

# PXL-500/PXL-510: Firmware v8.4.30

## 1.0 PXL-500/PXL-510 Firmware v8.4.30

PXL-500/PXL-510 Firmware v8.4.30 corrects two problems.

1. A sporadic controller/A-Open modem initialization issue was corrected. This problem was determined to be an incompatibility between PXL-500/510 controllers and A-Open modems of specific firmware revisions. This problem would only occur when a modem is connected to the RS-232 communication port of the controller and the controller's power is cycled OFF and ON, requiring reinitialization of the modem. The modem would not always accept the reinitialization command from the controller. To accommodate modems with this problem, the controller firmware now handles modem initialization in a different manner, ensuring modem initialization is completed.
2. A relock timing issue between First Person In (FPI) and Automatic Unlock/Lock (AUL) was corrected. This problem would appear under the following conditions:
  - Either the controller's FPI delay value or its AUL time zone was changed
  - While the controller was in the unlock period of its original AUL time zone

Under these conditions, the controller would not lock the door at the stop time of the controller's AUL time zone. The firmware has been changed to enforce locking the door at the end of the new AUL time zone.

PXL-500/PXL-510 Firmware v8.4.30 makes two improvements, one basic and one extensive set of improvements.

The basic improvement is that a Request to Exit (RTE) logic change has been made to increase door security. Originally, if an RTE unlock was issued by a controller, that door lock would remain unlocked until the unlock time expires, regardless of the number of times the door was opened and closed during the unlock time. The firmware has been changed so that if a controller issues an RTE unlock, the door lock will remain unlocked until either the door open time expires (which means no one exited the door) or the door is opened and closed ONCE (allowing one person entrance or exit).

The extensive set of improvements are in regard to the interaction of all the various forms of door unlock/lock commands. Since many of the door unlock/lock commands were added over an extended period of time, these commands did not interact as well as they could have. This firmware revision (in conjunction with Doors software v4.30) redefines the interaction of door unlock/lock commands and adds new features which minimizes conflicts and adds flexibility. A summary of these changes is provided in Section 5 beginning on page 3 of this document.

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## 2.0 Application

Firmware release 8.4.30 (PROM v8.4.30 and PIC v2.09) can only be used in PXL-500/PXL-510 controllers. The leading '8' digit in the release number indicates that this release is for the PXL-500/PXL-510.

## 3.0 Compatibility

- PROM 8.4.30 and PIC v2.08 are interconnected and both must be installed on a controller for proper operation.
- Firmware release 8.4.30 and Doors v4.30 must be used together to enable all the new features offered by this firmware release.
- An SB-593 is compatible with both a PXL-500/PXL-510 and a PXL-250 (the extra row of connector pins on the SB-593 will “hang” over the PXL-250’s mounting holes).
- A PXL-500/PXL-510 can be added to any existing PXL-250 network and it will function just like a PXL-250. The PXL-500/PXL-510 has additional functionality in terms of card capacity and other features. If PXL-500s/PXL-510s are added to an existing PXL-250 network and the new features will be used (such as Temp Cards), then a PXL-500/PXL-510 must be installed as the master and any controller location that will use the function must also have a PXL-500/PXL-510 in place.
- If Alarm Control integration with a NetworX NX-8E alarm panel will be used, a PXL-510 **MUST** be used as the master. This is true for either a PXL-250 network, a PXL-500 network, or a mixed PXL-250/PXL-500 network. In a PXL-250 or a mixed network, any doors participating in alarm control must use a PXL-500/PXL-510.
- When implementing a PXL-500 system that will also incorporate telephone entry (EntraGuard Gold), the telephone entry unit is no longer required to be the master. PXL-250/EntraGuard mixed systems still require an EntraGuard as master.

*NOTE: For additional compatibility information, see the Compatibility Guide - Series 3 (P/N 01876-001).*

## 4.0 Known Issues

1. Because of improvements made in the RS-485 circuitry, for network optimization R45 (2.2K) resistors **MUST** be removed from existing PXL-250s when adding a PXL-500/PXL-510. For instructions on how to test for, locate, and remove the R45 (2.2K) resistor from a PXL-250, refer to the R45 (2.2K) Resistor Removal Application Note (P/N 01736-001) included in the PXL-500/PXL-510 box or at [www.kerisys.com](http://www.kerisys.com).

