INSTRUCTION MANUAL

MIO MODERO KEYPADS

CLASSIC, PRESTIGE, ELITE, MIO MODERO IR

MIO-CLASSIC-S/D, MIO-PRESTIGE-S/D, MIO-ELITE-S/SL, MIO-ELITE-D/DL, MIO MODERO IR

AV FOR AN IT WORLD

IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.

12. USE ONLY with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
18. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

ESD Warning: The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.

WARNING: To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.

WARNING: No naked flame sources - such as lighted candles - should be placed on the product.

WARNING: Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.

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AMX WARRANTY AND RETURN POLICY

The AMX Warranty and Return Policy and related documents can be viewed/downloaded at www.amx.com.

ESD WARNING

To avoid ESD (Electrostatic Discharge) damage to sensitive components, make sure you are properly grounded before touching any internal materials.

When working with any equipment manufactured with electronic devices, proper ESD grounding procedures must be followed to make sure people, products, and tools are as free of static charges as possible. Grounding straps, conductive smocks, and conductive work mats are specifically designed for this purpose.

Anyone performing field maintenance on AMX equipment should use an appropriate ESD field service kit complete with at least a dissipative work mat with a ground cord and a UL listed adjustable wrist strap with another ground cord

WARNING: Do Not Open! Risk of Electrical Shock. Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel.

Place the equipment near a main power supply outlet and make sure that you can easily access the power breaker switch.

WARNING: This product is intended to be operated ONLY from the voltages listed on the back panel or the recommended, or included, power supply of the product. Operation from other voltages other than those indicated may cause irreversible damage to the product and void the products warranty. The use of AC Plug Adapters is cautioned because it can allow the product to be plugged into voltages in which the product was not designed to operate. If the product is equipped with a detachable power cord, use only the type provided with your product or by your local distributor and/or retailer. If you are unsure of the correct operational voltage, please contact your local distributor and/or retailer.

FCC AND CANADA EMC COMPLIANCE INFORMATION:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- •Reorient or relocate the receiving antenna.
- •Increase the separation between the equipment and receiver.
- •Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- •Consult the dealer or an experienced radio/TV technician for help.

Approved under the verification provision of FCC Part 15 as a Class B Digital Device.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.

CAN ICES-3 (B)/NMB-3(B)

EU COMPLIANCE INFORMATION:

Eligible to bear the CE mark; Conforms to European Union Low Voltage Directive 2006/95/EC; European Union EMC Directive 2004/108/EC; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU; European Union WEEE (recast) Directive 2012/19/EU; European Union Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Directive 2006/121/EC

You may obtain a free copy of the Declaration of Conformity by visiting http://www.amx.com/techcenter/certifications.asp.

WEEE NOTICE:

This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

Table of Contents

Mio Modero Keypads

Overview

The Mio Modero device family provides a wide range of control capabilities in the form of keypads that are as adept as they are elegant. Each device is available as single style (8 button max) or double style (16 button max) with an optional LCD capped button (FIG. 1).

FIG. 1 White, Single Style Classic; Black, Single Style Prestige; Gray, Double Style Elite with LCD

The devices are available as follows:

Mio Modero Device Family	
Classic	Engraved plastic buttons with a red (active) feedback LED in the upper left corner.
Prestige	Clear plastic capped buttons with laser printed inserts; a red (active) feedback LED in the upper left corner.
Elite (Discontinued)	Painted and engraved plastic buttons, backlit with a blue (inactive) and red (active) feedback; available with an LCD button.
Mio Modero IR	IR receiver capable of accepting both 38kHz and 455kHz frequency bands.

Specifications

The Mio Modero device family keypad specifications are as follows:

Specifications			
Power:	12 vDC, 70 - 230 mA (range depending on device type and number of buttons)		
Front Panel Components:	• LCD (where applicable) - SPI controlled 96 x 96 pixel resolution, monochrome FSTN display with a white Electroluminescent backlight; an active button. • Pushbuttons - a maximum of 8 buttons on the single style and 16 buttons on the double style. The Classic and Prestige provide a direct LED light. • LEDs - red and blue backlit buttons indicate activity. Only present in the Elite devices.		
Rear Panel Components:	• DIP switch - 8 position mini DIP switch used to set the device address for the keypad on the AxLink Bus. • Wiring connection - 4 pin 3.5mm Phoenix AxLink connector.		
Dimensions (HWD):	• Single style - 4.46" x 2.71" x .57" (113.28 mm x 68.83 mm x 14.48 mm) • Double style - 4.46" x 4.39" x .57" (113.28 mm x 111.51 mm x 14.48 mm)		
Supported Languages:	• English • Spanish • French • Italian • German	• Portuguese • Arabic • Mandarin Chinese • Russian • Japanese	• Thai • Hindi • Korean • Hebrew • Greek
Weight (range):	.25 lbs (.11 kg) - .50 lbs (.23 kg)		
Operating Environment:	• Operating Temperature: 0° to 50° C (32° to 122° F) • Storage Temperature: -10° to 70° C (14° to 158° F)		
Mounting:	Mounts into US and a majority of International single gang back boxes.		

Specifications (Cont.)	
Included Accessories:	• Single style mounting kit (KA-5795-01) • Double style mounting kit (KA-5795-02) • Mylar kit (Prestige only) - Sheets of common menu items and icons for creating inserts for single and double buttons. Available in either black, white, or beige. (66-5798-01WH, White; 66-5798-01BG, Beige; 66-5798-01BL, Black) • Phoenix Connector (41-5045) • Installation Buttons (Elite and Classic only)
Other AMX Equipment:	• Accent Frame (for some larger wallboxes): *Classic and Prestige Colors* (xx indicates color selection) - FG5795-08xx (single button); FG5795-09xx (double button) *Elite Colors* (xx indicates color selection) - FG5796-08xx (single button); FG5796-09xx (double button) • Custom buttons: *Classic Colors* (xx indicates color selection) - FG5795-21xx (4 single buttons); FG5795-22xx (2 double buttons) *Prestige Colors* (xx indicates color selection) - FG5798-05xx (4 single buttons); FG5798-06xx (2 double buttons) *Elite Colors* (xx indicates color selection) - FG5796-21xx (4 single buttons); FG5796-22xx (2 double buttons) • Blank buttons: *Classic Colors* (xx indicates color selection) - FG5795-07xx *Elite Colors* (xx indicates color selection) - FG5796-07xx

Available Color Schemes

The Mio Modero device family is available in a range of colors, and the Elite supports a variety of Lutron color schemes.

