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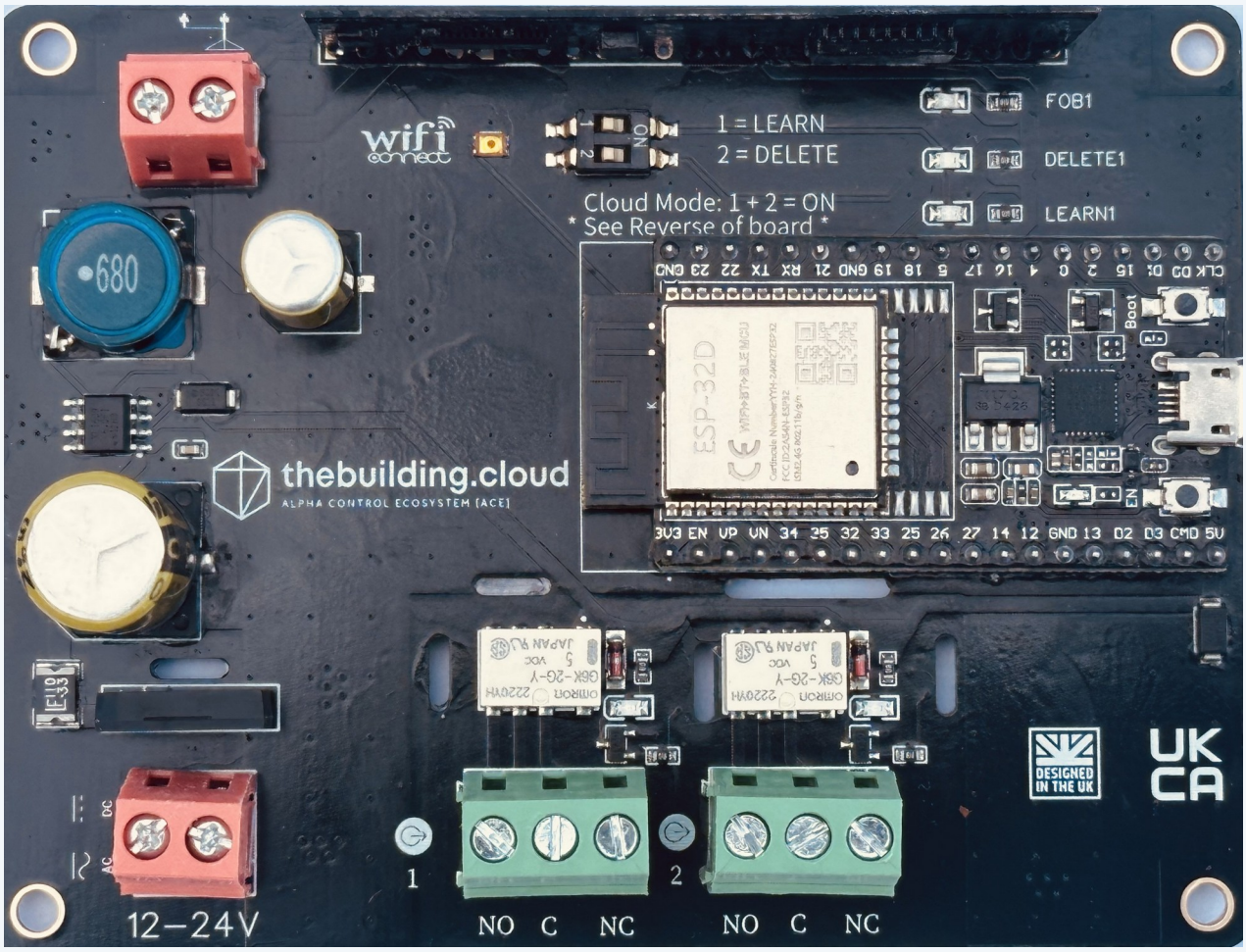
FIREBIRD

FIREBIRD ACCESS CONTROL

FireBird 202A Series v3.2

Installation, Configuration & User Manual



STAND-ALONE | CLOUD-MANAGED | DUAL RELAY | 433 MHz RF

Dual-relay remote access control for gates, barriers, doors and automation

FB-202A-V32-MAN-EN • Manual Revision 1.0 • August 2026

Support: help@thebuilding.cloud

REMOTE CONTROL + CLOUD-MANAGED DUAL-RELAY ACCESS CONTROL

01 Document control and safety

Read this page before installation, wiring or commissioning.

