

THDr

THDr is the Total Harmonic Distortion in relation to the RMS value of the total waveform.

THDr is the ratio of the sum of the powers of all [harmonic](#) frequency components (except for the fundamental RMS1) to the power of all harmonic frequency components and is calculated as follows:

$$\text{THDr} = \frac{\sqrt{\text{TotalRMS}^2 - \text{Rms}_0^2 - \text{RMS}_1^2}}{\sqrt{\text{TotalRMS}^2 - \text{RMS}_0^2}} \times 100 \%$$

Remarks:

[Total RMS](#) = RMS value of all waveform points (full waveform periods)

RMS_0 = RMS value of the [DC](#) component

RMS_1 = RMS value of the [fundamental frequency](#) component

$$\text{RMS}_i = \sqrt{\text{Real}_i^2 + \text{Imag}_i^2} = \sqrt{\text{Power}_i^2}$$

Remarks:

Real_i = Real part of frequency component i

Imag_i = Imaginary part of frequency component i