

Electric powertrain testing

Industry experience and an understanding of how testing equipment is used are vital in the development of accurate, flexible test systems for electric powertrains

▶ With its EPT line of electric powertrain test systems, D&V Electronics continues to break new ground. As a company, D&V Electronics is focused on providing the absolute best in e-motor and drive testing equipment. The understanding that is required to build such equipment is the result of more than 17 years of not only developing leading-edge measuring and analytical equipment for the automotive industry, but also of attention to detail and a deep and extensive understanding of how the equipment will be used, and how to make the user experience better. D&V has been developing and building production test equipment for electric motors for more than eight years, since the first BAS motors went into production.

These attributes are no more evident than in D&V's latest end-of-line electric-motor test system – the EPT-100. Starting with the most basic of requirements, the dynamometer platform, D&V uses a state-of-the-art load motor from Germany, with high-speed and low-inertia characteristics. The production tester is coupled with D&V's battery simulator, providing accurate fast transition times, as well as bidirectional regenerative power capabilities.

D&V has developed a system that will automatically engage and disengage the device under test (DUT) from the load motor. This innovation allows for reduced cycle times, because it eliminates the need for the operator to align the splined shafts. This is achieved with a driving shaft that not only extends and retracts, but also rotates until it detects a positive engagement.

The tester has both a pneumatically assisted parts transfer system and an automatically locating and lock



D&V's EPT line of electric powertrain test systems

system with horizontal to vertical movement. The tooling is built for the ruggedness of the production line, as well as being easily changeable for different motors.

The ability of the system to offer unparalleled levels of performance and measuring accuracy are the reasons that D&V is a global leader in electric motor testing technology. Besides the precision high-speed drivelines and dynamic response capabilities of the dynamometer system, the purposely designed data acquisition electronics, along with the high level of software integration to tie it all together, allows for a great deal of flexibility

in providing real-time, highly accurate results for engineers.

The internal tester components and controller from the PC are linked via a network connection, which enables high-speed data transfer. This architecture provides expandability and high electrical noise immunity because of the excellent electrical insulation.

D&V is able to provide production testing in less than two minutes, including BEMF and performance tests, with an easy user interface, while offering a software platform that can provide complex, full-featured analysis for engineering studies. Production testing results

include full resolver position measurement and the ability to automatically correct the angle to the drive to ensure that every motor is tested to the same level and characteristics.

D&V Electronics is leading the industry in end-of-line testing equipment for electric motors, belt starter generators and integrated starter generators, with production test systems in operation in Europe, North America and Asia. ☺

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