Development of a Wear-Measuring Device for Rigid Overhead Conductor Rails Using the Light Section Method

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Wear measurement is essential for maintenance of rigid overhead conductor rails. In some cases, issues such as reduced measurement accuracy from advancing wear or an inability to conduct continuous and automatic measurement may arise. Therefore, this report proposes a new non-contact continuous wear measurement device for rigid overhead conductor rails that acquires cross-sectional profile using the light section method. Using our newly developed algorithm, this device measures residual heights from the contact surface to both the fittings and the top surface of the rigid overhead conductor rail. We validated the performance of the proposed device through both static and continuous measurement tests.