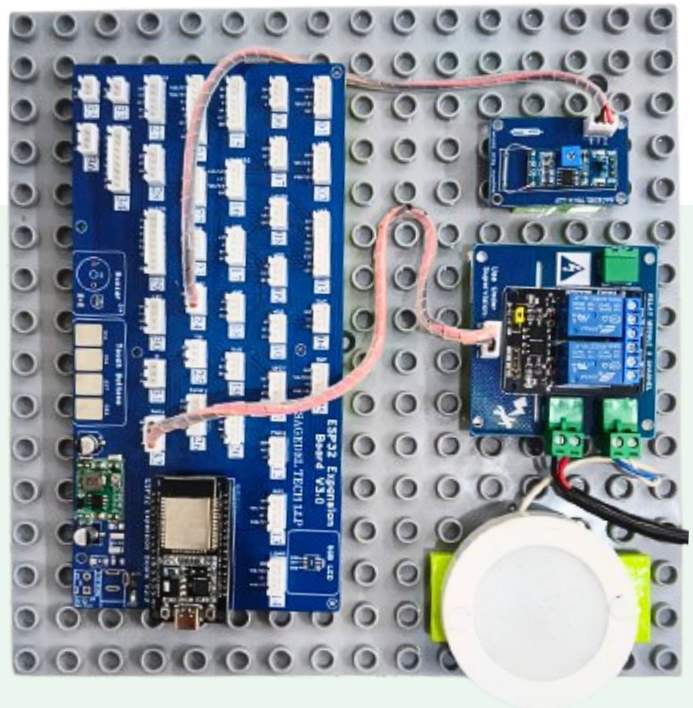


MAGNETIC LIGHT

Magnetic Light System — Automatic Light Control Using Reed Switch

2026



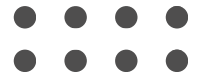
Phone
9958007460



Website
www.sagedel.com

MAGNETIC LIGHT

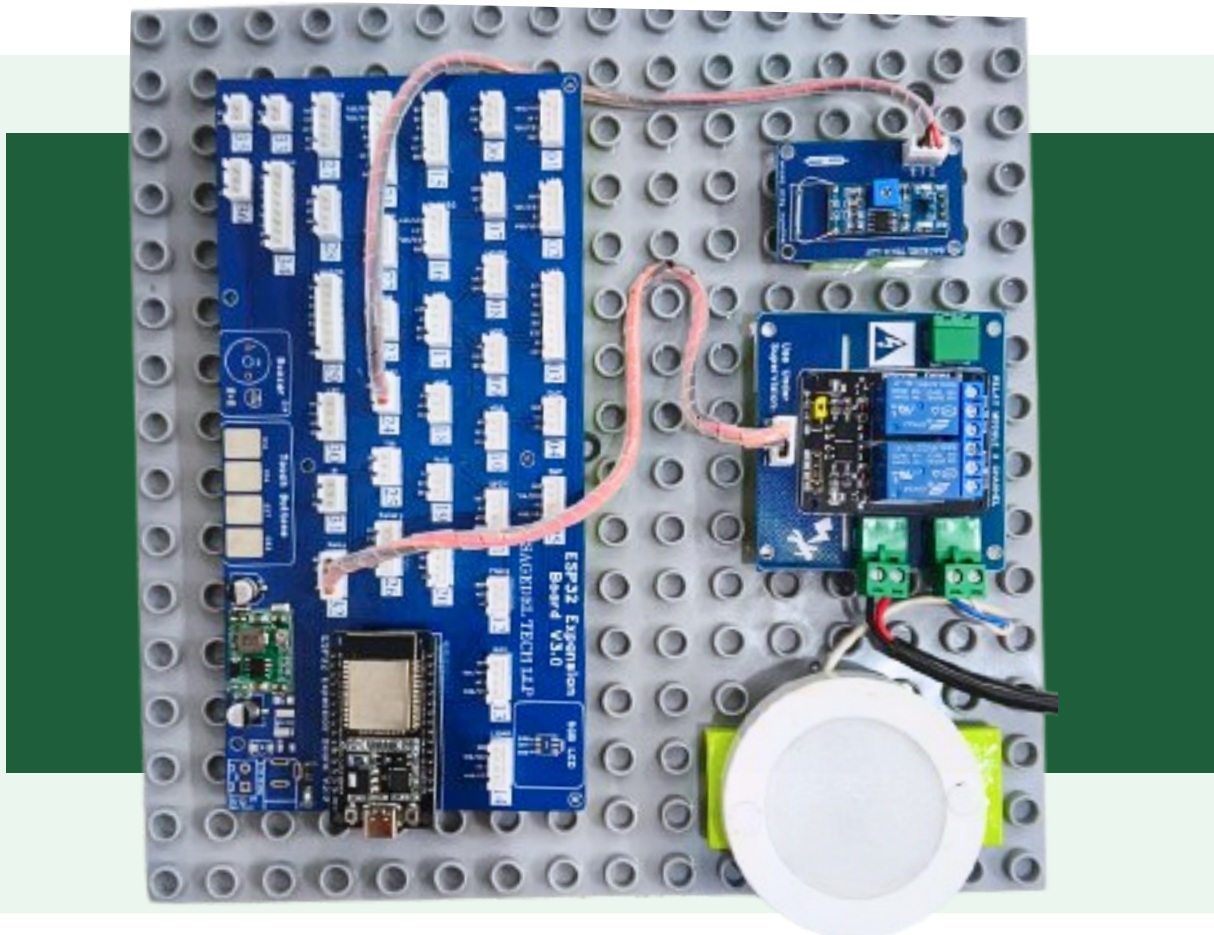
Objective:



