

Setting up elevator controls on a KT-1 or a KT-400 controller using KT-MOD-IO16 ioModules

Use this application note to set up elevator controls on KT-1 or KT-400 controllers using KT-MOD-IO16 ioModules.

Requirements

- EntraPass Special, Corporate, or Global Edition 8.10 or higher
- A Kantech controller:
 - KT-400 firmware 1.27 or higher
 - KT-400 rev1 firmware 2.04 or higher
 - KT-1 firmware 2.05 or higher
- KT-MOD-IO16 ioModules
- Optional: KT-MOD-REL8 modules
- A KT-MOD-CAB or a KT-MOD-CABEU. The KT-MOD-CAB fits six modules. The KT-MOD-CABEU fits four modules.
- An external power supply. You can use the KT-PS4085 with a TR1640 transformer and a 12 VDC at 7A battery.

Note: Each KT-MOD-IO16 draws 12 VDC 750 mA. Each KT-MOD-REL8 draws 330 mA.

Physical setup

Figure 1 shows the KT-MOD-CAB with the maximum number of expansion modules. Figure 2 shows the KT-MOD-CABEU with the maximum number of expansion modules and optional power equipment.

Figure 1: KT-MOD-CAB

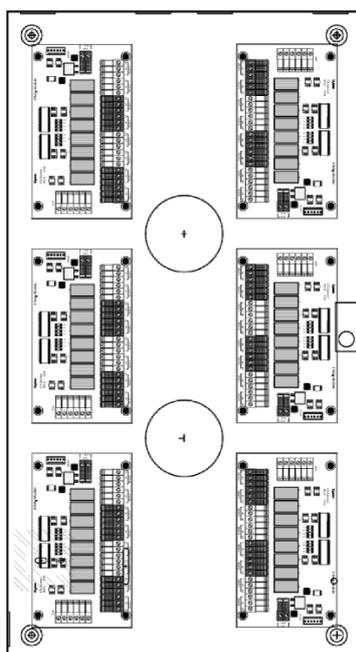
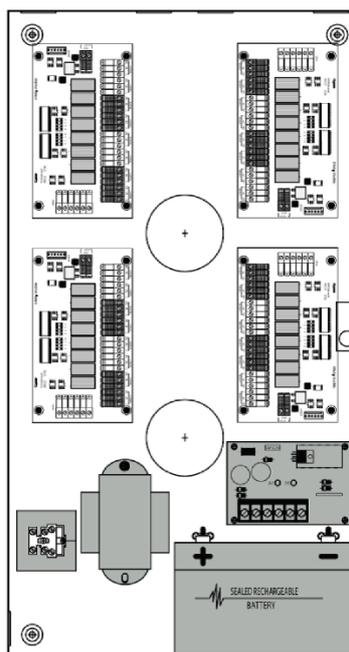


Figure 2: KT-MOD-CABEU



The following tables show two setup options to manage elevator cabs using KT-1 or KT-400 controllers. Use a KT-1 controller to manage one elevator cab. Use a KT-400 controller to manage up to four elevator cabs.

Table 1 shows the number of KT-MOD-IO16 modules that you require to manage up to four elevator cabs. You must use one Form C relay for each floor.

Table 1: Physical setup using KT-MOD-IO16 modules

Number of cabs	Number of floors	Number of KT-MOD-IO16
1	8	1
1	16	1
1	32	2
1	48	3
1	64	4
2	16	2
2	32	4
2	48	6
2	64	8
3	16	3
3	32	6
3	48	9
3	64	12
4	16	4
4	32	8
4	48	12
4	64	16

Table 2 shows the number of KT-MOD-IO16 and KT-MOD-REL8 modules that you require to manage up to four elevator cabs. The KT-MOD-REL8 modules include Form C relays.

