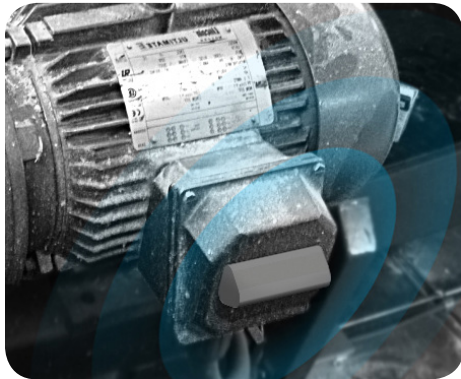


BEEKs™ Industrial Beacons



TECHNOLOGY HIGHLIGHTS:

- Bluetooth Smart 4.1 compliant beacons
- iBeacon (Apple), Eddystone (Google) and sBeacon (Bluvision) supported simultaneously
- Highly accurate environmental sensors
- Up to 3 years battery life time
- Location precision down to 6 ft (2 m)
- Bluzone central management
- Fast and easy roll-out, equipment agnostic

BLE BEACONS FOR CONDITION MONITORING, ASSET LOCATION OR OTHER APPLICATIONS

- **Accurate** – High resolution, wireless vibration and temperature sensor efficiently provides insights to equipment status.
- **Multi-Purpose** – Used as promotional / way-finding beacons or industrial sensor network.
- **Rapid Implementation** – Gather real-time data on item location and equipment condition with minimal infrastructure.

BEEKs™ Bluetooth Low-Energy (BLE) beacons are among the most advanced beacons in the industry. Being fully Apple iBeacon and Google Eddystone compatible, BEEKs beacons may be used for any standard beacon application that provides location based promotional or way-finding services to smartphone users.

When combined with HID Global's end-to-end IoT ecosystem, that includes BluFi™ BLE to WiFi gateways and the Bluzone™ cloud services, BEEKs can be centrally managed remotely through the cloud to transfer new messages, firmware updates and battery status checks. Their unique design allows BEEKs to broadcast reliably even in densely populated WiFi environments.

BEEKs are not limited to standard beacon applications. HID Condition Monitoring Services, enabled by Bluvision, include a range of sensor beacons for capturing motion, vibration and temperature. This sensor data is sent via BluFi gateways to the Bluzone Cloud to perform operational analysis for motorized equipment performance, capacity

load, etc. Alerts according to policy are received via e-mail or web service.

Equipment agnostic, high-resolution, 3-axis vibration and temperature monitoring provides anomaly detection that indicates when a piece of rotating machinery has deviated from its normal operating state, which can be used in the inspections workflow to improve maintenance practices.

HID Global Location Services, enabled by Bluvision, is an efficient real-time asset location (RTLS) platform leveraging BEEKs beacons to effectively pin down the locations of assets inside a warehouse, campus or manufacturing hall.

BEEKs beacons are available in multiple form factors and sensor configurations; ID badges for Workplace Optimization or with anti-tamper sensors to raise an alarm upon removal. The extensible architecture allows organizations to scale deployments of standard beacon applications and extend to centralized management, real-time condition monitoring or location services in a later phase.

APPLICATION AREAS:

Condition Monitoring (requires Bluzone™ cloud SaaS)

- Wireless status info on motorized equipment (on/off)
- Fault detection, based on vibration trends or temperature
- Reporting of equipment duty cycles
- Cold chain applications

Real-time location for assets (requires Bluzone™ cloud SaaS)

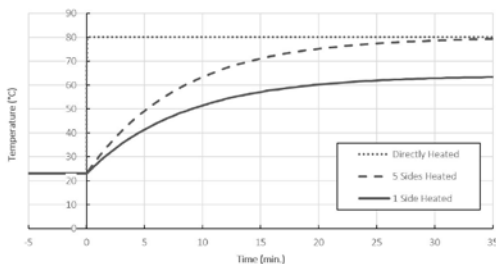
- Indoor position tracking of assets (Tools, portable equipment, vehicles)
- Position based alerting, heat-maps etc.

