



JW FISHERS MFG INC

1953 COUNTY ST.
E. TAUNTON, MA 02718 USA

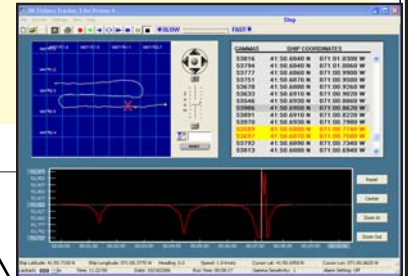
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Email: info@jwfishers.com WEB: www.jwfishers.com

TECHNICAL DATA SHEET



SYSTEM COMES COMPLETE AND READY TO GO

- **LOW COST, HIGH PERFORMANCE**
- **ONE GAMMA SENSITIVITY**
- **1,500 FT. DETECTION RANGE**
- **LCD GAMMA READOUT AND TARGET ALARM**
- **RS232 OUTPUT AND TRACKER SOFTWARE AVAILABLE**
- **GPS OUTPUT**
- **150-1,000 FOOT CABLE**
- **2 YEAR WARRANTY**



Tracker 3 Software Available



PROTON 4 Magnetometer

The PROTON 4 is a fourth generation proton magnetometer from JW Fishers. It is a top performing microprocessor driven marine magnetometer detection system. With a one gamma sensitivity, it has the maximum usable sensitivity for a towed magnetometer. A two second cycle time gives a strong return signal and is fast enough to detect even small iron/steel targets. The PROTON 4 features a triaxial noise-cancelling sensor that allows omnidirectional towing without heading error or dead zone. The system is fully digitized and displays its output on an easy to read 5 digit LCD that is backlit for night operations. An alarm informs the operator when the readout changes.

An RS232 output and software package are also available. The gamma reading is displayed on a laptop PC, and with input from a GPS receiver, the target's position is also displayed and recorded. The Fish has excellent hydrodynamic characteristics moving smoothly through the water at tow speeds up to 10 knots. A 2-3 knot tow speed is recommended for small targets. With the optional Altimeter, precise distance off the bottom can be maintained. For deep water towing, the Fish is towed behind a downrigger. The Fish can be towed at almost any speed, but should be towed slow to locate small targets or when towing the Fish deep. A sensitivity switch allows easy pinpointing of targets. Modular construction allows easy field repair, should it ever be necessary. The PROTON 4 is covered by a full TWO YEAR WARRANTY.

DETECTION RANGES

OBJECT	NEAR RANGE	FAR RANGE
1 gal can		2 gamma at 12'
5 gal can		2 gamma at 18'
55 gal can		2 gamma at 45'
Sm. plane	25 gamma at 20'	2 gamma at 50'
1 ton iron	40 gamma at 30'	2 gamma at 80'
6" pipe line	200 gamma at 20'	2 gamma at 100'
12" pipe line	350 gamma at 20'	2 gamma at 175'
Lg. anchor	500 gamma at 50'	2 gamma at 200'
Med ship	1500 gamma at 100'	2 gamma at 1000'
Lg. ship	2000 gamma at 100'	2 gamma at 1500'

SPECIFICATIONS

DIMENSIONS/WEIGHTS:

- Fish 52'L x 6"Dia 48 lbs.
- Control Box 14"L x 10"W x 6"H 5 lbs.
- Tow Line75"D x 150'-1,000' 20-130 lbs.
- Carrying case 59"L x 18"D x 22"H 80 lbs.
- Total Shipping 59"L x 18"D x 22"H 170/320 lbs.

PERFORMANCE/DESCRIPTIONS:

- Sensitivity (switch adjustable) resolves 1 gamma
- Maximum detection distance 1,500 feet
- Cycle time (switch adjustable) 2-4 seconds
- Tow speed 1-10 MPH
- Maximum operating depth (standard unit) 200 feet
- Input voltage (two car batteries) 24 vdc
- Power consumption 40 Watt

MATERIALS/COLOR:

- Fish High impact PVC, stainless/yellow
- Control Box High impact case/black
- Cable 8 conductor in polypropylene/yellow

OPTIONS

- GPS interface
- RS232 output interface
- Tracker Software display package (includes boating tracking)
- Altimeter
- Downrigger
- 300 foot cable
- 500 and 1,000 foot depth versions

GENERAL

Magnetometers are precision electronic instruments that measure and display the strength of the earth's magnetic field in an area. If ferrous metal is present, the earth's magnetic field is altered and the readout of the magnetometer changes accordingly.



