Typical Applications Include: designs to meet any application requirement. Electronic Throttle Control options include both low-cost and heavy-duty designs, as well as custom various human interface and operator controls that act seamlessly in today's modern cab environment. For hybrid and electric vehicles. In an effort to improve vehicle safety and operator efficiency, we also supply new energy solutions for a greener environment by providing advanced motor controllers and power electronics. We are a leading provider of electronic throttle controls, transmission shifters, and sensors addressing the long-term trend across the globe towards attaining higher fuel efficiency and lower emissions. We are also addressing agricultural and other specialty vehicles, plus medium- and heavy-duty trucks, buses, and motor coaches, as customer specific solutions for on- and off-highway vehicles. These include material handling, construction, agricultural vehicles, personal recreational vehicles (PRVs), material handling, construction vehicles, buses and motor coaches, heavy-duty trucks, and medium-duty trucks.

Typical Applications

- Hall Effect Technology
- High Strength Materials
- Customizable Treadle Cover Available
- Various Treadle Angles Available
- Kick Down and Non-Kick Down Versions

Curtiss-Wright Sensors

- Compatible with a Large Portfolio of
- Robust Compact Designs

Key Strengths:

- Agricultural Vehicles
- Construction Equipment
- Off-Highway Vehicles
- On-Highway Vehicles

Curtiss-Wright Industrial Division is a recognized leader in providing components and sub-systems that enable various markets related to electronic throttle responsive to specific customer requirements. This leading position in various markets by being highly extensible experience of the industry-leading OEMs. Whether designing to a specification, building an application, or creating completely new concepts to address an OEM specification, an application, or creating completely new concepts to address an OEM specification, we provide long-term relationships with many customer development teams, we enable a free flow of ideas that provide the most reliable and cost-effective product solution. We are proud of our legacy spanning over 85 years, providing customer specific solutions to each unique application.

Why Choose Curtiss-Wright?

- Extensive Experience
- Reliable Partner
- Innovative Products
- Global Support
- Why Choose Curtiss-Wright?

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- Why Choose Curtiss-Wright?

Curtiss-Wright has established a global footprint, with design and manufacturing in Portland, Oregon, USA; Chicago, Illinois, USA; LA, California, USA; Christchurch, UK; South Wales, UK; Munich, Germany; Pune, India; Singapore; Shanghai, China; Taipei, Taiwan. Curtiss-Wright Industrial Division has a global presence, with sales and technical support teams in over 45 other countries, including the USA, the United Kingdom, China, and India. This is backed by our own sales and technical teams in Christchurch, UK, South Wales, UK, Munich, Germany, Pune, India, Singapore, and Shanghai, China.

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For a listing of our global sales network, visit our website at www.cw-industrialgroup.com.
Electronic Throttle Controls

Curtiss-Wright’s proud legacy of innovative pedal control development spans over 85 years, developing some of the industry’s first breaking solutions for the extremely demanding forestry and on-highway markets back in 1937. That passion for innovation continues in our wide range of ETCs (Electronic Throttle Control systems) which are suitable for light, medium and heavy commercial vehicle applications for both on- and off-highway use.

Three distinct styles of ETCs are available: suspended electronic pedals, floor mounted electronic pedals, and hand operated throttle controllers.

These products incorporate the latest non-contact Hall-effect sensing technology to provide a durable, rugged and reliable drive-by-wire signal for the vehicle’s electronic fuel management system or the motor controller for battery-powered vehicles. The sensors are compatible with all the major engine manufacturers and provide a combination of APS and IVS signals that can be factory configured to suit individual applications.

Suspended Pedals

Electronic suspended pedals are well suited for applications where clean floor access is required. Pedal options include both low-cost and heavy-duty designs, as well as custom designs to meet any application requirement.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>WM-540</th>
<th>WM-546</th>
<th>WM-542</th>
<th>WM-554</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Life</td>
<td>5,000,000 Full Travel Cycles</td>
<td>4,000,000 Full Travel Cycles</td>
<td>3,000,000 Full Travel Cycles</td>
<td>3,000,000 Full Travel Cycles</td>
</tr>
<tr>
<td>Output Types</td>
<td>Dual APS, Dual PWM, APS, PWM, APS/IVS</td>
<td>Dual APS, APS/IVS, APS/IVS, APS/IVS</td>
<td>Dual APS, APS, APS, APS/IVS</td>
<td>Dual APS</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Operating force = 34N, Full Travel = 48N. Static Load: 1500N@ 150mm. Vibration: Random broadband up to 4g (3-axis, 3 hr. each axis,)</td>
<td>Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g</td>
<td>Static Load: 667N. Vibration: 3 hour, 3-axis, random broadband up to 4g</td>
<td>Operating Force (at 200mm from pivot point) Idle = 17N, Full Travel = 35N. Static Load: 667N @ 200mm. Vibration: Random broadband up to 4g (3-axis, 3 hr. each axis,)</td>
</tr>
<tr>
<td>Environmental</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 105°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
</tr>
</tbody>
</table>
Curtiss-Wright Industrial Division

Curtiss-Wright Industrial Division is a recognized leader in providing components and sub-systems that enable customer specific solutions for on- and off-highway vehicles. These include material handling, construction, agricultural and other specialty vehicles, plus medium- and heavy-duty trucks, buses, and motor coaches, as well as sophisticated wheelchairs and scooters for medical mobility.