Document control

Product	FireBird 202A Series dual-relay remote access controller - hardware v3.2
Document	Installation, Configuration & User Manual
Document code	FB-202A-V32-MAN-EN
Manual revision / date	Revision 1.0 / August 2026
Intended audience	Qualified installers, commissioning engineers, facilities teams and authorised administrators
Operating modes	Stand-Alone and Cloud-Managed
Support	help@thebuilding.cloud

Revision 1.0 scope

- Introduces the FireBird 202A Series v3.2 with external 12-24 V AC/DC power, two independent potential-free relay outputs and an integrated 433 MHz remote-control receiver.
- Documents Stand-Alone remote learning, local credential capacity, fixed left/right button-to-relay mapping and full-memory deletion.
- Documents Cloud Mode provisioning, cloud-side remote enrolment and relay assignment, plus the dedicated Wi-Fi CONNECT reset procedure.
- Uses current production-controller photographs and documents only the product-level interfaces, operation and published technical parameters required by installers and administrators.

ELECTRICAL SAFETY: Use only a suitable external 12-24 V AC or DC SELV/PELV supply. Isolate the external supply before connecting or changing wiring. Never connect 230 V mains directly to the controller.

REMOTE OPERATION: Before operating a gate, barrier, door or machine by remote control, ensure the operating area is safe and visible and that all independent safety devices are functional.

SCOPE: The FireBird 202A provides access/control signals through relay contacts. It is not a substitute for emergency-stop, fire-release, safety-edge, photocell, force-limiting or other mandatory safety systems.

02 Contents and conventions

Manual structure and quick navigation.

Section	Title	Page
1	Document control & safety	1
2	Contents & conventions	2
3	Product overview & modes	3
4	Technical specifications & power	4
5	Interfaces & terminals	5
6	Relay outputs & connections	6
7	RF remotes & radio characteristics	7
8	Stand-Alone learn / delete	8
9	Stand-Alone mapping & capacity	9
10	Cloud Mode setup	10
11	Wi-Fi CONNECT reset / recovery	11
12	Cloud remote & relay assignment	12
13	Installation & commissioning	13
14	Troubleshooting	14
15	Maintenance, security & support	15
A	Compliance / declaration record	16

Document conventions

- DANGER / WARNING / NOTE identify safety, configuration and supporting information.
- LEARN / 1 enrols local remote buttons; DELETE / 2 erases local credentials.
- Cloud Mode: switches 1 + 2 ON at power-up. Relay terminals: N/O - C - N/C.

PCB MARKINGS: Use the markings on the installed v3.2 PCB as the final authority for terminal identity and switch position.

03 Product overview and operating modes

Two independent relay channels with local RF learning or cloud-managed control.

