ENSOLT

Alarm

Management

System

AMS

Volume 30

Alarm Management System

ALARM TYPES

Current Alarms

In the normal mode the display will be showing the Current Alarm screen, this gives immediate indication of which alarm channels are still in alarm, if these alarms have been acknowledged and if the fault has cleared. The system will automatically sort the alarm information into chronological order down to the nearest millisecond.

Each channel will show the date/time, description, event type, priority and status as shown below.

Alarm Activation

When an alarm occurs the full alarm details will be displayed on the screen and a coloured flashing background colour is used to inform the operator that a new alarm has occurred. As an option, the software can generate an audible alarm from within the PC.

As the AMS software is capable of displaying various different screens such as History Alarms, System Alarms etc the software automatically switches to the Current Alarm Screen each time a new alarm occurs to ensure that the operator is always kept informed of the current alarm situation.

Alarm Priorities

One of the key decisions an operator has to make when an alarm occurs is how urgent an alarm is compared to other alarms occurring in close succession. Priority levels (0-30) can be used to help the operator determine either the type of alarm (for example pressure, level, temperature, trip, status) or to determine the level of importance. The pre-assigned priority number will appear alongside the alarm description as a prompt.

History Screen

By definition the Current Alarm Screen is used to display active alarms Search by Priority, Time/Date, Channel or Text

Using the History Screen, alarm details can be filtered to only see certain events. The filtering can be by priority/group, channel number or text, date and time range or any combination of the above. So it is a simple task to investigate certain targeted alarms to find exactly what has happened and when on the plant.

System Events and Internal Errors

It is not only the external events that are monitored, the software will also monitor and record significant system events and faults such as when a card is removed or goes faulty, when a card is configured and when system faults occur such as "buffer full" and "paper low" etc. These events allow an engineer analysing the data to see the full picture of what happened and when.
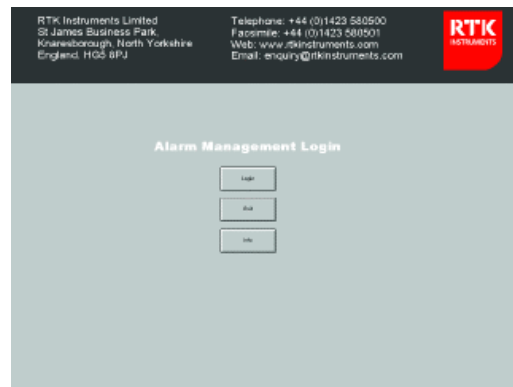
Archive History and Backup on Network

One of the main benefits of linking Alarm Annunciators and Event Recorders to the AMS software is the ability to archive all the alarm information and have this remotely backed-up or linked to a company wide computer network. This archiving process can be set to automatically proceed on defined time scales or triggers.

User Configuration

The AMS software is supplied with coloured fonts and backgrounds, which are used to identify each step within the alarm process. A different colour is used for an alarm, acknowledged alarm, return to normal, system alarm, configuration change etc to further assist the operator. To allow the user maximum flexibility, all these key visual parameters can be changed by the user, these include channel description, priority/group, colours etc.

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RTK
INSTRUMENTS

Alarm Management Login

Login

Exit

Info

Multi Level Access

The AMS software is provided with password protection, which allows the client to limit the features available to the user depending on the privileges required for each skill set, i.e.

Supervisor, Engineer and Operator, within the software. Each user is assigned a unique login name and password and access to features is limited as required.

Operator Control

The serial communication link between the alarm hardware and the AMS software is bi-directional so it is a simple process to Acknowledge, Mute and Reset alarms from the AMS screen or the Annunciator or both if required.

This allows the operator to remove alarms from the Current Alarm Screen once they have returned to the normal state although full details will still be available within the History Alarm Screen for later analysis.

Audit Trail

It is sometimes necessary to have an official audit trail of the critical alarms on a process or power plant. The AMS can be used to record and archive these alarm events together with the details of when alarms were acknowledged, when the fault cleared and then subsequently reset.