We are a leading provider of electronic throttle controls, transmission shifters, and sensors addressing the long-term trend across the globe towards attaining higher fuel efficiency and lower emissions. We are also addressing new energy solutions for a greener environment by providing advanced motor controllers and power electronics for hybrid and electric vehicles. In an effort to improve vehicle safety and operator efficiency, we also supply various human interface and operator controls that act seamlessly in today's modern cab environment.

Why Choose Curtiss-Wright?

Extensive Experience

Curtiss-Wright Industrial Division has established a leading position in various markets by being highly responsive to specific customer requirements. This diverse application knowledge base includes the following markets related to electronic throttle controls:

- On-Highway Vehicles
- Off-Highway Vehicles
- Materials Handling
- Construction Equipment
- Agricultural Vehicles
- Personal Recreational Vehicles

Innovative Products

We are proud of our legacy spanning over 85 years, providing customer specific solutions to market leading OEMs.

Using our applications engineering expertise with customer development teams, we enable a free flow of ideas that provide the most reliable and cost-effective product solution to each unique application.

Reliable Partner

We have long-term relationships with many of the industry-leading OEMs. Whether customizing an existing product to better suit an application, or creating completely new concepts to address an OEM specification, our global team of engineers are ready for the challenge.

Our engineers will work directly with your team to determine what is needed for a successful outcome.

Global Support

Curtiss-Wright Industrial Division has a global footprint, with design and manufacturing in the USA, the United Kingdom, China and India. This is backed by our own sales and technical support teams in over 45 other countries, ensuring exceptional levels of efficiency, quality and on-time delivery.

Typical Applications

Electronic Throttle Control options include both low-cost and heavy-duty designs, as well as custom designs to meet any application requirement.

Typical Applications Include:

- Medium-Duty Trucks
- Heavy-Duty Trucks
- Buses and Motor Coaches
- Construction Vehicles
- Agricultural Vehicles
- Material Handling
- All-Terrain Vehicles
- Personal Recreational Vehicles (PRVs)
- Other Specialty Vehicles

Key Strengths:

- Robust Compact Designs
- Electrically Sealed to IP67, FMVSS-124 and 302 Compliant
- Compatible with a Large Portfolio of Curtiss-Wright Sensors
- Kick Down and Non-Kick Down Versions
- Various Treadle Angles Available
- Customizable Treadle Cover Available
- High Strength Materials
- Hall Effect Technology
- CAN Technology
Floor Pedals

Electronic floor-mounted foot pedals are well suited for applications where the operator is seated or standing and it is preferred to have the pivot point under the operator’s heel for electronic accelerator control. Pedal options include both low-cost and heavy-duty designs, as well as custom designs to meet any application requirement.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>WM-526</th>
<th>WM-575</th>
<th>WM-528</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Life</td>
<td>10,000,000 Full Travel Cycles</td>
<td>5,000,000 Full Travel Cycles</td>
<td>3,000,000 Full Travel Cycles</td>
</tr>
<tr>
<td>Output Types</td>
<td>Dual APS, Dual PWM, APS, PWM, APS/IVS</td>
<td>Dual APS, Dual PWM, APS, PWM, APS/IVS</td>
<td>Dual APS, Dual PWM, APS, PWM, APS/IVS</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g</td>
<td>Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g</td>
<td>Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g</td>
</tr>
<tr>
<td>Environmental</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120 hours. Sand/Dust: Tested to SAE J1455</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 125°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
</tr>
<tr>
<td>Sealing</td>
<td>Electronics IP67 sealed (IEC 60529)</td>
<td>Electronics IP67 sealed (IEC 60529)</td>
<td>Electronics IP67 sealed (IEC 60529)</td>
</tr>
</tbody>
</table>

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>WM-558</th>
<th>WM-575</th>
<th>WM-532</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Life</td>
<td>3,000,000 Full Travel Cycles</td>
<td>3,000,000 Full Travel Cycles</td>
<td>3,000,000 Full Travel Cycles</td>
</tr>
<tr>
<td>Output Types</td>
<td>Dual APS, APS/IVS, APS/IVS/IVS, Dual PWM</td>
<td>Dual APS, Dual PWM, APS, PWM, APS/IVS</td>
<td>Dual APS, Dual PWM, APS, PWM, APS/IVS</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Operating force (at 150mm from pivot point). Idle = 17N, Full Travel = 45N. Static Load: 1500N@ 150mm. Vibration: Random broadband up to 4g (3-axis, 3 hr. each axis.)</td>
<td>Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g</td>
<td>Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g</td>
</tr>
<tr>
<td>Environmental</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 105°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
<td>Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120 hours 27°C to 75°C. Sand/Dust: Tested to SAE J1455</td>
</tr>
</tbody>
</table>
Hand Throttles