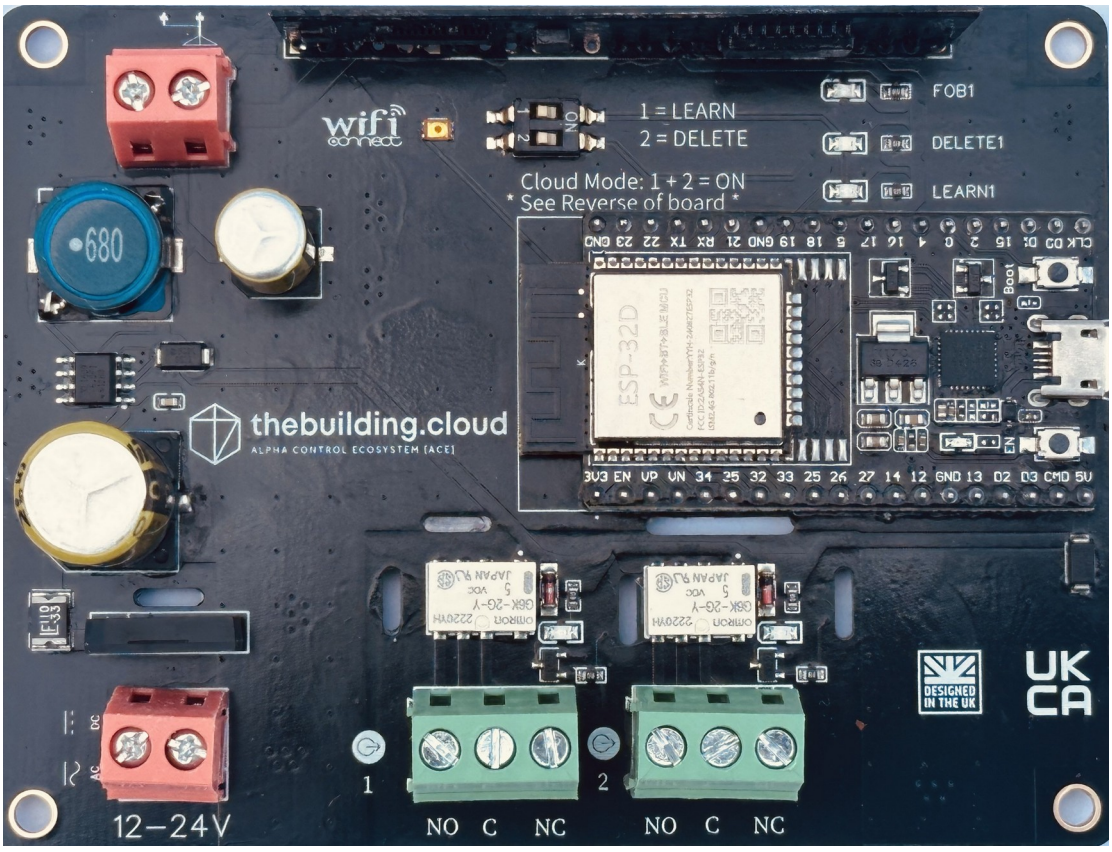


Figure 1 - FireBird 202A Series v3.2 controller. The two relay terminal blocks are marked 1 and 2; each provides N/O, C and N/C contacts.

The FireBird 202A Series is a compact dual-relay access/control unit designed for radio remote controls and optional Wi-Fi cloud management. It is powered from an external 12-24 V AC or DC supply and does not provide Wiegand reader inputs or a manual REX input.

Operating modes

Mode	How it operates	Typical use
Stand-Alone	Remote-control button credentials are learned and validated locally. No network connection is required for normal operation.	Independent gates, barriers, doors or two-function control.
Cloud Mode	The controller joins site Wi-Fi and is managed in thebuilding.cloud. Remote buttons act as cloud-managed credentials and may be assigned to either relay.	Multi-site management, remote enrolment, flexible relay assignment and administration.

FACTORY / NORMAL STATE: For normal operation leave switch 1 (LEARN) OFF and switch 2 (DELETE) OFF. Do not leave either programming switch ON after setup.

04 Technical specifications and power requirements

Select a suitable external supply and allow for Wi-Fi connection peaks.

Electrical and functional specification

Input supply	12-24 V AC or DC, external supply required
Typical controller current - Stand-Alone	Approximately 150 mA
Peak controller current - Cloud/Wi-Fi	Approximately 550 mA while searching for or connecting to Wi-Fi
Recommended supply capacity	At least 1 A for the controller alone, with additional capacity for any other equipment sharing the supply
Relay outputs	2 independent potential-free changeover outputs: N/O, C and N/C
Relay contact rating - v3.2 hardware shown	Maximum switching voltage 125 VAC or 60 VDC; maximum switching current 1 A
RF interface	Integrated 433 MHz AM remote-control receiver; secure code-hopping protocol
Stand-Alone capacity	Up to 3,000 individual remote-control button credentials
Cloud capacity	Not constrained by the 3,000-button local store; practical capacity is governed by the cloud service/account
Local inputs	No Wiegand input; no manual REX input
Network recovery	Dedicated Wi-Fi CONNECT button; 10-second hold clears the stored SSID association and returns the unit to AP/captive-portal setup

SUPPLY SIZING: Do not size the external supply only for the 150 mA Stand-Alone draw if Cloud Mode may be used. Allow for the approximately 550 mA Wi-Fi peak plus an engineering margin.

