



LogMate® Alarm Management Software

LogMate Alarm Rationalization Tools

Overview: LogMate Rationalization Tool

The LogMate Alarm Knowledge Base (KB) enables rationalization teams to capture and track all important configuration data. The Alarm KB is a central database of alarm configurations, alarm priority and alarm limit calculations, change management and audit features. It functions as a complete knowledge management tool, providing automated alarm configuration data collection, organization and retrieval from a DCS or SCADA system.

- **Set Alarm Limits (Set Points):** Easily determine and set alarm limits with the alarm calculation utility.
- **Set Alarm Priorities:** Establish alarm priorities by selecting categories and impacts.

Calculating and implementing these configurations results in optimized processes.

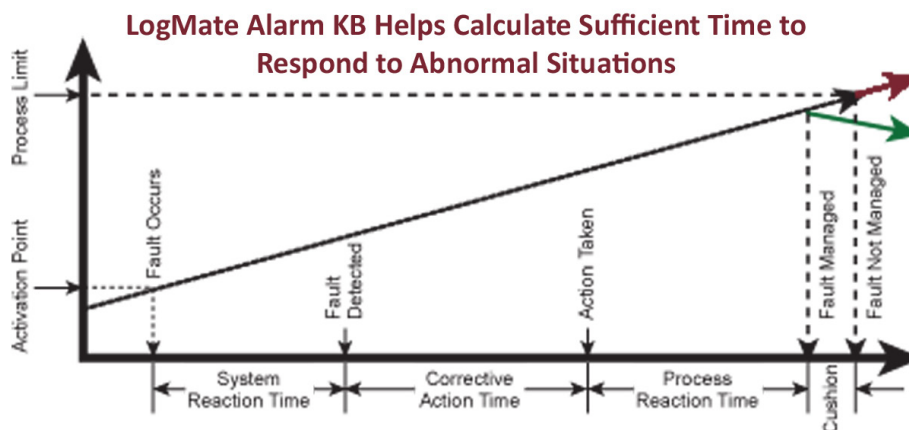
Alarm KB Features

- A process knowledge database with alarm configuration settings and addition rationale.
- Calculate alarm limits (set points) for process variables using a patent pending processing algorithm.
- Automatically calculates recommended alarm priorities based on a severity matrix.
- Alarm KB Analysis presents the priority distribution of configured alarms for comparison to design targets and benchmarks.
- Enforces design stability and best practices by comparing active settings to the master control system configuration.
- Automated import of alarm configuration data to master alarm database.
- Links configuration data to operator documentation for immediate electronic recall, assisting in upset resolution.

Rationalize Alarm Limits

The alarm limit calculation utility provides an unbiased approach to calculate appropriate alarm limits, allowing controllers and operators sufficient time to respond to a process upset. Based on research and methodology from Dr. Doug Rothenberg, the utility calculates alarm set points based on:

- Rate of change of the process variable;
- Time to manage the alarm, including a defined safety margin;
- Process variable “trouble” threshold values based on alarm rationalization.



Real-Time Advisory Tool Makes Rationalization Easy

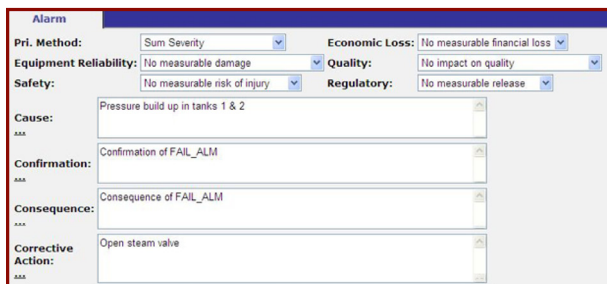
The Alarm KB allows operators to rationalize alarms and modify the real-time summary screen with corrective action instructions or other important alarm information. A pop-up provides real-time information on cause, corrective actions, time needed for each action and consequence of inaction. The Alarm KB enables operators to have related safety information available in real time, such as procedures or diagrams available from an alarm screen.

Timestamp	Priority	Tag	Mod Desc	Desc. 2	Event Type
06/02/05 16:03:18	Low	SQ018	CL2 UNLOADING DOCK	Sequence has Failed	ALARM
06/02/05 16:03:17	Low	XV018-1	E CL2DOCK UNLOAD VLV #1	OPEN confirm time	ALARM
06/02/05 15:59:20	Low	SQ018	CL2 UNLOADING DOCK	Sequence has Failed	ALARM
06/02/05 15:58:32	Low	SQ018	CL2 UNLOADING DOCK	Sequence has Failed	ALARM
06/02/05 15:58:31	Low	XV018-1	E CL2DOCK UNLOAD VLV #1	OPEN confirm time	ALARM

Traditional vague alarm messages from DCS

Timestamp	Tag	Priority	Cause	CorrectiveAction	Area	Event Type
06/02/05 16:03:18	SQ018	Low	Pressure build up in tanks 1 & 2	Open steam valve	DISINFECTION	ALARM
06/02/05 16:03:17	XV018-1	Low	Cause of FAIL_ALM	CorrectiveAction for FAIL_ALM	DISINFECTION	ALARM
06/02/05 15:59:20	SQ018	Low	Pressure build up in tanks 1 & 2	Open steam valve	DISINFECTION	ALARM
06/02/05 15:58:32	SQ018	Low	Pressure build up in tanks 1 & 2	Open steam valve	DISINFECTION	ALARM

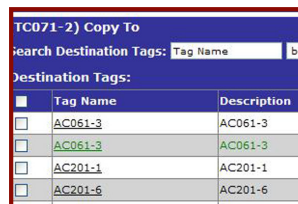
Optimized alarm messages using the Rationalization Tool



Rationalize alarms using the Alarm KB



Tags are easily linked to related alarms and other information or files, such as standard operating procedures.



Tag Name	Description
AC061-3	AC061-3
AC061-3	AC061-3
AC201-1	AC201-1
AC201-6	AC201-6

Engineering and design work is made more efficient through comprehensive copy and edit tools.



Impact severity and response guidance for alarms is provided to the operations team in the real-time summary screens.

How Does the Alarm KB Work?

The basic settings in the Alarm KB can be automatically imported or manually added. The Alarm KB contains a list of "tags" or "points." Each tag is associated with a list of alarms. The fields are customizable to provide the exact information operators need to see.

Each alarm entry is associated with a number of attributes, including:

- Type of Alarm
- Alarm Limit (Set Point)
- Priority
- Level of Impact
- Cause
- Consequence
- Corrective Action
- Control Response Time

Related attributes are not limited to those above and can be adapted to your methodology and requirements.

With the Rationalization Tool, operators can turn vague alarm events into guidance information. When an alarm activates in real time, operators can see the cause, corrective action and other important information.