

1.3.49. MODULARIZATION OF ELECTRONICS AND MECHANICS IN AUTOMATIC ULTRASONIC MATERIAL TESTING SYSTEMS PRESENTED IN PRACTICAL APPLICATIONS

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Cost pressure is an issue that also applies to ultrasonic testing systems as an asset invested. Intelligent solutions with high functionality and reasonable expenditures are the target. With an appropriate modular design that combines simple elements to a complex testing unit investment can be minimized without suffering any loss of performance.

The latest development of the IANUS ultrasonic electronics with its scalability and the matching software will be presented in inspection systems for weld seams, rails, wheel sets, strips and heavy plates. The basis is a hardware that can be globally used for many inspection tasks. The definite function is determined by firmware that can be loaded into a FPGA and software running on Power PC cores in the FPGA.

What is valid for the electronic concepts applies also to the mechanical parts of an inspection system. Probe holders and guiding elements are designed in way that they can be mounted in sub-assemblies forming a complete testing mechanics. All that comes along with minimization of cabling and other connections for media supplies.

For interfaces to control systems and other computers mainly industrial standards (e.g. TCP / IP or Profinet) are used in order to generalize connectivity.