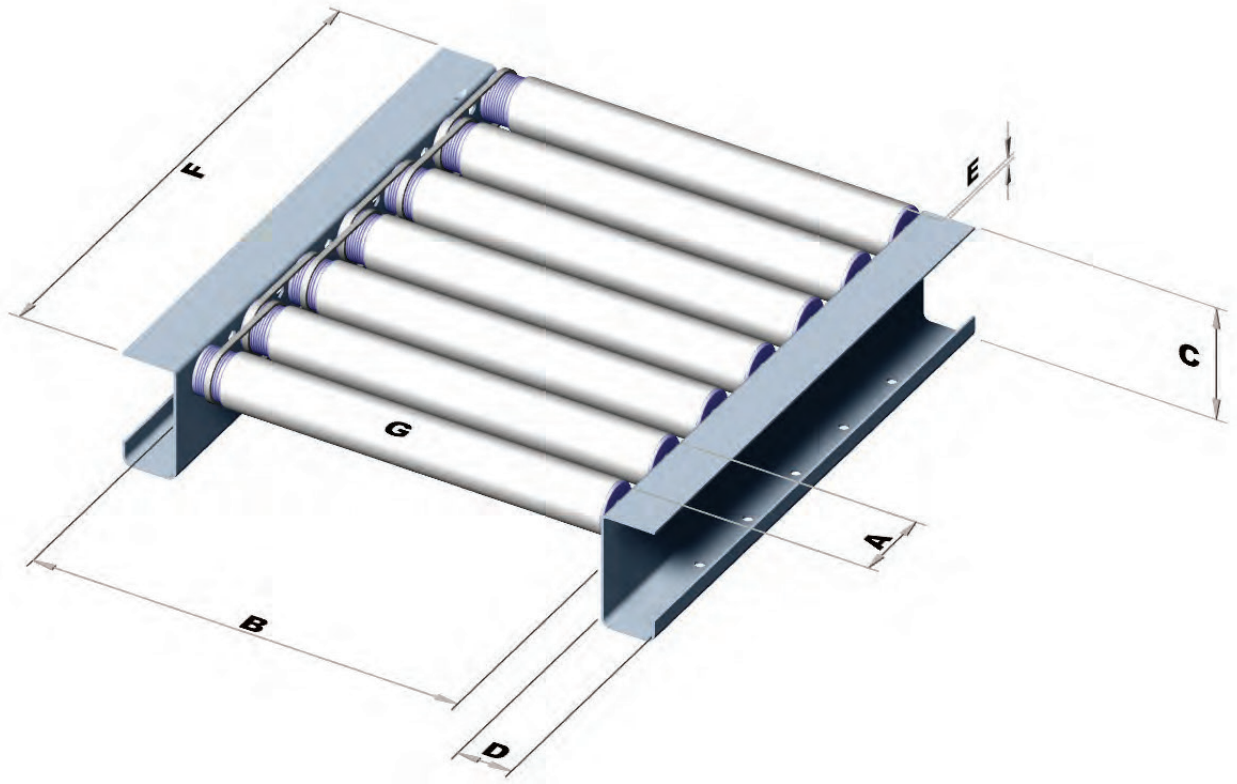
Mounting holes on Side Frame Bottom Flanges are assumed to be 9 mm Dia.
Mounting holes are assumed to be centered along the width of the Side Frame Bottom Flanges
Mounting holes are assumed to be aligned with the conveyor's roller centers

Area under PDU-90 has to be free of any conveyor supports or cross-members

<sup>1</sup> Irregular Roller Pitches may be accommodated. Contact us for details

<sup>2</sup> For Senergy-Ai motor rollers, you can specify ConveyLinX-Ai2 or MotionLinX-Ai controllers

<sup>3</sup> Different mounting hole size and/or locations can be accommodated. Be sure to include the details when you contact us



# PULSEPOPOP - 30°/45° diverter

## Product Information

### Features

- Choose 30 degree or 45 degree divert
- Compact design
- Bolt-in installation takes minutes
- Fully MDR driven (no pneumatics)
- Low maintenance – no lubrication requirements
- Effectively create a sortation conveyor

### Compatible Control Technologies

SENERGY



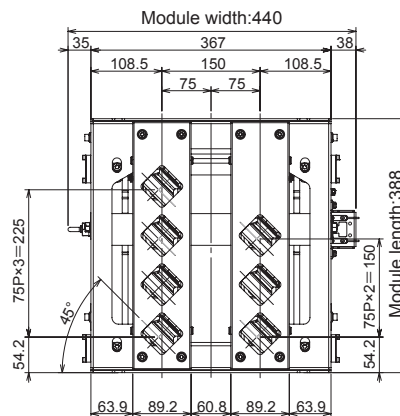
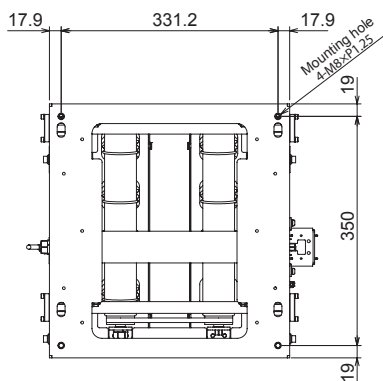
SENERGY - Ai



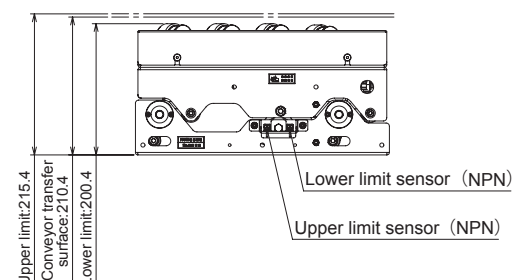
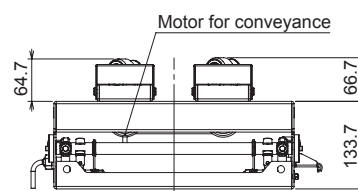
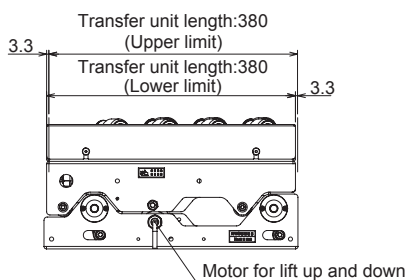
## Technical Data

Dimensions (L x W mm)	# of Driving Wheels	Load Size Min (L x W mm)	Load Size Max (L x W mm)	Load Weight Max	Max Sorting Speed	Throughput
440 x 388 mm	4	200 x 200 mm	600 x 450 mm	30 kg	Up to 90 m/min with a 75 speed code	Up to 2400/hour depending on product size
440 x 488 mm	5					
440 x 588 mm	6					
440 x 688 mm	7					

## Dimensions



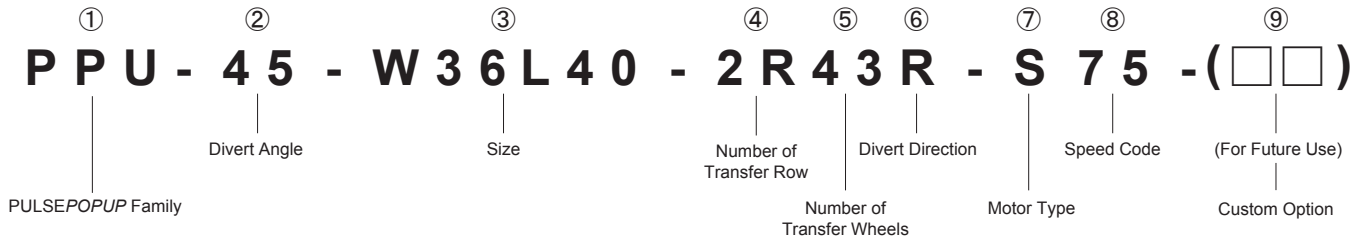
(Reference drawing for BF 440 mm conveyor with 4 driving wheels)







