Intelliwinch
automated winch system

The Intelliwinch is a compact size instrumentation winch steered with a PC based control unit that can be integrated with other sensors for fully automated operation.
The intelligent winch system is designed to arrive at the highest productivity when acquiring watercolumn data. Working with f.i. the RheoTune in/situ density-rheometry probe short turn-around times for nautical depth surveys becomes a reality.

Multibeam-, fluid mud survey and environmental monitoring stepped up the necessity for intensive probing over the watercolumn.

Though manual operation is in most cases possible it becomes less and less feasible. The rapid survey demand, cost for sea time and human factors generally favour a more automated approach.

The design focuses on fully automated measuring cycle with sufficient guarantees for probe safety. Speed over ground and echosounder nadir depth input are combined with operator set thresholds to account for external factors.

Automated selection winchspeed for lowering and measuring can be set.

TYPICAL APPLICATIONS
- Vertical rheometry/density profiling
- Sound velocity probing (continuous)
- Environmental sensors (OBS, CTD, etc.)

MAIN ADVANTAGES
- Variable speed up to 90 m/min
- Fully automated measurement cycle
- Safety settings for SOG, Slack wire, waterdepth, sensortilt
- Manual override for safety and quick profiling
  Interfaces with most professional survey packages:
- Hydro Pro, Hypack, Qinsy, PDS, Eiva

winch software - settings menu

winch control   winch handheld

SPECIFICATIONS

WINCH CONTROL

The winch control menu can be used to operate the winch. The switch on the handheld unit must be set to automatic. For correct use, a number of settings must be understood, and set correctly. The main-buttons for the winch control are Up, Down and Stop. The probe lowering can be stopped automatically by using the stopping criteria in the settings menu of the winch software. Cable Out menu: this box shows the length of cable that is unrolled from zero cable out.

Zero (Button) menu: The zero-cable out value is used as the standby position of the winch. So, after a measurement is stopped, and UP is pressed, the probe is brought back up to this zero point.

Speed menu: actual probe lowering speed as computed from the measured waterdepths. Depth menu: actual probe waterdepth. Note: in air it should indicate about 0.53 m.

WINCH SETTINGS

Max SOG: maximum Speed Over Ground. Measurements cannot be started when the drifting speed is too large.

High Speed: speed used to quickly go to measuring depth. After the measurement the same speed is used to bring the probe back to the surface.

Slow Speed: speed used below a certain depth in the expected silt layer

Break Path: vertical interval that is used to slow down the winch from quick lowering (with high speed) to slow lowering (slow speed).
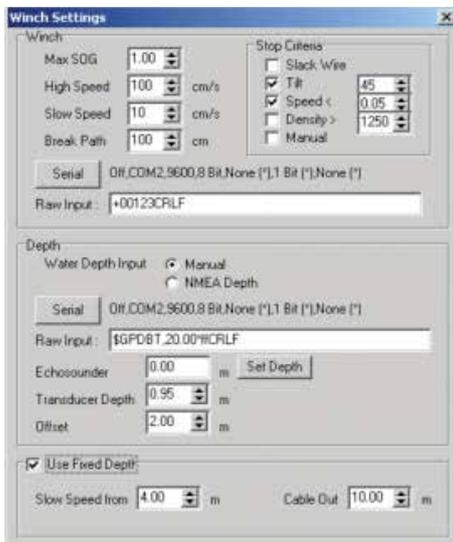
Stop Criteria

Slack Wire: stop when there is no more tension on the cable (info of 'slack' is received over comport).

Tilt: stop when the tilting (tipping over) exceeds... (in degrees)

Speed <:   stop when measured probe subsidence is slower then... (in m/s)

Density >:   stop when measured density exceeds...

Besides parameters like 'density' the winch software can be extended with other parameters at request of the customer.