Senergy

Senergy is a unique gearbox design and powerful brushless DC motor providing an extremely efficient means of delivering an amazing amount of torque and speed with the smallest amount of energy. To ensure motor roller longevity with these applications, Senergy has been designed using a planetary gearbox incorporating a robust cage design for each individual stage.

Typically used in conveyors for Zero Pressure Accumulation or roller transportation, the Senergy Roller gearbox selection contains only 11 gearbox combinations, providing manageable inventory ordering and maintenance. Senergy’s range and performance characteristics are suitable for speeds between 6 to 969 fpm and starting torque up to an amazing 224 in/lbs.

Regardless of the project, type of conveyor, weight or speed of the load, you really only need one type of roller: Senergy.

Features:
- Low Voltage Brushless 24 VDC Motor
- External Motor Control
- High Starting Torque & Overload Capacity
- 11 Gearbox Combinations
- 9-pin JST Standard Connector
- Common Idler Roller Compatibility
- CE Certified | RoHS Compliant | IP54 Rated

Benefits:
- High Resolution & Repeatable Linear Motion
- Reduced Conveyor Zones with Precision Stopping
- Simple & Secure Installation
- Longer Lifespan with Powerful Gearbox
- Safer Low Voltage
- Energy Savings with Run on Demand Technology
- Simple Preventive Maintenance Procedures
- Decreased Inventory
## Characteristics Data

### ECO-mode

<table>
<thead>
<tr>
<th>Speed Code</th>
<th>Gearbox</th>
<th>Speed f/min</th>
<th>Torque in-lbf</th>
<th>Tangential Force lbf</th>
<th>Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>3 stage</td>
<td>6.5 – 64.7</td>
<td>26.2</td>
<td>145.0</td>
<td>27.4</td>
</tr>
<tr>
<td>20</td>
<td>3 stage</td>
<td>8.8 – 88.3</td>
<td>19.2</td>
<td>106.2</td>
<td>20.1</td>
</tr>
<tr>
<td>25</td>
<td>3 stage</td>
<td>10.7 – 107.8</td>
<td>15.7</td>
<td>87.2</td>
<td>16.4</td>
</tr>
<tr>
<td>35</td>
<td>3 stage</td>
<td>15.8 – 159.0</td>
<td>10.6</td>
<td>59.0</td>
<td>11.1</td>
</tr>
<tr>
<td>45</td>
<td>3 stage</td>
<td>19.2 – 190.0</td>
<td>8.7</td>
<td>48.3</td>
<td>9.1</td>
</tr>
<tr>
<td>60</td>
<td>2 stage</td>
<td>26.3 – 265.0</td>
<td>6.4</td>
<td>35.4</td>
<td>6.7</td>
</tr>
<tr>
<td>75</td>
<td>2 stage</td>
<td>32.1 – 323.3</td>
<td>5.2</td>
<td>29.0</td>
<td>5.4</td>
</tr>
<tr>
<td>95</td>
<td>2 stage</td>
<td>42.3 – 426.7</td>
<td>3.9</td>
<td>21.9</td>
<td>4.1</td>
</tr>
<tr>
<td>125</td>
<td>1 stage</td>
<td>57.7 – 581.9</td>
<td>2.9</td>
<td>6.1</td>
<td>3.0</td>
</tr>
<tr>
<td>175</td>
<td>1 stage</td>
<td>78.8 – 794.9</td>
<td>2.1</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>215</td>
<td>1 stage</td>
<td>96.2 – 969.8</td>
<td>1.7</td>
<td>9.6</td>
<td>1.8</td>
</tr>
</tbody>
</table>

### BOOST & BOOST 8-mode

<table>
<thead>
<tr>
<th>Speed Code</th>
<th>Gearbox</th>
<th>Output Shaft Speed f/min</th>
<th>Torque in-lbf</th>
<th>Tangential Force lbf</th>
<th>Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>3 stage</td>
<td>6.4 – 46.8</td>
<td>47.7</td>
<td>189.1</td>
<td>215.0</td>
</tr>
<tr>
<td>20</td>
<td>3 stage</td>
<td>8.8 – 63.9</td>
<td>34.9</td>
<td>138.4</td>
<td>157.4</td>
</tr>
<tr>
<td>25</td>
<td>3 stage</td>
<td>10.7 – 77.9</td>
<td>28.6</td>
<td>113.5</td>
<td>129.0</td>
</tr>
<tr>
<td>35</td>
<td>3 stage</td>
<td>15.8 – 115.0</td>
<td>19.4</td>
<td>76.9</td>
<td>87.4</td>
</tr>
<tr>
<td>45</td>
<td>3 stage</td>
<td>19.2 – 140.3</td>
<td>15.9</td>
<td>63.0</td>
<td>71.8</td>
</tr>
<tr>
<td>60</td>
<td>2 stage</td>
<td>26.3 – 191.6</td>
<td>11.6</td>
<td>46.1</td>
<td>52.4</td>
</tr>
<tr>
<td>75</td>
<td>2 stage</td>
<td>32.1 – 233.8</td>
<td>9.5</td>
<td>37.8</td>
<td>43.0</td>
</tr>
<tr>
<td>95</td>
<td>2 stage</td>
<td>42.3 – 308.6</td>
<td>7.2</td>
<td>28.6</td>
<td>32.5</td>
</tr>
<tr>
<td>125</td>
<td>1 stage</td>
<td>57.7 – 420.8</td>
<td>5.3</td>
<td>21.0</td>
<td>23.8</td>
</tr>
<tr>
<td>175</td>
<td>1 stage</td>
<td>78.8 – 574.8</td>
<td>3.8</td>
<td>15.3</td>
<td>17.4</td>
</tr>
<tr>
<td>215</td>
<td>1 stage</td>
<td>96.2 – 701.3</td>
<td>3.1</td>
<td>12.6</td>
<td>14.3</td>
</tr>
</tbody>
</table>

*Rated torque and rated tangential force of BOOST 8 are the same values as BOOST.