Retail advertisement

- BEEKs beacons may be used in iBeacon and/or Eddystone mode for advertising messages or location based services
- Central provisioning or monitoring via BluFi and Bluzone optionally possible

SPECIFICATIONS

BEEKs CM v2 Temperature Sensor Details [80° C input starting from ambient (23° C)]			
Part	Input	Time constant (63% steady state)	Steady state offset
Temperature sensor installed on board	Oil bath, fully submersed	0.8 sec	0°C
Temperature sensor installed in beacon	Temperature chamber (5 sides heated)	8.1 min	0°C
Temperature sensor installed in beacon	Hot plate (1 side heated, 4 sides ambient cooled)	6.3 min	-16.3°C



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	BEEKs			
	Industrial v2	CM v2	Cooler	Mini
Base Model Number	BVBI45G2	BVCM45G2	BVBL45C	BVBM33B (standard) BVBM33BT (Tamper-proof)
ELECTRONIC				
Bluetooth communication	Bluetooth Low Energy 4.1, 2.4 GHz ISM			
BLE Protocols	Eddystone, iBeacon, sBeacon			
Sensitivity	-97dBm			
Transmission power	-40dBm to +5dBm (-3 m to -150 m line of sight range)			
Processor type	ARM Cortex M3 and M0			
Data rates	1Mbit/s / 2Mbit/s			
Memory	55KB Flash			
Sensors	Motion (+/- 8 g), Temperature -13° to +185° F (-25° to +85° C)	Motion, Vibration (3-axis, up to 25.6 KHz, +/- 64 g max. dynamic range, 16-bit), Temperature -13° to +185° F (-25° to +85° C)	Motion, Vibration (3-axis, up to 800 Hz), Magnetometer, Temperature -13° to +149° F (-25° to +65° C)	Motion, Vibration (3-axis, up to 800 Hz), Magnetometer (tamper function), Temperature -13° to +149° F (-25° to +65° C)
PHYSICAL				
Length x Width	2.36 in x 0.83 x 0.98 in (60 x 21 x 25 mm)			1.3 in x 0.3 in (34.2 x 8.35 mm)
Mounting Method	3M VHB adhesive sticker	Epoxy glue (for Advanced Condition Monitoring)	3M VHB adhesive sticker	3M VHB adhesive sticker with metal foil (Tamper version)
Housing Material	Polycarbonate and ABS			
Color	Grey			Black
Weight	1 oz (28 g)	1.37 oz (39 g)	1 oz (28 g)	0.24 oz (7 g)
BATTERY				
Type	3.6V / 2600mAh - Primary Lithium			CR-2032 - 3V
Lifetime (depending on utilization)	up to 3 years			
CHEMICAL AND MECHANICAL RESISTANCE				
Water	IP67, 68° F (20° C), 3.3 ft (1m) x 1h			
Withstands Exposure To	Water and UV resistant			
THERMAL				
Storage	-22° to +185° F (-30° to +85° C)			-22° to +170° F (-30° to +77° C)
Operating Temperature	-13° to +185° F (-25° to +85° C)			-13° to +170° F (-25° to +77° C)
OTHER				
Speciality	General purpose industrial beacon for asset real-time location tracking and basic motion, on/off, and temperature (Status Monitoring SaaS required).	Condition Monitoring beacon for AI fault detection, epoxy potted, 25.6 kHz raw data streaming, vibration trend analysis (Advanced Condition Monitoring SaaS required). Also applicable to basic motion (on/off) and temperature (Status Monitoring).	Temperature logger beacon w/ logger firmware to be queried by Bluzone or phone SDK. Includes magnetometer to detect door openings. Not suitable for Status or Advanced Condition Monitoring SaaS.	Small beacon with or without removal alert. For asset real-time location or Status Monitoring SaaS.
Standards	FCC / CE / JRF / IC; BLE			FCC / CE; BLE
Options	512 KB Flash memory (for more advanced internal recording and machine learning with accurate per minute timestamp recordings), Epoxy glue (e.g. Loctite AA 330 or Devcon 5 minutes), 3M VHB tape			
Box Size	10 pcs.			
Warranty	2 years			