Table 2: Physical setup using KT-MOD-IO16 and KT-MOD-REL8 modules

Number of cabs	Number of floors	Number of KT-MOD-IO16	Number of KT-MOD-REL8
1	8	1	1
1	16	1	2
1	32	1	4
1	48	1	6
1	64	1	8
2	16	2	4
2	32	2	8
2	48	2	12
2	64	2	16
3	16	2	6
3	32	3	12
3	48	3	18
3	64	3	24
4	16	4	8
4	32	4	16
4	48	4	24
4	64	4	32

To set up elevator controls on a KT-1 or a KT-400 controller using KT-MOD-IO16 ioModules, complete the following tasks in EntraPass:

Creating a floor

1. On the EntraPass workstation, click the **Definition** tab.
2. Click **Floor**, and then click the **New** icon.
3. From the **Site / Connection** list, select a site.
4. In the **English** field, type a name for the floor.
5. Click **Save**.
6. Repeat Steps 2 to 5 for each floor that you want to create.

Creating a floor group

1. On the EntraPass workstation, click the **Groups** tab.
2. Click **Floor Group**, and then click the **New** icon.
3. From the **Site / Connection** list, select the site or connection.
4. In the **English** field, type a name for the floor group.
5. For each floor in the floor group, from the **Unlock and access schedule** list, select the appropriate unlock and access schedule.
6. For each floor that you want to include in the floor group, select the **State** check box.
7. Click **Save**.

Programming the controller

To program the controller, complete the following tasks:

Adding an ioModule to a controller

1. On the EntraPass workstation, click the **Devices** tab.
2. Click **Controller**.
3. In the **Controller** window, from the **Controller** list, select the controller that you want to program.
4. Click the **ioModule** tab, and then click **Add**.
5. In the **ioModule** pane, in the **English** field, type a name for the ioModule.
6. In the **Serial Number** field, type the ioModule's serial number.

If you are not using KT-MOD-REL8 modules, complete the task *Programming the ioModule without a KT-MOD-REL8*. If you are using KT-MOD-REL8 modules, complete the task *Programming the ioModule with a KT-MOD-REL8*.

Programming the ioModule without a KT-MOD-REL8

1. Click the **Terminals 1 – 4** tab.
2. Click **Use as elevator** and click **Use as outputs**.

Note: To enable the floor confirmation function, click **Use as floor confirmation (inputs)**. For more information, see *Floor confirmation*.

3. From the **Elevator** list, select **Door #1** or the reader that is installed in the cabin. Door 1 represents elevator cab 1.
4. From the **Elevator outputs** list, select **Elevator outputs 1 – 4**.
5. For terminals 5–8, terminals 9–12, and terminals 13–16, repeat Steps 1 to 4 and select the appropriate reader and outputs.
6. Click **Save**.

Programming the ioModule with a KT-MOD-REL8

1. Click the **Terminals 9 – 12** tab.
2. Click **Use as SPI**.
3. Click the **SPI** tab, and then click the **Output Module on ioModule** tab.
4. Click **Add**.
5. In the **KT-MOD-REL8: 8 – Relay Module (KT-MOD-REL8)** pane, in the **English** field, type a name for the module.
6. From the **ioModule** list, select which ioModule the SPI connects to.
7. Click **Use as elevator equipment**.
8. From the **Elevator** list, select **Door #1** or the reader that is installed in cabin. Door 1 represents elevator cab 1.
9. From the **Elevator outputs** list, select **Elevator outputs #1-8**.
10. Click **Save**.
11. Repeat Steps 1 to 10 for each KT-MOD-REL8 module that you want to add.

Associating outputs with floors

Complete this task only once regardless of how many elevators you program in the controller. There is one output for each floor and the controller determines which physical relay to trigger on the actual cab.

1. In the **Controller** window, click the **Elevator** tab.
2. For each output, from the **Floors** list, select a floor to associate with the output. When every output is associated with a floor, the font in the **Floors** column changes to red.
3. Click **Save**.

