

# BellsOnTime

## Intelligent School & Residence Bell Scheduling System

Developed by RCL Technologies

### Overview

BellsOnTime automates bell schedules for schools and residences, ensuring punctual operations. Control the system via the mobile app or manual switch, with reliable relay-driven bell activation.

### Key Features

- Automated bell scheduling (daily, weekly, term-based)
- Mobile app control (iOS & Android)
- Cloud sync & offline operation
- Manual override via spring-loaded switch
- Multi-zone configuration (future)
- OTA firmware updates

### Applications

Schools & Colleges, Boarding Residences, Industrial Sites, Churches & Public Facilities

### Specifications

Category	Details
Model	BellsOnTime v1.0
Manufacturer	Sciatis Enterprises t/a RCL Technologies
Control Unit	<a href="#">Raspberry Pi Zero 2 WH</a>
Power Supply	AC 85–264V → DC 5V 2A (10W Isolated Buck Converter Module)
Relay Module	RCL 101 Relay Board (GOODSKY UDH-SH-105D or equivalent)
Switch Type	Spring-loaded momentary switch
Network	Wi-Fi 2.4GHz
Mobile App	Android/iOS (.NET MAUI)
Operating Voltage	220V AC ±10%
Power Consumption	≤ 10W
Enclosure	4x4 Plastic Surface Mount Box (PEB44)
Dimensions	110 × 110 × 60 mm
Operating Temp	0°C ~ 50°C
Humidity	10% ~ 90% RH
Weight	~300g
Backup	Real-time clock retention
Firmware Update	OTA via Wi-Fi

## Power Supply

- Type: AC-DC Isolated Buck Converter Module
- Input Voltage: AC 85 – 264V, 50/60 Hz
- Output: DC 5V, 2A
- Rated Power: 10W
- Efficiency: Approximately 80%
- Protection: Integrated over-current, short-circuit and thermal protection
- Isolation: Fully isolated power module design
- Environmental:
  - Operating Temperature: -30°C to 70°C
  - Relative Humidity: 20% – 90% RH
- Physical: Module Dimensions: 66mm × 32mm

## Relay Module

- Type: 1-Channel Optocoupler-Isolated Relay Module
- Control Voltage: 5V DC
- Trigger Current: Approximately 5mA
- Trigger Mode: Jumper selectable (High-level or Low-level trigger)
- Switching Capacity:
  - AC Load: 250V AC @ 10A
  - DC Load: 30V DC @ 10A
- Contact Interface: NO (Normally Open), NC (Normally Closed), COM
- Isolation: Optocoupler isolation for improved signal integrity and safety
- Indicators:
  - Power Indicator: Green LED
  - Relay Status: Red LED
- Physical:
  - Dimensions: 50mm × 26mm × 18.5mm
  - Mounting: 4 × Ø3.1mm mounting holes

## Software Features

- Schedule management & manual control
- Cloud sync & multi-user access
- Real-time status monitoring
- Remote firmware updates
- Diagnostic logging

## Safety & Compliance

- Short-circuit & overload protection
- Surge protection on relay board
- SANS-compliant components
- Indoor use only

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