ALLPLEX track Coordinator & Receiver

ATX-COR-MT01 & ATX-RCV-MT01

BOSCH

en Installation Guide

Table of contents

1 Copyright, Safety and Warranty

1.1 Copyright information

1.2 Important safety notes

1. **Read, Follow, and Retain Instructions** – All safety and operating instructions must be read and followed properly before putting the unit into operation. Retain instructions for future reference.
2. **Consider all Warnings** – Adhere to all warnings on the unit and in the operating instructions.
3. **Accessories** – Use only accessories recommended by the manufacturer or those sold with the product. Accessories not recommended by the manufacturer shall not be used, as they may cause hazards.
4. **Installation Precautions** – Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to persons and damage to the unit. Mount the unit according to the manufacturer's instructions.
5. **Service** – Do not attempt to service this unit by yourself. Opening or removing covers may expose you to dangerous voltages or other hazards. Refer all servicing to qualified service personnel.
6. **Damage Requiring Service** – Disconnect the unit from the main AC or DC power source and refer servicing to qualified service personnel under the following conditions:
   - When the power supply cord or plug is damaged.
   - If liquid has been spilled or an object has fallen into the unit.
   - If the unit has been exposed to water and/or inclement weather (rain, snow, etc.).
   - If the unit does not operate normally, when following the operating instructions. Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may result in damage, and require extensive work by a qualified technician to restore the unit to normal operation.
   - If the unit has been dropped or the cabinet damaged.
   - If the unit exhibits a distinct change in performance, this indicates that service is needed.
7. **Replacement Parts** – When replacement parts are required, the service technician shall use replacement parts that are specified by the manufacturer. Unauthorized substitutions may result in fire, electrical shock or other hazards.
8. **Safety Check** – Upon completion of service or repair work on the unit, ask the service technician to perform safety checks to ensure that the unit operates properly.
9. **Power Sources** – Operate the unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact your dealer.
   - For units intended to operate from battery power, refer to the operating instructions.
   - For units intended to operate with External Power Supplies, use only the recommended approved power supplies.
10. **Lightning** – For added protection during a lightning storm, or when this unit is left unused for long periods of time, disconnect the unit from power. This will prevent damage to the unit due to lightning and excessive power line surges.
11. **Restricted Access Locations** are required for the installation.

1.3 Safety precautions

Disposal
Your Bosch product has been developed and manufactured using high-quality materials and components that can be reused.
This symbol means that electronic and electrical devices that have reached the end of their working life must be disposed of separately from household waste.
In the EU, separate collecting systems are already in place for used electrical and electronic products. Please dispose of these devices at your local communal waste collection point or at a recycling center.

1.4 FCC information

This device complies with Part 15 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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:

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

2 System Overview

The coordinator provides communication between the Central Console software and the many receivers throughout the protected area. The receiver detects alarm signals from the transmitter, and sends the signal to the coordinator either by wired RS-485 or through wireless radio frequency. The coordinator forwards this information to the Central Console software over wired Ethernet (TCP/IP), where the alarm will be processed accordingly. Each coordinator (with its built-in receiver) also includes two analog inputs which support 4 state supervised modes, and drivers for two relay outputs.

The receiver is designed to work with the Security Escort system throughout a protected area, including building interiors. Each receiver contains a radio receiver to detect the transmissions from transmitters, and a microcomputer to decode and interpret test and alarm messages. Multiple receivers detect the same transmission and send the signal information to the coordinator, so that the system can identify the transmitting information, including the device and location. The receiver also monitors housing tampering and radio jamming, and reports them to the coordinator.

Indoor coordinators/receivers are typically mounted on inside walls, and have one red and one green LED. The green LED is used to indicate a successful test of a personal transmitter. The red LED is illuminated during alarms. Each coordinator/receiver contains a piezo-electric buzzer that can be activated if an alarm transmission is detected.

Outdoor coordinators/receivers are contained in small weatherproof boxes, typically mounted on the sides of buildings and on light posts. Outdoor coordinators/receivers do not have the visible red and green LED's. For outdoors, the relay outputs can be connected to devices to be used to acknowledge successful tests and alarms.

3 Mounting the Device

Choose a mounting location based on the previous site survey. Mount the coordinator/receiver as close as possible to the location found with the test coordinator/receiver. Use the following sections as a guideline for coordinator/receiver mounting and spacing.

3.1 Indoor installation

Select a mounting location that:

- provides a clear line-of-sight of the protected area, if possible.
- is at least 31 cm (1 ft.) away from metal objects such as HVAC ducts.
- is on an inside wall, if possible.
- is 1.5 m to 1.8 m (5 ft. to 6 ft.) from the floor.
- is not at a barrier where it is important to resolve which side an alarm location is on.
- is not damaged by tampering or opening doors.

3.1.1 Spacing

Coordinator/receiver spacing should be no more than 25 m (80 ft.) between each coordinator/receiver for standard construction. Range depends on the construction of the building. For example, a building with hollow drywalls may support 25 m (80 ft.) spacing, but a building with steel reinforced concrete may require reduced spacing. It is very important to maintain a consistent spacing as this ensures optimum signal locating. The better the coordinator/receivers can detect a transmitted signal, the more accurate the locating.

3.1.2 Mounting height

Mount coordinator/receivers 1.5 m to 1.8 m (5 ft. to 6 ft.) from the floor. Maintain a consistent mounting height to ensure optimum signal locating. Do not place coordinator/receivers close to the ceiling. This places them closer to the floor above reducing the floor-to-floor location accuracy. It is also helpful to place the coordinator/receivers somewhat higher on the top floor to be covered and somewhat lower on the bottom floor to be covered.