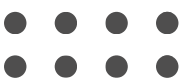
Learn how to interface a Reed switch and relay with an ESP32 to detect magnetic activation and automatically switch a light on for a set duration before turning off.

What it Does:

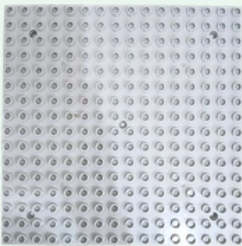
The ESP32 continuously monitors the Reed switch for activation. Once triggered, it turns the light ON through the relay, keeps it on for 4 seconds, then automatically switches it OFF and resets for the next activation.



Modules & Components used:



ESP Expansion Board



Lego board



Magnetic Reed Switch



2 Channel Relay Module



Connector



USB cable



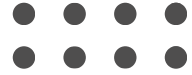
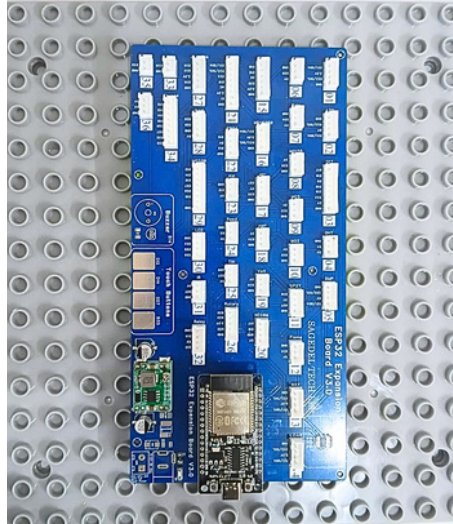
5W AC LED Light



Connector

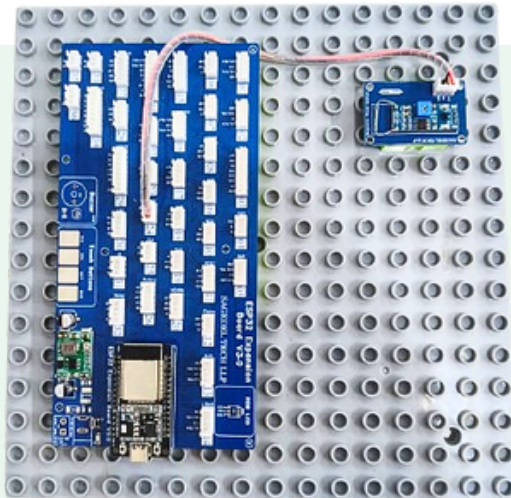
Step-by-Step Assembly & Connections

Step 1: Place the ESP32 Expansion Board securely on the lego plate and align it with the mounting holes.



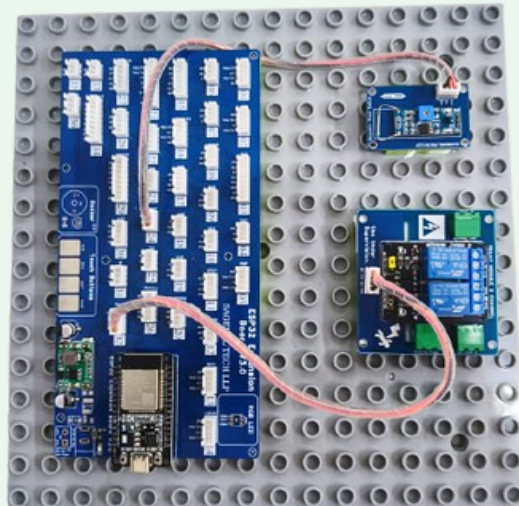
Step 1

Step 2: Connect the Magnetic Reed Switch to **Port No. 24** on the ESP32 Expansion Board.