Configuring a door as an elevator cab

1. On the EntraPass workstation, click the **Devices** tab.
2. Click **Door**.

3. In the **Door** window, from the **Door** list, select **Door #1** or the reader that is installed in the cabin.
4. In the **English** field, type a name for the elevator cab.
5. On the **General** tab, in the **Miscellaneous** pane, select the **Elevator cab** check box.
6. Click **Save**.

Assigning a public unlock schedule to an elevator cab

There are two unlock schedules: unlock schedule #1 and unlock schedule #2. If both of the schedules have valid programming, unlock schedule #1 takes priority.

1. In the **Door** window, from the **Door** list, select the door that you want to assign a public unlock schedule to.
2. Click the **Elevator** tab.
3. From the **Unlock schedule #1** list, select the unlock schedule.
Note: If you select a valid unlock schedule, the floor schedule that you programmed in the floor group is used. For more information, see *Creating a floor group*.
4. From the **Floor Group #1** list, select the floor group.
5. Click **Save**.

Creating an elevator access level

1. On the EntraPass workstation, click the **Users** tab.
2. Click **Access level**, and then click the **New** icon.
3. In the **English** field, type a name for the access level.
4. For each elevator cab, from the **Schedule** and **Floor Group** lists, select the schedule and the floor group to assign to the elevator access level.
5. Click **Save**.

Assigning an access level to users

1. On the EntraPass workstation, click the **Users** tab.
2. Click **Card**.
3. From the **Card user name** list, select a user.
4. Click the **Access level** tab.
5. From the **Access level** list, select the appropriate access level.
6. Click **Save**.

General information

Use the following general information to help you set up elevator controls on a KT-1 or a KT-400 controller using KT-MOD-IO16 ioModules.

Public unlock schedules

- EntraPass Special, Corporate, and Global Editions 6.03 and later allow one public unlock schedule for each floor. For more information, see *Creating a floor group* and *Assigning a public unlock schedule to an elevator cab*.

Active relays

- When you define relay and output modules as elevator modules, all of their relays activate (normally open).
- On the KT-MOD-IO16 and the KT-MOD-REL8 modules, all of the LEDs are on when the floors are locked.
- In cases of physical failure, all floors are in free access.

SPI cables

- An SPI cable is included with each module or cabinet.
- SPI cables come in two lengths. The KT-MOD-SPI-16 is 16 inches. The KT-MOD-SPI-36 is 36 inches.
- Do not extend SPI cables.

Door contacts

- Do not use a door contact on a door that is defined as an elevator cab.

Floor confirmation

- You can use the ioModule to perform floor confirmations. In this process, when a user selects a floor in the cab, the floor selection is disabled, and the software reports which floor the user has selected.
- To enable the floor confirmation function when you program the controller, click **Use as floor confirmation (inputs)**. For more information, see Step 2 of *Programming the ioModule without a KT-MOD-REL8*.

Manual operations

- After you define a door as an elevator cab, to access manual operations, click the **Operation** tab on the EntraPass workstation, and click **Elevators**.
- See Table 3 for descriptions of the manual operations that operators can perform:

Table 3: Manual operations

Manual operation	Description
Lock elevator floor	Lock the selected elevator floor manually.
Unlock elevator floors	Unlock the selected elevator floor. Note: The floor remains unlocked until the next operation is performed, whether by schedule or by the operator.
Temporarily lock or unlock elevator floor	Unlock an elevator floor for a preset delay. After the delay expires, the elevator floor relocks automatically. Note: On the KT-400, the maximum delay is 18:12:15.
One time access	Allow free access to the elevator floor or floors for the duration of the elevator cab unlock time. Note: The default time is 10 seconds.
Door back to schedule	Reapply a schedule for an elevator.
Enable floor	Enable a previously disabled elevator floor so that it can be unlocked using a card.
Disable floor	Disable an elevator floor so that cardholders cannot access the elevator floor even if they have access rights.

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