SBE56 STANDARD OPERATING PROCEDURE

GENERAL INFORMATION

The SBE 56 is a low-cost, high-accuracy, fast-sampling temperature recorder with USB interface, internal battery, and memory. Data is uploaded upon recovery via the internal USB connector, and output in engineering units (degrees C, date and time).

SBE56 Pre-deployment:

SBE56 Post-deployment:

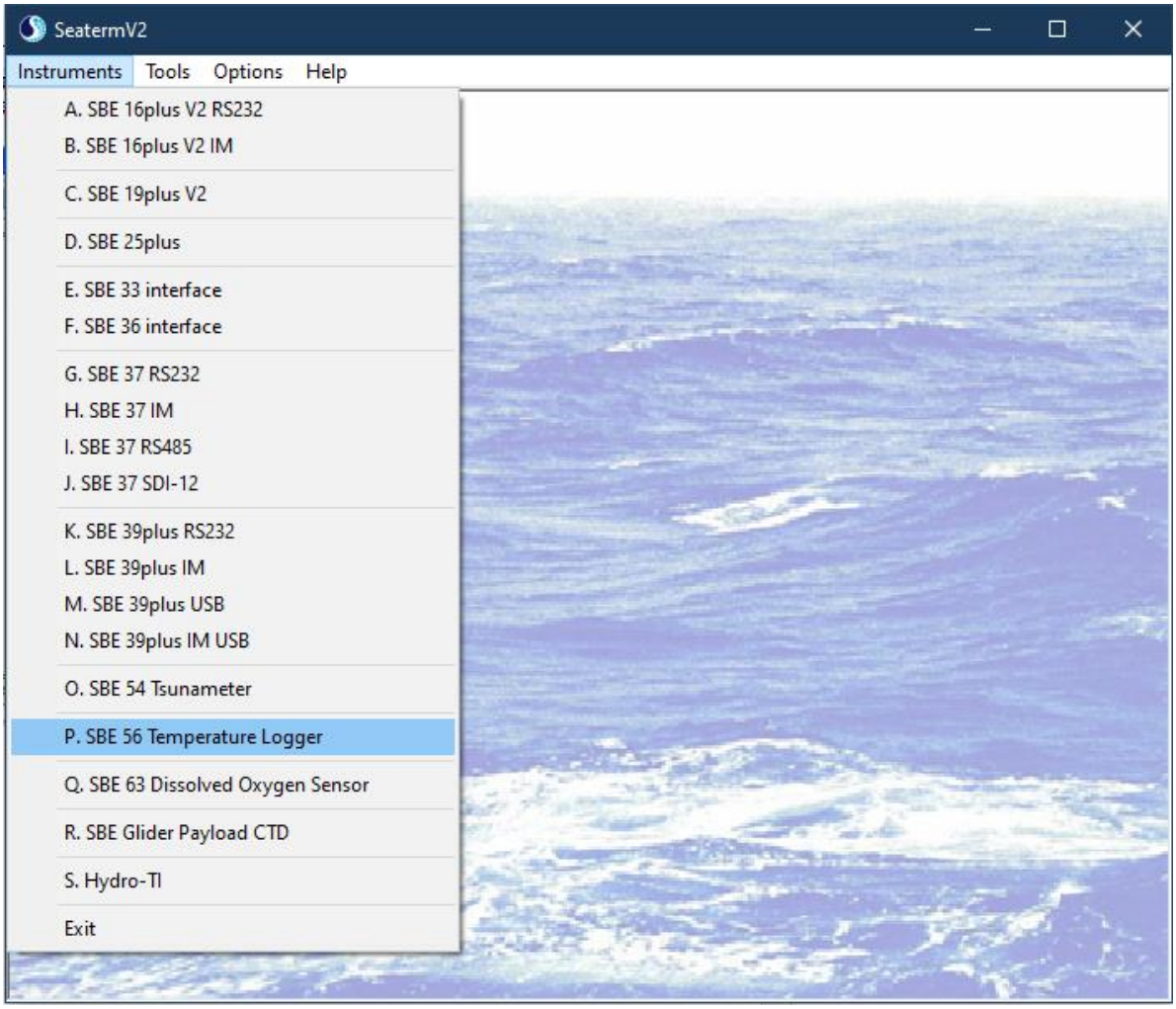
Drop Sheet: \\pearl\ocean\OGTECH\Docs\DropsheetTemplates\Seabird\IMOS_DropSheet_sbe56.xls