*Boost 8 performance is available with EZ-24HTB and ConveyLinx HTF card only.
Pulse Gear Drive (PGD)

Pulse Gear Drive is a compact low-voltage drive to replace your AC Motors, Pneumatic devices, and much more, easing the overall cost and time during commissioning.

You may have found that Motor Rollers aren’t always the best option for some applications which may leave your options limited. The gear drive is perfect when driving actuators, pop up wheels, lift motors, belt drives, diverters, and many other applications. More importantly, our PGD uses the same engine as our Senergy Motor Rollers allowing the same Control architecture.

### Characteristics Data

<table>
<thead>
<tr>
<th>Speed Code</th>
<th>Gearbox</th>
<th>ECO-mode</th>
<th>BOOST &amp; BOOST 8-mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Output Shaft Speed f/min</td>
<td>Torque in-lbf</td>
</tr>
<tr>
<td>67</td>
<td>3 stage</td>
<td>8.5 – 86.7</td>
<td>39.1</td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>12.8 – 129.0</td>
<td>26.2</td>
</tr>
<tr>
<td>33</td>
<td></td>
<td>17.4 – 176.3</td>
<td>19.2</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td>21.3 – 215.1</td>
<td>15.7</td>
</tr>
<tr>
<td>18</td>
<td>2 stage</td>
<td>31.4 – 317.3</td>
<td>10.6</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>38.4 – 387.2</td>
<td>8.7</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>52.4 – 528.9</td>
<td>6.4</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>64.0 – 645.3</td>
<td>5.2</td>
</tr>
</tbody>
</table>

*Rated torque of BOOST 8 is the same value as BOOST.

*Boost 8 mode is available only with the "High torque" series of EZ24 (EZ24HTB) and ConveyLinx (ConveyLinx HTF).
**Features:**

- Compact Frame
- 8 Gearbox Combinations
- High Starting Torque & Overload Capacity
- Output Shaft with Dual Bearings & Keyway
- Heavy-Duty Reinforced Gearbox
- JST Standard Connector
- CE Certified | RoHS Compliant | IP54 Rated

**Benefits:**

- Virtually Unlimited Application Uses
- High Resolution & Repeatable Linear Motion
- Easily Replace Pneumatic Cylinders in Transfers, Wheel Diverters, and Numerous Complex Devices
- Quickly Convert 480VAC Motors for Mechanical Devices
- Simple & Secure Installation
- Longer Lifespan with Powerful Gearbox
- Safer Low Voltage
- Energy Savings with Run On Demand Technology
- Simple Preventive Maintenance Procedures
- Decreased Inventory with Gearbox Arrangements
Pallet Roller

PulseRoller Pallet Rollers were designed to replace the AC Motor mounted to the side of a Pallet Conveyor. Pallet Rollers can reach up to 70” between frame dimensions and drive up to 2,800 pounds. Obtainable speed ranges from 8 fpm to 90 fpm with an awesome amount of torque. The Pallet Roller uses a high torque version of ConveyLinx or EZ24 modules to provide you with more starting torque/current for heavier loads.

Attachments for the Pallet Drive include: Sprocket, Keyway, Timing Pulley, Micro-V Pulley and more.

**Features:**
- Tough Reinforced Planetary Gearbox
- 5 Gearbox Combinations
- High Performance Motor
- JST Standard Connector
- Convey Loads up to 2800 lbs
- Dual Drive Conveys Loads up to ~5,000 lbs
- 2.25”, 2.375”, and 2.5” Outer Diameter Selections
- Sprocket, MicroV and Many Other Attachments
- CE Certified | RoHS Compliant | IP54 Rated

**Benefits:**
- Convey Extremely Heavy Pallet Loads
- Reliable Gearbox with Maximum Torque
- High Resolution & Repeatable Linear Motion
- Convert 480VAC Motors in Conveyor Roller Applications
- Safer Low Voltage
- Energy Savings with Run On Demand Technology
- Simple & Secure Installation
- Longer Lifespan with Powerful Gearbox
- Simple Preventive Maintenance Procedures
## Characteristics Data

### Roller Dia: 60.5

<table>
<thead>
<tr>
<th>Speed Code</th>
<th>Gearbox</th>
<th>Speed f/min</th>
<th>Torque in-lbf</th>
<th>Tangential Force lbf</th>
<th>Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Reinforced 3 stage</td>
<td>8.2 ~ 26.6</td>
<td>96.3</td>
<td>522.3</td>
<td>342.9</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>11.2 ~ 36.3</td>
<td>70.5</td>
<td>382.3</td>
<td>251.0</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>15.3 ~ 49.6</td>
<td>51.6</td>
<td>279.8</td>
<td>183.7</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>22.7 ~ 73.8</td>
<td>34.6</td>
<td>188.0</td>
<td>123.4</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>27.7 ~ 90.1</td>
<td>28.4</td>
<td>154.1</td>
<td>101.1</td>
</tr>
</tbody>
</table>