Mio Modero Color Schemes	
Mio Modero Classic	Black (BL), White (WH), Beige (BG)
Mio Modero Prestige	Black (BL), White (WH), Beige (BG)
Mio Modero Elite (Discontinued)	Black (BL), White (WH), Beige (BG), Almond (AL), Brown (BR), Gray (GR), Ivory (IV), Light Almond (LA), Taupe (TP), Gold (GL), Silver (SL)
IR Receiver	Black (BL), White (WH), Beige (BG)
International Wall Plates	Black (BL), White (WH), Beige (BG), Almond (AL), Brown (BR), Gray (GR), Ivory (IV), Light Almond (LA), Taupe (TP), Gold (GL), Silver (SL)

Mio Modero LCD Feature

The Mio Modero Elite is available with an optional LCD screen. The LCD is a scalable black-and-white image (SPI) controlled 96 x 96 resolution monochrome FSTN display with a white Electroluminescent back light. The viewable area of the screen is 25 mm x 25 mm.

- The LCD displays an 18 pt. font and supports 4 lines of text.
- The viewing angle of the LCD is 12 o'clock, allowing for a top down viewing once mounted to a wall.
- The LCD is capable of displaying levels via a bar graph and text over the bar graphs.
- Additionally, the LCD has a button cap enabling it to act as a button.

Fixed Menu System

Using the KeypadBuilder application available for download from **www.amx.com**, the LCD can be programmed with a Fixed Menu System (FMS) that is navigated via the Mio Modero and its LCD button.

See the *KeypadBuilder Instruction Manual* for more information on programming Fixed Menu Systems.

Proximity Detection "People Sensor"

The Mio Modero Elite has an electromagnetic field proximity detector or "People Sensor."

A disruption of the field within 4 to 6 inches will activate the keypad's backlight.

Installation

Overview

Before touching the device, discharge the static electricity from your body by touching a grounded metal object.

The basic front and rear components of the Mio Modero are as follows:

