

# VAMP

Medium voltage  
arc flash eliminator units  
VAM 3ED,  
VAM 3TD, VAM 1T





## Medium voltage arc flash eliminator units

The new innovative arc eliminator VAM 3ED is an extremely fast acting switch grounding all phases within 5 ms after occurrence of an arc flash in the switchgear.

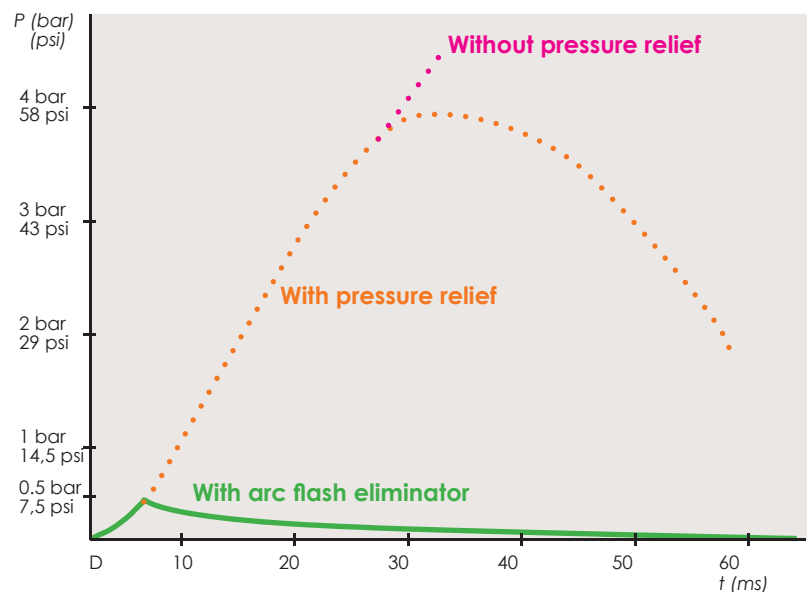
The very fast operation means not only that the thermal damages by the extreme heat of the arc is totally omitted, but also that the pressure increase due to heating of the air or other insulation gas is drastically reduced.

VAM 3ED is triggered by the VAMP 221 arc protection system, which is activated by the light and current from an arc flash fault.

Arc flash eliminator units increase personnel safety and the reliability for all type of switchgears, including non-arc proof ones in service.

Due to limited in pressure increase, no pressure relief or exhaust channels are necessary, which in turn simplifies the design and reduces the cost for both switchgear and building.