## Part Number Definition



### ② Divert Angle

**30** --- 30° degree

**45** --- 45° degree

### ③ Size

**W36 L40** --- W440mm x L388mm

**W36 L50** --- W440mm x L488mm

**W36 L60** --- W440mm x L588mm

**W36 L70** --- W440mm x L688 mm

### ④ Number of Transfer Row

**2R** --- 2 rows

### ⑤ Number of Transfer Wheels

**4 3** --- 4 wheels x 3 wheels

**5 4** --- 5 wheels x 4 wheels

**6 5** --- 6 wheels x 5 wheels

**7 6** --- 7 wheels x 6 wheels

### ⑥ Divert Direction

**R** --- Right

**L** --- Left

### ⑦ Motor Type

**S** --- SENERGY (JST connector)

**M** --- SENERGY-Ai (M8-4pin connector)

### ⑧ Speed Code

**75**

### ⑨ Custom Option

## Installation



# PULSEPOPOP - 30°/45° diverter

## How to Order a PPU Unit

Even though you specify your part number as described on page 37, each unit is made to order and its mounting is custom made to match your particular conveyor dimensions. When you contact Pulseroller to place an order for the part number you want, we will need to know the following additional information to complete your order:

### Conveyor Dimensions (refer to Drawing on page 39)

(Please give all dimensions in mm)

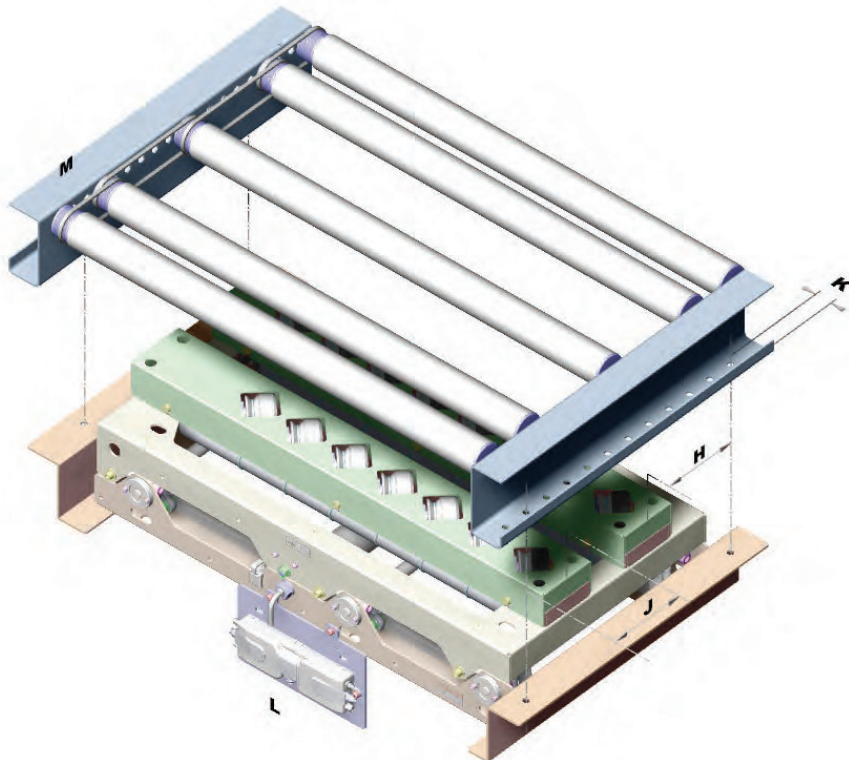
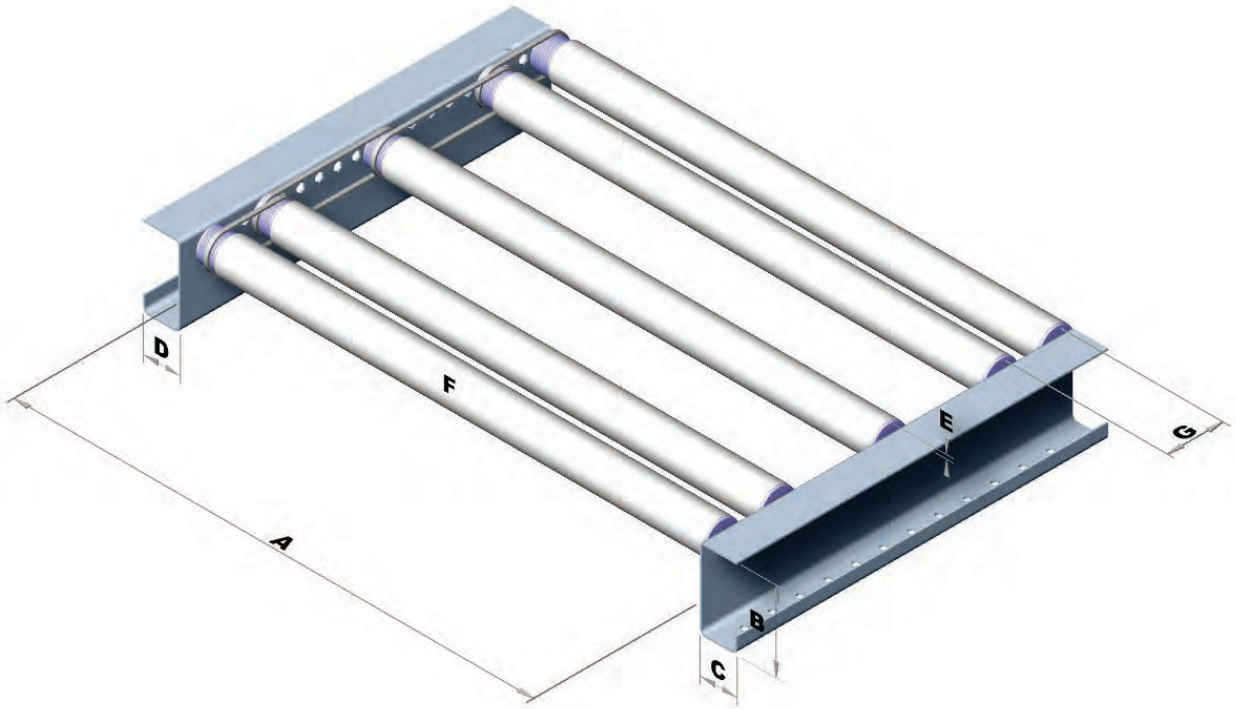
- A** – Conveyor Between Frame (BF)
- B** – Height of conveyor frame
- C** – Width of bottom flange of conveyor frame
- D** - Width of opposite conveyor frame flange (if different from C)
- E** – Distance from top of conveyor frame to top of roller
- F** – Roller Diameter (48.6 mm or 50 mm)
- G** – Roller center pitch
- H** – Distance from centerline of 1st PPU Lifting Unit to centerline of bottom frame flange mounting hole<sup>1</sup>
- J** - Distance from centerline of 2st PPU Lifting Unit to centerline of bottom frame flange mounting hole<sup>1</sup>
- K** – Distance from edge of bottom flange to centerline of mounting holes<sup>1</sup>
- L** - Motor/Control – Specify SENERGY (JST) or SENERGY-Ai (4 Pin M8)<sup>2</sup>
- M** - Interlocking – Specify if your conveyor has Micro-V or Grooves with O-Bands

### Mounting Considerations:

Area under PPU Unit has to be free of any conveyor supports or cross-members

<sup>1</sup> Irregular mounting hole pitches and locations may be accommodated. Contact us for details





