W4A Key

Configuration guide

Practical installation and configuration examples

Contents

1. About this guide

This guide provides examples of configuring the W4A Key for common applications.

Each example includes, where applicable:

- the purpose;
- the electrical connections;
- the operations to create;
- specific settings;
- a functional test;
- the expected result.

This guide does not replace the W4A Key Instruction Manual.

Before making any connections or changing any settings:

- check the device model;
- consult the technical specifications;
- disconnect and isolate the power supply;
- check that the external equipment is compatible;
- follow the safety instructions;
- perform the tests before making the device available to users.

The values shown are examples and must be adapted to the equipment being controlled.

1.1. Profiles used in the practical examples

The W4A Key must be installed and technically configured using the Installer profile.

The Installer profile allows you to:

- configure the device;
- create and change operations;
- configure inputs and outputs;
- perform tests;
- carry out maintenance and diagnostics.

After configuration, an appropriate profile should be used for everyday operation:

- **Administrator, when the person also needs to manage other users;**
- **User, when the person needs to run operations and, if authorised, manage Guests;**
- **Guest, for temporary or limited access.**

The Installer profile can also run configured operations. However, a separate profile is recommended for everyday use, leaving the Installer profile for technical functions.

If the Installer is also a regular user of the device, they can create an Administrator profile for everyday use.

1.2. Temporary access and restrictions

If visitors, suppliers, guests or other temporary users will use the device, create a Guest profile.

The profile can be restricted by:

- start and end date;
- daily schedule;
- maximum number of accesses;
- available operations;
- access to restricted operations;
- level of traceability.

If an operation should reduce the number of available accesses, enable Access counting for that operation.

Operations that do not represent an access, such as lighting, stopping or auxiliary commands, should not normally be used for access counting.

Before sharing the profile, check that its permissions and restrictions match the intended use.

2. Opening a gate with a pulse

2.1. Purpose

This example uses the W4A Key to send a pulse to the control input of a gate operator.

Activating the command in the app temporarily closes a relay contact, reproducing the action of a push button.

This type of connection is commonly used with inputs labelled by the gate operator manufacturer as:

- START;
- STEP;
- PP;
- PUSH;
- OPEN;
- pulse control;
- push-button input.

Check the input designation and behaviour in the gate operator manual.

2.2. Electrical connections

Connect the W4A Key power supply to the AC_IN terminals, observing the limits of the model.

To use output 1, connect:

W4A Key	Gate operator
NO1	Pulse control terminal
C1	Common terminal of the control input

The W4A Key output is a normally open, potential-free contact.

The W4A Key does not supply power to the gate operator input. The connection must only close the contact between the two control terminals.

2.3. Operation to create

Create an operation with the following parameters:

Parameter	Gate
Name	Open gate
Operation status	Active
Restricted operation	No
Access counting	As appropriate for the intended use
Automatic command creation	Yes
Output	Output 1
Activation type	ON pulse in milliseconds
Duration	500 milliseconds
Delay	0 seconds
Next operation	None
Operating schedule	No restriction

The specified duration is only an example. Use the value recommended by the gate operator manufacturer.

2.4. Test

1. check that the movement area is clear;
2. run the Open gate command;
3. check that the gate operator receives the pulse and starts moving;
4. check that the contact opens again after the configured time;
5. test the profile restrictions, where applicable.

2.5. Expected result

When Open gate is run, contacts C1 and NO1 close for the configured time and then return to the open state.

The gate operator controls movement, limit switches and safety devices.

3. Controlling an electric lock

3.1. Purpose

This example uses the W4A Key to temporarily unlock a door fitted with an electric lock. When the command is run in the app, a W4A Key output closes for the configured time, allowing the lock to be powered or controlled through an external circuit.

Adapt the connection to the lock type and its power supply.

3.2. Electrical connections

The W4A Key does not supply power to the lock.

The lock must use an external power supply suitable for its voltage and current.

Example using output 1:

W4A Key	Connection
NO1	Lock power terminal
C1	Supply from the lock's external power source

Connect the other lock terminal directly to the return of its power supply.

