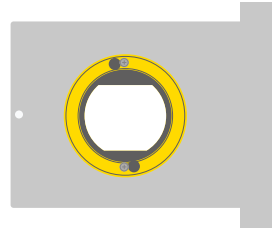
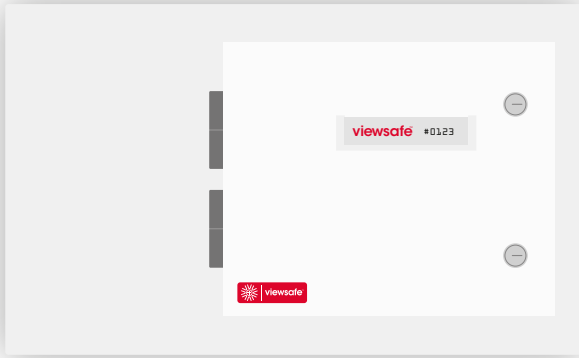
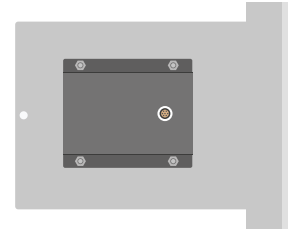




viewsafe™ safety assured maintenance aperture



**I.R. Window
Maintenance Slide**



**Partial Discharge
Maintenance Slide**



**CO2 Emergency
Maintenance Slide**



**Observational
Maintenance Slide**

The Viewsafe™ safety assured Maintenance Aperture has been designed to integrate the most important safety and functionality features required when inspecting and maintaining live electrical equipment and switchgear.

The patent-pending slide mechanism of the Viewsafe™ Base Unit allows the introduction of varying Viewsafe™ Maintenance Slides; each of which increase efficiency, safety and productivity through monitoring and maintaining electrical assets.

- Designed and tested to attain internal electrical arc classification up to 50kA for 1sec. at 11kV, certified by a KEMA Test Station and Lloyd's Register Type Approval in accordance with IEC 62271.

- The secure-access lock mechanism situated upon the Viewsafe™ Base Unit door restricts unauthorised access and also allows Viewsafe™ to be integrated into a permit-to-work system.

- Thermal Image or Partial Discharge inspection? Carry out both with the Viewsafe™ system. The unique Viewsafe™ design facilitates both of these preventive maintenance methods through a single Viewsafe™ Base Unit; reducing cost, and increasing the efficiency and accuracy of equipment performance.

- Integrating the Fluke® IR Window with a Viewsafe™ Maintenance Slide allows the inspection of live equipment via Thermal Imaging Cameras; identifying hotspots of high resistance and potential faults – preventing failure and unplanned downtime.

- By utilising Viewsafe™ in tandem with the PD Maintenance Slide, ultrasonic acoustic PD measurements are found to be 10 times more accurate than current PD measurement techniques.

- In the event of an emergency, the CO2 Emergency Maintenance Slide allows fast, firefighting access to the electrical panel, preventing further damage to equipment; reducing costs incurred and increasing the safety of the surrounding area.

- The identification labels for each Viewsafe™ unit optimise inspection survey routing and location information for efficient repair of equipment when required.

- As Viewsafe™ continues to invest in R&D in the electrical inspection field, the Viewsafe™ design allows for new and innovative inspection techniques to be integrated into the current Viewsafe™ Base Unit through a single Viewsafe™ Maintenance Slide.



viewsafe™ Safety Assured Maintenance Aperture



Viewsafe™ Features:

FULLY LOCKABLE – Viewsafe™ Base Unit has key-lock access situated upon the access door that prevents unauthorised admittance. Viewsafe™ can therefore be introduced to operate within a permit-to-work program as well as ensuring that only correctly trained personnel have access to the device.

ON-LINE INSPECTION – the unique design of Viewsafe™ allows the on-line inspection of electrical switchgear equipment whilst guaranteeing user safety; achieved by ensuring there is no direct line of exposure between the user and the live electrical equipment inside the panel.