<sup>2</sup> For Senergy-Ai motor rollers, you can specify ConveyLinX-Ai2 or MotionLinX-Ai controllers









# Controls Overview

## Simple Drive Control

		 EQUBE	 EZQUBE
Category	Description	 E-Qube	 EZ-Qube
Conformity	UL Recognized (UL 61800-5-1)	●	●
Motor connection	Number of Motor Ports	1	1
Motor profile	ECO Mode	●	●
	BOOST Mode	-	●
	BOOST-8 Mode	-	-
Configuration	Speed	32 steps by DIP SW	31 steps by DIP SW
	Accel / Decel	16 steps by DIP SW	16 steps by DIP SW
Electrical Braking	Standard Dynamic	●	●
	Servo Lock	-	●
	Free Spin	-	●
Control I/O	Error Output	●	●
	Reverse Input	●	●
	Run Input	2 (3 Speeds)	2 (3 Speeds)
	Analog Input	-	●
LED Indicators	Power	●	●
	Running	●	●
	Over-Temp	●	●
	Current Limit	●	●
	Motor Error Status	●	●
Motor Protection	Overvoltage	●	●
	Overload	●	●
	Over Temperature	●	●

## Networked Drive Control

					
Category	Description				
		ConveyLinX Ai		MotionLinX	
Conformity	UL Recognized (UL 61800-5-1)	●		●	
	ETL Listed (UL 61010-1 & 61010-2-201)	●		●	
Device Connections	Motor Ports	2		2	
	Sensor Inputs	2		2	
	Auxillary Inputs	2 individually programmable as input or output		2 individually programmable as input or output	
	Auxillary Outputs	2 individually programmable as input or output		2 individually programmable as input or output	
Motor Profile	ECO Mode	●		●	
	BOOST Mode	●		●	
	BOOST-8 Mode	●		●	
Configuration	Speed	EasyRoll Software or from Remote PLC		EtherCAT Controller	
	Acceleration Rate	EasyRoll Software or from Remote PLC		EtherCAT Controller	
	Deceleration Rate	EasyRoll Software or from Remote PLC		EtherCAT Controller	
	Open/Closed Loop Control	EasyRoll Software or from Remote PLC		EtherCAT Controller	
Electrical Braking	Electrical Braking Method	EasyRoll Software or from Remote PLC		EtherCAT Controller	
	Standard Dynamic	●		●	
	Servo Lock	●		●	
Control Functions	Free Spin	●		●	
	Zero Pressure Accumulation (ZPA)	●		-	
	ZPA with Merge	●		-	
LED Indicators	PLC Remote I/O	●		●	
	Power	●		●	
	Ethernet	●		●	
	Module & Network Status	●		●	
	Motor Ports Status	●		●	
Motor Error/ Status Detection	Sensor Ports Status	●		●	
	Overvoltage	●		●	
	Overload	●		●	
	Short Circuit	●		●	
	Stalled	●		●	
	At Max Torque	●		●	
Networks	Overheat	●		●	
	Ethernet I/P	●		-	
	Modbus TCP	●		-	
	Profinet I/O	●		-	
	CC-Link IEF Basic ( <i>special firmware required</i> )	●		-	
	EtherCAT	-		●	

## EQUBE -Simple Drive Control-

### Features

- CE Certified, RoHS Compliant, IP20 Environment
- UL recognized (UL 61800-5-1)
- Options for PNP or NPN control inputs
- Part Number for Senergy-Ai motor technology
- DIP Switch Setting for 32 available speeds
- DIP Switch Setting for 16 available Accel /Decel rates
- 2 Digital Run signals to provide 3 speed options plus Input for Reverse
- LED Indicators for Power, Run, Reverse, and Error
- PI regulated Speed Control
- ECO Performance Mode



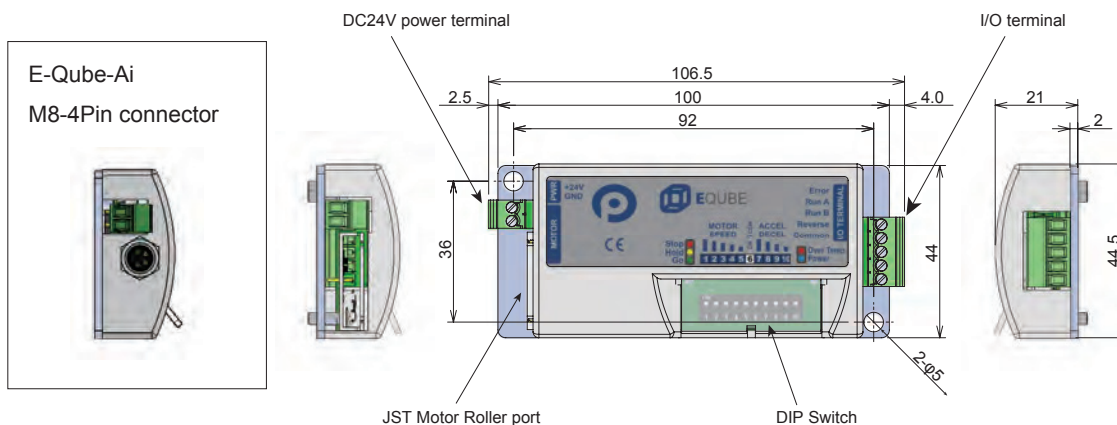
### Technical Data

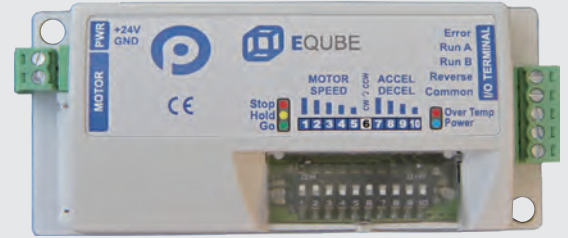
Input Voltage	18 to 28VDC
Input Power	NEC Class II Certified
Rated Motor Output Current	2.5A
Available Starting Current	Up to 3.0A for 1.5 seconds

### Applicable Environment

Ambient Operating Temperature	-10°C to 40 °C (14°F to 104°F)
Ambient Operating Humidity	10 - 90% RH (No condensation)
Ambient Storage Temperature	-40°C to 85 °C (-40°F to 185°F)
Ambient Storage Humidity	10 - 90% RH (No condensation)
Vibration	1G or less

### Dimensions (mm)





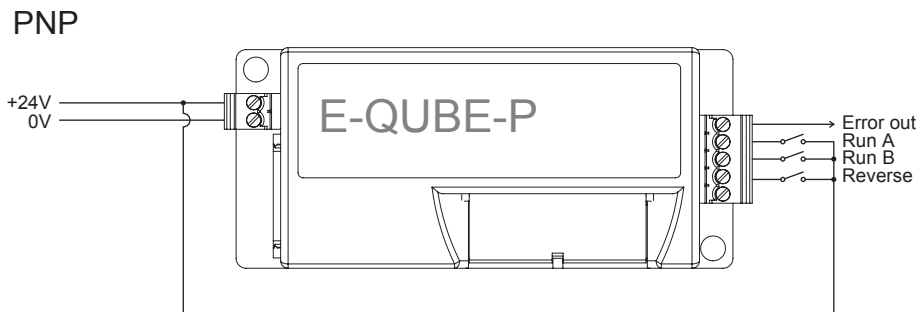
## DIP Switch Setting

No.	Function	Description
1	Speed setting	32 fixed stages available with DIP switch combinations
2		
3		
4		
5		
6	Direction of rotation	ON = CCW, OFF = CW
7	Acceleration / Deceleration timer setting	16 fixed timers (0 ~ 2.5 sec) available with DIP switch combinations
8		
9		
10		