3.1.3 Multi-floor installations

Mount coordinator/receivers over one another in multi-floor installations. This helps maintain proper floor-to-floor reception.

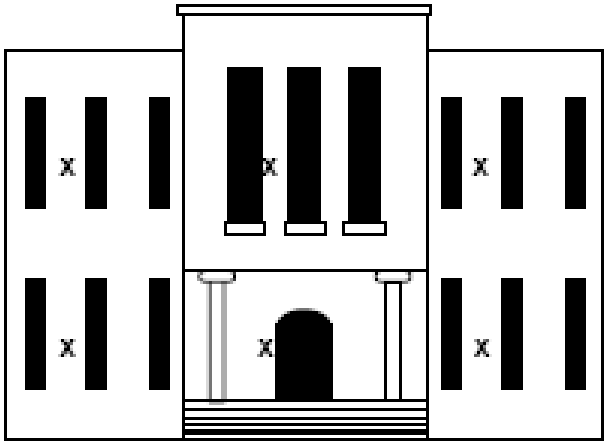


Figure 3.1: Coordinator/receiver locations

x	Coordinator/Receiver location inside buillding

3.2 Outdoor installation

Select a mounting location that:
- provides a clear line-of-sight of the protected area.
- is away from metallic objects such as chain-link fences and electrical transformers. If coverage is required near such items, perform testing near them to determine the potential need for additional receivers.
- is 3 m (10 ft.) above grade.
- is not at a barrier where it is important to resolve which side an alarm location is on.
- is easy to service.
- is not damaged by tampering.

3.2.1 Spacing

Mount coordinators/receivers every 90 m (300 ft.). It is very important to maintain spacing as consistent as possible to ensure optimum signal locating. The more the coordinators/receivers can detect a transmitted signal, the more accurate the locating. Make sure each coordinator/receiver has a clear line-of-sight of the intended protection area.

3.2.2 Mounting height

Mount coordinators/receivers 3 m (10 ft.) above grade. Maintain a mounting height that is as consistent as possible to ensure optimum signal locating.

3.2.3 Overhangs/eaves

Coordinator/receiver locations should be below building overhangs and eaves. Most transmissions occur 1 m (a few feet) above grade. Therefore, mounting above overhangs and eaves can result in inaccurate signal locating. Be especially careful around metal roofs as these can block the signal.

3.3 Pre-wired installations

When mounting the enclosure to a pre-wired electrical box, make sure that the electrical box has a 15.2 cm (6 in.) overhead clearance. The enclosure should be mounted as shown in figure below.

Notice!

The enclosure does not currently support octagonal electrical boxes.

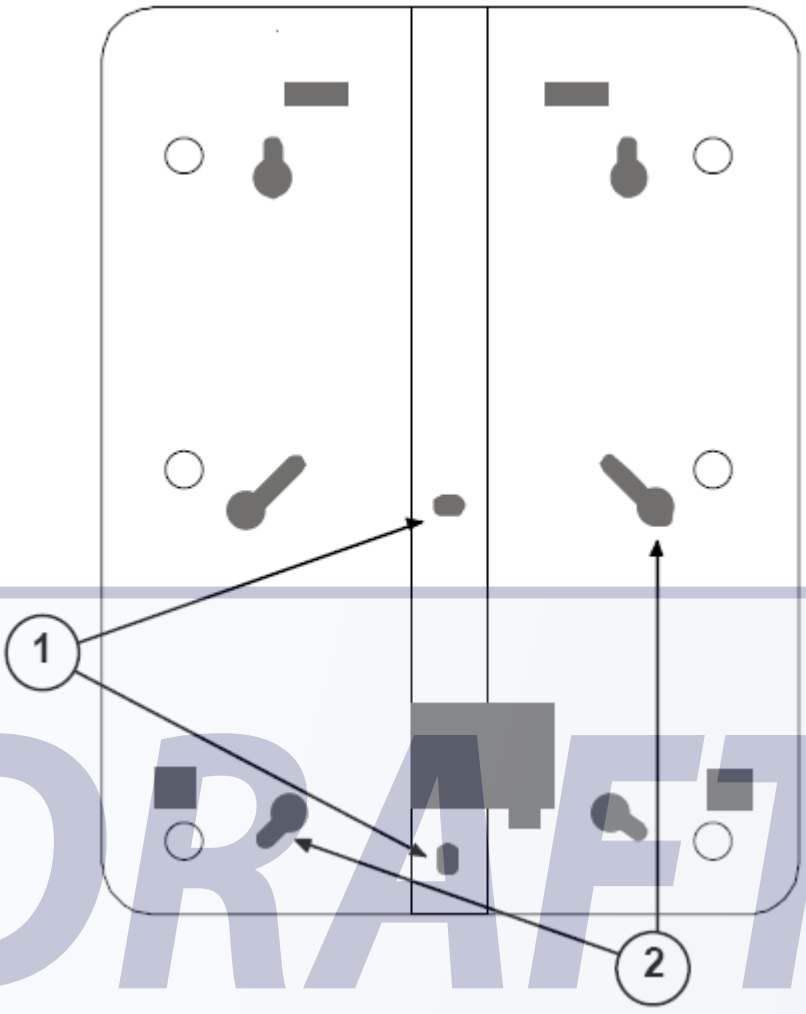


Figure 3.2: Back of indoor enclosure

1	Use with single-gang electrical boxes
2	Use with 8.9 cm (3½ in.) square electrical boxes

3.4 Drilling templates

Use the following templates for mounting the outdoor enclosure. For enclosure with bottom entry, see *Drilling template for outdoor enclosure bottom entry, page 12*. For enclosure with rear entry, see *Drilling template for outdoor enclosure rear entry, page 13*.