The contact between C1 and NO1 closes when output 1 is activated.

For locks with a high current draw, an inductive load or specific requirements, use an auxiliary relay or a suitable protection circuit.

3.3. Operation to create

Create an operation with the following parameters:

Parameter	Door
Name	Open door
Operation status	Active
Restricted operation	No
Access counting	As appropriate for the intended use
Automatic command creation	Yes
Output	Output 1
Activation type	ON pulse in seconds
Duration	3 seconds
Delay	0 seconds
Next operation	None
Operating schedule	No restriction

The stated duration is only an example.

Adjust the time according to:

- the type of lock;
- the time needed to open the door;
- the characteristics of the installation;
- the manufacturer's recommendations.

3.4. Test

1. check that the lock connections and power supply are correct;
2. run the Open door command;
3. check that the lock is released for the configured time;
4. check that it returns to its normal state after the pulse ends;
5. test the profile restrictions, where applicable.

3.5. Expected result

When Open door is run, contacts C1 and NO1 close for the configured time.

The lock is temporarily released and then returns to its normal state.

The behaviour during a power failure depends on the lock type and the installation configuration.

4. Controlling two independent doors

4.1. Purpose

This example uses both W4A Key outputs to control two independent doors.

Each door has its own operation and command in the app.

Output 1 controls door 1 and output 2 controls door 2.

4.2. Electrical connections

Each lock or controlled device must have a suitable power supply.

W4A Key	Connection
NO1	Power terminal of the door 1 lock
C1	Supply from the external power source for door 1
NO2	Power terminal of the door 2 lock
C2	Supply from the external power source for door 2

Connect the other terminal of each lock directly to the return of its respective power supply.

The two outputs are independent and potential-free.

Do not connect terminals C1 and C2 together unless the connection is part of the electrical design and has been confirmed to be compatible.

4.3. Operations to create

Create two operations with the following parameters:

Parameter	Door 1	Door 2
Name	Open door 1	Open door 2
Operation status	Active	Active
Restricted operation	No	No
Access counting	As appropriate for the intended use	As appropriate for the intended use
Automatic command creation	Yes	Yes
Output	Output 1	Output 2
Activation type	ON pulse in seconds	ON pulse in seconds
Duration	3 seconds	3 seconds
Delay	0 seconds	0 seconds
Next operation	None	None
Operating schedule	No restriction	No restriction

Adapt the durations to the equipment being controlled.

4.4. Test

1. run Open door 1 and check that only output 1 is activated;
2. run Open door 2 and check that only output 2 is activated;
3. check that each contact returns to its open state after the configured time.

4.5. Expected result

The Open door 1 command activates only contacts C1 and NO1.

The Open door 2 command activates only contacts C2 and NO2.

The two doors operate independently.

5. Opening a gate with a physical push button

5.1. Purpose

This example allows the gate to be opened using:

- a push button connected to input 1 of the W4A Key;
- the Open gate command in the app.

The physical push button and the app run the same operation.

5.2. Electrical connections

Make the following connections:

W4A Key	Equipment	Connection
NO1	Gate operator	Pulse input, such as START, PP or OPEN
C1	Gate operator	Common terminal of the control input
C	Physical push button	First push-button terminal
IN1	Physical push button	Second push-button terminal

Use a normally open, potential-free push button.

Check the gate operator terminal designations in its manual.

Do not apply an external voltage to terminals C and IN1.

5.3. Operation to create

Create an operation with the following parameters:

Parameter	Gate
Name	Open gate
Operation status	Active
Restricted operation	No
Access counting	As appropriate for the intended use
Automatic command creation	Yes
Output	Output 1
Activation type	ON pulse in seconds
Duration	1 second
Delay	0 seconds
Next operation	None
Operating schedule	No restriction

The duration must follow the gate operator manufacturer's recommendation.

5.4. Input configuration

Configure input 1 to run the Open gate operation when the input changes to ON.

Parameter	Recommended configuration
Input	IN 1
Operating mode	Run operation
Operation	Open gate

Pressing the button closes the contact between C and IN1 and runs the operation.