Above setting is for illustrative purpose only

## Wiring



\*NPN version is not available with E-Qube-Ai

## Speed Setting Via Signal Input

Run A	100% of set speed by DIP switch
Run A + B	75% of set speed by DIP switch
Run B	50% of set speed by DIP switch

## EZQUBE -Performance Drive Control-

### Features

- CE Certified, RoHS Compliant, IP20 Environment
- UL recognized (UL 61800-5-1)
- Options for PNP or NPN control inputs
- Provides ECO and BOOST modes
- DIP Switch Setting for 31 available fixed speeds
- DIP Switch Setting for 16 available Accel /Decel rates
- 0 to 10V Analog Speed Setting Input
- 2 Digital Run signals to provide 3 speed options plus Input for Reverse
- LED Indicators for Power, Run, Reverse, and Error
- PI regulated Speed Control
- Dynamic, Free Spin, and Servo Lock braking modes available



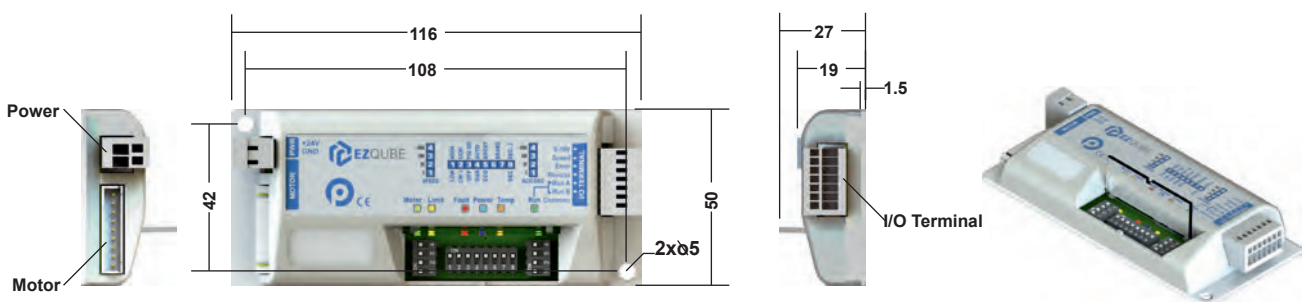
### Technical Data

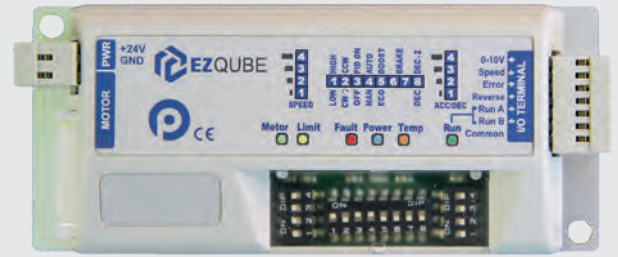
Input Voltage	18 to 28VDC
Input Power	NEC Class II Certified
Rated Motor Output Current	2.5A (ECO), 3.5A (BOOST)
Available Starting Current	3.0A (ECO), 5.0A (BOOST)

### Applicable Environment

Ambient Operating Temperature	-10°C to 40 °C (14°F to 104°F)
Ambient Operating Humidity	10 - 90% RH (No condensation)
Ambient Storage Temperature	-40°C to 85 °C (-40°F to 185°F)
Ambient Storage Humidity	10 - 90% RH (No condensation)
Vibration	1G or less

### Dimensions (mm)



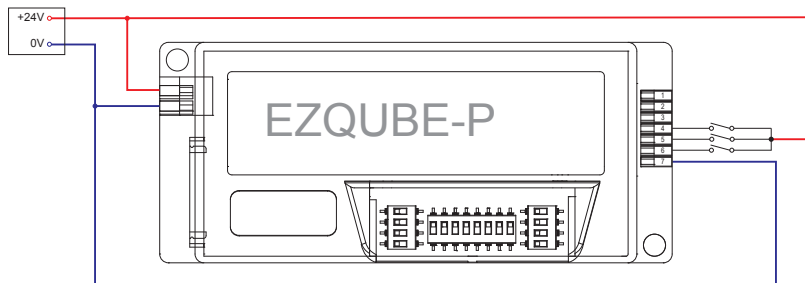


## DIP Switch Setting

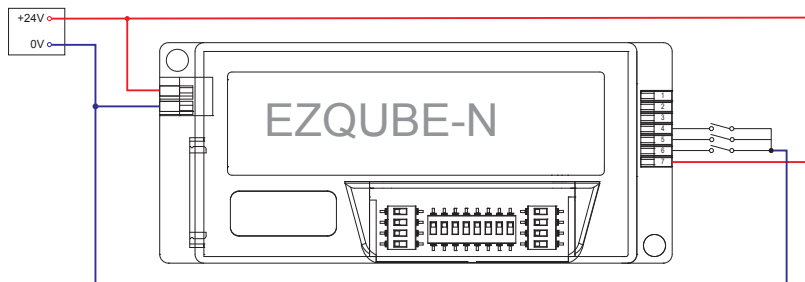
SWITCH SPEED	Function	OFF	ON	
1	Speed setting	31 fixed stages available with DIP switch combinations		
2				
3				
4				
SWITCH ACC/DCC	Function	OFF	ON	
1	Accel / Decel Setting	16 fixed timers (0.05 ~ 2.5 sec) available with DIP switch combinations		
2				
3				
4				
SWITCH CONFIG	Function	OFF	ON	
1	Speed range setting	Low range	High Range	
2	Direction of Rotation	CCW	CW	
3	Open/Close loop	Open Loop	Close Loop (PID)	
4	Auto/Manual Error Reset	Manual Reset	Automatic Reset	
5	Motor Setting	Eco mode	Boost mode	
6	Electrical Brake Method Setting	Brake method	SW 6	SW 10
		Dynamic brake	OFF	OFF
7		Free spin	ON	OFF
Servo Lock		OFF	ON	
8	Deceleration Time	Decel time = Accel	Decel time = 2 * Accel	

## Wiring

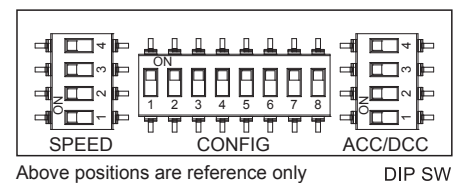
### PNP



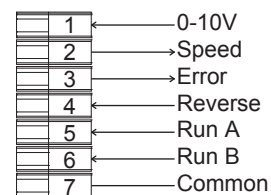
### NPN



## DIP SW Setting



## Removable I/O Terminal Block



## Speed Setting Via Signal Input

Run A	100% of set speed by DIP switch
Run A + B	75% of set speed by DIP switch
Run B	50% of set speed by DIP switch



## CONVEYLINX -Ethernet Drive Control for Senergy-Ai Technology-

### Features

- CE Certified, RoHS Compliant, IP54
- ETL Listed (UL 6101-2 & UL 61010-2-201)
- UL recognized (UL 61800-5-1)
- Provides control for 1 or 2 ZPA Zones or acts as a 2 In / 2 programmable I/O with Dual Motor control remote I/O unit to a PLC
- Auto detection of PNP or NPN sensors and light/dark operate when configured for ZPA control
- 3-Port Ethernet switch with standard RJ-45 sockets for easy daisy chaining of network cables from controller to controller
- 4 Pin M8 Style connections for Senergy-Ai motors and standard off the shelf sensors
- Thermal and overload motor protection plus Proportional-Integral regulated motor speed control
- 6 Tri-colored context sensitive LED indicators
- Simultaneously recognizes Ethernet I/P, Modbus TCP, and Profinet I/O protocols on the same controller
- Motor speed and ramp parameters and ZPA adjustments accessible with EasyRoll Configuration Software
- User programmable functionality available with ConveyLogix Software (see Pulseroller.com for details)
- Sensor Ports can be configured to accept Push-Pull type sensors (PLC I/O Mode only)