3.4.1 Drilling template for outdoor enclosure bottom entry

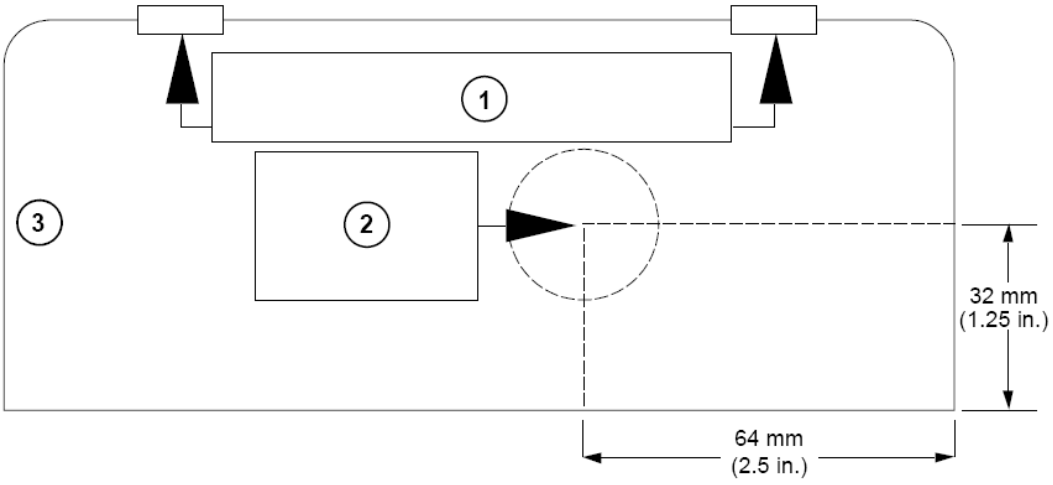


Figure 3.3: Drilling template bottom entry

1	Align template with mounting hole squares on box
2	Drill here, 25 mm (1 in.) diameter maximum; 19 mm (¾ in.) conduit.
3	Bottom entry

