

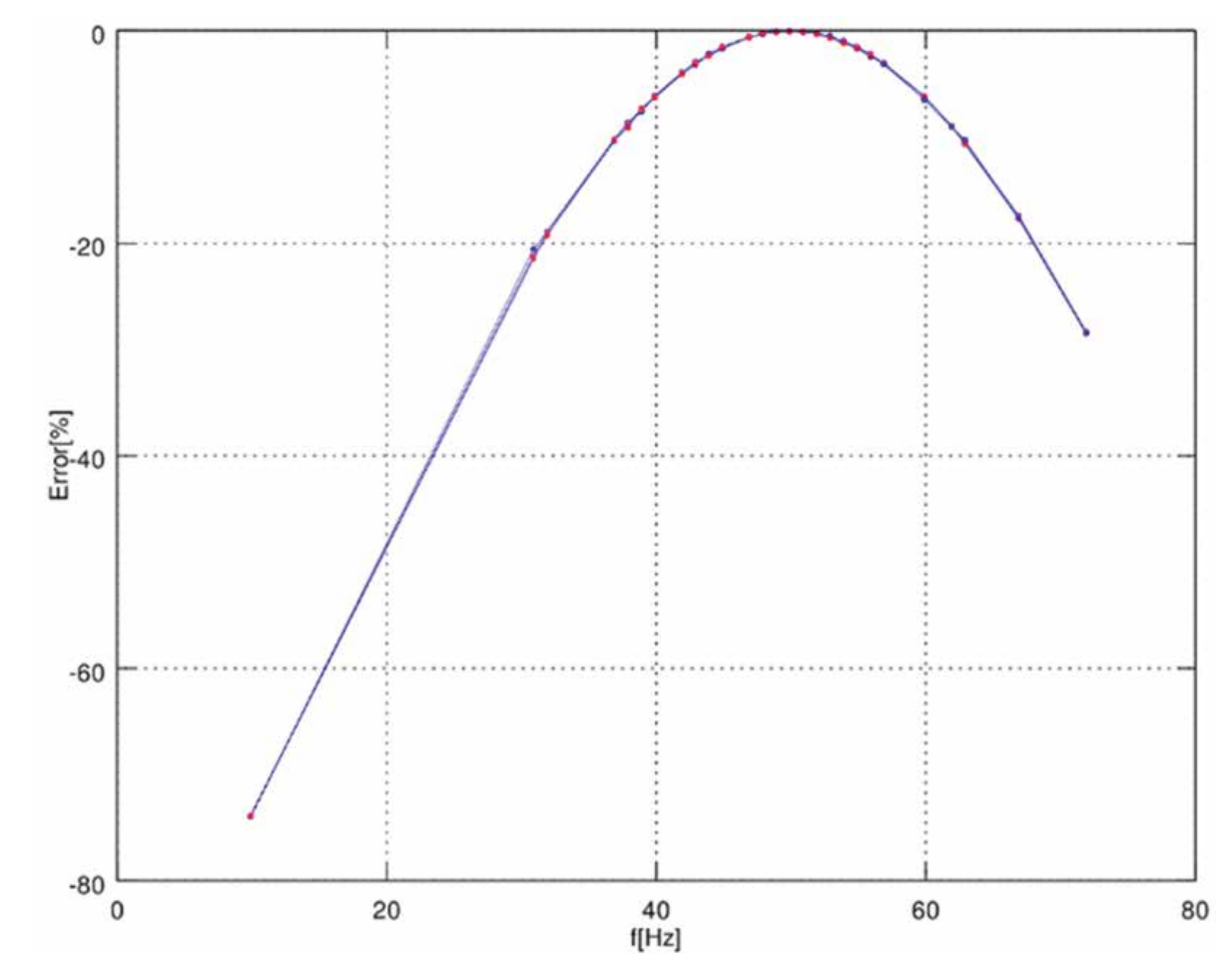
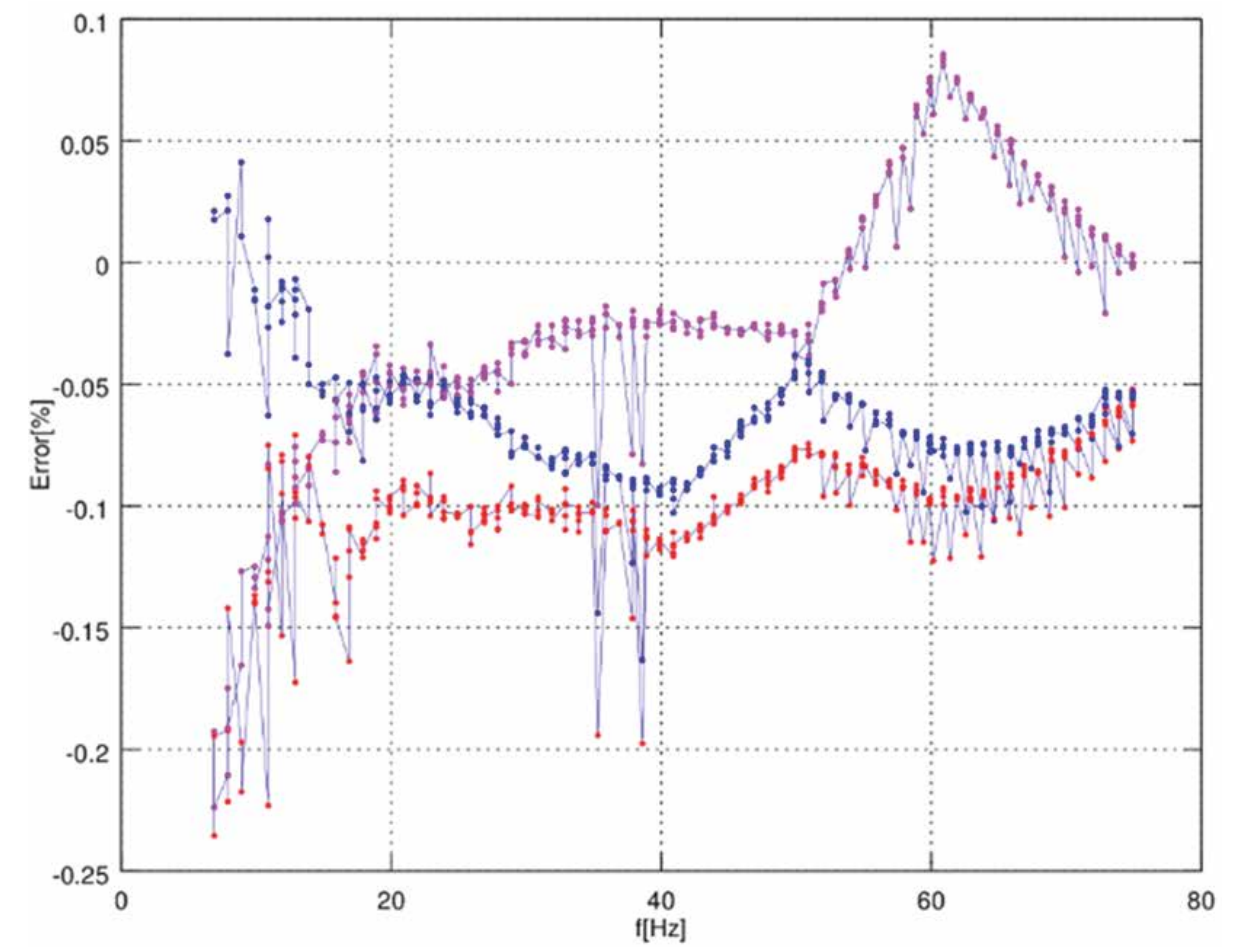
# Arcteq Innovation: Ultra-accurate measurement technology

