SER^NET

DISTRIBUTED – NETWORK ENABLED SEQUENCE OF EVENTS RECORDER

ROCHESTER
SCIENTIFIC COLUMBUS

EVENT RECORDER

SER^NET is an advanced alarm management system that captures critical alarms with 1 msec precision in the sequence they occur for quick determination of the root cause. The SER^NET can display your alarms in a WEB Browser for easy analysis and provides real time data outputs via serial and Ethernet ports, making it ideal for monitoring your critical alarms from substation switchgear, transformers, turbines, boilers, pumps, motors, UPS, HVAC, building security and more.

Each SER^NET product can work as a stand-alone system monitoring up to 48 digital inputs or multiple SER^NET units can be networked together to form a larger system with all events consolidated in one chronological list as they occur. A single WEB browser screen can display alarms from several SER^NET units, making it easy to see the interaction between different equipment types or processes.This flexibility makes it easy to analyze alarms across an entire site or even across multiple sites for a larger system view - much better than piecing together a list of alarms from multiple devices.

The SER^NET WEB browser includes sorting and filtering functions to help with the root cause analysis. In addition to displaying alarms, the WEB browser is also used for all configuration details and downloading of events via CSV or COMTRADE formats.

The SER^NET can transmit alarms as they occur with Modbus and DNP protocols. Email notification of critical alarms can be provided along with SNMP for network management.

Each SER^NET unit can store 40,000 events in memory for long term data storage and the unit can be supplied with a single or dual redundant hot-swappable power supply for added reliability.

FEATURES AND BENEFITS

- Capture alarms to 1 msec precision across entire system
- 40,000 event storage per unit
- WEB browser configuration and display of alarms
- Network multiple units together for "big picture" view
- Time sync via IRIG-B and NTP
- Modbus, DNP, ASCII, BACnet protocols
- LED indicator per alarm
- Email notification
- Meets new NERC SER requirements
- 19" rack and surface mounting

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SPECIFICATIONS

INPUT

System Capacity
• 16, 32, 48 inputs per unit
• 3,072 inputs per SER system
Field Contacts
• Normally Open (N.O.) or Normally Closed (N.C.)
• Wetted (voltage supplied) or dry (voltage free) contacts

Field Contact Voltage Range
• 20-150 VDC (auto-select)

Input Isolation
• Each input is optically isolated

Input Response
• 1 millisecond to 60 seconds
Responds to alarms as quick as 1 msec or alarms lasting up to 60 seconds

Contact De-Bounce
• 0-60 seconds
Can ignore multiple alarms occurring within 0-60 seconds from initial alarm

Delete From Scan
Automatic Mode
• Adjustable from 0-255 events per minute. Automatically resets itself
Manual Mode
• Disable any input manually

ALARM LEGENDS
• 32 character alarm legend
• 32 character normal legend

LED INDICATORS
Alarm Status
• Red LED per input
• Flash upon alarm, steady ON after acknowledged via WEB browser

Power, Status, Time Sync
• Green LED for "Normal"
• Red LED for "Abnormal"

OUTPUTS
Alarm Relays
• 2 form C (SPDT) relays, configurable via WEB browser for:
- Common alarm (closes on any alarm)
- Reflash alarm (pulses upon new alarm)
- System watchdog
• Energized or de-energized operation

Relay Ratings
• 24 VDC @ 2.0 amps
• 110 VDC @ 0.2 amps
• 120 VAC @ 2.0 amps

TIME STAMPED ALARMS
• 1 msec time stamp resolution
• 40,000 event storage (per unit)

TIME SYNCHRONIZATION
• IRIG-B time sync input (modulated or de-modulated) accurate to +/- 1 msec Real Time
• NTP time sync (via Ethernet) (can sync 1-3 IP addressed sources) accuracy based on location of NTP time servers
• Internal Crystal
• Master unit can synchronize up to 24 "Slave" units via RS485 (max 4,000 feet)

COMMUNICATIONS
Serial Port
• Rs-232/485 selectable
• Modbus RTU, DNP 3.0, serial ASCII

Ethernet Port 10/100
• DHCP or Fixed IP
• Modbus TCP/IP, DNP 3.0, BACNET, SNMP

WEB Server
• Multi-user support
• Used for configuration of unit
• Graphical and text display of alarms
• Can combine up to 24 units on a single WEB browser (1,152 alarms)
• Sorting and filtering functions
• Acknowledgement of alarms
• Separate screens for active alarms and archived event log
• Email notification
• Export to CSV, COMTRADE
• Printing of alarms (auto/manual)
• Multiple levels of security

CONNECTIONS
Input / Output Terminals
• Removable barrier terminal block
• Maximum 12 GA (2.5mm)

MECHANICAL
Surface Mounting
• Din rail / panel
• 17.8"(452) x 6.8"(172) x 2.3"(58)

19" Rack Mounting
• 1U
• 6.8" (172) Depth

POWER REQUIREMENTS
Built-in Power Supplies:

24VDC Power Supply
• 24 VDC (19-29 VDC)
• Maximum 24 watts

AC/DC Power Supply
• 85-300 VAC 50,60 Hz
• 100-300 VDC
Can use 1 supply above or 2 for redundancy / dual power applications
• Hot swappable
• 24 VDC provided for field contact voltage (must specify)
• Maximum 24 watts

External Power Supplies:
System Power Supply
- Input: 48 VDC (36-72 VDC)
- Output: 24 VDC (requires internal 24 VDC power supply above)
125 VDC Field Contact Voltage Supply:
- Input: 90-265 VAC or 110-350 VDC
- Output: 125 VDC

ENVIRONMENTAL
Operating Temperature Range:
• -4 to 140ºF (-20 to 60ºC)

Humidity:
• 20-95% RH

Surge Withstand:
• ANSI C37.90.1:2002

Fast Transient:
• IEC-61000-4-4

Surge Immunity:
• IEC-61000-4-5

EMI/RFI/ESD:
• IEC-61000-4-2, 4-3, 4-6, 4-8
• Emissions: CISPR 11, Class A

Isolation:
• 2000 VDC Power to Earth
• 3150 VDC Power to Inputs

Power Quality:
• IEC 61000-3-2 harmonic current
• IEC 61000-3-3 flicker low voltage
• EN 61000-4-11 voltage variation

CERTIFICATIONS
UL, ULC, CE

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