

Zebra Instruments Presents - *The*



PhāzR™

3-Phase Power Analysis and Direction of Rotation



Determines the Quality of 3-Phase Power going to Equipment or Circuits

Microprocessor Controlled Tests:

- ▲ Phase Order: A-B-C or C-B-A
- ▲ Voltage: Each Leg Balanced Within 3.5%
- ▲ 'Pseudo-Phase' (Duplicate Phase Angles)

All Tests are fully automatic and are accomplished with only one switch!

Saves Time -

*PhāzR helps you wire your 3-Phase equipment or circuits correctly **the first time**, saving rewiring.*

Saves Equipment -

*Many modern compressors will be **immediately damaged** if they are started with reverse rotation. Others will not circulate lubricants correctly.*

Saves Frustration -

*Incoming power feeds are sometimes mis-marked but can easily be verified with the **PhāzR**.*

Zebra Instruments

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Made in



the U. S. A.

Distributed By:



PhāzR™

The *PhazR* provides Direction of Rotation and Power Analysis for 3-Phase Systems:

PhazR performs microprocessor-controlled tests to determine the direction that rotating components (compressors, motors, fans) will rotate when power is applied. For modern Air Conditioning compressors, this information is vital - some compressor types will be instantly damaged if connected with reverse rotation; some can tolerate a few seconds before damage; and some will *seem* to operate properly when incorrectly wired but will not provide the proper lubrication qualities needed for long life.

PhazR also measures the voltages present from each of the three legs (A, B, and C) and compares those voltages to each of the other legs to determine if a voltage imbalance exists. A warning LED flashes to alert you if the imbalance is greater than 3.5% between any leg to any other leg. Tests have shown that voltage imbalances above this amount are often responsible for premature motor and compressor failure, excessive heat in the component, and a waste of our energy resources.

PhazR checks for what we call *Pseudo-Phasing*; a less-common problem that can occur when a building or panel is mis-wired, or when three individual circuit breakers have been used instead of a 3-Phase breaker with a common internal trip mechanism and only one of the breakers has tripped. Feedback voltages through other components might cause a voltmeter to indicate that all three phases are present, but two of the phases are actually the same phase angle.

A Contractor from Georgia told us: “I used to perform voltage checks for my customers to spot imbalances before they caused problems. I would take all the voltage measurements, writing them down, and use a calculator to see if they were outside of the N.E.M.A. recommended ranges. With the PhāzR, there are no measurement sets, no percentage calculations, just two LED’s that tell me if its OK or not. This tool is a lot faster!”

A Service Tech from Missouri reports: “We often found that the incoming wires to new equipment were either mis-labeled, or not labeled at all. So we would wire the system up, and fire up the fan to see which direction it would spin. Many times it would be backwards, so we’d have to kill the power, reverse two of the incoming wire connections and re-energize the equipment and do a final test. Using your tool saves us from any rewiring. We *always* get it right the first time.”

The PhazR was designed by Technicians and Installers, so it’s rugged, user-friendly, and will save you time. No other tool has all the features that the PhazR does.