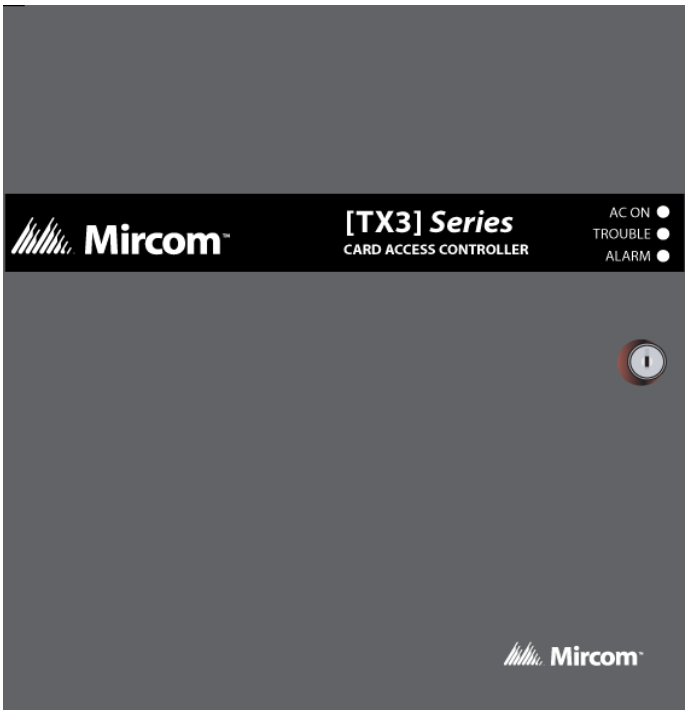
TX3 Series

TX3-CX CARD ACCESS SYSTEM



Installation and Operation Manual

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1 Welcome

This document provides information about the TX3-CX Card Access System and on how to install and configure the system.

Installation must be performed by a qualified technician and must adhere to the standards and special notices set by the local regulatory bodies.

Note: **Mircom periodically updates panel firmware and Configurator Software to add features and correct any minor inconsistencies. For information about the latest firmware or software visit the Mircom website at www.mircom.com.**

For warranty and special notices information see the Warranty and Special Notices chapter on page 49.

This chapter explains

- The TX3-CX Card Access System
- Applications
- Configurable Features
- Installer Responsibilities
- Network Setup

1.1 Introducing the TX3-CX Card Access System

The TX3-CX Card Access System is part of the Mircom suite of products that provide building ready monitoring, control and integrated security solutions for use in the high end multi-tenant residential market.

The Card Access System addresses the need within today's high end multi-tenant residential market for an easy-to-use tenant access system and an easy-to-use configuration utility.

This manual provides the technician with information about the installation and configuration of the Card Access System and explains how to configure various components for a new system, including the modification of an existing system.

1.2 Applications

Mircom's card access system consists of a controller, two card readers and configuration software. The controller accepts card readers with the Wiegand interface and controls two access points or doors. A number of different card readers are supported all of which are configurable using the configurator software.

The Card Access System is used in a stand-alone or networked environment using a standard RS-485, daisy chain peer-to-peer network arrangement. This network can consist of nodes consisting of only the card access controller or a combination of card access controller, telephones access controllers and elevator control units (see Figure 1).

1.2.1 Wiegand interface

The Wiegand interface is a wiring standard for card readers for establishing the connections between a card reader and the card access system. This interface is a serial interface requiring 7 to 10 conductors for communications between the reader and the controller. This interface also supplies 12V power to the reader.

The Wiegand compatible access card has 26 bits of information embedded onto the card. The card reader reads and registers the card information and sends it back to the controller in a serial bit stream.

1.2.2 Card Access System

The Mircom Card Access System system supports a proprietary 37 bit encoding technology and a 26 bit SIA standard format, and consists of a maximum of 31 card access controllers networked together. Each card access controller can have two card readers. The Card Access System provides battery backup and a real time clock.

The card access system integrates with the TX3 Telephone Access system by utilizing a common network for both telephone access and card access systems.

A PC provides configuration and on-line monitoring of the card access and the telephone access status. Once the system is configured, the PC is not required.

1.3 Configurable Features

The system is configured by connecting the inputs and outputs to device access points, and using the configurator software to establish the correlations between these inputs and outputs.

Additional physical configuration is required using the dip switches and jumpers on the controller. DIP switches set the card access controller network address. Jumper settings set the controller for firmware updates, last device on network and the supply voltage.

1.3.1 PC Configurator Software

The Configurator Software TX3-MSW is a combined telephone access and card access configurator that uses a common database. Once the controller is installed the system applies its default values. Use the configurator software to fully configure the system. See the following documentation:

- LT-995 Configuration and Administration Guide
- LT-973 TX3 Software Guide

1.4 Installer Responsibilities

The installation and setup must be done by a qualified technician. The technician is responsible for installing all of the system components, connecting all of the input and output wiring for the appropriate door entry systems, and ensuring that the wiring adheres to the requirements of the system for proper operation using the configurator software.

1.4.1 PC Requirements

The following are the PC requirements:

- Windows based configurator
- Should support Windows XP or later

1.5 Network Setup

Figure 1 shows a basic card access system with one card access controller and two card readers. The maximum distance between the card access controller and the card readers is 500 feet. The card access system can have up to 31 card access controllers networked together.

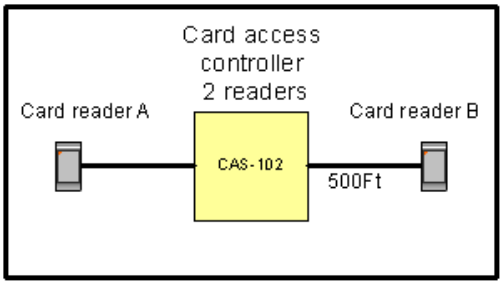

Figure 1. Basic Card Access System

Figure 2 shows a network with two card access controllers, each with two card readers.

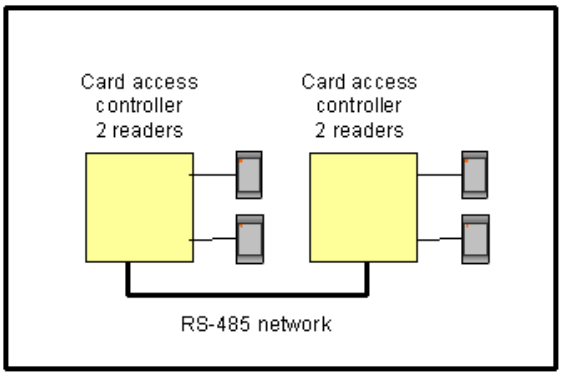

Figure 2. Card Access Controller Network

1.6 About This Manual

This manual provides comprehensive information on the installation and configuration of the Card Access System by the installation technician. Tasks are described in the order that they are likely to be performed.

Chapter 2 describes the installation of the controller.

Chapter 3 describes the configurable modes of operation.

This manual applies to the following models:

- TX3-CX-2K Two Door Card Access System Kit
- TX3-CX Two Door Card Access Controller

1.6.1 Version Control

The version number appears on the front cover and changes whenever there is a major or minor update to any part of the system regarding operation or configuration.

The following convention indicates major or minor changes:

Initial release. Version 1.00.0

Major change. Version 2.00.0

Minor change. Version 2.01.0

Pre-release changes. Version 2.01.1

1.6.2 Additional Documentation

For additional documentation, see the following Mircom literature:

- TX3-CX Touch Screen Administrators Guide LT-995
- TX3 Telephone/Card Access System Installation and Operation Manual LT-969
- TX3 Telephone Access System User's Guide LT-968
- TX3 Two Door Card Access System Kit Catalogue Number 6531
- TX3 Series Elevator Restriction Accessories Catalogue Number 6532

1.6.3 Key Terms

The following terms are common and specific to this manual:

CAU. Card Access Unit

ERU. Elevator Restriction Unit

LCU. Lobby Control Unit

1.6.4 Contact Us

You can contact us from Monday to Friday 8:00 A.M. to 5:00 P.M. E.S.T.

1.6.5 General Inquiries

Toll Free: 1-888-660-4655

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1.6.7 Technical Support

For technical support contact Mircom's Technical Support Department between 8 A.M. and 5 P.M. (EST) Monday through Friday, excluding holidays.

Toll Free: 1-888-MIRCOM5

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2 Installation and Setup

This chapter describes the installation and setup of the controller and card reader.

This chapter explains

- Card Reader Installation
- Setup
- Connecting the Inputs and Outputs
- Card Reader Connection
- Power Supply
- Battery Backup
- RS-485
- Dip Switch and Jumper Settings
- Updating Firmware
- Beginning the Configuration

2.1 Installing the Controller and Components

The card reader controller is surface mounted with four screws as shown in Figure 3.

