Yale 22132 - KPT-29ZBS Remote Keypad with Tag Reader

Introduction

The Yale KPT-29ZBS is a ZigBee Remote Keypad with Tag Reader. It is designed to have quick access control of the ZigBee network coordinator or system control panel. Also by assigning User PIN Code to a Tag, users can use the Tag to gain access control of the system with a simple swipe. The Keypad can send wireless signals to and receive wireless signals from the coordinator in the ZigBee network. The LCD display will display any information the ZigBee network coordinator or system control panel sends back.

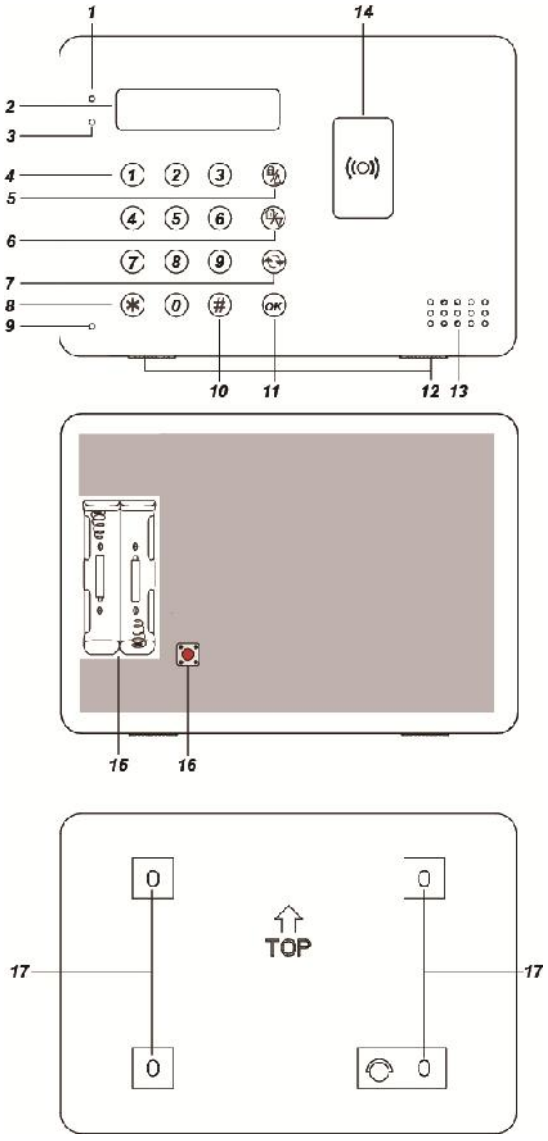
The Keypad can either be mounted on a flat surface or wall mounted with the use of the 4 mounting knockouts. It also has tamper protections switch which will be activated upon any attempt of unauthorized opening of the cover.

The Keypad utilizes ZigBee technology for wireless signal transmission. ZigBee is a wireless communication protocol that is reliable and has low power consumption and high transmission efficiency. Based on the IEEE802.15.4 standard, ZigBee allows a large amount of devices to be included in a network and coordinated for data exchange and signal transmission

The Keypad serves as an end device in the ZigBee network. It can be included in the ZigBee network to transmit signal upon activation, but cannot permit any other ZigBee device to join the network through the Keypad.

Parts Identification

1. **Power LED**
   - Lights up when the LCD Display is on.
2. **Backlit LCD Display**
3. **Status LED**
   - Lights up when a fault exists in the system.
4. **Backlit Numeric keys**
5. **Backlit Arm/▲ Key**
6. **Backlit Home/▼ Key**
7. **Backlit ⟳ Key**
8. **Backlit ✱ Key**
9. **IR Sensor**
10. **Backlit # Key**
11. **Backlit OK Key**
    - To reset the Remote Keypad:
      Press and hold the **OK Key** for 10 seconds.
      Release the button when the LCD display shows a “KPT will reset in 2 seconds” message.
12. **Cover Open Switch**
13. **Buzzer**
14. **Backlit RFID Sensor Zone**



15. Battery Compartment

16. Tamper Switch

17. Mounting Knockouts x 4

Features

- ***Battery***

The KP uses two **1.5V "AA" Lithium batteries** as its power source.

