

ISM-1 Integrated Systems Monitor

FOR THE MONITORING OF ALARM CONTACTS IN THE ELECTRICAL AND PROCESS INDUSTRIES



EVENT RECORDER

The AMETEK Integrated System Monitor, ISM-1, is a modular compact sequence of events recorder system offering the flexibility and reliability to tackle any application from several to several thousand points with confidence.

Reliability was the number one criteria in the design of the ISM-1. Every component, every connector, and every piece of hardware was selected with the goal of achieving reliability orders of magnitude higher than any other events recorder. Virtually all operating parameters are programmable in the ISM-1, to tailor the alarming and reporting to the needs of different applications. Interfaces to printers, DCS systems, CRT annunciator, and PC computers provide the necessary data for prompt response or analysis. A variety of input filtering options reduces false reports from sensitive or noise-generating equipment.

The ISM-1 is the only sequence of events recorder designed to last as long as the facility in which it is installed – with minimal service or maintenance!

Event Capture Unit

The Event Capture Unit or ECU is the heart of the ISM-1 System. Each ECU supplies the logic required to monitor either 128 or 256 inputs and can function as a stand alone events recorder. Each input is sampled every millisecond and can be configured for normally open or normally closed contacts.

The design of the ECU virtually eliminates the nuisance of false alarms. Digital filters are available on a system wide and per input channel basis. The ECU can be configured to automatically delete noisy points from scan and reinsert them at a later time.

Communications Interface Unit

The Communications Interface Unit (CIU) interfaces with single or multiple ECUs and provides a centralized collection point for all alarms. The CIU can re-transmit these alarms to Annunciator Displays for visual indication. In addition, the CIU provides serial data outputs for printers and connection to Alarm Management Software Systems.



Field Contact Voltage Power Supply

The Field Contact Voltage (FCV) power supply provides wetting voltage for dry contact inputs and performs inputcheck and ground detection functions.

Alarm Management Software

The ISM can interface directly to Alarm Management Software systems using our Modbus Outputs and OPC Server. The software screens provide an active alarm summary highlighting your critical alarms and has built-in tools for trending and alarm analysis of historical events. The Software is networkable allowing distribution of alarms to any location.

FEATURES AND BENEFITS

- Reliable and Versatile - High MTBF
- Distributed Modular Architecture
- Serial driven Annunciator Display
- Modbus and OPC outputs
- Alarm Management Software



Experience the Power™

ISM-1 SYSTEM SPECIFICATIONS

ISM-1 systems consist of multiple input modules, field contact voltage power supplies, event capture units (for time-stamping alarms), and a communication interface unit for centralized time synchronization and consolidation of alarms for communications

System Capacities

- 1- 6656 inputs per ISM-1 system
- 1-208 input modules
- 1-26 field contact voltage power supplies
- 1-26 event capture units
- 1 communication interface unit (multiple unit configurations available)

Input Resolution

- 1 millisecond system wide, regardless of number of inputs

INPUT MODULES

Inputs

- 32 inputs/module
- optical coupler isolation/input
- Normally open (NO) or normally closed (NC) selection via software

Field Contact Voltage (FCV)

- Wet or dry contacts
- 12, 24, 48, 125, 250 VDC/VAC
- -12, -24, -48, -125, -250 VDC
- Customer or AMETEK supplied field contact voltage

Input Terminations

- Compression and screw-type terminals available
- Input Termination panel (ITP) 32 or 64 inputs/panel
- 19" card rack 32-512 inputs/card rack
- Slide-out chassis assembly 32-128 inputs/chassis

FIELD CONTACT VOLTAGE SUPPLY

Inputs

- 128 to 512 inputs/supply

Field Contact Voltage

- 12, 24, 48, 125, 250 VDC

Input Power

- 24, 48, 125 VDC
- 120/240 VAC
- Redundant power option
- Primary/back-up power option

Additional Features

- Input check function
- Ground fault detector option

EVENT CAPTURE UNIT (ECU)

Inputs

- 128 or 256 inputs per ECU
- Ribbon cable connection to input modules
- 1000 events storage per ECU

Interface Ports

- Dual RS-232 ports for local configuration or event printing
- Fiber optic port for interface to Communication Interface Unit (CIU). Distances up to 1000 meters between ECU and CIU.

ECU Time Synchronization

- Provided by the CIU

ECU Power

- Dual redundant power supplies or primary/back-up power
- 120/240 VAC 50/60Hz
- 10 watts maximum

MTBF

- 115 years

COMMUNICATION INTERFACE UNIT (CIU)

Communicates and time sorts data from multiple ECUs. Provides multiple communication outputs for printers, serial interfaces and software systems. Provides centralized time synchronization.

Inputs/Outputs

- (4) User programmable contact inputs
- (2) User programmable relay outputs

CIU Interface Modules (14 max)

- Fiber Optic Module (SCM) connects single ECU to CIU
- Single/dual RS-232 module multiple communication types
- Relay driver module provides 4 additional outputs

RS-232 Serial Output Types

- Terminal/Printer (TPIOM)—used for local configuration terminal and printer
- Dual Printer (PRN)—used with two printers for split printing or primary/backup
- Dual Serial Modbus (MOD)—single and grouped alarms. Includes time-stamped data
- Annunciator Serial Output—uses Modbus communications for AN6100C and AN3100D annunciator systems
- OPC (via PC Software)—uses serial Modbus output

- Master Station Interface (MIOM)—connects to ISM COMM software
 - DCS Interface—Fox1A, Fox300, Bailey
- ### CIU Time Synchronization
- IRIG-B
 - AC-line synchronization
 - Pulse per unit time
 - Internal crystal clock
- ### Clock Accuracy
- 1 millisecond per day with IRIG-B
 - 100 milliseconds per day with TCXO option
 - 3 seconds per day with internal crystal
- ### CIU Power
- Dual redundant power supplies or primary/back-up power
 - 20-60 or 90-260 VDC
 - 120/240 VAC 50/60Hz
 - 10 watts maximum
- ### Events Legends
- 119 characters per input; divisible in any combination of alarm and return-to-normal descriptor

ALARM MANAGEMENT SOFTWARE

- ISMCOMM - used for remote retrieval of alarms upon request
- HMI Software - on-line automatic retrieval of alarms. Current and historical alarm display. WEB interface, multiple users, phone, email, pager notifications

ENVIRONMENTAL

Operating Temperature Range

- 32° to 140°F (0 to 60°C)

Humidity

- 0 to 95% non-condensing

Surge Withstand Capacity (SWC)

- Conforms to IEEE/ANSI C37.90.1-1989

RFI

- Meets SAMA standards to PMC 33.1 c-1978 class 2, band A, B and C

Dielectric Strength

- Conforms to IEEE C37.90-1978, 1500 VDC input to ground

ISM-SX SYSTEM SPECIFICATIONS

The ISM-SX is a streamlined sequence of events monitor for smaller systems. It is identical to the ISM-1 except there is no CIU.

System Capacities

- 1- 256 inputs per ISM-SX system
- 1-8 input modules
- 1 field contact voltage power supply
- 1 event capture unit



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