DRY CONTACTS: The relay terminals do not provide controller supply voltage. The connected gate, barrier or interface circuit must provide its own suitable control voltage through C/COM.

05 Controller interfaces and terminals

Identify the v3.2 controls before applying power.

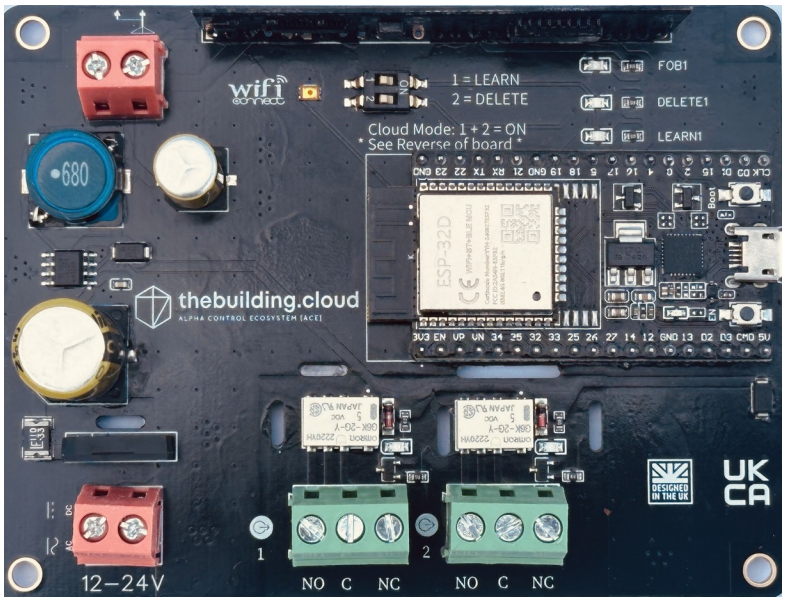


Figure 2 - FireBird 202A Series v3.2 PCB overview.

Interface / control	Marking	Function
Power input	12-24 V AC/DC	External low-voltage supply input.
Relay 1	1 - N/O / C / N/C	First independent potential-free changeover output.
Relay 2	2 - N/O / C / N/C	Second independent potential-free changeover output.
Switch 1	LEARN	Local Stand-Alone remote-button enrolment.
Switch 2	DELETE	Local credential-memory erase; used with LEARN for Cloud Mode setup.
Wi-Fi CONNECT	wifi connect	Hold for 10 seconds to clear stored SSID association and return to AP/captive portal.
RF receiver	Integrated	Receives compatible 433 MHz secure code-hopping remote transmissions.
Indicators	PCB LEDs	Programming, RF and network/state indication depending on operating mode.

06 Relay outputs and connection principles

Both outputs are isolated changeover contacts; use them as control contacts.

Output	N/O	C / COM	N/C / Typical use
Relay 1	Normally open	Common	Use N/O + C for a momentary gate/barrier trigger input.
Relay 1	Open at rest	Switched common	Use N/C + C only where the target equipment specifically requires a normally-closed circuit.
Relay 2	Normally open	Common	Second independent output; same connection principles as Relay 1.
Both	Potential-free	No internal voltage	Provide the external circuit voltage at the equipment being controlled; do not assume voltage is present at the relay terminals.

Typical connection to a gate or barrier controller

1. Isolate the FireBird supply and the equipment being controlled.
2. Identify the target equipment's external trigger/input terminals and confirm whether it expects a normally-open or normally-closed volt-free contact.
3. For the most common momentary trigger input, connect the target input circuit across C and N/O of Relay 1 or Relay 2.
4. Do not inject voltage from an unknown source into the FireBird power input or any logic connection. Keep the relay circuit electrically separate from the controller supply unless the site design intentionally uses the same external source.
5. Power up and test each relay independently. Confirm Relay 1 cannot operate the Relay 2 function and vice versa.