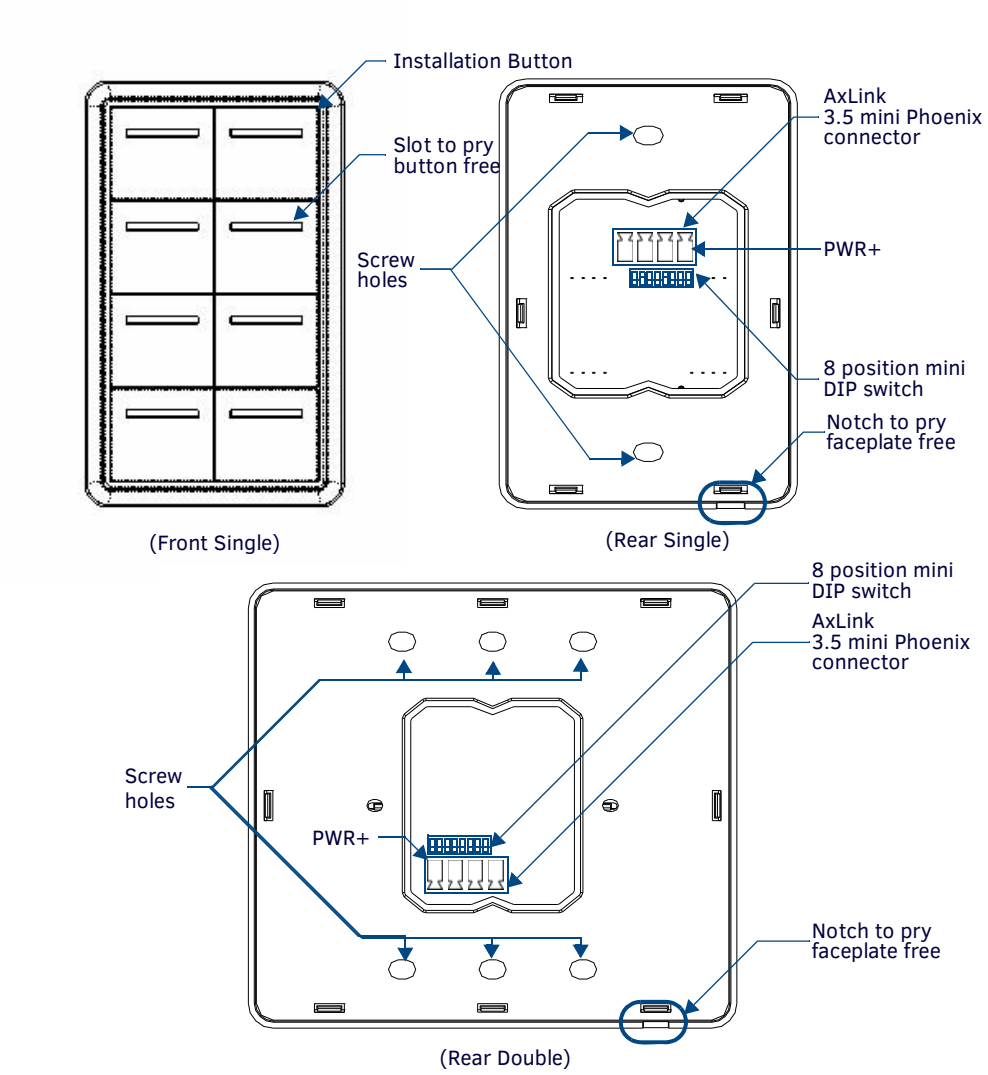

FIG. 2 Mio Modero Front and Rear Components

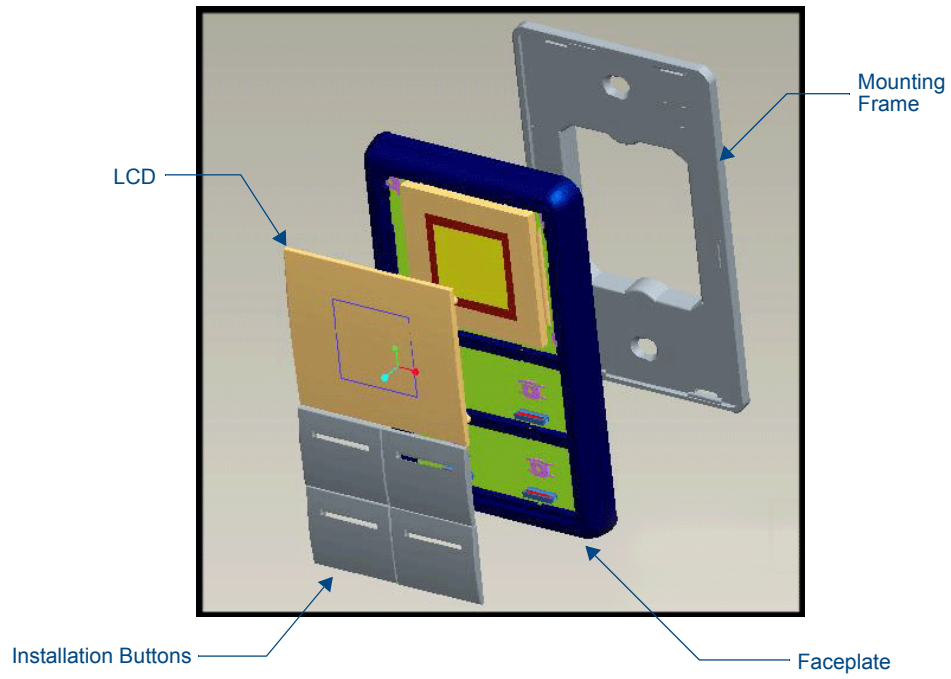

FIG. 3 Sections of The Mio Modero

Changing Buttons

The Mio Modero Classic and Elite are shipped with "installation" buttons; they are intended to be place holders until your engraved buttons, designed with KeypadBuilder, arrive.

Switching Out "Installation" Buttons

1. Pry the button using the slot on the front of the "installation" buttons to remove them from the Mio Modero.
2. Select the location of the custom buttons and snap them into place. Be sure to note the orientation of the white insert on the back of the button, the notch must be down. Insert the bottom of the button first and then push the top into place.
3. Snap the faceplate on the mounting frame.

Changing Custom Buttons

1. If connected, disconnect the power supply.
2. If connected to mounting frame, place a flathead screwdriver in the notch at the bottom right of the Mio Modero, and pry the faceplate from the mounting frame.
3. On the back of the faceplate locate the button access points, outlined with white circles. Using a straightened paperclip, poke through the button access points until the buttons pop free.
4. Snap the desired custom buttons into place. Be sure to note the orientation of the white insert on the back of the button, the notch must be down. Insert the bottom of the button first and then push the top into place.
5. If the power supply was disconnected in **Step 1**, reconnect and return power to the device.
6. Snap the faceplate on the mounting frame.

Be certain to reprogram the Mio Modero to match the new button arrangement; use KeypadBuilder to assign the locations. See the *KeypadBuilder Instruction Manual* available at **www.amx.com**.

Mio Modero Prestige

The Mio Modero Prestige ships with sheets of common menu items and icons for creating inserts for single and double buttons.

1. If connected, disconnect the power supply.
2. If connected to mounting frame, place a flathead screwdriver in the notch at the bottom right of the Mio Modero, and pry the faceplate from the mounting frame.
3. On the back of the faceplate locate the button access points, outlined with white circles. Using a straightened paper clip, poke through the button access points until the buttons pop free.
4. The Prestige buttons are comprised of three parts, the frame, window, and back insert. From the front of the button, use your thumb to poke the window and back insert out of the frame. See FIG. 4.

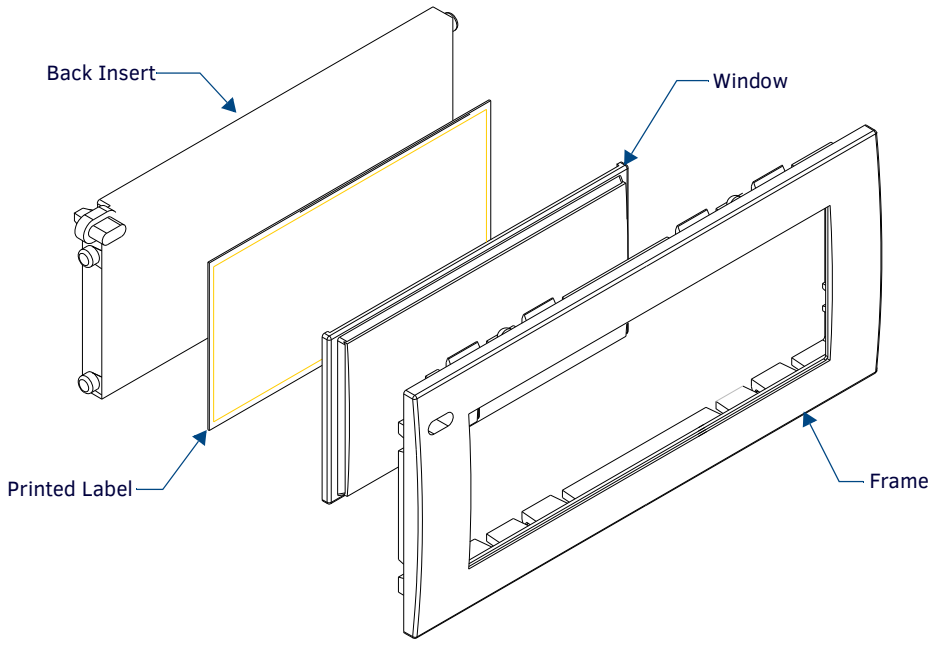

FIG. 4 Prestige Button Components

5. Snap the widow into the frame and then place the printed labels inside each button.
6. Snap the back inset to the window and frame.
7. Insert the buttons into their proper location on the faceplate.
8. If the power supply was disconnected in **Step 1**, reconnect and return power to the device.
9. Snap the faceplate on the mounting frame.

Setting The AxLink Device Number

1. If connected, disconnect the power supply.
2. Locate the 8-position Device DIP switch on the rear panel.(FIG. 5).
3. Set the DIP switch according to the switch values shown below.

Switch	1	2	3	4	5	6	7	8
Value	1	2	4	8	16	32	64	128

The device number is set by the total value of DIP switch positions that are ON (up).
As an example, the DIP switch in FIG. 5 defines device number 129 (1+128=129).

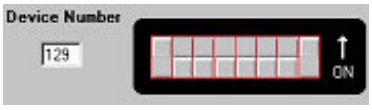

FIG. 5 Example Device DIP Switch set to 129

If you later change the device number, remove and reconnect the AxLink power connector to enter the new device number into memory.

