

Automation of Measuring and Testing Machines in One Step

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Programming of Rexroth drives with National Instruments control without PLC

National Instruments and Bosch Rexroth have introduced a perfectly-matched control and drive solution at this year's NIWeek conference. Here, the advantages of the control hardware CompactRIO and the programming environment LabVIEW are combined with dynamic servo technology. Rexroth's pre-configured drive systems for measuring and testing machines cover a wide range of services and shorten the initial commissioning with a software wizard to three minutes. Using a jointly realized, tested, and already proven interface, machinery manufacturers are programming motion sequences in the graphic environment LabVIEW without a single PLC code line.

LabVIEW is the worldwide leader for programming environments for measuring and testing machines with more than 200,000 applications. Often the control hardware CompactRIO by National Instruments is used in these applications. Therefore Rexroth has preconfigured drive systems with the compact drive control devices IndraDrive Cs and the servo motors IndraDyn S. The IndraDrive Cs kits cover finely scalable the torque range from 0.56 Nm to 19.8 Nm. In addition, Rexroth supports custom drive solutions for torques up to 631 Nm.

Using the interface CAN over EtherCat – jointly aligned by National Instruments and Rexroth – the CompactRIO control directly accesses the servo drives as master. Manufacturers program process and motion control exclusively via the graphic programming environment LabVIEW. Additional PLC programming becomes redundant. The plugin SoftMotion Drive Interface (SDI) required for IndraDrive Cs can be downloaded and installed directly from the LabVIEW development environment.

The start-up assistant EasyWizard shortens the initial start-up of the drive systems to three minutes. The intelligent drive control device automatically recognizes the respective values via the electronic nameplate of the Rexroth motors. For the initial start-up of IndraDrive Cs drives you only need to enter a small number of application-specific values. Graphic programming of movements can then start right away in LabVIEW.

The IndraDyn S synchronous servo motors can meet the requirements of protection class IP54 or IP65. Depending on the precision required, the motors are equipped with encoder systems for standard or precision requirements.

CompactRIO is particularly suitable for point-to-point movements of few axes. Bosch Rexroth simplifies the implementation of complex multi-axis applications in measuring and testing machines in LabVIEW using the motion logic system IndraMotion MLC. Programming of movements also takes place exclusively via LabVIEW – without a single line of PLC code. For IndraMotion MLC, over 550 virtual instruments and modules are already available for movement control in LabVIEW.

Source: Bosch Rexroth