3.4.2 Drilling template for outdoor enclosure rear entry

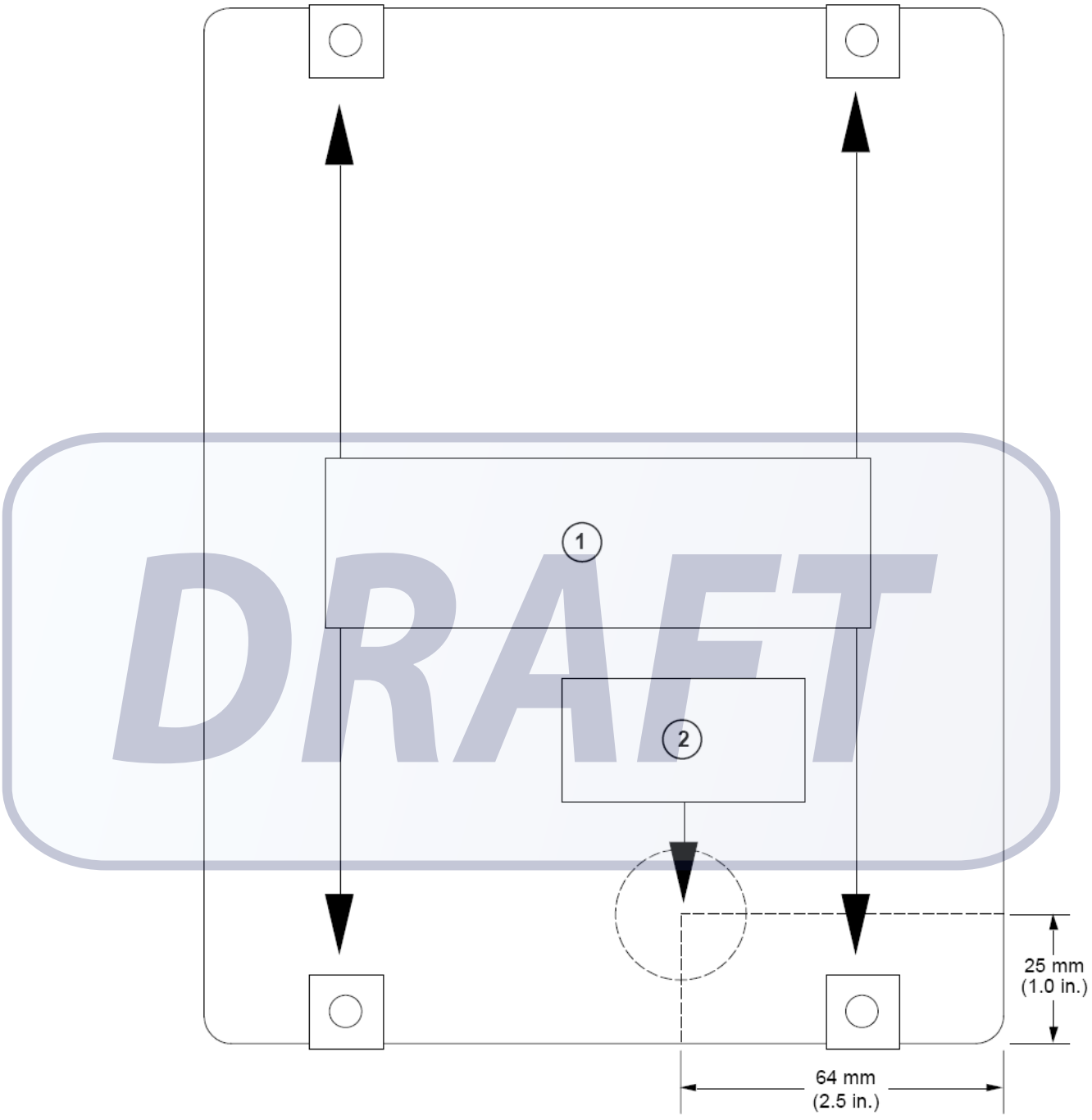


Figure 3.4: Drilling template rear entry

1	Align template with mounting holes on backside of box.
2	Drill here, 25 mm (1 in.) diameter maximum; 19 mm (¾ in.) conduit.

4 Layout and Wiring of the Device

Danger!
Apply the electrical power only after all connections are completed and inspected.

This section identifies and locates the key components on the coordinator/receiver.

4.1 Layout of the coordinator/receiver

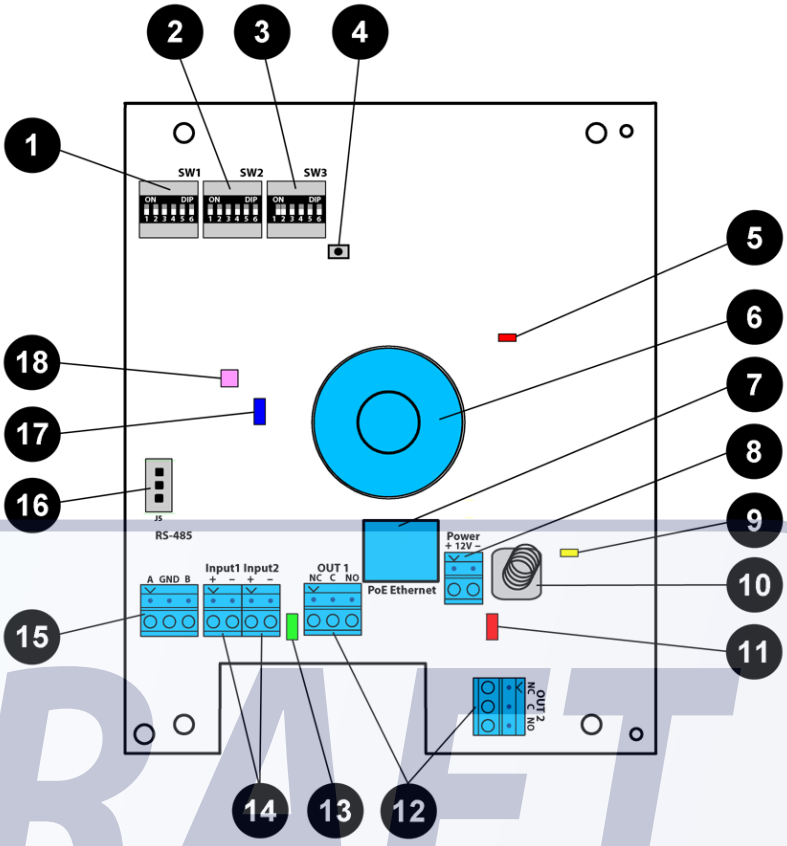


Figure 4.1: Layout of coordinator/receiver

1	Dip switch SW1 (not available on coordinator)	10	Tamper switch
2	Dip switch SW2	11	Red LED
3	Dip switch SW3	12	Output connectors
4	Reset button	13	Green LED
5	Power over Ethernet (PoE) LED (not available on receiver)	14	Input connectors
6	Buzzer	15	RS-485 communication connector
7	Power over Ethernet (PoE) connector (not available on receiver)	16	RS-485 jumpers
8	Power supply connector	17	Ethernet LED
9	Power supply LED	18	Tricolor LED

4.2 Power supply connector

The coordinator/receivers can be powered by an external 12V DC input. It consists of two terminals: one of which is used to provide the positive input, and the other the negative input. The operating input voltage range is 10.8 – 13.2V.

Figure 4.2: Power Supply Connector

4.3 Power over Ethernet (PoE) connector

Power over Ethernet (PoE) is applicable to coordinators only. Receivers do not have the Ethernet interface ports. The coordinators can be powered by PoE without needing an external DC input. The PoE connector is identified by the label PoE Ethernet on the coordinator. Connect the PoE using the standard Cat 5e Ethernet cable and above. PoE provides the maximum total power of 12.95 Watt to the coordinator, and complies with the IEEE802.3af class 0 standard.

The coordinator also sends any received data from the receivers or transmitters to the Central Console Software via the Ethernet cable. The coordinator is pre-configured with the following default IP settings:

IP Settings	Value
IP Address	192.168.1.100
Subnet Mask	255.255.255.0
Gateway	192.168.1.1
Port	20000

Table 4.1: Default IP Settings of Coordinator

The default settings can be changed using the Utility Tool from the Security Escort software. See the *Security Escort Installation and Setup Manual* for more information.

4.4 RS-485 communication connector

The coordinator and receivers can communicate with each other using the RS-485 interface. The communication connector is identified by their 3 terminal points, namely A, GND and B. The recommended data transmission speed is 19200 bps @ 1km (default) and 115 kbps @ 500m. For outdoor installations, the recommended wiring for RS-485 communication is shielded twisted-pair.