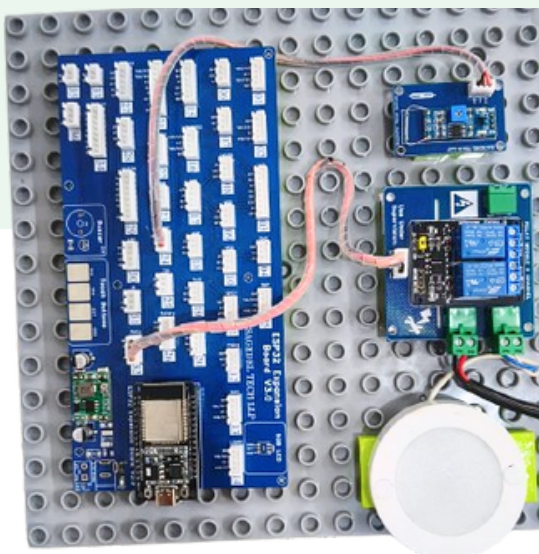
Step 2

Step 3: Connect Relay Module to **Port No. 32** on the ESP32 Expansion Board.



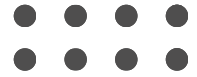
Step 3

Step 4: Connect the light's power wire to the relay module's



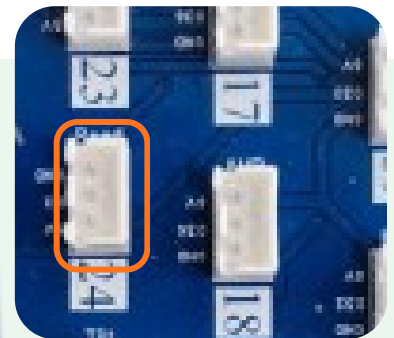
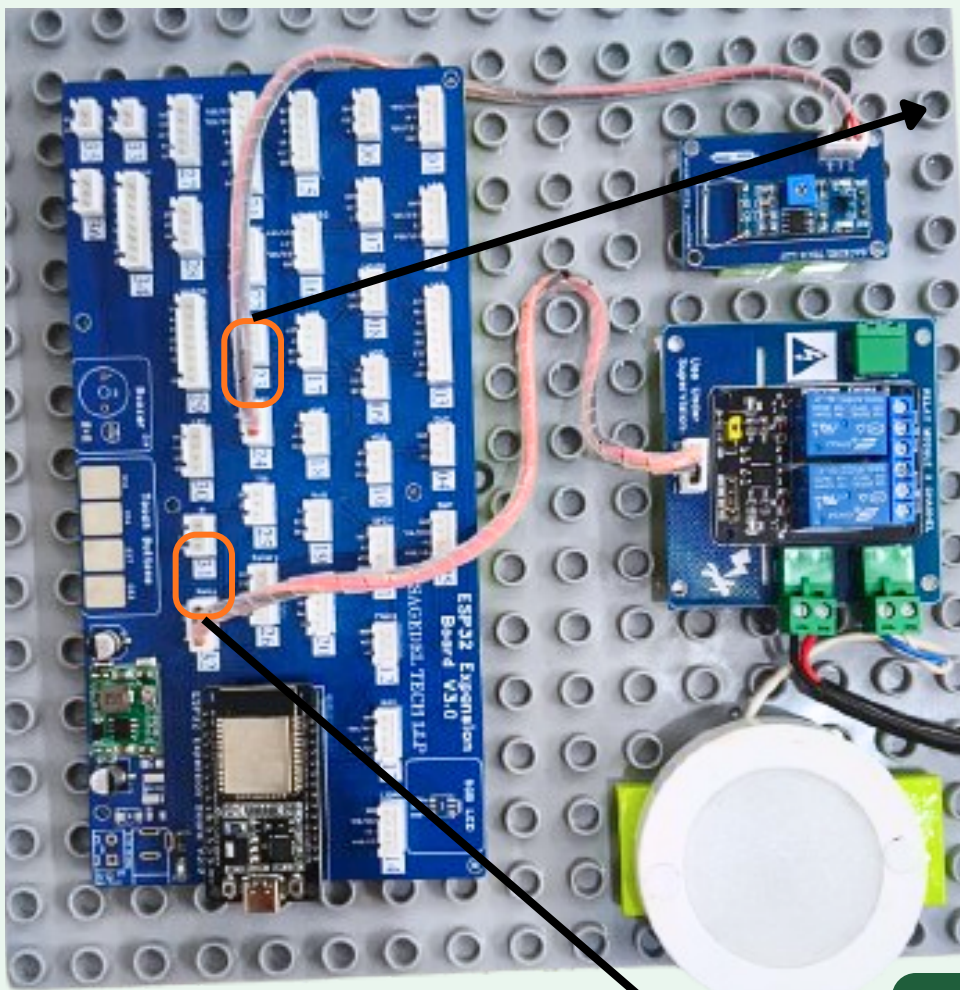
Step 4

