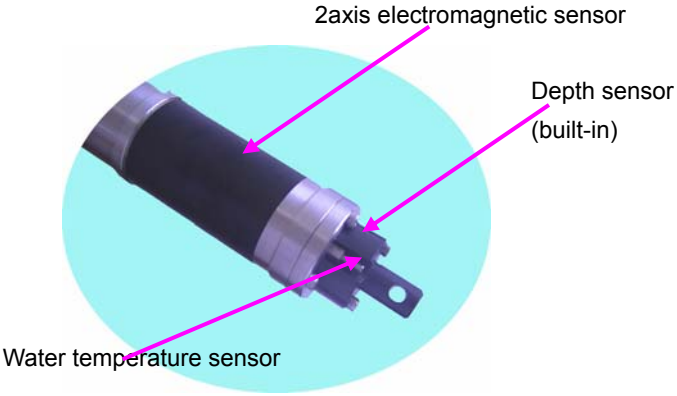
ALEC TECHNICAL EXPRESS December, 2005 No.8

New products, to be released in 2006

Alec Electronics Co., Ltd. always has about new 15 projects or so in its product development pipeline. We are pleased to introduce 4 new models that are almost completed and are going through rigorous field tests. These new units will be released in January 2006 and we are very proud to introduce them.

1. AEM213-D Electromagnetic Current Meter

The AEM213-D is a portable electromagnetic current meter capable of measuring flow velocity and direction in rivers, waterways, lakes, swamps as well as in the ocean. This new model was developed from the former compass equipped Alec Electronics ACM210-D. Alec has made numerous improvements which include making the instrument smaller. It features depth and temperature sensors as standard, which allows for vertical profiling of water temperature as well as confirming measurment depth. The display unit is equipped with 2MB of flash-memory and a calendar function that allows continuous accurate measurements with automatic data recording.



Sensor Specification

Cable	Kevlar-reinforced signal cable (φ6.5mm, std 50-m)
Dimension	φ42 L307 (mm)
Material	Titanium
Weight in air	about 1 kg (less vane)
" in water	about 0.65 kg (less vane)
Pressure -resistant	100m equivalent

Display Specification

Parameter	Current direction/velocity, Depth, Temperature
Memory	2MB Flash memory (capable of 180,000 data)
Power source	C battery x 4 (approx. 10 hrs)
Material	Epoxy
Waterproof grade	JIS4
Dimension	240 x 100 x 95 (mm)
Weight	1.05 kg (including batteries)
Others	Printer (optional)

Mounted sensors specification

Parameter	Method	Measuring range	Resolution	Accuracy
Velocity	Electromagnetic	0-250cm/s	0.1cm/s	±1cm/s or 2%
Direction	Hall Element Compass	0-359.9°	0.1°	±2°
Depth	Semi-conductor Pressure	0-50m	0.01m	±0.3%FS
Temperature	Thermistor	-5~40℃	0.01℃	±0.02℃

2. P-600, Printer for Compact-CTD

The newly released P-600 printer is designed for use in-situ with the Alec Electronics Compact-CTD (The miniature memory type Compact-CTD was introduced in Technical Express No.2). Up until now a PC was required to check data after retrieval in the field or to modify the deployment setting. Now, the new P-600 allows modification of the deployment setting; review of data or print out of data without a PC (Note that the Compact-CTD has built-in memory, so data transfer and processing can be done later with a PC). Basic instrument setup can be completed via the touch panel. It is easily operated and data can be transferred without opening the waterproof lid. Furthermore, since the P-600 has a built-in rechargeable battery, only it and the instrument are needed to make in-situ for observations. Real-time data can be viewed on the P-600's liquid crystal display when the communication cable is connected. This function is very useful and ensures that the instrument is recording just before deployment.

Logger specification

Parameter	Depth, Temp, Salinity, Chlorophyll, Turbidity	
Deploy.Mode	Depth trigger	Time trigger
Interval	0.1,0.2,0.5,1-m	0.1,0.2,0.5,1-s
Memory type	2M-byte flash memory	
Recording Capacity	at 1m pitch, 190 measurements for 100m profile	about 200,000 data
Power source	rechargeable lithium-ion battery (to be changed once a year) measurable 10 consecutive hours	
Weight	2.0 kg in air, 1.0 kg in water	
Dimensions	Sensor: 60mm dia x length 460 mm guard diameter 136 mm	
Material	Titanium	
Depth Rating	600-m	
Other	Calendar memory function	

Printer specification

Printing Items	Depth, Temp, Salinity, Chlorophyll, Turbidity
Method	Thermal printing (about 9000 lines/roll)
Setting	1. Printing items 2. Printing pitch
Communication Function	1. Mode setting (switching of mode, pitch and interval) 2. Date communication 3. Data transfer to PC 4. Real time monitoring
Other Function	Charges Compact-CTD when connected to AC100V
Power Source	Built-in rechargeable battery
Dimensions	300 x 200 x 200(H)
Weight	about 3.8 kg
Other	Waterproof