Install the following components as required:

- Thermal kit TH-102 (optional)
- Tamper switch (optional)
- Modem TX3-MDM (optional) *see Figure 5*

The back cover is 12 inches wide by 14 inches long. The top two mounting holes are 10 inches apart.

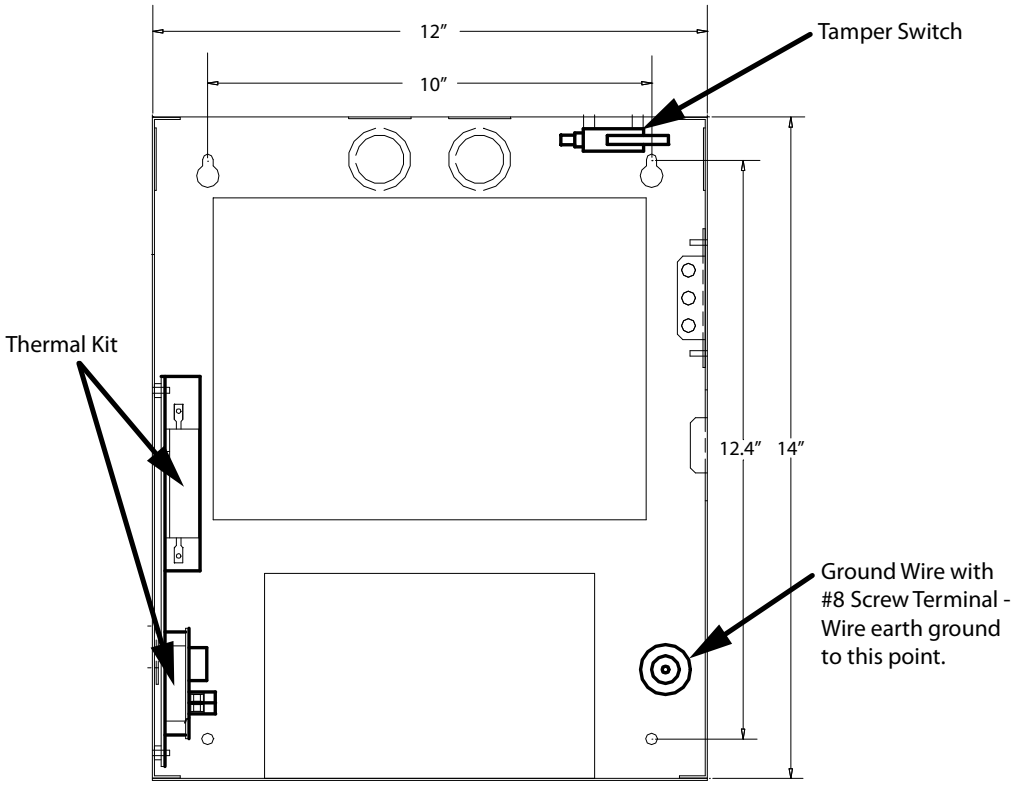

Figure 3. Controller Back Cover Dimensions and Optional Component Location

To mount the card reader

1. Using the controller back cover as a template mark the top two mounting hole locations 10” apart as shown in Figure 3.

2. Place the screws halfway into the wall in the position shown using a suitable screw.

3. Hang the box onto the two screws.
4. Screw the other two screws at the bottom of the panel.
5. Tighten all four screws into place.

2.1.1 Installing the thermal kit and tamper switch

Install the thermal kit inside the back cover on the left side in the location as shown in Figure 3.

An optional tamper switch may be installed as shown at the top right corner of the back cover as shown in Figure 3. The tamper switch wire connects to the general purpose input and correlated to a specific output (action). For a complete description of correlations see Chapter 3 Configurable Features.

2.1.2 Installing the modem

Install the optional TX3-MDM Modem Module on the card access controller board in the location as shown in Figure 4.

Secure the Modem Module into the location using four screws.

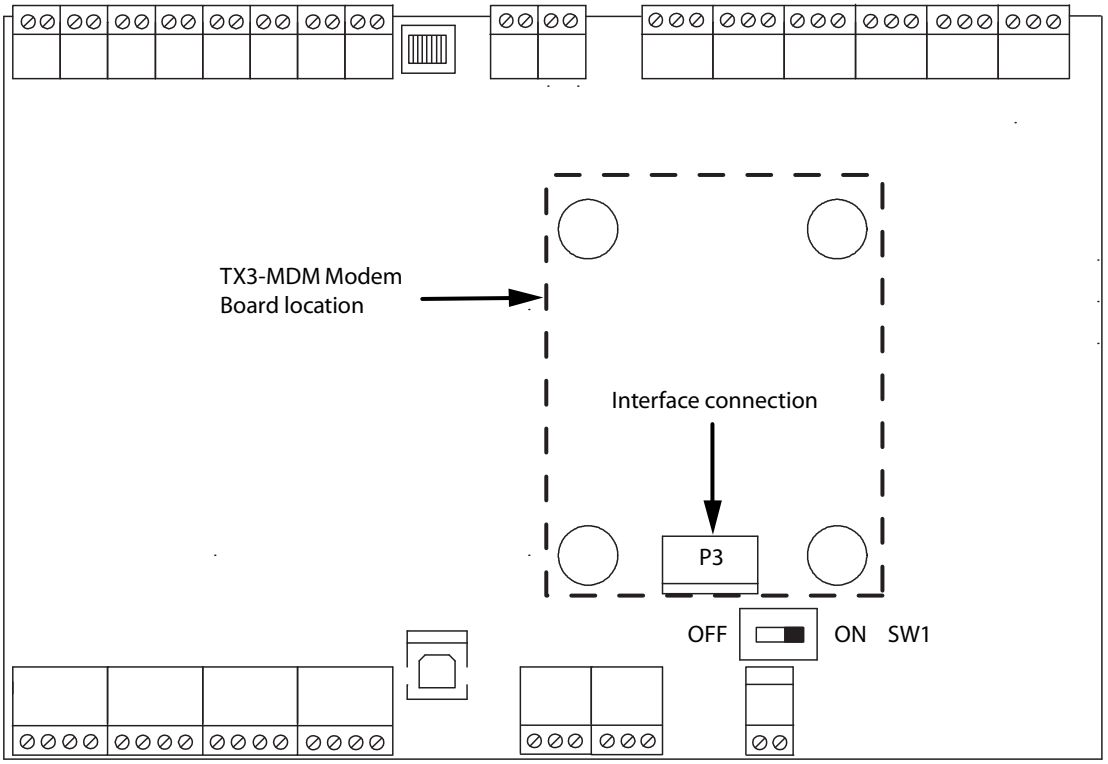

Figure 4. Modem Board Location

2.2 Controller Board Description

The Card Access System controls access points according to how the inputs and outputs are defined and correlated with each other. Inputs and outputs are defined by how the access and control points are wired with the controller.

Before you begin you must establish how you want the outputs to behave as a function of the inputs. For a complete description of correlation and the modes of operation see Chapter 3 Configurable Features.

Keep a record of the wiring for configuration purposes.

2.2.1 Controller Panel LEDs

There are three status LEDs on the front of the Card Reader Panel:

AC ON LED. `AC ON LED` illuminates steady green when AC power is present.

Trouble LED. `Trouble LED` flashes amber at a slow rate when there is a common trouble condition in the system. Trouble consists of:

- any supervised input
- AC power/low battery
- door held open warning

Alarm LED. `Alarm LED` flashes red at a fast flash rate when there is a forced entry or the door held open alarm timer expires.