Specific Port Connections

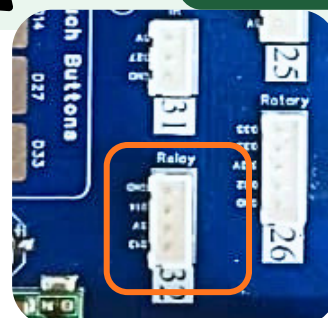


- Reed Switch → port no. 24
- Relay Module → port no. 32

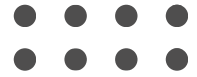
Connect **Reed Switch** to
port no. 24



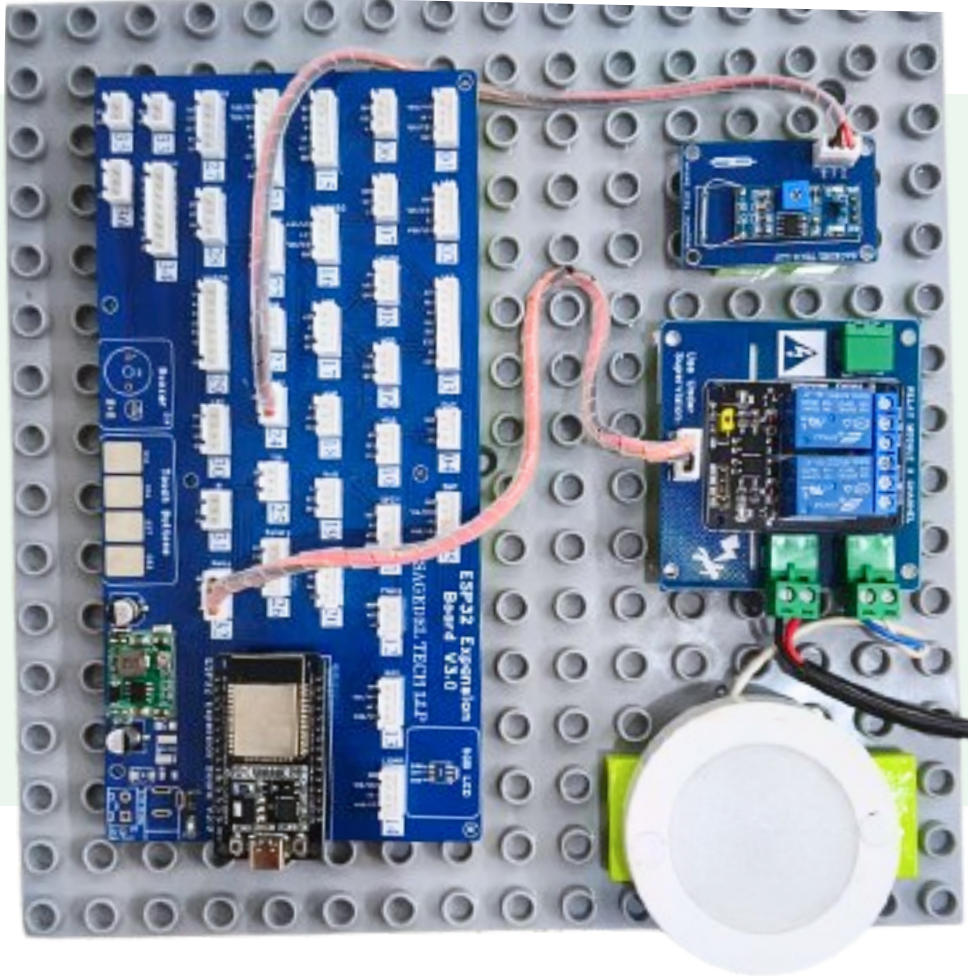
Connect **Relay Module** to
Port no. 32



Final Cable Management



- Power on the ESP32 and observe the relay's response in real time — the reed switch detects the magnet's presence to determine open/close status, and the relay switches the light on or off accordingly.



Calibration:

The reed switch's magnetic trigger distance, verifying its HIGH/LOW state logic, and tuning debounce timing to reliably detect open/close transitions — then using that state to switch the relay-controlled light on or off in real time.