

# AQ 2000 – Arc quenching system

AQ 2000 arc quenching system extinguishes arcing faults within 6ms of arc initiation. The AQ 100 by Arcteq is a reliable and fast acting dedicated arc protection system providing excellent protection against arcing thermal effects by tripping the sourcing circuit breaker(s) almost instantly. When protecting against arcing fault pressure effects circuit breakers are sometimes not fast enough as the pressure wave builds up within the first 10ms of the fault. The AQ 2000 Arc Quenching System is developed to limit the total arcing time to less than 6ms and to minimize or even eliminate the arcing fault pressure damaging

effects. In most applications this will result in a calorie/cm<sup>2</sup> energy release of less than 1.

The AQ 2000 is utilized in conjunction with the AQ 100 arc protection system. In case of an arc fault the AQ 100 detects the fault, triggers the AQ 2000 arc quenching system and simultaneously trips the fault feeding circuit breaker(s). The AQ 2000 creates a three-phase to ground low-impedance parallel path for fault current to flow thus extinguishing the arc fault. The total arcing time is less than 6ms.

## AQ 2000 BENEFITS

### PERSONNEL SAFETY

- Reduce risk of injury during operations and maintenance
- Protection active even in open door situation
- Lower personal protection equipment (PPE) requirements, typically category zero

### EQUIPMENT SAFETY

- Minimized damage to equipment
- Less repair costs
- Shorter power outages

### APPLICABLE FOR NEW OR RETROFIT INSTALLATION

- Applicable for any type of new switchgear configuration
- Can be easily retrofitted to existing installations

### REDUCED TOTAL SWITCHGEAR AND BUILDING COST AND FOOTPRINT

- “Arc resistant” characteristics with metal clad switchgear designs
- Option to arc resistant switchgear applications
- No arc flash energy release beyond switchgear enclosure
- Minimized pressure effect

### DEPENDABILITY

- Continuous self-supervision of the system
- Alarm on any erroneous condition
- Meets with highest EMC immunity requirements

TOTAL ARCING TIME  
LIMITED TO LESS THAN 6MS



**ARCTEQ**<sup>®</sup>  
RELAYABLE POWER

## TECHNICAL DATA

### AQ 2000T – CAPACITIVE TRIGGER DEVICE

- ✓ Power supply: 24Vdc
- ✓ Rated voltage: 400Vdc
- ✓ Trigger current pulse: 4000A

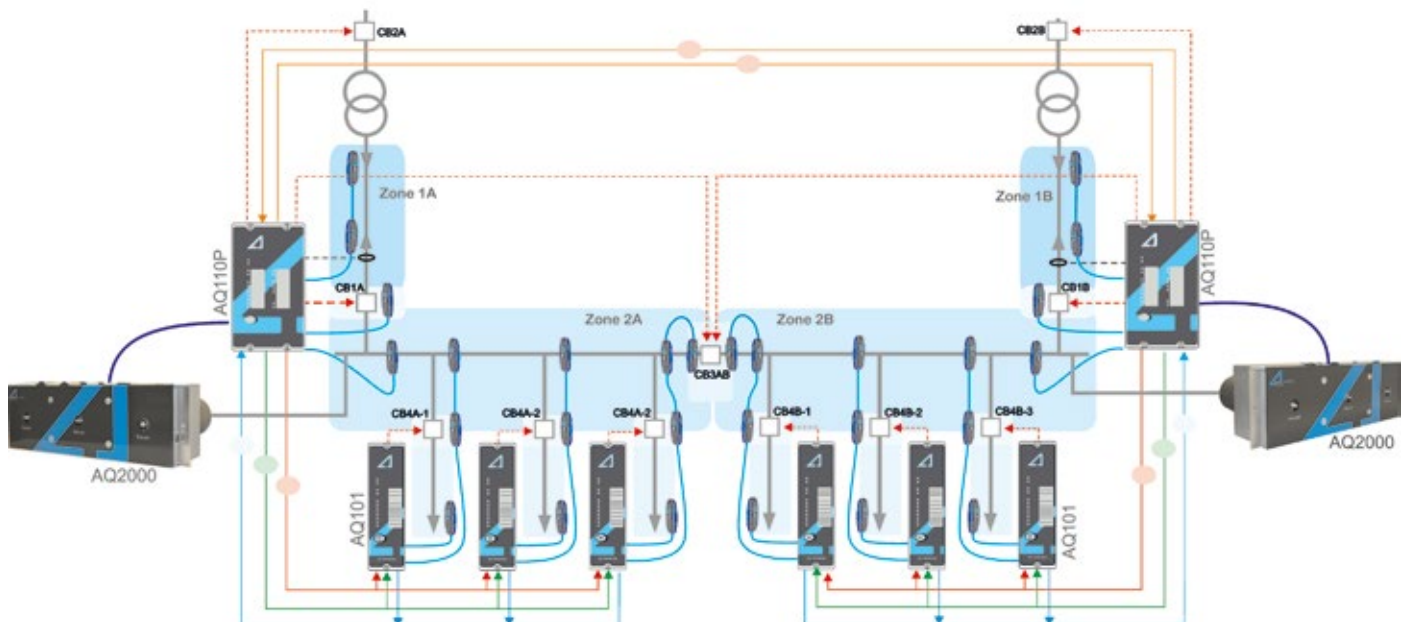
### AQ 2000Q – QUENCHING DEVICE

- ✓ Rated voltage: up to 17.5kV
- ✓ Short-circuit withstand: 40kA for 1 second
- ✓ BIL: 38/95kV
- ✓ Peak current: 100kA
- ✓ Electric life: 2 operations at 40kA, 100ms each
- ✓ Mechanical life: 12 operations
- ✓ Total system operation time 6ms\*



\*from arc detection to closing of quenching device

## APPLICATION EXAMPLE



- ✓ AQ 100 series arc protection is utilized for arc detection. AQ 2000T provides a high current trigger pulse for AQ 2000Q quenching device to operate and quench the arc within 6ms. Sourcing circuit breakers are tripped simultaneously.