

## 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
- NFC Programming Port for rapid infield device installation
- 15 year battery life based on hourly 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

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.



## TECHNICAL DETAILS

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

## 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.

## 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 (using Telstra or Optus)
Data Delivery	CSV, MQTT, API
Local Interface	Near Field Communications – NFC
Security	AES-128

\*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 NB-IoT Network directs the device to change "Extended Coverage Level" operation from ECL0 to ECL1 or ECL2.
  - Ambient operating temperature

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