### Roller Dia: 63.5

<table>
<thead>
<tr>
<th>Speed Code</th>
<th>Gearbox</th>
<th>Speed f/min</th>
<th>Torque in-lbf</th>
<th>Tangential Force lbf</th>
<th>Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Reinforced 3 stage</td>
<td>8.6 ~ 27.9</td>
<td>96.3</td>
<td>522.3</td>
<td>342.9</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>11.7 ~ 38.1</td>
<td>70.5</td>
<td>382.3</td>
<td>251.0</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>16.0 ~ 52.0</td>
<td>51.6</td>
<td>279.8</td>
<td>183.7</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>23.8 ~ 77.5</td>
<td>34.6</td>
<td>188.0</td>
<td>123.4</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>29.1 ~ 94.5</td>
<td>28.4</td>
<td>154.1</td>
<td>101.1</td>
</tr>
</tbody>
</table>

*Control: EZ-24HTB or ConveyLinxHTF

### Pallet Handling

**Pallet Handling**

**Characteristics Data**

<table>
<thead>
<tr>
<th>Roller Dia: 60.5</th>
<th>Speed Code</th>
<th>Gearbox</th>
<th>Speed f/min</th>
<th>Torque in-lbf</th>
<th>Tangential Force lbf</th>
<th>Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
<td>Reinforced 3 stage</td>
<td>8.2 ~ 26.6</td>
<td>96.3</td>
<td>522.3</td>
<td>342.9</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td></td>
<td>11.2 ~ 36.3</td>
<td>70.5</td>
<td>382.3</td>
<td>251.0</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td>15.3 ~ 49.6</td>
<td>51.6</td>
<td>279.8</td>
<td>183.7</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td></td>
<td>22.7 ~ 73.8</td>
<td>34.6</td>
<td>188.0</td>
<td>123.4</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td></td>
<td>27.7 ~ 90.1</td>
<td>28.4</td>
<td>154.1</td>
<td>101.1</td>
</tr>
</tbody>
</table>

*Control: EZ-24HTB or ConveyLinxHTF

**Pallet Handling**

**Characteristics Data**

<table>
<thead>
<tr>
<th>Roller Dia: 63.5</th>
<th>Speed Code</th>
<th>Gearbox</th>
<th>Speed f/min</th>
<th>Torque in-lbf</th>
<th>Tangential Force lbf</th>
<th>Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
<td>Reinforced 3 stage</td>
<td>8.6 ~ 27.9</td>
<td>96.3</td>
<td>522.3</td>
<td>342.9</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td></td>
<td>11.7 ~ 38.1</td>
<td>70.5</td>
<td>382.3</td>
<td>251.0</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td></td>
<td>16.0 ~ 52.0</td>
<td>51.6</td>
<td>279.8</td>
<td>183.7</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td></td>
<td>23.8 ~ 77.5</td>
<td>34.6</td>
<td>188.0</td>
<td>123.4</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td></td>
<td>29.1 ~ 94.5</td>
<td>28.4</td>
<td>154.1</td>
<td>101.1</td>
</tr>
</tbody>
</table>

*Control: EZ-24HTB or ConveyLinxHTF
ConveyLinx

ConveyLinx is the world’s first Ethernet networked Controller for Motor Driven Roller systems and now with nearly a decade of refinement, it’s certainly the most valued. ConveyLinx allows you to effortlessly commission a low voltage Motor Roller accumulation conveyor system in half the time of traditional systems with the press of a button.

Internal tracking, flexible zone recognition, zone control, and Diagnostics are a few of the great features and benefits packed into this small module. ConveyLinx is flexible. Easily configure the product for simple Zero Pressure Accumulation (ZPA). For more advanced control over any zone, connect a PLC or PC via Ethernet. Or, simply write your own code, download it and have ConveyLinx execute the commands without the need for a PLC or PC. Quickly make changes such as speed, acceleration/deceleration, braking, ZPA functions, and much more using EasyRoll Software.

ConveyLinx gives you the perfect balance for control over your system.

Features:
- Dual Zone Ethernet Networked Controller
- 2 Motor Drive & 4 Sensor JST Connections
- Integrated Zero Pressure Accumulation Logic
- Configuration Via EasyRoll Software or Via PLC
- Built-in Tracking Data Handling & Flexible Zone Recognition
- Synchronized Operation of Both Drives
- Advanced Diagnostics Functions
- ETL Certified to UL Standards | CE Certified
- EtherNet/IP | Profinet | Modbus | ODVA Approved

Benefits:
- Minimized Commissioning & Installation Times
- Repeatable Linear Motion
- Flexibility with a Choice of Autonomous, PLC, or PC Control
- Reduce Programming Times with Integral ZPA
- Control & Diagnose All Zones Via a Single Ethernet Cable
- Versatile & Flexible Parameters & Functions
- Less Downtime with an Effortless Automatic Module Replacement
IQZonz is the latest controller technology created entirely from customer feedback. IQZonz is a mid-range controller designed to quickly commission a standard Zero Pressure Accumulation conveyor without any software. IQZonz automatically sets the direction of Senergy Motor Rollers to match the desired flow. Two Senergy Motor Rollers and two Sensor connections are present to control two zones of accumulation conveyor.

