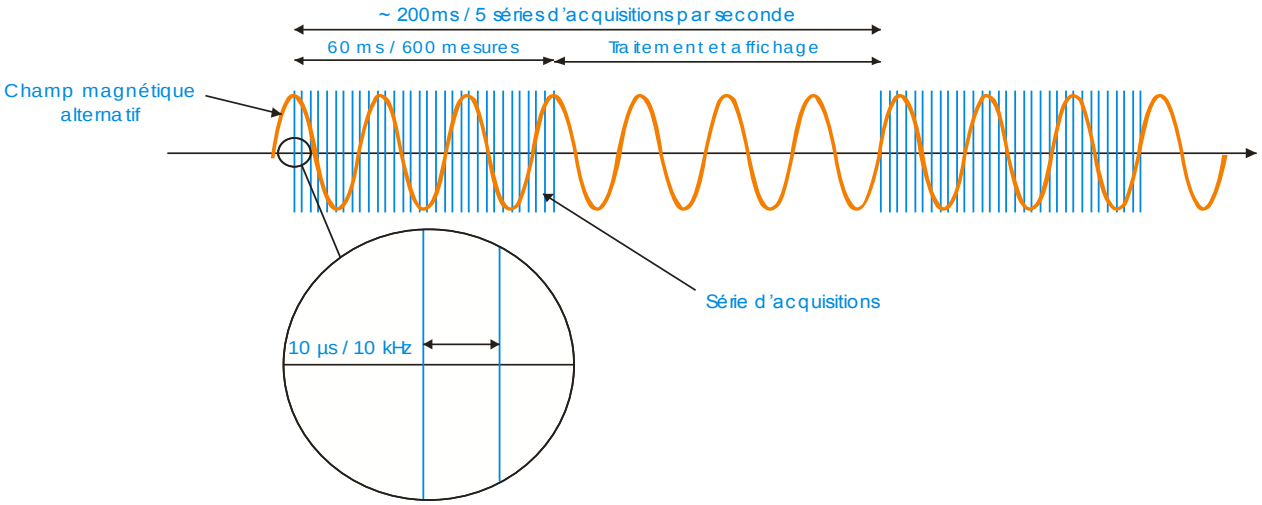
MAGNETIC FIELD METER

MEASUREMENT SYSTEM:

Measures are realized in two times. First time, Analysse makes an acquisition for the average, peak and RMS measure of magnetic field instantaneous. Second time, these values are placed in a table to perform an average.

INSTANTANEOUS ACQUISITION:

To have a good precision, Analysse performs a sampling at 10 kHz, witch represent 200 values per period (for alternative magnetic field at 50 Hz).Each sampling lasted 60ms, or 3 periods or 600 values.



Magnetic field is considered as continuous if the range of signal is 5% (or 10A/m) less than maximum value.

DC FIELD:

200 values are used to calculate the average measure. The peak and effective measures are not displayed.





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AC FIELD:
The calculation are realized on a sampling of integer number of periods.The measured signal can be analyzed. After each acquisition of 600 values, we eliminate the parts of incomplete sinusoide at the beginning and the end of the signal. With a signal at 50Hz, we preserve 2 sinusoides (40ms), at 60Hz, 2 or 3 sinusoide (33.3ms or 50ms) and at 400Hz, 23 sinusoides (57,5ms)

IMPORTANT : to obtain the best RMS value accuracy, it's very important to perform a zero out of a magnetic field (AC and DC).Otherwise, zero is calculated from a mean value shifted, this would result in very significant discrepancies in the measurement of alternating fields unsymmetrical (alternating single, double rectified AC, etc ...).

Units: kA/m, A/m, A/cm, Oe and mT

SLIDING AVERAGE:
After each acquisition, DC, RMS and peak values calculated are recorded in a table.
The DC, RMS and peak values shown on screen represents the average of the respective values recorded in the table.

Associated with this system, a monitoring algorithm constantly checks the display according to the instantaneous measurement detected by the probe.

- If a difference between instantaneous and average values is found, the table is completely cleared and the display also (less than 0.5 sec). The table is rebuilt to ensure stability. To indicate the quality of the displayed values, a bar graph of stability of the measure appears on the left side of the screen during the reconstruction of the table.





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