

SIM-9450 Status Input Module



Gateway Expansion for Legacy Hardware

The SIM-9450 Status Input Module (SIM) is an accessory panel for ePAQ-94XX Multifunction Gateway products used within the automated substation. It enables the Gateway to accept hardwired status inputs and brings them into your enterprise SCADA system.

Each SIM unit can accept 64 Status input signals utilizing a user provided positive or negative polarity wetting voltage of 12 Vdc, 24 Vdc, 48 Vdc, or 125 Vdc. Additional SIM units can be added to provide the number of status inputs needed within the substation. Digital input status points are terminated directly to the SIM itself and the results are transmitted to the substation ePAQ gateway unit via RS 422 communications lines.

Mounted in a 6.35" X 19" circuit board assembly, the SIM can be locally "stacked" or distributed to provide the number of inputs needed within the substation at the locations desired. Status 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 SIM module includes front panel LEDs to provide a local indication of communications activity (TX/RX), as well as power and SIM microprocessor "heartbeat". Each status input is provided with its own indication LED as well; thus, providing for rapid installation, diagnostics and maintenance.

- **19" Rack Mounted configuration**
- **64 Status Inputs per SIM**
- **Status Wetting Voltage:**
 - 12 Vdc
 - 24 Vdc
 - 48 Vdc
 - 125 Vdc
- **Wetting Polarity: Positive or negative keying accepted**
- **Status Connections: 5 mm plug-in Terminal Blocks (#12 AWG)**
- **Maximum Expansion: up to 16,384 status inputs (256 SIM units)**
- **Communications: Each SIM has two (2) four-wire RS 422 communication lines. (for Data Pass-through or Redundancy)**
- **SIM Units may be configured in a Redundant Architecture for Automatic Failover**
- **Power: 24 VDC (supplied by ePAQ)**

SPECIFICATIONS

Analog Inputs	64 status inputs per SIM-9450, 4 mA per status point Maximum expansion is 256 SIM Units (16,384 status inputs)
Scan Rate	1 msec per point. Sequence-of-Events (SOE) capability available (SCADA protocol dependent)
Filtering	Debounce filtering provided within SIM firmware
Isolation	Inputs are isolated from logic circuits using optical -couplers and DC-DC Converters Minimum 5KV RMS (status 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 SIM 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 SIMS to be linked together in parallel or to allow multiple SIMS 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	LED front panel indicators to monitor local power supply voltage, communications and central processor health One LED is also provided to indicate status of each status input
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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