Mount the module without tools by snapping into four round holes. Simply mount the module with the direction arrows facing the direction of travel for the flow of product, connect Senergy motors and zone sensors, apply 24-volt power, and the conveyor is automatically running in ZPA mode. IQZonz determines the necessary settings based on how the modules are connected. Add Wake-up and Line Full interlocks to the upstream or downstream devices using the IQMap module to automatically create the interface.

**Features:**
- Drives 2 Motors to Maximize Savings
- ZPA Logic with Flex Zone Built-in
- Controls the Senergy Motor in “ECO” Mode
- Self-Configuring & Automated Setup
- Single Page Configuration Software (IQTool) to Change Default Settings
- Standard Ethernet Cables for Module-to-Module Connections

**Benefits:**
- Easy to Use & Simple Install
- Lower Cost for Mid-Level Controls
- No Programming Required
- Save Time with Quick Configuration
- Extremely Fast Commission Time
EZ24

EZ24 is a run on demand single zone control that drives your low-voltage brushless DC motor. Effortlessly move from one pound up to a couple thousand pounds with speeds up to 1,000 fpm depending on load weight and speeds.

Select from multiple modes to control torque, energy, and several different modes of electronic braking. If an electro-mechanical brake is required, then our EZ24HTB card has you covered.

Using DIP switches allows many parameters such as acceleration, deceleration, direction of rotation, and speed to be quickly selected or changed. The speed can also be set by digital inputs from an external control. Continuously monitor the motor condition with the available motor error output.

Features:
- Simple Run On Demand Controller for Senergy Motors
- Standard Duty | High Torque | Extreme Cold
- Analog Input Command & Digital Output Representing Speed Available
- Speed | Acceleration | Deceleration Settings
- External Speed Connection
- FWD | REV | Motor Error Out
- CE Certified

Benefits:
- Quick Installation
- Simple & Safe Wiring
- Diagnostics on Board
- Configuration Via Dip Switch
EQube

Eqube is a low cost, compact, run on demand single zone control that drives your low-voltage brushless DC motors. Effortlessly move from one pound up to hundreds of pounds with speeds up to 1,000 fpm, depending on load weight, all with a single 24VDC signal.

Using DIP switches many parameters such as acceleration, deceleration, direction of rotation, and speed can be quickly selected or changed. Digital inputs from an external control can manage the speed, and with a motor error output available, the motor condition can be continuously monitored.

Features:
- Simple Run On Demand Controller for Senergy JST
- Standard Torque Only
- Speed | Acceleration | Deceleration Settings
- External Speed Setting by Two Digital I/O
- FWD | REV/Motor Error Out
- CE Certified

Benefits:
- Super Compact Design for Space Savings
- Acceleration & Deceleration Settings for Smooth Operation
- Simple Interfacing for Fast Commissioning
A microprocessor inside the motor drive holds and processes important data about the motor. There are several benefits of having Advanced Intelligence (Ai) inside the motor roller or geared drive.

The first major benefit is a reliable industrial-hardened M8 4-pin connector that is easily routed through the hex hole of the conveyor. Another benefit is the standard, commercially available 4-wire M8 extensions of the cable connect from the motor drive to the controller. Both of these benefits are possible because the microprocessor transmits pulse data over a single wire regarding the hall-effect sensor inputs.

Other benefits include no longer having to remove the roller out of the conveyor frame to check the part or serial numbers, simply click on the motor icon within EasyRoll to see all the pertinent information about the Drive. The controller easily drives the motor based on distance instead of time, giving you repeatable linear motion at a very fine resolution (fractions of a millimeter). This is possible because every motor roller or gear drive has the following data coded before leaving the factory:

- Part Number
- Serial Number
- Manufacturing Date
- Actual Motor Temperature
- Run Cycle Time
- Overload Count
- Gearbox Ratio
- Motor Positioning Data
Ai technology is patent pending and provides the reliable motor drive you’ve come to expect with a much higher rating of IP54, CE, and ETL certified to UL standards. This ensures that, as lower voltage technology becomes more of the standard in the conveyor industry, you will be ready with the right certifications.
Senergy Ai

Senergy Ai is an intelligent, low voltage, motorized-driven conveyor roller with a robust and precise planetary gearbox, giving you an optimal way of driving any type of conveyor. It’s powerful, self-contained drive is virtually maintenance-free and operates efficiently with nearly no sound.

Senergy Ai offers significant high-starting torque which is beneficial for conveying product in curves, inclines, or any other critical application requiring such torque. To ensure motor roller longevity with these applications, Senergy Ai has been designed using a planetary gearbox incorporating a cage design for each individual stage required.

Senergy Ai is the world’s first motor roller using a robust M8 connector connected to an external control of your choice. The hall-effect signals are digitally coded inside the motor by a u-Controller making it possible to communicate precision motor control through only one pin to an external controller. The u-Controller also digitally codes through the same pin the motor temperature, run-time, gearbox information, serial number, and other information. The external control analyzes all this data for multiple functions such as over temperature control, over current, life of the motor, and motor positioning.