NOTE: *AMX has created Dip Switch2 to assist in calculating dip switch position values. Download the program Dip Switch2 from www.amx.com for free.*

Wiring

The Mio Modero uses a four-pin mini AxLink connector for power and data.

NOTE: *Do not connect power to the Mio Modero until the wiring is complete.*

Preparing captive wires

You will need a wire stripper, and flat-blade screwdriver to prepare and connect the captive wires.

1. Strip 0.25 inch (6.35 mm) of wire insulation off all wires.
2. Insert each wire into the appropriate opening on the connector according to the wiring diagrams and connector types described in this section.
3. Turn the flat-head screws clockwise to secure the wires in the connector.

   NOTE: *Do not over-torque the screws; doing so can bend the seating pins and damage the connector.*

Wiring Guidelines

The Mio Modero requires 12 VDC power to operate properly. The necessary power is supplied via the AxLink cable.

The maximum AxLink wiring distance is determined by power consumption, supplied voltage, and the wire gauge used for the cable.

The following table lists wire sizes and the maximum lengths allowable based on the maximum power consumption rating of 170mA.

Wiring Guidelines at 170 mA	
Wire Size	**Maximum Wiring Length**
18 AWG	690.42 feet (210.43 m)
20 AWG	436.80 feet (133.13 m)
22 AWG	272.33 feet (83.00 m)
24 AWG	171.66 feet (52.32 m)

The maximum wiring lengths for using AxLink power are based on a minimum of 13.5 volts available.

Connecting the Wiring

The following paragraphs describe wiring connections for using the AxLink and relay connectors.

NOTE: *If using power from AxLink, disconnect the wiring from the control system before wiring the Mio Modero.*

AxLink Data and Power Connections

Connect the control system's AxLink connector to the AxLink connector on the rear panel of the Mio Modero for data and 12 VDC power as shown in FIG. 6.

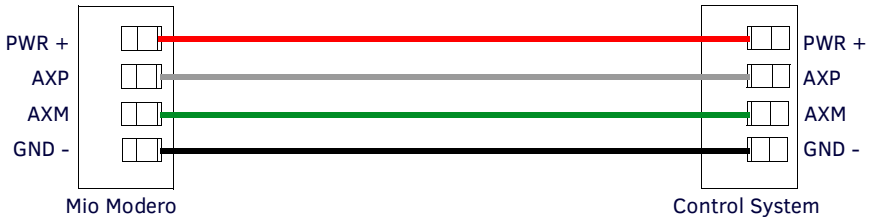

FIG. 6 AxLink straight-thru wiring

Using AxLink For Data With an Auxiliary Power Supply

Connect the controller's AxLink connector to the AxLink connector on the rear panel of the Mio Modero device, as shown in FIG. 7.

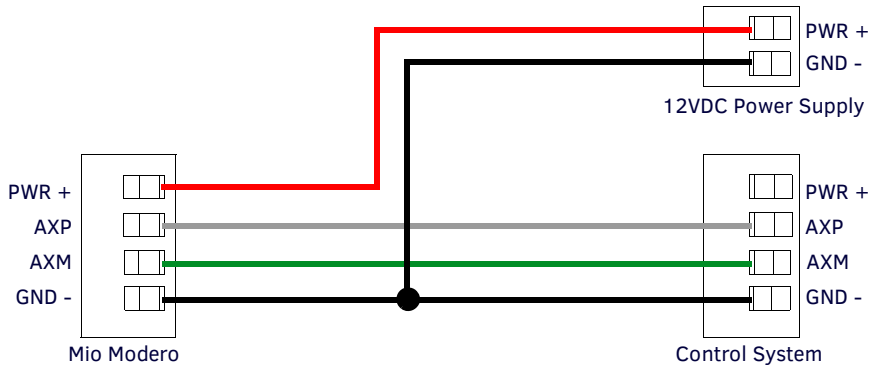

FIG. 7 AxLink and 12 VDC power supply wiring diagram

NOTE: *If you are not using power from AxLink, disconnect the wiring from the controller before wiring the Mio Modero device. Make sure the auxiliary power supply's PWR (+) is not connected to the controller's AxLink connector.*

Use an auxiliary 12 VDC power supply when the distance between the controller and server exceeds the limits described in Wiring Guidelines table.

Connect only the GND (-) wire on the AxLink connector when using an auxiliary 12 VDC power supply.

Mounting Procedures

FIG. 8 shows the wallbox mounting dimensions for the single and double style Mio Modero. AMX recommends mounting the Mio Modero in a standard one-gang wallbox, a conduit box per NEC specs section 370, with a minimum internal clearance of 2-5/8" x 1-3/4" x 1-5/8" (HWD), but it is possible to mount the Mio Modero to a podium without a wallbox.