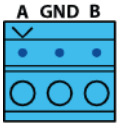


Figure 4.3: RS-485 Connector

4.5 RS-485 jumpers

The coordinator and receivers use RS-485 multi-drop communication channels between the device boards. It is necessary to include end-of-line jumper settings on the last receiver to have a stable communication channel (see *Setting the jumpers for RS-485 communication loop, page 24*). The jumper blocks are identified as J5 on the coordinator/receiver.

4.6 Input connectors

Two 2-pin connectors on the left side of the coordinator/receiver provide terminal points for wiring from input devices. The terminal strips are identified as Input1 and Input2 on the coordinator/receiver. There are two terminals for each input point.

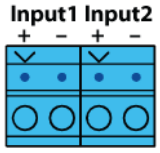


Figure 4.4: Input Connectors

Each input point supports four-state supervised mode. To detect the four states, there are special values allowed for potential drop depending on the resistors used. The coordinator/receiver can also detect short and open wiring conditions and initiate an alarm if the appropriate devices are connected.

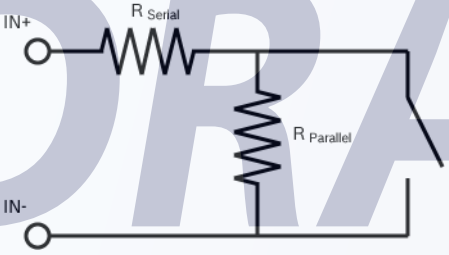


Figure 4.5: Circuit Diagram for Resistors

$R_S = R_P = 2.2\ k\Omega\ ¼W$

4.7 Output connectors

Two 3-pin connectors provide terminal points for connection of external devices. The connectors are identified as OUT 1 and OUT 2 on the coordinator/receiver. The output terminals are Form-C type relay dry contacts. For each relay, Normally Closed (NC), Normally Open (NO) and Common (C) terminals are provided.

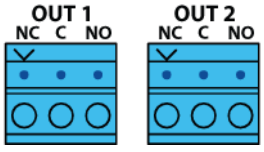


Figure 4.6: Output Connectors

4.8 LED indicators

The following section describes the behaviors of the various LEDs upon device start up and during system operation.

Power supply LED

– The LED will light up in orange as long as the coordinator/receiver is powered by the DC input.

Power over Ethernet (PoE) LED

– The LED will light up in red as long as the coordinator is powered by the PoE input.

Green LED

– For every successful transmitter test, the LED will briefly light up in green.

Red LED

– For every alarm or specific system test in progress, the LED will briefly light up in red.

Tricolor LED

– Upon coordinator/receiver start up
  – the LED blinks a number of times in white to indicate the current radio frequency (RF) configuration as set by the dip switch (see *Checking the radio frequency (RF), page 27*)
– Coordinator/receiver communicating via RS-485
  – the LED blinks in pink every 3 seconds
– Coordinator/receiver communicating via RF when RS-485 is not working
  – the LED blinks in green for any transmission events if the signal strength is excellent
  – the LED blinks in blue for any transmission events if the signal strength is average
  – the LED blinks in red for any transmission events if the signal strength is poor
– If there is no communication between the coordinator and receiver, the LED does not light up.

Notice!

The power supply, PoE and tricolor LEDs are only visible if you remove the casing enclosure.

4.9 Tamper switch

To protect the coordinator/receiver against unauthorized access, an additional interface to detect tamper contact is used. The tamper switch is triggered when the coordinator/receiver is not covered in the casing enclosure. This event is monitored and reported to the Central Console Software where any subsequent actions are determined by the configured software settings. It is recommended that the coordinator/receiver should be covered in the casing at all times.

4.10 Reset button

A reset button is available on the coordinator/receiver. This button can be used to perform a hard or soft factory reset based on the associated dip switch setting (see *Selecting the hard/soft reset mode, page 21*). Depending on the hard or soft reset, pressing it will clear specific sets of configuration for the device. For more information, please refer to *Resetting the coordinator/receiver, page 27*.

5 Setting the Switches and Jumpers

There are three dip switches on the receiver, namely SW1 on the left, SW2 in the middle and SW3 on the right. Dip switch SW1 is not mounted on the coordinator. Therefore, only dip switches SW2 and SW3 are available on the coordinator. Use the dip switches to configure settings like the address of the device and the radio frequency, or the operation settings like usage of soft or hard reset.

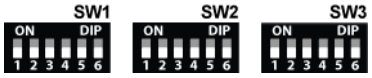


Figure 5.1: Dip switches

The usage of the dip switches are explained as of below:

Dip Switch	Switch Number	Usage
SW1 (receiver only)	1	Address of Device
	2	
	3	
	4	
	5	Not Used
	6	
SW2	1	Frequency Selection
	2	
	3	Hard/Soft Reset Mode
	4	Baud Rate
	5	
	6	Disable/Enable Buzzer
SW3	1	Spacing Selection
	2	Transmit Mode
	3	Not Used
	4	
	5	
	6	

Table 5.1: Usage of dip switches

Usage of the dip switches will be explained in detail in the respective sections.

Notice!
Take note that switch number 5 and 6 on dip switch SW1 and switch number 3, 4, 5 and 6 on dip switch SW3 are currently not being used.

Notice!
It is recommended to power off the coordinator/receiver before you change the dip switch settings. Upon completing the changes, power up the devices. The new settings will only take into effect once the coordinator/receiver completed a power reset cycle.

