

# SOGEC-Analog Input Module (AIM)

The SOGEC Analog Input Module (AIM) is designed specifically for data acquisition in industrial cathodic protection systems.

The AIM provides four, high-impedance, analog signal inputs controlled by an industrial microprocessor that manages the acquisition and non-volatile storage of all parameters and enables RS485 communication functions.

The AIM provides a common, versatile, and networkable data acquisition interface for a wide variety of Cathodic Protection operation parameters (e.g. reference electrodes, shunts, etc.)

The AIM communicates via an RS485 serial connection which may be stand-alone or controlled via connection to SOGEC UCI controller.



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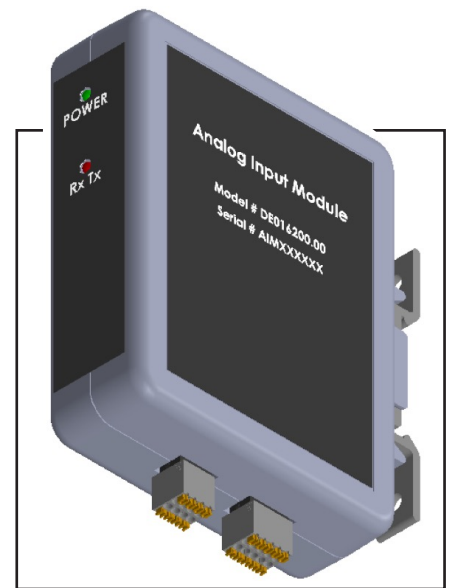


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## **Aim Features**

### **Analog Input Interface**

- Four (4) fully-differential, transient-protected, high-impedance analog inputs for Reference Electrodes, Shunts, or any other parameter.

### **True Simultaneous Potential Measurements**

- Each input has independent buffering and analog conversion, so all four inputs may be measured simultaneously (rather than sequentially via multiplexed inputs). Multiple AIMs on a common RS485 communications link enable true simultaneous measurement of hundreds of reference electrode inputs.

### **User-defined 'Instant Off' Delays**

- Users may define exactly when 'Instant Off' potential measurements are captured after system de-energization. Coupled with the simultaneous potential measurement capability, this enables truly synchronous instant off measurements from all reference electrodes in the system.

### **Internal Memory / Data Storage**

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### **RS-485 Interface**

- The built-in RS-485 standard protocol communications port enables users to remotely access, log, monitor and adjust AIM operation using a comprehensive command set.

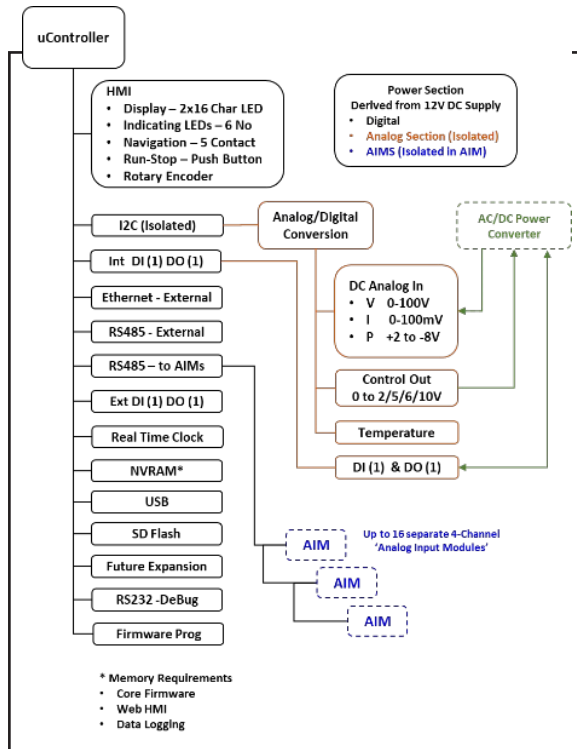


| Parameter          | Description / Rating / Compliance                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Microcontroller    | Flash-based high performance 32-bit ARM Cortex-M0+ processor                                                                                                                                                  |
| Memory             | High performance serial based 32Mbit/4Mbyte Flash memory                                                                                                                                                      |
| Real Time Clock    | Battery-backed crystal-based Real Time Clock                                                                                                                                                                  |
| RS485 Port         | Half-duplex RS485<br>Configurable Baud Rate - 9600, 19200, 57600, or 115200.<br>User assigned addressing 1 to 255 (0 reserved for Global Commands)                                                            |
| A/D Conversion     | Dedicated fully differential 16-Bit Sigma-Delta Converter for each analog input (i.e. not multiplexed) providing true-simultaneous data acquisition on all analog inputs. 50/60Hz & 100/120Hz noise filtering |
| Analog Input       | User Selectable ranges: -2 to +10VDC, -2 to +4VDC, 0 to +0.2VDC<br>Transient-protected high-impedance inputs >20M $\Omega$                                                                                    |
| Internal Reference | Built-in ultra-stable 2500mV internal calibration reference provides continuous correction to analog processes                                                                                                |
| Power Supply       | 12VDC / 100mA (Max) – Isolated on board                                                                                                                                                                       |
| Wiring             | All wiring to UCI is via industrial quick-mate modular connectors                                                                                                                                             |



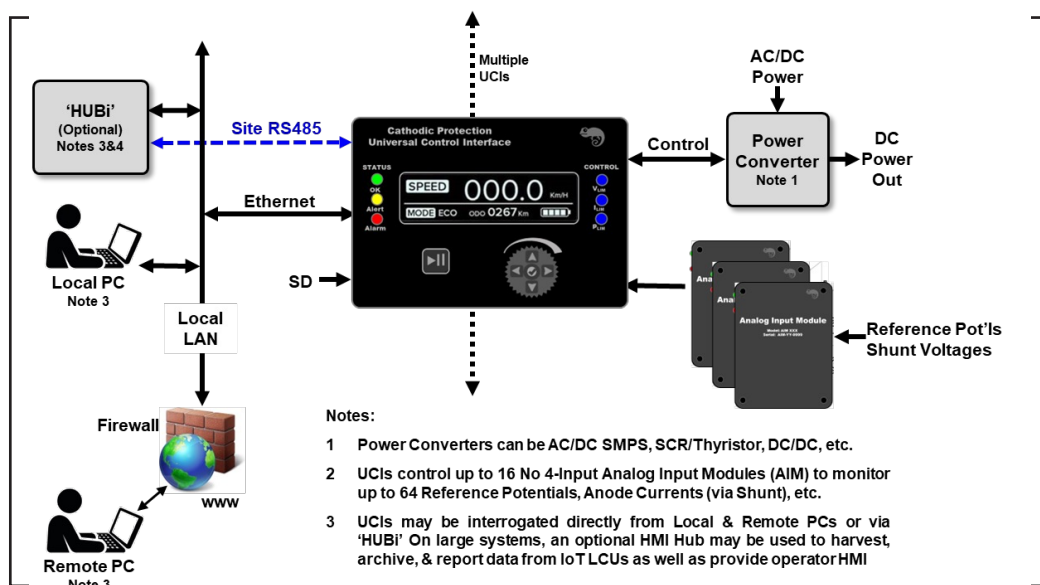
## AIM Functional Block Diagram

Create Block diagram similar to that depicted for UCI below)



## AIM Typical Network Arrangement

(An updated version of below – highlighting AIM. Can also show AIM connected directly to RS485 rather than thru UCI)





## UCI Physical Dimensions

Dimensioned drawings here that identify the ports, connector types, pinouts, etc.