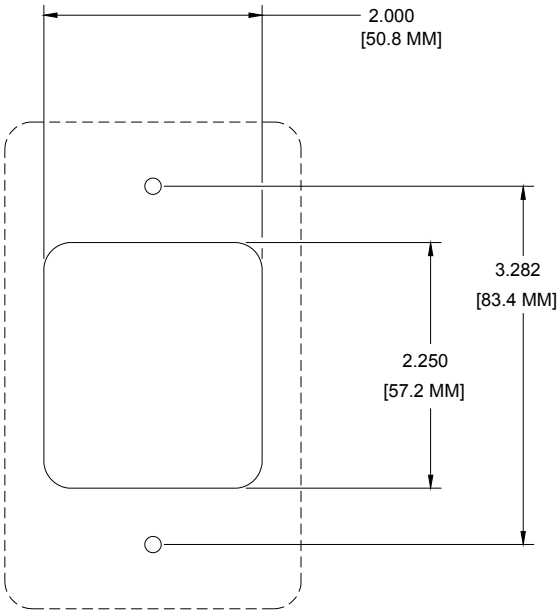

FIG. 8 Mio Modero Single Style mounting dimensions

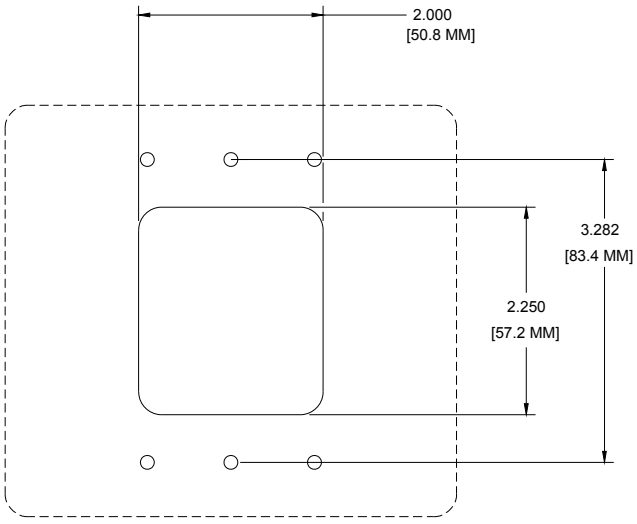

FIG. 9 Mio Modero Double Style mounting dimensions

Wallbox Mounting

1. Use the cutout dimension for the wallbox to cutout the install surface for the Mio Modero.
2. Confirm that the terminal end of the AxLink cable is disconnected, and not receiving power.
3. If the faceplate is connected to the mounting frame, place a flathead screwdriver in the notch at the bottom right of the Mio Modero, and pry the faceplate from the mounting frame.
4. Connect the AxLink power supply. The connector passes through the center of the mounting frame and connects to the board. The connection is illustrated in FIG. 2.
5. Place the mounting frame on the wallbox; align the screw holes with the mounting holes and fasten the mounting frame to the wallbox using the screws supplied.

   NOTE: *Do not over-tighten the screws when mounting the mounting frame. The device should be flush with mounting surface.*
6. Attach the faceplate to the mounting frame first at the top and swing it to the bottom. See FIG. 10.

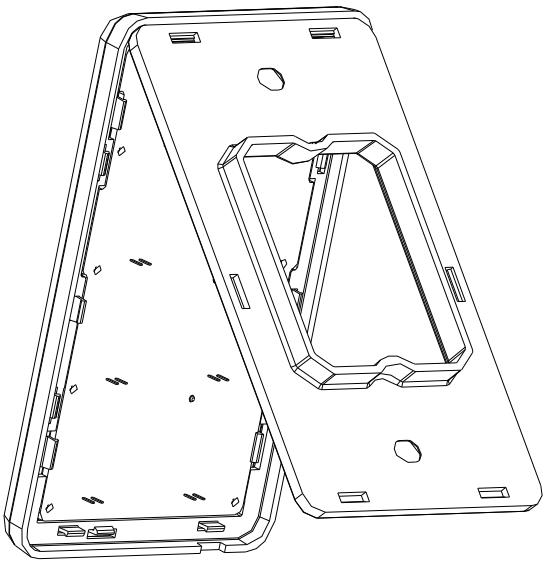

FIG. 10 Attaching the faceplate to the mounting frame

Podium Mounting

1. Use the cutout dimension shown in either FIG. 8 or FIG. 9 to cutout the mounting frame install surface for the Mio Modero.
2. Confirm that the terminal end of the AxLink cable is disconnected, and not receiving power.
3. If the faceplate is connected to the mounting frame, place a flathead screwdriver in the notch at the bottom right of the Mio Modero, and pry the faceplate from the mounting frame.
4. Connect the AxLink power supply. The connector passes through the center of the mounting frame and connects to the board. The connection is illustrated in FIG. 2.
5. With the mounting frame resting in the cutout area, drill the mounting holes into the flat surface.

   NOTE: *Do not over-tighten the screws when mounting the mounting frame. The device should be flush with mounting surface.*
6. Attach the faceplate to the mounting frame first at the top and swing it to the bottom (see FIG. 10).

Accent Frame

While the Mio Modero device family does fit into many International wallboxes, it may be necessary to utilize the optional accent frame to completely cover the wallbox.

To install the Mio Modero with the optional accent frame:

1. Use the cutout dimension for the wallbox to cut out the install surface for the Mio Modero.
2. Place the accent frame on the wallbox; align the screw holes with the mounting holes on the wallplate. Fasten the wallplate to the wallbox.

   Based on the extensive number of international wallboxes it is not pragmatic to ship every possible screw that could be used. Please use the screws appropriate for your specific wallbox.

   NOTE: *Do not over tighten the screws when mounting the mounting frame. The device should be flush with mounting surface.*
3. Confirm that the terminal end of the AxLink cable is disconnected, and not receiving power.
4. If the faceplate is connected to the mounting frame place a flathead screwdriver in the notch at the bottom right of the Mio Modero IR, and pry the faceplate from the mounting frame.
5. Connect the AxLink power supply. The connector passes through the center of the mounting frame and connects to the board. The connection is illustrated in FIG. 2.
6. Place the mounting frame on the accent frame; align the screw holes with the mounting holes and fasten the mounting frame to the wallplate. The Accent Frame is shipped with two #6-32 x .187 long flat head screws (80-131); these are used to attach the Mio panel to the accent frames.
7. Snap the faceplate to the mounting frame.

Mio Modero IR

The Mio Modero IR (FIG. 11) is a remote IR receiver for use with NetLinx® Central Controllers and operates via the AxLink bus to remotely control devices.

- The Mio Modero IR is in a wall panel that fits into the US-style single-gang enclosure and most International single-gang enclosures.
- The Mio Modero IR works with AMX 38 kHz and 455 kHz IR transmitters.