5.5. Test

1. check that the movement area is clear;
2. press the physical push button;
3. check that the gate starts moving;
4. run the command in the app;
5. check that both produce the same result.

5.6. Expected result

When the physical push button is pressed or Open gate is run in the app, contacts C1 and NO1 close for the configured time.

The gate operator receives the pulse and controls the movement of the gate.

6. Controlling a shutter

6.1. Purpose

This example controls the raising and lowering of a shutter through two independent operations:

- **Raise shutter;**
- **Lower shutter.**

Output 1 controls upward movement and output 2 controls downward movement.

Interlocking must be enabled to prevent the two outputs from activating at the same time.

6.2. Electrical connections

Connect the W4A Key to the control inputs of the shutter controller or to the coils of suitable auxiliary relays or contactors.

Do not connect the motor directly to the outputs without checking electrical compatibility.

W4A Key	Connection
NO1	Raise input
C1	Common terminal of the raise control input
NO2	Lower input
C2	Common terminal of the lower control input

Check the shutter controller manual for the terminal designations and the accepted control method.

6.3. Interlock configuration

Enable output interlocking.

This setting prevents outputs 1 and 2 from remaining active at the same time.

Interlocking configured in the W4A Key does not replace the electrical or mechanical interlocks required by the motor or controller manufacturer.

6.4. Operations to create

Create two operations with the following parameters:

Parameter	Raise shutter	Lower shutter
Name	Raise shutter	Lower shutter
Operation status	Active	Active
Restricted operation	No	No
Access counting	No	No
Automatic command creation	Yes	Yes
Output	Output 1	Output 2
Activation type	Press and hold or ON pulse in seconds	Press and hold or ON pulse in seconds
Duration	According to the selected type	According to the selected type
Delay	0 seconds	0 seconds
Next operation	None	None
Operating schedule	No restriction	No restriction

Use Press and hold when the output should remain active only while the user holds down the command.

Use ON pulse in seconds when the controller accepts a timed pulse to start movement.

The selection must follow the control method specified by the shutter controller manufacturer.

6.5. Stop operation

If stopping is achieved by interrupting the active output, a Stop operation may be created when supported by the configuration.

6.6. Test

1. check that the movement area is clear;
2. run Raise shutter and check the direction of movement;
3. run Lower shutter and check the direction of movement;
4. check that the two outputs do not remain active at the same time;
5. test the stop function, if configured.

6.7. Expected result

The Raise shutter operation activates only output 1.

The Lower shutter operation activates only output 2.

Interlocking prevents simultaneous activation in both directions.

7. Controlling lighting in bistable mode

7.1. Purpose

This example lets you turn lighting on and off using the app.

Each time the command is run, it changes the output state:

- if it is off, it turns on;
- if it is on, it turns off.

7.2. Electrical connections

The lighting must be powered by a suitable external circuit.

W4A Key	Connection
NO1	Lighting supply input or control circuit input
C1	Supply from the external circuit

Connect the other lighting terminal directly to the return of its power supply.

A direct connection must be used only when the voltage, current and load type are within the output ratings.

If the lighting has a high inrush current or is unsuitable for the relay contact, use an auxiliary relay or contactor.

7.3. Operation to create

Create an operation with the following parameters:

Parameter	Lighting
Name	Lighting
Operation status	Active
Restricted operation	No
Access counting	No
Automatic command creation	Yes
Output	Output 1
Activation type	Bistable
Delay	0 seconds
Next operation	None
Operating schedule	No restriction

7.4. Test

1. run the Lighting command and check that the light turns on;
2. run the command again and check that the light turns off;
3. check that the state shown in the app matches the output state.

7.5. Expected result

Each time the Lighting command is run, it changes the state of output 1.

Contacts C1 and NO1 remain closed while the lighting is on and open when it is turned off.

8. Controlling timed lighting

8.1. Purpose

This example turns on lighting for a specified period.

When the command is run, the output activates and automatically turns off at the end of the configured time.

8.2. Electrical connections

The lighting must be powered by a suitable external circuit.

W4A Key	Connection
NO1	Lighting supply input or control circuit input
C1	Supply from the external circuit

Connect the other lighting terminal directly to the return of its power supply.