5.1 Setting the loop address

Use the address dip switch to configure the RS-485 loop address of the receiver. Each coordinator/receiver on a loop must have its own unique address. Only addresses 0 through 15 are valid.

The coordinator always uses address 0. You do not need to set the address for the coordinator. Therefore, the dip switch SW1 used for setting addresses is not available on the coordinator. The receivers use addresses 1 to 15. Set the address using dip switch SW1. Configure the four switches from the left, 1, 2, 3 and 4 as the address of the device.

Address	Switch Number on Dip Switch SW1			
	1	2	3	4
0 (used for coordinator only)	OFF	OFF	OFF	OFF
1 (default setting for receiver)	ON	OFF	OFF	OFF
2	OFF	ON	OFF	OFF
3	ON	ON	OFF	OFF
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
15	ON	ON	ON	ON

Table 5.2: Address settings on dip switch SW1

5.2 Setting the radio frequency (RF)

Use the radio frequency (RF) switches on dip switch SW2 to configure the RF of the device. Set the two switches from the left, 1 and 2 according to the following table.

Radio Frequency	Switch Number on Dip Switch SW2	
	1	2
304 MHz (default setting)	OFF	OFF
303.825 MHz	OFF	ON

Radio Frequency	Switch Number on Dip Switch SW2	
	1	2
433.42 MHz	ON	OFF
Invalid setting	ON	ON

Table 5.3: Radio frequency (RF) settings on dip switch SW2

Once configured, you can confirm the RF settings every time you power up the coordinator/receiver by observing the tricolor LED. For more information, refer to *Checking the radio frequency (RF), page 27*.

5.3 Selecting the hard/soft reset mode

There are two reset modes for the coordinator/receiver, namely the hard or soft reset. To select the reset mode, use dip switch SW2. Set switch number 3 based on the following table.

Reset Mode	Switch Number on Dip Switch SW2
	3
Soft reset (default setting)	OFF
Hard reset	ON

Table 5.4: Reset mode on dip switch SW2

Pressing the Reset button on the coordinator/receiver performs the hard or soft reset accordingly. The differences of the reset mode are described in *Resetting the coordinator/receiver, page 27*.

5.4 Setting the baud rate

Configure the baud rate of the RS-485 communication by using the dip switch on the right, SW2. The same baud rate must be set across the coordinator and the receivers in order for the RS-485 communication to work. Use the switch numbers 4 and 5 on dip switch SW2 to set the baud rate. The options are described in the following table.

Baud Rate	Switch Number on Dip Switch SW2	
	4	5
19200 (default setting)	OFF	OFF
38400	OFF	ON
57600	ON	OFF
115200	ON	ON

Table 5.5: Setting the baud rate on dip switch SW2

5.5 Enable/disable the buzzer

Enable or disable the buzzer by setting the buzzer dip switch. Set switch number 6 on dip switch SW2 to the OFF position to disable the buzzer. Once disabled, the buzzer will be muted at all times, including during alarm events. Set switch number 6 on dip switch SW2 to the ON position to enable the buzzer to be operational. Once enabled, the buzzer will sound whenever triggered accordingly by the alarm events.

Enable/disable Buzzer	**Switch Number on Dip Switch SW2**
	6
Disable Buzzer (default setting)	OFF
Enable Operational Buzzer	ON

Table 5.6: Enable or disable the buzzer on dip switch SW2

5.6 Enable/disable the spacing mode

Spacing mode can be used to verify the maximum acceptable spacing of receivers. Enable or disable the spacing mode by setting switch number 1 on dip switch SW3. Spacing mode is disabled by default, where switch number 1 is set to the OFF position. To enable the spacing mode, set switch number 1 on dip switch SW3 to the ON position.

Enable/disable Spacing Mode	**Switch Number on Dip Switch SW3**
	1
Disable Spacing Mode (default setting)	OFF
Enable Spacing Mode	ON

Table 5.7: Enable or disable the spacing mode on dip switch SW3

To test the spacing of receivers:

1. Mount the first receiver (receiver 1). Set switch number 1 on dip switch SW3 to the ON position. Power the receiver from a 12 VDC source.
2. Take the second receiver (receiver 2) and a transmitter a distance away from the first receiver.
3. Activate the transmitter.
4. If receiver 1 sounds the test beep, receiver 2 is within range. Repeat this test until receiver 1 no longer sounds the test beeps. Move back to the last location where receiver 1 received the test beeps. This location marks the maximum spacing between the receivers. The distance between the receivers should not exceed 25 m (80 ft.) indoors and 90 m (300 ft.) outdoors. Mount receiver 2 at this location or closer to receiver 1.

