taggle

Product Datasheet

NB3D
Pulse Counter

NB-IoT Transmitter for Pulse Output Meters and Sensors

KEY FEATURES

- NB-IoT Radio with integrated internal antenna for simple installation
- Embedded SIM and NB-IoT communication provided and managed by Taggle
- Suitable for use with both dry contact closure (reed switch, relay) and voltage (open collector, FET) pulses. This covers most water meters, rain gauges, electricity meters (kWhr), float-switch level sensors and on/off sensors of any type
- Available with integrated Honeywell "T-Probe" reed switch or M-12 connector for other pulse output devices
- NFC for rapid infield device installation
- 15 year battery life based on daily transmissions*
- IP68 rating provides high degree of protection against ingress of dust and moisture
- Light-weight and easy to install
- Suitable for both urban and rural deployments
- Low-cost, no maintenance device
- Transmits meter or sensor data, meter alarms such as backflow, tamper (where available), as well as temperature and battery status
- Transmissions are secured with AES 128 encryption
- RCM Compliant
- Optional - available with external SMA connector to enable use of external antenna

The NB3D is a battery powered wireless telemetry unit designed for domestic and commercial water meters and various sensors that have digital (on/off) or pulse outputs. The NB3D supports low cost, utility scale deployments using existing NB-IoT cellular networks.

The NB3D accumulates both forward and reverse flow pulses from the connected device in a low-power deep-sleep mode every 15 minutes, and transmits the accumulated count values once per day.

Transmitting daily, the NB3D has an expected battery life of 15 years*.

To enable simple procurement and operation, the NB3D contains a pre-integrated SIM and Taggle managed NB-IoT communications services from existing NB-IoT network providers.

NB3D telemetry data is sent via NB-IoT to Taggle where the data is then stored and published via standardised data feed to nominated business systems.

APPLICATIONS

- Automatic Metering Infrastructure including residential, commercial and industrial meters
- Rain gauges
- Electricity meters (kWhr)
- Float-switch level sensors
- On/Off sensors of almost any type

OPERATING MODE

When in Operating Mode, the NB3D's microprocessor is programmed to wake from a low-power, deep-sleep mode at 15 minute intervals.

It then interrogates the attached meter or sensor and translates the data into a secure format for transmission on the NB-IoT network. The device will then return to a deep sleep mode until the next time interval expires.

HISTORY OF THE NB3D

The NB3D builds on Taggle's successful radio telemetry solutions, which have been used extensively across Australia since 2011.

The use of NB-IoT, provides Taggle customers with a complementary radio technology to the Taggle Byron radio used by customer, water utility and councils across Australia.

TECHNICAL DETAILS

Dimensions	215mm (L) x 58mm (D)
Weight (approx)	480g +/- 10%
Enclosure Material	Ultradur PBT
Ingress Protection	IP68 (4m depth at 4 days)
Temperature	-10°C to 60°C (Average temperature not to exceed 30°C)
Sealed	Electronics and battery fully potted
Cable/length	40cm standard - customisable

BATTERY

Type/Size	3.6 V Lithium Thionyl Chloride (non-replaceable) D-cell.
Capacity	19Ahr
Battery life	15 years* estimated based on 15min data logging and once per day transmissions.

SENSING/INPUTS

Input Types	Contact closure (reed switch, relay) and voltage (open collector, FET) pulses
Max Pulse Rate	8kHz

COMMUNICATIONS

Radio Module	NB-IoT Band 28
SIM	MFF2 (Provide by Taggle and integrated into device)
Carrier	Taggle provided Telstra NB-IoT (Australia), or Spark NB-IoT (New Zealand)
Data Delivery	CSV, MQTT, API
Local Interface	Near Field Communications – NFC
Security	AES-128
Compliance	RCM
Antenna	Internal (optional - external SMA connector)

*Battery Life estimate is based on
- 15 minute data logging with once per day transmissions
- Device operating in Extended Coverage Level (ECL0)
- Device operating within specifications outlined in this document.
- Battery Life can be affected by;
  - Increased data logging, transmission rate or payloads
  - Challenging radio transmission locations, where the NBIoT Network directs the device to change "Extended Coverage Level" operation from ECL0 to ECL1 or ECL2.
  - Ambient operating temperature

HEAD OFFICE
14 Junction Street
Marrickville NSW 2204
enquiries@taggle.com.au
+61 2 8999 1919