2.2.2 Controller Board Components

The card access controller consists of the following terminals:

- 8 inputs
- 8 outputs (6 relay contact outputs and 2 outputs providing 12 Vdc)
- connections for two card readers (noted as Reader A and Reader B)
- power supply
- RS-485 connector
- USB and Modem board connectors

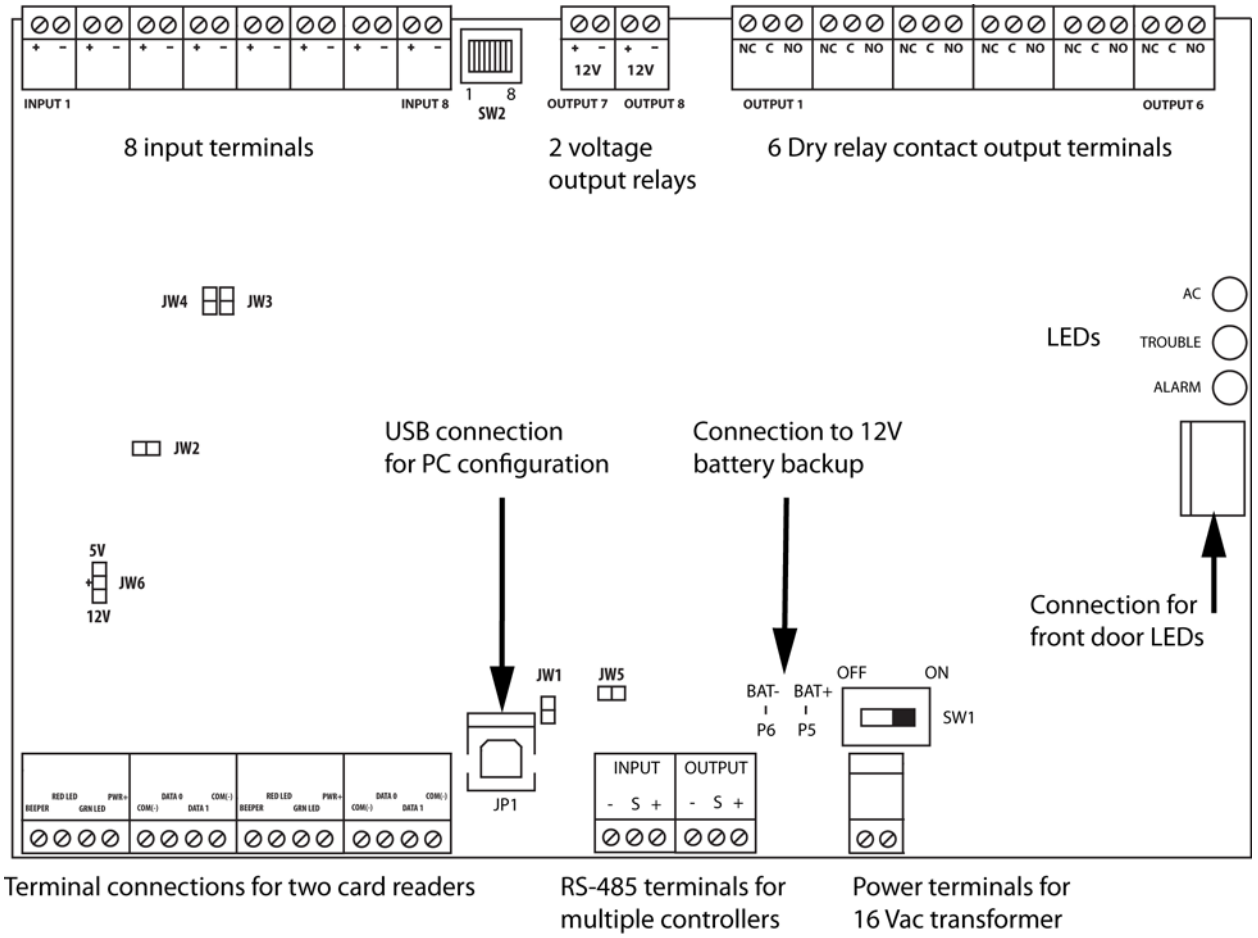

Figure 5. Controller Board Connection Locations

Note: See Figure 16 and Figure 17 for the terminal connections for the two card readers.

2.2.3 Power Supply

An external PS-4 or PS-4P Plug-in Transformer connects to the 16 Vac terminals. Refer to Figure 5.

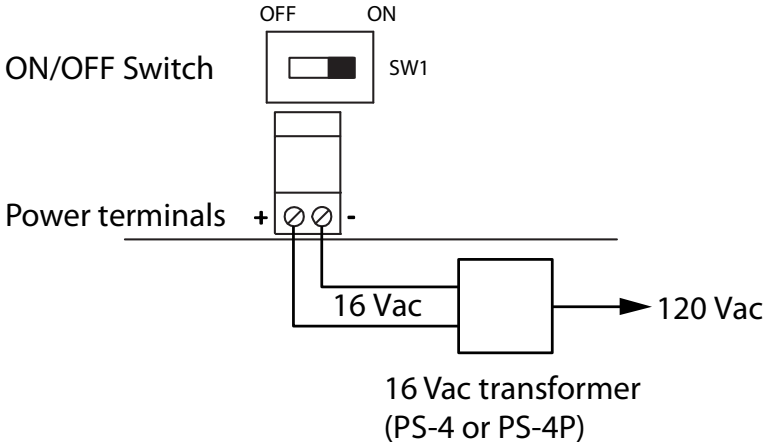

Figure 6. Power Supply

2.2.4 ON/OFF Switch and Battery Back-up

Battery back-up is provided with a 12V 6.5AH battery which fits inside and at the bottom of the unit. Connect the battery to the connectors located to the left of the ON/OFF switch SW1 as shown in Figure 7.

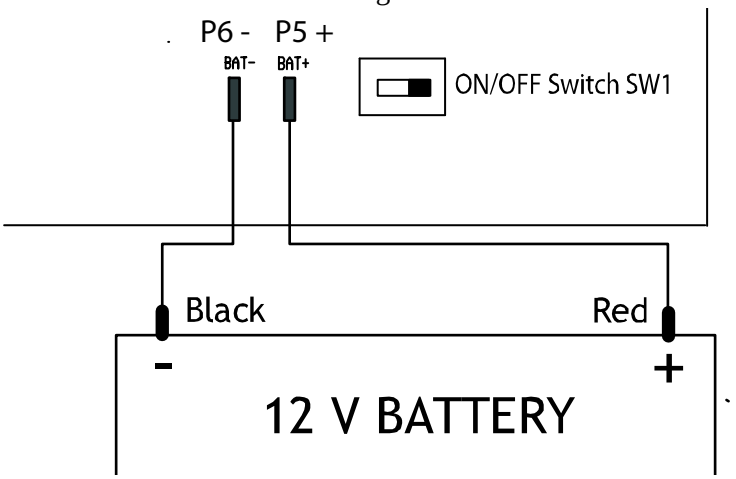

Figure 7. Controller Board Battery Wiring

2.2.5 RS-485

An RS-485 terminal lets you connect multiple card access controllers across a network. The RS-485 terminal consists of + (positive), - (negative), and S (Shield) connections. See Figure 8.

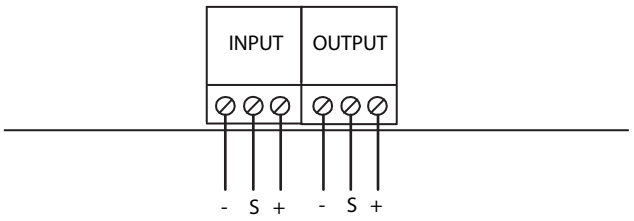

Figure 8. RS-485 Terminals

Note: Connect the last controller on the network to the RS-485 input terminal and close jumper JW5. On all the other controllers leave JW5 open.

2.2.6 USB Port

The USB port provides a connection to a PC, for configuring the card access system and down loading any new firmware.

2.3 Connecting the Inputs

Each card access controller has eight inputs to accommodate the different types of configurable functions associated with the inputs. For additional details and a complete description of the different types of configurable functions see Chapter 3 Configurable Features.

After the installation and setup is complete, the functional state of all inputs and circuit supervision types must be configured using the configurator software. During configuration you will also establish correlations between inputs and outputs.

Depending on the device each input is configured according to:

- type of input function
- active state
- supervision requirement

- alarm delay

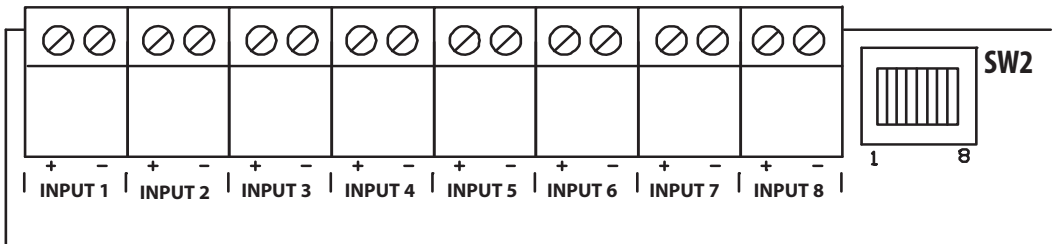

Figure 9. Controller Board Input Terminals

2.3.1 Type of input function

Configure each input for one of the following actions:

- Request to Exit (reader A)
- Request to Exit (reader B)
- Door sense (reader A)
- Door sense (reader B)
- General purpose input

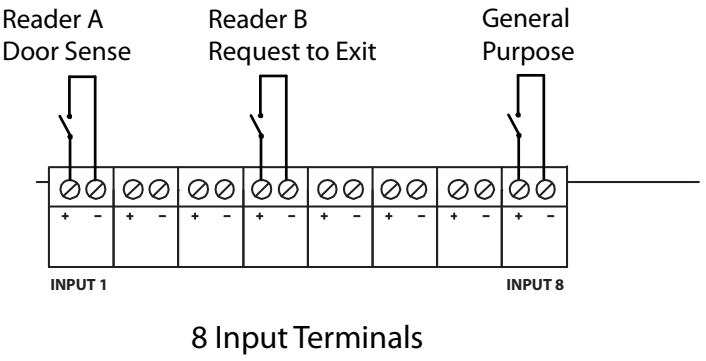

Figure 10. Input Terminal Sample Connections

2.3.2 Request to Exit

Activation of this input unlocks the door and starts the door unlock timer.