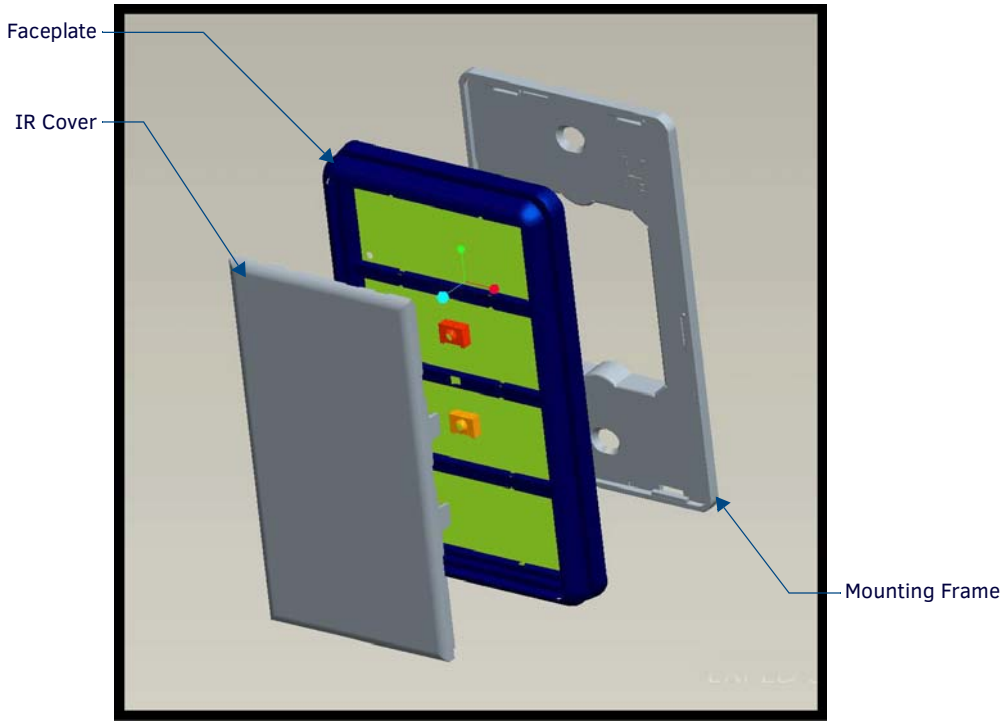

FIG. 11 Mio Modero IR receiver

Mio Modero IR Specifications	
Power:	12 vDC, 15 mA
Receive Frequencies:	38 and 455 kHz
Range:	38KHz: • Transmitter at 38Hz = max of 95 feet line of sight • Transmitter at 38Hz and at 50° horizontal angle from center = 55 feet • Transmitter at 38Hz and at 30° vertical angle from center = 65 feet 455KHz: • Transmitter at 455Hz = max of 58 feet line of sight • Transmitter at 455Hz and at 45° horizontal angle from center = 31 feet • Transmitter at 455Hz and at 45° vertical angle from center = 35 feet
Mounting:	Mounts into US-style single-gang enclosures and most International single-gang enclosures.
Dimensions (HWD):	4.46" x 2.71" x .57" (113.28 mm x 68.83 mm x 14.48 mm)
Weight:	.15 lbs (.07 kg)

Wiring and Installation

Set the receive AxLink device number before installing the Mio Modero IR. FIG. 12 illustrates the location of key components on the Mio Modero IR circuit board.

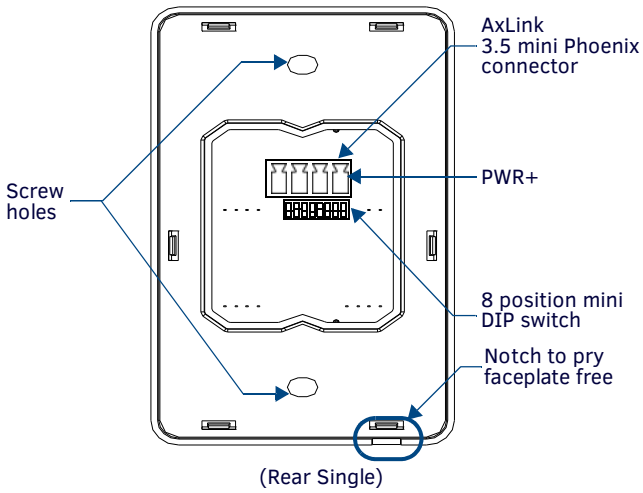

FIG. 12 Location of key components on the Mio Modero IR circuit board

Setting the AxLink Device Number

1. If connected, disconnect the power supply.
2. Locate the 8-position Device DIP switch (FIG. 12).
3. Set the DIP switch according to the DIP switch values shown below.

Switch	1	2	3	4	5	6	7	8
Value	1	2	4	8	16	32	64	128

The device number is set by the total value of DIP switch positions that are ON (up).

As an example, the DIP switch in FIG. 13 defines device number 129 (1+128=129).

FIG. 13 Example Device DIP Switch set to 129

If you later change the device number, remove and reconnect the AxLink power connector to enter the new device number into memory.

Wiring Guidelines

The Mio Modero IR requires 12 VDC power to operate properly. The power is supplied by the AMX system's AxLink cable. The maximum wiring distance between the Central Controller and the receiver is determined by power consumption, supplied voltage, and the wire gauge used for the cable.

The following table lists wire sizes and the maximum lengths allowable between the receiver and the Central Controller. The maximum wiring lengths are based on a minimum of 13.5 volts available at the Central Controller's power supply.

Wiring Specifications @ 35 mA	
Wire Size	**Maximum Wiring Length**
18 AWG	3000 feet (914.40 m)
20 AWG	2121.64 feet (646.68 m)
22 AWG	1,322.75 feet (403.17 m)
24 AWG	833.80 feet (254.14 m)

AxLink Data and Power Connections

The Mio Modero IR uses a four-pin mini AxLink connector for power and data.

Connect the control system's AxLink connector to the AxLink connector on the rear panel of the Mio Modero IR for data and 12 VDC power as shown in FIG. 14.

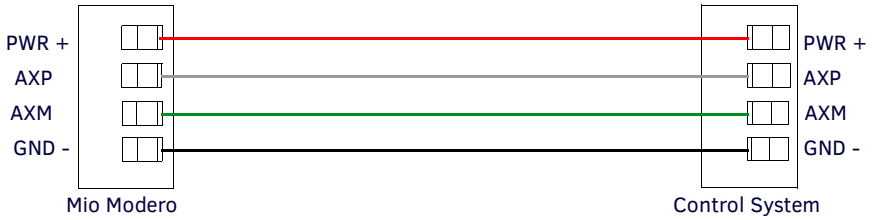

FIG. 14 AxLink straight-thru wiring

For wire prepartaion guidelines, refer to *Preparing captive wires* section on page 10.

Checking AxLink Status

The AxLink LED, shown in FIG. 12, lights to indicate AxLink power/data status as follows:

- **1 blink per second** Indicates power is active and AxLink communication is working.
- **2 blinks per second** Indicates the devices specified in the Master program do not match the devices found.
- **3 blinks per second** Indicates AxLink communication error.
- **Full On** Indicates the following conditions:
  - There is no AxLink control or activity, but power is On.
  - The Axcess program is not loaded.

If the LED is on and not flashing, disconnect the AxLink connector and recheck all AxLink connections.

Then, reconnect the AxLink connector to the panel and verify the LED is flashing once per second.

Mounting Procedure

FIG. 15 shows the wallbox mounting dimensions for the Mio Modero IR.

AMX recommends mounting the Mio Modero IR in a standard one-gang wallbox, a conduit box per NEC specs section 370, with a minimum internal clearance of 2-5/8" x 1-3/4" x 1-5/8" (HWD).

