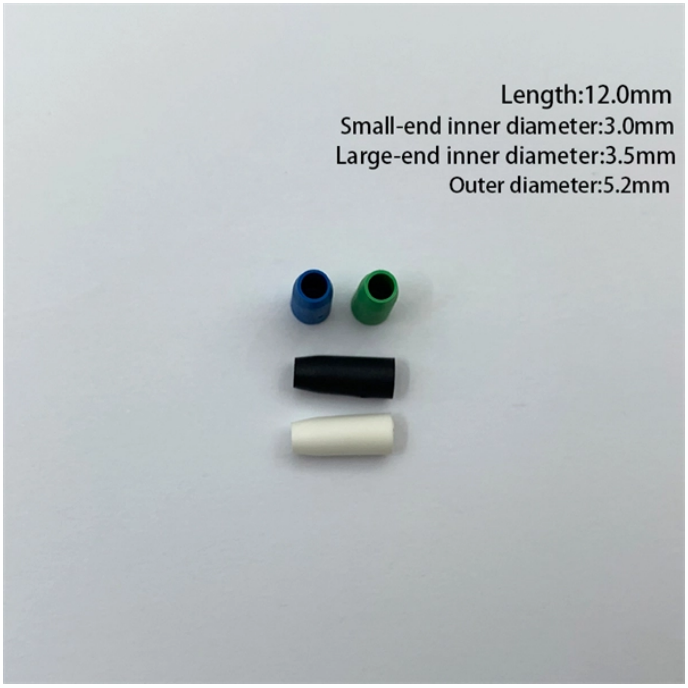
5G Distribution Network Automated Protection



Overview

Through the analysis of communication protocols of transmission layer in power systems, we know that using either TCP or UDP to transmit information, it is necessary to control the flow when applying 5G-based differential protection. The followi. Through the analysis of communication protocols of transmission layer in power systems, we know that using either TCP or UDP to transmit information, it is necessary to control the flow when applying 5G-based differential protection. The following will discuss flow control strategies from different aspects, including communication protocol, transmi. In power grids, Transmission Control Protocol (TCP) and UDP are usually used as protocols of transmission layer. TCP is based on the connected mode, while UDP is based on the disconnected mode. It is known that one of the greatest differences between TCP and UDP is that TCP needs to establish connection in advance before communication, its mechani. 5G slicing technology is applied to 5G channels in an end-to-end slicing mode based on SA (Standalone) networking, which provides bandwidth and resource allocation for transmission of different information data based on weight proportion, according to the different requirements of distribution network information

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and the characteristics of various. MPTCP (Multi Path TCP) is an evolutionary mechanism of traditional TCP, which enables the host to implement a single TCP connection in TCP through multiple different network interfaces, and realize effective utilization of data message and improve bandwidth availability. Additionally, MPTCP which can use multiple links to transmit data at the same. The realization of traditional differential protection requires the protection devices on both sides to obtain the synchronous electrical variables, whose amount is much large. Therefore, optimizing the transmission mechanism to reduce the data-transmission frequency can effectively reduce the amount of data transmission. For example, the whole lin.

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	Aiming at the performance degradation of traditional zero sequence current protection in complex distribution networks caused by the integration of distributed generation, this paper ...
	Many IoT (Internet of Things) services will utilize 5G services. The intersection of 5G and IoT brings an extension of the existing threat surface that requires careful consideration from a cyber risk perspective.
	One of the key technologies for realizing the current differential protection principle based on 5G communication in distribution networks is current data synch
	To solve the problems analyzed above, the adaptive differential protection method for smart distribution network under the framework of 5G communication is studied.
	Aiming at distribution network differential protection based on 5G, this study adopted an adaptive frequency conversion transmission mechanism to significantly reduce the data flow of ...

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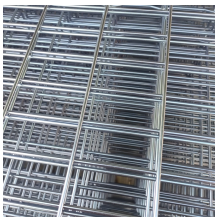
5G communication technology has so many advantages with large bandwidth, high reliability and low latency that the 5G-based differential protection technology becomes a research ...

This paper proposes a differential protection method for distribution networks based on 5G communication technology. 5G communication technology has the characteristics of high ...



In order to enhance the safe and stable operation capability of distribution networks with a large number of distributed power sources connected, research on di

In the paper, the protection principle of 5G intelligent distribution network was declared firstly. Secondly, we analyzed the feasibility of 5G network slicing in smart distribution protection.

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