

Overview

This guide explains how to wire and configure photocells (photoelectric safety beams) or safety edges through the GatEvo Connect unit to a gate panel, using the I/O Manager in the app. The GatEvo Connect has **4 inputs** and **6 outputs**. Each input/output pair is managed as one IO channel and can be named, configured and monitored live from anywhere via Bluetooth or Cloud.

	Count	Type	Notes
Inputs	4	Dry contact / Resistive	Volt-free only — NO external voltage. Supports dry contact NC/NO or resistive 4k1Ω / 8k2Ω for safety edges
Outputs	6	Relay (volt-free)	Configurable: NO or NC, Momentary or Latching

■ CRITICAL — DRY CONTACT INPUTS ONLY

GatEvo Connect inputs are **dry contact (volt-free) only**. Do **NOT** apply any voltage (AC or DC) to the input terminals under any circumstances. Applying voltage will **permanently damage the PCB** and void the warranty. Always use volt-free contacts — photocell relay output, safety edge end-of-line relay, or key switch. Resistive mode (4k1 / 8k2) is a passive resistor circuit only — no external voltage is applied.

Input Configuration Options

Each input channel can be set to one of four modes in the app:

Input Type	Use Case	How It Works	Typical Device
Button	Momentary push	Short contact closure triggers the output	Push-to-exit button, key switch
Sensor (NC)	Photocell / beam	NC circuit at rest — beam break opens contact and triggers output. No voltage on input	Photoelectric safety beam, free-exit loop
Resistive 4k1 Ω	Safety edge (4k1 EOL)	4,100Ω resistor across input at rest. Edge compression changes resistance and triggers output	Rubber safety edge with 4k1Ω end-of-line resistor
Resistive 8k2 Ω	Safety edge (8k2 EOL)	8,200Ω resistor across input at rest. Edge compression changes resistance and triggers output	Rubber safety edge with 8k2Ω end-of-line resistor

Safety edge resistive wiring note:

The end-of-line (EOL) resistor is already factory-fitted inside the safety edge. Wire the two cores directly to the GatEvo input terminals — do not add any additional resistors. Select the matching resistor value (4k1 or 8k2) in the app Input Type dropdown to match the safety edge specification on its datasheet.

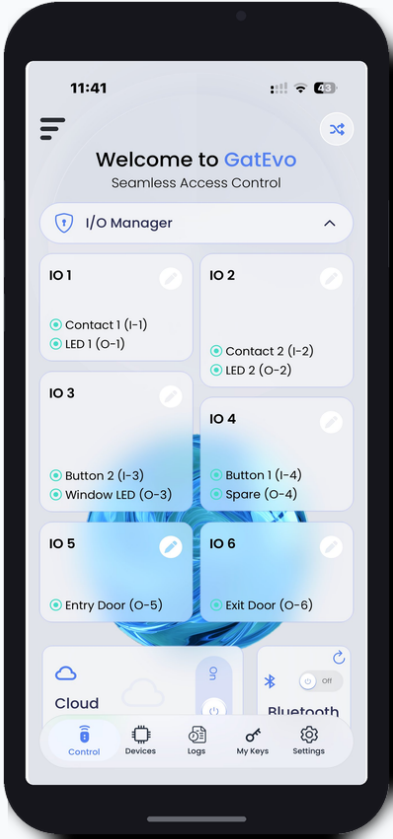
Wiring Summary — Photocell to GatEvo to Gate Panel

From	To (GatEvo)	Notes
------	-------------	-------

Photocell NC + C terminals	GatEvo Input terminal	Dry contact only — NO voltage on input terminals
GatEvo Output terminals	Gate panel photocell input	Relay output wired in series with gate panel photocell / safety input loop
Capacitor filter ×4 (supplied)	Across each input terminal pair	In parallel — suppresses cable noise and prevents false triggers

Step-by-Step App Configuration

STEP 1 — Open I/O Manager & Select the IO Channel



→ From the Control screen, tap the I/O Manager panel to expand it

→ All IO channels are shown: IO 1–4 each have one input, plus IO 5–6 are output-only