Power Saving Feature

- When idle, the Remote keypad will enter Power Saving Mode to save power.
- The LCD and keyboard back lights are turned off in Power Saving Mode.
- When the IR sensor detects a user approaching within 30-50 cm of the Remote Keypad, the LCD light will turn on and displays the status of the system for 2 seconds. 4 types of status are available:
    I. **System Arm**
    The system is in armed mode
    II. **System Disarm**
    The system is in disarmed mode
    III. **System Home Arm**
    The system is in home armed mode
    IV. **Alarm Memory**
    The system had an alarm that was not silenced.
- After the 2-second display, the Remote Keypad will prompt the user to enter PIN code.
- After 15 seconds of key inactivity, the power goes off and the Keypad returns to Power Saving Mode.

Low Battery Voltage Detection

- The Keypad will detect battery status. If the battery voltage is low, a Low Battery signal will be sent to the ZigBee network coordinator or system control panel.

Insert Battery

1 Remove the Keypad back cover.
2 Insert new batteries into battery compartment.
3 Remote Keypad will emit a short beep.
4 After 15 seconds of inactivity, the Remote Keypad will enter sleep mode.
5 Replace the back cover.

When changing batteries, after removing the old batteries, press the Tamper Switch twice to fully discharge before inserting new battery

- ***Tamper Protection***
    - The Remote Keypad is protected against any attempt to open the back cover with a tamper switch. When the back cover is opened, the tamper switch will be triggered and the Keypad will transmit a tamper open signal to the ZigBee network coordinator or system control panel.
    - After replacing the back cover. The Keypad will transmit a tamper restore signal to the ZigBee network coordinator or system control panel.
    - When the Keypad is properly mounted with back cover screwed onto the wall, removing the keypad forcefully will break off the back cover from the hollowed section around the screw location and activate tamper switch.

ZigBee Network Setup

- ***ZigBee Device Guideline***

ZigBee is a wireless communication protocol that is reliable, has low power consumption and has high transmission efficiency. Based on the IEEE802.15.4 standard, ZigBee allows a large amount of devices to be included in a network and coordinated for data exchange and signal transmission.

Due to the fundamental structure of ZigBee network, ZigBee device will actively seek and join

network after powering on. Since performing a task in connecting network may consume some power, it is required to follow the instructions to avoid draining battery of a ZigBee device

- Ensure your ZigBee network router or coordinator is powered on before inserting battery into the ZigBee device.
- Ensure the ZigBee network router or coordinator is powered on and within range while a ZigBee device is in use.
- Do not remove a ZigBee device from the ZigBee network router or coordinator without removing the battery from a ZigBee device.

● *Joining the ZigBee Network*

As a ZigBee device, the Keypad needs to join a ZigBee network to transmit and receive signal. Please follow the steps below to join the device into the ZigBee network.

1. Insert two **1.5V AA Lithium batteries**.
2. Press and hold the OK key for 10 seconds for the Keypad to search and join an existing ZigBee network. Please make sure to enable the permit-join feature on the router or coordinator of your ZigBee network.
3. After joining the ZigBee network, the Keypad will emit 2 beeps and it will be registered in the security system in the network automatically. Please check the ZigBee network coordinator, system control panel, or CIE (Control and Indicating Equipment) to confirm if joining and registration is successful.
4. The Keypad will not emit any sounds if it did not join the ZigBee network. Please check your ZigBee network coordinator, control panel or CIE setting to ensure the permit-join function is available, and then use the Factory Reset function below to join the ZigBee network.

● *Factory Reset*

If you want to remove the Keypad from the current network and join a new network, you need to use the Factory Reset function to clear the Keypad for its stored setting and information first before it can join another network. To perform Factory Reset:

1. Press and hold the OK Key for 10 seconds, then release the button when the Keypad emits 1 beep and the LCD display shows a “KPT will reset in 2 seconds” message.
2. The Keypad has been reset to factory default setting with all its previous network information removed. It will now actively search for available ZigBee network again and join the network automatically.
3. If the Keypad successfully joins a ZigBee network, it will emit 2 beeps.
4. If the Keypad cannot find an available ZigBee network, no sound will be emitted.

Installation

● *Mounting the Remote Keypad*

The Keypad is designed to be desktop mounted or wall mounted with fixing screws and plugs provided.

For **desktop mounting**, simply place the Remote Keypad on a table/desk/bench etc.

Wall Mounting:

The bottom of the KP has 4 knockouts, where the plastic is thinner, for mounting purpose.

1. Detach the base and cover assembly.
2. Break through the plastic knockouts on the base.
3. Drill 4 holes and fix the screws & plugs provided.
4. Screw the base onto the wall.
5. Reattach the base and cover assembly.

