





# Metermade®

Ultra low-power, cellular flow-metering data logger



-  PULSE-OUTPUT FLOW METER MONITORING
-  INTERNAL 4G CAT-M1/NB-IoT MODEM
-  REMOTE DEVICE MANAGEMENT
-  LONG BATTERY LIFE

## N1-001

The Metermade® N1 Meter Interface Unit (MIU) is an ultra-low power device, designed to operate in the field for up to ten years on a single set of batteries (based on one report per day). It's housing meets the IP68 rating, permitting direct installation onto a flow meter and is capable of surviving submersion to a depth of four metres for four days.

The Metermade® N1's flexible device configuration enables the measurement of digital and pulse counter signals. This data is stored internally on non-volatile flash memory with upstream communications provided using an internal 4G cellular modem, permitting use on 4G CAT-M1 and NB-IoT networks.

The Metermade® N1 is the lowest cost option to provide highly reliable billing revenue data, directly to a host database using the industry standard DNP3 or FTP protocol. Remote configuration and device management is supported via leading industry SCADA applications, remote firmware download capability is provided via FTP file transfer.

The N1 is equipped with two (2) digital inputs and provides Forward/Reverse/Nett Totalisers and instantaneous flow calculation as standard. A 'magnetic swipe' function is provided to allow on-demand meter reads and data updates by field personnel.

The MIU configuration supports bulk editing/generation permitting high volume configuration and deployment.

# Technical Specifications

## General

Supply Voltage	3.5 – 8.5V DC, High-capacity, internal Lithium battery pack (field replaceable)
Current Draw	50 $\mu$ A sleep, 5 mA active, 200 mA cell communications, 2 A (peak) cell network detect, (measured at 3.6V DC)
Real Time Clock	Internal – Year, month, day, hour, minute, second, Automatic DNP3 time synchronisation from DNP3 master, Automatic cellular network time sync when using FTP data export mode
Temperature	-20°C to +85°C Celsius
Humidity	0 to 90% relative humidity, non-condensing
Programming	Windows based Configurator M+ configuration software, Remote device management via DNP3, Remote firmware download via FTP, local programming port, live local diagnostics
Mounting	90 mm (h) x 125 mm (d, nominal) / 155 mm (d, maximum), supplied with stainless steel mounting bracket
Environmental	IP68 (4 metres depth/4 days duration)

## IO Interfaces

Digital Input	2 x low-current dry-contact binary inputs (non-isolated), each input supports pulse counting, up to 3Khz (sleep/wake mode dependant), Forward/Reverse/Nett Totalisers with 32-bit rollover
System Input	Internal measurement of Cell Network RSSI, MIU temperature, MIU battery voltage and session status code

## Telemetry

4G Cellular	Supports World-wide 4G/LTE Cat-M1 / NB-IoT Bands: B1, B2, B3 (1800 MHz.), B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28 (700MHz.), B66, B71, B85. Class 3 Output Power (+23dBm)
Antenna	Internal antenna / External SMA Female connector (user selectable)
SIM Card	1.8 and 3V UICC (Standard size SIM card)
Data Protocols	DNP3.0 Slave unsolicited mode, FTP data export
Host Support	True TCP support to DNP host (supports three Master IP addresses)
Security	CHAP or PAP authentication, SIM credentials, configurable username, password and APN, built in IP firewall, 512-Bit AES Encrypted firmware download

## Approvals

Build	RoHs
Standards	RCM (AUST/NZ), EMC compliance, other export standards on request
Production	Proudly Made in Australia

## Factory Accessories

Standard Accessories	Each device is supplied with a battery, stainless steel quick release mounting bracket and installation accessories kit.
Optional Accessories	A comprehensive range of factory manufactured or sourced accessories to ensure reliable and swift solution deployment. Visit <a href="http://37s.com.au">37s.com.au</a>



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