**Features:**
- Low-Voltage Brushless 24VDC Motor
- High-Starting Torque & Overload Capacity
- 11 Gearbox Combinations
- 4-pin M8 Standard Connector
- Internal Data Memory (Gearbox, Production Date, Serial #, Run Timers, and More)
- Internal Thermistor
- Precision Repeatable Linear Motion
- Common Idler Roller Compatibility
- ETL Certified to UL Standard | CE Certified | RoHS Compliant | IP54, IP66, IP69 Rated

**Benefits:**
- Reduced Conveyor Zones with Precision Stopping
- Simple & Secure Installation
- Longer Lifespan with Powerful Gearbox
- Energy Savings with Run On Demand Technology
- Safer Low Voltage
- Simple Preventive Maintenance Procedures
- Decrease Inventory
## Characteristics Data

<table>
<thead>
<tr>
<th>Speed Code</th>
<th>Gearbox</th>
<th>ECO-mode?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Speed f/min</td>
</tr>
<tr>
<td>15</td>
<td>3 stage</td>
<td>6.5 ~ 64.7</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>8.8 ~ 88.3</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>10.7 ~ 107.8</td>
</tr>
<tr>
<td>35</td>
<td>2 stage</td>
<td>15.8 ~ 159.0</td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>19.2 ~ 194.0</td>
</tr>
<tr>
<td>60</td>
<td></td>
<td>26.3 ~ 265.0</td>
</tr>
<tr>
<td>75</td>
<td></td>
<td>32.1 ~ 323.3</td>
</tr>
<tr>
<td>95</td>
<td>1 stage</td>
<td>42.3 ~ 426.7</td>
</tr>
<tr>
<td>125</td>
<td></td>
<td>57.7 ~ 581.9</td>
</tr>
<tr>
<td>175</td>
<td></td>
<td>78.8 ~ 794.9</td>
</tr>
<tr>
<td>215</td>
<td></td>
<td>96.2 ~ 969.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Speed Code</th>
<th>Gearbox</th>
<th>BOOST &amp; BOOST 8-mode</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Output Shaft Speed f/min</td>
</tr>
<tr>
<td>15</td>
<td>3 stage</td>
<td>6.4 ~ 46.8</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>8.8 ~ 63.9</td>
</tr>
<tr>
<td>25</td>
<td></td>
<td>10.7 ~ 77.9</td>
</tr>
<tr>
<td>35</td>
<td>2 stage</td>
<td>15.8 ~ 115.0</td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>19.2 ~ 140.3</td>
</tr>
<tr>
<td>60</td>
<td></td>
<td>26.3 ~ 191.6</td>
</tr>
<tr>
<td>75</td>
<td></td>
<td>32.1 ~ 233.8</td>
</tr>
<tr>
<td>95</td>
<td>1 stage</td>
<td>42.3 ~ 308.6</td>
</tr>
<tr>
<td>125</td>
<td></td>
<td>57.7 ~ 420.8</td>
</tr>
<tr>
<td>175</td>
<td></td>
<td>78.8 ~ 574.8</td>
</tr>
<tr>
<td>215</td>
<td></td>
<td>96.2 ~ 701.3</td>
</tr>
</tbody>
</table>

*Rated torque and rated tangential force of BOOST 8 are the same values as BOOST.

*Boost 8 performance is available with EZ-24-HTB and ConveyLinx HTF card only.
Pulse Gear Drive Ai (PGD Ai)

Pulse Gear Drive Ai is a compact low-voltage drive to replace your AC Motors, Pneumatic devices, and much more to ease the overall cost and time during commissioning.

You may have found that Motor Rollers aren’t always the best option for some applications which may leave your options limited. The gear drive is perfect when driving actuators, pop up wheels, lift motors, belt drives, diverters, and many other applications. More importantly, our PGD Ai uses the same engine as our Senergy Ai Motor Rollers allowing you to keep the same control architecture.

The various gearbox combinations offer you a wide range of speed and torque, allowing you to use it with numerous different intralogistic applications. Using a 4-pin M8 connector allows for safer connections. With built-in Advanced Intelligence, the PGD Ai provides a wealth of information and capabilities to the controller that other products cannot provide.

Features:
• Compact Frame
• 8 Gearbox Combinations
• High Performance Motor
• Output Shaft with Dual Bearings & Keyway
• Heavy-Duty Reinforced Gearbox
• 4-Pin M8 Standard Connector
• Internal Data Memory (Gearbox, Production Date, Serial #, Run Timers, and More)
• Internal Thermistor
• Precision Repeatable Linear Motion
• ETL Certified to UL Standard | CE Certified | RoHS Compliant | IP54 Rated

Benefits:
• Virtually Unlimited Application Uses
• High Resolution & Repeatable Linear Motion
• Easily Replaces Pneumatic Cylinders in Transfers & Wheel Diverters
• Quickly Convert 480VAC Motors for Many Mechanical Devices
• Simple & Secure Installation
• Longer Lifespan with Powerful Gearbox
• Safer Low Voltage
• Energy Savings with Run on Demand Technology
• Simple Preventive Maintenance Procedures
• Decreased Inventory with Gearbox Arrangements
## Characteristics Data