Typical behaviour during arc flash fault

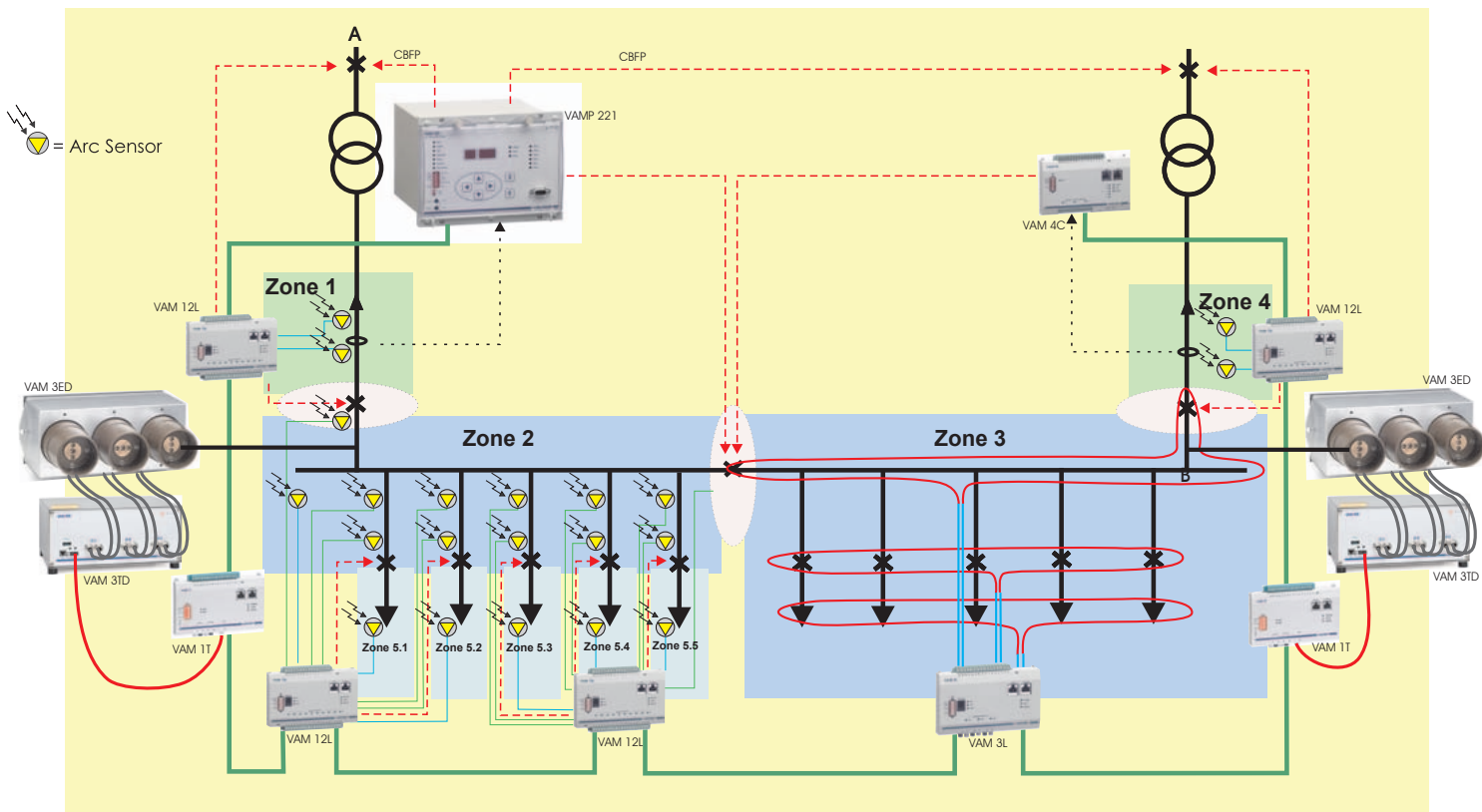


## Benefits

- Advanced solution for arc resistant switchgear
- Less than 5 ms total arc flash quenching time
- Applied to new and retrofit installation
- Provides personnel and asset protection
- Minimizes downtime
- Applicable when pressure relief is not possible such as marine & offshore installations



## Typical application



Should the arc flash fault happen in the switchgear, the VAMP 221 system detects simultaneous light and fault current. The VAMP 221 sends an optical triggering command to the VAMP 3ED arc eliminator unit which quenches the arc flash fault by creating a controlled three phase bolted short circuit to ground.

# Product highlights and specifications



## VAM 3ED arc eliminator unit

- Thomson coil based shorting device
- 5 ms arc flash elimination time
- Re-usable
- Full self-supervision

## VAM 3TD trigger unit

- Energy stored in a capacitor bank
- Triggers VAM 3TD eliminator unit
- Controlled by VAM 1T
- Full self-supervision

