

# MESSENGER M61-96



**NDS**  
remote monitoring systems

## SELF POWERED GSM METER READING UNIT

### Fact Sheet

#### **BACKGROUND**

Based on the well proven M61 product, to date over 3,500 M61's have been deployed. The M61-96 meter reader has been developed to meet the environmentally harsh requirements of the water meter reading environment.

#### **APPLICATION**

The M61-96 can be connected to 1 or 2 pulsed output meters. The pulses are counted and totalised in time frames. The totalised count and volume for each time frame is stored in non-volatile memory, these frames are then passed over the GSM network to a Host management terminal for billing and trend analysis. Time frame and volume parameters are fully reconfigurable over the GSM network.

The M61-96 is self-contained and requires no external power source.

Time and date (including leap year adjustment) are maintained locally on the M61-96, accuracy is guaranteed to within 2 minutes per annum and is based on the 'Real Time' downloaded from the Host Management Terminal.

The unit is IP66/67, the retractable aerial has 2m of cable allowing the unit to be mounted below ground in environmentally harsh surroundings.

#### **OPERATION**

M61-96 is completely self-contained with a built in GSM modem and 10 year life lithium battery. The battery is sized in order to allow weekly calls to be made to download stored frames and confirm operational readiness (the call rate is fully reprogrammable over the GSM network). Battery life is measured locally and an alarm is reported to the Host management system when the battery is deemed to be nearing the end of its useful life.

The M61-96 initiates SMS data calls to the Host Management System at the pre-programmed intervals. The M61-96 stays in receive mode for up-to 1 minute at the end of each SMS data call, allowing new parameters to be downloaded in a Host System Derived SMS-data message.

Cable cut detection is performed on the pulse counting cables, this is reported to the Host Management System for early fault diagnosis.

Pulse measurement parameters are stored locally and re-programmable over the GSM network.

The M61-96 can be locally forced into active receive mode to allow new parameters to be downloaded over the GSM network, positive acknowledgement of the new parameters is returned.

New parameters include Host Management terminal telephone numbers, contact debounce parameters, Meter Idents, flow/volume rates, call in time index, real time and date, counter time frame period, etc..

Similarly parameters and statistics can be up-loaded, these include all of the above as well as communications statistics (call fail logs and statistics), and battery life usage.

Because information from the M61-96 unit is formatted and sent using SMS-data technology over the GSM network, installation is simple and provides excellent communications coverage. The PC based Messenger Host Station can be used as a site editing suite.

The Messenger Host Terminal application alerts users to alarms and can display the status of related Messenger unit's, alarm and meter histories. Field staff are notified automatically by an SMS text message or e-mail from the Messenger Host in the event of alarm conditions.

If for any reason a data call fails, M61-96 has a retry algorithm to ensure message delivery.

## TECHNICAL SPECIFICATION

<b>COMMUNICATIONS</b>	
Standard Modem	GSM 900/1800 (dual band) integrated modem. Optional 900/1900 dual band
Antenna	Integral external antenna and 2m lead.
<b>INPUTS</b>	
Inputs can be wired as either	2 pulse counter inputs with cable cut detection.
Type	High input impedance >100kΩ.
Pulse detection	<10 pps
Protection	Over voltage protection >5kV
Cable Type	2 x 2m 5 core flying lead, non hygroscopic cable.
Battery Monitoring	Life calculation based on call in algorithm.
On board Counter logs	8kBytes (expandable to 32kBytes) of non-volatile memory available. Logging programmable between 15minutes and 64 hours in 15 minute intervals.
On board Comms Logs	100 (expandable if required)
<b>POWER SUPPLY</b>	
Battery specification	36Ah Double 'D' Lithium (Pulses Plus™) 84w x 60h x 36d
Current consumption	Quiescent: 10 micro Amps (nominal) TX/RX: 200mA to 600mA at 3.6V
<b>ENCLOSURE</b>	
Rating	IP66/67
Dimensions	D60mm x H115mm x W115mm
Mounting	Flange mounting holes and self adhesive backing pad
Cable entry	2m flying leads through resin. Cable glands on IP66 version
<b>GENERAL</b>	
Approx. Weight (inc. modem and stub antenna)	650 gms
Operational temp range	-20°C to +55°C (GSM Modem) -45°C to +60°C (Messenger unit)
Retry Algorithm (in case of failed calls/busy Host)	10 retries at approximately 1 minute intervals. Unit will restart the call algorithm when the pre-programmed call interval expires.
Call frequency	1 to 255 days and option to disable
<b>APPROVALS</b>	
Independently approved	EN61010-1:2001, EN60068-2-1, EN60068-2-2, EN60068-2-3, EN61326:1997

## FURTHER INFORMATION

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