Time Stamp Events to 1ms

When connected to the RTK 9000TS Sequence of Events Recorder the AMS software will include the full date and time to a resolution of 1ms. This time is actually logged and buffered securely at the 9000TS and transmitted via a serial link to the AMS software. On power networks and process plants this resolution is often necessary to see the REAL chain of events that causes power or process interruption or shutdown.

ODBC Link

Using the ODBC standard the AMS software can be used to link all gathered data to proprietary databases such as Access. This allows further detailed analysis of the data using a variety of different software tools.
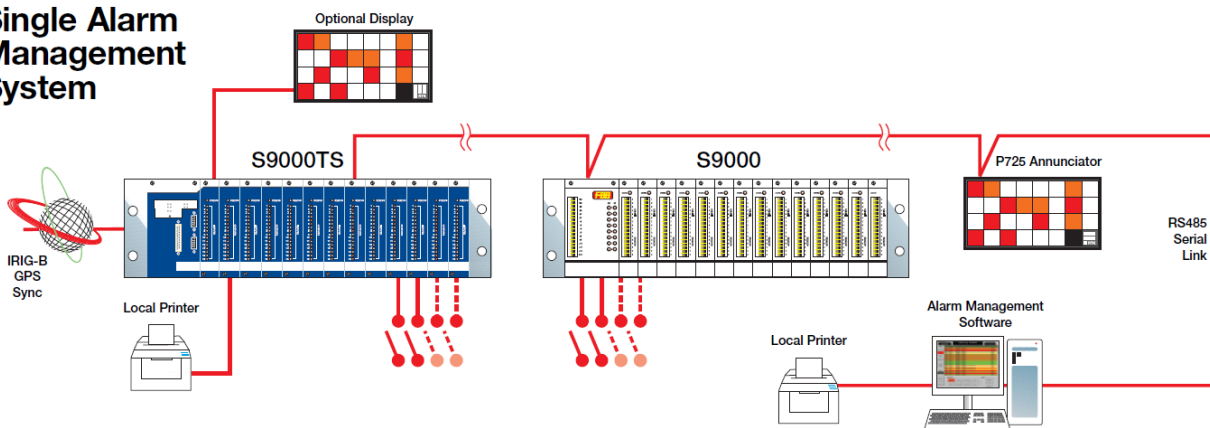
Import System Details From Excel Customers can use a standard Excel spreadsheet to collate all the information on the alarm channels, including channel description, priority etc. When this is complete it is a simple job to import this data into the AMS system and avoid unnecessary input errors and time delays.
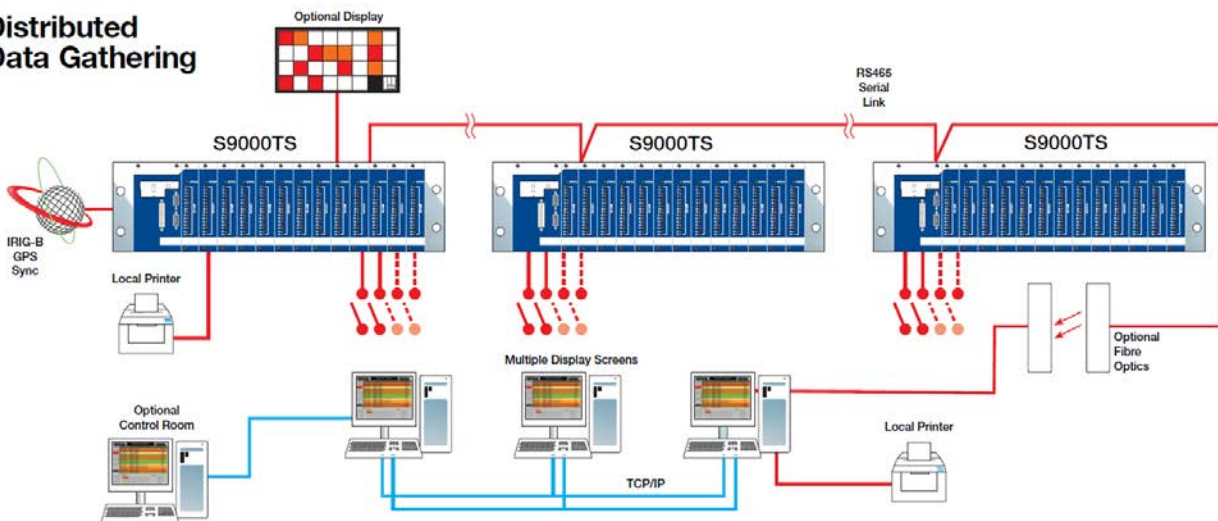
Auto-shelving

