

FUJITSU Component Wireless Modules

Bluetooth® Version 4.1 Sensor Embedded Beacon with Data Log Function

FWM8BLZ02A-109069

Overview

A Bluetooth Version 4.1 sensor embedded beacon with accelerometer and temperature sensors and data log function.



RoHS compliant

Features

■ Data log function

Sensor data is stored in non-volatile memory in the beacon, and it is sent upon command from central equipment. Maximum 32K bytes can be stored.

Mode 1: Record only mode. (No data is sent. To read data, use mode 2.)

Mode 2: Connect with remote command mode of FDC^{(*)1} and read data. (Note: Data logging is interrupted when connected in this mode)

Log data reading: Data can be read in 3 styles: *Number of stored data, Index number designation, and all data.*

■ Embedded accelerometer and temperature sensors

The beacon can measure inclination of object and temperature. Data is measured at the preset interval and stored in non-volatile memory.

■ Shock detection function

When the beacon receives a shock which exceeds a preset threshold, the beacon can record the number of times and maximum shock value in RAM. The data is transferred from RAM to non-volatile memory at a preset intervals^{(*)2}.

■ 3 types of sensor data reporting

- **Via advertising packet:** Data is embedded in advertising packet and sent by auto broadcast function
- **Via Fujitsu Components Data Communication (FDC)^{(*)1}:** Beacon outputs sensor data at preset intervals
- **Using Sensor Value Characteristic^{(*)3}:** Data is stored in sensor module and central equipment accesses the module to read data

■ 3 types of beacon operation mode

- **Auto broadcast mode:** Data is sent without connection to central equipment (via advertising packet).
- **Peripheral mode (remote command request):** Data is sent by connection with central equipment (via FDC or using sensor value characteristic). In case of FDC, it can also connect in remote command mode^{(*)4}. Remote command mode can change beacon setting also
- **Recovery mode:** Reset beacon to initial setting

■ Long operation life with coin cell battery

Auto broadcast mode: More than 12 months (at 1 second sense/advertise interval)

Peripheral mode (via FDC): More than 6 months (at 1 second sense/connection interval)

Peripheral mode (using Sensor Value Characteristic): More than 12 months (at 1 second sense interval)

■ LED status

The Beacon status can be checked by the LED indicator



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Applications

Best for state monitoring applications which do not need real-time processing, or in situations where real-time processing is difficult. e.g.: logistics, nursing services, etc.

Front-end device of IoT platforms

Notes: ^{(*)1}: Fujitsu Component unique data transmission profile, equipped in the beacon as standard ^{(*)2}: Shock and acceleration are not measured at the same time

^{(*)3}: Sensor Value Characteristic is a function set in 'Characteristic', GATT specification of Bluetooth Version 4.1, to have central equipment read. Sensor Value Characteristic is Fujitsu Component unique name ^{(*)4}: Data storage operation (mode 2) stops when connected via remote command mode

■ Specifications

Item	Specifications	
Part number	FWM8BLZ02A-109069	
Antenna	Pattern antenna	
Bluetooth technology	Conforms to Bluetooth Version 4.1 technology	
Transmit power	-16, -12, -8, -4, 0, +4 dBm (changeable by command)	
Power supply	CR family coin type lithium battery CR2450 (not included)	
Operating temperature / humidity	-30°C to +60°C, 20 to 80% RH	
Sensor	Sense interval	Typical 990ms (range 99 to 60,000ms)
	Acceleration sensor	Range of detection: ±16G, accuracy: ±3%
	Temperature sensor	Range of detection: -30°C to +60°C, accuracy : ±0.3°C
Dimensions / Weight	40 x 31 x 12mm / Approx. 10g (without battery)	
Certifications	Bluetooth qualification (QDID), Radio Act (Japan), FCC, IC, CE	

