

High Voltage Surge Arresters

Buyer's Guide — Section EXCOUNT-II

Surge arrester monitor EXCOUNT-II

EXCOUNT-II is our top-of-the line product combining outstanding looks with the most extensive and powerful features. Included are a variety of surge counting features together with all the essential leakage current measurement functions. EXCOUNT-II enables users to keep track of overvoltages in the network as well as providing state-of-the art on-line condition monitoring of arresters.



Design features

EXCOUNT-II is a unique monitoring system, which can be used as an aid to assess the health of the entire substation by monitoring surges transmitted in and out of the network. Each surge arrester is fitted with a sensor, which detects the total number of discharges, the surge amplitude, date and time of occurrence, as well as the leakage current through the arrester. The measurements can be remotely read when convenient with the aid of a hand-held transceiver (and optional external antenna).

Remote reading provides increased personnel safety compared with conventional counters. With a communication distance of up to 60 m (120 m with external antenna), the person does not necessarily have to even be inside the substation perimeter, so saving the need to arrange entry permits or have electrically trained personnel perform the work.

The measured data can then be transferred to a computer for statistical analysis. Included with EXCOUNT-II is specially designed software which facilitates download of the measured data from the transceiver and permits analysis and reporting of the collected information.

Surge registration

EXCOUNT-II does more than just count surges. It also registers the date and time as well as amplitude of the surge each time the arrester has discharged a current over 10 A. Time and amplitude measurement gives the user better information about overvoltages in the network and the operation of the arrester.

Leakage current measurement and condition monitoring

EXCOUNT-II gives the user the possibility to measure both the total leakage current as well as the resistive component of the current through the arrester. Measurement of the resistive current gives a good indication of the arrester's condition and fitness for continued service. The measurement method employed is based on third-harmonic analysis which is considered the most reliable measuring method for condition monitoring according to IEC 60099-5.

Safe and secure

The sensor is housed in a sealed, weather-proof case, suitable for outdoor use and proven to match the short-circuit capability of the arrester to which it is connected. The sensor requires no external power supply as it incorporates its own internal power source in the form of a high-efficiency capacitor automatically charged by solar cells and electric field probe.

EXCOUNT-II

Technical data

General

Climatic conditions	Sealed water-tight design, IP67
Short-circuit capability	65 kA according to IEC 60099-4
Power supply	Built-in solar cells and field probe (battery alternative for indoor use)

Surge registration

Minimum counting threshold (8/20 μ s)	10 A
Amplitude classification (8/20 μ s)	10 - 99 A 100 - 999 A 1000 - 4999 A 5000 - 9999 A > 10000 A
Time stamp	Yes
Time resolution	< 0.5 s
Memory capacity	1000 registrations (wrap-around)

Leakage current measurement

Measuring range of total leakage current	0.2 - 12 mA _{peak}
Measuring range of resistive leakage current (peak level)	10 - 2000 μ A
Measuring frequency range	48 - 62 Hz

EXCOUNT-II versions

EXCOUNT-II are available for two different frequencies depending on national regulations. Contact ABB for guidance.

Sensor

Model	Frequency
1HSA441 000-A	for 868.35 MHz
1HSA441 000-C	for 916.50 MHz

Sensors for inverted mounting

Model	Frequency
1HSA441 000-D	for 868.35 MHz
1HSA441 000-E	for 916.50 MHz

Transceiver model 1

Application: Measuring total leakage current and surge data

Model	Frequency
1HSA442 000-C	for 868.35 MHz
1HSA442 000-E	for 916.50 MHz

Transceiver model 2

Application: Measuring total leakage current, resistive leakage current and surge data.

Model	Frequency
1HSA442 000-A	for 868.35 MHz
1HSA442 000-D	for 916.50 MHz

External antenna

Model	Frequency
1HSA446 000-A	for 868.35 MHz
1HSA446 000-B	for 916.50 MHz

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