ASSA ABLOY ES8100 V-Lock frequently asked questions

Contents

Introduction

Since the successful release of the ASSA ABLOY ES8100 V-Lock, a small number of installation scenarios warrant some additional information for our customers.

The ASSA ABLOY ES8100 V-Lock presents a number of feature improvements over its Lockwood/Trimec predecessor, the ES8000, including a higher pre-load rating of 100kg, Door Position Monitoring, integrated LED lock status and diagnostics visual indication, increased door misalignment correction from 7mm to 12mm, an IP53 rating for external door applications and simple, one-step, PTO/PTL onsite configuration.

As such, please familiarise yourself with the ES8100 Instruction Manual as installation and programming procedures are different to the previous ES8000 V-Lock and also refer to the below FAQ section for some more specific assistance.

Diagnostic LED Indicator Lights:

The onboard visual Lock Status Indicator LED (Red/Green) also performs diagnostic functions as the lock continuously monitors its status and that of its environment. Regardless of the Lock Status LED setting, On or Off, the Diagnostics indicators will always operate.

If any diagnostics condition exists, the lock status indicators (Red/Green) will not be shown until the diagnostics conditions are cleared. If there is more than one diagnostic condition active, diagnostic indications will alternate between any active conditions, every 10 seconds.

The below table is shown in the Installation Instructions provided with the product and available for download on the product web page, ES8100-V-Lock | ASSA ABLOY

Indicator LED	Fault	Required action
Slow flashing yellow	Voltage drop under load	Measure voltage drop at lock while locking under load. Voltage should remain stable under load.
Blue	Lock jam	Check for strike plate alignment or obstructions. Check door operation and side loading is not excessive.
Purple (solid or flashing)	Motor over current	
Orange	Over voltage	Measure voltage at lock. Requirement 11 - 26V.
Yellow	Under voltage or extreme over voltage	
Fast flashing red	2 wire unlocking time-out	Release side load from door to allow bolt to unlock under spring pressure.
Slow flashing blue	Under temperature	Check environmental conditions. Requirement -10 to 55°C.
Slow flashing red	Over temperature	
Slow flashing red and blue	System fault warning	The lock approaching end of life - replace lock.
Fast flashing red and blue	Critical system fault	PtL locks will move to non-powered state - replace lock.

Note:
A Slow flashing LED flashes every 2.5 seconds
A Fast flashing LED flashes every 0.5 seconds

Please see below for more detail on some of the Indicator LED scenarios, what they normally represent and how to diagnose and correct the issue.

Slow flashing Yellow light:

This is an indication showing that the input voltage that is measured at the lock (at the RED and BLACK wires of the lock cable) has dropped below the required minimum voltage while the lock is driving the bolt into the locked position.

The minimum limits are 21.0VDC @ 24V supply and 10.8VDC @ 12V supply or a 15% voltage drop at any input voltage.

When this fault indication is seen, the lock will still operate in most cases but will have reduced performance and the output power available at the locking bolt might be reduced.

There are several reasons that this indication might be shown:

- The power supply used is incapable of supplying the required power to reliably drive the lock. If the output of the supply is below 12Watts, per lock, then this fault indication might be seen.
- The power supply is used to drive several locks together at the same time and has insufficient power to do so.
- The cabling between the lock and power supply is insufficient and has a significant voltage drop, either an incorrect gauge wire is used, or the length of the cable is too long for the wire gauge used. Please refer to the cable Gauge/Length table in the supplied Installation Guide and User Manual. The Manual may also be downloaded from the product web page.

If a flashing yellow indication is seen, the following can be done to troubleshoot the problem:

- Confirm that the power supply used can deliver at least 12W of power to the lock, per lock, if the same power supply is used to drive two locks, then its output power requirement is doubled (24W).
- For advanced diagnostics;
    - Use a volt meter to measure the voltage between the **RED** and **BLACK** wires of the lock. This must be measured at the wiring loom supplied with the lock.
    - While measuring the voltage, send a control signal to the lock to initiate the locking cycle (this will also require a strike plate to be placed in front of the lock in addition to the control signal being sent).
    - If the measured voltage drops below 21.0V (if powered by a 24VDC supply) or below 10.8V (if powered by a 12VDC supply) then this is an indication that either the power supply is insufficient or the cabling has a significant voltage drop.
    - If the fault disappears with the lock removed from the door frame and re-appears when the lock is re-installed, there may be additional load on the bolt, due to a weather seal or door closer mechanism which requires the bolt to act with greater force. This requires additional power being supplied to the lock.

Refer to the cable gauge requirement table provided in the ES8100 Installation Instructions for suggested cable sizes.