<table>
<thead>
<tr>
<th>Speed Code</th>
<th>Gearbox</th>
<th>Output Shaft Speed f/min</th>
<th>Torque in-lbf</th>
<th>Current A</th>
<th>Output Shaft Speed f/min</th>
<th>Torque in-lbf</th>
<th>Current A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 stage</td>
<td>8.5 – 86.7</td>
<td>39.1</td>
<td>215.9</td>
<td>8.5 – 62.7</td>
<td>71.1</td>
<td>281.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12.8 – 129.0</td>
<td>26.2</td>
<td>145.0</td>
<td>12.8 – 93.3</td>
<td>47.7</td>
<td>189.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17.4 – 176.3</td>
<td>19.2</td>
<td>106.2</td>
<td>17.4 – 127.5</td>
<td>34.9</td>
<td>138.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>21.3 – 215.1</td>
<td>15.7</td>
<td>87.0</td>
<td>21.3 – 155.5</td>
<td>28.8</td>
<td>113.5</td>
</tr>
<tr>
<td>67</td>
<td>2 stage</td>
<td>31.4 – 317.3</td>
<td>10.6</td>
<td>59.0</td>
<td>31.4 – 299.5</td>
<td>19.4</td>
<td>76.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>38.4 – 387.2</td>
<td>8.7</td>
<td>48.3</td>
<td>38.4 – 280.0</td>
<td>15.9</td>
<td>63.0</td>
</tr>
<tr>
<td>45</td>
<td></td>
<td>52.4 – 528.9</td>
<td>6.4</td>
<td>35.4</td>
<td>52.4 – 382.5</td>
<td>11.6</td>
<td>46.1</td>
</tr>
<tr>
<td>33</td>
<td></td>
<td>64.0 – 645.3</td>
<td>5.2</td>
<td>29.0</td>
<td>64.0 – 466.6</td>
<td>9.5</td>
<td>37.8</td>
</tr>
<tr>
<td>27</td>
<td>3 stage</td>
<td>8.5 – 86.7</td>
<td>39.1</td>
<td>215.9</td>
<td>8.5 – 62.7</td>
<td>71.1</td>
<td>281.5</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>12.8 – 129.0</td>
<td>26.2</td>
<td>145.0</td>
<td>12.8 – 93.3</td>
<td>47.7</td>
<td>189.1</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>17.4 – 176.3</td>
<td>19.2</td>
<td>106.2</td>
<td>17.4 – 127.5</td>
<td>34.9</td>
<td>138.4</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>21.3 – 215.1</td>
<td>15.7</td>
<td>87.0</td>
<td>21.3 – 155.5</td>
<td>28.8</td>
<td>113.5</td>
</tr>
<tr>
<td>9</td>
<td>2 stage</td>
<td>31.4 – 317.3</td>
<td>10.6</td>
<td>59.0</td>
<td>31.4 – 299.5</td>
<td>19.4</td>
<td>76.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>38.4 – 387.2</td>
<td>8.7</td>
<td>48.3</td>
<td>38.4 – 280.0</td>
<td>15.9</td>
<td>63.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>52.4 – 528.9</td>
<td>6.4</td>
<td>35.4</td>
<td>52.4 – 382.5</td>
<td>11.6</td>
<td>46.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>64.0 – 645.3</td>
<td>5.2</td>
<td>29.0</td>
<td>64.0 – 466.6</td>
<td>9.5</td>
<td>37.8</td>
</tr>
</tbody>
</table>

*Rated torque of BOOST 8 is the same value as BOOST.

*Boost 8 mode is available only with the "High torque" series of EZ24 (EZ24HTB) and ConveyLinx (ConveyLinx HTF).
Pulse Motion Drive Ai (PMD Ai)

Pulse Motion Drive is a brushless DC motor with a compatible mounting option for SMC’s Actuators and is directly compatible to a 100W PCD-40 servo mount.

Pulse Motion Drive is a compact, low-voltage drive created to replace compressed air or AC motors in your system with a safer and more precise motorized linear actuator. The safer 24DC low voltage drive can easily obtain resolutions of less than a millimeter, giving fine control for many types of applications.

Most companies find that compressed air typically isn’t a viable solution in many of the latest manufacturing and distribution applications. With Pulse Motion Drive, there is a solution.

Features:
• Compact Frame
• Compatible Mounting Footprint for PCD-40 Servo Mount
• Heavy Duty Single Stage Gearbox
• Rotational Speed up to 1,400 rpm
• High Performance Motor
• 4-pin M8 Standard Quick Connector
• Internal Data Memory (Gearbox, Production Date, Serial #, Run Timer, and More)
• Internal Thermistor
• Precision Repeatable Linear Motion
• CE Certified | RoHS Compliant | IP54 Rated

Benefits:
• Compatible to 100W AC Motor (PCD-40)
• Replaces Troublesome Compressed Air
• High Resolution with Repeatable Linear Motion
• Simple & Secure Installation
• Safer Low Voltage
• Energy Savings with Run on Demand Technology
• Simple Preventive Maintenance Procedures
ConveyLinx Ai2

ConveyLinx Ai2 opens up a wide range of applications, from simple zero-pressure accumulation conveyor to complex packaging and machinery using repeatable linear motion. This is achieved with one extremely compact controller with unprecedented programming capabilities.

A zero pressure accumulation conveyor can be controlled by ConveyLinx Ai2 and is fully automated without a single PC or PLC. If your application requires a higher level of control, a PLC or PC can be connected via EthernetIP, ProfiNet, or Modbus giving you complete control and monitoring capabilities over a single Ethernet cable. Although possible, it’s not required to have PLC control in every zone; the only requirement is a connection to critical decision points of the conveyor system.