INSTANT ACCESS – with the availability of Thermal Imaging Cameras and the handheld UltraTEV Plus+ Partial Discharge Detector, the user can monitor the performance of their electrical equipment instantly, giving real-time performance data.

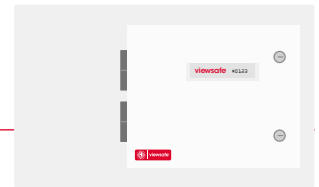
INCREASED ACCURACY – harnessing the power of both Thermal Imaging and Partial Discharge inspection techniques through Viewsafe™, the accuracy of asset performance data is significantly increased compared to the single inspection technique alternative. The unique design also means that the detection of Partial Discharge is 10x more accurate than current inspection techniques.

REDUCE LOSSES – by utilising more accurate and regular inspection methods, the risk of unplanned downtime is reduced and therefore so are the associated losses. The increase in functionality to allow the use of just a single Maintenance Slide of each type with an entire Viewsafe™ Base Unit installation saves costs dramatically compared to a similar installation without Viewsafe™ products.

DAMAGE REDUCTION – in the event of an electrical fault that causes a fire in the electrical equipment, the CO2 Emergency Maintenance Slide allows the user to extinguish the fire as quickly and safely as possible. Not only ensuring the safety of people in the surrounding area but also potentially saving equipment from extensive and avoidable damage.



Technical Data



Viewsafe™ Base Unit Detailed Specification

Colour	White
Types	Indoor: VIEWSAFE-IND Outdoor: VIEWSAFE-OUT
Dimensions	Length: 370mm Width: 225mm Depth: 20mm
Aperture Dimensions	Length: 130mm Width: 110mm
Aperture Area	14300mm ²
IP Rating	IP65
KEMA (Internal Arc Testing) IEC 62271	50kA for 1sec. at 11kV
Lloyds Register Type Approval Up to 11kV Marine Switchgear - Outdoor / Indoor	Yes
Warranty	Lifetime replacement against manufacturing defects

Viewsafe™ Maintenance Slides

General Specification

Colour	White / Grey / Red / Yellow
Types	VIEWSAFE-IRMS: Infrared Window Maintenance Slide VIEWSAFE-PDMS: Partial Discharge Maintenance Slide VIEWSAFE-CO2MS: CO2 Emergency Maintenance Slide VIEWSAFE-OMS: Observational Maintenance Slide
Maintenance Slide Dimensions	Length: 160mm Width: 170mm Depth: 3mm



Viewsafe™
The Courtyard
Green Lane
Heywood
Lancashire
OL10 2EX

Telephone:
01706 628 423
Email:
info@viewsafe.co.uk
Website:
www.viewsafe.co.uk

viewsafe™ Partial Discharge Maintenance Aperture



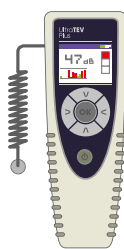
The UltraTEV Plus+™ is essential for:

- Identifying and investigating asset faults
- Ensuring personal safety around MV/HV assets
- Comparing PD activity between assets
- Comparing PD activity in single assets over time
- Gathering data for asset condition registers

The UltraTEV Plus+™ is the leading instrument for assessing and comparing substation asset condition; providing a **low cost, easy to operate** system with **immense flexibility**.

The unit is able to detect partial discharge via TEV and ultrasonic measurement techniques to provide the user with the optimum information on the health of their electrical equipment. The capability of the UltraTEV Plus+™ has been increased with the integration into Viewsafe™ and the production of the Partial Discharge Maintenance Slide. By designing a Maintenance Slide that allows the ultrasonic acoustic sensor a direct line into the electrical cabinet under inspection, the UltraTEV Plus+™ ultrasonic readings are found to be up to **10x more accurate** than current measurement techniques provide.

Safety regulations mean that at present on-line ultrasonic detection must take place outside of the electrical cabinet. This leads to the distortion of obtained readings via noise interference in the surrounding area; thus potentially resulting in the unsuccessful detection of faults. Viewsafe™ provides the **perfect solution** to this problem with the Partial Discharge Maintenance Slide.