The 9000TS Event Recorder there are a number of ways that alarms can be automatically or manually inhibited (shelved). This may be because an alarm channel is temporarily out of service or that the system has sensed that the frequency is outside pre-defined limits and as such considered to be erroneous. In all these situations the AMS can show these inhibited alarms on the screen and also log at which time/date the inhibit started and stopped.

Communicate to different products Whilst the AMS is offered with the RTK range of alarm products it can also be used as an Alarm Management Display for other third party products. A huge number of different drivers and protocols are available as standard.
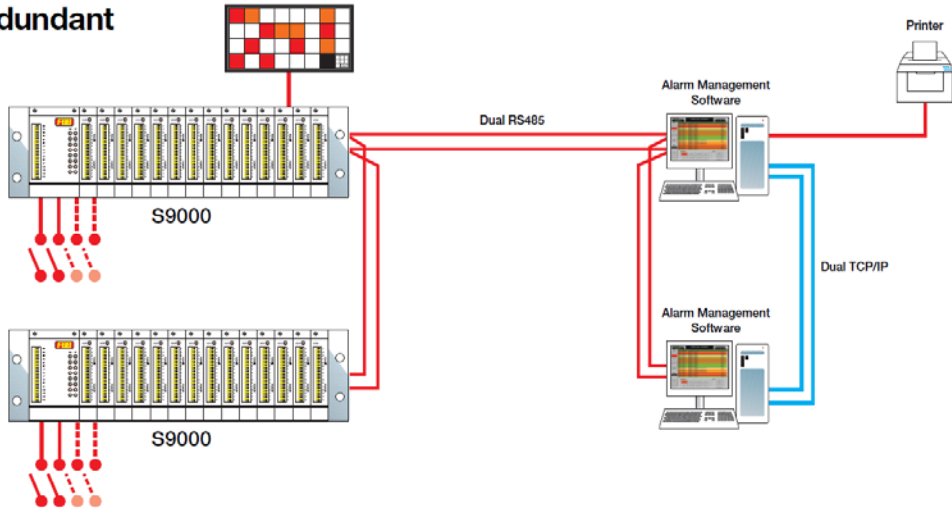
Dual Redundant System

Printer

Alarm Management Software

Dual RS485

S9000

S9000

Dual TCP/IP

Alarm Management Software

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ENSOLT

Engineering Solutions and Training

About the Publication

ENSOLT is one of the leading design and engineering organization in Chennai. Established in 1991, ENSOLT provides engineering consultancy and EPC services principally focused on the Oil & Gas, Power Plant and Petrochemical industries. The Company has also diversified into sectors like training and project guidance to engineering college students. ENSOLT is committed to quality knowledge transfer and training. The objective of this firm is to provide cost effective solutions to engineering glitches in the field of Electronics, Communication, Electrical and Instrumentation.

ENSOLT brings experts from industry to campus and conducts Guest Lectures and workshops on various topics which relates institutions curriculum with industrial real time application. ENSOLT shares the knowledge of well experienced faculties from reputed Industries to the educational institutions. ENSOLT also provide technical assistance to engineering students to better understand the theory with the real time practical work. ENSOLT conduct customised courses on various engineering discipline.

ENSOLT is privileged to bring this book to the public forum. This book assists student community and employees of the process industry to carry out their mission successfully.