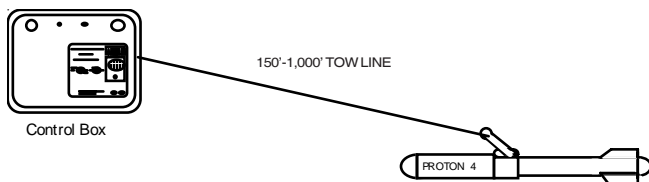
Since the 1940's, almost every major wreck find was made with a magnetometer. Metal hulled ships and barges are easy targets and can be detected hundreds of feet away. The Spanish galleons laden with gold and silver (metal not detectable by magnetometer) were also found with mags by detecting the ship's anchors, cannons, cannon balls, or ballast stones (magnetite was often used as ballast).

PROTON MAGNETOMETER

In the 1960's, the proton magnetometer (as we know it today) was invented. Since that time the proton magnetometer has dominated the field, both in the scientific community and in salvage work. It is both a rugged and sensitive instrument. Its claim to fame is, unlike flux-gate mags, the direction of the sensor head does not alter the output reading as it is being towed. Once it has been tuned to an area, no further adjustments are necessary.

PROTON 4

The PROTON 4 is a proton magnetometer that was specially designed for underwater salvage work. The system consists of a Control Box, a 150-1,000' cable and a towfish.



FISH - The Fish is 52 inches long and has a watertight compartment that contains the sensors and the electronics necessary for processing the signal before sending to the control box. The Fish has four fins for stability and is weighted for negative buoyancy. The materials used in the construction of the Fish were specifically selected for high impact resistance and low maintenance.

CABLE - The 150-1,000' tow cable consists of multi-paired and coax cables encased inside a braided polypropylene rope. The combination results in a highly abrasion-resistant tow cable.

CONTROL BOX - The Control Box receives signals from the fish and does additional processing for display on the digital readout. On the face of the Control Box are the following controls and displays:

Readout - A five digit LCD readout displays the gamma reading. The readout is backlit for nighttime viewing.

Sensitivity Switch - A four position switch allows the sensitivity to be reduced once a target area is located, so the target can be accurately pinpointed.

Pol Time - A three position switch controls the cycle time. 2.5, 3, or 4 seconds can be selected.

Alarm - A seven position switch sounds an alarm if the readout changes beyond the selected gamma amount.

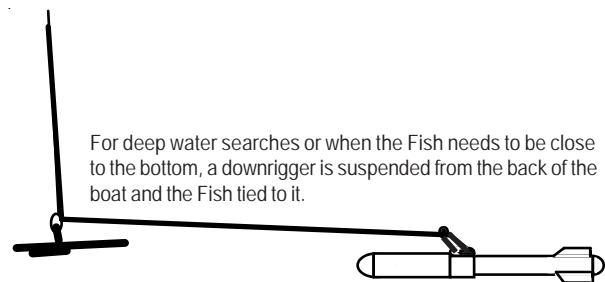
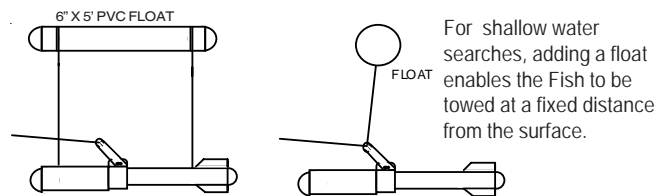
OPERATION AND USE

When you receive your PROTON 4, it has been tuned at the factory and is ready to operate; all you need are two 12v batteries (car or marine type) for power. Included with the PROTON 4 is a large world map. The map shows the gamma reading for different parts of the world; e.g. 61,000 for the North Pole area (magnetic field is strongest), to 24,000 in Ecuador, S.A. (magnetic field is weakest). You check the map for the reading in your area; e.g. Boston, Mass. = 55,000; Miami, Florida = 48,000. The tuning switches in the Fish is set to the position that covers this frequency (each switch position covers a broad band of frequencies). At this point, the PROTON 4 is "tuned" and ready to go. The Power On switch on the Control Box is turned on and the unit automatically begins cycling. The gamma reading and LORAN or GPS coordinates will be printed. With the optional RS232 output interface the information can be output to any computer or software program.

NOTE:

In most areas of central South America (ie Brazil) the magnetic field is so weak that operation of a magnetometer is not reliable. Contact the factory if you plan on using the mag in SA.

When towing the Fish, as you approach a ferromagnetic (steel) target, the readout number will decrease; the amount of decrease will depend on the size of the target and how close the Fish passes to it. A change of several thousand can be expected for a very large target. The PROTON 4 can easily pinpoint wrecks.



OPTIONS

LORAN / GPS Interface - Provides input interface for a LORAN or GPS receiver.

RS232 Output Interface - Provides an output to any computer.

Tracker Software program - Windows compatible. Stores and displays data in digital and analog format, including boat tracking, for real time viewing, printing, and storage.

Altimeter - Tells operator how far the Fish is above the bottom.

300' Cable - The PROTON 4 can be ordered with a 300' cable (150' standard).

Downrigger - A depressor wing used for deep water towing.

