

SIDEKICK INSTRUMENT HUB

Model: PERFORMANCE



Overview

The SIDEKICK Instrument Hub is a user-friendly, reconfigurable, and autonomous data handler designed to support advanced oceanographic tasks and missions. Its core function is to streamline the deployment of oceanographic sensors with minimal setup and technical expertise required.

Features

The SIDEKICK is a versatile platform for powering, controlling, and logging data from multiple marine instruments, including both Serial RS232 & Ethernet devices.

It can operate as a fully autonomous unit or as a hybrid system that streams real-time data when a cable connection to topside is available.

All instrument data is logged with a unified timestamp to ensure correlation across sampling channels. Monitoring routines can track data streams and system status. A "Sneak Peek" feature allows users to review a snapshot of the most recent profile moments after retrieval.

The 4-relay board enables selective powering of instruments as needed.

6 serial ports and 1 full GigE Ethernet connection allow integration of a large variety of sensors. The system includes 2TB of storage, and supports the addition of a removable 4TB SSD.

Designed with flexibility in mind, the SIDEKICK encourages sensor reconfiguration and upgrades to match evolving mission needs.

SIDEKICK Instrument Hubs run on Sixclear JADE, a modular, publisher–subscriber-based data handling environment that empowers users to develop sophisticated acquisition and control routines with ease.

End-caps Interfaces

Control End-cap: Status LED light | COMM. port | POWER port | ON/OFF switch | START switch

Instruments End-cap: 7 x MCBH connectors of your choice, set during initial configuration, that can be changed to match evolving needs



SIDEKICK PERFORMANCE

Mechanical

- Depth Rating: 2,500 meters
Hard anodized 6061-T6 aluminum
Weight: 19 Lbs (in air), 4.0 Lbs (in water)
- Depth Rating: 200 meters
PEEK Enclosure
& Super Duplex Stainless Steel End-caps
Weight: 19 Lbs (in air), 4.0 Lbs (in water)
- Dimensions: 21" length × 6.0" outer diameter
- End-caps O-rings: #243 and #244

Power

- Power Input: 13–50 VDC
- Power Consumption: 8 to 15 W typical

Electrical Protection & Control

- Relay Control: 4-channel relay board
- Protections: Reverse polarity protection
- Initial Inrush current limiter
- Handles difficult cyclic power load

Interfaces & I/O

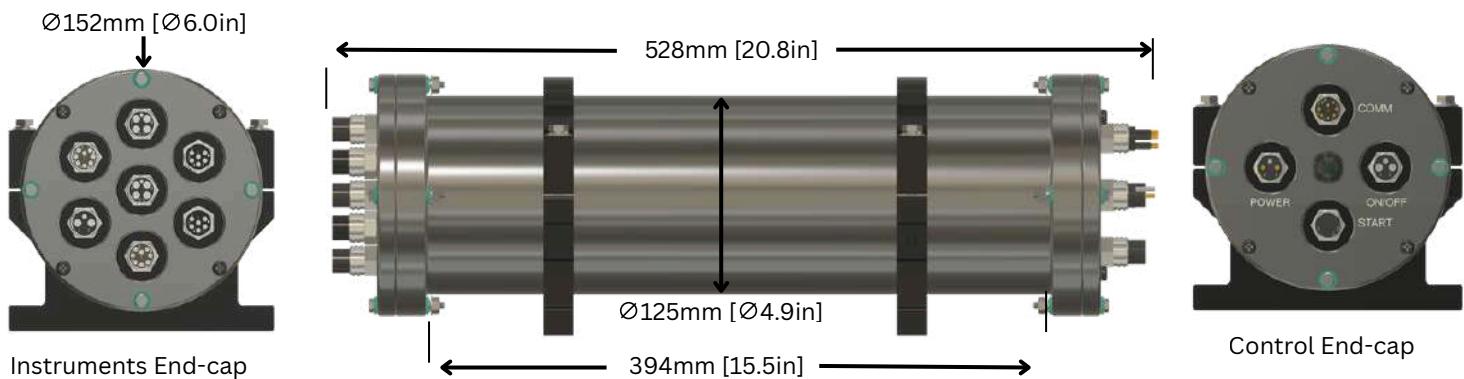
- 7 x user-specified interface connectors
- 6 x serial I/O:
- 1 x 10/100/1000 Mbps Ethernet port

Operating System

- OS: Thinned-out image of Windows IoT Enterprise

Processing & Storage

- Processor: Intel Atom or Pentium (2 cores, 1.94 GHz)
- Memory: 4 GB DRAM
- Graphics: Integrated Intel GPU
- 2 TB Internal Storage



Hardware Options:

GIOTA with Pentium Processor (up 4 cores, 2.5 GHz)

4TB Samsung SSD

3 Isolated Power Rails requires you selection (2 choices) of 12V, 15V and/or 24V in addition to the main 12V circuit

Example of an Executable Sixclear JADE Application could include the following modules (sixclear.com).

3 x "Visa plugin" to connect to any Serial Instruments

1 x "Basler camera plugin" for imaging

1 x "Relay Manager plugin" to turn power On/OFF to instruments

1 x "Switch plugin" to start the logging sequence

1 x "Status LED plugin"

1 x "State Machine plugin with error monitoring" for automated recording

1 x "Sneak Peek Aggregator plugin" for quick visualization of data upon retrieval



Compatible with:

Bellamare PowerCore Battery Packs

Bellamare ISIS-DPI Plankton Cameras

Bellamare MV-200 Industrial Machine Vision Cameras