2.3.3 Door sense

When the door is open this input is active and when the door is closed the input is inactive.

2.3.4 General purpose input

The general purpose input is mainly used for establishing a correlation with a specific output. When a general purpose input becomes active it is considered as an event that correlates to either turn on or off a general purpose output, or to turn on or off the high security mode. Other correlated events include different functions such as forced entry, auto relock or interlock.

2.3.5 Active state

An active state is when the input circuit is considered active and is configured as one of the following:

- open
- short (default)

There are some restrictions in configuring the active state depending on what kind of supervision is required.

If the input is not supervised the input is either ‘open’ or ‘closed’. If the input is supervised for ‘open’ the active state cannot be ‘open’.

If the input is supervised for both ‘open’ and ‘short’ the active state cannot be ‘open’.

2.3.6 Supervision requirement

Each input is configured for a specific type of supervision depending on your particular installation requirements as follows:

- no supervision
- supervise for open
- supervise for short
- supervise for both open and short

2.3.6.1 No Supervision

When inputs are configured with no supervision, the active state is either ‘open’ or ‘short’.

2.3.6.2 Supervised for open

When configured as supervised for open, the active state is ‘closed’ (short). Open supervision uses a single 47K ohm resistor.

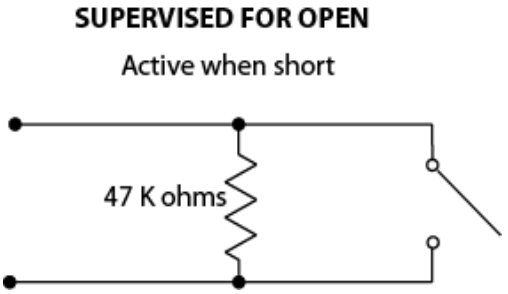

Figure 11. Input - Supervised for Open

Note: The active state cannot be an open state.

2.3.6.3 Supervised for short

When configured as supervised for short, the active state is either ‘open’ or ‘short’. A single 47K ohm resistor is required for short supervision.

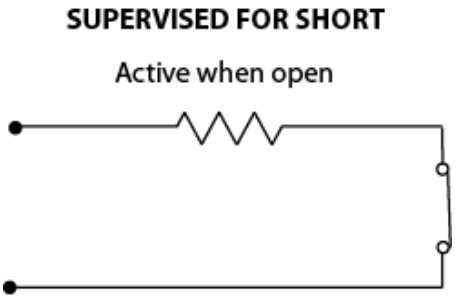

Figure 12. Input - Supervised for Short

Note: The active state cannot be a short state.

2.3.6.4 Supervise for open and short

When configured as supervise for both ‘open’ and ‘short’, the active state cannot be open, therefore the active state is closed.

Two 22K ohm resistors are required for supervision.

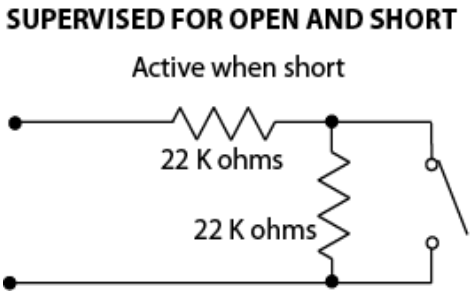

Figure 13. Input - Supervised for Open and Short

Note: The active state cannot be an open state.

2.3.7 Alarm Delay

Alarm delay is a configurator defined parameter that specifies the amount of time before an input raises an alarm condition. For more information see Chapter 3 Configurable Features.

2.4 Connecting the Outputs

There are 8 outputs located on the top right hand corner of the card access controller as shown in Figure 5. Outputs 1 to 6 are on the right side and outputs 7 and 8 are in the middle.

Each output is wired for a specific function or for an active state. Determine the functional requirements for the device and connect the outputs accordingly. For additional details and a complete description of the different types of configurable functions see Chapter 3 Configurable Features.

After the installation and setup is complete, the functional state of all outputs must be configured using the configurator software.

2.4.1 Specific functions

Each output is wired for the following specific functions:

- Lock for Reader A or B
- Handicap lock for Reader A or B
- General purpose output

Lock for reader A or B. This output assigns the main access door to either reader A or reader B. When access is granted at the designated reader, this output unlocks the door.

Handicap lock for reader A or B. This output controls the handicap access door. Access is granted to cards with handicap privileges.

General purpose output. The general purpose output is for all other types of outputs, such as turning on a light.

2.4.2 Active state

Outputs require active states. Each output is configured for the active state to one of the following:

- energized
- de-energized

In the energized active state the normal state is de-energized and vice-versa.

2.4.3 Outputs 1 to 6

Outputs 1 to 6 are relay contact programmable outputs with the following characteristics. Figure 14 shows a sample connection.

- normally open (NO)
- normally closed (NC) available
- 30 Vdc rated, 2 Amperes

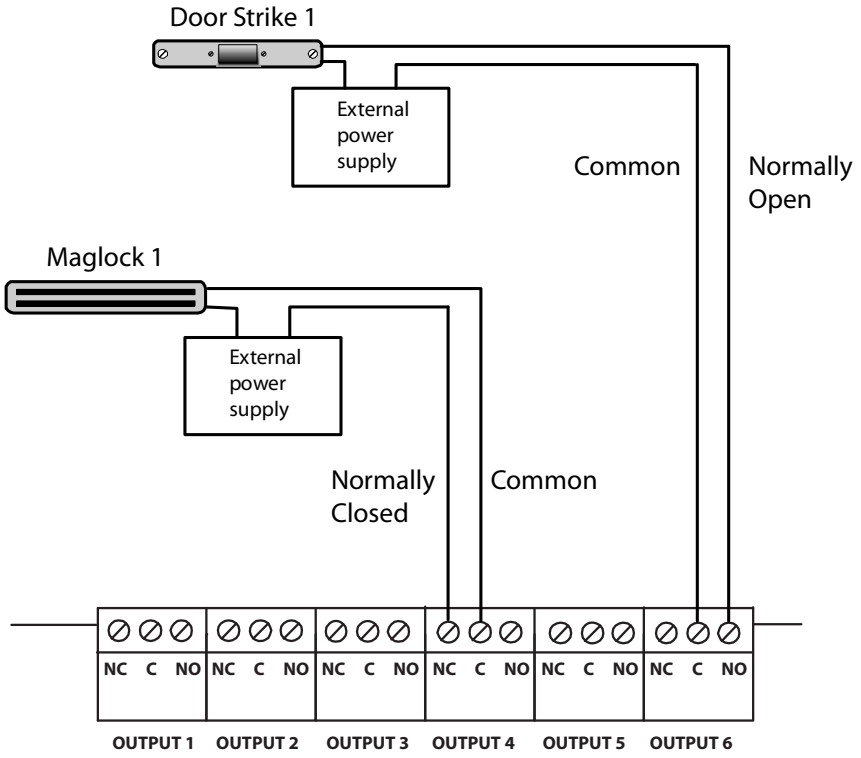

Figure 14. Controller Output Terminal Sample Connections

2.4.4 Outputs 7 and 8

Outputs 7 and 8 are programmable and provide a combined output of 1 A. Each individual output is capable of providing:

- 12 Vdc
- 500mA of current (700 mA maximum)

Note: Outputs 7 and 8 are capable of providing a maximum output of 700 mA each, for a combined output of 1 A. For example, if output 7 provides 700 mA, then output 8 provides 300 mA.

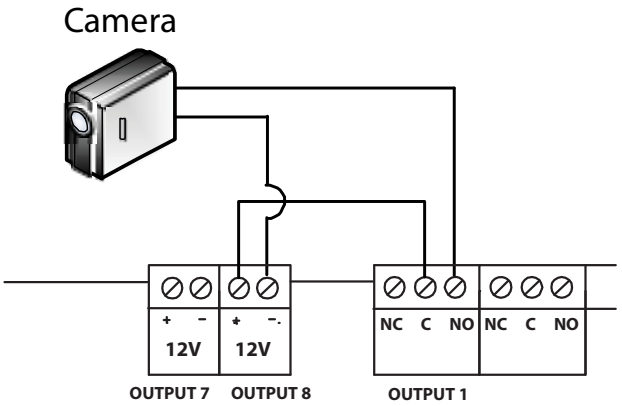

Figure 15. Controller 12 V Output Sample Connections

Figure 15 shows a camera powered by output 8 and activated by output 1.