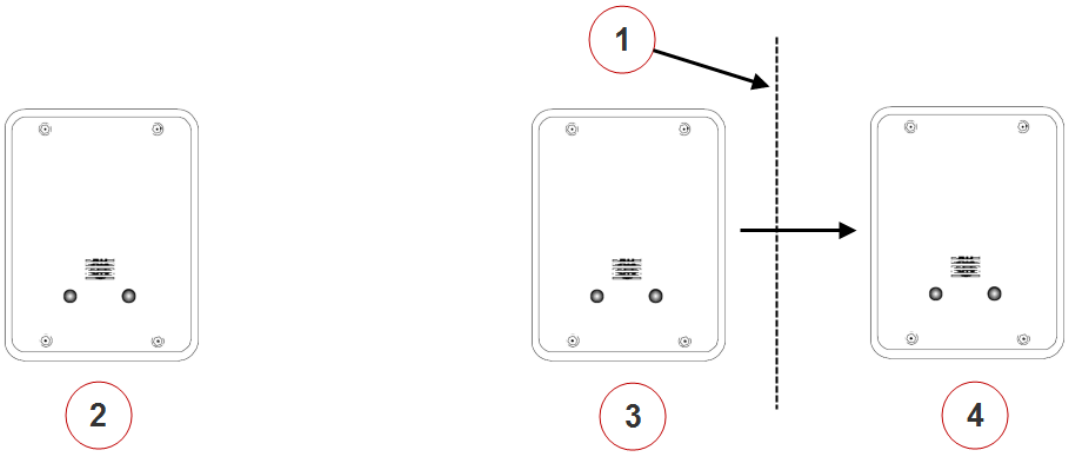


Figure 5.2: Receiver Spacing

1	Receiver 1 stops sounding the test beeps when receiver 2 is moved past this point	3	Receiver 2 at maximum range
2	Receiver 1	4	Receiver 2 beyond maximum range

5.7 Enable/disable the transmit mode

Transmit mode can be used to verify the maximum acceptable spacing of receivers from the coordinator using the radio frequency communication. When the transmit mode is enabled on the receiver, it will communicate with the coordinator continuously. Enable or disable the transmit mode by setting switch number 2 on dip switch SW3. Transmit mode is disabled by default, where switch number 2 is set to the OFF position. To enable the transmit mode, set switch number 2 on dip switch SW3 to the ON position.

Enable/disable Transmit Mode	Switch Number on Dip Switch SW3
	2
Disable Transmit Mode (default setting)	OFF
Enable Transmit Mode	ON

Table 5.8: Enable or disable the transmit mode on dip switch SW3

The following is applicable when using the radio frequency as the communication channel. Transmit Mode is enabled with switch number 2 of dip switch 3 on the AT receiver (see the *ALLPLEX track Coordinator & Receiver Installation Guide*). Only transmissions with an adequate receive margin will light up the green LEDs. This indicates the maximum acceptable spacing of the AT receiver.

To test the spacing of the receivers:

1. Activate the spacing mode on the coordinator (see *Enable/disable the spacing mode, page 22*). Set switch number 1 on dip switch SW3 to the ON position.

2. Activate the transmit mode on the receiver. Set switch number 2 on dip switch SW3 to the ON position. Power the receiver from a 12 VDC source. The receiver will start transmitting messages to the coordinator continuously. This communication is indicated by the blinking LED.
3. If the receiver is within the range, the LED will continue to blink. Move the receiver away from the coordinator until the green LED stops blinking. This indicates that the receiver is now beyond the maximum range. Move back to the last location where the coordinator is able to receive the transmission from the receiver. This location marks the maximum spacing between the coordinator and the receiver. The distance between the coordinator and the receiver should not exceed 25 m (80 ft.) indoors and 90 m (300 ft.) outdoors.

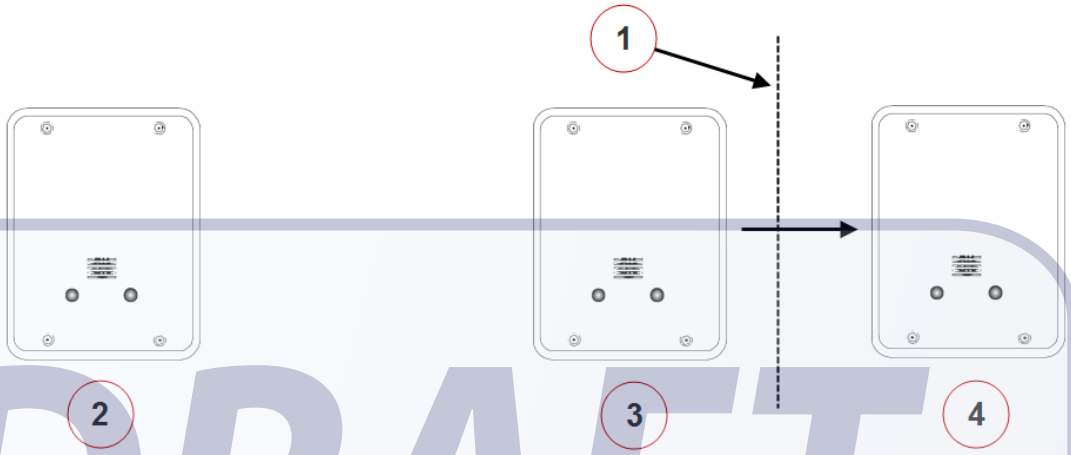


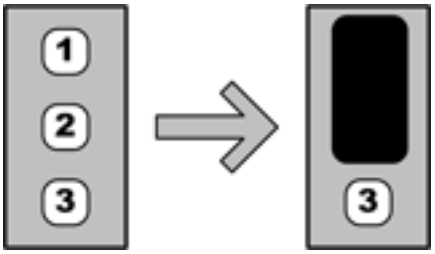
Figure 5.3: Coordinator and Receiver Spacing

1	LED of the coordinator stops blinking when the receiver is moved past this point	3	Receiver at maximum range
2	Coordinator	4	Receiver beyond maximum range

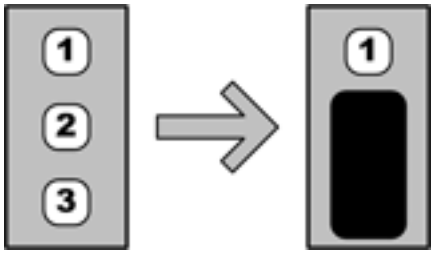
5.8 Setting the jumpers for RS-485 communication loop

For RS-485 communication, it is necessary to include the end of line jumper settings on the last receiver to have a stable communication channel. Set the jumper for the coordinator and the last receiver as of below:

1. For the coordinator, locate the jumper block J5 and set the jumper over the jumper pins 1 and 2 (default setting on coordinators).



