

MV switchgear / MCset

Reduce wear & tear, maximize Safety & Availability of your Electrical equipment



Your equipment needs regular check-ups in order to maintain its original level of performance. Moreover, to ensure the maintenance is conducted in the optimal way, it needs to be executed by skilled professionals. Schneider Electric offers Maintenance (Preventive and/or Predictive) solutions that fits the needs of your business.

To conduct these Preventive Maintenance Plans, our experienced and qualified Field Service Representatives are equipped with

1. original equipment spare parts and dedicated consumables,
2. proprietary softwares for an efficient, precise and reliable data management / reporting,
3. proprietary test equipments (calibrated) for Predictive maintenance when recommended by the equipment Maintenance Guide or FSR according to your equipment & industry characteristics

Recommended maintenance frequency of operations depends on 3 main criteria:

1: Equipment operating conditions

Manufacturer preventive maintenance operations must be carried out regularly from every 5 years if operating in normal conditions, up to 2 years if operation in a corrosive atmosphere.

(according to IEC 62271-1)	Normal operating conditions	Corrosive atmosphere
Ambient air temperature	<ul style="list-style-type: none"> • ≤ 40°C • ≤ 35°C, on average over 24h • ≥ -5°C 	
Environment	No dust, smoke, salt, corrosive or flammable gas and vapour (clean industrial air)	Pollution: SO ₂ = sulphur dioxide, H ₂ S = hydrogen sulphide.
Altitude	≤ 1000 m (above 1000 m, a derating coefficient will be applied)	
Humidity	<ul style="list-style-type: none"> • Average relative humidity over 24h < 95 %, • Average relative humidity over 1 month < 90 %, • Average vapour pressure over 24h < 2.2 kPa, • Average vapour pressure over 1 month < 1.8 kPa 	

> **Electrical equipment may only be maintained by qualified engineers**

Maintenance services, a part of a comprehensive range of services

Schneider Electric is helping you get the most of your equipment and installations, increasing performance and flexibility, while controlling aging infrastructures associated costs.



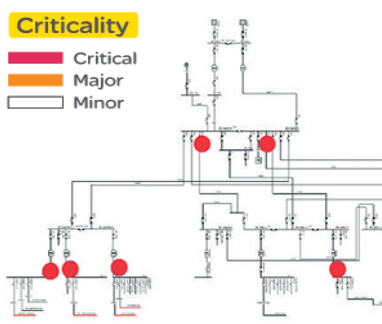
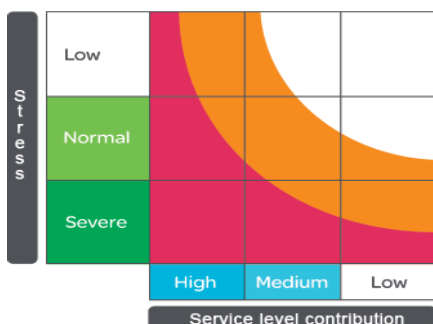
2: Number of operating cycles

LV/MV electrical equipment is warranted for electrical & mechanical endurance for a number of accumulated operations. When a device has exceeded the operating limits defined by manufacturer's characteristics, then an accurate diagnostic is recommended.

3: Equipment's level of Criticality

An electrical equipment assessment within the business context allows to identify the electrical distribution infrastructure criticality levels.

The stress level of each set of equipments is submitted and its contribution to the installation service level, both contribute to define its criticality and define the appropriate Maintenance Management Plan



MCset - MV switchgear

Main recommended activities	Shutdown		Frequency (1) / Performance Level									
	cubicle	switch-board	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Switchgear												
Inspection of general condition of the cubicle (front panel, control unit, box, frame)			L1	L1	L1	L1	L1	L1	L1	L1	L1	L1
Inspection of voltage transformer fuses (if needed replace 3 fuses same time)							L3					L3
Inspection of fuses feeder cubicles fitted with fused switches (replace 3 fuses if needed)	✓						L3					L3
Inspection of fuses feeder cubicles fitted with fused contactors (replace 3 fuses if needed)	✓						L3					L3
Removable devices												
Inspection of position contacts operation (racked-in / racked-out part, earthing switch, racked-out voltage transformer)		✓					L1					L1
Inspection of isolator switches (chalking, signs of heating)		✓					L1					L1
Grease rack-in connectors		✓					L1					L1
Control mechanisms (flap control, earthing switch and rack-out, voltage transformer control rods ...)												
Open / close the moving parts manually / electrically	✓		L1	L1	L1	L1	L1	L1	L1	L1	L1	L1
Open / close earthing switch manually		✓					L4					L4
Clean / grease flap (signs of corrosion, arcing) / locking system / earthing switch control		✓					L4					L4
Clean moving part guide rails	✓						L4					L4
Inspection / operate key operated interlocks (connection, disconnection, earthing switches)		✓					L3					L3
Inspection / operate rack-in inhibition mechanism	✓						L3					L3
Air Vents and insulating materials												
Clean (inside / outside)		✓					L3					L3
Power circuits												
Inspection of cables (chalking, signs of heating) /connection (tightening, fixing)		✓					L3					L3
Inspection of busbars (signs of heating, remove connection, polish / reassemble contact parts)		✓					L3					L3
Inspection of CT's / earthing switch (tightening, fixing)		✓					L3					L3
Low Voltage Auxiliary circuits												
Inspection of wire connections (tightening, fixing) / appearance of the insulating material		✓					L3					L3
Inspection of good contacts continuity to secure correct signalling		✓					L3					L3
Inspection of protection relay (tripping chain)		✓					L4					L4

(1) For normal operating conditions - L3 / L4 to be increased every 3 years in severe atmospheres (corrosive, naval, offshore) according to Manufacturer's after-sales services

Schneider Electric proprietary Predictive tools

ProDiag	✓						L4					L4
ProFusion	✓						L4					L4
ProCorona							L4					L4
IR Thermography (non proprietary tool)							L3					L3

Level of maintenance

- Level 1** Schneider Electric after-sales services or customer employee according to the manufacturer maintenance instruction
- Level 2** Schneider Electric after-sales services or certified customer employee according to the manufacturer maintenance instructions
- Level 3** Schneider Electric after-sales services or qualified customer technician using the tools and measurement/setting devices specified in the manufacturer maintenance instructions
- Level 4** Schneider Electric after-sales services only.

Spare Parts availability

Every piece of equipment has a level of risk associated with it. While you can minimise risks by choosing high-quality products and performing regular maintenance, risks can never be entirely removed. By having access to the right spare parts at the right time you can ensure that your equipment is returned to service in the shortest possible time, avoiding lost revenue and safeguarding your assets and business. Schneider Electric supplies original spare parts for both our current and past Electrical equipment product ranges.

Key recommended Spare Parts for :

- on site availability
- emergency delivery by Schneider Electric

- Auxiliary contact bloc
- Voltage transformer's fuse
- Relay
- LV Fuse

To know more click on: www.schneider-electric.com/electricaldistributionsservices

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