A direct connection must be used only when the voltage, current and load type are within the output ratings.

If the lighting has a high inrush current or is unsuitable for the relay contact, use an auxiliary relay or contactor.

8.3. Operation to create

Create an operation with the following parameters:

Parameter	Lighting
Name	Timed light
Operation status	Active
Restricted operation	No
Access counting	No
Automatic command creation	Yes
Output	Output 1
Activation type	ON pulse in seconds
Duration	60 seconds
Delay	0 seconds
Next operation	None
Operating schedule	No restriction

The specified duration is only an example and must be adjusted to the intended use.

8.4. Test

1. run the Timed light command;
2. check that the lighting turns on;
3. check that it stays on for the configured time;
4. check that it turns off automatically at the end of that period.

8.5. Expected result

When Timed light is run, contacts C1 and NO1 close for the configured time and open automatically at the end.

9. Opening a gate with temporary lighting

9.1. Purpose

This example automatically performs two actions in sequence:

1. send an opening pulse to the gate operator;
2. turn on lighting for a specified period.

Output 1 controls the gate and output 2 controls the lighting.

9.2. Electrical connections

W4A Key	Circuit	Connection
NO1	Gate operator	Opening or pulse input
C1	Gate operator	Common terminal of the control input
NO2	Lighting	Lighting supply terminal or control circuit input
C2	Lighting	Supply from the external circuit

Connect the other lighting terminal directly to the return of its power supply.

Check the gate operator manual to confirm that its control input accepts a dry contact.

If the lighting is unsuitable for the W4A Key contacts, use an auxiliary relay or contactor.

9.3. Operations to create

Create two operations with the following parameters:

Parameter	Gate	Lighting
Name	Open gate	Access light
Operation status	Active	Active
Restricted operation	No	No
Access counting	As appropriate for the intended use	No
Automatic command creation	Yes	No
Output	Output 1	Output 2
Activation type	ON pulse in seconds	ON pulse in seconds
Duration	1 second	60 seconds
Delay	0 seconds	0 seconds
Next operation	Access light	None
Execution of next operation	After completion	-
Operating schedule	No restriction	No restriction

The gate pulse duration must follow the gate operator manufacturer's recommendation.

Adjust the lighting time to the needs of the location.

9.4. Test

1. run the Open gate command;
2. check that the gate operator receives the pulse;
3. check that the lighting is activated after the first operation finishes;
4. check that the lighting turns off automatically.

9.5. Expected result

When Open gate is run, output 1 sends the pulse to the gate operator.

After that operation finishes, output 2 activates the lighting for the configured time.

10. Controlling a load through an auxiliary contactor

10.1. Purpose

This example controls a load through an auxiliary contactor.

Output 1 of the W4A Key controls only the contactor coil. The load is switched on and off by the contactor's power contacts.

Use this arrangement when:

- the load current exceeds the output rating;
- the inrush current is high;
- the load is inductive;
- the utilisation category requires a contactor;
- the control circuit must be separated from the power circuit.

10.2. Electrical connections

W4A Key	Circuit	Connection
NO1	Contactor coil	One of the coil terminals
C1	Coil power supply	Supply from the external power source
—	Contactor coil	Other terminal connected directly to the supply return
—	Contactor power contacts	Connected in series with the load supply

The contactor coil voltage must be compatible with its power supply.

If the coil is powered by direct current, install a suitable flyback diode with the correct polarity.

If the coil is powered by alternating current, use suitable surge protection where necessary.

10.3. Operation to create

Create an operation with the following parameters:

Parameter	Load
Name	Switch load
Operation status	Active
Restricted operation	As appropriate for the intended use
Access counting	No
Automatic command creation	Yes
Output	Output 1
Activation type	Bistable
Delay	0 seconds
Next operation	None
Operating schedule	As appropriate for the intended use

Use Bistable when each command should alternate between switching the load on and off.

If the load should run only for a specified period, use ON pulse in seconds and set the required duration.

