ABB RXPDK Relay

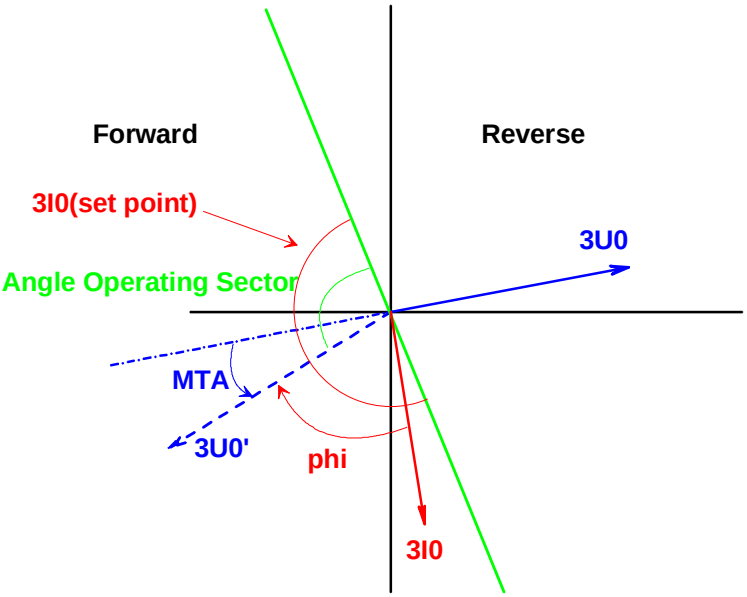
It's a directional overcurrent relay, 3 different model versions (21, 22H and 23H) are available.

Directional unit of 21H:

- cross-polarized with voltage memory

Directional unit of 22H:

- zero-sequence polarizing



The zero-sequence voltage is rotated by 180 deg:

$3U0' = 3U0 \cdot e^{j\cdot(180+MTA)}$ for MTA; „leading"

$3U0' = 3U0 \cdot e^{j\cdot(180-MTA)}$ for MTA; „lagging"

MTA = maximum torque angle setting

The angle between the voltage is measured:

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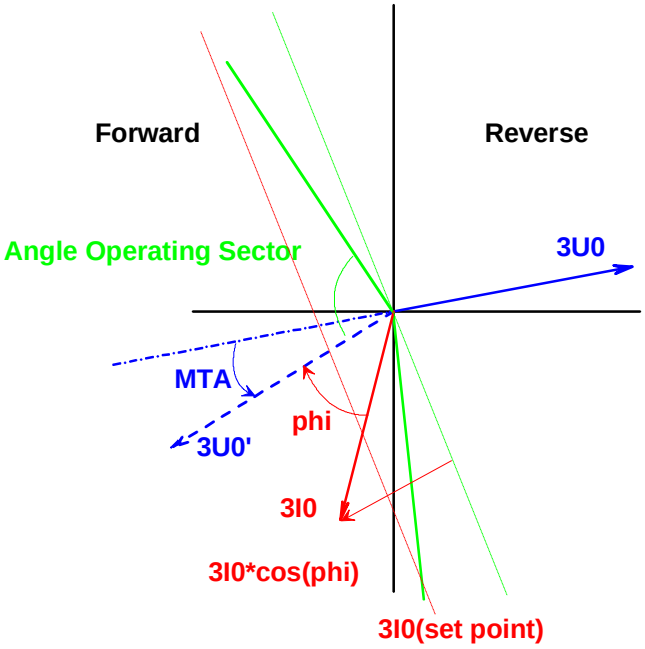
The magnitude of the calculated angle phi is compared with the "Angle operation sector":

$Forward = |phi| < SectorAngle$ -> forward fault

For checking the reverse fault is the zero-sequence current rotated by 180 deg.

Directional unit for H23:

- the sector is limited to 0 - 140°
- the PowerFactory model is shifting the voltage by -70° and limits the sector to +/- 70°



The angle operating sector is fixed set to 70 deg.
The MTA (max. torque angle) is set to -70 deg.