

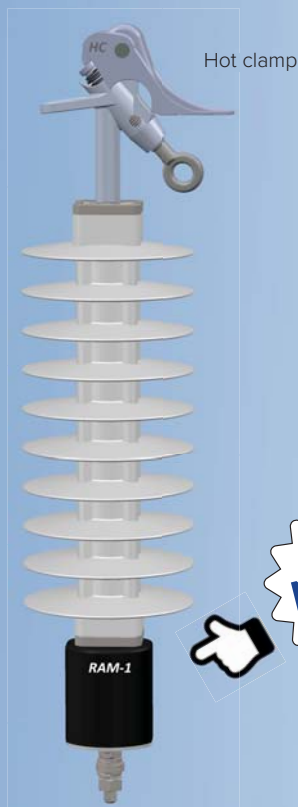
RAM-1 - Remote condition monitor for surge arresters above 1 kV

RAM-1 (Remote Arrester Monitoring) is intended for monitoring the condition of MO surge arrester with continuous operating voltage above 1 kV. Until now the measurement of the resistive component of surge arresters leakage current in accordance to the standard IEC 60099-5 has been possible only in a HV laboratory. With the innovative measurement system the resistive component of the leakage current can be measured in accordance to the standard IEC 60099-5 with the same accuracy as in the laboratory. The results of the measurements can then be wirelessly sent to the buyer's media of choice. RAM-1 is installed on the grounding side of the surge arrester. To monitor a group of arresters installed into a three-phase system it is sufficient to install a single RAM-1 device which is distinguished by:

- autonomous operation,
- versatility to be installed on existing or new MO surge arresters
- easy to install,
- affordable solution,
- up to 20 years of maintenance and cost free use.

Basic package:

- ✓ **RAM-1 device with top and bottom fitting.**
- ✓ **Condition report every two months.**
- ✓ **Built-in SIM card or LoRaWAN communication capability.**
- ✓ **Web and mobile app with record of RAM-1 devices and gathered measurements.**
- ✓ **English language interface.**
- ✓ **NFC, Bluetooth, GPS technology.**

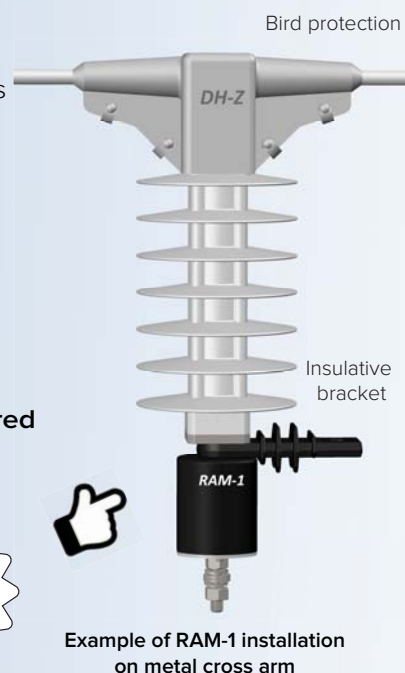


Example of RAM-1 installation on conductor

NEW!

Extended package:

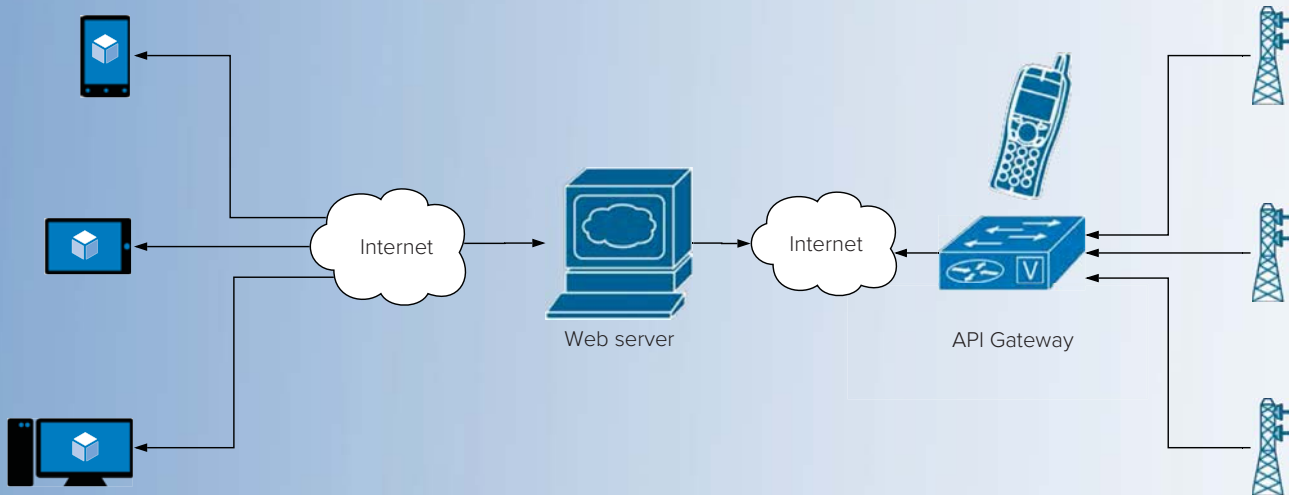
- Mobile application.
- Ability to save information about installed device: location, time of instalment, installer, etc.
- Ability to save information about surge arrester.
- Measurements acquired from RAM-1: resistive current, surge counter, arrester inclination, instant fault, temperature.
- Graphical presentation of acquired measurements, depicted increase of resistive component of the leakage current.
- More frequent condition reports.
- Chronological recording of activities on the device (inspections, corrections, possible damages).
- User account for online access to information of measurement.
- Record of access to information (when, by whom and what was examined).
- Automatic reporting of exceeded measured values to authorised personnel.
- Automatic ordering of damaged equipment and delivery tracking.
- Language selection according to customers wishes.



Example of RAM-1 installation on metal cross arm

NEW!

Operation scheme RAM-1



Technical data

Usage	Surge arresters above 1 kV
Leakage current	Resistive component, 0 ... 3 mA ($\pm 10\%$)
Frequency	48 Hz ... 62 Hz
Temperature range	-40 °C ... + 85 °C
Housing IP protection level	IP 67
Standard	IEC 60099-5
User interface	Mobile and web app, SMS
Measuring cycle	1 hour
Communication cycle	up to 60 days (customizable)
Communication	2G, 3G, 4G or LoRaWAN
Autonomy	Up to 20 years, maintenance free
Housing material	Termoplastic V-0 (UL 94)
Connector / material	Top M12x40, bottom M12x60 / material A2 or A4
Acquired Data	Surge counter, temperature, inclination, location, leakage current
Installation options	on conductor, on steel bracket, on insulative bracket

All products are developed and manufactured in Izoelektro



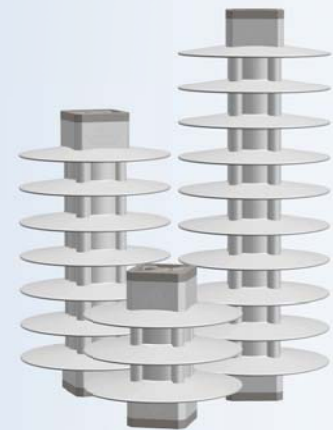
Protection cap DH-Z
for surge arresters DH



Hot clamp for
live-line working



NEW!



Surge arresters class DH
from 3 kV to 44 kV

RAM-1 - advantages

- 20 years maintenance free
- measurement of the resistive component in operation
- remote indication