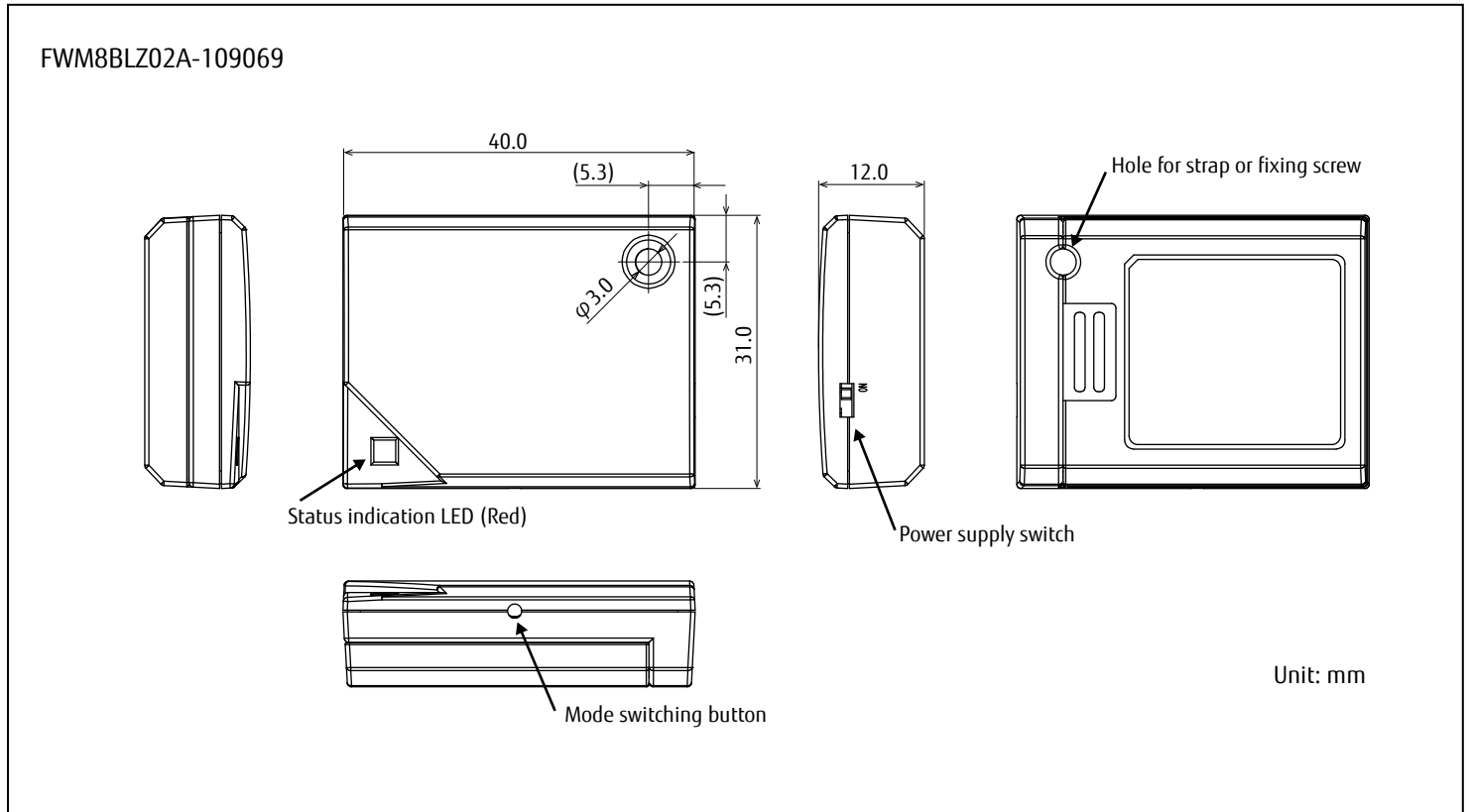
■ Battery specifications

Note: Use of coin type lithium battery CR2450
 Please use the battery meets Figure 1 (minus electrode height min. 0.9mm, diameter max. 23 mm) to keep enough clearance between beacon holder and battery.



Figure 1

■ Dimensions



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