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NOJA Power Releases Cos Phi Earth Fault Algorithm for Recloser Controller Package

*Providing Selectivity of SEF Protection for High Impedance Faults and
Compensated Neutral Networks*

Driven by network demands for greater precision of directional detection of high impedance faults, NOJA Power have released an upgrade to their Recloser Controller firmware introducing an optional Cos Phi algorithm to their existing earth fault protection suite.

NOJA Power's OSM Recloser system with RC control already possesses the highest resolution SEF capability, with pickup from 200mA SEF, but the inclusion of the Cos Phi algorithm provides greater precision in compensated neutral networks with respect to directional protection.

Emerging trends in distribution protection calls for effective selectivity in earth fault protection, and with legislative requirements for protection of earth faults with impedances as high as 25kΩ, the Cos Phi earth fault algorithm in the NOJA Power OSM Recloser RC10/15 controller provides protection engineers with the capability to achieve these performance goals.

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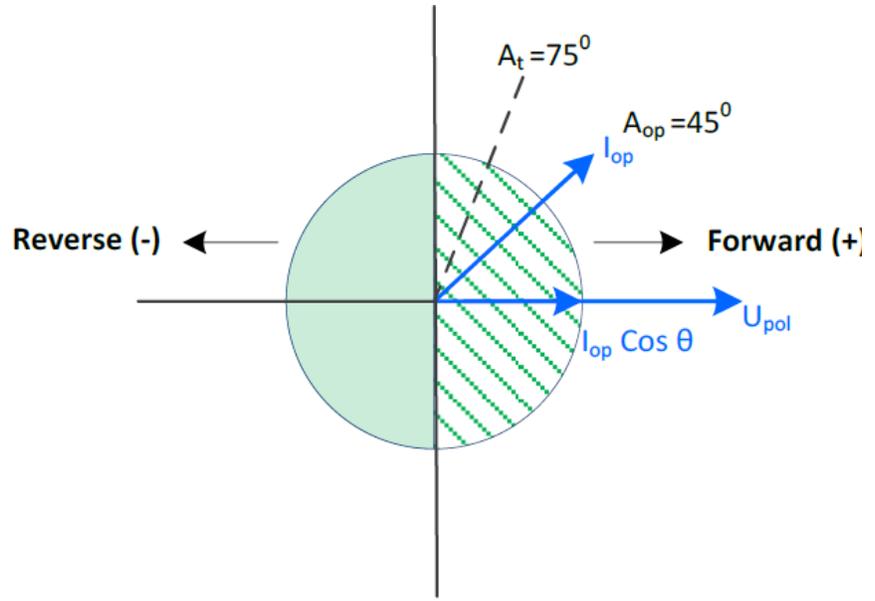
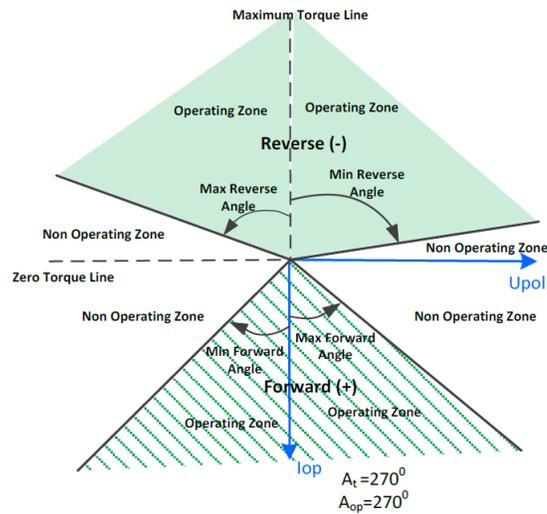


Figure 1 – Sample Operating Region for Cos Phi operating at 75°

The Cos Phi algorithm implementation is further enhanced by an upgrade in selecting operating ranges for relay characteristic angles in directional protection. By improving the accuracy of the operating range for a directional relay, the NOJA Power OSM Recloser allows protection engineers to mitigate the risk of spurious tripping of SEF under high impedance fault conditions.



Advanced Polar Detection Boundaries

Figure 2 - Detection Boundary Adjustment Example for Directional

Protection Precision

“With the increasing focus on network safety and bush fire mitigation we are seeing an increasing number of customer moving to compensated neutral networks and the COS PHI earth fault algorithm is in response to our customer demand for more selectivity for high impedance faults,” reports NOJA Power Group Managing Director Neil O’Sullivan.

Available as a complementary firmware upgrade to existing users of the NOJA Power RC10 and RC15 controller systems, the Cos Phi protection algorithm provides a clean answer to the emergent challenges of addressing low fault currents with high capacitive components.

For users of the legacy RC01 controller, NOJA Power also offers a controller upgrade path to connect a new RC10 or RC15 controller to legacy 200 series equipment, providing new functionality such as the enhanced SEF capability to older OSM Recloser installations.

For an application note or more information on achieving Directional Protection with NOJA Power’s OSM Recloser system, visit www.nojapower.com.au or contact your local NOJA Power Distributor.