



MAINTENANCE IN DOOR ACCESS SYSTEM

Maintenance is compulsory to ensure the smooth running of a system as according to its original functions and specifications. Even the best equipments require maintenance to function properly over time.

For Door Access System providers, there are two common types of maintenance to be offered to clients.

1. Preventive Maintenance
2. Corrective Maintenance

The former is to check that the system is running smoothly and the latter is to rectify the problems found during preventive maintenance or at other times. Read more about maintenance here.



PREVENTIVE MAINTENANCE

What – Preventive maintenance is the routine servicing of a door access system carried out on a scheduled basis to ensure that the system is running smoothly. This maintenance is a thorough check to prove that all components in the system are working as intended in accordance with the specifications and maintain the good performance as it was originally installed and commissioned. The regular and scheduled inspection is to verify that there are no changes in the environment or area that can impact the system's performance.

When – A representative of the maintenance company shall pay a visit to the signed up premises and deliver the preventive maintenance during or before the twelfth calendar month following the month of commissioning or of the previous preventive maintenance visit. The representative must explain to the clients that they also need to take part in maintaining the mechanical components in an access control system such as locks and hinges more frequently than once per year. By advising the client of what to do in order to maintain a good running system, the installed system could be maintained for a long period of time.

How – A preventive maintenance visit is not just a routine visit. It is imperative that a system provider keeps the historical data and the details of any work performed and any faults that have been found in the signed up premises. This include operation by the client and any faults generated by the client in addition to faults attributed to the equipments. In the first instance the system and all of the individual components have been designed with a specific life span or expectancy.

- As a minimum the tasks can include:
- System installation
- System use
- System components

Why – Regular maintenance is highly required even when it involves the best systems. This is because of the demands put on the system by the users, and this is more apparent if it operates in a difficult environment. Preventive maintenance and service includes both testing and inspection but can only be truly effective if the installation company is both trustworthy, competent and the engineers are trained correctly.

Preventive Maintenance To Do List

System installation

Check all equipments and components against the original specifications and system record. The satisfactory operation of all components should be made.

- Confirm that there are NO CHANGES in the environment that could influence the life of any of the system parts
- Ensure that there is NO UNDUE WEAR attributed to any of the system components that will cause premature failure or rapid deterioration
- OBSERVE DEVIATIONS from the system record or any unauthorized modifications that may have been made.
- Don't forget to record any observations on the system record.

System use

- Verify that the system use is being unchanged from the original specification.
- Confirm that the building or area has not been developed in anyway that can now compromise the system.
- Ensure that the perimeter protection devices remain secure and that no additional access routes exists.

System components

Perform a full check of all of the components and equipments, which include:

- **Perimeter protection**

Include all locking devices and hardware associated with the barriers and doors plus ancillary equipments. This is where the majority of faults occur because of the moving parts involved in their operation. Alignment should be checked and any parts requiring lubrication should be serviced.

- **Tokens and readers**

Clean and service all tokens and readers. Then, check for the validating of authorized tokens correctly and the rejection of others. Check on keys on keypads to make sure that they must all function properly. Non-contact readers must have the range proved and batteries fitted appropriately. Voltage supplied to readers should be confirmed as satisfactory and all the results must be recorded in log records.

- **Controllers and power supplies**

Take readings for the output voltage and current loadings and prove the mains supply and its physical route have not been modified since the original installation. For power supplies with back-up batteries these should be proved to support the system if the mains is disconnected. The charging voltage is to be checked and the batteries changed if any weakness is found and for sealed lead-acid batteries this is to be a maximum of five years. It is difficult to generalize on the function of controllers but they should be checked for off-line or any degraded

mode of operation and the log viewed for any working problems during the life of the system. Automatic functions that are not normally used and may have been rarely employed in the system life should be proved.

- **Cabling**

Faults are usually attributed more to terminations and jointing or flexible connections and door loops than to the cable. Circuit measurements can be taken and compared against those logged at the time of the original installation and those taken at subsequent visits. Containments are to be checked for unauthorized modifications and screens/braids for integrity. If any suspicions of damage to any cables exist the insulation resistance can be checked against the original data.

During the visit the service engineer should assess the area that such hardware is operating in to ensure that the following are not creating problems:

- Temperature
- Humidity
- Corrosion
- Vibration
- Dust and other contamination
- Physical abuse

The results of the inspection are to be entered on a maintenance visit record along with the signature of the client or representative at the end of the visit. Don't forget to give a copy to the client.

Keep historical record with the date of every visit, faults found and action taken and keep all information for at least 24 months after the inspection.



CORRECTIVE MAINTENANCE

What – Corrective maintenance is the emergency servicing in response to the development of a fault. This maintenance is normally unscheduled and will require logical reasoning and good organization for an efficient troubleshooting. It is vital that the engineer can understand the circuits in which they are working on and how these circuits function to ensure smooth running for the system.

When – On top of corrective maintenance during emergencies, it can also be performed when a fault is found during a preventive maintenance visit. This is possible as with many systems, the engineer can be guided by the control log or displays that will remind or alert them of malfunctions. In layman's terms, corrective maintenance can be done when (a) an error occurs and troubleshooting must be done or (b) an error is discovered during servicing.

Why – Corrective maintenance is necessary as most devices incorporate semi-conductors, diodes, transistors and integrated circuits, which in principle are reliable but will always have a small tolerance for malfunctions as they are manufactured in large volumes. Furthermore, corrective maintenance must also be performed to retain the future maintainability and service of the devices as well as to retain their market potential so that improvements in reliability can be gained.

Corrective Maintenance To-Do List

It still remains that problems occur even with well-designed systems and specifying good quality equipment. These time-honoured steps can be taken to smoothly establish the perspective of dealing with that occur with any system:

- Understand the characteristics of the equipment and system that are being worked on
- Understand how the equipment is supposed to operate
- Research the symptoms that give indication of incorrect operation
- Determine the form of failure that is the cause of these symptoms
- Isolate the problem by breaking the system down into parts and eliminating the non-troublesome parts
- Rectify the fault
- Verify that the system once again functions as intended and prove that the correct measures have been taken and that no further problems are in existence
- Record the date and time of receipt of each request for emergency service, together with the date and time of completion of corrective maintenance and the action carried out.
- There will be times when it is not possible to cure a fault immediately. In the event that a temporary disconnection has to be made, this must be recorded. The reason for the disconnection, the date and time of disconnection and of subsequent reconnection must be given.