

kappa 

kappa 

Stand 03.2020

Live-monitoring of gas- and air-insulated switchgear,
hybrid switchgear, GCB, and generator

For Power Grids Switchgear Camera Systems



Headquarters
Kappa optronics GmbH
info@kappa-optronics.com
www.kappa-optronics.com

Kappa USA
Kappa optronics Inc.
contact@kappa-optronics.com
www.kappa-optronics.com

realize visions .

**Minimizing risk to
human operators is key**

One centralized system
Software adapted to client's needs
Matching and pre-installation ex works

realize visions .

Switchgear Camera Systems for Power Grids

Rugged cameras for safe monitoring provide visual assurance of positions and thus contribute to minimizing risks to personnel. With the field-proven camera systems for all substation viewports, Kappa is your most experienced partner.



www.kappa-optronics.com

GIS Gas Insulated Switchgear | HYBRID Switchgear | GCB Generator Circuit Breaker | Generator

Safe & Field-Proven

Thousands of cameras already in use by market key players

Cameras fit all viewports in gas- and air-insulated substations, for switches and breakers

One for all client's needs, for new substations and upgrading

Outstanding reliability

Precondition for insurance coverage in numerous countries

Safety for the staff on site

Verified live view with live image indicator

Prevention of eye damage

Accident prevention: no need for climbing on ladders

Safe installation, all is preset and matched

Customer can visualize the movement of the switch, live!

Rugged High-End

Proven in high voltage and medium-voltage use

Extremely resistant to shock and vibration

CMOS sensor

GigE Vision or Video

Integrated high power white LEDs with low glare illuminate switches and breakers

Reflection-free optic with variable field of view

Compliant to IEEE Std C37.20.9-2019

Indoor/outdoor with waterproof protection up to IP 67/NEMA 6

Pluggable connector cable for very easy refit, no bending or twisting, minimum maintenance effort

Cable for long distance (300 ft.), single connector (PoE or XLR)

Easy-to-Use

Easy installation and operation: system configuration with preset cameras and installation plans

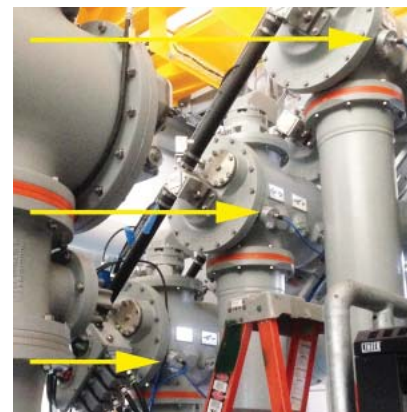
Optimally matched configuration on the basis of the individual substation's specifications

Software adapted to substation client's needs (digital solution)

Labeled cameras matched with software mimic of the real system

Proven QA procedures, complete system set-up is thoroughly tested ex factory

Easy operation, avoids errors



Camera fits into narrow spaces and obviates the need for personnel to access hard-to-reach spaces for a direct visual view.

Scalable for All Substations: Field-proven camera systems fit all substation viewports, on medium- and high-voltage, gas- and air-insulated switchgear, hybrid switchgear, GCB, and generators. These state-of-the-art cameras are designed for network-dependent or network-independent solutions. Both solutions could be used for green-field projects, retrofits or upgrades to maximize safety.



Digital System

GIS CAM
Fast Ethernet/PoE

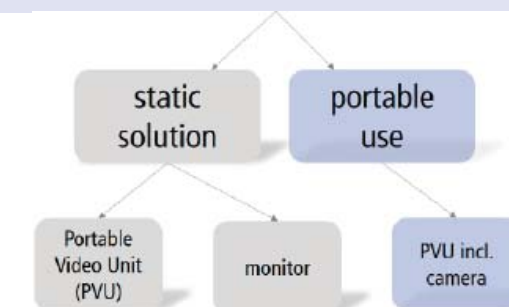
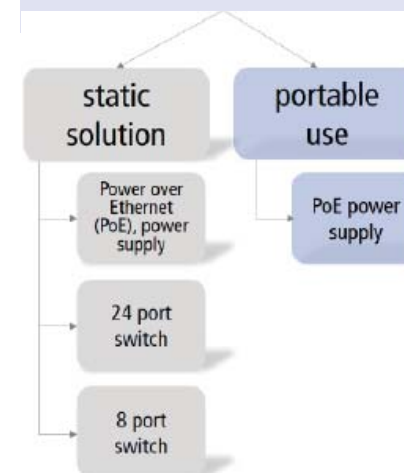
Network-dependent: Digital cameras can be networked to provide views from multiple switches or breakers in a substation so that an observer at a central location can select any view. Our digital cameras are available as an IP65 rated fixed installation, for indoor and outdoor use. Fixed camera installations of 2 to 400+ cameras are available in user-programmable configurations, from stand-alone, to 24-port or 8-port switch applications.

Video System & Portable System

SWITCHGEAR CAMERA ANALOG | SGC-Analog
PORTABLE VIDEO UNIT | PVU
VIDEO

Network-independent: If a camera will be directly connected to a monitor without a network solution, we provide switchgear cameras analog (SGC-Analog) for fixed and mobile use. The fixed camera installations are available with either a Portable Video Unit (PVU) with built-in battery and monitor, or an installed monitor affixed to your equipment. The mobile version is a 'plug and play', on-demand solution (e.g. for service technicians).

PVU for SGC-Analog (Switchgear Camera Analog): Three cameras for three phases can be connected at the same time and the camera image can be chosen via a selection switch. The large, sharp monitor allows the flawless recognition of the switch position. Commercially available lithium-ion cells power the unit for a power-independent operation up to 5 hours and the built-in charger keeps additional cells ready for extended operating time. The PVU is protected with IP 67 for indoor and outdoor use, can also be powered by a standard 110 V AC power outlet or a 12 V DC power outlet..



Your Most Experienced Partner!

Our clients need to install appropriate cameras, fitted with adapters and LEDs, at all viewports in order to fully visualize the isolation gap. In every case, the foundation of Kappa's solutions is an extremely compact robust camera, in a housing developed especially for adaptation to viewports, with client-defined mechanical interfaces and extremely shock and EMC resistant design as well as high temperature resistance.

Kappa optronics develops and produces Cameras and Vision Systems with certifiable design We have been on the market for 40 years, putting our stability, experience and innovative might to the test with our know how for customers with exceptional demands. One particular emphasis is on our robust cameras for extreme environmental conditions. We service your needs not only technically, but also by fulfilling all industry-specific requirements on design assurance, qualification and certification. We look forward to working for and with you!