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## **DB-300-METO 3M METOCEAN DATA AQUASITION SYSTEM**



Photo courtesy of UK MetOffice

Designed originally to meet the exacting standards of the UK Met Office, and based upon the class II Mk II navigation buoy used by the UK Trinity House, the DB-300-METO is the largest in the range of specially designed data buoy platforms and is intended for open ocean deployment in deep water where instrumentation is required to be deployed on or near the surface and can be a permanent or temporary platform. These buoys will support service personnel at sea in their "crows nest" which includes a sensor ring for attachment of meteorological instruments and antennas with ladder access. The modular construction allows the buoy to be broken down for shipping.

Solar panels are fitted to a stainless steel sub frame to protect them from impact damage by large waves. A self contained solar powered navigation light is also provided.

The buoys are fitted with two through hull fairlead tubes (moon pools) so that ocean instruments can be deployed without cables being exposed over the hull and without recovering the buoy. Instruments are stored within the tube until the buoy is deployed, providing important protection during movement. Buoys can be fitted with lifting eye extensions which make the liftable using a single hitching point. The buoys have flat bottoms and are free standing.

Buoys may be fitted with a variety of sensor and telemetry packages. As standard, we utilise the

AXYS Technologies TRIAXYS wave sensor, the Vaisala WXT-520 Weather sensor, providing wind speed, direction, air temperature, R.H, Air Pressure and rainfall and the YSI-SonTek oceanographic sensor system providing current speed and direction, sea temperature, conductivity, depth, salinity (computed) Ph, DO, Turbidity.

Buoys are equipped with 12 channel GPS receivers for position monitoring and watch circle protection.

Data are acquired at regular intervals and sent ashore using GPRS, Satellite VHF/UHF or a combination of telemetry systems.

We also offer a smaller diameter hulls, 1.0 to 2.4m all with similar features

**PLEASE CONTACT US TO DISCUSS YOUR CHOICE.**

## Specifications:

### Buoy:

Diameter mm	3000	Solar Panels	Up to 7 x 50W
Overall Wt Kgs ex battery and payload	2350 MkI	Nav light	Self contained solar. Typ Gp5 ev 20 amber, range 4 nm in UK.
Sensor ring height at optimum ballast	2582 MkII	Radar reflector	Internal Echomax radar reflector giving peak RCS 24m2
Typical Mooring Chain	4,29 m	Fairlead deployment tube	2 Off 128mm ID, 160mm OD
Typical Anchor Weight Kgs	22-30 mm	Optimum mooring Wt / Ballast Kgs	7000 Kgs
Free board at optimum ballast	7000	Approximate reserve buoyancy	3900 kgs
	0.5m MkI		
	0.8m MkII		

### Vaisala WXT-520 sensor:

#### Wind speed

Speed	
Measurement range	0 ... 60 m/s
Accuracy	
0 ... 35 m/s	±0.3 m/s or ±3%, whichever is greater
36 ... 60 m/s	±5%
Direction	
Measurement range	0 ... 360°
Accuracy	±3°
Response time	251 ms

#### Liquid precipitation

Rainfall	cumulative accumulation after latest automatic or manual reset
output resolution	0.01 mm, 0.001 inches
accuracy	5%*
Rainfall duration	counting each ten-second increment when droplet detected
output resolution	10 s
Rain intensity	one-minute running average in ten-second steps
range	0 ... 200 mm/h (broader range with reduced accuracy)
output resolution	0.1 mm/h, 0.01 inches/h

#### Barometric pressure

Measurement range	600 ... 1100 hPa
Accuracy	±0.5 hPa at 0 ... 30 °C (+32 ... +86 °F) ±1 hPa at -52 ... +60 °C (-60 ... +140 °F)

#### Air temperature

Measurement range	-52 ... +60 °C (-60 ... +140 °F)
Accuracy at +20 °C (+68 °F)	±0.3 °C (±0.5 °F)

#### Relative humidity

Measurement range	0 ... 100 %RH
Accuracy	±3 %RH within 0 ... 90 %RH ±5 %RH within 90 ... 100 %RH

#### General

Operating temperature	-52 ... +60 °C (-60 ... +140 °F)
Storage temperature	-60 ... +70 °C (-76 ... +158 °F)
Input voltage	5 ... 32 VDC
Typical power consumption	3 mA at 12 VDC (with defaults)
Housing	IP65
Housing with mounting kit	IP66
Electromagnetic compatibility IEC standards	complies with EMC standard EN61326-1; Industrial Environment IEC 60945/61000-4-2 ... 61000-4-6



- Due to the nature of the phenomenon, deviations caused by spatial variations may exist in precipitation readings, especially in short time scale and especially on floating platforms. Rainfall measurements should be treated with caution and may be disabled at the web interface if required. The accuracy specification does not include possible wind induced error.

