Schneider Electric

Statement of Work

Preventive Maintenance Service

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1.0 Executive Summary

The Schneider Electric Preventive Maintenance Program offers the best option to maintain the operational conditions of Prefabricated IT Modules, increase system uptime, meantime between failures (MTF), and contribute to maximum reliability in the customer's business.

Preventive Maintenance is based on periodic visits to check equipment, perform basic rectification activities, update software versions, and perform substitution of standard consumable elements.

Battery replacement is not included as part of the standard Maintenance Service Plan.

Remote Monitoring Service is available in conjunction with the Preventive Maintenance Program for remote monitoring of Prefabricated systems and early detection of incidents.

After each maintenance activity the client receives a report stating work performed, status of equipment, and improvement recommendations (operational reliability, safety, energy efficiency, regulatory aspects, etc.).

Preventive Maintenance activities are performed with no disruption to the business continuity of the client.

The Preventive Maintenance Service is performed during normal business hours. Upgrades to off-hours scheduling are available, please contact your Schneider Electric Representative for details.

2.0 Features & Benefits

Features	Benefits
Peace of Mind	One stop shop to support customer needs related to the Prefabricated solution and included equipment. Support performed by specialized Field Service Engineers to allow the customer to concentrate on core business activities.
Certified Service Personnel	Certified Field Service Engineers, specialized in Prefabricated products and associated technologies: electrical, UPS, cooling, fire protection systems, monitoring and management systems.
Proactive Maintenance	Assures system will perform to manufacturer's specifications. Assures Prefabricated structure is in correct operational state.
Preventive Maintenance Calendar with Flexible Scheduling Options	An activity calendar is supplied at the beginning of the maintenance period, scheduling is flexible to adapt to customer's varying business requirements.
Expenses included	Fixed cost – providing service budgeting stability: travel, labor and consumable parts included.
Environmental inspection	Prefabricated environment verification to proactively detect potential risks.
Site and Equipments Reports	Provides a detailed assessment after each maintenance visit including recommendations to proactively diagnose and prevent potential risks in the systems.
Reliability	Confirmation that the Prefabricated installation is functioning properly, allowing the maximum operational service uptime and business continuity.

3.0 Details of Service

The Preventive Maintenance Service provides Schneider Electric certified service personnel at the customer's location. A calendar indicating frequency and estimated dates of visits will be provided.

3.1 Prefabricated Module Structure

Frequency of preventive visits: 1 per year (yearly)

Applicable to: All Prefabricated IT Modules

Following is a description of the preventive maintenance activities associated to the Prefabricated Module Structure:

ISO and NON ISO Prefabricated Modules – Enclosure and ancillary elements	
Activities	**Description**
Environmental inspection	Inspection of external environmental Prefabricated Module conditions for proactive avoidance of undesired effects: water, sun, wind, smoke, airborne contaminants, flooding, etc. Inspection of internal Prefabricated Module environmental conditions to determine correct operational conditions of internal equipment, following manufacturer's recommendations. Environmental variables measured include temperature, relative humidity, airflow, air particle concentration and room cleaning status. Inspection of internal spaces of the Prefabricated Module to determine fully free space in the different areas, with no presence of obstacles in the evacuation areas, and no potential flammable materials to start or activate an internal fire.
Visual inspection	Visual inspection of Prefabricated Modules and Prefabricated installation site to determine potential structural or functional risk situations.
Preventive Maintenance tasks	Internal panels status check (walls, ceiling and floor). Silicone sealing status check. Check correct closing and adjustment of the doors (rubber sealing). Doors lock operability check. Anti-panic door lock check with bar handle operability. Cable trays and supports check. Check anchorages of electrical panels and other equipment on the walls. Check status of external paint (possible degradation), presence of rust and possible fissures. Check status of Roxtec and/or other cable and piping glands. Overpressure dumpers/valves status check. Check rack movement over their guides (if apply). Check labeling of main equipments and probes.
Documentation	Recommendations related to environmental and human activities associated with Prefabricated Module structure will be delivered to the customer to enhance lifecycle and usability.

