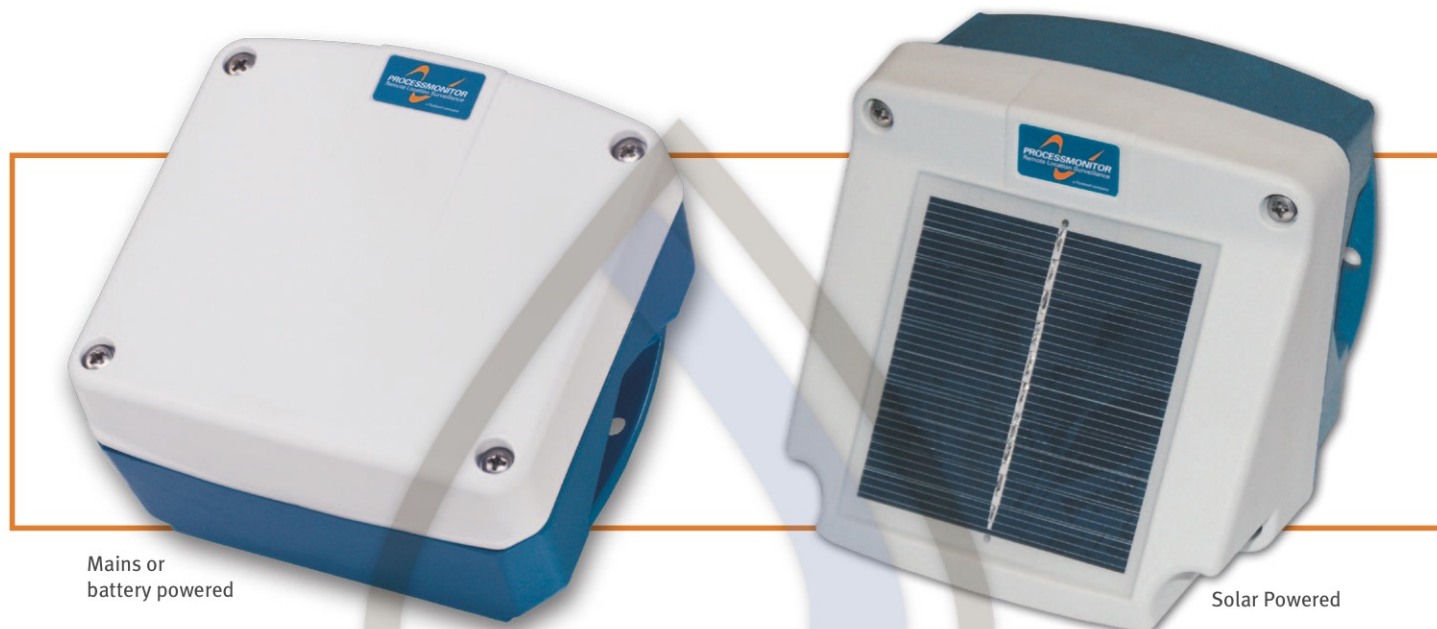


## Data Acquisition & Communication Module

with 4 digital and 4 analog (isolated) inputs,  
data logging and modbus communication



### Advantages

- Entirely autonomous monitoring and datalogging solution independent from local infrastructure suitable for off-grid or hard to reach locations using GSM/GPRS communications and solar panel, battery or AC/DC power options.
- Easy and time saving configuration through local USB 2.0 by bright and clear terminal interface (no code input!) or remotely through smart reversed communication, even when the M844 has a public, dynamic IP address.
- Flexible freedom in data communication by TCP, FTP and/or e-mail. Alerts and alarms by SMS.
- Universal and versatile applicable for different kind of sensors and instruments through 4 analog, 3 digital status-/pulse inputs, 1 coil input and onboard Modbus and SDI-12 communication protocol.
- Data logging by 2GB micro-SD card, for over 10 million data entries with date and time stamp.
- Reduce maintenance costs and service time as even the optional internal battery will last for 3 - 8 years.
- Better cause-effect retrieval with increased log interval and alarming when setpoint is triggered.
- Resistant to harsh environments not a DIN-rail mounted module but an "all-on-board" module in a GRP field mount enclosure IP67 / NEMA4X.

### Features

- The M844 is in full compliance with the web-based ProcessMonitor server or ProcessView stand-alone software package for visualization, data history, trend graphics and/or extensive alarming.
- 110 - 230V AC mains and reverse polarity protected 8 - 30V DC power supply, battery or solar powered.
- Stabilized 24V DC sensor excitation for mains powered versions.
- Energy management sensor onboard, accurately calculates the remaining battery lifetime.
- Integrated Quad-band GPRS antenna; no "eye-catchers" to prevent vandalism or abuse.
- Wide operating temperature range -30°C to +75°C.
- Flexible mounting possibilities (wall/panel/pipe).