● *Using Remote keypad with ZigBee Router*

IMPORTANT NOTE

If the Remote keypad installation location is away from your system control panel and requires ZigBee routers to improve signal strength. **DO NOT** use a ZigBee Router without backup battery. A ZigBee router without battery will be powered down during AC power failure and the Remote keypad connected to the router will lose connection with ZigBee network. You should plan your Remote keypad installation location using only ZigBee router with backup battery.

Operation

To start any operation, follow the below steps:

1. When the Keypad is under power saving mode, move close to the Keypad to trigger the IR sensor, the LCD display will display the status of the system then prompt you to “Enter PIN Code”
2. **With User PIN Code:** Press any key, the keyboard will light up, then enter a PIN Code of the ZigBee network coordinator or system control panel and press the OK key to confirm.
   With RFID Tag: Put the Tag on the RFID sensor, the Keypad will emit a beep. (For tag configuration, please see **User Menu**)
   Perform one of the following actions within 60 seconds:
   - Press the **Arm** key to change system mode to Away Arm mode.
   - Press the **Home Arm** key to change system mode to Home Arm mode.

   The LCD screen will display “Counting Down” as the system begins Exit Delay timer countdown according to the setting of the ZigBee coordinator or system control panel. If the system is successfully armed, the Keypad will emit a long beep and the LCD will display “Arm Success” or “Home Arm Success”.
   If fault event exists in the alarm system, the LCD will display “System is prevented from arming” then jump to “Fault Display” option in the menu to remind you of the fault events in the alarm system. If you still wish to arm the alarm system, select “Arm” or “Home Arm” in the menu and press OK to confirm. The Keypad will begin Exit Delay timer countdown to “Force Arm” the alarm system.
   - Press **OK** key to change system mode to Disarm mode and enter keypad User Menu.

- If a PIN code is entered correctly, the Keypad will enter User Menu and emit 2 beeps
- If a PIN code is entered correctly but fault(s) exists in system, the Keypad will enter User Menu and emit 3 beeps
- If an incorrect PIN code is entered, the Remote Keypad will emit 4 beeps.
- If the wrong PIN Codes were entered 5 times within 1 minute, the keypad will be locked down for 1 minute. During the 1 minute period, all key presses are prohibited.

User Menu

- The Keypad will communicate with the system to retrieve information before entering User Menu. The following options will be displayed in LCD screen for selection.

		A	**r**	**m**											
		H	**o**	**m**	**e**		**A**	**r**	**m**						
		A	**l**	**a**	**r**	**m**		**M**	**e**	**m**	**o**	**r**	**y**		
		F	**a**	**u**	**l**	**t**		**D**	**i**	**s**	**p**	**l**	**a**	**y**	
		L	**o**	**g**											
		B	**e**	**e**	**p**		**C**	**o**	**n**	**t**	**r**	**o**	**l**		
		R	**F**	**I**	**D**		**C**	**o**	**n**	**f**	**i**	**g**	**u**	**r**	**e**

- **Arm**: Select “Arm” and press OK key to confirm. If the ZigBee network coordinator or system control panel is successfully armed, the Remote Keypad will emit a long beep and the LCD will display “Arm Success”.
- **Home**: Select “Home” and press OK key to confirm. If the ZigBee network coordinator or system control panel is successfully armed, the Remote Keypad will emit 3 beeps and the LCD will display “Home Arm Success”.
- **Alarm Memory:** This option will become available after an alarm has been triggered. Entering the Keypad’s User Menu will be directed to the Alarm Memory option automatically. Press **OK** to confirm and use ▲ and ▼ key to view the alarm memory.
  The status LED will light up under Disarm mode (including Power Saving Mode) when alarm memory exists in the system. The ZigBee network coordinator or system control panel will determine how the alarm memory will be cleared.
- **Fault**: This option will only become available if fault event exists in system. To view fault events, select “Fault Display” and press OK key to confirm. Use the ▲ and ▼ keys to view the fault events and press ↻ key to return to menu
  If you try to arm the system when fault event exists, the arming will be prohibited and the LCD screen will jump to Fault Display. Please go to your ZigBee coordinator or system control panel to check and remove the fault condition(s). If you want to force arm the system, select Arm or Home Arm and press OK again. The system will ignore the fault event and enter your selected

arm mode.