3.2 Electrical Installation, Switchgear, UPS, ATS & PDU

Frequency of preventive visits: 1 per year (yearly)

Applicable to: All Prefabricated IT Modules including these systems

Following is a description of the preventive maintenance activities associated with Electrical installation, switchgear and PDU:

Electrical Installation, Switchgear & PDU Inspection	
Activities	**Description**
Environmental inspection	Determine that Prefabricated Module internal environmental conditions are adequate for operating conditions of the electrical systems and electrical elements.
Visual inspection	Visual inspection of Switchgear, electrical installation & PDU to verify that it is in good physical condition, properly connected and without presence of any anomalies: plastic deformation, smoke spot, elements hotter than normal, burning smell, etc. Visual inspection of UPS batteries to determine no presence of deformation, corrosion or acid leakages.
System operating conditions	Inspection of UPS and/or PDU event and alarm log, to determine abnormal situations in the power supply. Verification of transfer to on-battery operation and transfer to and from static bypass. Verification of parallel operation performance. For circuit breakers; confirm charge, close, trip and block close functions. For protective relays and other breaker control devices; verify relay trip output contacts.
Preventive Maintenance tasks	**Switchgear and electrical installation:** Switchgear function check: For draw-out type instrument transformers; test operation, alignment, penetration of withdrawal disconnect and correct operation of withdrawal mechanism. For circuit breakers; confirm charge, close, trip and block close functions. For protective relays and other breaker control devices; verify relay trip output contacts General cabling check to determine correct continuity and correct connection (good tightening) by thermographic picture analysis. Check general and emergency lighting elements. Check correct labeling of switchboard elements. Check supply voltage (phase-phase, phase-neutral, neutral-earth). Check racks earth connection (structure and doors). Check switchboards earth connection (panels and doors). Check for open holes in the switchboard. Check internal ventilation/temperature of switchboards.

Preventive Maintenance tasks	**Power Meters:** Check general physical condition and verify there is no apparent external damage Check that the voltages and current coming from the electrical source and being read by the power meter coincide. Confirm data can be downloaded from the power meter and corresponds with power values read. **UPS:** Check physical status of filter and other internal parts of the UPS. Ventilators rotation check (correct direction, strange noises, etc…) Check voltages and currents (input and output). Check Neutral-Earth voltage Inverter mode functionality check Check functionality in inverter mode if DC voltage is within specifications (if possible). Static switch functionality check (if possible). Determine batteries autonomy and remaining lifetime. Confirm temperature/ventilation conditions of batteries area are according to battery manufacturer's working specification. **ATS:** Check general physical condition and verify there is no apparent external damage Check voltages and currents (input and output). Check Neutral-Earth voltage. Check that transition functions from Diesel Generator source and UPS are operating properly.
Documentation	Check the presence of single line and multiple line electrical drawings as close as possible to the corresponding electrical panels. In the Prefabricated Preventive Maintenance report, there is a chapter for Electrical including graphical report with status and recommendations.

3.4 Cooling System

Frequency of preventive visits: 2 or 4 per year (semiannual or quarterly, depending on the country)

Applicable to: All Prefabricated IT Modules with DX Cooling system

Following is a description of the preventive maintenance activities associated to Cooling System:

