






# Metermade®

Ultra low power, flow metering cellular data logger



-  REMOTE DATA LOGGING
-  INTERNAL 4G CAT-M1/NB-IoT MODEM
-  REMOTE DEVICE MANAGEMENT
-  MODBUS COMMS FOR SMART FLOWMETERS
-  PULSE-OUTPUT FLOW METER MONITORING

## N2-002

The Metermade® N2 Meter Interface Unit (MIU) is an ultra-compact, irrigation metering-focused variant of the Site Sentinel® and Metermade® data logger and RTU family, providing a highly-reliable, direct-to-host remote irrigation meter reading solution in a single package.

The Metermade® N2 device variant is uniquely tailored to suit direct installation inside the housings of Tyco i300 or Pentair i500 irrigation flowmeters, without the need for additional external enclosures. The standard installation kit supports swift deployment on new meter deployments, or retrofit onto existing meter fleets.

The N2 product utilises the existing Tyco i300 or Pentair i500 irrigation flowmeter power supply system, eliminating the need for duplicated battery systems at the meter site.

The N2 provides downstream flowmeter connectivity via a standard digital RS485 Modbus Master communications port. The user configurable Modbus table permits download of pre-defined flowmeter data profiles or ad-hoc Modbus data profiles to support the addition of additional 'smart' downstream devices such as water quality probes and level sensors etc.

The N2's flexible device configuration enables the measurement of additional external analog and digital I/O signals in the irrigation metering / delivery space such as pipeline pressure, valve position indication, local pulse meter inputs, as well as support for direct operating digital output controls to inhibit customer valves.

Metering 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 worldwide. High security levels are standard, with CHAP or PAP authentication, SIM credentials, configurable username, password and APN, built in IP firewall, 512-Bit AES Encrypted firmware download and device-unique Electronic Serial Number (ESN).

Remote configuration and device management is supported via leading industry SCADA / Cloud Hosted Data applications. Remote firmware download capability is provided via FTP file transfer.

# Technical Specifications

## General

Supply Voltage	9–36V DC (isolated supply input)
Current Draw	80 $\mu$ A sleep, 10 mA awake, 200 mA cell communications, 2 A (peak) cell network detect, (measured at 12V 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	132.6mm (w) (inc mounting feet) x 26.0mm (h) x 82.7mm (d), DIN Rail mounting clips provided

## IO Interfaces

Digital Input	2 x dry-contact binary inputs, each input supports pulse counting, up to 3Khz (sleep/wake mode dependant), Forward/Reverse/Nett Totalisers with 32-bit rollover
Analogue Input	2 x 0–20 mA, 0–2.048V DC, 0–5V DC (user selectable, per channel), 15 bit resolution (non-isolated), 4x user-configurable alarm limits per channel
Digital Output	2 x SPDT relay outputs, dry contact outputs, 24V DC, 2A contact ratings per output
System Input	Internal measurement of Cell Network RSSI, RTU temperature, RTU battery voltage and session status code
Serial Comms	1 x Modbus Master 2-wire RS485 Serial Port (screw terminals)

## 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	External SMA female connector
SIM Card	1.8 and 3V UICC (Standard size SIM card)
Data Protocols	DNP3.0 Slave unsolicited / polled 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

Accessories	<p>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></p> <p>Antenna brackets to suit Tyco i300/Pentair i500 5W/10 Watt Solar Panel housings</p> <p>Plug and play data cables for Tyco i300/Pentair i500 deployments</p> <p>Standard installation accessory kit includes DC Power cable, fasteners and cable ties</p>
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