# ZES ZIMMER
Electronic Systems

Power measurement at **low** power factor
and / or high frequency

The measuring error of any power measurement contains the errors of the current and the voltage path and also the delay time difference between these both channels. Using sinusoidal signals this constant delay time difference will cause a linear increasing phase error caused direct by the increase of frequency. This error is calculated as :   phi = dt * 360° * f

This phase error also causes a dependence of the active power measurement accuracy on the phase shift between current and voltage of the measuring circuit.

With the **option O12: „special adjustment"** these errors will be reduced by minimising the delay time difference of voltage and current path.

LMG450: Accuracy of power measuerement versus cos(phi) at 50Hz / sinewave
U- and I-Ranges at full scale (270V/1,32A)
comparison: guaranteed and typical values of LMG450 with and without option L45-O12
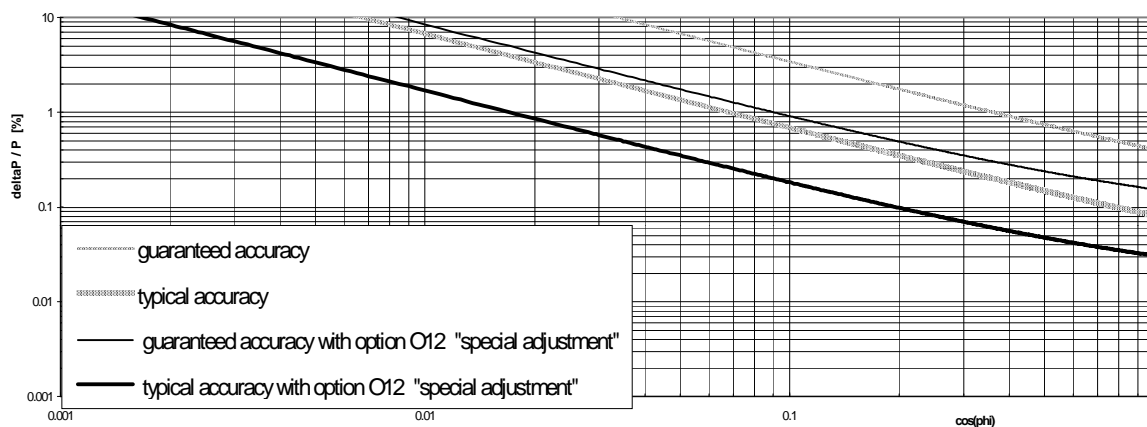
LMG450: Accuracy of cos(phi) measuerement versus cos(phi) at 50Hz / sinewave
U- and I-Ranges at full scale (270V/1,32A)
comparison: LMG450 with and without option L45-O12 (special adjustment)