Winding turn counter
The new method of determination
The number of winding turns and, thus, the turns ratio is an essential property of any transformer. Therefore, the winding turn determination is a vital step in transformer production and repair. For example, in the transformer production process, the number of turns must be measured before installing the winding on the core. When a transformer is repaired, the number of turns has to be determined in case the winding has to be rebuilt and design drawings are not available.

By using a completely new tool – the turn counter – it is possible to measure the number of turns with high accuracy in a cost efficient way.

The current in an electrical conductor causes a magnetic field. By measuring this magnetic field in a closed loop, the sum of all currents flowing through this loop can be calculated. This sum of currents is referred to as the "total current".

If a well defined current is injected in a winding and the total current is measured in a loop surrounding all turns of a winding, this total current is the injected current multiplied by a coefficient, which is the number of turns of a winding.
Winding turn determination
Customer benefits

**Winding measurement**
- High-precision measurement of all winding types and sizes
- Suitable for winding blocks
- Increased quality in transformer construction
- Cost efficiency and quality control through early error prevention
- Simplified repair of unknown transformer models, automatic winding turn determination instead of individual counting
- Testing of spare windings is possible
- Fast and easy setup
- Automated measurement procedure

**Winding turn counter**
- Much faster measurement
- Increased safety at work through low DC voltage
- On-site measurement of winding blocks

\[ N_1 = \frac{I_{\text{total}}}{I_1} \]