

S2-4 Fiber-optic Digital Online Monitoring System for High-voltage Equipments in Substation

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Abstract:

For the main problems in insulation on-line monitoring of high voltage equipments at present, a set of optical power and optical fiber transmission dielectric loss on-line monitoring hardware and software system are developed in this paper, which are based on the optoelectronic conversion technology, fiber-optic transmission technology, digital signal processing technology and virtual instrument technology. This paper settles the function problem of the active current transducer and remote module with optical power supply and solves the problem of voltage and current signals synchronous acquisition using optical fiber synchronous trigger signals; At same time, through optical fiber communication system which is of strong anti-interference ability, it captures the collected digital signal and achieves the signal accurate transmission and the isolation of high high-voltage side and low high-voltage side. Local side module provides optical energy for remote module and receives the data collected. It uses USB interface to communicate with the computer, which is simple, convenient and of strong scalability. At the same time, based on LabVIEW virtual instrument technology, the software programming and friendly user interface is completed.