CONTACT RATING: For the v3.2 hardware shown, do not exceed 125 VAC or 60 VDC and 1 A switching current. For inductive, high-inrush, mains, motor or unknown loads, use a suitably rated interposing relay/contactor and suppression appropriate to that load.

Relay 1 - typical roles

- Primary gate/barrier trigger
- Door release input
- Automation input 1

Relay 2 - typical roles

- Second gate/door
- Pedestrian function
- Automation input 2

07 RF remote controls and radio characteristics

Remote buttons are treated as individual credentials.

The integrated radio subsystem is intended for compatible 433 MHz AM remote controls using a secure code-hopping protocol. Each transmitter has an identifier and each button is distinguishable, allowing FireBird to treat a button press in the same way that another access-control platform might treat an individual tag credential.

Nominal radio band	433 MHz AM; compatible transmitters operate around 433.92 MHz.
Security method	Secure code-hopping / rolling-code protocol.
Typical line-of-sight range	Up to approximately 100 m with compatible 433 MHz AM keyfobs under favourable conditions.
Range limitations	Metal enclosures, antenna placement, nearby conductors, building structure, interference, keyfob battery condition and orientation can materially reduce range.
Button identification	The receiver distinguishes transmitter identity and button status so FireBird can map individual buttons to relay actions.
Remote type	Two-button remote controls supported by the FireBird 202A configuration described in this manual.

Installation guidance for reliable RF operation

- Position the controller and its RF antenna arrangement away from large metal surfaces, power transformers and dense high-current wiring where practical.
- Do not modify, replace or expose the internal RF receiver circuitry. The receiver implementation and compatible transmitter sourcing are part of the product technical file.
- Test remote-control range from realistic user positions after the enclosure is closed and all site equipment is energised.
- If range changes unexpectedly, check the remote battery, enclosure/antenna position and new sources of RF interference before replacing the controller.

RANGE: Published component-level range figures are line-of-sight values, not a guaranteed site distance. Commission the actual installation at the required operating points.

08 Stand-Alone Mode - learn and delete

Local remote-button programming without Wi-Fi or cloud access.

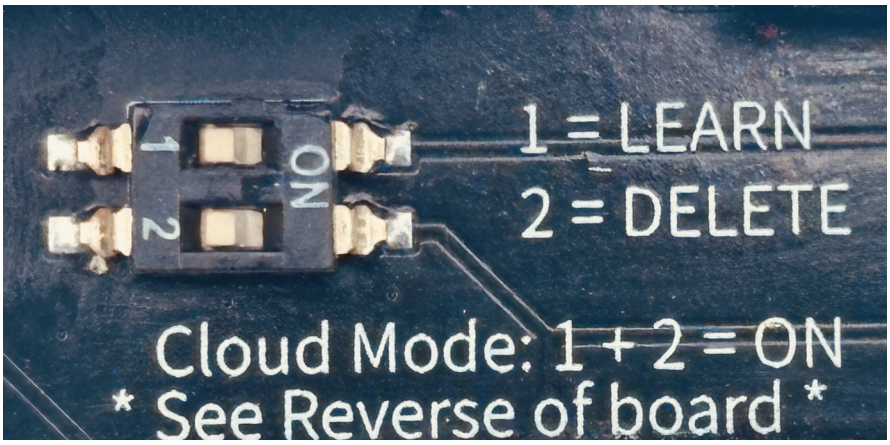


Figure 3 - Programming switch reference. Switch 1 = LEARN, switch 2 = DELETE. Both OFF is normal operation.

Learn remote-control buttons

1. Confirm the controller is in Stand-Alone Mode and both switches are initially OFF.
2. Move switch 1 (LEARN) to ON. The learn indicator should show the programming state.
3. Press the remote-control button to be enrolled. The individual button is stored as a credential.
4. Wait briefly before learning the next button and repeat as required.
5. Return switch 1 (LEARN) to OFF when programming is complete.
6. Test every learned button from outside programming mode.