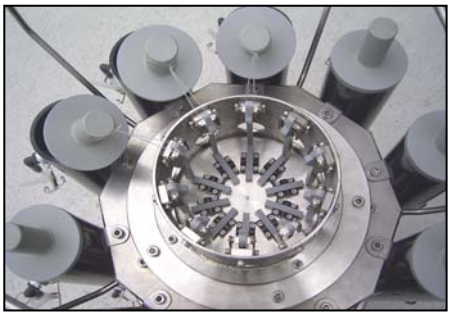
3. ATU6W-CMP, Low Concentration Turbidity Meter

As was announced in Technical Express No.4, Alec Electronics was going to work on a low concentration turbidity meter with recording capabilities following the completion of our super-high turbidity meter (Compact-HTW). The unit is now complete. The measurement principal is based upon infrared backscatter but its resolution is 0.0002FTU. The new unit features a wiper that sweeps the optical surface before each sample. This improves the repeatability of the measurements and makes long-term deployments possible. There are now 3 Alec Electronics Turbidity models available to suit every purpose. Please see specifications below for the unit that suits your needs.

Instrument	Low Turbidity Meter	Chlorophyll/Turbidity Meter			Super-high Turbidity Meter
Model name	ATU6W-CMP	ACLW-CMP			ATU3W-CMP
Parameter	Turbidity	Turbidity	Chlorophyll	Temperature	Turbidity
Sensor Type	Infrared back-scattering	Infrared back-scattering	Fluorescence light-scattering	Thermistor	Infrared back-scattering
Measurement range	0~10FTU Option 0~100FTU (Formazine)	0~1000FTU (Formazine)	0~400μg/L (Uranine)	-5~40℃	0~70000ppm (Kaolin)
Accuracy	±0.002 or ±2% of measured value (0.1~10FTU)Zero drift±0.002 FTU	±2% of measured value, Zero drift ±0.3FTU	±1% of linearity (0~200 μ g/l), Zero drift ±0.1 μ g/L	±0.05℃	±10ppm or ±5% of measured value Zero drift ±10ppm
Resolution	0.0002FTU	0.03FTU	0.01 μ g/L	0.001℃	1.3ppm
Memory type	2M-byte flash memory				
Capacity	179178 data				
AD Converter	16 bits digital conversion				
Measurement Mode	Continuous mode, Burst mode				
Measurement Interval	0.5,1,2,5,15,20,30 seconds				
Burst time	1~1440 minutes, adjustable per minute				
Sample No.	1*,10,15,20,30,60,120,180,240,300,600,1200 *ACL-CMP only				
Power	Lithium battery (14AH)				
Consumption	60mA	90mA		50mA	
Material	Titanium				
Dimensions/Weight	Dia 60mm x L 170mm / 1080g in air, 560 g in water				
Durability	200m depth				

Introducing a multi-bottle CTD water sampler from Alec Electronics !!

Alec Electronics Co., Ltd. has entered the field of multi bottle water samplers. We've adopted the Clorotec-CTD-Control-System for use in a stand-alone water sampler. The unit is compact, comes with ten 2 liter water samplers and is very reasonably priced. The unit records 5 parameters: temperature, salinity (conductivity), depth, chlorophyll and turbidity. It is designed with a built-in rechargeable battery and includes memory which means that no communication cable is required. The order of sampling is programmed through a PC. The unit records lid opening and closing in its memory and also records measurement data and water sampling depth data. The command for water sampling can be set either for depth trigger or time trigger. In the time trigger mode the sampler can be used in time series systems. The unit can be used in a small boat if equipped with a winch rated at 100 kg which means that a special winch is not required. The prototype will be completed soon and field tests will be take place from December 2005 to January 2006. Please contact us if you would like to join us in our field tests.



Water sampler specification

Sampling Method	Electromagnetic solenoid
Number of bottles	10
Capacity of bottle	2 L
Material	PVC(Sampler body)
	Titanium(Carousel)
	Stainless Steel(Guard cage)
Weight	less than 50 kg (Body only)
	less than 70 kg(Water included)

Memory specification

Capacity	2 M-byte flash memory
Recording	
time trigger	H/M/S, depth, temp, salinity, chlorophyll, turbidity
depth trigger	Starting time, depth temperature, salinity, chlorophyll, turbidity
Measuring interval	0.1,0.2,0.5,1-s (time trigger)
	0.1,0.2,0.5,1-m (depth trigger)

Mounting sensor specification

Parameter	Type	Measuring range	Resolution	Accuracy
Depth	Semiconductor	0~300m	0.01M	0.3% of FS
Temperature	Thermistor	-5~40℃	0.001℃	±0.02℃
Salinity	UNESCO formula	0~40	0.001	±0.03
	(inductive cell)	0~60mS/cm	0.001mS/cm	±0.02mS/cm
Turbidity	Infrared backscattering	0~1000FTU	0.03FTU	±2% of measurement
		(Formazine)		Zero drift ±0.3FTU
Chlorophyll	Fluorescent intensity	0~400μg/L	0.01μg/L	Linearity ±1%
				Zero drift±0.1μg/L

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