## TRIAXYS Wave direction Sensor:

Physical Description	
Height/Length/Depth	35cm x 35cm x 20cm (13" x 13" x 6")
Weight	6 Kg (14 lb)
Material	Stainless Steel/Aluminium
Sensors/Processor	Flexure suspension servo (Range ±2g)
Accelerometers	Piezoelectric vibrating gyroscope (Maximum angular velocity ±80°/s)
Rate	
Compass	Microprocessor controlled fluxgate (Accuracy ± 0.5°)
A/D and sampling frequency	8 channel 14 bit at 4 Hz
Microprocessor	PC104 and 80C552
Power Requirements	11.5 to 13.5 VDC, ~0.15 amps (1 amp peak load)
Communications	RS 232 (3 wire), 9600, 8, N, 1
Resolution/Accuracy	



	Range	Resolution	Accuracy
Heave	±20 m	0.01 m	Better than 2%
Period	1.50 to 33.0 seconds	0.05Hz	Better than 2%
Direction	0 to 360°	1°	±1°

## YSI Multi-Parameter Sonde:

Optical Dissolved Oxygen •	% Saturation		whichever is greater; 200 to 500%: ±15% of reading
Optical Dissolved Oxygen •	mg/L		whichever is greater; 20 to 50 mg/L: ±15% of reading
Conductivity ••	0 to 100 mS/cm	0.001 to 0.1 mS/cm	±0.5% of reading + 0.001 mS/cm
Salinity	0 to 70 ppt	0.01 ppt	±1% of reading or 0.1 ppt, whichever is greater
Temperature	-5 to +60°C	0.01°C	±0.15°C
pH	0 to 14 units	0.01 unit	±0.2 unit
Depth Shallow	0 to 30 ft, 9.1 m	0.001 ft, 0.001 m	±0.06 ft, ±0.02 m
Turbidity •	0 to 1,000 NTU	0.1 NTU	±2% of reading or 0.3 NTU, whichever is greater *



## SonTek Argonaut-MD Acoustic Current Meter:

Velocity Range		+/- 6m/s	Compass/Tilt Resolution	0.1°
Accuracy	+/- 1% of measured velocity,	+/- 0.5 cm/s	Accuracy Heading	+/- 2°
Resolution		0.1 cm/s	Accuracy Pitch and Roll	+/- 1°



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Data Buoy Sensor Interface - PART

This list currently shows logged entries for (08/01/2010). All times are in GMT. Use the drop down boxes below to view data from other dates. Click the 'Google maps' link next to the buoy name to view the last known location of the buoy. Click [here](#) to return to the main menu.

Select a day to view:

Buoy name: Partrac Met 1 (89441000300656745787) (Google maps)

Time (GMT)	Date	Latitude	Longitude	Wind Direction Av. (°)	Wind Speed Av. (m/s)	Max Wind Speed (m/s)	Air Temp (°C)	Humidity (%RH)	Air Pres. (hPa)	Rain Intensity (mm/h)	Buoy bearing (°)	Battery Voltage (V)	Case Temp. (°C)
15:30:00	08/01/10	56°15.7079N	14.0457W	338	5.7	7.4	2.5	66.6	1028.2	0.0	078	14.31	8.2
15:00:00	08/01/10	56°15.7151N	14.0396W	338	6.0	8.6	2.3	66.7	1028.1	0.0	032	14.27	8.2
14:30:00	08/01/10	56°15.7100N	14.0459W	338	7.0	9.0	2.3	70.7	1027.9	0.0	116	14.27	8.2
14:00:00	08/01/10	56°15.7095N	14.0593W	338	7.6	9.8	1.9	73.2	1027.7	0.0	044	14.23	8.2
13:30:00	08/01/10	56°15.7133N	14.0434W	332	8.0	10.0	2.0	77.9	1027.7	0.0	355	14.27	8.2
13:00:00	08/01/10	56°15.7105N	14.0413W	326	8.4	10.8	2.2	73.8	1027.4	0.0	181	14.37	8.2
12:30:00	08/01/10	56°15.7084N	14.0412W	320	8.2	10.1	2.0	79.0	1027.7	0.0	264	14.27	7.7
12:00:00	08/01/10	56°15.7134N	14.0400W	315	8.1	10.4	2.4	75.7	1027.8	0.0	301	14.31	7.7
11:30:00	08/01/10	56°15.7325N	14.0239W	320	7.5	9.7	2.3	81.4	1027.9	0.0	248	14.82	6.7
11:00:00	08/01/10	56°15.7044N	14.0450W	326	7.7	9.5	2.0	79.6	1027.9	0.0	056	14.76	5.7

Specifications subject to change without notice

DB-300-METO iss B Sept 2009