Delete all locally stored remote credentials

1. Confirm switch 1 (LEARN) is OFF and the controller is powered.
2. Move switch 2 (DELETE) to ON and hold it ON for at least 3 seconds.
3. Return switch 2 (DELETE) to OFF.
4. Re-enrol every authorised remote button required by the site and test both relays.

PERMANENT ACTION: DELETE removes the locally stored Stand-Alone remote-button credential memory. This action cannot be undone. Record authorised remotes before deletion.

09 Stand-Alone button mapping and capacity

The left and right buttons have fixed relay functions in local mode.

Two-button remote mapping		
LEFT BUTTON	→	**Relay 1 in Stand-Alone Mode**
RIGHT BUTTON	→	**Relay 2 in Stand-Alone Mode**

CLOUD MODE: each learned remote-button credential may be assigned to Relay 1 or Relay 2 in thebuilding.cloud.

Fixed mapping in Stand-Alone Mode

Remote action	Stand-Alone result	Credential behaviour
Press / learn LEFT button	Triggers Relay 1	The left-button code is stored as an individual local credential.
Press / learn RIGHT button	Triggers Relay 2	The right-button code is stored as a separate individual local credential.
Learn both buttons on one remote	Left -> Relay 1; Right -> Relay 2	Uses two button-credential memory positions.
Learn one button only	Only that learned button is authorised	The unused button is not automatically authorised.

Local capacity

Stand-Alone Mode supports up to 3,000 individual remote-control button credentials. Capacity is counted by learned button, not by physical remote control. For example, enrolling both buttons of a two-button remote consumes two local credential positions.

CAPACITY EXAMPLE: If both buttons of every remote are enrolled, 3,000 button positions correspond to up to 1,500 fully enrolled two-button remotes. If only one button per remote is used, up to 3,000 physical remotes can be represented.

STAND-ALONE LIMITATION: The fixed left->Relay 1 and right->Relay 2 mapping applies only to Stand-Alone Mode. Use Cloud Mode when flexible button-to-relay assignment is required.

10 Cloud Mode setup

Provision Wi-Fi, then enrol the controller in thebuilding.cloud.

Before starting

- Complete and inspect all power and relay wiring.
- Use an external supply that comfortably supports the approximately 550 mA Wi-Fi search/connection peak.
- Have the correct site Wi-Fi SSID and password available.
- Record the controller/unit identity required by thebuilding.cloud onboarding workflow.
- Ensure both relay-controlled systems are safe while the controller is being commissioned.

Enter Cloud Mode / captive portal

1. Power the FireBird 202A OFF.
2. Move switch 1 (LEARN) and switch 2 (DELETE) both to ON.
3. Power the controller ON. The v3.2 PCB is marked "Cloud Mode: 1 + 2 = ON".
4. On a smartphone or Wi-Fi-capable device, search for FireBird-WiFi or FireBird-WiFi-XXXXX, where the suffix identifies the unit.
5. Connect to the FireBird setup network. The captive portal should open automatically.
6. Select the required site Wi-Fi network and enter its password. Rescan from the portal if required.
7. Allow the controller to connect to the site network.
8. Return both programming switches to OFF for normal operation.
9. Complete controller enrolment in thebuilding.cloud using the supported portal/app workflow.

POWER PEAK: Wi-Fi scanning and connection can draw approximately 550 mA. An undersized or unstable supply can cause resets exactly when the controller is trying to join the network.

NETWORK SECURITY: Do not record Wi-Fi passwords in the installation handover pack. Store network credentials only in the authorised site process.

11 Wi-Fi CONNECT reset and captive-portal recovery

Use the dedicated button when the saved Wi-Fi network must be cleared.



Figure 4 - Wi-Fi CONNECT button on FireBird 202A v3.2.

Reset the stored Wi-Fi network association

1. Keep the controller powered and ensure relay-controlled equipment is in a safe state.
2. Press and hold the Wi-Fi CONNECT button continuously for approximately 10 seconds.
3. Release the button after the 10-second hold. The controller clears the stored SSID association and returns to Access Point (AP) setup mode.
4. Wait for the FireBird-WiFi / FireBird-WiFi-XXXXX setup network to become visible.
5. Connect to the setup network and use the captive portal to select the new site Wi-Fi SSID and enter its password.
6. Confirm the controller reconnects to thebuilding.cloud and test both relay channels.

