

AIM-9440 Analog Input Module



Gateway Expansion for Legacy Hardware

The AIM-9440 Analog Input Module (AIM) is an accessory panel for ePAQ-94XX Multifunction Gateway products used within the automated substation. It enables the Gateway to accept transducer generated analog values and bring them into your enterprise SCADA system.

Each AIM unit can accept 32 analog input signals configured as either +/- 0-1 mA, +/- 0-20 mA current loops, +/-5Vdc or +/-10Vdc voltage inputs. Additional AIM units can be added to provide the number of analog inputs needed within the substation. Transducer outputs are terminated directly to the AIM itself and, after A/D conversion, the results are transmitted to the substation ePAQ unit via RS 422 communications lines.

Mounted in a 6.35" X 19" circuit board assembly, the AIM can be locally "stacked" or distributed to provide the number of inputs needed within the substation at the locations desired. Analog inputs are isolated from logic circuitry to provide for a module that is "substation hardened" against environmental effects, such as electrical spikes and surges.

Each AIM module includes front panel LEDs to provide a local indication of communications activity (TX/RX), as well as power and AIM microprocessor "heartbeat"; thus, provides for quick diagnostics and easier maintenance.

- **19" Rack Mounted configuration**
- **32 Analog Inputs per AIM**
- **Module Inputs:** +/- 0-1 mA, +/- 0-20 mA, +/- 5Vdc, +/-10Vdc
- **Resolution:** 16 Bits resolution at 120 samples per second, per channel
- **Input Connections:** 5 mm Terminal Blocks (#12 AWG)
- **Maximum Expansion:** up to 8,192 inputs (256 analog input modules)
- **Communications:** Each AIM has two (2) four-wire RS 422 communication Lines. (for Data Pass-through or Redundancy)
- **AIM Units may be configured in a Redundant Architecture for Automatic Failover**
- **Power:** 24 VDC (supplied by ePAQ)

SPECIFICATIONS

Analog Inputs	32 analog inputs per AIM-9440 Maximum expansion is 256 AIM Units (8,192 analog inputs)
Sample Rate	120 samples per channel, per second
Filtering	Differential mode noise rejection: 60 dB Common mode noise rejection: 70-90-dB Additional rejection filtering for 50 Hz or 60 Hz noise is performed within unit software
Isolation	Inputs are isolated from logic circuits using optical isolation and DC-DC Converters Minimum 2KV RMS (analog input to logic isolation) SWC/fast transient – IEEE C. 37.90.1, IEEE Standard 1613-2009 Power line surge – IEC 1000-4-2 Electromagnetic emissions – FCC Part 15, Class B Electromagnetic compatibility – ED 61000-4-3 Dielectric rating – 1000 Vdc, on all inputs Overload rating 500 Vdc (common mode to ground)
Configuration	The operating firmware of the AIM may be field configured via the RS-422 line from the master ePAQ Substation Gateway, thus, eliminating site visits for firmware changes and updates.
Baud Rate	Up to 4 Mbps
Ports	Two (2) four wire RS-422 ports for serial communications with ePAQ Substation Multifunction Gateway Second RS-422 ports will allow multiple AIMS to be linked together in parallel or to allow multiple AIMS to share the same RS-422 channel to the Gateway Unit.
Power	24 Vdc +/- 20% Power is via the ePAQ Substation Gateway RS-422 line, thus eliminating the need for separate power cabling
LED Indicators	Three (3) LED front panel indicators to monitor power, communications and central processor health
Physical	6.35"H x 18.87"W
Environment	-40° to +75°C, (-40° to 175°F) 0-95% humidity (non-condensing)

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