2. For the last receiver, locate the jumper block J5 and set the jumper over the jumper pins 2 and 3 (default setting on receivers).



6 Troubleshooting the Device

This section offers troubleshooting guidance for situations when there are issues with the coordinator/receiver. Upon powering up the device, there are visual indicators that provide information about the current state or configuration of the devices. If these indicators behave differently from what is expected, there could be issues that need to be addressed. The following information can be helpful to determine potential issues.

Take note that the following LED indicators are only visible if the casing enclosure of the device is temporarily removed:

- Power supply LED
- Tricolor LED
- Ethernet LED
- Power over Ethernet (PoE) LED (on the coordinator only)

6.1 Checking the power supply

When you power up the coordinator/receiver using the external DC input, the power supply LED on the device will light up in orange. The LED will continue to illuminate as long as power is supplied to the device. If the LED is not illuminated, there could be issues with the power supply. Check that the operating input voltage is between the range specified (see *Power supply connector, page 16*). If there is no power, check the cable or power supply to ensure that it is not faulty. If there are no faults with the cable or power supply, check the coordinator/receiver.

6.2 Checking Power over Ethernet (PoE)

Power over Ethernet (PoE) is only applicable for coordinators. Power for the coordinator can be supplied via the Cat 5e cable using the PoE technology. When powered by the PoE, the PoE LED will light up continuously in red color. If the LED is not illuminated, check that the Cat 5e cable or the power sourcing equipment (for example, the network switch supplying the PoE) is not faulty.

6.3 Checking Ethernet network issues

Ethernet network communication is only applicable for coordinators. The coordinator communicates with the Central Console via Ethernet TCP/IP. If the coordinator uses an IP address that is already in use by another device on the Ethernet network, an IP address conflict occurs. This will render one or both the devices to be unable to connect to network resources or perform other network operations.
If an IP address conflict is detected by the coordinator, the green and red LED will blink continuously (500ms on, 500ms off). To rectify the issue, change the IP address of the conflicting device using the Utility Tool of the Security Escort software, and blah blah blah (... to be confirmed).

6.4 Checking the RS-485 communication

The coordinator and receivers communicate with each other via RS-485 by default. The tricolor LED on the device will blink in pink light every 3 seconds as long as RS-485 communication is available. If the RS-485 communication is broken, the coordinator and receivers will switch to radio frequency (RF) as the communication channel. As a result, the behavior and color of the tricolor LED will no longer be the same (blink in pink light every 3 seconds). To troubleshoot RS-485 communication, check that the following is working:

1. RS-485 is enabled on the host system configuration.

2. Wiring of RS-485 is not faulty.
3. Baud rate settings (configured via dip switch) on the coordinator/receivers are the same.

6.5 Checking the radio frequency (RF)

If the coordinator and receivers are communicating via radio frequency (RF), you can confirm the RF configuration by checking the tricolor LED visually. Every time you power up the device, the LED will illuminate and blink a number of times in white light. The number of blinks on the LED corresponds to the configured RF, as shown in the following table.

Radio Frequency	Number of Blinks
304 MHz (default factory setting)	Two
303.825 MHz	One
433.42 MHz	Three
Invalid setting	Non-stop

Table 6.1: LED behavior upon powering up the device

If the selected RF is incorrect, set the dip switches accordingly and reconfirm the settings with the procedure above.

6.6 Resetting the coordinator/receiver

Incorrect configurations on the coordinator or receiver may sometimes be the cause of issues that you encounter. In instances like these, the issue may be cleared by simply performing a reset on the coordinator/receiver. Depending on hard or soft reset, the reset cycle clears specific sets of configuration to the factory settings. Pressing the reset button initiates the reset cycle of the coordinator/receiver, with the red and green LEDs blinking once simultaneously to indicate a hard reset, and the red and green LEDs blinking twice simultaneously for a soft reset. The device is then powered up automatically with the factory settings. For a list of settings or features that are being reset, please refer to the Appendix *Differences between hard and soft reset mode on the coordinator/receiver, page 28*.

6.7 Upgrading coordinator/receiver firmware

Use the Utility Tool of the Security Escort software to check/upgrade the coordinator/receiver firmware. For more information on the usage of Utility Tool, please refer to the *Security Escort Installation and Setup Manual*.

7 Appendices

7.1 Differences between hard and soft reset mode on the coordinator/receiver

The table below lists the different configurations that were cleared when performing the hard or soft resets.

Reset on device	Settings/Features	Hard Reset	Soft Reset
Coordinator	Name of device	✓	
	IP	✓	
	Subnet mask	✓	
	Gateway	✓	
	RF enable/disable	✓	✓
	RS485 enable/disable	✓	✓
	Internal tamper enable/disable	✓	✓
	Fail siren enable/ disable	✓	✓
	Verbose enable/ disable	✓	✓
	Test/Engineering settings	✓	✓
	Receiver table	✓	✓
Receiver	Host coordinator	✓	✓

Table 7.1: Differences between hard and soft reset

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