If you decide to control the system through a PLC via Ethernet, all configuration files are provided on pulseroller.com. When connected to ConveyLinx Ai2, there are extensive diagnostic tools enabling cost-effective targeted plant maintenance that can drastically reduce unplanned downtime.

Features:
- 2 Zone Ethernet Networked Controller
- 2 Motor Drive & 4 Sensor with M8 Style Connector
- Integral Zero Pressure Accumulation Logic
- Configuration Via EasyRoll-Software or Via PLC
- Built-In Tracking Data Handling
- Synchronized Operation of Both Drives
- Advanced Diagnostics Functions
- IP54 Rated | ETL Certified to UL Standards
- CE Certified
- EtherNet IP | ProfiNet | Modbus | ODVA Approved
- Low Profile Foot Print

Benefits:
- Minimized Commissioning & Installation Times
- Extremely Compact Size for Small Areas
- Repeatable Linear Motion
- Flexibility with a Choice of Autonomous, PLC, or PC Control
- Reduce Programming Times with Integral ZPA
- Control & Diagnose All Zones Via a Single Ethernet Cable
- Versatile & Flexible Parameters and Functions
- Less Downtime with an Effortless Automatic Module Replacement
- Robust & Reliable Connections
In certain conveyor applications, the need for additional I/O points exceeds the number of motorized drives in a system. It’s often difficult to integrate I/O blocks from other suppliers in a ConveyLinx system.

ConveyLinx-I/O offers the unique feature of providing an I/O block at your fingertips that is specifically designed for the ConveyLinx system. ConveyLinx I/O provides engineers with a simple and efficient way to integrate additional I/O using the ConveyLinx Ethernet Network.

Consider ConveyLinx I/O for additional devices on a ZPA conveyor system such as proximity sensors in right angle transfers, stack lights, solenoids, and much more.

**Features:**
- 8 Configurable I/O Points
- PNP/NPN Logic Conversion
- Standard I/O Pin Out
- Separate Power Supplies for Outputs
- IP54 Rated | ETL Certified to UL Standards
- CE Certified
- EtherNet IP | Profinet | Modbus | ODVA Approved
- Low Profile Mounting Foot Print

**Benefits:**
- Easy & Quick Integration
- Fully Compatible to All ConveyLinx Modules
- Failsafe Commissioning with Standard I/O Pinout
- Low Profile Design for Conveyor Side Frames
- Potential Emergency Stop of Outputs
MotionLinx Ai is for those who enjoy our ConveyLinx technology, but need the deterministic and fast response times of the EtherCat network. It was designed for a wide variety of applications in the conveying and machine building industries and can drive either Senergy Ai, PGD Ai, or PMD Ai products. A maximum of four sensors and two drives can be connected to one card using M8 Connectors. Each module is equipped with an In/Out EtherCAT slave controller, allowing multiple MotionLinx-Ai modules to be connected in series to form an EtherCAT network.

Quickly integrate an MDR conveyor using EtherCAT’s extremely fast and reliable deterministic network. Use the speed of the network for more efficient and better resolution of our drives, giving you repeatable linear motion. Install MotionLinx Ai in virtually any environment due to its extremely small footprint and IP54/CE rating. Using Ai technology gives you extensive diagnostic tools for all Ai Drives, drastically reducing unplanned downtime.

**Features:**
- 2 Motor Drive & 2 Sensor-I/O M8 Port Connections
- Configuration Via EtherCat PLC or PC
- Synchronized Operation of Both Drives
- Advanced Diagnostics Functions
- IP54 Rated | ETL Certified to UL Standards
- CE Certified
- EtherCAT Network
- Extremely Small Footprint

**Benefits:**
- Easy Mechanical Integration Due to Small Physical Dimensions
- Robust & Reliable Connection Due to Use of Standard M8 Connectors
- Repeatable Linear Motion Self-Controlled or PLC-controlled
- Versatile and Flexible Parameters & Functions
- Fast Module Replacement
MotionLinx I/O

In many conveyor applications the need for additional I/O points is typically required. MotionLinx I/O easily integrates into an existing MotionLinx Ai system, providing eight additional configurable inputs and outputs. By using a standard M8 connector with a standard pin out, finding the right sensor and cable is easily accomplished. Install MotionLinx I/O in virtually any environment due to its extremely small footprint and IP54/CE rating. All necessary files can be found in the download section at pulseroller.com.

Features:
- 8 Configurable I/O points
- PNP/NPN Logic Conversion
- Standard I/O Pin Out
- Configuration Via PLC
- Separate Power for Outputs
- Outputs Rated 400 mA Continuous
- EtherCat Compatibility
- IP54 Rated | ETL Certified to UL Standards
- CE Certified

Benefits:
- Fast Integration
- Lower Learning Curve by Using a Single Supplier
- Failsafe Commissioning Due to Standard I/O Pinout
- Low Profile Design for Conveyor Side Frames
- Potential Emergency Stop of Outputs
EQube Ai is a low cost, compact, run on demand, single zone control that drives your low-voltage brushless DC motor. Effortlessly move from one pound up to hundreds of pounds with speeds up to 1,000 fpm depending on the load weight. EQube Ai uses a 4-pin M8 connector for the motor connection giving you a robust and reliable connection with an IP54 rating.

