

DISTRIBUTION SOLUTIONS

# ABB Ability™ Circuit Breaker Upgrade for MV

## VD4 Digitup - Enabling digital switchgear



Take advantage of using VD4 Digitup for making any medium voltage switchgear digital regardless of their age, design and brand.

VD4 Digitup is a core enabler to increase flexibility, efficiency, safety, productivity and reliability for plant operators and to lower cost of operation.

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Switchgear modernization  
with VD4 Digitup solution

### Benefits

#### Safety

- Reduced risk of electrical shock by substituting copper wires with fiber cables
- Sensors placed onboard the withdrawable breaker guarantee their inspection and maintenance while keeping the switchgear live
- Intrinsically safe electrical connection between primary and secondary power distribution

#### Reliability

- All information available in the communication network: analog measurements, switchgear status monitoring data
- Control and protection commands available on fiber optics
- All signals digital on the station and process level

#### Start-up efficiency

- Time reduced by 40 to 50% during the commissioning phase
- Minimum switchgear downtime
- Speed and flexibility increase system availability
- Full system test from the process IOs to protection, control and SCADA system off-site

#### Operations optimization

- Supervision of the exchanged data reduces the need for periodic testing
- Permanent supervision enables fast and precise actions in case of failures
- IEC 61850 testing and simulation features enable fast and safe isolation and testing of protection functions



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Roll-in replacement with  
relay onboard the breaker  
or the panel

### Solutions

VD4 Digitup allows implementing a truly digital switchgear easily and quickly even when the panel designs are not set for this application.

It is accomplished by using state-of-the-art, well proven components: vacuum breakers with onboard current and voltage sensors connected to Relion® protection and control relays enabling IEC 61850 digital communication.

The implementation of a IEC 61850 station and process bus enables the substitution of point-to-point copper connections between different components (e.g. instrument transformers, old fashion relays, etc.) and switchgear by means of a safe, standardized communication bus. The process bus enables real-time measurement signals and status information to be broadcasted throughout a substation without any complex wiring schemes.

VD4 Digitup can be provided as retrofit breakers used to replace phased out devices with latest production versions. They are mechanically and electrically engineered to adapt to the existing solution on site. ABB Service experts conduct site audits on the existing installations to assess the condition of the equipment, recommend the proper solution and support the right investment decision.

### Product variants

The switchgear modernization can be achieved in different way:

- Roll-in replacement
- Hard-bus retrofill with OneFit
- Cradle in cradle with ABB cassettes

All the solutions have the protection relay in the auxiliary compartment. The roll-in replacement can also be provided with the relay onboard in cases when the existing circuit breakers with integrated direct protection relays need to be replaced.

Upgrade of the protection and control functions requiring voltage signals that are not available in the panels, becomes possible.

### Options

- **TruckMaster** remote motorized racking
- **MySiteCare** monitoring and diagnostic
- **MyRemoteCare** cloud based services
- **Power Care** customer support agreement

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For more information please contact:



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