WHEN TO USE: Use the Wi-Fi CONNECT reset after an SSID/network change, failed provisioning or when intentionally moving the controller to another Wi-Fi network.

NOT A CREDENTIAL ERASE: The Wi-Fi CONNECT button resets network provisioning. It is separate from the DELETE switch used for local remote-button memory.

12 Cloud remote management and relay assignment

Cloud Mode removes the fixed left/right relay mapping used in Stand-Alone Mode.

In Cloud Mode, remote controls are managed as individual button credentials. The platform can enrol compatible remote-button credentials and assign each button to the required relay, so the physical left/right position no longer dictates the relay function.

Cloud task	Behaviour	Operational note
Enrol remote button	Create/manage the remote-button credential in thebuilding.cloud.	Cloud-side enrolment can be performed through the supported management workflow.
Assign to Relay 1	Button credential operates Relay 1.	The button may be left or right on the physical remote.
Assign to Relay 2	Button credential operates Relay 2.	The button may be left or right on the physical remote.
Reassign function	Change the button-to-relay mapping in the cloud.	No need to depend on the Stand-Alone left/right rule.
Revoke access	Disable/remove the cloud credential.	Preferred for individual leavers or lost remotes instead of deleting all local credentials.
Scale	Cloud credential count is not limited by the 3,000-button local Stand-Alone store.	Practical capacity is governed by the cloud service/account and deployment design.

Remote controls as access credentials

- Treat each authorised button as a separate credential with a defined owner, purpose and relay assignment.
- Use descriptive names in the cloud so a lost or returned remote can be identified and revoked without affecting other users.
- For two-button remotes, document the intended function of each button during handover.
- After any assignment change, test the remote at the installation and verify only the intended relay operates.

CLOUD VS LOCAL: A local Stand-Alone credential store and cloud-managed credentials are different operating models. Commission the controller in one intended mode and document that mode clearly for support.

13 Installation, commissioning and handover

Test power, both relays, radio range and network behaviour before service.

Pre-power / installation checks

Check	Requirement	Pass / notes
Mounting	Controller secure, dry, protected from unauthorised access and positioned for reliable RF/Wi-Fi performance.	
Power	External 12-24 V AC/DC supply correctly connected and adequately rated.	
Relay 1	N/O-C-N/C wiring matches the target equipment input and contact rating.	
Relay 2	N/O-C-N/C wiring matches the target equipment input and contact rating.	
Safety	Gate/barrier/door safety circuits remain independent of FireBird logic.	
Programming	LEARN and DELETE OFF; controller ID and operating mode recorded for handover.	

Functional test

Test	Expected result	Pass / notes
Power-up	Stable operation; no reset during Wi-Fi activity.	
Remote left	Stand-Alone: learned left button operates Relay 1 only.	
Remote right	Stand-Alone: learned right button operates Relay 2 only.	
Invalid remote	No relay operation.	
Cloud assignment	Button operates only its assigned cloud relay.	
Wi-Fi recovery	CONNECT reset returns controller to AP mode.	

14 Troubleshooting

Isolate power before opening the enclosure or changing wiring.

Symptom	Likely cause / checks	Action
No power / no LEDs	External 12-24 V supply absent, polarity/termination issue, upstream fuse or wiring fault.	Measure the external supply at the controller input and correct the supply fault before further testing.
Controller resets during Wi-Fi connection	Supply cannot support approximately 550 mA peak, excessive voltage drop or unstable source.	Use a correctly rated supply and check cable size/voltage at the board during Wi-Fi activity.
Cannot learn remote	Wrong mode, LEARN switch not ON, incompatible remote or RF reception issue.	Return to Stand-Alone, set LEARN ON and test close to the controller with a known compatible remote.
Remote operates wrong relay in Stand-Alone	Button expectation does not match fixed mapping.	Left button maps to Relay 1; right button maps to Relay 2.
One remote lost	Local Stand-Alone memory has no individual cloud-style revoke workflow.	If security requires removal, erase and re-enrol authorised local buttons, or migrate/manage in Cloud Mode.
Relay changes state but equipment does not respond	Wrong N/O/N/C pair, no external trigger circuit, target input configuration or load/interface problem.	Verify target equipment input requirements and use an interposing relay where required.
FireBird-WiFi not visible	Not in setup/AP mode or startup not complete.	Power-cycle with both switches ON, or use the 10-second Wi-Fi CONNECT reset.
Cloud offline but local RF works	Site Wi-Fi/internet or cloud enrolment issue.	Check network coverage and controller assignment; do not disturb independent safety systems.
Poor remote range	Battery, metal enclosure, antenna location, interference or orientation.	Test with known-good remote and review RF installation position.

