# Voltage Asymmetry calculation - MFR300 - MFR13

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MFR13

- The MFR13 calculates the asymmetry as the maximum deviation of each delta voltage from the average.
- In Principle, it's the ANSI standard, but
    - ANSI: monitor MAX / Average in [%]
    - MFR13: monitor MAX-Average in [V]

MFR300

The MFR300 calculates the asymmetry from the negative sequence in relation to the nominal voltage

The formula of the negative sequence is:

$$\underline{|G|} = \frac{1}{3}\sqrt{\frac{V_{12}^2+V_{23}^2+V_{31}^2}{2} - \sqrt{3}\cdot\sqrt{\frac{V_{12}^2\cdot V_{23}^2+V_{23}^2\cdot V_{31}^2+V_{31}^2\cdot V_{12}^2}{2} - \frac{V_{12}^4+V_{23}^4+V_{31}^4}{4}}}$$

The monitoring would be for **|G| / nominal voltage**