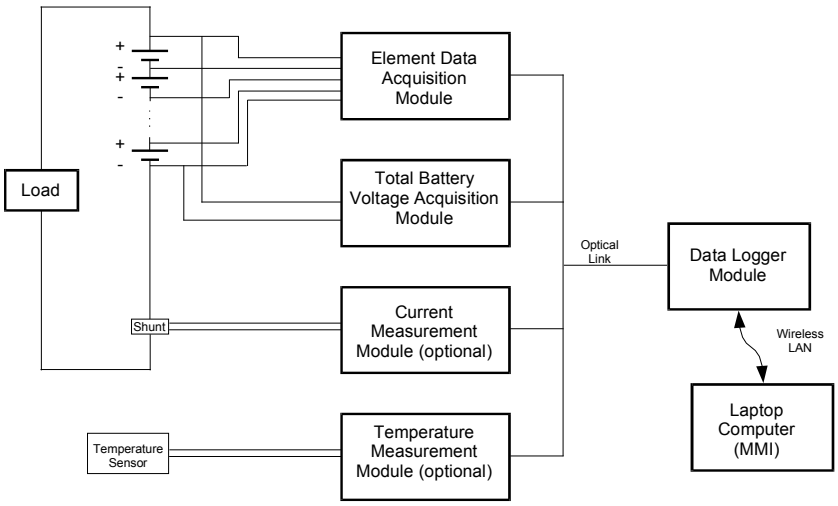
AVM-SS04

an automatic submarine battery monitoring system

Introduction

The **AVM–SS04** system is a submarine battery monitoring system. It constantly measures the voltage of each individual battery cell as well as the total battery voltage. If the submarine is equipped with current and temperature sensors, the system can also optionally record their readings.

The system collects and records all data and displays them as needed. The status of each battery cell while charging, discharging or idling, can be easily monitored from a laptop computer screen (MMI). As a result, maintenance of the battery system can be streamlined and early warning is provided in case of an element malfunction.



Description

The **AVM–SS04** system is modular. It consists of three basic modules:

- The Element Data Acquisition Module
- The Total Battery Voltage Module
- A Laptop Computer with suitable software and MMI

A complete system comprises the Element Data Acquisition Module for measuring the voltage of each battery cell, the Total Battery Voltage Acquisition module for measuring the total voltage of a battery, the Temperature Measurement Module (optional), and the Current Data Acquisition Module (optional) and the Laptop Computer.

To prevent interference from the high electrical impulses present in a submarine environment from affecting stored data, all Data Acquisition Modules are connected through an optical link to the Data Logger Module.

Depending on the rate of data acquisition, days or even months / years of data can be stored. The Laptop Computer, running application software is connected to the Data Logger computer via Wireless LAN and serves as the Man Machine Interface (MMI). Through the Laptop Computer all recorded data can be reviewed and the parameters of the measuring system configured.

Technical Specifications

- Fully compatible with any Submarine Battery System
- Up to 4 batteries of up to 120 elements each (or more) can be monitored
- Resolution of at least 0.5 mVolts
- Measurement cycle of as low as 12 seconds. The frequency of the scans is user configurable
- Data logger galvanically isolated from data acquisition modules
- Galvanic isolation of at least 1 Kvolts
- Can be connected to existing infrastructure of the submarine battery in order to measure additional battery characteristics like Ah, Temperature
- Suitable plugs for connecting to the existing terminal infrastructure for battery monitoring. The installation of the set does not interfere with manual access to the existing terminal connections
- Panel indicators on all units provide status and alarm information
- Connection through a Wireless LAN to the Laptop Computer allows downloading of recorded data and change of operational parameters. The system modules operate autonomously and do not require the presence of the laptop to operate
- All measurements are time-stamped by use of an embedded real time clock
- Operating Temperature: 0-50 degrees Celsius
- Dimensions are minimal. The equipment will be packed in hermetically-sealed aluminum boxes (IP56) to be customized according to available space and specific installation constraints allowing easy access to maintenance personnel.
- The Laptop Computer is equipped with software for the retrieval, processing and presentation of stored battery data measurements. The operator can program different data acquisition scenarios, store data for the entire lifecycle of the battery, view graphical representations of recorded data; the operator may also export data for use on an external computer for further statistical analysis

Scope of Supply

- Installation Study
- Installation works for Turn-Key delivery, including STW (Setting To Work) and HAT (Harbor Acceptance Test).
- Measuring Devices packaging custom adapted to available space.
- Ah measurement (option)
- Temperature measurement (option)
- Other parameters can be measured as requested (option)
- Cabling
- Laptop Computer (MMI)
- Data Logging Software
- Training
- Documentation
- Warranty: 24 months following site acceptance test

For additional information, contact:

SSA SA
84 Ethnikis Antistaseos
15211 Halandri
Greece

Tel: (+30) 210 6723004
Fax: (+30) 210 6726682
e-mail: ssa@ssa.gr