



Associated Electronic Services Pty Ltd

## EMU - Environmental Monitoring Unit Product Specification



### **GENERAL**

The Environment Management Unit (EMU) is a self contained module designed for the monitoring of environmental parameters such as the presence of smoke, temperature and pressure within aircraft Commercial Off The Shelf (COTS) equipment, that could affect the safe operation of the COTS during a flight mission.

The EMU can control power to external devices in a fixed sequence, and logs power up and down sequences as well as any alarm conditions. External communications is provided to other equipment through hard wired connections and Ethernet LAN.

### **PHYSICAL INTERFACE**

The EMU is contained in a machined box of external dimensions of 150mm x 115mm x 60mm with flanges that allow it to be mounted.

It has a single RJ-45 socket for the Ethernet connection, plus a 50 way and a 25 way male D type connectors through which all signals and power are fed respectively.

Internally generated heat is dissipated by natural convection and conduction with a maximum surrounding air temperature of 50C.

The pressure sensor is mounted within the EMU case therefore the case is not airtight and so is open to the pressure outside.

The EMU continuously scans for faults, status and alarms, and generates a continuous time stamped non-volatile log in EEPROM, for an accumulated total period of 650Hrs.

Set points and tables for alarm conditions are stored in firmware and are not user configurable.

## Specifications

### **Power Requirements**

- External, Fused, Z Grade, +28VDC (+18V to 32V DC), Current draw <250mAmax.

### **Inputs**

- Smoke Alarm
- Temperature (External, platinum sensors, 4 max.) Range = -10 to 50C +/-2C
- Pressure (Internal sensor) Range = 0.697 to 1.05 bar +/-0.01bar
- Fan Alarm Status
- Power On/Off Logic
- Smoke Alarm, Smoke Alarm Fault and Smoke Alarm Test

### **Outputs**

- 7 NO Relay contacts – assigned to contactor control, Pressure limit LED, Temp Margin LED, Temp Limit LED, Maintenance Status LED
- 2 CO Relay contacts - unassigned

### **User Interface**

- For Log management operations.

### **Connectors**

- RJ45 – Ethernet 802.3 10Mbps, static IP and fixed mask. Stored in firmware, factory change.
- D25J - Power
- D50J – I/O

### **Cooling**

- Natural convection and conduction (Max air temp of 70C)

### **Size**

- External 150mm x 115mm x 60mm

### **Mounting**

- Side flanges. Capable of sustained 3G UP acceleration, 9G Forward, 1.5G side, 4.5G down. Peak 6G for 11mSec, operation guaranteed, Peak 20G for 11mSec, operation not guaranteed.

### **Weight**

- 0.8 Kg

### **Environment**

- Temperature – Storage = -20C to 75C, Operation = -8C to 51C, variation within 2C/Min over the range 1-49C
- Altitude – 0 to 35,000 MSL
- Humidity – 10% to 90% non-condensing
- Fungus – No fungus supporting materials utilised.
- Pressure – to 35,000Ft
- Decompression – 27,000ft max altitude change within 15 seconds.