Cooling System (indoor and outdoor units)	
Activities	**Descriptions**
Environmental inspection	Determine that Prefabricated Module internal environmental conditions are adequate for operating conditions of the cooling system.
Visual inspection	Visual inspection of indoor units of cooling system, piping and drainage elements to determine they are in the correct state, properly connected avoiding gas/water leakage, and without presence of any anomalies: deformation, presence of water drops, rust, frozen elements, filters extremely dirty, etc. Visual inspection of outdoor units of cooling system and piping to determine they are in the correct state, properly connected avoiding gas/water leakage, and without presence of any anomalies: deformation, impacts, rust, fan air exchange areas extremely dirty, etc.
System operating conditions	Inspection of Cooling system event and alarm log, to determine abnormal situations in the power supply or the ability to maintain temperature and/or humidity set-points. Verification of cooling system operation modes (Cooling, Reheat, Humidification, Dehumidification).
Preventive Maintenance tasks	Check/clean all filters present in indoor and outdoor units. Replacement of air filters if required. Check/clean outdoor unit coil. Verify main control voltages. Verify indoor and outdoor unit voltage and amperage. Refrigerant level check. Correct fan rotation check (direction, strange noises, etc.) Cooling gas pressure check (low and high pressure values) Determine concordance in temperature of set point with inlet/outlet indoor cooling unit elements (impulsions and return temperature). Check correct cabling and connections. Determine if there is any abnormal noise present in outdoor unit compressor and/or pump. Humidifier tank and resistor check. Condensation drains check (clean if needed). Bearing check and lubrication (if apply). Drive belts replacement (if apply). Replacement of humidifier steam cylinder (if apply).

Implement updates	Cooling system firmware and/or control software will be updated with new released versions.
Documentation	Check the presence of frigorific drawings in the Prefabricated Module. In the Prefabricated Preventive Maintenance report, there is a chapter for Cooling systems with a graphical report including status and recommendations.

3.4 Fire Protection System

Frequency of preventive visits: 4 per year (quarterly)

Final number of visit adapted to country local regulation

Applicable to: All Prefabricated IT Modules

Following is a description of the preventive maintenance activities associated to Fire Protection System:

Fire Detection and Extinguishing System	
Activities	**Description**
Visual inspection	Visual inspection of fire panels, smoke detectors, extinguishing agent cylinders, pipes and ancillary elements to verify they are in the correct state, properly connected, and without presence of any anomalies: deformation, rust, gas pipes not correctly anchored to wall panels.
System operating conditions	Inspection of Fire panel event and alarm log, to determine abnormal situations in the power supply or the ability to activate fire extinguishing system. Simulation of smoke presence in Prefab Module (special smoke spry), activating the fire protection system through all the smoke detectors. Manual activate/stop of the fire protection system through internal and/or external push buttons.
Preventive Maintenance tasks	Check the aspirating early detection system VESDA (if apply). Check fire panel batteries and lifetime. Fire panel detection system check. Extinction system check (with solenoid element removed) Light/Acoustic signals check. Check operational status of push buttons (activation and stop). Push buttons labeling check. Overpressure valves functionality check. Extinguishing cylinders and associated elements lifetime check. Extinguishing cylinders gas pressure check to confirm presence of enough extinguishing agent and no presence of leakage.
Implement updates	Fire panel and VESDA system (if apply) firmware and/or control software will be updated with new released versions.
Documentation	Check the presence of Fire Protection System drawings. In the Prefabricated Preventive Maintenance report, a chapter for Fire Protection System is included with a report including status and recommendations.

3.5 Monitoring & Management System:

Frequency of preventive visits: 1 per year (yearly)

Applicable to: All

Prefabricated IT Modules including these systems

Following is a description of the preventive maintenance activities associated to Monitoring and Management Systems:

Monitoring and Management System	
Activities	**Description**
Visual inspection	Visual inspection of central unit of the Monitoring System, sensor, probes and dry contacts verify they are in the correct state, properly connected, and without presence of any anomalies.
System operating conditions	Determine that the Monitoring System is up and running, collecting information from the monitored equipment, sensors and probes. Determine that Monitoring System has active connection with RMS (Remote Monitoring Service) and is reporting all the collected information in the Prefabricated Module. Inspection of the event and alarm log supplied by the monitored equipment and historically stored in the Monitoring System to determine any abnormal situations in the operational activity of the Prefabricated Module as a holistic system.
Preventive Maintenance tasks	Simulate alarms to confirm that the Monitoring System is receiving and reporting to RMS and customer's staff (email/SMS/BMS). Verify status of T/H sensors, water leakage detector, door open sensor and other sensors, including the cabling. Sensors cleaning. Confirm that values reported by sensors correspond with the reality. Check operation of dry contacts alarms (if the customer agrees). Monitoring System memory backup. Check internal ventilation/temperature of Monitoring System central unit.
Implement updates	Monitoring System firmware will be updated with new released versions.
Documentation	Check the presence of Monitoring System electrical drawings and sensors location drawing in the Prefab Module. In the Prefab Preventive Maintenance report, a chapter for Monitoring and Management Systems is included, with a graphical report including status and recommendations.