## 5.0 Door Unlock/Lock Command Summary

### 5.1 AUTOMATIC UNLOCK/LOCK (AUL)

AUL allows an operator to use *Doors* software to configure doors to be automatically locked and unlocked per the hours defined in a time zone. This feature is applied to doors individually in the Setup > System > Doors menu. A pull-down list allows the operator to select the applicable time zone. If a door's AUL time zone is set to Never that door will not automatically unlock/lock.

For temporary, manual control, the Operate > Doors window now provides commands that allow you to override the current AUL setting for individual doors: Suspend and Restore.

#### Suspend affects AUL in these ways.

- 1) Suspending a door's AUL function manually prevents the door from following its AUL time zone.
- 2) If a door is within its AUL time zone (the door is unlocked) and you Suspend AUL, the door is locked and will not follow the AUL time zone until manually Restored.
- 3) If a door is outside of its AUL time zone (the door is locked) and you Suspend AUL, the door remains locked and will not follow the AUL time zone until manually Restored.

#### Restore affects AUL in these ways.

- 1) Restoring a door's AUL function allows the door to follow its AUL time zone.
- 2) If a door is within its AUL time zone (the door should be unlocked) and you Restore AUL, the door is unlocked and continue to operate per its AUL time zone.
- 3) If a door is outside of its AUL time zone (the door is locked) and you Restore AUL, the door remains locked, but will unlock per its AUL time zone and continue operating per its AUL time zone.

#### 5.1.1 Manual Door Unlock/Lock versus Suspend/Restore

If an operator manually changes a door's state to that opposite of the door's AUL state (i.e. locked to unlocked or unlocked to locked), *Doors* will caution the operator that it may be advisable to Suspend the door's AUL schedule. The difference is that with a manual state change, the door will return to its AUL state when the AUL time zone boundary is reached, and will continue to operate per the AUL settings. If the AUL is Suspended, the door will follow the operator's manual commands until the operator Restores the door. This can be for hours, days, weeks, indefinitely.

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### 5.1.2 Current AUL State

The Setup > System > Controller Status window has a column, Auto Unlock/Lock Status, that displays the current AUL state of all doors/controllers. This is the quickest way to determine which doors are in the Suspended state.

#### NOTES:

*The AUL time zone takes precedence over the following commands.*

- *Manual Unlock/Lock*

*The AUL time zone is overridden by the following commands.*

- *Global Unlock*
- *Global Lock*
- *Continuous Request to Exit (CRTE)*

### 5.2 Global Unlock

Global Unlock allows an operator to define a controller input that, when set, automatically unlocks all doors on all controllers on the access control network. This input is specified as the Global Unlock/Auxiliary RTE input on the master controller. If the input is open, Global Unlock is inactive; when the input is closed, Global Unlock is activated.

#### 5.2.1 Global Unlock Versus AUL

Global Unlock operates by Suspending the AUL for all doors. Then, while the Global Unlock input is active, doors that are locked per their AUL time zone configuration will be unlocked. When Global Unlock becomes inactive, all doors that should be locked per their AUL time zone configuration will be locked.

#### 5.2.2 Current Global Unlock State

The Setup > System > Controller Status window has a column, Auto Unlock/Lock Status, that displays the current state of all doors/controllers. If a Global Unlock is active, all controllers will show AUL Suspended/GUE Unlocked.

#### NOTES:

- *Global Unlock takes precedence over ALL other lock or unlock commands.*
- *Any attempts to Restore the AUL for any door while Global Lock is active will be ignored by the master controller.*
- *Global Unlock and CRTE are mutually exclusive features for the master controller ONLY; since these features share the same input, you can only enable one feature or the other, not both.*

## 5.3 Global Lock

Global Lock is a new feature in Doors. It is found in the Setup > System > System Options > Network Master Parameters menu option. Global Lock allows an operator to designate a controller input that, when set, automatically locks all doors on all controllers on the access control network. This input is specified as Input 4 on an SB-593 Satellite board attached to the master controller. If the input is open, Global Lock is inactive; when the input is closed, Global Lock is activated.

### 5.3.1 Global Lock Versus Unlock Commands

Global Lock operates by Suspending the AUL for all doors. Then, while the Global Lock input is active, doors that are unlocked per their AUL time zone configuration, a continuous RTE (CRTE) request, or a manual unlock command will be locked. When Global Lock becomes inactive, all doors that should be unlocked per their AUL time zone configuration will be unlocked. All other doors will remain locked until a valid unlock request is made (such as credential presentation, a continuous RTE (CRTE) request, or a manual unlock command).