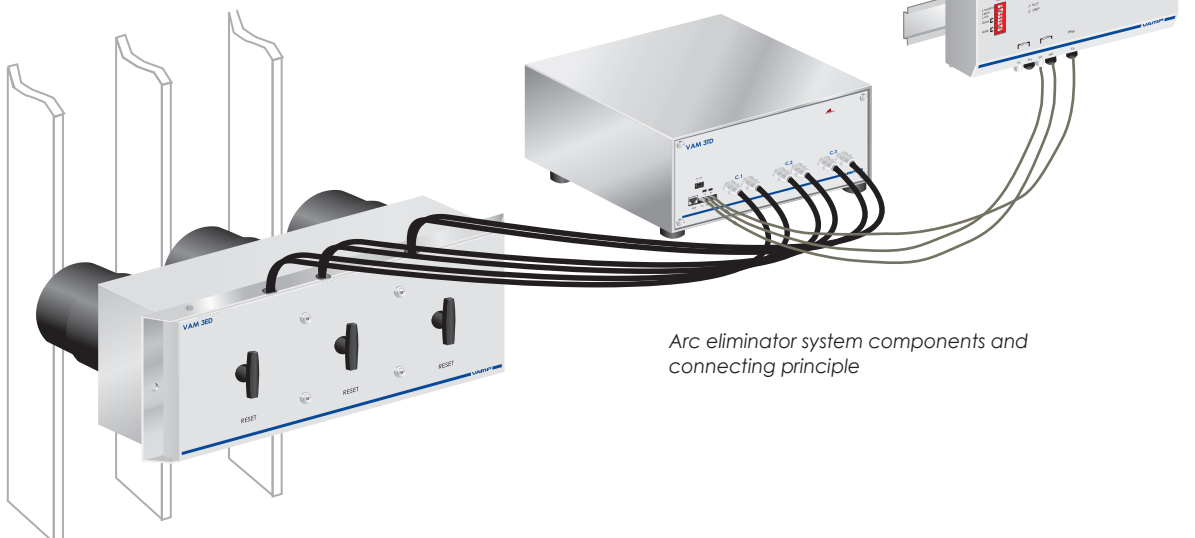
## VAM 1T control unit

- Interface between VAMP 221 system and VAM 3TD trigger unit
- supervised trip and communication fiber connection to VAM 3TD
- One trip and two alarm contacts
- Full self-supervision

## Technical specification

Rated voltage $U_n$	12 - 17.5 kV	Rated voltage $U_n$	400 V dc
Insulation level	BIL 38/95 kV	Current pulse $I_{peak}$	4000 A
Short circuit current	40 kA/1s	Operating voltage $U_{aux}$	24 V dc
Peak current	100 kA		
Operation time*	< 5 ms		

\* from arc detection to closing

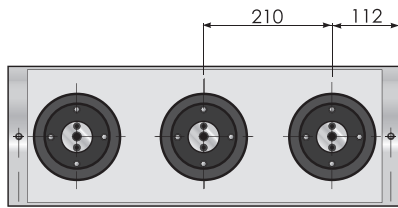
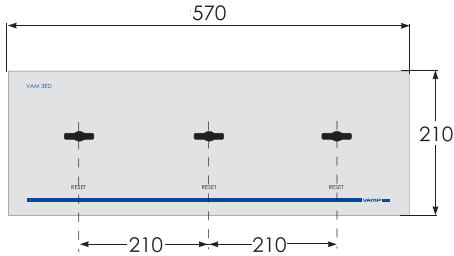


Arc eliminator system components and connecting principle

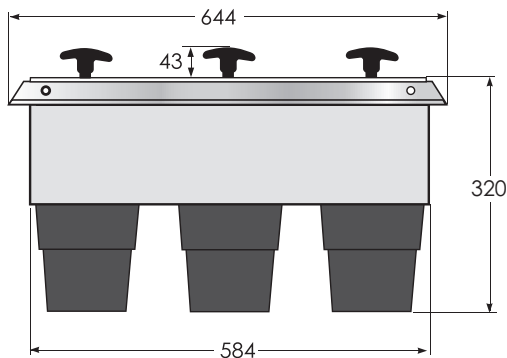
# Dimensional drawings

All dimensions in mm

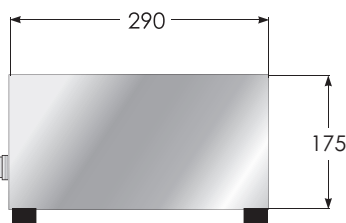
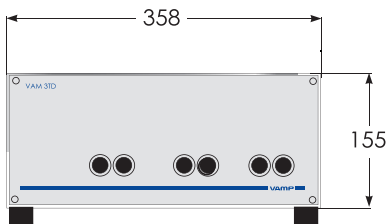
## VAM 3ED



