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ТА СОЦІАЛЬНИХ КОМУНІКАЦІЙ

СОЦІАЛЬНО-ГУМАНІТАРНІ АСПЕКТИ РОЗВИТКУ СУЧАСНОГО СУСПІЛЬСТВА

МАТЕРІАЛИ ВСЕУКРАЇНСЬКОЇ НАУКОВОЇ КОНФЕРЕНЦІЇ ВИКЛАДАЧІВ, АСПІРАНТІВ, СПІВРОБІТНИКІВ ТА СТУДЕНТІВ

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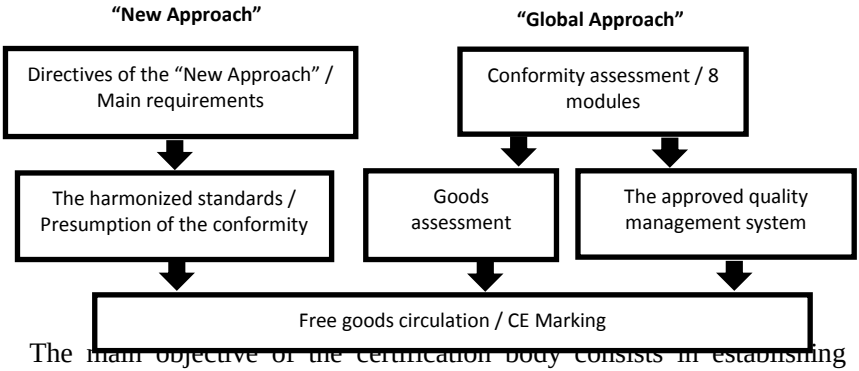

The main objective of the certification body consists in establishing whether the product meets the Main requirements of the EU Directive by means of the procedure of the conformity assessment. This task is carried out in a case when the harmonized standards are applied, and also in a case when the harmonized standards were not applied by a producer.

THE INFLUENCE OF THE METERS' POSTURE ON THE ACCURACY OF ELECTRIC ENERGY ACCOUNTING

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For measurements of consumed or generated energy in AC circuits of industrial frequency the meters of electronic and induction types are applied.

In the meters of induction system the interaction between alternating magnetic fluxes and the currents, induced by them in the mobile part of the device (aluminum disc, axle, thrust bearing and bearing), occurs.

Under the influence of electromechanical interaction the disk and the axle are set in motion and revolve with a frequency proportional to the power value. Thus, the movable part revolutions number allows to measure the energy (power multiplied by time).

In accordance with GOST 6570-96, deflection from a vertical working position of the meter in any direction should not surpass 3°. In case of exceeding this value the changes of the friction moment emerge in the movable axis bearings, which leads to additional error.

We made a research of how the position of 3-phase induction electricity meter type CA4-195 effects on its measurements accuracy. The operation of the meter was explored with active and reactive inductive load. For the control

verification the electronic stopwatch and a single-phase wattmeter (accuracy class 0.1) were used.

The calculation of power, which is measured by meter, was performed according to the formula:

$$P = \frac{3600 \cdot n}{A \cdot t},$$

where n – the number of complete revolutions of the meters' disc; t – time shown by the stopwatch; A – ratio.

The research found that the tilts in the vertical plane up to 10° practically do not affect the readings of the metering device. With further deflection of the meters' posture (up to 30°), significant errors (up to –4,63 %) occur, which beyond the margin of error of electric energy metering device.

FORMATION OF THE SENSING ELEMENT OF THE MAGNETIC FIELD SENSOR BASED ON CU AND CU

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To form the sensing elements of the magnetic field sensors based on magneto-resistance effect, it was suggested to use a method of layer condensation in vacuum Co and Cu with the thickness of individual layers from 1 to 20 nm and sequence depending on the functionality of the finished sensitive element. For high-speed digital sensors, it is reasonable to form multilayer nanostructures of a spin-valve "sandwich" type Co(4÷12nm)/Cu(4÷8 nm)/Co(20 nm)/S (S - substrate). Co magneto-rough lower layer is additionally secured by high temperature of substrate T_S = 950 K which provides high values of lower layer coercitivity Co. The sensor element based on such a multilayer structure depending on the applied external magnetic field can be located in two states "high" and "low" value of resistance that can provide a stable state of logic "zero" and "unity."

For highly sensitive magnetic field sensors with linear operating dependencies of resistance from the applied magnetic field R(V) with the maximum value of resistance at B = 0 T, there can be used multilayer film systems on the basis of Co and Cu as multilayers $[Co(1 \div 3\ nm)/Cu(1 \div 3\ nm)]_x/S$ or a film system of granular solid solution (Cu, Co) obtained by