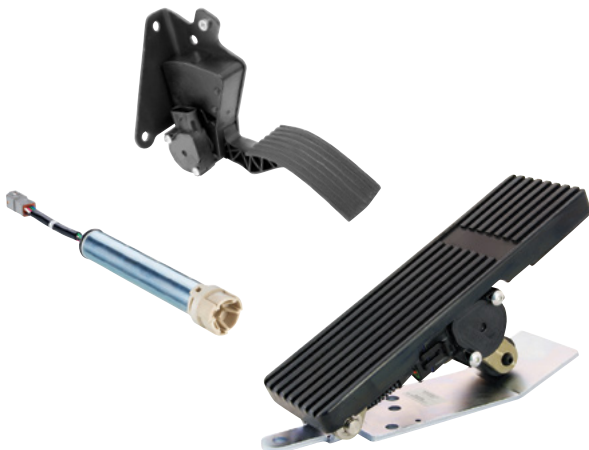




# Electronic Throttle Controls

Electronic Suspended Pedals, Electronic Floor Pedals and Hand Throttles



# 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

Model	WM-540	WM-546	WM-542	WM-554
<b>Product Life</b>	5,000,000 Full Travel Cycles	4,000,000 Full Travel Cycles	3,000,000 Full Travel Cycles	3,000,000 Full Travel Cycles
<b>Output Types</b>	Dual APS, Dual PWM, APS, PWM, APS/IVS	Dual APS, APS/IVS, APS/IVS/IVS, Dual PWM	Dual APS, Dual PWM, APS, PWM, APS/IVS	Dual APS
<b>Mechanical</b>	Operating force = 34N, Full Travel = 48N. Static Load: 1500N@ 150mm. Vibration: Random broadband up to 4g (3-axis, 3 hr. each axis.)	Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g	Static Load: 667N. Vibration: 3 hour, 3-axis, random broadband up to 4g	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.)
<b>Environmental</b>	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	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	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	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
<b>Sealing</b>	Electronics IP67 sealed (IEC 60529)	Electronics IP67 sealed (IEC 60529)	Electronics IP67 sealed (IEC 60529)	Electronics IP67 sealed (IEC 60529)

## 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



Model	WM-526	WM-575	WM-528
<b>Product Life</b>	10,000,000 Full Travel Cycles	5,000,000 Full Travel Cycles	3,000,000 Full Travel Cycles
<b>Output Types</b>	Dual APS, Dual PWM, APS, PWM, APS/IVS	Dual APS, Dual PWM, APS, PWM, APS/IVS	Dual APS, Dual PWM, APS, PWM, APS/IVS
<b>Mechanical</b>	Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g	Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g	Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g
<b>Environmental</b>	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	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	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
<b>Sealing</b>	Electronics IP67 sealed (IEC 60529)	Electronics IP67 sealed (IEC 60529)	Electronics IP67 sealed (IEC 60529)

### Specifications



Model	WM-558	WM-537	WM-532
<b>Product Life</b>	3,000,000 Full Travel Cycles	3,000,000 Full Travel Cycles	3,000,000 Full Travel Cycles
<b>Output Types</b>	Dual APS, APS/IVS, APS/IVS/IVS, Dual PWM	Dual APS, Dual PWM, APS, PWM, APS/IVS	Dual APS, Dual PWM, APS, PWM, APS/IVS
<b>Mechanical</b>	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.)	Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g	Static Load: 1500N. Vibration: 3 hour, 3-axis, random broadband up to 4g
<b>Environmental</b>	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	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	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
<b>Sealing</b>	Electronics IP68 and 69k sealed (IEC 60529)	Electronics IP67 sealed (IEC 60529)	Electronics IP67 sealed (IEC 60529)

## 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



### Twist Throttle Unit



### Thumb Throttle Unit



### Specifications

Model	WM-547	WM-535	WM-D10	WM-A10
Product Life	500,000 Full Travel Cycles	800,000 Full Travel Cycles	2,000,000 Cycles	Throttle: 500,000 Cycles Switch: 1500 Cycles
Output Types	Dual APS, Dual PWM, APS, PWM, APS/IVS	Dual APS, Dual PWM, APS, PWM, APS/IVS	APS & Dual APS	Dual APS & Single Rocker Dual APS & Dual Rockers
Mechanical	Max Torque: 4.5 Nm. Vibration: 3 hour, 3-axis, random broadband up to 4g	Max Torque: 60 Nm. Vibration: 8 hour, 3-axis, random broadband up to 11g	Max Torque: 20Nm Vibration: PSD Up to 8G2/Hz, range 8Hz to 2KHz	Greater than 200N static load. Vibration: Random 8 hour, 3-axis
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	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	Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120hr, 27°C to 75°C. Sand/Dust: Tested to SAE J1455	Operating Temp: -40°C to 85°C. Storage Temp: -40°C to 85°C. Humidity: 95% RH for 120hr, 27°C to 75°C. 1500hr UVA exposure. 336hr Salt fog exposure
Sealing	Electronics IP67 sealed (IEC 60529)	Electronics IP66 sealed	Electronics: IP67 Mechanical: IP6x	IP69K



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