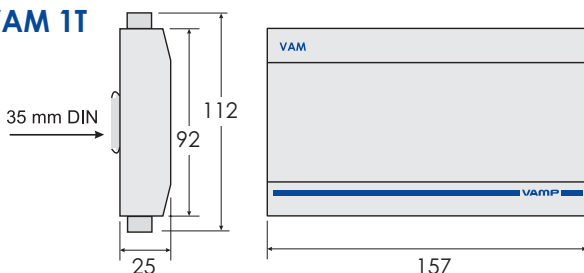
Top view



## VAM 3TD



## VAM 1T



## Order codes

Order Code	Explanation	Note
VAM 3ED	Arc eliminator unit	
VAM 3TD	Trigger unit	
VAM 1T	Control unit	
VAMP 221	-C* Cental unit	See separate brochure VB221
VAM 3L	-C* Fiber sensor I/O unit	3 fiber loops, 1 trip relay
VAM 3LX	-C* Fiber sensor I/O unit	3 fiber loops, 1 trip relay, adjustable sensitivity
VAM 4C	-C* Current I/O unit	3 current inputs, 1 trip relay
VAM 4CD	-C* Current I/O unit	3 current inputs, 1 trip relay, flush mounting
VAM 10L	-C* Point sensor I/O unit	10 sensor inputs, 1 trip relay
VAM 10LD	-C* Point sensor I/O unit	10 sensor inputs, 1 trip relay, flush mounting
VAM 12L	-C* Point sensor I/O unit	10 sensor inputs, 3 trip relays
VAM 12LD	-C* Point sensor I/O unit	10 sensor inputs, 3 trip relays, flush mounting
VAMP 4R	-C* Interface Unit	4 x NO, 4 x NC, 2 groups (use vx002 cable)
VA 1 DA-6	-C* Arc Sensor	Cable length 6m
VA 1 DA-20	-C* Arc Sensor	Cable length 20m
VA 1 DT-6	-C* Temperature Sensor	Cable length 6m
VA 1 DP-5	-C* Portable Arc Sensor	Cable length 5m
VA 1 EH-6	Arc Sensor (Pipe type)	Cable length 6m
VA 1 EH-20	Arc Sensor (Pipe type)	Cable length 20m
ARC-SLx	Fiber sensor, 16 000 lx, 2,5m	x = fiber lenght [m], blocking cover in both ends see note 1
ARC-SLmx	Fiber sensor, 8 000 lx	x = fiber lenght [m], see note 2
VX001-xx	Modular cable between VAMP 221-VAM & VAM-VAM	xx = Cable length [m], see note 3
VYX001	Surface Mounting Plate for Sensors	Z-shaped
VYX002	Surface Mounting Plate for Sensors	L-shaped
VYX076	Raising Frame	Height 40mm
VYX077	Raising Frame	Height 60mm
VYX223	Raising Frame	Height 100mm

\* -C = Conformal coating (option)

Note 1. Cable lengths 10, 15, 20, 25, 30 m

Note 2. Fibre lengths 1, 5, 10, 15, 20, 25, 30, 35, 40, 50 or 70 m

Note 3. Cable lengths 1, 3, 5, 7, 10, 15, 20, 25 & 30 m



With its headquarters in Finland, Vamp Ltd specializes in protection relays, arc flash protection and measuring and monitoring units for power systems.

Vamp's medium-voltage and sub-transmission protection relays are used in a number of applications, from overhead line feeders and substations to power plants and industrial power system. Their unique integrated arc flash fault protection functionality enhances the safety of both people and property and has made Vamp a leading brand in arc flash protection worldwide. All Vamp products meet the latest international standards and regulations.

Our success is based on competitive standard products, constant development by our designers possessing experience from three protection relay generations, our long-term partnerships, flexibility and 24 hour care of the customers.

Our organization has been audited and found to be in accordance with the requirements of the ISO 9001:2000 management system.

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