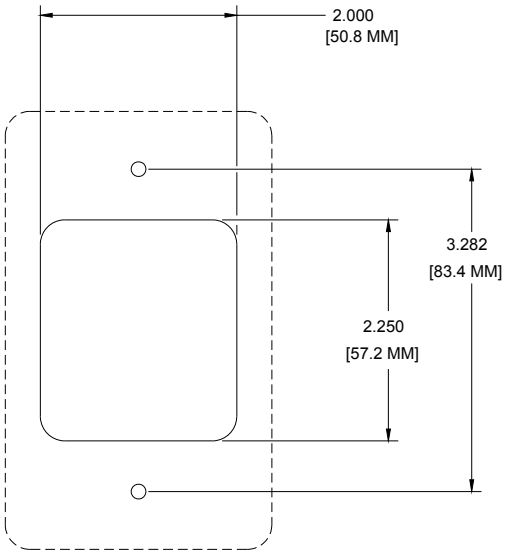

FIG. 15 Mio Modero IR mounting dimensions

1. Use the cutout dimension for the wallbox to cutout the install surface for the Mio Modero IR.
2. Confirm that the terminal end of the AxLink cable is disconnected, and not receiving power.
3. If the faceplate is connected to the mounting frame, place a flathead screwdriver in the notch at the bottom right of the Mio Modero IR, and pry the faceplate from the mounting frame.
4. Connect the AxLink power supply. The connector passes through the center of the mounting frame and connects to the board.
5. Place the mounting frame on the wallbox; align the screw holes with the mounting holes and fasten the mounting frame to the wallbox using the screws supplied.
6. Attach the faceplate to the mounting frame first at the top and swing it to the bottom. See FIG. 16.

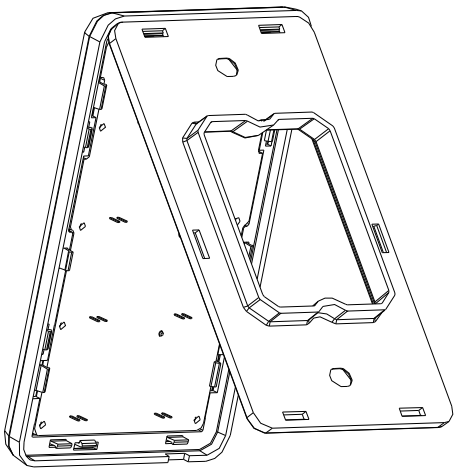

FIG. 16 Attaching the faceplate to the mounting frame

Programming The Mio Modero

KeypadBuilder

Most functionality of the Mio Modero is handled using the application, *KeypadBuilder*. Go to **www.amx.com** for the *KeypadBuilder Instruction Manual*.

There are a select number of SEND_COMMANDs the Mio Modero recognizes.

SEND_COMMANDs

Below is a list of SEND_COMMANDs accepted by the Mio Modero device family from NetLinx masters. As indicated, not every command applies to all Mio Modero devices, e.g., the ^TXT command is not apparent without an LCD upon which to display.

NOTE: *All text is based on a Unicode index.*

To use these commands, establish a Telnet session from the PC to the NetLinx master.

SEND_COMMANDs	

@BRT	Set Brightness level
	Syntax:
	`"'BRIT-<tag>,<awake brightness level>,<sleep brightness level>'"`
	Variables:
	• brightness level # = a value from 0 - 32.
	• tag = Red or Blue; affected LCDs
	`"'@BRT-#'"` (Set LED Awake brightness level)
	`"'@BRT-##'"` (Set LED Awake brightness level, sleep brightness level)
	`"'@BRT-tag#'"` (Set Red or Blue LED, brightness level)
	`"'@BRT-tag##'"` (Set Red or Blue LED, awake brightness level, and sleep brightness)
	Examples:
	`(1) SEND_COMMAND Panel,"'@BRT-16'"`
	Sets the awake brightness level to 50%.
	`(2) SEND_COMMAND Panel,"'@BRT-32,5'"`
	Sets the awake brightness level to 100% and sleep brightness level to approximately 15%
	`(3) SEND_COMMAND Panel,"'@BRT-RED,32'"`
	Sets the red LED awake brightness level to 100%.
	`(4) SEND_COMMAND Panel,"'@BRT-BLUE,32,5'"`
	Sets the Blue LED awake brightness level to 100% and sleep brightness level to Approximately 15%

^CFG	Set Keypad to Combine Mode. Combine mode allows you to combine/uncombine adjacent buttons on the Keypad.
	Syntax:
	`"'^CFG- <command value>'"`
	Variables:
	• command value = (1= enter combine mode, 0= exit combine mode).
	Example:
	`SEND_COMMAND Panel,"'^CFG-1'"`
	Sets the Keypad to button combine mode.
	Note: While in button combine mode, no pushes will be sent.
	Place the Keypad into button combine mode, and hold down two adjacent buttons for 2 seconds to combine them.
	• When two buttons have been pressed for 2 seconds, the LED on the left button will flash to indicate they are combined.
	• If you press two buttons that are already combined, they will be uncombined. The indication is that both button LEDs will flash alternately.
	See the *Combining Buttons* section on page 21 for details.

@CST	Sets the display contrast for the device.
	Syntax:
	`"'@CST-<Contrast Level>'"`
	Variables:
	• Contrast Level = a value from 0 - 31.
	Example:
	`SEND_COMMAND Panel,"'@CST-15'"`
	Sets the display contrast to approximately 50%.

SEND_COMMANDs (Cont.)	

^FML S	Sets a line of the display to a menu line
	Syntax:
	`"'^FML-<variable text address range>,S'"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• S = Static line type
	Example:
	`SEND_COMMAND Panel,"'^FML-1,S'"`
	Sets dynamic line 1 to a menu line

^FML D	Sets a line of the display to a dynamic line with no level
	Syntax:
	`"'^FML-<variable text address range>,D'"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• D = Dynamic line type
	Example:
	`SEND_COMMAND Panel,"'^FML-2,D'"`
	Set Line 2 to a Dynamic Line with no Level

^FML D L	Sets a line of the display to a dynamic line with a level
	Syntax:
	`"'^FML-<variable text address range>,D,L'"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• D = Dynamic line type
	• L = Level
	Example:
	`SEND_COMMAND Panel,"'^FML-1,D,L'"`
	Set line 1 to a Dynamic line with level

^FML D L #	Sets a line of the display to a dynamic line with a level, and sets the level style
	Syntax:
	`"'^FML-<variable text address range>,D,L,<Level Style>'"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• D = Dynamic line type
	• L = Level
	• level style = 0 or 1 for level style type
	Example:
	`SEND_COMMAND Panel,"'^FML-1,D,L,0'"`
	Set line 1 to a Dynamic line with level and set style to 'Level Style 0'

^GLY
(LCD equipped only)
	Set Glyph Character.
	Syntax:
	`"'^GLY-<variable text address range>,',<glyph number>"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• glyph number = glyph text.
	Example:
	`SEND_COMMAND Panel, "'^GLY-1&4,',2"`
	Sets the second glyph character on dynamic lines 1 and 4 of the LCD button.

