

SAMon SA Online Leakage Current Monitor

*Online Leakage
Current Analyser*



- Online monitor for Surge Arrestor
- Calculates corrected 3rd harmonics current
- Immediate data transferred to PC through RF or RS485 ports.
- Continuous Monitoring various parameters of Surge Arrestor

The Product

SAMon On-line Leakage current analyzer for LA

The performance of surge arresters depends on the insulating property of metal- oxide (ZnO) used in arresters. The deterioration of the insulating property increases leakage current in the arrester. This leakage current depends on applied voltage and temperature at the time of measurement. SAMon is developed for continuous monitoring of arresters in the EHV substation.

The product is the result of two years of development work in lab as well as on the field on monitoring the EHV arresters continuously and on line.

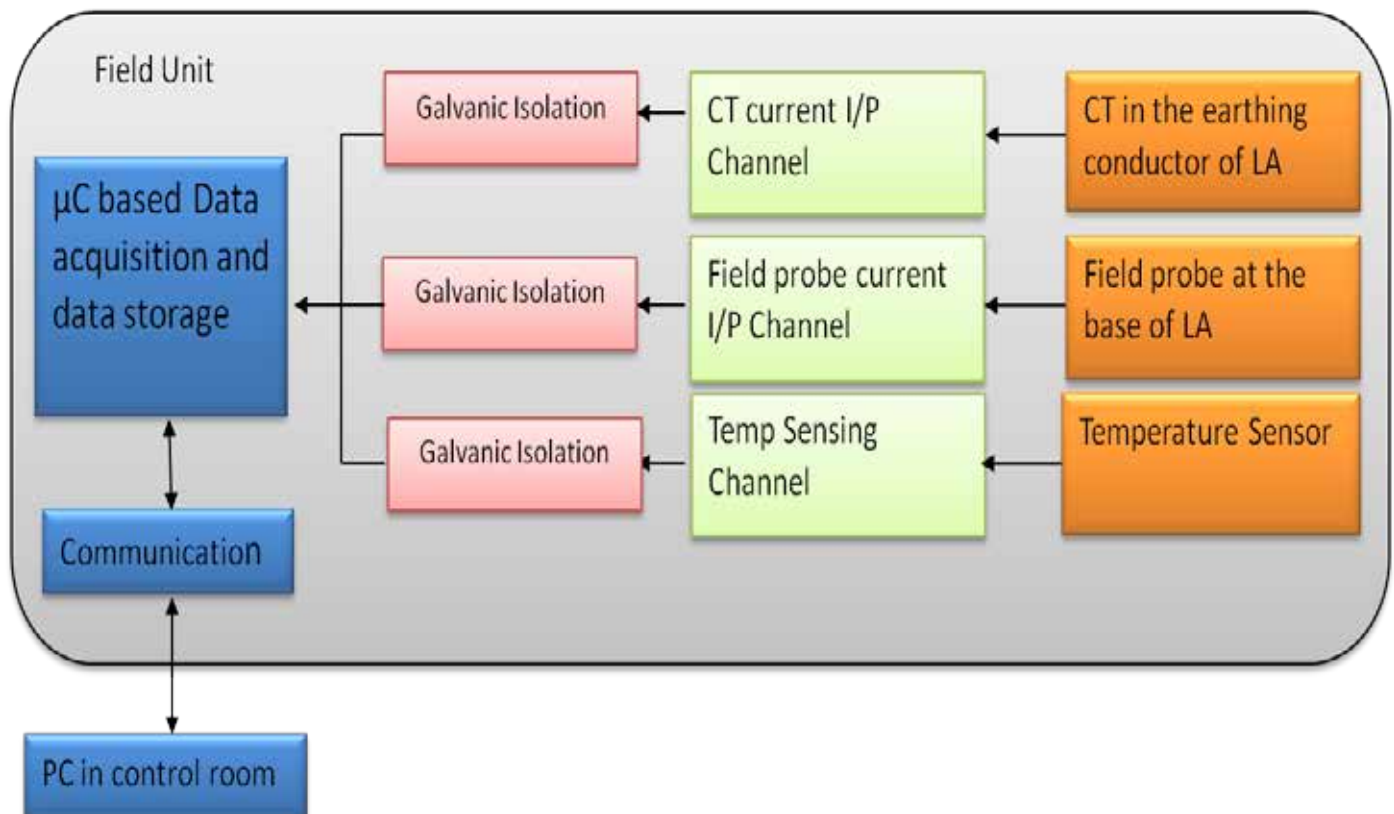
SAMon and its accessories are permanently mounted on the arrester. User has a flexibility to decide the time interval between the measurements. The device measures the total leakage current, third harmonic leakage current with system harmonic compensation and corrected third harmonic current. The results are immediately transmitted to PC in the control room using suitable communication.

Features

- SAMon reads the leakage current flowing through the earthing conductor in the arrester.
- It also reads the Field probe current and temperature
- SAMon show the 3rd harmonic leakage current in the arrester with system harmonic compensation with desired time interval.
- SAMon calculates corrected 3rd harmonics current.
- SAMon has either RS485 or RF communication facility
- It operates on 90 to 230V AC or DC supply
- The data is immediately transferred to PC in the control room
- The special software in the control room has the facility to receive the data and store in structured manner. The further data analysis can be done using this software

Working Principle

The surge arrester monitor consists of Field unit, CT, Field probe, temperature sensor, data Communication and software running on a PC in the control room. Refer Block diagram



Software Features with Sample Test Report:

The special type of CT designed for continuous monitoring of leakage current and arrangement of field probe to read the system harmonics is mounted at the base of each arrester. The earthing conductor of the arrester is passed through the CT. The secondary signal of CT and field probe signal is further processed using the pre amplifiers mounded near the CT. The processed signals are passed to the analyzing unit mounted at the base of arrester. The analyzing unit can receive maximum 3 sets of signals from 3 arresters. (For three phases).

The analyzing unit receives the amplified signals from the CT and Field probe pre amplifier. The signals are galvanically isolated and given to the analog to digital converter. This unit also contains the microcontroller, memory, real time clock and communication port. The microcontroller samples the CT and field probe signal for a fixed duration. The total leakage and third harmonic current is calculated from the CT signal. The system harmonic compensation is done using the field probe signal.

The system also measures the ambient temperature. The unit is connected to the central PC using the RS485 or Fiber optic connection.

The SAMon analysis software is installed in the central PC which is located in the control room. The communication cable is connected to all the SAMons and finally gets connected to this PC. The software gives the facility to enter the details like ID of arrester, serial no, location of installation etc. It also gives the facility to decide the time duration between two readings.

At decided interval PC sends request to analyzing unit. The analyzing unit samples data from all three arresters, calculates the parameters and send it to PC. The received data is stored with date and time stamp. Further the data can be exported to different formats such as xls and pdf. The software also provides the facility of trending the received data.



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