

# FCL Components Wireless Modules

## Bluetooth® Version 5.0 Sensor Embedded Beacon

### FWM8BLZ07A

#### Overview

A *Bluetooth* Version 5.0 sensor embedded beacon. Integration of 6 different sensors for IoT applications make multiple sensing capabilities to many different types of combination of the requirement.



RoHS compliant

Suitable for a variety of applications, such as monitoring work environments, machine operating conditions, and cargo transportation conditions.

#### Features

- **Selection of 3 types of sensor data reporting**
  - Via advertise packet - Beacon outputs sensor data by using auto broadcast function
  - Via CL Components' Data Communication (FDC) (\*1)  
Beacon outputs sensor data in preset intervals
  - Using Sensor Value Characteristic (\*2)  
Data is stored in sensor module & central equipment accesses the module to read data
- **Integrates 6 different sensors for IoT applications, enabling the use of multiple sensors in different combinations.**
- **OTA configuration mode**  
In *Over-The-Air* (OTA) config mode the beacon unit settings and data can be re-configured by connecting to the central device
- **LED status indicator**  
The Beacon status can be displayed on the LED indicator
- **Long operation life with coin cell battery**  
The Beacon is able to operate for more than 6 months at advertise packet output (\*3), 3 months at FDC output (\*4), 6 months at Sensor Value Characteristic output (\*5).



FWM8BLZ07A

#### ■ Sensor specifications

Sense interval	990 ms (changeable between 200 to 60,000 ms)
Temperature	-30°C to +60°C
Humidity	20% to 80%, accuracy ±3.0%
Barometric pressure	300 hPa to 1,000 hPa, accuracy ±1.0 hPa
Illuminance	0 LX to 10,000 LX
3-axis acceleration	±16G, accuracy ±3.0%
Sound level	0 dB SPL to 90 dB SPL

#### Notes:

- \*1: FCL Components unique data transmission profile, equipped in the beacon as standard
- \*2: Sensor Value Characteristic is a function set in 'Characteristic', GATT specification of Bluetooth Smart, to have central equipment read. *Sensor Value Characteristic* is unique FCL Components name.
- \*3: At 5 seconds sense interval and advertise interval.
- \*4: At 5 seconds sense intervals and 1 second connection interval.
- \*5: At 5 seconds sense interval.

## ■ Specifications

Item	Specifications
Part number	FWM8BLZ07A (xxxxxx: suffix to specify each customer's settings)
Type	Sensor embedded beacon
Antenna	Embedded (pattern antenna)
Bluetooth technology	Bluetooth core specification Version 5.0 (LE single mode)
Transmit power	-16, -12, -8, -4, 0, +4 dBm (changeable by command)
IC	Nordic Semiconductor nRF52832
Power supply	Coin cell lithium battery CR2450 (not included)
Operating temperature / humidity	-30°C to +60°C, 20 to 80% RH
Dimensions / Weight	40 x 31 x 12mm / Approx. 10g (without battery)
Certifications	Bluetooth Qualification (QDID), Radio Act (Japan), FCC, ISED, CE
Other	Battery voltage notification function
	Secure advertise function (*6)

Notes: \*6: Encryption of advertise data is not available by the secure advertise function.

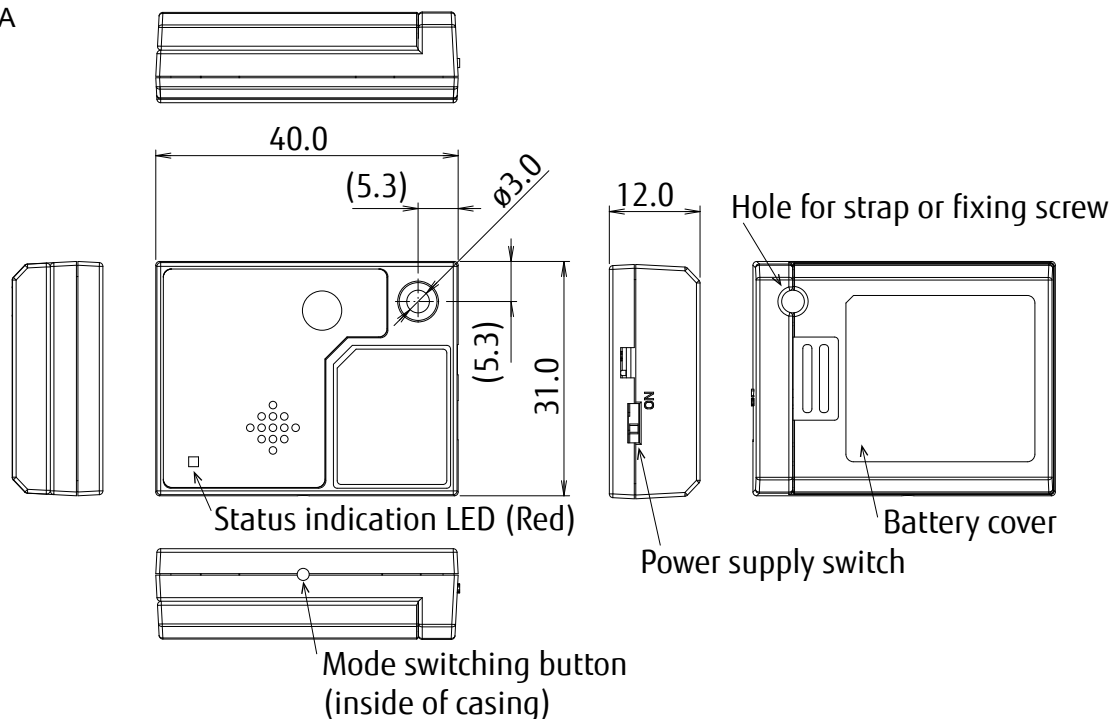
- Battery specifications

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



Unit: mm

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