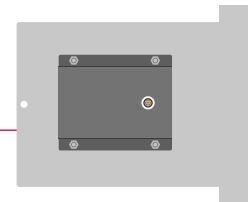
The UltraTEV Plus+™ detects ultrasonic acoustic Partial Discharge

The **lightweight, ergonomically designed** hand set features a menu-driven, backlit colour LCD screen that provides a range of information, including numerical values for TEV and ultrasonic readings. This allows operators to compare readings between assets as well as compare single asset readings over time. The UltraTEV Plus+™ also includes a headphone socket for audible readings of ultrasonic activity to enable operators to hear PD activity directly as they undertake their asset condition surveys.



viewsafe™

Technical Data



Viewsafe™ PDMS: Partial Discharge Maintenance Slide

Detailed Specification

Air Ultrasonic Ceramic Receiver

Center Frequency	40.0±1.0 KHz
Bandwidth (-6dB)	2.5 KHz
Receiving Sensitivity at 40.0KHz; 0dB re 0.0002μbar per 10Vrms at 300mm	-65 dB min.
Capacitance at 1KHz ±20%	2400 pF
Max. Driving Voltage (cont.)	20 Vrms
Total Beam Angle -6dB	55° Typical

External Sensor Input Socket

Contact Resistance	5.3mOhm
Current Rating	2.5A
Dielectric Strength	19V/m
Operating Temp Min.	-55 °C
Operating Temp Max.	250 °C

External Sensor Cable

Contact Resistance	7.5mOhm
Current Rating	2.5A
Dielectric Strength	19V/m
Operating Temp Min.	-55 °C
Operating Temp Max.	250 °C
Wire Diameter	0.35mm

KEMA (Arc-Testing)

IEC 62271	50kA for 1sec. at 11kV
-----------	------------------------

Lloyd Register Type Approval

Up to 11kV marine switchgear - indoor and outdoor	Yes
---	-----



Viewsafe™
The Courtyard
Green Lane
Heywood
Lancashire
OL10 2EX

Telephone:
01706 628 423
Email:
info@viewsafe.co.uk
Website:
www.viewsafe.co.uk

viewsafe™ I.R Window Maintenance Aperture



FLUKE®

Viewsafe™ incorporates the Fluke® CLKTO C-Range IR Windows situated upon a Maintenance Slide. The IR Window Maintenance Slide allows the user to inspect electrical equipment safely, free from the threat of arc-flash or electrocution. Only a single IR Maintenance Slide is required per Viewsafe™ installation.

Infrared thermography of electrical equipment is a vital preventive maintenance inspection technique, which can give instant real-time temperature of the electrical equipment. Thermal image inspection can help identify areas of insulation break down, loose connections and areas of abnormally high resistance that would ultimately lead to asset failure. It is also proven to provide substantial cost savings to the user. To allow the thermal inspection of equipment, integrating Viewsafe™ with Fluke IR Windows and Thermal Imagers gives users the safest and most effective method of monitoring and maintaining their electrical equipment and assets.

The use of Viewsafe™ IR Window Maintenance Slide will:

INCREASE SAFETY – the Fluke Infrared (IR) Window prevents direct human exposure to live equipment, and as a result, protects the user should an arc flash occur during inspection. The IR Window is also impact-resistant for indoor switchgear up to 72kV, in compliance with the ANSI C37.20.2 standard.

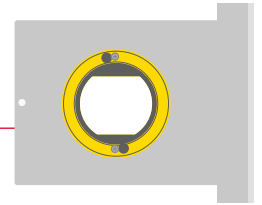
REDUCE COST – IR Windows become much more cost effective when utilised within the Viewsafe™ system. Due to its unique design, only a single Viewsafe™ IR Maintenance Slide is required per installation, as each individual slide will fit the low costing Viewsafe™ Base Unit. This reduces overall cost on installation as well as providing the user with a much more efficient means of preventive maintenance.