2.5 Connecting the Card Reader

The card readers are manufactured by AWID and are part of the Mircom Card Access package. The cards are produced by Mircom. The controller supports two card readers.

2.5.1 Card Reader Requirements

Mircom provides the SR-2400MI-GR-MP multi protocol proximity card reader.

Third party card readers must meet the following minimum requirements in order to be compatible with Mircom's card access system:

- must support the 26 bit standard SIA protocol
- standard Wiegand interface
- LED status indicator
- warning or alarm buzzer
- 12 Volt operation

- maximum 500 feet distance from the card reader and the controller use 20 AWG wire and for 250 feet use 22 AWG

2.5.2 Card Reader Connection

Connect the readers to the terminals on the bottom left side of the card access board as shown in Figure 16 and Figure 17.

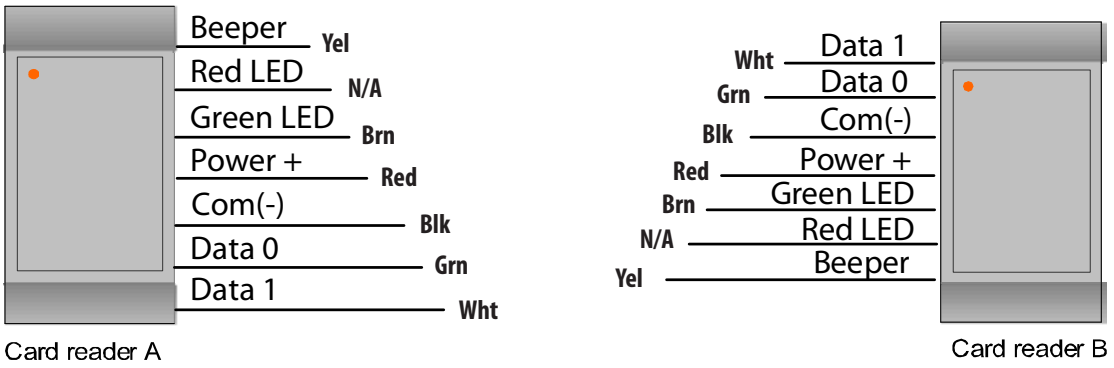

Figure 16. Card Reader Connections

Note: The card reader COM (-) wire can be connected to either COM (-) connector on the terminal block.

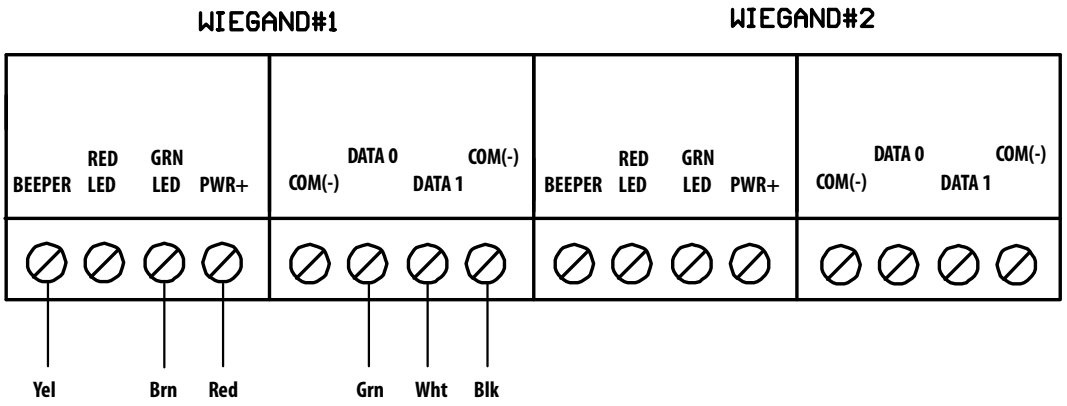

Figure 17. Controller Board Card Reader Connectors

Card Reader A. Connections required for card reader A (starting from the far bottom left side) are Beeper, Red LED, Green LED, PWR(+), COM(-), Data 0, Data 1 and COM (-).

Card Reader B. Card reader B follows the same terminal connections, located to the right of the card reader A terminals.

Note: When using card readers with a single LED control connect the control wire to the green LED terminal.

2.5.3 Card Reader Status LEDs

There are three status LEDs on the card reader:

Green LED. Illuminates steady green when door is unlocked.

Red LED. Illuminates steady red when door is locked.

Orange LED. Illuminates steady orange when any card is used for the first time. Normal illumination returns upon subsequent use. (*on some models only*)

2.5.4 Card Reader Beeper

The beeper indicates specific events at different beep rates as follows:

Access Granted. Two short beeps.

Access Denied. One short beep and one long beep.

Mode of Operation Changed. Three short beeps indicate a change in the on or off state for the high security or the unlock mode.

Alarm. Continuous short beeps.

2.6 Setting DIP Switches SW2

DIP switches set the card access controller address. Valid addresses are 1 to 31. DIP switches 1 to 5 are used for binary addressing with DIP switch 1 being the least significant bit. DIP switch SW2 is found at the top central portion of the card access controller board, see Figure 5.

Note: DIP switches 6, 7 and 8 are not used and should remain at the factory set values.

Table 1: SW2 DIP SWITCH SETTING FOR ADDRESSING

1	ON	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF
5	ON	OFF	ON	OFF	OFF
6	OFF	ON	ON	OFF	OFF
7	ON	ON	ON	OFF	OFF
8	OFF	OFF	OFF	ON	OFF
9	ON	OFF	OFF	ON	OFF
10	OFF	ON	OFF	ON	OFF
11	ON	ON	OFF	ON	OFF
12	OFF	OFF	ON	ON	OFF
13	ON	OFF	ON	ON	OFF
14	OFF	ON	ON	ON	OFF
15	ON	ON	ON	ON	OFF
16	OFF	OFF	OFF	OFF	ON
17	ON	OFF	OFF	OFF	ON
18	OFF	ON	OFF	OFF	ON
19	ON	ON	OFF	OFF	ON
20	OFF	OFF	ON	OFF	ON
21	ON	OFF	ON	OFF	ON
22	OFF	ON	ON	OFF	ON
23	ON	ON	ON	OFF	ON
24	OFF	OFF	OFF	ON	ON
25	ON	OFF	OFF	ON	ON
26	OFF	ON	OFF	ON	ON
27	ON	ON	OFF	ON	ON
28	OFF	OFF	ON	ON	ON
29	ON	OFF	ON	ON	ON
30	OFF	ON	ON	ON	ON
31	ON	ON	ON	ON	ON