The fault indication will automatically clear after the lock cycles within its normal limits.

Solid Blue light:

A solid blue fault light indicates that the bolt is experiencing a jam condition, normally when trying to move into the locked state.

- Check that there are no obstructions in the Strike plate which would prevent the bolt from engaging fully into the plate.
- Check that the lock and Strike plate are properly aligned.
- Check that side loading on the bolt is not excessive.

Purple light (solid or flashing):

A Purple fault light indicates that the lock's motor is experiencing an over-current condition. This is normally due to the bolt experiencing a jam or excessive load condition.

- Check that there are no obstructions in the Strike plate which would prevent the bolt from engaging fully into the plate.
- Check that the lock and Strike plate are properly aligned.
- Check that side loading on the bolt is not excessive.
- In some rare conditions where excessive load exists from door closers, weather seals or air pressure, a 24 Watt per lock power supply should be considered.

Solid Orange light:

A solid orange fault light indicates that the voltage to the lock is higher than the recommended voltage. Confirm that the voltage measured at the power supply does not exceed 26V.

The fault indication will automatically clear once the voltage is restored to the correct operating level.

Solid Yellow light:

A solid yellow fault light is an indication that the voltage to the lock has significantly dropped below the recommended input voltage. This fault will be active if the lock voltage drops under 10.8V. Use a voltmeter and measure the input voltage to the lock at the lock cable assembly, if the measured voltage is under 10.8V then check all wiring and/or the power supply.

A solid yellow LED may also indicate an extremely high voltage being applied to the lock. The fault will be active if the voltage is above 34VDC.

The fault indication will automatically clear once the voltage is restored to the correct operating level.

Fast flashing Red light:

A fast flashing Red LED condition should only occur when the lock is configured in 2-Wire mode and indicates that the lock blocking mechanism has unlocked but the bolt has not sprung back to the unlocked position. This may be due to excessive side loads or an obstruction.

This fault indication will automatically clear after the bolt reaches the fully unlocked position.

Note: 2-Wire operation is only possible in Fail Safe (PTL) mode.

Slow flashing Blue light:

A slow flashing blue fault light indicates that the ambient temperature of the lock's environment is too low. The operating temperature range of the ES8100 is -10 to +55 degrees Celsius.

Slow flashing Red light:

A slow flashing red fault light indicates that the ambient temperature of the lock's environment is too high. The operating temperature range of the ES8100 is -10 to +55 degrees Celsius.

Fast flashing Purple and Yellow light:

A fast flashing Purple and Yellow light will correspond with the lock moving itself into the Unlocked position, where it will remain. The condition can be reset by removing power from the lock for a minimum of 2 minutes.

This condition normally represents an issue with insufficient power being supplied to the lock but in rare circumstances, may also indicate an internal problem within the lock. The simplest way to determine the cause of this condition is to test the lock directly on a 12V battery. If the lock operates correctly when connected to a battery, the cause of the condition will be due to the installation and the installer should follow recommendations made for either Solid or Flashing Yellow lights, in this document. If the lock continues to flash Purple and Yellow and move itself permanently into the Unlocked position, return the lock for replacement.

Fast/Slow alternating Red and Blue light:

When the lock identifies a system error, the slow flashing red and blue light warns the user of the fault but the lock will continue to operate as long as it's able to. This error is determined by internal diagnostics and is not related to the number of lock operations or length of time.

Should the system failure deteriorate further and reach a critical level, the flashing rate will increase to a fast flash and a lock configured in PTL mode will move to the Unlocked state, where it will stay.

Retrofitting an ES8100 V-Lock into an ES8000 V-Lock location

As per the product Datasheet and Web Page, the ES8100 V-Lock body and faceplate retain the original footprint to the previous ES8000 V-Lock and is therefore a direct retrofit if replacing an ES8000 V-Lock.

However, to increase door misalignment correction, the ES8100 Strike Plate is 3mm wider than the ES8000, with the lock operating magnet also located in a different position on the plate. Therefore, the ES8000 Strike Plate cannot be used with the ES8100 V-Lock.

To enable the full door misalignment correction improvement on the ES8100, we recommend that the ES8100 Strike Plate be utilised in retrofit applications. If this is not possible, an ES8100 Retrofit Strike Plate is available, **208100-004**, for use in this scenario. The 208100-004 Retrofit Strike Plate

has the same dimensions as the original ES8000 Strike Plate and is a direct replacement, including mounting holes.

Please note that if using the 208100-004 Retrofit Strike Plate, door misalignment correction is reduced from 12mm total to 7mm total and the lock also operates under reduced maximum locking and unlocking loads.