→ The GatEvo Connect has 4 inputs (IO 1–4) and 6 outputs (IO 1–6) in total

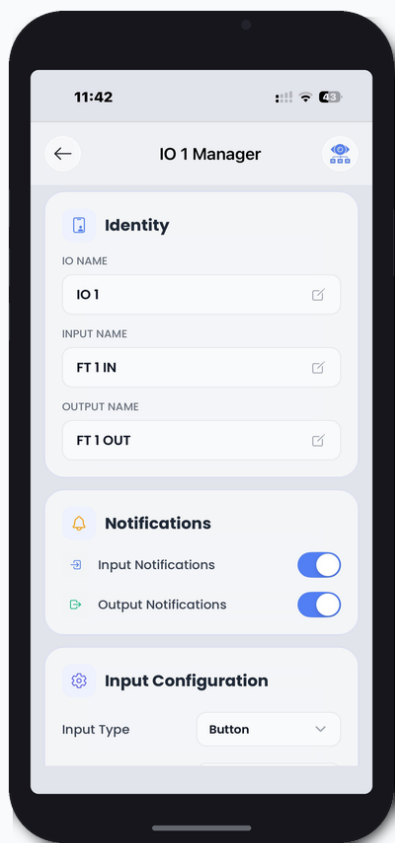
→ Each tile shows: IO name, input name (I-x), output name (O-x), and a live status dot

→ Status dot colour: Red = Inactive (contact open) | Green = Active (contact closed)

→ Tap the pencil (edit) icon on the IO channel to configure (e.g. IO 1 for Photocell 1)

TIP: Check the live status dot before and after wiring — it should turn Green when the photocell beam is unbroken (NC contact closed). This confirms correct wiring instantly.

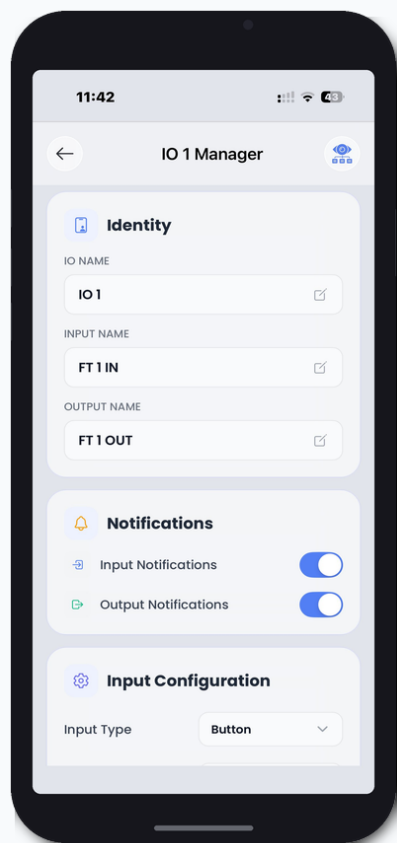
STEP 2 — Name the Input & Output for Clear Log Identification



- Inside the IO channel editor, scroll to the Identity section at the top
- Set the IO Name to identify the channel, e.g.: FT 1
- Set the Input Name: FT 1 IN
- Set the Output Name: FT 1 OUT
- These names appear in the GatEvo activity logs and push notifications
- Clear names are essential for fast fault-finding across multiple channels and sites

NOTE: Suggested naming prefixes: FT = photocell beam, SE = safety edge, PB = push-to-exit button, FS = free-exit sensor. Keep names short and consistent across all your GatEvo installations.

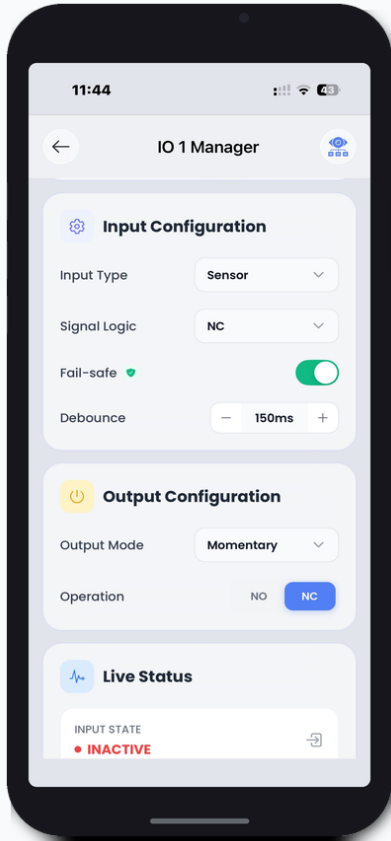
STEP 3 — Configure Notifications (Optional)



- Scroll down to the Notifications section (visible on same screen below Identity)
- Toggle Input Notifications ON — alerts client when photocell beam is broken
- Toggle Output Notifications ON — alerts when the relay output activates
- Notifications are delivered via GatEvo Cloud — Cloud must be enabled and connected
- Useful for: detecting gate activations, identifying intermittent beam faults remotely
- Toggle both OFF if push notifications are not required for this channel

TIP: Input notifications let clients see every gate activation in the app in real time, even when off-site. They are also invaluable for detecting intermittent photocell faults before they cause problems.