Electronic hand throttles, such as the thumb and twist grip throttles are designed specifically for use where a handle bar mounted arrangement is preferred. These controls are ergonomically designed and ideal for use with All-Terrain Vehicles (ATVs), Personal Recreational Vehicles (PRVs), Motorbikes and Ebikes. Our range of lever hand controls are designed to meet the needs of a wide variety of applications, and are fully customizable with options including shaft orientation, sensor positions, and knob color.

### Rotary Throttle Units

**Model**  
- WM-547  
- WM-535  
- WM-D10  
- WM-A10

**Product Life**  
- WM-547: 500,000 Full Travel Cycles  
- WM-535: 800,000 Full Travel Cycles  
- WM-D10: 2,000,000 Cycles  
- WM-A10: Throttle: 500,000 Cycles, Switch: 1,500,000 Cycles

**Output Types**  
- WM-547: Dual APS, Dual PWM, APS, PWM, APS/IVS  
- WM-535: Dual APS, Dual PWM, APS, PWM, APS/IVS  
- WM-D10: APS & Dual APS  
- WM-A10: Dual APS & Single Rocker, Dual APS & Dual Rockers

**Specs**  
- Max Torque: 4.5 Nm  
- Vibration: Random broadband up to 4g

**Environmental**  
- Operating Temp: -40°C to 85°C  
- Storage Temp: -40°C to 125°C  
- Humidity: 95% RH for 120 hours, 27°C to 75°C  
- Sand/Dust: Tested to SAE J1455

**Sealing**  
- Electronics IP67 sealed (IEC 60529)

### Twist Throttle Unit

**Model**  
- WM-547  
- WM-535  
- WM-D10  
- WM-A10

**Mechanical**  
- Max Torque: 60 Nm  
- Vibration: 8 hour, 3-axis, random broadband up to 11g

**Environmental**  
- Operating Temp: -40°C to 85°C  
- Storage Temp: -40°C to 125°C  
- Humidity: 95% RH for 120 hours, 27°C to 75°C  
- Sand/Dust: Tested to SAE J1455

**Sealing**  
- Electronics IP66 sealed

### Thumb Throttle Unit

**Model**  
- WM-547  
- WM-535  
- WM-D10  
- WM-A10

**Environmental**  
- Operating Temp: -40°C to 85°C  
- Storage Temp: -40°C to 85°C  
- Humidity: 95% RH for 120 hours, 27°C to 75°C  
- Sand/Dust: Tested to SAE J1455

**Sealing**  
- Electronics: IP67, Mechanical: IP6x
Other Specialty Vehicles
- Personal Recreational Vehicles (PRVs)
- All-Terrain Vehicles
- Material Handling
- Agricultural Vehicles
- Construction Vehicles
- Buses and Motor Coaches
- Medium-Duty Trucks

Typical Applications Include:
- Designs to meet any application requirement.
- Electronic Throttle Control options include both low-cost and heavy-duty designs, as well as custom
- Various human interface and operator controls that act seamlessly in today's modern cab environment.
- For hybrid and electric vehicles. In an effort to improve vehicle safety and operator efficiency, we also supply
- New energy solutions for a greener environment by providing advanced motor controllers and power electronics
- Trend across the globe towards attaining higher fuel efficiency and lower emissions. We are also addressing

We are a leading provider of electronic throttle controls, transmission shifters, and sensors addressing the long-
- Well as sophisticated wheelchairs and scooters for medical mobility.
- Customer specific solutions for on- and off-highway vehicles. These include material handling, construction,

Key Strengths:
- Responsive to specific customer requirements. This
- Leading position in various markets by being highly
- Curtiss-Wright Industrial Division has established a

Why Choose Curtiss-Wright?
- Quality and on-time delivery.
- Ensuring exceptional levels of efficiency,
- By supporting successful
- Our engineers will work directly with your team
- The challenge.
- Our global team of engineers are ready for
- Concepts to address an OEM specification,
- Customizing an existing product to better suit
- Of the industry-leading OEMs. Whether
- We have long-term relationships with many

Reliable Partner
- Customizable Treadle Cover Available
- Various Treadle Angles Available
- Kick Down and Non-Kick Down Versions

Curtiss-Wright Sensors
- Compatible with a large portfolio of
- Electrically sealed to IP67, FMVSS-124
- Robust compact designs

Curtiss-Wright Industrial Division

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