ESCALATE: Stop work and contact technical support if the controller is overheating, repeatedly resetting on a known-good supply, shows visible damage or the relay/control behaviour is uncertain.

15 Maintenance, security and support

Keep the installation documented, recoverable and safe throughout its service life.

Planned maintenance

- Inspect enclosure condition, cable restraint, terminals, corrosion and moisture at the site-approved interval.
- Check the 12-24 V supply voltage and stability, particularly if network resets or intermittent operation are reported.
- Test both relay outputs with the controlled equipment and confirm safety circuits operate independently.
- Test representative remote controls from normal user locations; replace remote batteries when performance becomes inconsistent.
- For Cloud Mode, review authorised administrators, controller assignment, remote credentials and relay mapping. Revoke lost or returned remotes promptly.
- Record any changes to power supply, wiring, Wi-Fi network, operating mode, remote register or cloud configuration.

Security and recovery principles

Stand-Alone	Cloud Mode
• Keep a controlled remote register	• Use named button credentials
• Deletion removes the whole local credential store	• Revoke individual remote access where supported
• Re-enrol after a security-driven erase	• Use Wi-Fi CONNECT only for network recovery

Support information to provide

- Controller/unit ID and hardware version (202A v3.2).
- Operating mode: Stand-Alone or Cloud Mode.
- Photo of the PCB with power isolated, including relay and switch positions.
- External supply voltage and measured voltage at the controller during the reported fault.
- Relay 1 and Relay 2 functions and target equipment type.
- For RF faults: approximate operating distance, environment and whether a known-good remote behaves the same.
- For network faults: site SSID name (never the password), signal/location details and whether FireBird-WiFi appears.

TECHNICAL SUPPORT: help@thebuilding.cloud

16 Compliance and manufacturer declaration record

Retain this page with the product technical file and signed conformity documentation.

FireBird 202A v3.2 is radio-enabled electrical/electronic equipment. The responsible economic operator must maintain the technical file and product-specific Declaration of Conformity required for the market. This manual is installation/user documentation, not the Declaration itself.

Product identification record

Responsible legal entity	Guard Security Systems Ltd
Trading / product brand	GuardSys | FireBird Access Control
Product family	FireBird 202A Series
Hardware version	v3.2
Product description	External 12-24 V AC/DC, dual-relay, 433 MHz remote access controller with optional Wi-Fi cloud management
Document reference	FB-202A-V32-MAN-EN, Revision 1.0
Country / market	United Kingdom / as applicable to product issue

Regulatory / technical-file considerations

- For Great Britain, assess the radio-enabled product against the applicable Radio Equipment Regulations and retain the required technical documentation and Declaration of Conformity.
- Retain RoHS supporting material for the complete FireBird product and supplied accessories/components.
- Internal RF subsystem and compatible-remote source documentation is retained in the technical file and is not reproduced in this distributed manual.
- The installer/system integrator remains responsible for safety and conformity of the completed gate, barrier, controlled door or machine.

FINAL DECLARATION: Before product release, complete and retain the signed product-specific Declaration of Conformity that matches the assessed FireBird 202A v3.2 production hardware and technical file. Do not sign a declaration based only on this manual.

Authorised signatory record

For and on behalf of	Guard Security Systems Ltd
Name / position	[Enter authorised signatory name and position]
Signature / date	[Signature] [DD / MM / YYYY]
Place of issue	United Kingdom