SPECIFICATIONS:

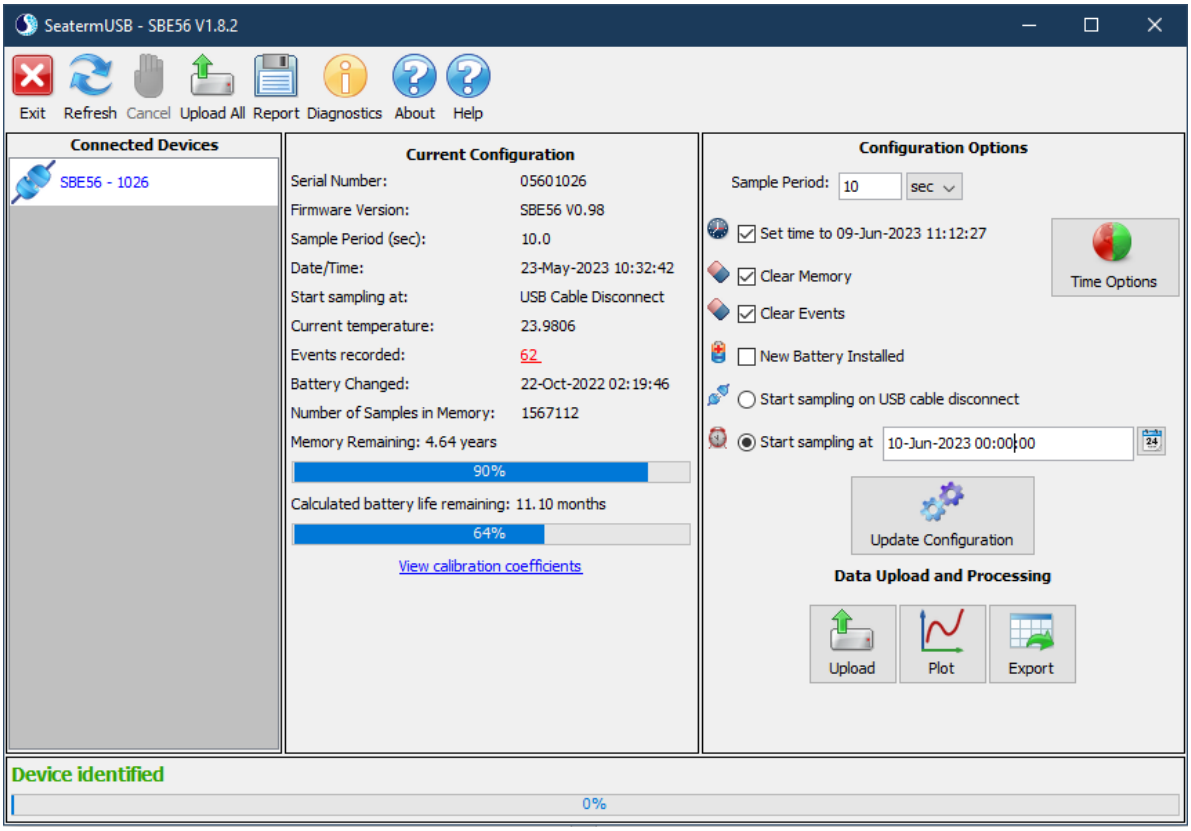
- Sampling rates: 0.5 seconds to 32400 seconds (9 hours) intervals.
- Deployment endurance: Up to 2 years on a single AA lithium cell.
- Clock Accuracy: 5 seconds/month
- Depth Rating: 1500m
- Memory Capacity: 15.9 million samples
- Temperature Accuracy: +-0.002°C (-5 to +35 °C); ± 0.01 °C (+35 to +45 C)
- Temperature Range: -5 to +45°C
- Temperature Resolution: 0.0001°C
- Temperature Stability: 0.0002 °C/month (0.002 °C/year)