### Applications

- Specially designed for industrial applications using (field) devices and instrumentation to measure level, flow, weight/mass, pressure, temperature, dissolved oxygen, pH, conductivity, vibration, energy/fuel consumption etc.
- Extremely suitable for replenishment purposes or logistic and Supply Chain (SCM) optimization for raw bulk materials including: Remote Silo/ Tank Monitoring, Remote Inventory Management, Customer and Vendor Managed Inventory (VMI).

## General information

### Introduction

M844 is an ultra-low power “all-in-one” Data Acquisition & Communication Module including datalogging, designed for a wide-range industrial applications. The M844 can be fully configured according to your process requirements. Sensors and two-wire instruments can be powered by the M844, so no additional signal converters / amplifiers, encapsulating cabinet or other electrical installation material necessary.

### Signal inputs

The unit has 4 digital and 4 analog 4 - 20mA inputs. With the mains powered version, the analog inputs are galvanically isolated to eliminate the risk of interference with your existing cabling and systems. The digital inputs contain 3 status / counter / pulse inputs and 1 coil input for e.g. a flowmeter. The sensor inputs can be easily expanded with approx. 10 Modbus slaves through a RS485 communication port or the SDI-12 protocol. One RS232 is also available.

### Data outputs

The generated data by the M844 is send through TCP, FTP and/or email. Total control can be gained through the fully integrated ProcessMonitor web-portal or the ProcessView stand-alone software package. Alerts and alarms are send by SMS with adjustable increased logging frequency. Internal diagnostics may send alarm messages including battery capacity, temperature and GSM signal strength.

### Configuration

Setup can be done through the local USB 2.0 port via a clear terminal menu (no code input!).

When using the ProcessMonitor web-portal or the ProcessView stand-alone software package remote configuration is possible by smart reversed communication, even with a public, dynamic IP address from a telecom provider.

Configuration includes communication settings, event report by exception (alarms), datalogging interval, TAG no, specific sensor information, including scaling, units etc.

All settings are stored in non-volatile memory and will not be lost in the event of power failure.

### Power requirements

Three power requirements are available to power the M844. The M844 can be supplied by a long-life (3 - 8 years) lithium battery. A solar powered version is available with a 3 x AA NiMH back-up battery pack. The energy management sensor tracks the real remaining battery life for both versions. Finally a 110 - 230V AC and 8 - 30V DC power supply is available with a 24V DC sensor supply.

### Data logging

Data logging by standard 2GB micro-SD card, for over 10 million data entries with date and time stamp. Log frequency is max. 4Hz. The log file is readable on every ordinary PC.

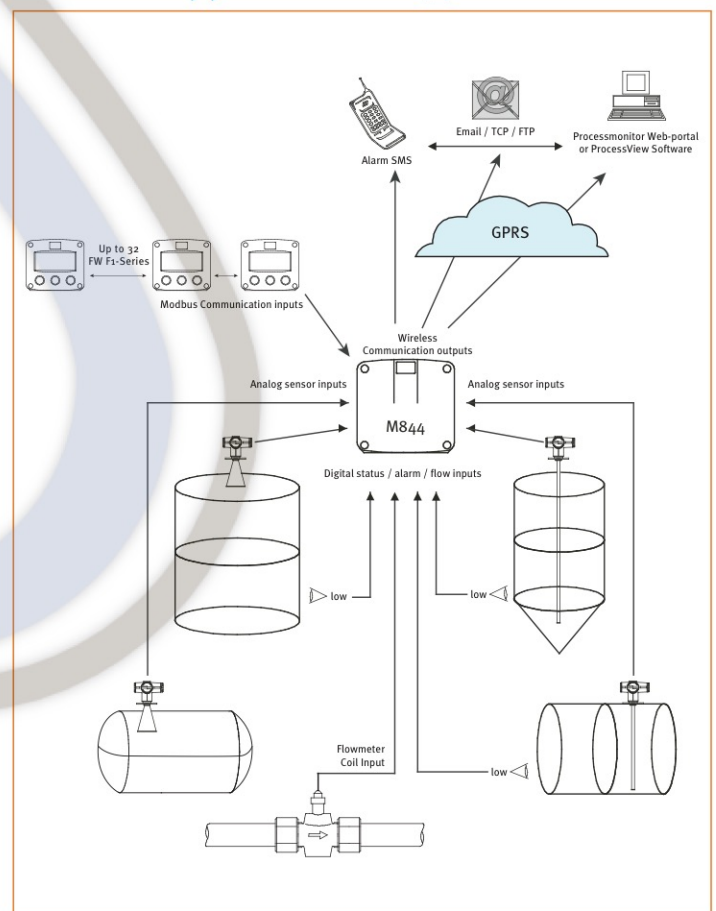
### Enclosure

The M844 is supplied in a rugged field mount enclosure, classified as IP67/NEMA 4X. Operational temperature is -30°C to +75°C (-22°F to +167°F).

