



## NEWS RELEASE

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### **Curtiss-Wright Addresses High Voltage Power Requirements for U.S. Ground Vehicles with High Voltage Turret Drive System**

*High Voltage Turret Drive Stabilization System (HV TDSS) converts, stores, controls 28V source power up to 750V*

**AUSA 2023, Walter E. Washington Convention Center, Washington D.C. (Booth 1509) – October 9, 2023** – Curtiss-Wright’s Defense Solutions Division announced that it is ideally positioned to meet increasing DoD requirements for high voltage (up to 750V) power on ground vehicles with its introduction of a [high voltage turret drive stabilization system \(HV TDSS\)](#) for new platform designs or for upgrading legacy motion control systems. High-voltage power can provide significant benefits to numerous next-generation U.S. ground vehicle programs, such as M1E3 Abrams Main Battle Tank Modernization, Mobile Protected Firepower (MPF) M10 Booker, Extended Range Cannon Artillery (ERCA), Robotic Combat Vehicle (RCV) and XM30 Mechanized Infantry Combat Vehicle (formerly OMFV). Using high voltage systems helps to resolve power issues that result from increased turret size and weight. Another advantage of providing HV power on vehicles is the ability to share common converter, distribution, and power management technology across a range of vehicle sizes.

Curtiss-Wright’s new HV TDSS system converts, stores, and controls the platform’s existing continuous low voltage 28V systems to a voltage level up to 750V. The HV TDSS system is ideal for aiming and stabilizing turrets and for rapid direct drive architectures on mobile weapons systems. The system is designed for use in a wide range of applications, including medium caliber cannons and main battle tank turret drive

and stabilization systems and high-speed motion control systems (e.g., active protection systems, optical tracking systems, and directed energy weapons).

The ability to provide high-voltage power on platforms is a rapidly growing requirement as high peak power is often needed to accelerate a high-inertia load – such as a turret or a weapons system – to a precise position in the shortest possible time. Previously, the delivery of short bursts of peak power came with an associated risk of damage to the vehicle's electrical systems.

Curtiss-Wright's new HV TDSS system eliminates the negative consequences of higher current systems. It leverages the continuous low-voltage power available on mobile platforms to enable the high-voltage energy buffering required for the higher voltage, short-burst peak power. It also allows a controlled flow of regenerative power back into the power architecture (e.g., energy storage or power source). The modular solution includes a DC/DC converter (converts 28V battery voltage up to 750V), an energy storage module (stores the power until needed), and a high-voltage motion controller (controls and delivers the electrical power to the drive systems). An optional load dump protector module protects the turret's 28V electrical components according to MIL-STD-1275 and DEF STAN 61-5 and includes an inrush current limitation and reverse polarity protection.

The HV TDSS meets IEC 61508, IEC 61800, and ISO 6469 functional safety requirements. The Curtiss-Wright modular TDSS approach enables the customer to assemble the system exactly according to their requirements.

### **About Curtiss-Wright Turret Aiming and Stabilization Drive systems**

Curtiss-Wright [turret aiming and stabilization drive systems](#) are designed to deliver scalable functionality and power adaptability to ground vehicle designers and turret manufacturers. The modular TDSS design enables system integrators to select the exact aiming and stabilization solution that their platform requires - from a manually operated drive all the way up to a highly sophisticated, stabilized drive system – while streamlining enhancements and/or system modification for use on a different platform. The TDSS approach is significantly more cost-effective and flexible than traditional bespoke aiming and stabilization system alternatives. TDSS is designed to make it easy

for system integrators to configure only the system that they require now while adding increasing levels of stabilization as their mission evolves. TDSS system components can be easily adapted for use on different ground vehicle turrets to meet dynamic program requirements including performance and precision.

Curtiss-Wright TDSS solutions deliver unmatched target location accuracy and turret stabilization while providing system integrators with an unprecedented level of freedom to define and deploy the exact solution they require, when they require it, with the ability to upgrade and add stabilization functionality as system requirements change. Because the TDSS uses standard system configurations, it speeds system development and enables programs to reach demonstration and production phases more rapidly. The use of preconfigured TDSS system components also reduces the time and costs associated with the requirements definition process.

### **About TDSS System Components and Configuration Levels**

TDSS components include rotary gear drives, linear gear drives, motion controllers, gyroscopes, hand controllers, and system software.

### **About Curtiss-Wright Corporation**

Curtiss-Wright Corporation (NYSE:CW) is a global integrated business that provides highly engineered products, solutions and services mainly to Aerospace & Defense markets, as well as critical technologies in demanding Commercial Power, Process and Industrial markets. We leverage a workforce of approximately 8,400 highly skilled employees who develop, design and build what we believe are the best engineered solutions to the markets we serve. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing innovative solutions through trusted customer relationships. For more information, visit [www.curtisswright.com](http://www.curtisswright.com).

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