

DISTURBANCE STABILITY IMPROVEMENT OF THE DEVICE FOR DETECTING DEFECTS OF ELECTRIC CABLE

Serghei TINCOVAN

UTM, St. cel Mare, 168, Chisinau, Republic of Moldova

serghei.tincovan@sde.utm.md, s.tinkovan18@gmail.com

When carrying out preventive maintenance and repair, it is necessary to localize and identify defects in power cables under conditions of an increased level of industrial interference.

Most of the known devices for localization and detection of defects in electric cables are vulnerable to such interference, which limits their effectiveness and application area. In the proposed device, methods of increasing noise immunity in the electrical tract of the receiving part are considered. The localization of the cable and the identification of the location of the defect in the cable in most known devices is based on a comparative analysis of the level of intensity of the electric field emitted by the cable under voltage [1], less often by the level of electromagnetic radiation. When determining the location of the cable in a concrete wall and the simultaneous influence of interference, for example from switching power supplies, the accuracy of determining the location of the electric cable decreases.

In this paper, it is proposed to reduce the level of emitted harmonics of the transmitter of the device by means of a filter between the output stage of the radio frequency and the connector for the antenna [2]. In the receiving part of the device, it was proposed to change the input selective circuit in order to increase the selectivity of obtaining a narrower radiation pattern of its antenna [3]. In addition, in the electrical tract of the receiver is proposed to use a noise-resistant detector to improve the signal-to-noise ratio [4].

Keywords: *transmitter, receiver, electric cable, defects, electromagnetic interference, radiation pattern.*

References

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