### Options

The following options are available for the M844: external antenna, GPS module, mounting plates for wall- and pipe mounting applications. The M844 blind cover can be exchanged by additional displays / monitors from the Fluidwell F-Series.

## Overview application M844





## Technical specification

### Power requirements

#### Power supply

Type PB	Long-life 3.6V Lithium battery with smart energy management sensor which tracks the real remaining battery lifetime.
Consumption	< 50 mA @ 3.6V in sleep mode. 100mA @ 3.6V average per log interval of < 1 s. 250mA @ 3.6V average during data transfer max 60 s.
Lifetime	3 - 8 years, depending on update rate.
Type PM	110 - 230V AC (50 / 60Hz) and reverse polarity protected 8 - 30V DC.
Excitation	With stabilized 24V DC supply to power the sensors.
Consumption	Approximately 14 Watt max.
Type PS	Solar powered and 3xAA NiMH rechargeable batteries
Consumption	< 50 mA @ 3.6V in sleep mode. 100mA @ 3.6V average per log interval of < 1 s. 250mA @ 3.6V average during data transfer max 60 s.

#### Sensor excitation

Sensor supply	Stabilized 250mA @ 24V DC only with type PM.
Power switch	Suitable for low power applications: 100mA @ 12V DC available with power supply type PB and PS.

### Casing

#### General

Enclosure	GRP (Glassfibre Reinforced Polyamide) enclosure. UV stabilized and flame retardant material.
Sealing	EPDM.
Classification	IP67 / NEMA 4X.
Dimensions	130 x 120 x 75mm (5.12" x 4.72" x 2.95") - W x H x D.
Weight	approximately 420 gr.
Cable entry	No holes.

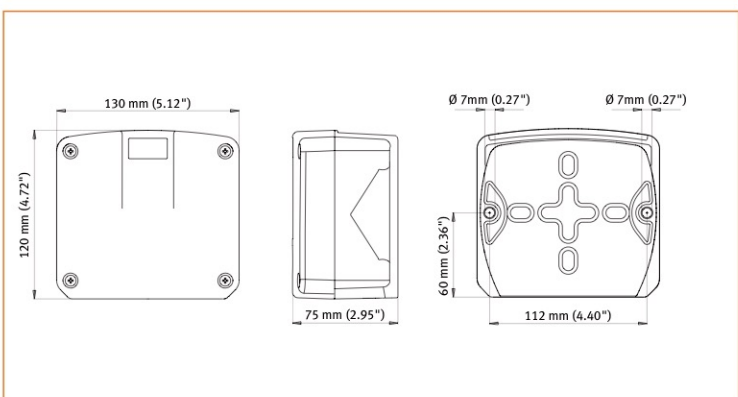
#### Terminal connections

Type	Removable plug-in terminal strip. Wire max. 1.5mm <sup>2</sup> and 2.5mm <sup>2</sup> .
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#### Operating temperature

Operational	-30°C to +75°C (-22°F to +167°F).
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### Dimensions GRP enclosure



### Signal inputs

#### Digital inputs

Status / pulse inputs	3 status or counter/pulse inputs 0 ~ 3.6 Volts, TTL tolerant (0-5V), NPN/PNP, open collector, reed-switch.
Intern. pull U/D	Selectable, up to 5 kHz.
Function	Alarm or flow/counter.
Coil input	1 coil input for (flow)meters, without external power supply.
Function	Flow rate measurement for flow, energy meters etc.
Sensitivity	Approximately 50mV.
Values storage	Saved in non volatile memory, even after battery replacement.
Note	Common signal is Ground.

#### Analog inputs

Inputs	4 analog 4 - 20mA inputs
Accuracy	Resolution: 12 bit.
Load impedance	For type PM: approx. 160 Ohm. For type PB & PS: approx. 15 Ohm.
Isolation	Galvanic isolation for each analog input is only available with power supply type PM.

#### Communication

Function	Input expansion and flexibility.
Serial ports	2 x RS232 and / or 1 x RS485
Protocols	ASCII / Modbus RTU and / or SDI-12. (others can be implemented on request)
Speed	Application dependable up to 115200 bps.
Addressing	Maximum 32 addresses.

### Data outputs

#### Data logging

Storage	Standard 2GB micro-SD card.
Frequency	Max. 4Hz
Data entries	Over 10.000.000 with date and time stamp.
Log file	FAT32 file system, readable at any ordinary PC.

#### Data communication outputs

Modem	Quad Band EGSM 850 / 900 / 1800 / 1900 MHz.
Capabilities	GPRS / GSM / SMS.
Retrieval	TCP/IP / FTP / EMAIL.
Alarming	EMAIL / SMS.
Local	Manually exchange micro SD-card via USB 2.0 port.

