

AML1 Advanced Multi-function Logger

The AML1 Advanced Multifunction Logger has been designed with electronics divided into a module that manages power and communication and a module that manages measurements and recording of data. It is a platform which allows new instruments and devices to be quickly developed on top of proven infrastructure.

AML1 Advanced Multi-Function Logger

INPUTS:

- 10 autoranging analogue (24 bit)
- 2 digital pulse
- RS485 half duplex
- I²C direct connection of digital sensor IC.
- SDI-12
- Wireless sensors

OUTPUTS:

Battery, regulated and switchmode power supplies for powering sensors

POWER SUPPLY:

Internal rechargeable lithium battery
Directly powered by solar panel
Non-polarised input

COMMUNICATIONS:

2.4 GHz low power wireless or USB
GSM modem to internet



ICT Environmental Systems

ICT environmental systems have been designed to provide seamless solutions from the measurement point to wherever the data is needed, whether directly to a SCADA or PLC system, via Modbus, or to a mobile phone or iPad via the internet.

An extensive range of precision sensors, instruments and data loggers is complemented by a comprehensive suite of communications solutions and software providing system and data management, viewing and analysis.

Equipment installed on site can be automatically discovered and added to the network.

AML1 Data Logger Specifications

The ICT AML (Advanced Multifunction Logger) is capable of performing a broad range of analogue and pulse / counter type measurements. It has 10 analogue inputs (10 single ended, or 5 differential), 2 pulse inputs, as well as RS485, SDI12, i²c, USB and 2.4GHz wireless interfaces. It can record up to 64 separate channels with 24bit precision. It also monitors and records its own power supply voltages and currents, temperature, air pressure and wireless signal strength.

AML Distribution Boards

In order to streamline the application of the AML1, ICT International can provide application specific distribution boards that target a known set of sensors.

The AML1 automatically recognises the distribution board and configures the inputs and internal logging to suit. If a different type of distribution board is plugged in, the AML1 configuration will again change. This allows a very wide range of sensor types and signal levels to be interfaced to the AML1. The AML1 does NOT require user programming or knowledge of programming languages to configure it to start logging.



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Virtual channels, allowing scripts to be entered, provide mathematical and logical functions. Inbuilt functions such as Evapotranspiration calculation based on the Penman-Monteith equation, VPD calculation, and Correction of barometric pressure for altitude are standard.

Each channel can produce an alarm based on a user configurable condition.

Each channel can be logged at a different interval, from 1 second to 1 hour + up to 3 user entered schedules.

AML1 Data Storage and Communication with MCC Hub and Internet

All data recorded by the AML1 is stored on a MicroSD card in .CSV format. Maximum card size is 32GB. The MicroSD card is formatted as FAT32. The AML1 is able to communicate with the ICT Telemetry Hub via 2.4GHz low power radio with CSV files from the AML1 synchronised with CSV files in the Hub. The Hub can receive data from a network of ICT Instruments and other Hubs. A Telemetry Hub can be fitted with a 3G, Wi-Fi, Satellite or Bluetooth modem to allow it to send data to the internet.

The Telemetry Hub can be configured with an RS485 port that can use the Modbus protocol to interface with a range of PLCs and SCADA systems.

The ICT AML1 and the Hub are both powered by wide temperature range Lithium Ion batteries. The AML1 can run in full power mode, constantly taking measurements, for use with control systems, or in power saving mode where it is asleep between measurements.

The ICT AML1 and the Hub can also be powered from mains by a 24V wall charger or a solar panel in remote applications. The AML1 has a 10-30 Volt DC power input for direct connection to a solar panel.

The AML1 standard enclosure is IP67. The standard MCC Hub enclosure is IP65.

Distribution Board Supplied - Soil Column Studies

- 5 x differential inputs. 5 x ICTGT3-15 Tensiometer Transducer, Range: -100 to +100 kPa. Cable length: 5m can be connected. The ICTGT3-15 transducer is typically connected to the ICT2100FNG Specialised Tensiometer for soil column measurements
- 60 x SDI-12 inputs
 - This means up to 60 x MPS-6 or in fact any other SDI-12 sensor that may be supplied typically by Decagon or with Campbell Scientific data logging systems
- Digital inputs (x2) for devices such as rain gauge or counters
- RS485 input for sensors or interface with a range of PLCs and SCADA systems

Note: The sensors will output in units of physical values, kPa in this instance, as the calibration function is entered into the AML1.



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SPECIFICATIONS

POWER

Internal Battery Specifications

4.8Ah Lithium Polymer, 4.20 Volts fully charged

External Power Requirements

Bus Power 8-30 Volts DC, non-polarised, current draw is 340mA maximum at 17 volts per logger

USB Power 5 Volts DC

Internal Charge Rate

Bus Power 60mA – 700mA Variable internal charge rate, maximum charge rate of 700mA active when the external voltage rises above 16 Volts DC

USB Power 100mA fixed charge rate

Internal Power Management

Fully Charged Battery 4.20 Volts

Low Power Mode 3.60 Volts – Instrument ceases to take measurements

Discharged Battery 2.90 Volts – Instrument automatically switches off at and below this voltage when no external power connected.

Battery Life varies

- With a recommended power source connected, operation can be continuous.



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ACCESSORIES



CH24 - 24 Volt Power Supply

The CH24 is a 100 - 240Volts AC Mains to 24Volts DC power supply adapter; capable of outputting up to 2.5Amps. For most ICT Instruments.



Frame Mount



MCC Mini

The MCC Mini is a simple to use USB Serial to Radio Communications device providing a high level of integrity in data transfers. Its miniature design and minimalist approach make it an attractive solution for portable computers and less intrusive workstation setups where space and weight are of concern.



SP22 - 20 Watt Solar Panel

SP22 - 20 Watt Solar Panel with 4m cable suitable for powering our SFM1, PSY1, HFD, SOM1, SMM1, etc.