- **Log**: Select “Log” and press OK key to view system log. Use the ▲ and ▼ keys to view the events and press ↻ key to return to User Menu
- **Beep Control:** This function is for you to set the Keypad warning beep functions.
  - **Entry/Exit Beep**: Set to “Turn On” or “Turn Off” this function to program whether the Keypad should emit warning beeps during Entry Delay or Exit Delay timer.
  - **Alarm Beep**: Set to “Turn On” or “Turn Off” this function to program whether the Keypad should emit warning beeps when an alarm is activated
- **RFID Configure:** This function is for you to manage your RFID device (Tag)
  - **RFID Learn**: This is for you to learn new RFID device into the Remote Keypad

    1. Use ▲ and ▼ key to select the RFID # you want to learn, press **OK** key to confirm.

    2. Put the Tag close to the RFID sensor for the Keypad to learn in the device.

    3. Once the Keypad learns in the Tag, the LCD display will prompt you to enter a PIN Code. Enter a User PIN Code stored in the ZigBee network coordinator or system control panel, press **OK** key to confirm.

    4. Learning is now complete. The Tag information has been added into the Keypad with corresponding PIN Code. You can now use the Tag to Arm/Home/Disarm the Control Panel through the Remote Keypad.
  - **RFID Delete**: This is for you to remove RFID devices stored the Keypad

    1. Use ▲ and ▼ key to select the RFID # you want to remove, press **OK** key to confirm.

    2. The RFID device is now removed from the Keypad.

Dual Key Alarm Functions.

- **Panic Alarm**: Press Button **1** + **3** to trigger a Panic Alarm.
- **Fire Alarm**: Press Button **4** + **6** to trigger a Fire Alarm.
- **Medical Alarm**: Press Button **7** + **9** to trigger a Medical Alarm.
- **Emergency Alarm**: Press Button ✱ + **#** to trigger an Emergency Alarm.

Alarm Activation, Alarm Memory & Countdown Sound

- When an alarm is triggered, the Keypad LCD screen will display “Alarm! Alarm!” and the buzzer will sound. To stop the alarm, move close to the Keypad to trigger the IR sensor and either:
  - Enter a User PIN Code and press the OK key to disarm the system. Or
  - Put the RFID device close to the RFID Sensor. The Keypad will emit 1 beep. Press the OK key to disarm the system.

  The Keypad will enter user menu.
- After an alarm is triggered, a new option “Alarm Memory” will become available when you enter User Menu. The Keypad will emit 5 beeps to remind you that an alarm has been triggered. Select the option and press OK key to view the alarm memory, press ↻ key to return to User Menu.

  Alarm memory will be cleared when the Keypad enters Power Saving Mode after 15 seconds of inactivity.
- If the system includes entry or exit countdown, the Keypad will emit countdown sound for the duration.

Appendix (The Appendix information is for developers only.)

- ***Remote Keypad with Tag Reader Cluster ID***

Device ID: IAS Zone 0x402 **Endpoint: 0x01**	
Server Side	**Client Side**
Mandatory	
Basic (0x0000)	*None*
IAS Zone(0x0500)	
IAS WD(0x0502)	
Optional	
None	*None*

- ***Attribute of Basic Cluster Information***

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*ZCLVersion*	Unsigned 8-bit integer	0x00 –0xff	Read only	0x01	M
0x0001	ApplicationVersion	Unsigned 8-bit integer	0x00 –0xff	Read only	0x00	O
0x0003	*HWVersion*	Unsigned 8-bit integer	0x00 –0xff	Read only	0	O
0x0004	*ManufacturerName*	Character String	0 – 32 bytes	Read only	Climax Technology	O
0x0005	ModelIdentifier	Character string	0 – 32 bytes	Read only	KPT-29_00.00.00.36TC	O
0x0006	*DateCode*	Character String	0 – 16 bytes	Read only		O
0x0007	*PowerSource*	8-bit	0x00 –0xff	Read only		M
0x0010	*LocationDescription*	Character String	0 – 32 bytes	Read / Write		O
0x0011	*PhysicalEnvironment*	8-bit	0x00 –0xff	Read / Write	0x00	O
0x0012	*DeviceEnabled*	Boolean	0x00 –0x01	Read / Write	0x01	M

- ***Attribute of IAS Zone Cluster Information***

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0001	*ZoneState*	8-bit Enumeration	All	Read only	0x00	M
0x0002	*ZoneType*	8-bit Enumeration	All	Read only		M
0x0003	*ZoneStatus*	16-bit bitmap	All	Read only	0x00	M

- ***Attributes of the IAS WD cluster information***

Identifier	Name	Type	Range	Access	Default	Mandatory / Optional
0x0000	*MaxDuration*	Unsigned 16-bit integer	0x00 –0xfffe	Read / Write	180	M