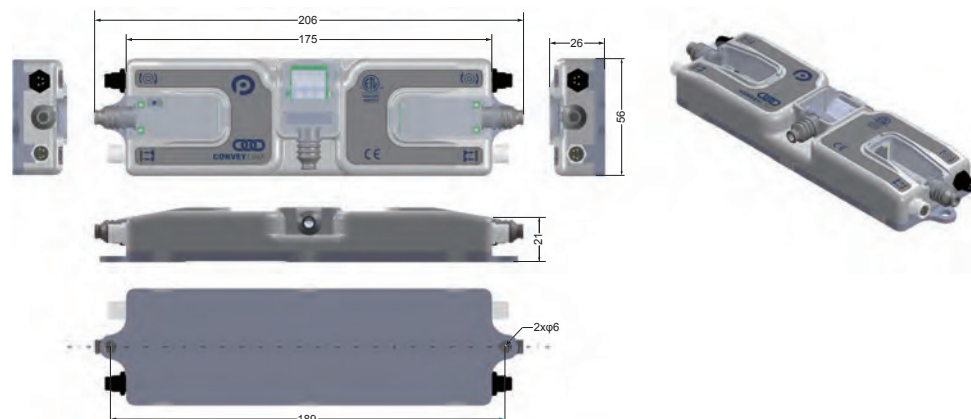
### Technical Data

Input Voltage	18 to 28VDC
Input Power	NEC Class II Certified
Rated Motor Output Current	2.5A x 2 (ECO), 3.5A x 2 (Boost and Boost-8)
Available Starting Current	3.0A x 2 (ECO), 5.0A x 2 (Boost), 8.0A x 2 (Boost-8)

### Applicable Environment

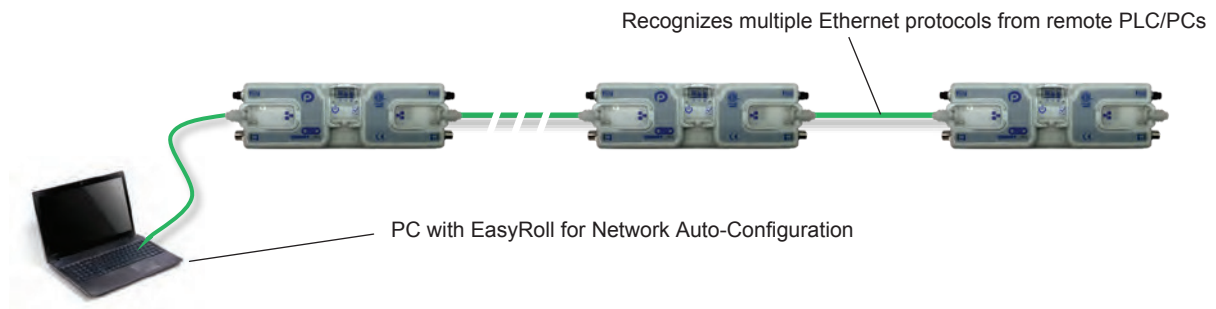
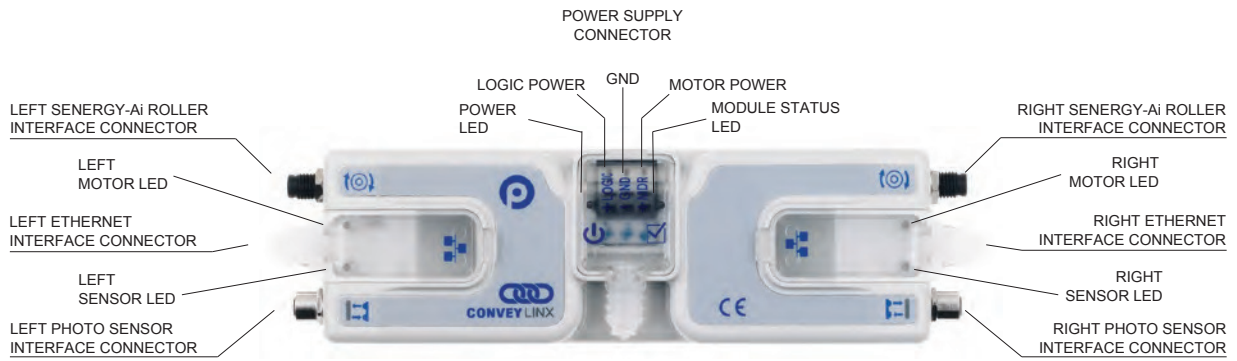
Ambient Operating Temperature (Standard)	-0 ~ 40°C (32 ~ 104°F)
Ambient Operating Humidity	10 - 90% RH (Non condensation)
Ambient Operating Temperature (Freezer)	-30°C to 40 °C (-22°F to 104°F)
Ambient Storage Temperature	-25°C to 70 °C (-13°F to 160°F)
Ambient Storage Humidity	10 - 90% RH (Non condensation)
Vibration	1G or less

### Dimensions (mm)





## Hardware Overview



Includes protective sleeves and covers for wiring and cabling to preserve IP54 rating



Sensor Port

- Pin 1 – 24VDC**
- Pin 2 – Configurable Aux I/O Pin**
- Pin 3 – GND**
- Pin 4 – Input**

Sensor Port Includes Aux I/O Pin that provides EasyRoll selectable input or output functions for ZPA mode. The Aux I/O Pin can also be configured by a remote PLC to be either an input or an output for non-ZPA applications



