

5900 Series Load Signal Conditioner

Instron® devotes significant R&D to ensure that its leading-edge data acquisition systems are matched with technically superior signal conditioning systems – the latest being the new 5900 Load Signal Conditioner module.

Signal conditioning is a critical part of data acquisition processing and measurement, affecting the overall quality of the test measurements taken and consequently the test results accuracy and standard deviations.

Features

- Accuracy to $\pm 0.5\%$ of reading down to 1/1000 of load cell capacity with Instron 2580 Series Load Cells
- Increased static electronic accuracy to ± 2.5 PPM (or 0.00025%) of full scale load maximum deviation
- State-of-the-art analog ICs, digital ICs, and data converters
- Custom precision resistor networks for optimum temperature stability
- Reduced electronic noise – half the noise of previous module
- RF Immunity is 60 times greater than previous Load Signal Conditioner module – full compliance with EN 61326-2-3, the standard for systems with strain gauge sensors

Benefit of Accuracy $\pm 0.5\%$ reading down to 1/1000 of load cell capacity

Since operators have varying skill levels and training needs, you need a user interface that is simple to learn. Instron Bluehill® Lite Software is designed to meet the routine, standardized testing demands of 3300 Systems. Bluehill Lite provides all the capabilities you need to handle basic tensile, compression, flexure, peel, tear, friction, and simple cyclic test requirements quickly and efficiently. Tests are started with just two steps, and test control, data acquisition, plotting, calculations, and reporting are performed automatically. To further assist the operator, the Prompted Method guides operators through repetitive test procedures with step-by-step instructions for all user levels.

Example Applications:

- Tensile and flexural tests are commonly on the same material, e.g. polymers, composites, or wood. Tensile tests usually require a higher capacity load cell than flexural tests where the maximum loads are significantly lower.
- Super elastic materials, e.g. Nitinol test for “Permanent Set”. Users load a tensile specimen to 6% or 8% and then unload to near zero load to maintain tension on the specimen. The strain (permanent set) that has occurred in the specimen is then measured. The very wide load range now offered allows users to be more confident that their permanent set values are correct.

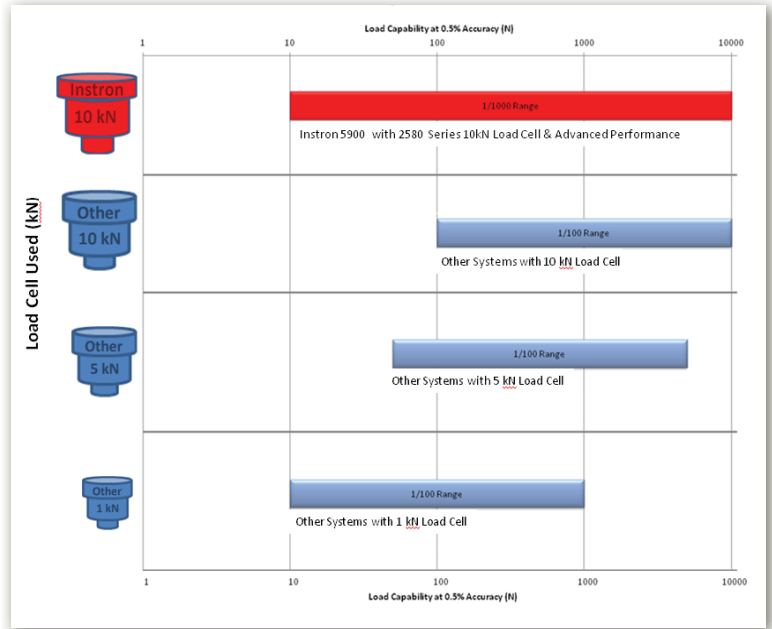


Benefit of Better RF Immunity

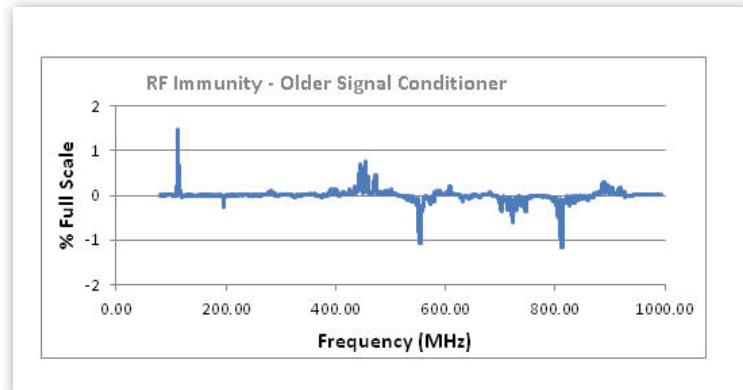
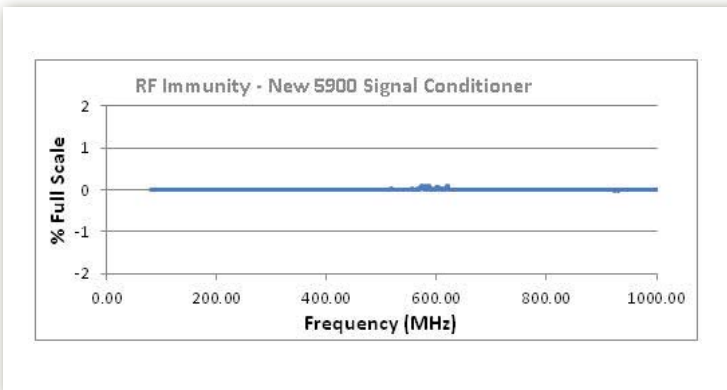
Interference is not hard to find; it is actually difficult to avoid, especially since wireless technology is everywhere. Electronic instruments, putting a radio next to the instrument, or an operator holding a mobile phone, etc. can all contribute to electromagnetic noise that can affect the testing instrument's true measurements and test repeatability.

What does Better RF Immunity Mean to You?

- Maximum stability and protection from erroneous load measurements due to common electronic interference
- Assurance of better repeatability of test measurements and results
- Better gage repeatability and reproducibility (GR&R)



An Instron 5900 system requires less load cells to achieve the same load accuracy measurement range as other systems with load accuracy to 1% of load capacity.



Graphs show the Instron 5900 Signal Conditioner Module's immunity to frequency interference in the frequency band of 80 MHz to 1 GHz (examples include radio, television, or mobile phones). The new Signal Conditioner Module shows a maximum error of 0.025% of full scale load, while the older version shows a maximum error of 1.5% of full scale load - a 60 times improvement.

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