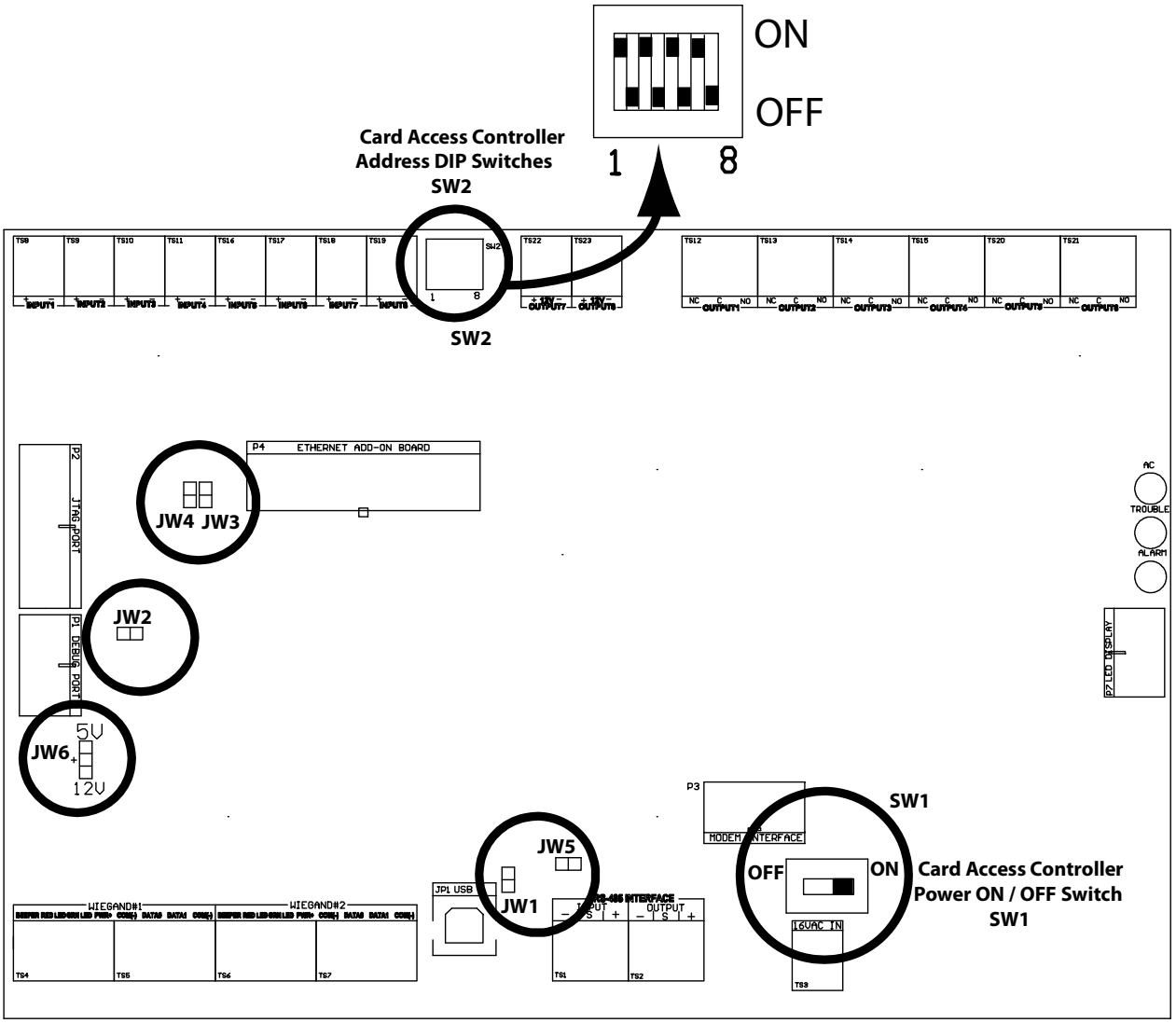

Figure 18. Location of Jumpers JW1 to JW5 and Switches SW1 and SW2

2.7 Setting Jumpers

There are six pre-set jumpers on the controller board as follows (refer to Figure 18):

JW1. `JW1` is used for updating firmware and by default is always closed (short).

JW2. JW2 is used for updating firmware and by default is open. See Updating Firmware on page 32.

JW3 and JW4. JW3 and JW4 are not used and are open by default.

JW5. JW5 is used for networking purposes and by default is open. If the card access controller is the last unit on a network then JW5 must be closed.

JW6. JW6 is not used and by default is open.

2.8 Turning on the Controller

Before you turn on the controller ensure that the all connections adhere with the correct operation of the devices. For example, a magnetic lock requires power in the default state.

Once the controller is turned on, you must begin the configuration. For detailed information on how to configure the controller see LT-995 Configuration and Administration Guide.

2.8.1 Default Configuration Values

Once the controller is on, it operates according to its preset default configuration values. When the configurator software first starts, it uses the default values and adopts these values as its initial settings.

The default configuration values are adopted only when the following situations occur:

- turning the system on for the first time
- memory corruption
- major or minor version change

2.9 Updating Firmware

Firmware updates require a specialized hardware initialization procedure. After the hardware initialization, use the TX3-MSW Configuration Software to complete the firmware update.

Whenever there is a major or minor firmware update, the next time the configurator software connects to the network, it autosenses the new default values and adopts these values as the new default settings. All existing configuration values are replaced with the new default values. Existing system values may be backed up and re-applied after the firmware update.

Note: Firmware revision changes do not affect default values.

To update firmware

1. Turn the power OFF by using SW1 on the bottom right side of the card access controller board.
2. Disconnect the battery.
3. Short JW1 and JW2 using a jumper.
4. Turn the power ON.
5. Wait for 15 seconds.
6. Turn power OFF and remove jumper JW2.
7. Connect the USB cable to the card access controller board.
8. Turn the power ON.
9. Proceed with the firmware update using the configurator software.
10. When you are finished updating the firmware, turn the power OFF.
11. Unplug the USB cable.
12. Open JW1.
13. Reconnect the battery.
14. Turn the power back ON.

2.9.1 Firmware Version Control

The firmware version number is accessible from the configurator software and changes whenever there is a major, minor or revision update.

The following convention is used whenever there is a major, minor or revision change:

Initial release. Version 1.00.0

Major change. Version 2.00.0

Minor change. Version 2.01.0

Revision changes. Version 2.01.1

2.10 Beginning Configuration

The card access controller is now ready for configuration.

The card access controller may be configured remotely using the optional modem board TX3-MDM Modem Module.

See the following documentation:

- LT-995 Configuration and Administration Guide

To start the configuration

1. Ensure that the controller is fully operational.
2. Connect the PC to the controller using the USB port.
3. Configure the Card Access system using the Configurator Program TX3-MSW and the LT-995 Configuration and Administration Guide.

3 Configurable Features

This chapter describes all the configurable features and their modes of operation, and provides you with detailed information to let you configure the system using the software configurator.

This chapter explains

- Inputs
- Correlation
- Access Criteria
- Timers
- Schedules
- Holidays
- System Status

3.1 Inputs

Each card access controller has eight inputs to accommodate the following special functions:

- Request to exit for reader A or B
- Door sense for reader A or B
- General purpose

3.1.1 Request to exit for reader A or B

When an input is active the door unlocks and the door unlock timer starts. When the door timer expires or the door sense associated with this card reader becomes active, the door locks.

The input is associated with the ‘request to exit’ function.

3.1.2 Door sense for reader A or B

When this input is active the door opens and when the input is inactive the door closes. The door sense input determines or performs the following functions:

- Determines if the door ever opened after it was unlocked as a result of access being granted. If the door did not open even though the door was unlocked, for the programmed time duration, it will be reported to configurator if configured.
- Senses a forced entry. If the door is locked and the door sense input becomes active, the force entry alarm activates if configured.
- Senses a door held open condition. This condition is when the door is unlocked and the door sense becomes active but does not get inactivated before the door unlock timer or the extended door unlock timer expires. At this time the ‘door held open warning timer’ starts. If the door is still open when this timer expires, a ‘door held open warning’ is reported to the configurator.

  Upon expiry of the ‘door held open warning timer’ the door held open alarm timer starts. Upon expiry of the ‘door held open alarm timer’ and the ‘door still held open’ a door held open alarm is reported to the configurator.

  If the door closes during the time when the ‘door held open warning timer’ or the ‘door held open alarm timer’ are active, the ‘restore door held open’ event is reported to the PC.

3.2 Correlation

The configurator software correlations function lets you establish specific relationships between panel inputs (events) and outputs (actions). Correlations also allow you to specify these relationships to a schedule.

3.2.1 Assigning events to access points

Assigning events to access points associates the access point with the event. The configurator lets you assign input events by labelling the following access points:

- Reader A
- Reader B
- Inputs 1 to 8

3.2.2 Events

Events are defined by the following inputs and reader states:

- Access is granted (*from Reader A or B*)
- Access is denied (*from Reader A or B*)
- Forced entry alarm (*from Reader A or B*)
- Door held open alarm (*from Reader A or B*)
- Door not open (*from Reader A or B*)
- Input is active (*from Inputs 1 to 8*)
- Unlock mode is on (*from Reader A or B*)
- Unlock mode is off (*from Reader A or B*)
- High security is on (*from Reader A or B*)
- High security is off (*from Reader A or B*)

3.2.3 Actions

An action is defined by the type of action that occurs for a specific event and consists of the following:

- Turn ON general output
- Turn OFF general output
- Turn ON high security
- Turn OFF high security

3.2.4 Output to panels

Correlations are applied across the network. Actions are specified to occur on the local panel, specific panels or all the panels on the network.

3.2.5 Duration

The duration of the action is specified in minutes and seconds, or indefinitely.

3.2.6 Schedule

The schedule lets you specify when correlated events take effect.

3.3 Access Criteria

The configurator software monitors the functional state of inputs from all panels and devices, and autosenses the on/off status of connected components. Outputs are programmed for specific functionality, such as specific delay and on/off times.

Granting access depends on different criteria, such as security precautions and the access privileges granted the card holder. To prevent unauthorized access the controller has various configurable features for determining the conditions and type of access.

Access requirements are a function of schedule, holidays, security precautions and access privileges. The parameters are configurable and allow for very detailed system operation. For example access privileges may have dependencies and consequently may be more suitable to run as a scheduled task.

The configurator software lets you define and configure the various modes of operation for managing access, defining inputs and assigning outputs. In order to effectively use the configurator you must understand these configurable features.

The following features are configurable:

- Lock / Unlock
- High security
- PC decision required
- Facility code
- Card + Pin
- Anti-pass-back
- Temporary card
- Interlock

- Access Level
- Controller options
- Access point options
- Card options

3.3.1 Lock / Unlock

An access point has one of the following lock status modes:

Lock Mode. When in lock mode the door is normally locked. Any valid access card unlocks the door for the duration of a specified time interval according to:

- door unlock timer
- extended door open timer

During this mode the red led on the card reader associated with this access point becomes active and turns green for the duration the door is unlocked.

