



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 multiparameter 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

The MIDAS ECM uses Valeport's robust 11cm discuss electromagnetic current sensor, allied to a flux gate compass (calibrated for <1° accuracy anywhere in the world) and a choice of optional additional sensors.

| Sensor | Type | Range | Accuracy | Resolution |
|--------------|----------------|--------------|-------------|------------|
| Current | Valeport EM | 0 - 5m/s | ±1% reading | 0.001m/s |
| Direction | Fluxgate | 0 - 360° | ±<1° | 0.001° |
| Pressure | Strain Gauge | Up to 500Bar | ±0.04% | 0.005% |
| Temperature | PRT | -5 to +35°C | ±0.005°C | 0.002°C |
| Conductivity | Inductive Cell | 0 - 80mS/cm | ±0.01mS/cm | 0.002mS/cm |
| Turbidity | Seapoint STM | 0 - 2000FTU | ±2% | 0.002% |

Other sensors also available - please consult Valeport.

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.
- Trip/Profile:** Data is output as a chosen parameter changes by a set value, usually Pressure for profiling.
- 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, some fitted as standard and selected by pin choice on the output connector:

Standard

- RS232** Up to 200m cable, direct to serial port.
- RS485** Up to 1000m cable, addressable half duplex comms
- RS422** Up to 1500m cable, addressable full duplex comms

Options

- FSK** 2 wire power & comms up to ~3500m cable (maximum cable length depends on cable specification - consult Valeport for confirmation)
- USB** For rapid upload or laptops without serial port
- Baud Rate:** 2400 - 115200 (FSK fixed at 19200, USB 460800)
- Protocol:** 8 data bits, 1 stop bit, No parity, No flow control

Electrical

- Internal:** 8 x D cells, 1.5v alkaline or 3.6v lithium
- External:** 9 - 30vDC
- Power:** 1.7W (sampling), <1mW (sleeping)
- Battery Life:** >100 hours operation (alkaline)
>250 hours operation (lithium)
- Connector:** Subconn Titanium MCBH10F

Memory

The MIDAS ECM is fitted with 8Mb 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 using 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).

Physical

- Materials:** Titanium or acetal housing, polyurethane & acetal sensor components, stainless steel cage
- Depth Rating:** 5000m (Titanium), 500m (acetal)
- Instrument Size:** 150mmØ x 750mm long
- Weight:** 20kg (titanium), 12kg (acetal)
- Shipping:** 860 x 530 x 310mm, 36kg (titanium), 28kg (acetal)

Software

System supplied with DataLog 400 Windows based PC software, for instrument setup, data extraction and display. DataLog 400 is licence free.

Ordering

- 0808007 MIDAS ECM Current Meter (titanium) measuring speed and direction, 3m communications lead, DataLog 400 software, manual and transit case.
- 0808008 MIDAS ECM Current Meter (acetal) measuring speed and direction, 3m communications lead, DataLog 400 software, manual and transit case.
- 0400014 Strain gauge pressure sensor (specify range)
- 0400012 PRT Temperature sensor
- 0400011 Conductivity sensor
- 0400021 Turbidity sensor
- 0400002 8 Mbyte memory upgrade (max 32 Mbyte)
- 0400005 FSK modem adaptor (and instrument pcb)
- 0400029 RS485 communications adaptor
- 0400030 RS422 communications adaptor

As part of our policy of continuing development, we reserve the right to alter at any time, without notice, all specifications, designs, prices and conditions of supply of all equipment.

Datasheet Reference Number: MIDAS ECM v1A