Quickly select or change settings using DIP switches for the many parameters such as acceleration, deceleration, direction of rotation, and speed. Digital inputs from an external control can manage the speed, and with a motor error output available, the motor condition can be continuously monitored.

Features:
- Simple Run On Demand Controller
- Standard Torque Only
- Speed/Acceleration/Deceleration Settings
- External Speed Setting by Two Digital I/O
- FWD | REV | Motor Error Out

Benefits:
- Compact Design for Space Savings
- Acceleration & Deceleration Setting for Smooth Operation
- Simple Connections for Fast Installation
- IP54 Rated | ETL Certified to UL Standards
- CE Certified
Pulse Driver Unit 90° *(PDU-90)*

PDU-90 is a well-proven right angle transfer design offering a robust and reliable direct unit. Every PDU-90 is specifically configured based on a customer’s individual conveyor specification, making the PDU-90 a perfect fit for your application.

Controlling PDU-90 with ConveyLinx ensures seamless integration into the PulseRoller product range. Additional control technology and pneumatics are not required because everything is driven and controlled by PulseRoller components, creating a high degree of standardization and modularization. The PDU-90’s simple design, integration, and commissioning significantly reduces time and frees up valuable resources.

**Features:**
- Multi-Belt Transfer
- Self-Contained Divert Unit from Roller Bed
- Independent Belt Units
- Lift Mechanism & Belts Driven Via Senergy
- Controlled by ConveyLinx Ai2
- Low Overall Height

**Benefits:**
- Seamless Integration with ConveyLinx Ai Technology
- Scaleable & Modular
- High Throughput Rates
- Fits Most Conveyor Applications
- Simple Maintenance
PulseRoller Accessories

PulseRoller offers numerous accessories designed or sourced specifically for our Motor Driven Roller and Zero Pressure Accumulation control technologies. PulseRoller can offer just about everything except the Side Frame of an MDR Conveyor System. See below for additional details about all of our available accessories that are in stock or ready to be manufactured.

MDR | Power
MDR | Power affords an economical means of providing power to our Control and Roller products. One power supply footprint with multiple inputs and amperages available makes it the perfect accessory. MDR | Power® modules are lockable, pre-wired to the power supply and terminals, and internally fused and protected. An automatic overheat shut-off mechanism offers built-in heat protection for the convection cooled unit, and an alarm output ensures you will know about any problems quickly. Additionally, the clear, polycarbonate cover allows for easy monitoring of the module status.

ConveySense
Zone presence sensors for your Accumulation Conveyor. There is no need to pay more for Sensor features that are not required on the Zero Pressure Conveyor. Features include a sensing distance of nearly 5'-0", an NPN signal alert when parts are present, and an RJ12 connection at the end for quick connections to our Controls Architecture. You can rely on ConveySense. Select the cable length of your choice and choose diffuse or retro-reflective.
Breakout Board
In addition to accessing the I/O, this breakout module also amplifies the output signal up to 150ma. The I/O without the amplification only provides enough current to signal a PLC that an output is present. Coupled with our controls, this module allows you to use the port to control motor starters, solenoids, stack lights, and more.

Extension Cables
We offer a wide range of Extension cable sizes to extend from our range of Controllers to the Brushless DC Drive. The low-cost Cables have been tested and approved for use with all of our Controls.

Ethernet Cables
We offer a wide range of Shielded Ethernet Cable sizes to use with our “Networked Controller” Conveylinx. The low-cost Ethernet Cables have been tested and approved for use with all of our Controls. All cables are shielded cables with a ground.

1.9” Idler Rollers
Insight can offer 1.9” Idlers to match our PulseRoller drive selection upon request. With thousands of Motor Rollers sold, many customers have found it beneficial to purchase Idlers through us to minimize purchasing resources versus going to multiple vendors. We have several vendors providing quality Idlers to us for your convenience.

Benefits:
• Convenient Location for Necessary Accessories
• Low Cost & High Quality
• Accessories Designed to Enhance Our Technologies
About PulseRoller

PulseRoller is the brand name for a family of 24-volt DC Motorized Drive Roller products and controls. The PulseRoller brand consists of a variety of motor drive rollers of various diameters and configurations, GearDrive motors, the most advanced Ethernet networked drive controllers, and other components required to assemble and implement motor driven roller conveyors.

Three core companies comprise the PulseRoller R&D team:

Insight Automation, Inc.
Sales & R&D
2748 Circleport Drive
Erlanger, Kentucky 41018 USA

Telephone: +1-859-647-1111
Sales Contact: Mr. Tim Barnes
Contact Email: sales@insightautomation.cc
Website: insightautomation.cc/contact
Industrial Software Controls Assembly & R&D
J.K. Mladost 3, bl.323
vh.G/D, 1712 Sofia, Bulgaria

Telephone: +359-2-975-1180
Technical Contact: indsoft@einet.bg
Sales Contact: Mr. Jimmi Petrov
Website: indsoft.bg

Kyowa Manufacturing Co., Ltd.
MDR Assembly & Sales & R&D
570-10, Kubota-cho, Kasai-city
Hyogo Prefecture, 675-2364, Japan

Telephone: +81-790-42-0601
Contact Email: info@kyowa-mfg.co.jp
Website: kyowa-mfg.co.jp