SOFTWARE:

Seaterm V2 (Select SBE56 Temperature Logger)



User Interface:



CONNECTION

SBE 56 use either a micro USB or mini USB connector depending on the age of the instrument.

SETUP (AIMS IMOS)

HANDS-ON

- Unscrew head of SBE56 with Servicing Tool
- Install new **voltage tested** lithium AA battery 3.6v e.g Saft LS14500
- Install desiccant in the head of SBE56 (A small desiccant bag is appropriate if no capsules are available).

DIGITAL

- Set computer time to UTC, sync if required.
- Connect SBE56 with appropriate cable.
- Open Seaterm V2 software, select SBE56 Temperature Logger module
- Sample Period: 10 seconds
- Select 'Time set to *****'
- Select 'Clear Memory'
- Select 'Clear Events'
- Select 'New Battery Installed'
- Select 'Start sampling at *Desired Start Date*'
- Select "Update Configuration"
- Disconnect usb cable from instrument

BENCH TEST

- Start sampling for at least 10 samples
- Follow digital recovery procedure to recover bench test deployment
- Once satisfied, recheck and redo digital setup steps

DEPLOYMENT (AIMS IMOS)

- Inspect oring, replace if required – Apply silicone grease. Ensure instrument is screwed hand tight closed once setup is complete
- If deploying on mooring wire, fit clamp - test that screws are not stripped beforehand
- Wrap instrument in plastic shrink wrap, secure with duct tape **Do not cover sensor or head with tape or plastic**
- **Clearly** label instrument with serial number
- Attach doubled up stainless steel wire through end of instrument to be twisted onto mooring cable
- Apply zinc cream to probe end to reduce fouling
- **Picture of setup 56 pre-deployment**
- Ensure instrument is deployed facing sensor **down** on the mooring cable
- Screw clamp onto cable
- Twist stainless steel wire onto mooring cable – Make it tight enough to secure the instrument onto cable in case of clamp failure

RECOVERY (AIMS IMOS)

HANDS-ON

- Recover instrument from cable
- Find and photograph serial number to identify sensor
- Photograph sensor on instrument head *prior to cleaning* – Does not need to be particularly close – Just a clear photo to be cropped later

- Note any issues e.g. bent temperature probe
- Remove wrapping if any and clean instrument
- Place instrument into 'test tank' along with other instruments from its deployment to assess any time or sensor drifts

DIGITAL

- Ensure computer time is set to UTC, sync if required.
- Open Seaterm V2 software, select SBE56 Temperature Logger module
- Connect usb cable
- ** confirm with OGTECH sketchy method to get stop time and timedrift estimate **
- Click 'Upload' to recover deployment data
- Save the data in relevant trip and site data directory. Naming convention is to either leave as default or use shortened version of "SBE56_*Serial Number*_*Date Code*.xml" eg. "SBE56_0991_2305.xml"
- Click 'Export':
    - File Type: .cnv
    - Select file from dropdown list
    - Date Format: Seconds since 1-Jan-2000
    - Leave other options as default
- Click 'Plot' to review data
- Checks:
    - 'Events recorded' (Errors during sampling)
    - Sampling period remained as setup
    - Expected number of samples
    - Reasonable temperature profile
    - Start/Stop times as expected
    - Current date/time
- Record metadata and note any observed anomalies/observations

TROUBLESHOOTING

- If date and/or sampling interval keep resetting upon testing, check firmware version is V0.98+, otherwise firmware update may be necessary (due to Y2K bug).