UHF and ultrasonic can detect PD well; each method has its advantages. UHF method is to detect the PD pulse caused by the HF electromagnetic waves which vibrate in GIS. Ultrasonic method is to detect the ultrasonic which generated the bubble shock. Therefore, the main monitoring data of GIS PD monitoring system includes: UHF PD signal, ultrasonic PD signal and transformer voltage signal. Online monitoring system collects all those signals and then generates alarm information about GIS's status. GIS PD monitoring system consists of sensors, data preprocessing system and PD monitoring IED. Input circuit adopts UHF PD sensor and the ultrasonic sensor to get electrical signals and after signal conditioning they are sent to PD monitoring IED. Specific communication service mapping between the bay level and the process level is defined, which is the standard of network transmission for the ample value. In bay level, data was stored, displayed and processed in IED. After that, a communication service between bay level and station level is defined to report data in the end.

source: https://switchgearcontent.com
Online GIS PD monitoring system according to IEC61850 protocol

In Figure we can see structure of GIS PD monitoring system with IEC 61850.

source: https://switchgearcontent.com