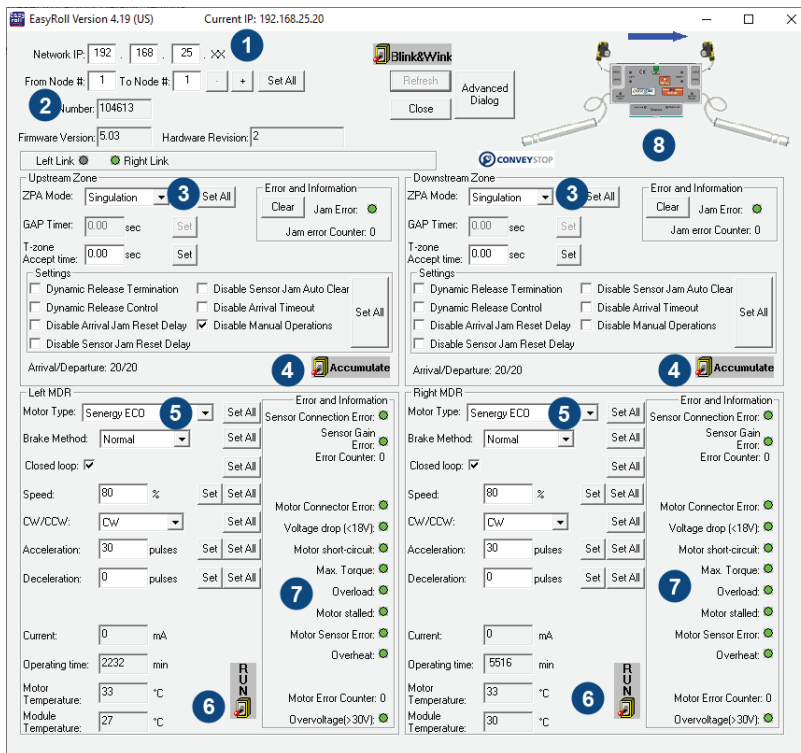


## CONVEYLINX - EasyRoll Configuration Software -

### Features

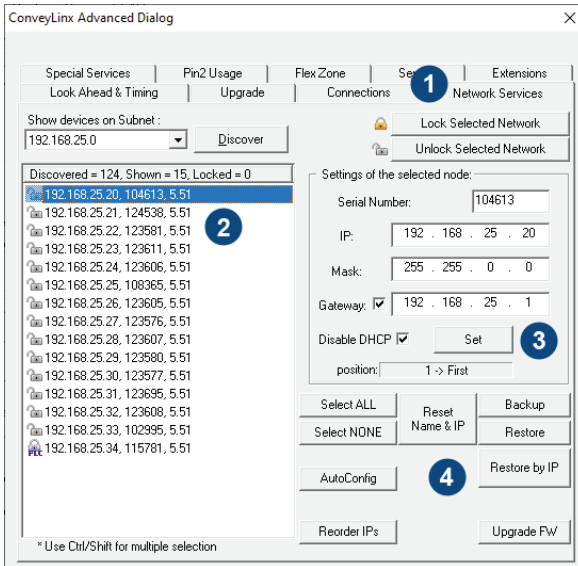
- Provides access to modify all motor performance and operational parameters
- Provides ability to modify operational characteristics of the built-in ZPA functionality
- Displays motor and operational status and error conditions
- Provides Discover utility used to find all Nodes on a network and manually set their I.P. addresses.
- Provides Node network connection mapping to logically link two or more separate ConveyLinx networks.
- Create Extensions to allow a module to run its motors in tandem with an adjacent module to create a larger logical zone
- PLC Mode selection allows a module to suspend its ZPA function and be logically controlled from an external PLC or PC.
- Ability to create Back-Up file of all Node and network settings that can be stored on a PC
- Provides a Restore function to replace the settings of Nodes and networks from a saved Back-Up file
- Provides the ability to Restore from a Backup either by IP Address or by individual Node serial numbers
- Provides ability to lock access to Auto-Configuration functionality
- Provides Upgrade utility to download controller firmware without modifying Node's existing settings
- Free Download from Pulseroller.com
- Windows PC only

### EasyRoll Main Screen



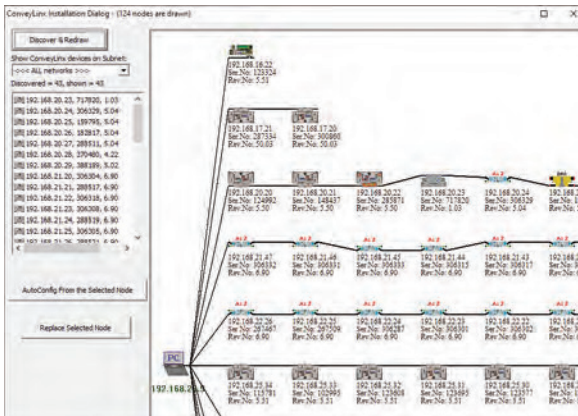
- 1 Subnet entry for access to multiple subnets
- 2 Easy Node navigation and Node range selection for which to apply multiple changes at the same time
- 3 Change ZPA functionality for upstream and/or downstream zone independently or apply changes to multiple Nodes at the same time
- 4 Click to command the zone to accumulate and retain this operation upon power up
- 5 Change motor performance settings for the Left and/or Right motors and apply these same settings to multiple Nodes
- 6 Temporarily command the Left or Right motor to run for maintenance and diagnostic purposes
- 7 Monitor the status of the Left and Right motors and see indication of different types of possible error conditions
- 8 Access a detailed diagnostic screen of Node status

Visit [Pulseroller.com](http://Pulseroller.com) to download EasyRoll



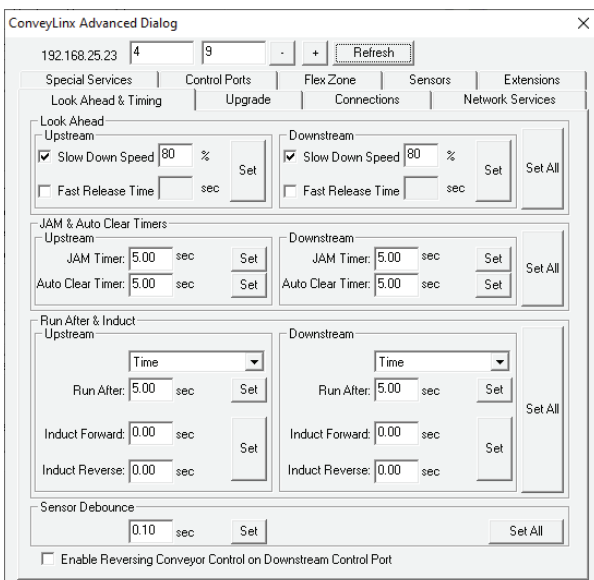
## Discover ConveyLinx Devices on the Network

- 1 There are 9 different Screens that provide access to various parameters that can be modified per Node or across a range of Nodes. Network Services Tab is shown here
- 2 Discover all ConveyLinx Nodes across multiple subnets and filter list to view by individual subnet if you wish. You can see I.P. address, Serial Number, and Firmware Version for each Node
- 3 Access Ethernet settings for an individual Node and set new values for I.P. Address, subnet mask, gateway, etc.
- 4 Create Backup file of all settings and configuration of a Subnet or multiple Subnet. You can also Restore the settings for a single Node, a Subnet, or Multiple Subnets from your Backup file.



## View Network Topology

From the Network Services Tab you can generate access a Network Topology View shown here. This view lets you see how all of your subnets are connected to you PC. From here you can perform Auto-Configuration for a subnet as well perform a Module Replacement procedure.



## Access to ConveyLinx Advanced Features

From the Advanced Dialog there are 9 different Screens that provide access to various parameters that can be modified per Node or across a range of Nodes.

Advanced Dialog allows you access to many parameters to fine tune the operation of the built-in Zero Pressure Accumulation (ZPA) control of a ConveyLinx controller.

This screen shows the access to all Jam detection timers as well as the Look Ahead function and adjustments to behavior of items entering and exiting the ZPA zones

ConveyLinx provides many more functions and is the most advanced motor drive control on the market today. Visit [www.pulseroller.com](http://www.pulseroller.com) for more details.



## MOTION LINX -EtherCAT Drive Control-

### Features

- CE Certified, RoHS Compliant, IP54
- ETL Listed (UL 6101-2 & UL 61010-2-201)
- UL recognized (UL 61800-5-1)
- 2 In / 2 programmable I/Out Dual Motor control remote I/O unit for EtherCAT Controller
- Auto detection of PNP or NPN sensors
- 3-Port Ethernet switch with standard RJ-45 sockets for easy daisy chaining of network cables from controller to controller
- 4 Pin M8 Style connections for motors and sensors
- Thermal and overload motor protection plus Proportional-Integral regulated motor speed control
- 6 Tri-colored context sensitive LED indicators
- Module configuration and motor performance parameters accessed via EtherCAT SDOs
- I/O and motor data exchange via EtherCAT PDOs
- Sensor Ports can be configured to accept Push-Pull type sensors
- Works with Senergy-Ai Technology motor rollers and drives



