

# MATP-2W IoT Sensor & Data Logger

Magnetometer - Accelerometer - Thermistor - Pressure



## Applications

- Tilt Current Meter
- Underwater Vehicle Monitoring
- Mooring Orientation & Tilt
- Temperature and Depth
- Vehicle Dynamics
- Shipping Monitoring

Feature	Benefit`
3-axis Accelerometer	- Resolve static orientation to 1° - Record dynamic acceleration at 64 Hz
3-axis Magnetometer	- +/- 2° nominal compass bearing accuracy - Temperature compensated
Precision Temperature	- Accurate to +/-0.1 °C from -5 to 30 °C - Accurate to +/-0.2 °C from -20 to -5, 30 to 50 °C
Pressure Sensor	- Depth measurement to 300 meters
Large Memory	- 4 GB microSD flash card, upgradable to 32 GB
Rechargeable Battery	- Hundreds of millions of records per charge
Rugged Housing	- O-ring sealed PVC housing
USB 2.0 Interface	- Connect and recharge with standard USB cable
Bluetooth Wireless	- Fast, hands free, automated IoT data collection

## Description

The MATP-2W IoT Data Logger is a wireless enabled device that contains an integrated 3-axis magnetometer, 3-axis accelerometer, precision temperature sensor and pressure sensor. The logger includes a microSD flash memory card, a rechargeable lithium battery, an O-ring sealed waterproof housing and a USB communication interface. The logger is capable of recording magnetometer and accelerometer at up to 64 Hz, pressure at 8 Hz and temperature at 1 Hz.

The MATP-2W is ideal for everything from basic temperature and depth recording, to underwater asset monitoring to motion analysis. The logger’s large memory, high recording rate, long battery life, rugged design and Bluetooth wireless connection make it suitable for a wide range of automated data collection tasks.

The MATP-2W contains a USB power as well as a Bluetooth 4.1 Wireless port. Data can be automatically read via a low-cost gateway, creating a fully automated data collection system.

## Specifications

### Sensors

	<b>Magnetometer</b>	<b>Accelerometer</b>	<b>Thermistor</b>	<b>Pressure Transducer</b>
<i>Type</i>	3-axis magnetoresistive sensor with 12-bit A/D Converter	3-axis MEMS Accelerometer with 12-bit A/D Converter	NTC Thermistor with 16-bit A/D Converter	Ceramic Bridge with 16-bit A/D converter
<i>Filtering</i>	None	1600 Hz averaging: up to 32 values per measurement	Hardware: low-pass filter	None
<i>Range</i>	+/- 10 Gauss	+/- 2 g standard +/- 4 g optional	-20 to 50 °C	0-200 meters depth
<i>Accuracy</i>	+/- 2° compass bearing typical	0.01 g	+/-0.1 °C (-5 to 30 °C) +/-0.2 °C (-20 to -5, 30 to 50°C)	1%
<i>Resolution</i>	<0.001 Gauss	<0.001 g	<0.01 °C	<0.1 m
<i>Maximum Rate</i>	64 Hz	64 Hz	1 Hz	8 Hz

### Logger

#### **Environmental**

<i>Operating Temperature</i>	-20 to 50 °C
<i>Depth Rating</i>	200 m

#### **Electronics**

<i>Memory</i>	4 GB microSDHC flash card (upgradable to 32GB)
<i>Communications</i>	Full speed USB micro-B port 2.4 GHz Certified Bluetooth Smart 4.1
<i>Battery Type</i>	Rechargeable Lithium Ion
<i>Battery Life</i>	6-9 months typical depending on operating mode
<i>Internal Clock</i>	1 minute per month

#### **Operating Modes**

<i>Recording Rates</i>	Accelerometer and Magnetometer to 64 Hz Temperature to 1 Hz Pressure to 8 Hz
<i>Start and Stop</i>	Start and Stop at user defined times
<i>Burst Mode</i>	Variable rate logging at user defined interval

#### **Mechanical**

<i>Dimensions</i>	27 mm (1.05") diameter x 285 mm (11.25") length
<i>Weight</i>	190 g (6.7 oz)
<i>Construction</i>	Housing: Grey PVC O-ring: EPDM (PVC)

#### **Other**

<i>Software</i>	Free Windows® Compatible Software Open source API available for data automation
<i>USB</i>	USB 2.0 compliant MSC and CDC Classes
<i>Firmware</i>	Field upgradable via USB cable



Lowell Instruments, LLC  
 33 Cameron Rd.  
 North Falmouth MA 02556  
 Ph: 508-444-2616  
 info@lowellinstruments.com  
 www.lowellinstruments.com