STEP 4 — Set Input Type, Signal Logic, Output Mode — Then Verify Live Status



→ Scroll to Input Configuration section:

- For photocell: Input Type = Sensor | Signal Logic = NC | Fail-safe = ON
- For safety edge 4k1: Input Type = Resistive 4k1Ω
- For safety edge 8k2: Input Type = Resistive 8k2Ω

→ Debounce: leave at 150ms default (increase if false triggers persist)

→ Scroll to Output Configuration:

- Output Mode = Momentary
- Operation = NC (Normally Closed)

→ Scroll to Live Status — verify before commissioning:

- Input State = ACTIVE (Green) when beam clear / edge uncompressed
- Input State = INACTIVE (Red) when beam broken / edge compressed

→ Tap Save Changes at the bottom of the screen

■ **IMPORTANT:** INPUTS ARE DRY CONTACT ONLY. Never apply any voltage to input terminals. For resistive safety edges, the EOL resistor inside the edge is the only passive element — no external voltage is applied.

NOTE: Fail-safe ON means the output will activate if the input cable is cut or disconnected, treating a lost signal as a safety event. Recommended for safety-critical photocells. Momentary output pulses briefly on trigger — correct for passing a signal to the gate panel.

Capacitor Filter — Eliminating Noise & False Triggers

When to fit the capacitor filters

If you experience **delayed activations, false triggers, intermittent faults or no response** from a photocell or safety edge input, the most common cause is **electrical noise induced on the input cable**. This typically occurs when the same multicore cable carries both the dry-contact signal and a voltage supply core to power another device — the voltage core capacitively couples interference onto the adjacent signal wires.

Solution: 4 × capacitor filters — supplied inside the GatEvo Connect enclosure

One capacitor filter is provided per input channel (4 inputs = 4 capacitors). Connect the capacitor **in parallel** across the input terminals for the affected channel. The capacitor acts as a low-pass filter — absorbing high-frequency noise spikes while allowing the genuine slow DC contact signal to pass through cleanly.

How to Install the Capacitor Filter

- 1 Locate the 4 capacitor filters inside the GatEvo Connect enclosure — one per input channel (IO 1–4)
- 2 Identify the input terminals for the affected channel (e.g. IO 1 Input terminals)
- 3 Connect the capacitor across the two input terminals — in parallel with the dry contact wires

4 Polarity: capacitors are non-polarised (ceramic or film type) — either orientation is correct

5 Re-test via Live Status in the app — false triggers and instability should now be eliminated

Why does shared cable cause input problems?

Gate installations commonly run multiple cores in a single cable — for example, the photocell dry-contact signal alongside a 12 V or 24 V supply powering the photocell receiver. The voltage-carrying cores act as an antenna and capacitively couple high-frequency interference onto the adjacent signal wires. The GatEvo input detects these as rapid open/close transitions, causing erratic behaviour, missed triggers or repeated false activations. The capacitor filter smooths these transitions so only genuine contact changes are registered.

Pre-Commissioning Checklist

☐	Photocell NC + C wired to GatEvo input terminals — confirmed dry contact, no voltage present
☐	GatEvo Output terminals wired in series with gate panel photocell / safety input
☐	IO channel named clearly: IO Name / Input Name (FT 1 IN) / Output Name (FT 1 OUT)
☐	Input Type selected correctly: Sensor (NC) for photocell Resistive 4k1Ω or 8k2Ω for safety edge
☐	Signal Logic set to NC Fail-safe toggled ON (recommended for safety-critical inputs)
☐	Debounce set to 150ms (default) — increase if false triggers persist after capacitor filter fitted
☐	Output Mode = Momentary Output Operation = NC
☐	Capacitor filter fitted in parallel across input terminals (if noise or false triggers suspected)
☐	Live Status: ACTIVE (Green) when beam clear / edge uncompressed — confirmed in app
☐	Live Status: INACTIVE (Red) when beam broken / edge compressed — confirmed in app
☐	Notifications configured as required by client
☐	Save Changes tapped and confirmed in app

Troubleshooting

- Input shows INACTIVE (Red) when beam is clear: check NC + C wiring — confirm dry contact with no voltage on terminals
- False triggers / rapid flicking Active↔Inactive: fit capacitor filter in parallel across input terminals
- No response from gate panel when beam is broken: confirm output wired in series with gate panel input, Output Mode = Momentary, Operation = NC
- Resistive input not detecting safety edge: confirm EOL resistor value matches app setting (4k1 or 8k2) — do not add any external resistors
- Intermittent faults at certain times only: cable noise from shared voltage supply core — run a separate cable or fit capacitor filter

- Fail-safe triggering without beam break: cable run is too long or has a break — check cable continuity, reduce cable length or use screened cable
- Notifications not arriving: confirm Cloud Connection is enabled and device shows Cloud Connected on the Control screen
- Live Status not updating: confirm Bluetooth (local) or Cloud (remote) is active and connected in the app