# Datasheet M844

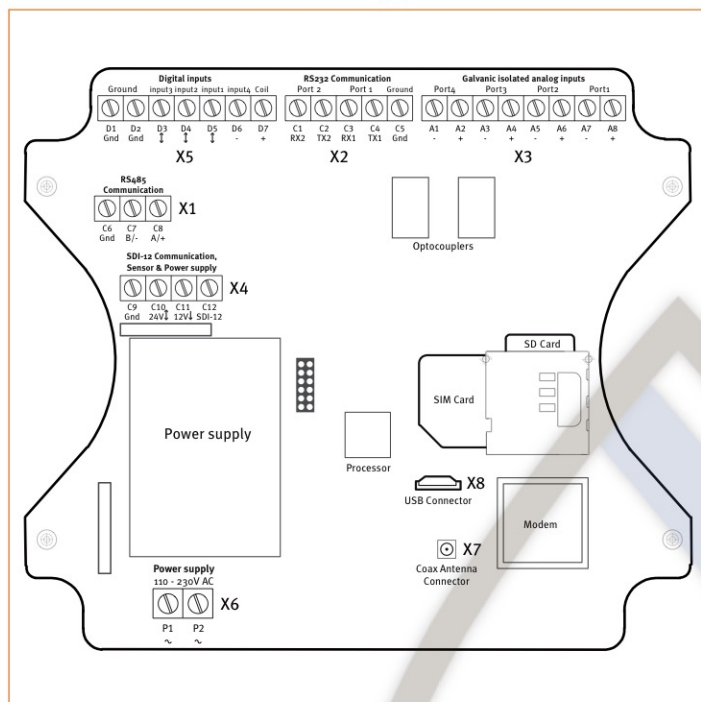
Data Acquisition &  
Communication Module

**PROCESSMONITOR**  
Remote Location Surveillance  
a Fluidwell company

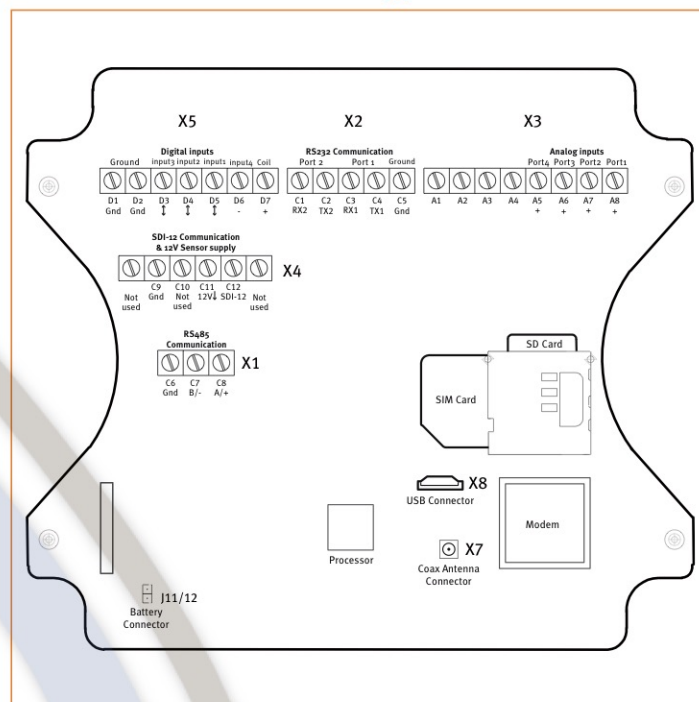
Outgoing

Count on us.

## Terminal connections Type PM



## Terminal connections Type PB - PS



## Ordering information

Standard configuration: M844-HD-NI-PM-ACFoo.

Ordering information: M844

GRP field / wall mount enclosures - IP67 / NEMA4X

HD No cable entry holes.

### Antenna

NI Internal antenna.

NE External antenna.

### Power requirements

PB Battery Powered.

PM 115 - 230V AC, 8 - 30V DC + 24V DC sensor supply.

PS Solar powered.

### Mounting accessories

ACFo2 Stainless steel wall mount kit (incl. screws and plugs).

ACFo5 Stainless steel pipe mount kit (worm gear clamps NOT included).

ACFo6 Two stainless steel worm gear clamps D = 44 - 56mm (1.73" - 2.20").

ACFo7 Two stainless steel worm gear clamps D = 58 - 75mm (2.29" - 2.95").

ACFo8 Two stainless steel worm gear clamps D = 77 - 95mm (3.04" - 3.74").

ACFo9 Two stainless steel worm gear clamps D = 106 - 138mm (4.18" - 5.43").

**ACFoo No mounting accessories.**

The bold marked text contains the standard configuration.