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Yokogawa Test & Measurement Releases DL950 ScopeCorder

- For improved efficiency in the development of automobiles, mechatronics, and power electronics -

Yokogawa Test & Measurement Corporation announces that it has developed the DL950 ScopeCorder, a high-precision data acquisition system. The DL950 and two compatible input modules will be released on February 9.

The DL950 is the successor to the DL850 and DL850V ScopeCorder series that were released in 2010, and features a number of enhancements that improve both functionality and operability. In addition, two new input modules are being released for the DL950; these are the 720212, which is capable of reading data at 200 mega-samples per second (MS/s), and the 720256, which can read data from four input channels at 10 MS/s. By the fall of this year, Yokogawa will also release an optional flash acquisition function for the storage of high-sampling-rate data in embedded non-volatile memory.

As the high-end model in the ScopeCorder series, which includes the DL350 portable model and the system-specialized SL1000, the DL950 will help to improve the efficiency of new product development in the automobile, mechatronics, and electronics industries. Yokogawa will offer the DL950 together with other products such as oscilloscopes and power analyzers to provide total solutions that help reduce power consumption and improve power conversion efficiency in customer's products.



From left, DL950, 720212 and 720256

Development Background

ScopeCorder series data acquisition systems combine the functions of oscilloscopes and data recorders, and have been widely used since the early 2000s for the development and maintenance of mechatronic equipment.

In recent years, there has been a growing demand in the electric vehicle and renewable energy markets for motors, inverters, and photovoltaic units that reduce power consumption and enable highly efficient power conversion. For the development of electric vehicles, for example, it is necessary to simultaneously acquire control signals, communication data, and NVH*¹ signals at multiple points over long timeframes.

Up to five DL950 units can be connected for synchronized measurement, making it possible to simultaneously measure and display weight, pressure, displacement, vibration, torque, and other parameters for the analysis of correlations among data. The addition of the two new input modules also allow the DL950 to meet high-speed multi-input measurement demands.

Features

1. Support for product quality improvement and measurement over long periods with high-speed sampling and data transmission

When 8 giga points of memory is installed (option), the 720212 input module can acquire data at a 200 MS/s rate for up to 20 seconds. Exceeding the capabilities of previously available input modules, this enables the capture of the ever-greater amounts of signal data on transitive changes and noise characteristics generated by the latest mechatronics devices.

When used in combination with the optional 10 gigabit Ethernet functionality and the newly released IS8000 integrated measurement software, it is possible to transfer data at up to 10 MS/s to a PC for display and storage. Furthermore, the flash acquisition function enables data to be read at up to 20 MS/s for long-term storage in the DL950's embedded non-volatile memory. This is useful for in-vehicle measurements in situations where the use of a PC is not possible due to space or security restrictions (such as in an automobile or on a train) or for high-speed sampling and long timeframe measurements in power plants.

2. Simultaneous measurement of a wide variety of mechanical parameters needed to improve efficiency in product design and evaluation

The mechatronics industry has a growing need for the measurement not only of electrical signals but also of NVH signals, and the number of measuring points is on an upward trend. The DL950 has eight slots for module attachment, while the 720256 input module has four input channels. When a 720256 module is mounted in each of the eight slots on the DL950, the simultaneous measurement of up to 32 channels is possible, and data from each channel can be acquired and recorded at 10 MS/s. In addition, measurements by up to five DL950 units can be synchronized by connecting them with an optical fiber cable. And thanks to a master function with the IEEE1588 high-precision time synchronization protocol for devices connected to a network, the DL950 achieves accurate synchronized measurement with other measuring instruments. With these features, the DL950 is capable of the simultaneous measurement of a wide variety of mechanical parameters needed to improve efficiency in product design and evaluation.

3. Large touch panel display and wizard-format*2 menus for improved ease of use

The DL950 is equipped with a large touch panel display for the easy and intuitive viewing of detailed waveform images. The DL950 also retains the same mechanical buttons, knobs, and other control panel features used in previous models, giving users a wider range of choices in how to operate the display.

Also provided is an application menu with a configuration wizard that enables the easy configuration of often-used applications such as power analysis and strain measurement. In response to customer demands, Yokogawa plans in the future to increase the number of wizard-format settings menus.

The ScopeCorder series utilizes common input modules, and the DL950 can also use previously offered modules.

*1 Noise, vibration, harshness: A standard for automobile comfort. Harshness refers to the shocks that occur when an automobile passes over a joint or uneven part of a road.

*2 A mechanism that displays complex settings screens one at a time and moves to the next one when configuration is complete, thus allowing complex setting configurations to be completed with relative ease.

Major Target Markets

- Electric/hybrid vehicles, car electronics components

- Power, energy, electrical, and inversion devices
- Mechatronics, including industrial robots and motors

Applications

- Design and evaluation of electric and electronic circuits
- Simultaneous measurement of analog signals in car electronics including change trends in CAN, CAN FD, and other such information sent over an in-vehicle bus in CASE development, and battery power consumption
- Electrical analysis and control signal evaluation in power electronics
- Simultaneous measurement and evaluation of temperature, vibration, and other mechanical signals that change relatively slowly as well as mechatronic and other such high-speed control signals

About Yokogawa

Founded in 1915, Yokogawa engages in broad-ranging activities in the areas of measurement, control, and information. The industrial automation business provides vital products, services, and solutions to a diverse range of process industries including oil, chemicals, natural gas, power, iron and steel, and pulp and paper. With the life innovation business, the company aims to radically improve productivity across the pharmaceutical and food industry value chains. The test & measurement, aviation, and other businesses continue to provide essential instruments and equipment with industry-leading precision and reliability. Yokogawa co-innovates with its customers through a global network of 114 companies spanning 62 countries, generating US\$3.7 billion in sales in FY2019. For more information, please visit www.yokogawa.com.

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