

Ultra low-power, weather-sealed flow meter cellular MIU

MODBUS COMMS FOR
SMART FLOWMETERSPULSE-OUTPUT FLOW
METER MONITORINGINTERNAL 3G OR 4GX
CAT-M1/NB-IoT MODEMREMOTE DEVICE
MANAGEMENT

LONG BATTERY LIFE

N3

The Metermade® N3 Meter Interface Unit (MIU) is an ultra-low power device, designed to operate in the field for up to 5-10 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® N3'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 3G or 4GX cellular modem. The cellular options provide support for tri-band 3G or 4GX option, permitting use on CAT-M1 and NB-IoT networks.

The Metermade® N3 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 N3 is equipped with both digital inputs and a user configurable Modbus Master communications port, providing interface capability with virtually all flow meters in the market place.

The N3 provides Forward/Reverse/Nett Totalisers and instantaneous flow calculation from Digital Inputs. User configurable Modbus table permits download of pre-defined or ad-hoc Modbus data table profiles to support smart flow meters.

A 'magnetic swipe' function is provided to allow on-demand meter reads and data updates by field personnel.

TECHNICAL SPECIFICATIONS

General

Supply Voltage	3.5 – 8.5V DC, High-capacity, internal Lithium battery pack (field replaceable)
Current Draw	50 μ A sleep, 5 mA active, 200 mA 3G communications, 2 A (peak) 3G network detect, (measured at 3.6V DC)
Real Time Clock	Internal – Year, month, date, 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 +65°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
Mounting	90 mm (h) x 125 mm (d, nominal) / 155 mm (d, maximum), supplied with stainless steel mounting bracket
Environmental	NATA certified to IP68 (4 meters depth/4 days duration)

IO Interfaces

Digital Input	2x 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
Serial Comms	1x Modbus Master (3-Wire RS232 or 2-Wire RS485, user selectable)

Telemetry

3G Cellular (Standard)	Supports 3G B1 (2100), B5 (850), B8 (900), Class 3 output power (+24dBm)
4G Cellular (“-4G” Option)	Supports 4G/LTE CAT-M1/NB-IoT, B28 (700), B3 (1800), Class 3 output power (+23dBm)
Antenna	Internal antenna (2dBi Gain)/External SMA Female connector (user selectable)
SIM Card	1.8 and 3V UICC (Standard size SIM card)
Data Protocols	DNP3.0 Slave unsolicited / polled mode, FTP data export, Sigfox 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 assembly
Standards	RCM (AUST/NZ), EMC compliance, other export standards on request
Production	Proudly Made in Australia

Factory Accessories

Accessories	A comprehensive range of factory manufactured or sourced accessories to ensure reliable and swift solution deployment (see website)
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