## Accurate and frequency independent

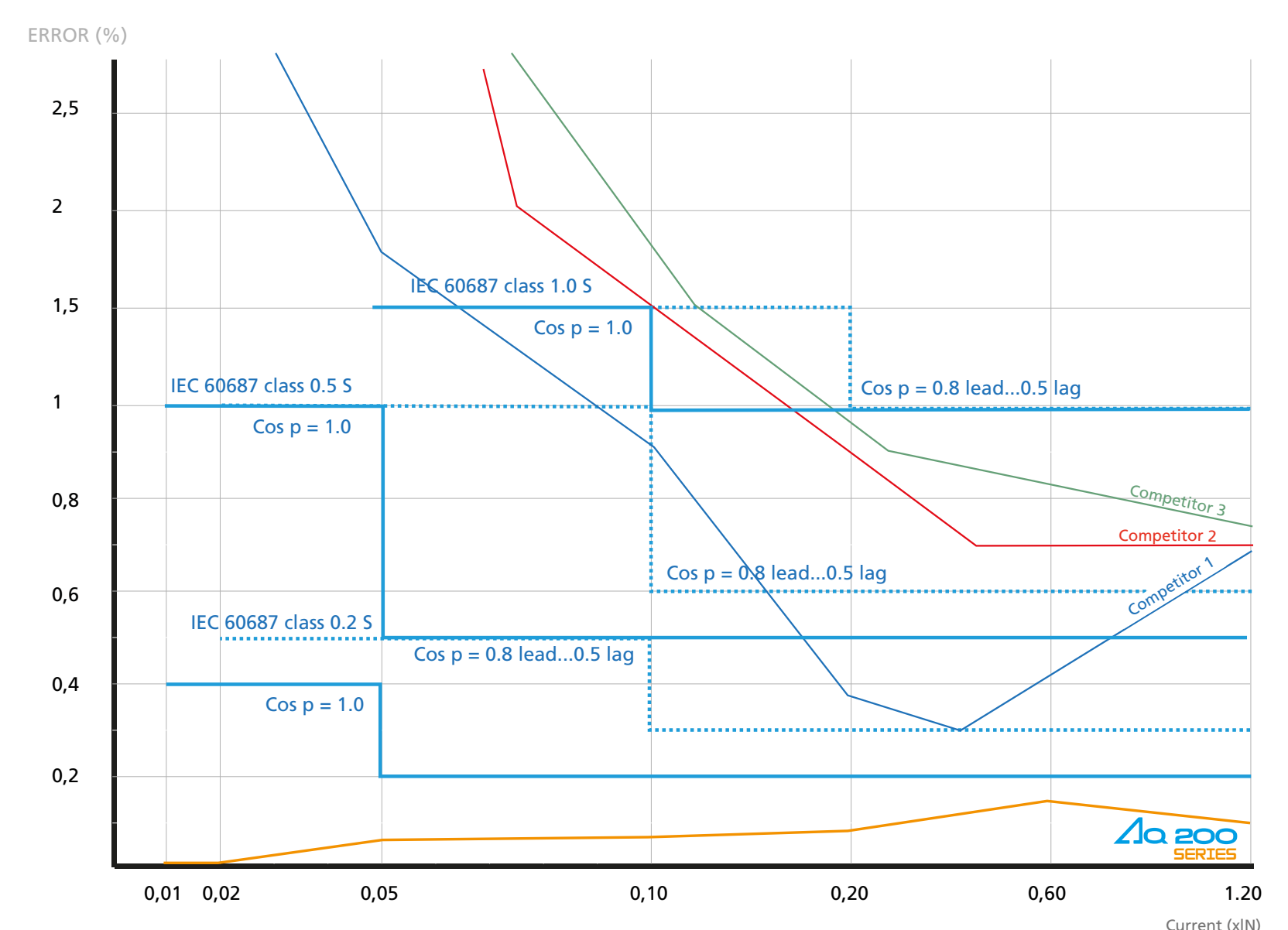
Arcteq's AQ 200 series protection and control IEDs are deploying patented measurement technology. This has resulted in a very unique combination of class 0.2S power and energy measurement accuracy, full dynamic measurement range and frequency independent measurement and protection in a single device. Therefore the AQ 200 series is well applicable for any applications requiring accurate measurement alone, or combination of measurement and protection. Frequency independent measurement technology allows for more accurate rotating machine protections as well.

## Patented measurement algorithm

The system frequency independent measurement accuracy has been achieved in AQ 200 series devices by adjusting the sample rate of the measurement channels according to the measured system frequency in a way that FFT (Fast Fourier Transformation) calculation can always make use of full power cycle buffer. Furthermore, all analog channels are calibrated against 8 system frequency points for both, magnitude and angle. This frequency dependent correction compensates the used measurement hardware frequency dependencies as the measurement hardware is not linear considering the measured analog signal frequency. Therefore the magnitude and angle measurements need to be calibrated against frequency to obtain high accuracy. Furthermore, the measured channels FFT result fundamental frequency component is corrected for magnitude and angle errors by Arcteq AQ 200 series patented calibration algorithms.



*The frequency tracking functionality keeps the measurement accuracy in Arcteq protection relays within class 0.2S between 6 and 75 Hz frequency.*



*The measurement accuracy in Arcteq protection relays stays within 0,2% even at extremely low currents.*