500' and 1,000' Versions - Deeper depth rated versions are available.

WARRANTY

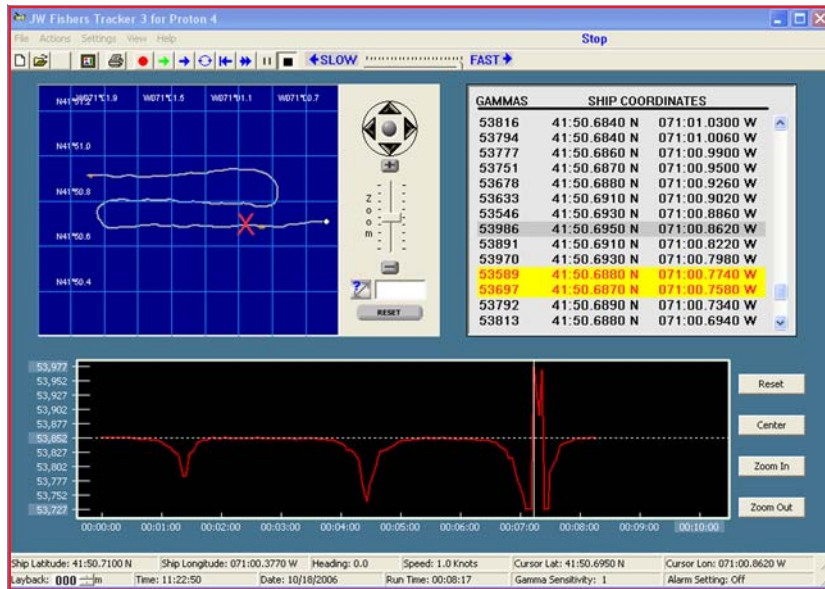
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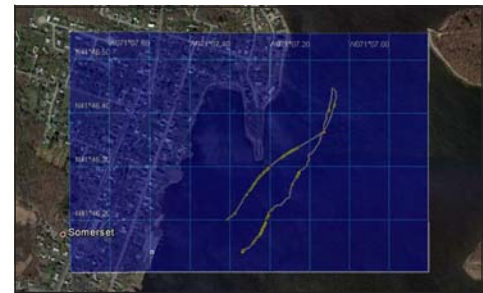
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TECHNICAL DATA SHEET



SOFTWARE DISPLAY for PROTON 3/4

- TRACKS AND STORES ALL DATA ON PC
- DISPLAYS LAST 1-60 MINUTES OF READINGS IN GRAPH FORM
- DISPLAYS OUTPUT READINGS AND GPS POSITION
- DISPLAYS BOAT SPEED, HEADING, AND LAYBACK
- DISPLAYS SENSITIVITY AND ALARM SETTINGS
- RUNS ON PC XP-WIN 8
- BOAT TRACK EASILY LAID ON MAPPING PROGRAM



OVERLAID ON MAPPING PROGRAM

TRACKER 3 for Proton 3/4 and Pulse 10/12

Fishers Tracker 3 software makes it easy to do a thorough search of any underwater area. This software is specially designed to work with Fishers Proton 3 and 4 magnetometers and Pulse 10 and 12 towed metal detectors. The display shows the path of the boat as it moves over the search area along with a cascading waterfall of the detector's readouts and the GPS position associated with each readout. When used with the Pulse 12 connected to more than one fish, multiple readouts are displayed. When a target is detected, the readouts and coordinates change color so the operator can quickly see when and where a target is detected. A software configurable audible alarm alerts the user to targets being detected.

At the bottom left of the screen is a graphical representation of the readouts which allow the user to display as little as one minute or up to one hour of data. When a target is detected the line swings up on the graph. When used with the Pulse 12, with more than one fish, multiple graphs are displayed. In addition to detection and GPS data, other information displayed are the boat's speed, compass heading, sensitivity setting, layback, time, date, and runtime.

The software shows a map window which uses the boat's GPS to plot the path of the boat and the position of targets (hits). When the cursor points at a "hit" on the graphical readout, the GPS coordinates for the hit is highlighted and a red "X" appears in the map window. Clicking an item on the readout list also places an "X" on the map showing the position of the target. The layback entry adjusts for the cable distance from the boat to the towed fish for a more accurate target position. The Tracker map can be exported as a image with a KML file to allow it to be easily overlaid on other mapping programs (as shown above). All data can be stored on the PC hard-drive or disk.

Using the computer mouse the operator can manipulate either the boat track image or the graphical image of the readouts. Clicking on the RESET button will erase the displayed data. Clicking on CENTER Button centers the displayed image. The Zoom-In and Zoom-Out buttons allow the size of the graph to increased or decreased. The boat track image also has an additional button that allows the image to be moved up, down, left, or right.

Tracker 3 software is provided on a CD and can also be downloaded at time of order.