### 5.3.2 Current Global Lock State

The Setup > System > Controller Status window has a column, Auto Unlock/Lock Status, that displays the current state of all doors/controllers. If a Global Lock is active, all controllers will show AUL Suspended/GLE Locked.

#### NOTES:

- *Global Lock takes precedence over ALL other lock or unlock commands EXCEPT for Global Unlock.*
- *Any attempts to Restore the AUL for any door while Global Lock is active will be ignored by the master controller.*

## 5.4 CONTINUOUS RTE (CRTE)

CRTE is a new feature in Doors. It is found in the Setup > System > Doors > AUX RTE menu option.

CRTE allows an operator to define the operation of the Aux RTE input so that the door lock follows the input status: while the input is open, the door is locked; while the input is closed, the door is unlocked. This input is specified as the Global Unlock/Auxiliary RTE input on the controller (A-Door Aux RTE), and GP-3 input (B-Door Aux RTE) on a satellite board.

### 5.4.1 CRTE Versus AUL

CRTE operates by Suspending the AUL for a given door. Then, while the CRTE input is active, the door is unlocked. When CRTE becomes inactive, the door will assume its AUL time zone configuration state.

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## NOTES:

- A Global Lock and a manual Lock command take precedence over a CRTE request. However, once the Global Lock or manual Lock command has been issued, a subsequent CRTE request will unlock the door.
- A CRTE request takes precedence over an AUL time zone function ONLY if the CRTE request is active before the start time of the time zone and it keeps its precedence as long as the CRTE request stays active.
- If a CRTE request is active when a Global Lock command goes inactive, the door will unlock until the CRTE request goes inactive or until some other Lock command overrides the CRTE request.
- CRTE and Global Unlock are mutually exclusive features for the master controller ONLY; since these features share the same input, you can only enable one feature or the other, not both.

## 5.5 Unlock/Lock Command

The unlock/lock commands allow an operator to manually unlock/lock doors as needed. Doors can be unlocked indefinitely, or for the specified door unlock time.

### 5.5.1 Unlock/Lock Commands Versus AUL

For unlock/lock commands to remain in effect for extended periods of time, the AUL must be Suspended; otherwise the unlock/lock command state will be changed per the AUL time zone or the type of unlock/lock command.

AUL Suspend commands cause Unlock/Lock commands to operate as follows:

- If an operator Suspends the AUL and manually locks a door, that door will remain locked until either the operator manually unlocks the door or the operator Restores the AUL and the AUL time zone dictates the door should be unlocked.
- If an operator Suspends the AUL and manually unlocks a door, that door will remain unlocked until either the operator manually locks the door or the operator Restores the AUL and the AUL time zone dictates the door should be locked.

NON Suspended AULs cause the Unlock/Lock commands to operate as follows:

- If an operator does NOT Suspend the AUL and manually locks a door, that door will remain locked until the AUL time zone dictates the door should be unlocked.
- If an operator does NOT Suspend the AUL and manually unlocks a door, that door will remain unlocked subject to the type of unlock command. An Unlock command will keep the door unlocked until the AUL time zone dictates the door should be locked. A Timed Unlock command will keep the door unlocked until the door unlock time expires, then the door is locked.

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## 5.6 GLOBAL SECURE

Global Secure is a Doors programmable feature. Its sole purpose is to ensure that any operator command unlocked doors are locked at one specified time every day. The factory default Global Secure time is 17:30 (5:30 PM).

### NOTES:

- *An active ALU schedule takes precedence over the Global Secure command.*
- *Global Secure will NOT Restore a Suspended ALU schedule.*
- *Global Unlock and Continuous RTE have precedence over Global Secure.*

## 5.7 First Person In (FPI)

FPI allows an operator to determine if a door should automatically unlock when the AUL time zone begins, or if the door should not automatically unlock for the AUL time zone until after a person presenting a valid card arrives. This helps to ensure an employee is onsite before automatically unlocking any doors.

### NOTE:

- *If the AUL time zone has been Suspended, FPI is disabled.*

## 5.8 REQUEST TO EXIT (RTE) and CREDENTIAL PRESENTATION

RTE and credential presentation are handled in the same manner. Activating an RTE input or presenting a valid credential will unlock a door for its designated unlock time. If an AUL schedule is active, it will be Suspended upon acceptance of the RTE or credential and Restored upon expiration of the door unlock time.

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**Release Notes**

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