The MIDAS ECM is a highly versatile point current meter, designed with durability and ease of deployment in mind. Valeport’s latest electronics architecture allows multiple additional sensors, and a variety of communications options, making it one of the few multi-parameter current meters that allows real time operations over several thousand metres of cable, as well autonomous deployments. A choice of Titanium or Acetal housing gives depth rating up to 5000m.

**Sensors**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>Type</th>
<th>Range</th>
<th>Accuracy</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>Valeport EM</td>
<td>0 – 5m/s</td>
<td>+/-1% reading</td>
<td>0.001m/s</td>
</tr>
<tr>
<td>Direction</td>
<td>Fluxgate</td>
<td>0 – 360°</td>
<td>+/-&lt;1°</td>
<td>0.001°</td>
</tr>
<tr>
<td>Pressure</td>
<td>Piezo-Resistive</td>
<td>Up to 500Bar</td>
<td>+/-0.01%</td>
<td>0.001%</td>
</tr>
<tr>
<td>Temperature</td>
<td>PRT</td>
<td>-5 - +45°C</td>
<td>+/-0.005°C</td>
<td>0.002°C</td>
</tr>
<tr>
<td>Conductivity</td>
<td>Inductive Cell</td>
<td>0 – 80mS/cm</td>
<td>+/-0.01mS/cm</td>
<td>0.002mS/cm</td>
</tr>
<tr>
<td>Turbidity</td>
<td>SeaPoint STM</td>
<td>0 – 2000FTU</td>
<td>+/-2%</td>
<td>0.002%</td>
</tr>
</tbody>
</table>

**Data Acquisition**

- Continuous: Regular output from all sensors at 1, 2, 4 or 8Hz.
- Burst: Regular sampling pattern, where instrument takes a number of readings, then sleeps for a defined time.
- Conditional: Instrument sleeps until a selected parameter reaches a set value.
- Delay: Instrument sleeps until predefined start time.

**Communications**

The instrument will operate autonomously, with setup and data extraction performed by direct communications with PC before and after deployment. It also operates in real time, with a choice of communication protocols for a variety of cable lengths, all fitted as standard and selected by pin choice on the output connector:

**Standard**

- RS232: Up to 200m cable, direct to serial port via USB adapter
- RS485: Up to 1000m cable, addressable half duplex comms

**Optional FSK**

- 2 wire power & comms up to 6000m cable (cable dependent)
- Baud Rate: 2400 - 115200 (FSK fixed at 19200, USB 460800)
- Protocol: 8 data bits, 1 stop bit, No parity, No flow control

**Memory**

The MIDAS ECM is fitted with 16MB solid-state non-volatile FLASH memory. Total capacity depends on sampling mode; continuous & burst modes have a single time stamp at the start of the file, trip mode (profiling) stores a time stamp with each reading. A single line of current data uses 10 bytes, with each additional parameter taking 2 bytes and a time stamp uses 7 bytes. The examples are for an instrument measuring speed, direction and CTD.

- Continuous: >520,000 data points
- Profile: >360,000 data points (>15 profiles to 5000m).

**Electrical**

| Internal | 8x D cells, 1.5V alkaline or 3.6V lithium |
| External | 9 – 30V DC |

**Power**

- 1.7W (sampling), <1mW (sleeping)
- >100 hours operation (alkaline)
- >250 hours operation (lithium)

**Connector**

- SubConn MCBH10F

**Physical**

- **Materials**: Titanium or Acetal housing, polyurethane sensor components, stainless steel (316) cage
- **Depth Rating**: 5000m (titanium), 500m (acetal)
- **Instrument Size**: 150mmØ x 700mm long
- **Cage Size**: 210mm Ø x 732mm long
- **Weight**: 20kg - Titanium
- **Shipping**: 130 x 37 x 32cm, 38kg - Titanium
- **Weight (in cage)**: 130 x 37 x 32cm, 34kg - Acetal

**Software**

System is supplied with DataLog Express Windows based PC software, for instrument setup, data extraction and display. DataLog Express is license free.

**Options**

- 04000565: Pressure sensor (specify range)
- 0400012: PRT Temperature sensor
- 0400011: Conductivity sensor
- 0400021: Turbidity sensor
- 0400002: 16 Mbyte memory upgrade (max 64 Mbyte)
- 0400EA5: FSK modem adapter

TB0400FSK: Probe board set required for FSK operation

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