Unlock Mode. When in unlock mode the door is unlocked. The green led on the reader associated with this access point stays lit. During this mode the door sense is not monitored for the following:

- door did not open
- door held open warning
- force entry alarm

3.3.1.1 Changing the lock/unlock mode

The lock/unlock mode is changed in one of the following three ways:

- an administrator using the configurator can send a command to change the lock mode
- an access card with lock/unlock privileges, if swiped twice in succession, toggles between lock and unlock mode
- a schedule associated with the lock/unlock mode - when the associated schedule is active, it changes to unlock mode and when the schedule is inactive, it changes back to lock mode

Whenever the mode is changed from lock to unlock or from unlock to lock, the beeper on the reader associated with this access point sends a distinct beep indicating the mode is changed.

3.3.2 High security

The high security mode grants access to cards with the high security privilege. This mode is changed as follows.

- if the access point is configured as high security then it is in high security mode by default unless changed by the PC or card with high security privilege
- if an access card with high security privilege is swiped four times in succession, the mode toggles between high security on to high security off
- the configurator software can change the mode from high security on to high security off or from high security off to high security on
- an event correlated with a response to turn on or off the high security mode

The high security mode locks all doors in the unlocked mode.

Whenever the high security mode changes, the beeper on the reader associated with this access point sends a distinct beep.

3.3.3 PC decision required

During this mode the decision to grant access is transferred to an attendant. Using the PC the attendant grants or denies access. Only valid cards assigned with the PC decision requirement are able to make this type of access request.

3.3.4 Facility code

Access cards consist of two codes; facility code and card code. The facility code mode is designed for new installations where access cards are not programmed into the database. When the facility mode is enabled, cards with same facility code are granted access.

Facility card codes prevent the same card from being used at a different location or facility. The facility code is set to any value from 0 to 4294967294 and is used when the card is configured to operate in facility code mode. The default is 0.

If there is no card code data, the door is unlocked for the same period of time that as that of the standard door unlock timer. This mode is configured for each access point.

Another mode allows you to ignore the card facility code. When the ‘ignore the card facility code’ is enabled, the facility code is ignored.

3.3.5 Card + Pin

This mode provides another level of security during certain parts of the day. During this mode not only a valid card is required for access but also a 4 digit pin code. The pin code is 4 digits long and is programmed for each card.

There is a schedule associated with this mode. When the schedule is enabled, the mode is on and when the schedule is disabled, the mode is off.

3.3.6 Anti-pass-back

This mode prevents unauthorised users from getting access. During the anti-passback period if a valid card is used at an access point, it cannot be re-used until the pre-programmed anti-pass-back timer expires. After expiration of the timer, the user gains access.

3.3.7 Temporary card

This mode limits the number of times that a temporary card is used. During this mode if a valid temporary card is presented, access is granted and the usage count is decreased by 1. When is reaches zero, access is denied.

A usage count of 255 indicates there is no restriction on use.

3.3.8 Interlock

This mode is typically used in a double door application to prevent unauthorised access. During this mode the user presents the card at both doors. The second door unlocks after presenting the card, if the first door is locked and closed.

This option is configured using the configurator. If enabled door B cannot be unlocked until door A is locked and closed. Door A cannot be unlocked until door B is locked and closed.

3.3.9 Access level

A maximum of 32 access levels are defined for each controller. A schedule is associated with each access level for all the access points on the controller as indicated by the following example.

Access level ID = 1

- for reader A schedule = Always
- for reader B schedule = Never

Access level ID = 2

- for reader A schedule = Office hours
- for reader B schedule = Always

If a card is assigned an access level 1 it means the user can have access to reader A at all times but will not have access to reader B at any time.

If a card is assigned an access level 2 it means the user can have access to reader A during the office hours and will have access to reader B all the time.

3.3.10 Controller options

The following controller options are configurable:

Card format. The following card formats are supported:

- 26 bit standard
- 37 bit (Mircom proprietary)

Send real time logs. If enabled, only the real time logs are sent to the PC.

Interlock feature. If enabled, door B cannot be unlocked until door A is locked and closed. Door A cannot be unlocked until door B is locked and closed.

Facility code. Facility code is set to any value from 0 to 4294967294 and is used in the facility code mode. The default is 0.

3.3.11 Access point options

The following access point options are configurable:

Auto relock. Enabling this option locks the door when the door closes before the door open timer or extended door timer expires. Disabling this option locks the door, but only after the expiration of door open timer or extended door open timer.

Temporary card. Cards designated as temporary with the usage count and 'auto card expiration' option enabled, causes a counter to deduct by one every time this card is used at the access point. When is reaches zero, the card deactivates.

Disable forced entry alarm. Disabling the forced entry alarm will not activate the forced entry alarm even if the door is opened without permission. Instead an access granted sequence is started. This is usually used on access points where there is no request to exit (RTE) device.

PC decision required. When enabled the PC decision to grant access is transferred to the PC from the controller. For this option to work the PC needs to be on all the time with an attendant. Use this option when the building has a security desk or a concierge.

First person delay. Configuring the access point for the lock/unlock schedule, causes the door to remain locked at the start of the unlock schedule, until the first valid card is presented to the card reader. The door continues to remain unlocked during the unlock schedule.

Request to exit bypasses door contact. When enabled RTE bypasses the door contact and does not unlock the door. This is typically used where there is a mechanical egress device installed on the door.

High security mode. When enabled only access cards with this privilege are able to open the door.

Report request to exit. This option logs and monitors events and system status. When enabled any requests to exit are logged and reported to the configurator. Since the person exiting is not known, only the time and date and the request itself is logged and reported.

Report door not opened. When enabled this option logs and reports events when access is granted but the door remains closed.

Report unknown format. When enabled this option logs and reports access attempts with a card with an unknown format.

Facility code mode. Enabling this mode grants access to cards based on only their facility code.

Inhibit ID. When enabled the card code is not send to the PC. This feature is used for logging and reporting purposes.

Timed anti-passback. When enabled access is not permitted at the same access point for a specific amount of time.

3.3.12 Card options

Access cards are configured for the following features:

Usage count. This count is used for the temporary card. The value is anywhere from 1 to 255. Using 255 means there are no restriction on usage. If any other value is used it means the card is only usable for that many number of times.

Status. The status of the access card is marked as:

- Active
- In-active
- Lost

In case of loss and inactivity, no access is granted. Active cards are granted access provided all the other conditions like schedule and privilege are met.

Access level. Access level are configurable on the basis of privilege and consists of 32 levels.

Pin code. The pin code is a 4 digit numerical value used during card + pin schedule.

Ignore anti-pass-back. When this option is enabled the card holder is not restricted by the timed anti-pass-back mode.

Lock/Unlock privilege. When this option is enabled the user has the privilege of unlocking the door by presenting the card to the reader twice in a succession.

High security privilege. When this option enabled only access cards with this privilege are able to open the door.

Extended unlock time. When this option is enabled the door opens for a designated amount of extended time. This option is normally given to seniors and handicap persons.

Handicap. When this option is enabled the output designated for handicap purposes is activated along with the main door.

3.4 Timers

The following types of timers are associated with the card access operation:

- Door unlock timer
- Extended unlock timer
- Anti-pass-back timer
- Door held open warning timer
- Door held open alarm timer

3.4.1 Timer schedule

Events are scheduled as always on, always off or administrator defined. Timed access adheres to a schedule as follows:

Auto-unlock schedule. When enabled the door remains unlocked during the schedule.

Card + pin schedule. Card access requires the use of a pin during the schedule.

3.4.2 Door Unlock Timer

The door unlock timer starts when the door unlocks. When the timer expires the door locks. The main door unlock timer is programmable from 1 to 300 seconds. The default is 10 seconds.

3.4.3 Extended unlock timer

The timer starts when the door unlocks. When the door unlock timer expires the door locks. The timer resets when the main door sense is programmed to be inactive. The extended unlock timer is programmable from 10 to 300 seconds. The default is 15 seconds.

3.4.4 Anti-pass-back timer

The anti-pass-back timer starts when access is granted. In this mode the user is restricted access to another access point until the anti-pass-back timer expires. When the timer expires the user has access. The anti-pass-back timer is programmable from 0 to 900 seconds. The default is 300 seconds.

3.4.5 Door held open warning timer

The door held open warning timer starts when access is granted. When the door unlock timer expires and the door does not close during this interval a ‘door held open’ warning is issued to the PC and the common trouble status becomes active. If the door closes during this interval, the timer resets and no warning report is sent to the PC.