3.6 Security and Access Control System

Frequency of preventive visits: 1 per year (yearly)

Applicable to: All types of IT Modules

Following is a description of the preventive maintenance activities associated to Security and Access Control System:

Security and Access Control System	
Activities	**Description**
Visual inspection	Visual inspection of Access Control System (fingerprint scanner, RFI reader, etc.) to verify it is in the correct state, properly connected, and without presence of any anomalies. Visual inspection of CCTV cameras to verify they are in the correct state, properly connected, and without presence of any anomalies.
System operating conditions	Determine that the Access Control System is up and running, verify the data base of authorized persons to access the Prefabricated Module is accessible and allowing the door to open for authorized personnel. Determine that CCTV cameras are recording video and can be remotely viewed and/or stored.
Preventive Maintenance tasks	Check correct operation of the system. Check cleaning and adjustment of the cameras. Check correct operation of the electric door locks.
Implement updates	Access Control System firmware will be updated with new released versions.
Documentation	In the Prefabricated Preventive Maintenance report, a chapter for Security and Access Control System is included with a graphical report showing status and recommendations.

4.0 Assumptions

The successful performance of the tasks defined in this statement of work (SOW) is based on the following key assumptions, which are agreed to by.

- The Preventive Maintenance Service can be purchased as a stand-alone service or in conjunction with any other service agreement. Additional visits can be purchased for the same system if required to enhance availability or satisfy local requirements.
- All scheduled services performed on-site by Schneider Electric will be executed during business hours, on a weekly basis Monday to Friday* from 8am to 5pm weekly, local time. Exceptions are holidays.
- The customer is responsible to provide any ladders, staging, roof hatches, or catwalks necessary for service requirements.

The following items are **not included in the scope** of this service:

- Repair of damage to the unit due to abuse, misuse, lack of maintenance or other damage caused by outside forces. Will be quoted to the client is a separate offer the cost of damage repair.
- Maintenance or repair of equipment not supplied originally in the Prefabricated Module
- Any specialized testing or commissioning.

**Sunday to Thursday in Arab countries*

5.0 Scope of Responsibility

The items stated here are responsibilities of both Schneider Electric and the customer.

5.1 Schneider Electric Responsibilities

- Meet the customer's service schedule date.
- Perform all of the Maintenance service tasks.
- Meet manufacturer and customer safety requirements.
- Submit Site and Maintenance Forms to the customer.
- Ensure all action items are completed.
- Conform to local health and safety regulations.
- Inform and provide recommendations to the customer about any action items not included in the SOW (Statement of Work).

5.2 Customer Responsibilities

- Provide dates and times when the scheduled work can be performed.
- Facilitate site access for Schneider Electric service personnel.
- Notify Schneider Electric personnel of any security clearance requirements in advance of arrival.
- Notify Schneider Electric personnel of any safety training and safety equipment requirements.
- Provide an on-site point of contact.
- Ensure safety plan is in place prior to intervention.
- Sign the completed Maintenance forms.

6.0 Project Work Details

The information stated here are the details of the project performed by Schneider Electric for the customer with specifications on date, time, and place.

- **Schedule/Calendar**
  Actual set dates will be discussed and approved between Schneider Electric and the customer.

- **Location**
  The location of this project will be on-site. It will be discussed and approved by Schneider Electric and the customer.

- **Completion Criteria**
  Schneider Electric is expected to have finished its written duties when any of the following occurs:
  1. Completes all the tasks included in this SOW.
  2. This project and SOW are terminated for other reasons, within the Customer Agreement.

7.0 Terms and Conditions

Schneider Electric standard Terms and Conditions apply.