

August 16, 2018

SUBJECT: Update: Support for the 505, 505E, & 505 Enhanced product lines

Woodward introduced its 505/505E controller product line in 1988, which has grown to become the standard for industrial steam turbine OEMs and users globally. Since that time, Woodward has continued to invest in and improve this product line in the form of new improved hardware, control algorithms and user interfaces. This product line has enjoyed much success in the market and continues to be an important part of Woodward's control offerings. Woodward is dedicated to providing you with the information and tools necessary continue to operate your existing controller or transition to one of the following new improved models:

Existing	New	
Model Name	Model Name	Application
505	505D	Single valve steam turbines
505 Enhanced	505D, 505DR	Single valve steam turbines, Redundant Apps
505E	505XT	Single valve or single extraction turbines and
		additional I/O (via LinkNet-HT modules)
N/A	Flex500	Single valve or single extraction turbines with
		custom PLC programming, dual redundant
		switching capability and additional I/O (via
		LinkNet-HT modules)

It is recommended that existing 505, 505 Enhanced and 505E users plan appropriately for migration to the new and improved models to experience the related control and operational improvements. With the exception of a few small wiring differences and improved terminal blocks, these new 505 control models are designed be a direct replacement for the existing 505 controllers. A 505 "drop-in" replacement harness is available that eliminates the need for rewiring. In addition, these new controllers are built off the same field proven software program as the original 505 controllers, enabling users to easily configure them to function and perform exactly like the older 505 control models if desired.

<u>Dual-Redundant:</u> For customers needing redundancy capability similar to the existing 505 Enhanced, Woodward can program the redundancy into the 505 steam core application software on a Flex500. Contact your Woodward Account Manager for more information on this option. The 505DR standard product release is now expected in 2020. This design will feature redundancy integrated into the operating system and an FTM to ease field wiring.

As post production support is an important part of Woodward's tier-one service and to 505, 505E, & 505 Enhanced users globally Woodward has developed the following product support plan to ensure long term factory support throughout the life of your product and during the migration process:

February 20, 2015:

New 505D models released



- Begin migrating all 505 and 505 Enhanced orders to the new models (except for dualredundant installations)
- Continued availability of legacy 505 and 505 Enhanced models for use as spare units for existing installations

February 8, 2016:

- New 505XT models released
- Begin migrating all 505E orders to new 505XT models
- Continued availability of legacy 505E models for use as spare units for existing installations

February 15, 2018:

- Open Source 505XT software released for the Flex500
- Sale of legacy 505, 505E, & 505 Enhanced models discontinued for new simplex applications (505 Enhanced remains available for redundant applications).
- Continued availability of legacy 505, 505E & 505 Enhanced models for use as spare units for existing installations
- Unlimited repair of legacy 505, 505E, & 505 Enhanced models
- Service exchange of legacy 505, 505E and 505 Enhanced models with available stock
- New 505D, 505XT & Flex500 replacement models available

November 15, 2018:

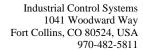
- Custom Dual-Redundant applications offered for the Flex500 (replacement for 505 Enhanced in redundant applications)
- Migrate sales of 505 Enhanced for redundant applications to the Flex500
- Continued availability of spare legacy 505, 505E & 505 Enhanced models for use only for existing installations
- Unlimited repair of legacy 505, 505E, & 505 Enhanced models
- Service exchange of legacy 505, 505E and 505 Enhanced models with available stock

March 15, 2020:

- New 505DR (standard Dual Redundant product with FTM) released
- Continued availability of spare legacy 505, 505E & 505 Enhanced models for use only for existing installations
- Unlimited repair of legacy 505, 505E, & 505 Enhanced models
- Service exchange of legacy 505, 505E and 505 Enhanced models with available stock

February 15, 2023:

- Legacy 505, 505E & 505 Enhanced models discontinued for spares usage
- Limited repair of legacy 505, 505E and 505 Enhanced models based on parts availability
- Limited service exchange of legacy 505, 505E and 505 Enhanced models with available Woodward stock
- 505D, 505XT, 505DR, Flex500 models available





February 15, 2028:

- 505D, 505XT, 505DR, Flex500 models remain in full production
- Support for the 505D, 505XT, 505DR and Flex500 until at least 2035

Electronic parts obsolescence presents a challenge to post-life support plans. Woodward makes last time buys, holds inventory and utilizes alternative parts to maintain support. Despite these efforts, there are times when component obsolescence makes it impossible to continue support. For this reason, Woodward cannot guarantee the support dates indicated above.

Regards,

Leg Marino
Greg Marino

Product Line Manager | Turbomachinery Systems

Woodward Industrial Control Systems - (greg.marino@woodward.com)