The door held open warning timer is programmable from 10 to 900 seconds. The default is 30 seconds

3.4.6 Door held open alarm timer

The door held open alarm timer starts when the door held open warning timer expires and the door remains not closed. When this timer expires and the door is still open, a ‘door held open alarm’ is issued to the PC and the common alarm status becomes active. The door held open alarm timer is programmable from 10 to 900 seconds. The default is 60 seconds

3.5 Schedules

Schedules let you set up a timetable to establish when certain actions are permitted to occur, such as door access. These schedules are designated and listed by name in the configurator software, and are available for selection wherever it is necessary to invoke access permission.

There is a maximum of 64 schedules than programmed into the system. Each schedule is consist of four periods and each period consist of

- Start time and end time in hours: minutes format
- Week days and week end and holiday selection

Each schedule has an ID and a label to identify the schedule for use in the configurator software.

If the current time and data satisfies any one of the four periods in a schedule the schedule is considered to be active, otherwise it is inactive.

By default the following two schedules cannot be edited:

- 'Always' schedule
- 'Never' schedule

Schedules are used for the following:

- Timer schedule
- Correlations
- Auto-unlock
- PIN required schedule
- Access levels

3.6 Holidays

Holidays are actually part of the schedule, up to a maximum of 128 holidays. Each holiday consists of the following:

- start time/date
- end time/date

If a holiday falls on the same date each year it can also be programmed as an annual event.

Each holiday has a holiday ID and label to identify the holiday for use in the configurator software.

By default only the new year is programmed into the system.

3.7 System Status

The controller monitors inputs for trouble and alarm conditions.

3.7.1 Common trouble

The common trouble indicator is active when any of the following inputs receive a trouble condition:

- Any supervised input
- Power (AC and battery)
- Door held open warning

The common trouble status clears only if all the above inputs are back in normal state. When the common trouble status is active, the common trouble led flashes at a slow rate.

3.7.2 Common alarm

The common alarm status is active when any of the following inputs receive an alarm condition:

- forced entry alarm
- door held open alarm

The common alarm status clears only if all the above inputs are back in normal state. When the common alarm status is active, the common alarm led flashes at a fast rate.

Warranty & Warning Information

Limited Warranty

Mircom Technologies Ltd. together with its subsidiaries and affiliates (collectively, the “Mircom Group of Companies”) warrants the original purchaser that for a period of two years from the date of manufacture, the product shall be free of defects in materials and workmanship under normal use. During the warranty period, Mircom shall, at its option, repair or replace any defective product upon return of the product to its factory, at no charge for labour and materials. Any replacement and/or repaired parts are warranted for the remainder of the original warranty or ninety (90) days, whichever is longer. The original owner must promptly notify Mircom in writing that there is defect in material or workmanship, such written notice to be received in all events prior to expiration of the warranty period.

International Warranty

The warranty for international customers is the same as for any customer within Canada and the United States, with the exception that Mircom shall not be responsible for any customs fees, taxes, or VAT that may be due.

Conditions to Void Warranty

This warranty applies only to defects in parts and workmanship relating to normal use. It does not cover:

- damage incurred in shipping or handling;
- damage caused by disaster such as fire, flood, wind, earthquake or lightning;
- damage due to causes beyond the control of Mircom such as excessive voltage, mechanical shock or water damage;
- damage caused by unauthorized attachment, alterations, modifications or foreign objects;
- damage caused by peripherals (unless such peripherals were supplied by Mircom);

- defects caused by failure to provide a suitable installation environment for the products;
- damage caused by use of the products for purposes other than those for which it was designed;
- damage from improper maintenance;
- damage arising out of any other abuse, mishandling or improper application of the products.

Warranty Procedure

To obtain service under this warranty, please return the item(s) in question to the point of purchase. All authorized distributors and dealers have a warranty program. Anyone returning goods to Mircom must first obtain an authorization number. Mircom will not accept any shipment whatsoever for which prior authorization has not been obtained.

Note: Unless specific pre-authorization in writing is obtained from Mircom management, no credits will be issued for custom fabricated products or parts or for complete fire alarm system. Mircom will at its sole option, repair or replace parts under warranty. Advance replacements for such items must be purchased.

Note: Mircom's liability for failure to repair the product under this warranty after a reasonable number of attempts will be limited to a replacement of the product, as the exclusive remedy for breach of warranty.

Disclaimer of Warranties

This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose) And of all other obligations or liabilities on the part of Mircom neither assumes nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

This disclaimer of warranties and limited warranty are governed by the laws of the province of Ontario, Canada.

Out of Warranty Repairs

Mircom will at its option repair or replace out-of-warranty products which are returned to its factory according to the following conditions. Anyone returning goods to Mircom must first obtain an authorization number. Mircom will not accept any shipment whatsoever for which prior authorization has not been obtained.

Products which Mircom determines to be repairable will be repaired and returned. A set fee which Mircom has predetermined and which may be revised from time to time, will be charged for each unit repaired.

Products which Mircom determines not to be repairable will be replaced by the nearest equivalent product available at that time. The current market price of the replacement product will be charged for each replacement unit.

WARNING

Mircom recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected.

NOTE

Under no circumstances shall Mircom be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, but are not limited to, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

MIRCOM MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS GOODS DELIVERED, NOR IS THERE ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, EXCEPT FOR THE WARRANTY CONTAINED HEREIN.

Special Notices

Product Model Number: TX3

AC REN (U.S.): 0.0B

AC REN (CANADA): 0.0

Complies With

Federal Communications Commission (FCC):

- TIA-968-A Technical requirement for connection of equipment tot he telephone network.
- CFR 47, Part 15, Subpart B, Class B
- Unintentional Radiators

Industry Canada (IC):

- Terminal attachment programme
- CS-03, Issue 8 - Certification Specifications
- ICES-003, ISSUE 4, CLASS B
- Verification Authorization - Digital Apparatus

Registration Numbers

FCC (U.S.): 1M8OT00BTX3

IC (Canada): 1156A-TX3

Industry Canada Notice for all TX3 Products Sold in Canada

The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. Industry Canada does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunication company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradations of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alteration made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the earth ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This is necessary both for proper operation and for protection.

Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Note: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices does not exceed five.

FCC Notice for all TX3 Products Sold in the U.S.A.

Type of Service

The TX3 is designed to be used on standard device telephone lines. It connects to the telephone line by means of a standard jack called the USOC RJ-11C (or USOC FJ45S). Connection to telephone company-provided coin service (central office implemented systems) is prohibited. Connection to party lines service is subject to state tariffs.

Telephone Company Procedures

The goal of the telephone company is to provide you with the best service it can. In order to do this, it may occasionally be necessary for them to make changes in their equipment, operations or procedures. If these changes might affect your service or the operation of your equipment, the telephone company will give you notice, in writing, to allow you to make any changes necessary to maintain uninterrupted service.

In certain circumstances, it may be necessary for the telephone company to request information from you concerning the equipment which you have connected to your telephone line. Upon request of the telephone company, provide the FCC registration number and the ringer equivalence number (REN); both of these items are listed on the equipment label. The sum of all of the RENs

on your telephone lines should be less than five in order to assure proper service from the telephone company. In some cases, a sum of five may not be useable on a given line.

Changes to Telephone Service

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

Ringer Equivalence Number

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. For products approved after July 23, 2001, the REN for this product is Customer Information 3 July 2003 part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). For earlier products, the REN is separately shown on the label.

If Problems Arise

If any of your telephone equipment is not operating properly, you should immediately remove it from your telephone line, as it may cause harm to the telephone network. If the telephone company notes a problem, they may temporarily discontinue service. When practical, they will notify you in advance of this disconnection. If advance notice is not feasible, you will be notified as soon as possible. When you are notified, you will be given the opportunity to correct the problem and informed of your right to file a complaint with the FCC. Contact your telephone company if you have any questions about your telephone line. In the event repairs are ever needed on the Communicator, they should be performed by Mircom or an authorized representative of Mircom. For information contact Mircom at the address and telephone numbers in Chapter 1, page 14.

If this equipment, TX3-CX Card Access System, causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

Product Identifier

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the back of the front panel cover of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

Telephone Connection

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. You are responsible for installing a compliant telephone cord and modular plug into this product as described in this manual. It is designed to be connected to a compatible modular jack that is also compliant. See installation instructions for details.

Equipment Failure

If trouble is experienced with the TX3-CX Card Access System, for repair or warranty information, please contact Mircom using the numbers on page 14. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Use on Party Lines

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

Use With Alarm Auto Dialers

If your institution has specially wired alarm equipment connected to the telephone line, ensure the installation of the TX3-CX Card Access System does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Hearing Aid Compatibility

The TX3-CX Card Access System is hearing aid compatible.