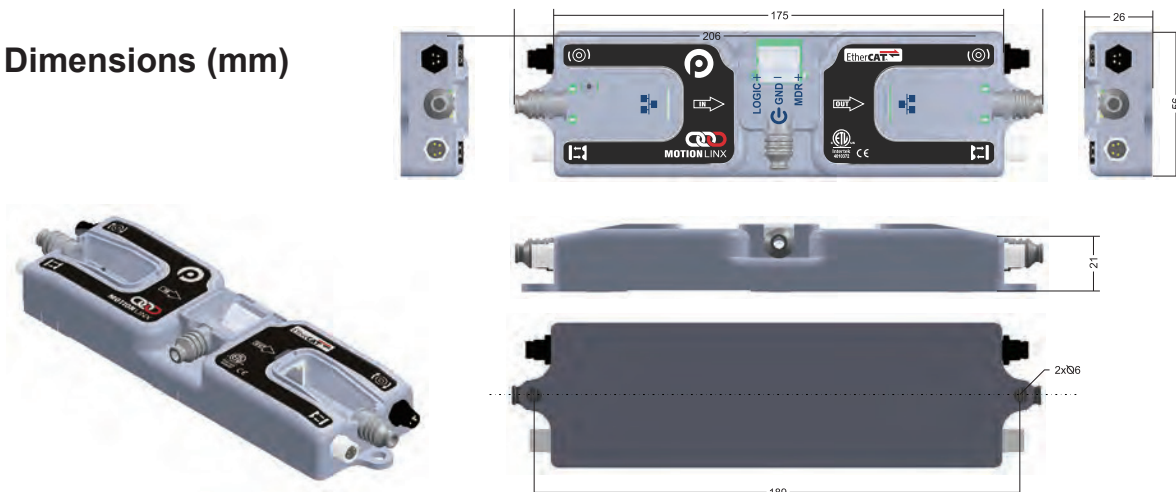
### Technical Data

Input Voltage	18 to 28VDC
Input Power	NEC Class II Certified
Rated Motor Output Current	2.5A x 2 (ECO), 3.5A x 2 (Boost and Boost-8)
Available Starting Current	3.0A x 2 (ECO), 5.0A x 2 (Boost), 8.0A x 2 (Boost-8)

### Applicable Environment

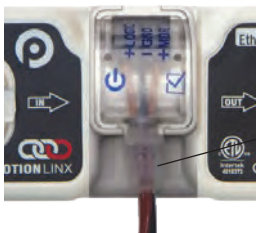
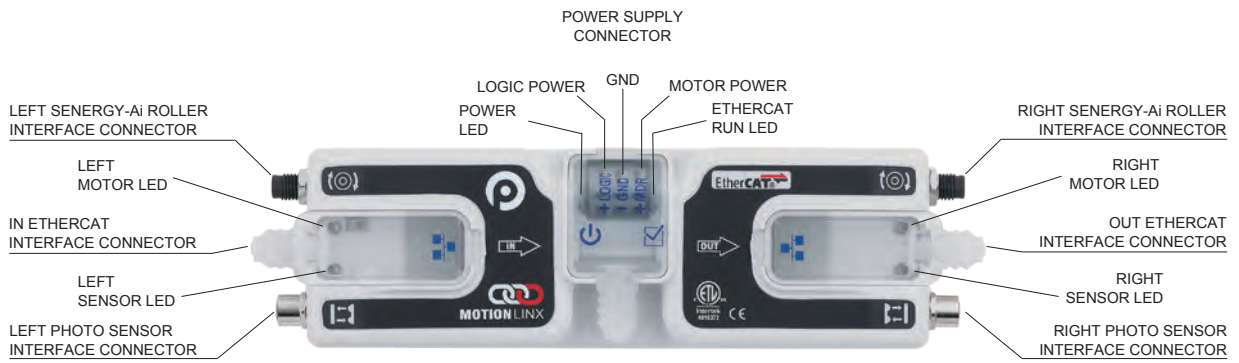
Ambient Operating Temperature	0°C to 40 °C (32°F to 104°F)
Ambient Operating Humidity	10 - 90% RH (Non condensation)
Ambient Storage Temperature	-25°C to 70 °C (-13°F to 160°F)
Ambient Storage Humidity	10 - 90% RH (Non condensation)
Vibration	1G or less

### Dimensions (mm)





## Hardware Overview



Includes protective sleeves and covers for wiring and cabling to preserve IP54 rating



### Sensor Port



- Pin 1 – 24VDC
- Pin 2 – Configurable Aux I/O Pin
- Pin 3 – GND
- Pin 4 – Input

Sensor Port Includes Aux I/O Pin that can be configured by the EtherCAT controller to be either an input or an output. The Sensor Port can also be configured to accept a Push-Pull type sensor

# I/O control



## ConveyLinx-I/O

### Features

- CE Certified, RoHS Compliant, IP54
- ETL Listed (UL 6101-2 & UL 61010-2-201)
- UL recognized (UL 61800-5-1)
- 4 M8 Ports each with 2 configurable Input or Output points for a total of 8 I/O
- 2 M8 Ports utilize male pins and 2 M8 Ports are female receptacles
- 3-Port Ethernet switch with standard RJ-45 sockets for easy daisy chaining of network cables from controller to controller
- Simultaneously recognizes Ethernet I/P, Modbus TCP, Profinet I/O, and CC-Link IEF Basic protocols on the same controller
- 6 Tri-colored context sensitive LED indicators
- Any or all of the 4 Ports can be configured to accept Push-Pull type sensors
- Auto-Configured with EasyRoll and can share network with any ConveyLinx family module
- User programmable functionality available with ConveyLogix Software (see Pulseroller.com for details)



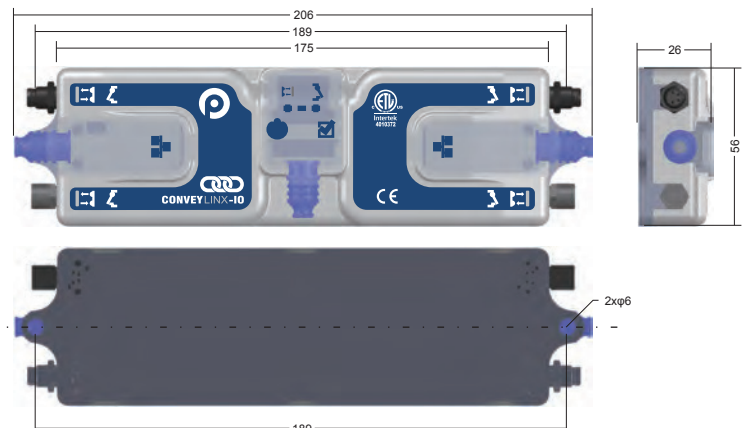
### Technical Data

Input Voltage	21 to 30VDC
Input Power	NEC Class II Certified
Input Current	0.4mA is Maximum OFF current. 1.5mA is Minimum ON current.
Output Current	Maximum current per Output is 300mA

### Applicable Environment

Ambient Operating Temperature	0°C to 40 °C (32°F to 104°F)
Ambient Operating Humidity	10 - 90% RH (Non condensation)
Ambient Storage Temperature	-25°C to 70 °C (-13°F to 160°F)
Ambient Storage Humidity	10 - 90% RH (Non condensation)
Vibration	1G or less

### Dimensions (mm)







# MotionLinx-IO

## Features

- CE Certified, RoHS Compliant, IP54
- ETL Listed (UL 6101-2 & UL 61010-2-201)
- UL recognized (UL 61800-5-1)
- 4 M8 Ports each with 2 configurable Input or Output points for a total of 8 I/O
- 2 M8 Ports utilize male pins and 2 M8 Ports are female receptacles
- 3-Port Ethernet switch with standard RJ-45 sockets for easy daisy chaining of network cables from controller to controller
- Module configuration parameters accessed via EtherCAT SDOs
- I/O exchange with controller via EtherCAT PDOs
- 6 Tri-colored context sensitive LED indicators
- Any or all of the 4 Ports can be configured to accept Push-Pull type sensors



