Application Note

Ensuring Accuracy and Streamlining Current Transducer Calibration with Yokogawa's LS3300 Power Calibrator

Customer: A German manufacturer of current and voltage transformers and transducers
Solution: LS3300 AC power calibrator in combination with WT310E power analyzer

Yokogawa LS3300 AC power calibrator together with WT310E power analyzer helps current transducer manufacturer accurately calibrate thousands of transducers a month

Challenge

A manufacturer of current transducers aimed to optimize end-of-line (EOL) testing and calibration for high-volume production handling up to several tens of thousands of units per month. The goal was to calibrate current amplitudes up to 60 A and ensure precise phase angle measurements for each transducer, all while maintaining traceability and maximizing production efficiency.

Solution

To meet these demanding requirements, the manufacturer developed a customized, automated evaluation system. This system integrated Yokogawa's LS3300 Power Calibrator and WT310E Precision Power Analyzer into the workflow. With Yokogawa's open SCPI command structure, system integration was completed in less hours, reducing setup time and complexity.

Through implemented solution customer enabled precise amplitude calibration up to 60 A. For runtime performance validation via phase angle measurement, the voltage generated by the LS3300 was used as a reference and directly connected to the voltage input of the WT310E. The current output from the LS3300 was routed through the transducer, and the resulting secondary signal was measured via the WT310E's direct current input.

The WT310E then calculates the phase angle between the measured voltage and current. By setting the phase angle between generated voltage and current to 0.000° on the LS3300 (adjustable from -180.000° to 359.999°), any deviation measured by the WT310E reflected the transducer's phase accuracy during runtime.

This combination of the LS3300 and WT310E provides accurate and repeatable measurements of voltage, current, and phase angle, ensuring each transducer met performance specifications before leaving the production line.

Key Benefits

- **High accuracy for confident calibration**
  The LS3300 delivers highly stable and accurate voltage, current, and phase outputs, ensuring traceable and repeatable calibration. This level of accuracy is essential for high-volume quality assurance, enabling the customer to maintain consistent product performance across thousands of transducers.
- **Faster testing through automation and smart feature**

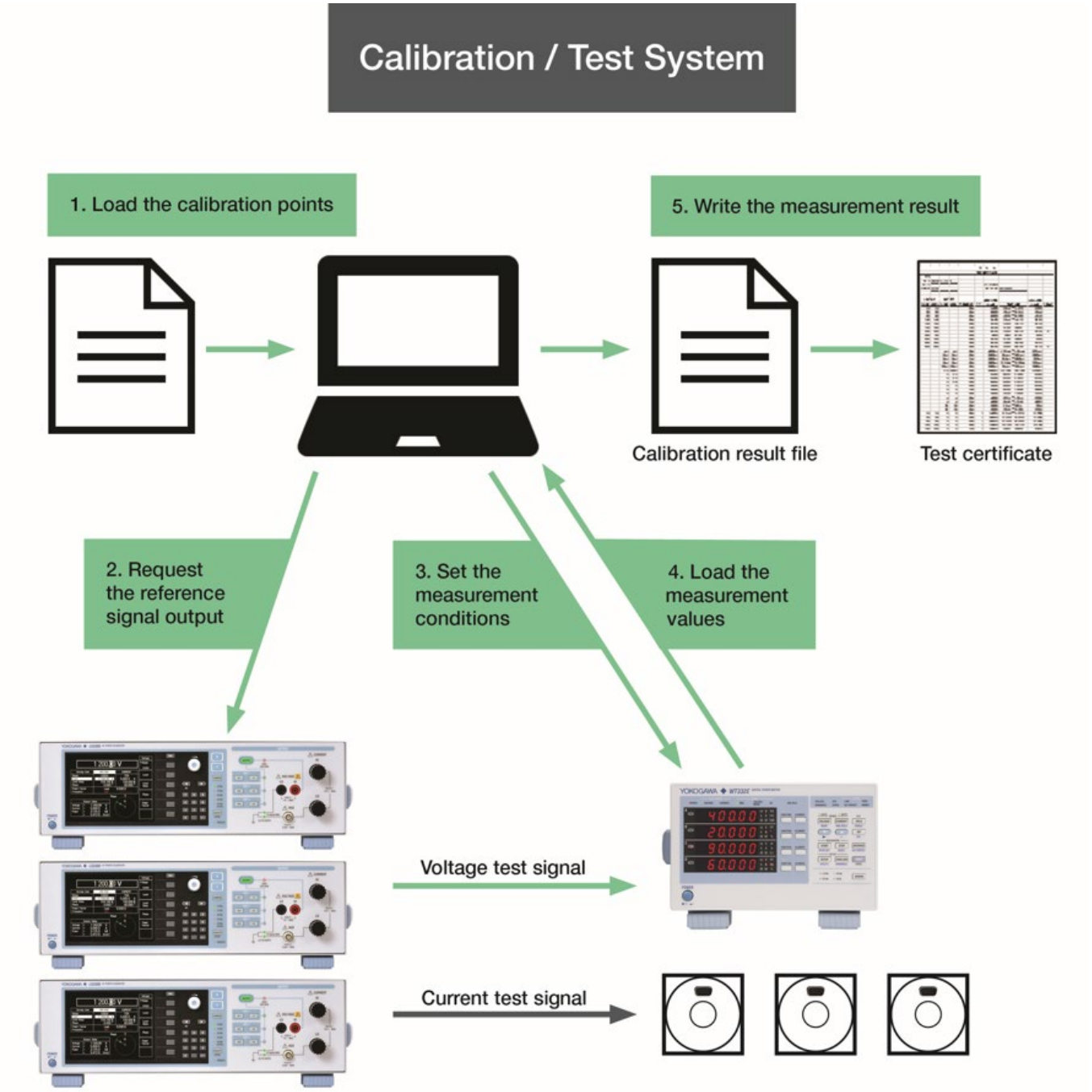
  With intuitive remote control capabilities and a clear "STABILIZING" status indicator, the LS3300 streamlines the calibration process. The system notifies users the moment outputs are stable, minimizing wait times and reducing the overall calibration time especially valuable when testing large numbers of points.

  This streamlined workflow, reduced manual effort, increased throughput, and ensured repeatability and consistency in testing.
- **High current output up to 180A**

  For high-current applications, up to three LS3300 units can be synchronized and operated in parallel to deliver up to 180 A output. This flexibility makes the LS3300 ideal for calibrating current transducers across a wide current range, including high-amplitude testing scenarios.

More about products:
LS3300 AC Power Calibrator
WT300E Digital Power Analyzer

Refer to the next page for the solution image.



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