^JST-
(LCD equipped only)
	Set text alignment using a numeric keypad layout for those buttons with a defined address range
	Syntax:
	`"'^JST-<variable text address range>,<new text alignment>'"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• new text alignment = Value of 1 - 9 corresponds to the following locations:
	1, 4 or 7 = Left
	2, 5 or 8 = Center
	3, 6 or 9 = Right
	Example:
	`SEND_COMMAND Panel,"'^JST-1.4,1'"`
	Sets the text alignment to the left side on dynamic lines 1, 2, 3 and 4 of the LCD button
	Note: There is no vertical alignment.

SEND_COMMANDs (Cont.)	

^PRX-	Sets the sensitivity for the proximity sensor.
	Syntax:
	`"'^PRX-#'"`
	Variable:
	• # = a value from 0 - 31.
	Example:
	`SEND_COMMAND Panel,"'^PRX-15'"`
	Sets the proximity sensor for the device to a level of approximately 50%.

^SHO	Show or hide text with a set variable text range.
	Syntax:
	`"'^SHO-<variable text address range>,<command value>'"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• command value = (0= hide, 1= show).
	Example:
	`SEND_COMMAND Panel,"'^SHO-1,0'"`
	Hides text on dynamic line 1 of the LCD button.

SLEEP	Force the device into screen saver mode.
	Syntax:
	`"'SLEEP'"`
	`"'SLEEP-#'" (timed sleep; a persistent command)`
	Variable:
	• # = 0 - 60 in seconds; time to wait before going to sleep. Default is 30. 0 sets the device to never sleep.
	Example:
	`SEND_COMMAND Panel,"'SLEEP-45'"`
	Forces the device into screen saver mode after 45 seconds.

@SSL	Sends a string to the master upon going to sleep.
	Syntax:
	`"'@SSL-<new text>'"`
	Variable:
	• new text = 1 - 20 ASCII characters. Default string is SLEEP.
	Example:
	`SEND_COMMAND Panel,"'@SSL-KeyPad Sleep'"`
	Sends the string " KeyPad Sleep' to the master at time of sleep.

@SST	Sends a string to the master upon start up.
	Syntax:
	`"'@SST-<new text>'"`
	Variable:
	• new text = 1 - 20 ASCII characters. Default string is STARTUP.
	Example:
	`SEND_COMMAND Panel,"'@SST-Panel Start'"`
	Sends the string " Panel Start " to the master at time of start up.

@SWK	Sends a string to the master upon wake up.
	Syntax:
	`"'@SWK-<new text>'"`
	Variable:
	• new text = 1 - 20 ASCII characters. Default string is WAKEUP.
	Example:
	`SEND_COMMAND Panel,"'@SWK-Wake KeyPad"`
	Sends the string " Wake KeyPad " to the master at time of wake up.

^TXT-
(LCD equipped only)
	Assign a text string to those LCD buttons with a defined address range. Sets non unicode text.
	Syntax:
	`"'^TXT-<variable text address range>,<new text>'"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• new text = 1 - 20 characters (uses one byte Unicode values for all text characters).
	Examples:
	`1. SEND_COMMAND Panel,"'^TXT-1&3,Test Only'"`
	Sets the text "Test Only" on dynamic lines 1 and 3 of the LCD button.
	`2. SEND_COMMAND Panel,"'^TXT-2.4,'"`
	Clear text on dynamic lines 1 through 4 of the LCD button.

SEND_COMMANDs (Cont.)	

^UNI-
(LCD equipped only)
	Set Unicode text. The Unicode text is sent as a two byte HEX value.
	Syntax:
	`"'^UNI-<variable text address range>,',<unicode text>"`
	Variables:
	• variable text address range = 1 - 4; the address range corresponds to the dynamic line number.
	• unicode text = Unicode HEX value.
	Example:
	`SEND_COMMAND Panel, "'^UNI-1&4,',$00,$BD,$00,$B5"`
	Sets the Unicode characters '½µ' on dynamic lines 1 and 4 of the LCD button.
	Note: Unicode is always represented in a two byte HEX value.

WAKE	Force the device out of screen saver mode.
	Syntax:
	`"'WAKE'"`
	Example:
	`SEND_COMMAND Panel,"'WAKE'"`
	Forces the device out of the screen saver mode.

Combining Buttons

Use the **^CFG** Send Command (see page 18) to combine/uncombine adjacent buttons on the Keypad:

NOTE: *The variables for the ^CFG command value are: 1= enter combine mode, 0= exit combine mode.*

1. Send the following Send Command to the Keypad, to set the Keypad to button combine mode:

```
SEND_COMMAND Panel,"'^CFG-1'"
```

   NOTE: *While in button combine mode, no pushes will be sent.*

2. Hold down two adjacent buttons for 2 seconds.
3. When the two buttons have been pressed for 2 seconds, the LED on the left button will flash to indicate they are combined.

If you press two buttons that are already combined, they will be uncombined. The indication is that both button LEDs will flash alternately.

Combine mode can be exited by sending the command '^CFG-0' or by disconnecting the keypad from power to reboot it.

Sending Firmware to The Mio Modero Keypads

You will need the NetLinx Studio software (available to download from www.amx.com) to update firmware located on the Mio Modero Keypads.

To send firmware to the keypads:

1. Open NetLinx Studio.
2. Go to **Tools > Firmware Transfers > Send to Axcess Device...** This opens the *Send to Axcess Dialog*. Browse to the location of the firmware file.
3. Select the file within the *Files* frame.
4. Click **Query for Devices**.
5. Select the Mio Modero Keypad within the *Devices* frame.
6. Click **Send** and then **Close**.
7. Upon confirmation of a successful send, you can exit NetLinx Studio.

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Last Revised:
10/29/2015