10.4. Test

1. run the Switch load command;
2. check that the contactor activates;
3. check that the load switches on;
4. run the command again;
5. check that the contactor and load switch off.

10.5. Expected result

When Switch load is run, contacts C1 and NO1 close and power the contactor coil.

The contactor switches its power contacts and controls the load.

The load current does not flow through the W4A Key output contacts.

11. Blocking opening with a sensor

11.1. Purpose

This example prevents the Open gate operation from running while an external sensor indicates a blocking condition.

It can be used, for example, with:

- a safety contact;
- a door sensor;
- an alarm contact;
- a limit switch;
- an external authorisation system.

Output 1 controls the gate operator and input 1 receives the sensor contact.

11.2. Electrical connections

W4A Key	Circuit	Connection
NO1	Gate operator	Opening or pulse input
C1	Gate operator	Common terminal of the control input
C	Sensor	First terminal of the dry contact
IN1	Sensor	Second terminal of the dry contact

The sensor must provide a potential-free dry contact.

Do not apply an external voltage to terminals C and IN1.

11.3. Operation to create

Create an operation with the following parameters:

Parameter	Gate
Name	Open gate
Operation status	Active
Restricted operation	No
Access counting	As appropriate for the intended use
Automatic command creation	Yes
Output	Output 1
Activation type	ON pulse in seconds
Duration	1 second

Delay	0 seconds
Next operation	None
Operating schedule	No restriction

The duration must follow the gate operator manufacturer's recommendation.

11.4. Input configuration

Configure input 1 to prevent activation while the sensor is in the blocking state.

Parameter	Recommended configuration
Input	IN1
Operating mode	Prevent activation in ON state or Prevent activation in OFF state
Outputs	NO1

Adjust the operating mode to the sensor contact type:

- normally open;
- normally closed.

Whenever possible, use a configuration that detects an open circuit or circuit failure.

11.5. Test

1. put the sensor in the blocking state;
2. run Open gate and check that the operation is blocked;
3. remove the blocking condition;
4. run the command again;
5. check that the gate operator receives the pulse.

11.6. Expected result

While the sensor indicates the blocking condition, the Open gate operation does not activate output 1.

When the condition clears, the operation becomes available again.

12. Full and pedestrian opening of a gate

12.1. Purpose

This example provides two independent commands:

1. **Open gate, for full opening;**
2. **Pedestrian opening, for partial opening to allow people through.**

Output 1 controls the full opening input and output 2 controls the pedestrian input of the gate operator.

12.2. Electrical connections

W4A Key	Circuit	Connection
NO1	Gate operator	Full opening input, such as START, OPEN or PP
C1	Gate operator	Common terminal of the full opening input
NO2	Gate operator	Pedestrian input, such as PED, PEDESTRIAN or PARTIAL
C2	Gate operator	Common terminal of the pedestrian input

If the gate operator uses a single common terminal for both inputs, terminals C1 and C2 may be connected to that common terminal, provided the connection is compatible with the equipment.

Check the gate operator manual for:

- the input designations;
- whether both accept dry contacts;
- the recommended pulse duration;
- the behaviour of pedestrian opening.

12.3. Operations to create

Create two operations with the following parameters:

Parameter	Full opening	Pedestrian opening
Name	Open gate	Pedestrian opening
Operation status	Active	Active
Restricted operation	No	No
Access counting	As appropriate for the intended use	As appropriate for the intended use
Automatic command creation	Yes	Yes
Output	Output 1	Output 2
Activation type	ON pulse in seconds	ON pulse in seconds

Duration	1 second	1 second
Delay	0 seconds	0 seconds
Next operation	None	None
Operating schedule	No restriction	No restriction

The pulse durations must follow the gate operator manufacturer's recommendation.

If only certain users may open the gate fully, mark the Open gate operation as restricted.

12.4. Test

1. run Open gate and check that the gate opens fully;
2. run Pedestrian opening and check that the gate opens partially;
3. check that each command activates only the corresponding input.

12.5. Expected result

The Open gate operation sends a pulse through output 1 and starts full opening.

The Pedestrian opening operation sends a pulse through output 2 and starts the partial opening configured on the gate operator.