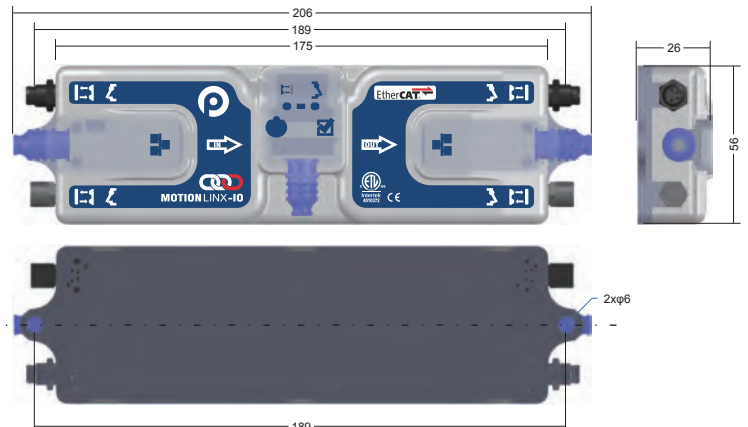
## Technical Data

Input Voltage	21 to 30VDC
Input Power	NEC Class II Certified
Input Current	0.4mA is Maximum OFF current. 1.5mA is Minimum ON current.
Output Current	Maximum current per Output is 300mA

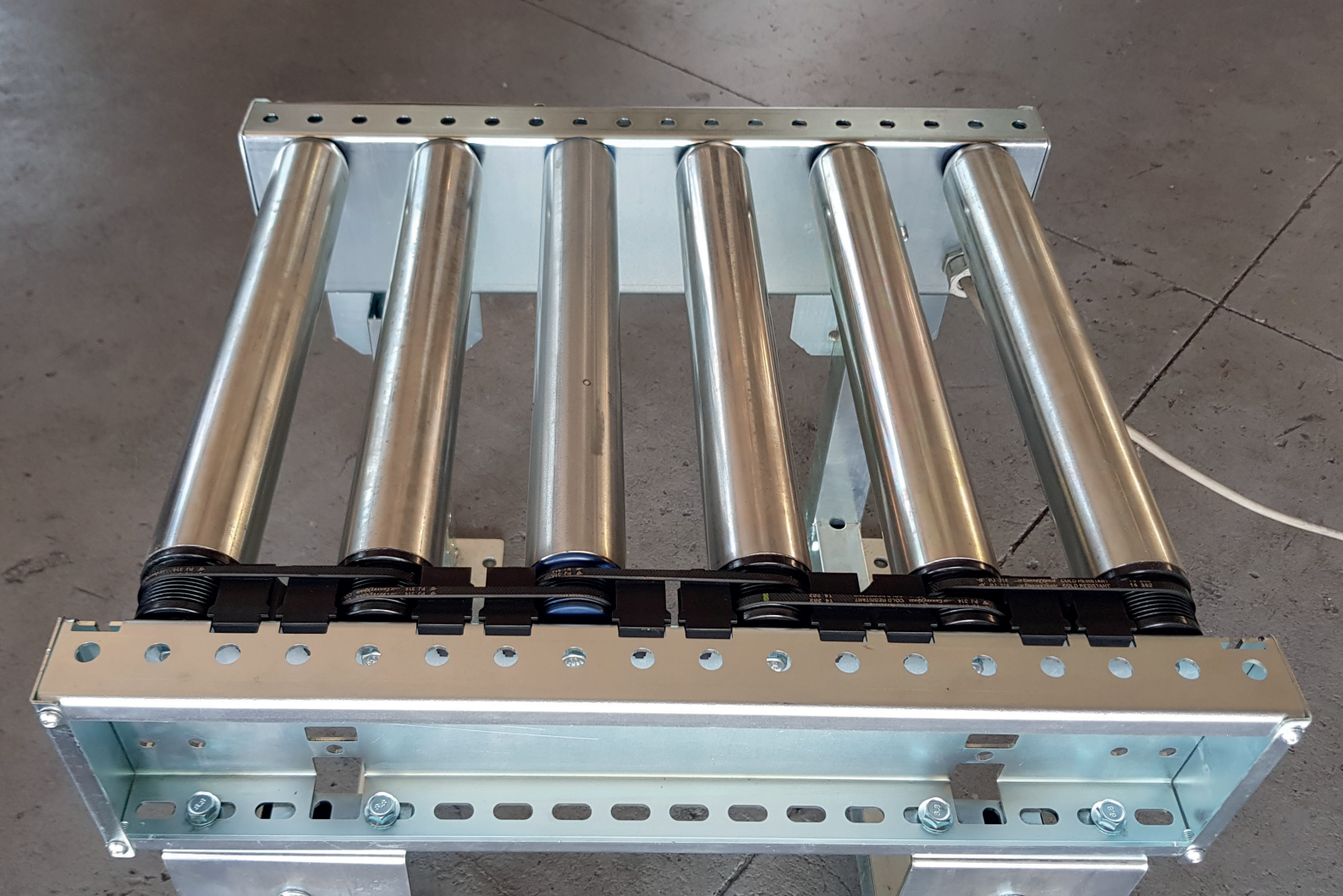
## Applicable Environment

Ambient Operating Temperature	0°C to 40 °C (32°F to 104°F)
Ambient Operating Humidity	10 - 90% RH (Non condensation)
Ambient Storage Temperature	-25°C to 70 °C (-13°F to 160°F)
Ambient Storage Humidity	10 - 90% RH (Non condensation)
Vibration	1G or less

## Dimensions (mm)









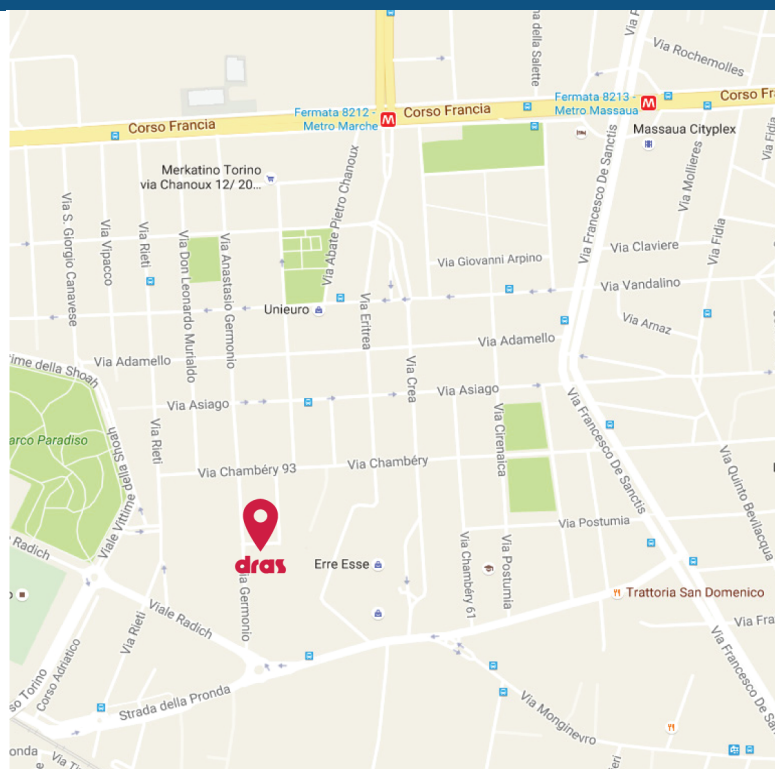


SOLUZIONI PER LA MOVIMENTAZIONE

Via Chambéry 93/107 V - 10142, Torino

TEL: 011.770.13.41

commerciale@dras.it



La Dras srl, con sede a Torino, è specializzata in soluzioni per la movimentazione industriale, in particolar modo nel settore alimentare. Forte della propria esperienza e competenza si propone come vostro partner non solo per la fornitura di prodotti ma per presentarvi nuove soluzioni tecniche a supporto di ogni esigenza. La preziosa collaborazione con Case Produttrici di primaria importanza permette di distribuire Marchi di Qualità che offrono elevate caratteristiche di affidabilità e garanzia conformi agli standard europei.

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