**Protection**

**Description**

### Directional current protection

**ANSI 67 - Directional phase overcurrent**

Phase-to-phase short-circuit protection, with selective tripping according to fault current direction. It comprises a phase overcurrent function associated with direction detection, and picks up if the phase overcurrent function in the chosen direction (line or busbar) is activated for at least one of the 3 phases.

**Characteristics**
- 2 groups of settings
- Instantaneous or time-delayed tripping
- Choice of tripping direction
- Definite time (DT), IDMT (choice of 16 standardized IDMT curves) or customized curve
- With voltage memory to make the protection insensitive to loss of polarization voltage at the time of the fault
- With or without timer hold.

**ANSI 67N/67NC - Directional earth fault**

Earth fault protection, with selective tripping according to fault current direction. 2 types of operation:
- Type 1, projection
- Type 2, according to the magnitude of the residual current phasor.

**ANSI 67N/67NC type 1**

Directional earth fault protection for impedant, isolated or compensated neutral systems, based on the projection of measured residual current.

**Type 1 characteristics**
- 2 groups of settings
- Instantaneous or time-delayed tripping
- Definite time (DT) curve
- Choice of tripping direction
- Characteristic projection angle
- No timer hold
- With voltage memory to make the protection insensitive to recurrent faults in compensated neutral systems.

**ANSI 67N/67NC type 2**

Directional overcurrent protection for impedance and solidly earthed systems, based on measured or calculated residual current. It comprises an earth fault function associated with direction detection, and picks up if the earth fault function in the chosen direction (line or busbar) is activated.

**Type 2 characteristics**
- 2 groups of settings
- Instantaneous or time-delayed tripping
- Definite time (DT), IDMT (choice of 16 standardized IDMT curves) or customized curve
- Choice of tripping direction
- With or without timer hold.

**ANSI 67N/67NC type 3**

Directional overcurrent protection for distribution networks in which the neutral earthing system varies according to the operating mode, based on measured residual current. It comprises an earth fault function associated with direction detection (angular sector tripping zone defined by 2 adjustable angles), and picks up if the earth fault function in the chosen direction (line or busbar) is activated. This protection function complies with the Enel DK5600 specification.

**Type 3 characteristics**
- 2 groups of settings
- Instantaneous or time-delayed tripping
- Definite time (DT) curve
- Choice of tripping direction
- No timer hold