PREVENT DOWNTIME – Regular live inspection of electrical equipment provides the user a far higher accuracy of information on equipment performance. In contrast to the standard annual inspection, with the purchase of a Fluke Ti Thermal Image camera and the Viewsafe™ system, the user is able to inspect their equipment far more frequently – vastly reducing the risk of electrical failure, and therefore unplanned downtime and costs.



viewsafe™

Technical Data



Viewsafe™ IRMS: Infrared Window Maintenance Slide

Detailed Specification

Crystal Insert Diameter	75mm
Viewing Aperture Diameter	68mm
Viewing Aperture Area	3632mm ²
Thickness	2mm
Shortwave IR Capable	Yes
Midwave IR Capable	Yes
Longwave IR Capable	Yes
Ultraviolet (UV) Capable	Yes
Visual Capable	Yes
Fusion Capable	Yes
KEMA (Arc-Testing) IEC 62271	50kA for 1sec. at 11kV
Lloyds Register Type Approval Up to 11kV marine switchgear - Indoor and Outdoor	Yes



Viewsafe™
The Courtyard
Green Lane
Heywood
Lancashire
OL10 2EX

Telephone:
01706 628 423
Email:
info@viewsafe.co.uk
Website:
www.viewsafe.co.uk

viewsafe™ CO2 Emergency Maintenance Aperture

viewsafe™ Observational Maintenance Aperture



In the event of a switchboard emergency through electrical failure, the CO2 Emergency Maintenance Slides are the **ideal solution** for reducing the damage to equipment and surrounding areas.

In the worst-case scenario where an electrical fire ensues from failure, the task of extinguishing the fire before substantial damage and potential injuries has occurred is a pressing one. It is for this reason that Viewsafe™ has developed the CO2 Emergency Maintenance Slide in conjunction with Viewsafe™.

Should an electrical fire result from equipment failure, the CO2 Emergency Maintenance Slide can give the user **immediate CO2 access** into the electrical panel. No longer is there the requirement to isolate the panel – eradicating the opportunity for the fire to escalate into something more serious.

The unique Viewsafe™ design also ensures that no further oxygen can enter the panel once the CO2 Emergency Maintenance Slide is put into place. Thus, if an electrical fire has occurred, it does not intensify and remains contained within the electrical cabinet.

This method also **keeps the user safe** by disallowing a direct line of exposure to the electrical failure, which would occur if an electrical panel cover had to be removed.

The Observational Maintenance Slide provides users of Viewsafe™ with an enlarged viewing port to visually inspect electrical equipment and components inside a panel safely and efficiently.

The use of Viewsafe™ also removes the need for an electrical panel to be isolated when a visual inspection is required; avoiding both **downtime** and **unnecessary cost**.

The large viewing area allows users to identify vital electrical information located on components such as Current/Voltage transformers and ratios, as well as other important electrical information, which may be identified inside the panel.



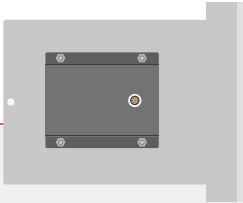
viewsafe™

Technical Data

Viewsafe™ OMS: Observational Maintenance

Detailed Specification

Glass Dimensions	Length: 93 mm Width: 103 mm Depth: 4 mm
KEMA (Arc-Testing) IEC 62271	50kA for 1sec. at 11kV
Lloyds Register Type Approval Up to 11 kV marine switchgear - indoor and outdoor	Yes



Viewsafe™ CO2MS: CO2 Emergency Maintenance Slide

Detailed Specification

CO2 Inlet Socket Diameter	Ø26 mm
Socket Dimensions	Length: 50 mm Width: 32 mm Depth: 57 mm
Aperture Material	Aluminium



Viewsafe™
The Courtyard
Green Lane
Heywood
Lancashire
OL10 2EX

Telephone:
01706 628 423
Email:
info@viewsafe.co.uk
Website:
www.viewsafe.co.uk