Model 8820A

MiniBAT ® Submersible Platform

Miniaturized Towed Instrumentation Platform

T he Guildline 8820A MiniBAT® is an extremely lightweight, remotely controlled towed instrumentation platform designed for use with a wide variety of data collection instruments. It provides a highly flexible profiling system for use in estuaries, lakes, rivers, and coastal areas. Deployment of the MiniBAT® is made simple by the provision of the easy-to-use Windows® based software and by a control box for automated or manual operations. The control box also provides an emergency override capability.

The basic system consists of the MiniBAT® tow body, tow bar, onboard control electronics, onboard pressure sensor, adjustable wings, graphical interface software, control box and a 7-conductor cable. One branch of the cable controls the MiniBAT® leaving 4 conductors for instrumentation.

Normal operation requires a 120/240 VAC supply. Alternatively, the system can be deployed using a 12 volt marine battery and an AC inverter. This feature allows the platform to be used with small outboard power boats.

The 8820A MiniBAT can be deployed and controlled by a single operator from boats as small as 5m. It offers a flexible, automated instrument platform for use at depths to 150m.

8820A FEATURES

> *One person operation - small, compact, lightweight, stows easily*

> *Easy towing with a 5 to 10 metre power boat*

> *Choice of power – 120/240 VAC line or 12 VDC battery*

> *Operational depth: surface to 150 metres*

> *Easy-to-use software for simple systems operation*

> *Supports a wide range of instruments with minimal configuration*

> *Remote undulation control by computer*

> *Auto bottom-following and avoidance*

> *Expert field assistance from Guildline to meet special program requirements*

> *The most cost effective system on the market*

The MiniBAT® control software offers a flexible, user friendly interface for a variety of applications. An important feature is the capability to log real-time GPS satellite information. Connecting cables between the control box and tow cable, and a floating 12 VDC power converter, complete the basic system.

The MiniBAT® can be easily deployed in the field by one person. The standard depth capability is 150 metres. Custom designs for greater depths and specialized instrumentation are available on request.

The suggested towing speed is in the range of 1 to 10 Knots using boats 5 to 10 m long. (actual towing speeds should be matched to the sensors onboard). Typical towing speeds for most field surveys are in the range of 3 to 4 Knots. Cable tension at these speeds is generally less than 90 kg but is dependent on the onboard load, configuration, depth of operation, amount of tow cable played out, type of tow cable used, and other factors.
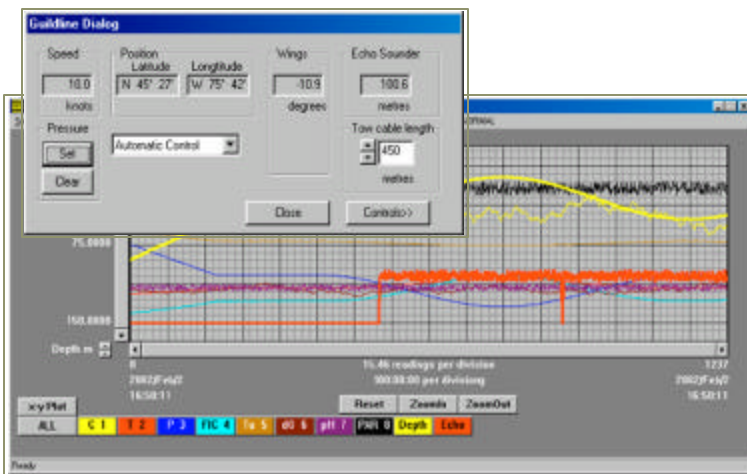
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Control Software

The standard software provided with the MiniBAT® runs under Microsoft Windows® operating systems. Guildline will pre-install the software if a computer is purchased as part of the MiniBAT® system.

The control software allows the user to have the MiniBAT® undulate over a desired depth range, maintain a constant depth, or maintain a given elevation above the bottom. It presents a graphical display of the MiniBAT® position with respect to the bottom and logs this information along with latitude, longitude, boat speed, wing angle, time, and date.

Simple menus provide for file naming, automatic control, and display parameters. If the Guildline CTD +5 data logger is used, the control software is integrated with the data recovery software, which is a part of the MiniBAT® instrumentation system.

Options

In addition to the standard items provided with the MiniBAT®, Guildline can, for remote control operations, supply a 7-conductor sea cable, a laptop computer with at least one RS232 I/O, an integrated GPS/Depth Sounder combination providing NMEA 0183 data output to the control box, and a 120/240 VAC power source.

For applications requiring the deployment of more than a short length of cable, an optional small battery driven winch with an 8-conductor slip ring can be supplied.

Guildline can also provide integrated systems with a wide range of sensor capabilities including: CTD's; PH sensors; DO sensors; PAR; Turbidity; Transmissometers; Fluorometers; Dye Tracers; Sound Velocity Sensors; Optical Plankton Counters; and Acoustic Instruments among others.

The 8820A MiniBAT comes with sophisticated, easy to use control software that runs on Microsoft Windows.

Systems

Complete systems including the MiniBAT®, instrumentation, sea cable, winch, control software and systems integration, can be supplied on request.

Integrated systems are comprised of existing instrumentation along with new hardware from Guildline or a number of other manufacturers. Guildline will advise the best way to integrate a complete system from the many choices available. Our engineering department has the experience to allow the user to purchase a complete system from one source.

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8820A Product Specifications

Tow Body

Overall Length	94 cm
Overall Width	74 cm
Overall Height	41 cm
Body Width	13 cm
Air Weight (unloaded)	14 kg
Weight with CTD +5	20 kg

Onboard Depth Sensor

Operating Range	0 – 150m
Accuracy (full scale)	0.05%
Resolution (full scale)	0.001%
Time Constant	< 10ms

Power

MiniBAT® Power Module	30 watts
Requirements for MiniBAT® Power Module	120/240 VAC[1]
Operating Voltage	+/-12 V DC floating
Consumption	8 watts

[1] Note – power can be supplied directly or via a 12V DC battery and DC to AC converter

Control Data Transmission

Conductor Cable	8mm diameter, 7-conductor
Data Format	NMEA 0183 I/O RS-232, 4800 Baud

Operational Depth

Standard	150m
Special	Contact Guildline

Construction Materials

MiniBAT® Frame	Stainless steel rod
MiniBAT® Wings and motor shroud	Stainless steel plate

Actuator Housing

	PVC
Instrument electronics housing	Delrin

Ordering Guide

8820A	MiniBAT with remote control
8820A-01	MiniBAT with Model XR-420 CTD +5 Data Logger
8820A-02	Turbidity sensor[2]
8820A-03	pH sensor[2]
8820A-04	Dissolved oxygen sensor[2]
8820A-05	Water sample pump
8820A-06	GPS position and depth receiver
8820A-07	Optical plankton counter[2]
8820A-08	Fluorometer[2]
8820A-09	Sound speed sensor[2]
8820A-10	Transmissometer[2]
8820A-11	Laptop computer
8820A-12	Reusable shipping container
8820A-14	Electric winch with 450m 7-conductor cable & slip ring
8820A-99	System integration

[2] Note – indicated sensors are optionally user-specified

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