

# LogMateAMS™ - Application Note

## Using the LogMate Alarm Knowledge Base



### Why You Need an Alarm Knowledge Base

As you go through the process of assessing your alarms to identify potential nuisance alarms or alarms that should be changed, you will "rationalize" alarms when they become potential items to change or remove.

Rationalizing an alarm is the process of determining whether or not the alarm should exist, how it should behave, and what should be done when it activates. This process leads to an alarm system that is manageable and invaluable to reaching operational goals.

During that process, even if for only one alarm, you will have valuable conversations with people who have a vested interest in the alarm system. Those conversations naturally result in the discussion of extremely valuable process and business information, much of which only resides in someone's head. Capturing that information is what an Alarm Knowledge Base is all about.

As you discuss your alarm system, the LogMate Alarm Knowledge Base (Alarm KB) provides a quick, online storage location for the knowledge that is shared by the alarm decision team. Whether or not an alarm is kept, you can document its intended purpose, cause, corrective actions, time to respond, and the rationale behind the alarm, or the absence of one.

As this information is added to the Alarm KB it can be viewed by operators, analyzed, used to automatically calculate recommended priority changes, and actively compared to the current DCS configuration to enforce the use of approved alarm settings.

### What is the Alarm Knowledge Base?

**A storage place for alarm settings and related information, the LogMate Alarm Knowledge Base (Alarm KB) guides smart alarm design and provides instant access to information that will help operators recover from abnormal situations.**

The Alarm KB is a part of the LogMate ACE module. The KB is essentially a database of alarm settings and additional information.

### What does the Alarm KB do?

- Maintains a replica of the DCS alarm configuration which can be compared to the active DCS settings at any time, enforcing stability of the alarm design.
- Stores valuable information gathered from personnel during the process of discussing the validity and proper configuration of alarms.
- Makes alarm information available online, in a browser-accessible documentation system that can be accessed by operators when they need information about how to respond to active alarms.
- Automatically suggests the best priority settings for your operating environment based on how alarms impact your plant and business goals
- Displays your priority counts as percentages of total alarms configured allowing you to compare to benchmarks and monitor progress.

## How Does the Alarm KB Work?

The Alarm KB stores its information in a database. The database contains a list of system "Tags" or "Points". Each "Tag" contains a list of all associated alarms. Each alarm is linked to its "Tag" as well as a list of attributes, including:

- Type of Alarm
- Alarm Limit (Trip point)
- Priority
- Level of Impact on Safety, Environment, Financial
- How to Confirm Alarm is Real
- Corrective Action
- Response Time
- Rationale

Alarm attributes are completely customizable. They can be modified to suit your process and design needs.

| Tag      | Type    | Limit | Priority | Inhibited | Severity | Env  | Fin | Time Available | Prn_Method   |
|----------|---------|-------|----------|-----------|----------|------|-----|----------------|--------------|
| 11789-1  | DEV_ALM | 0.00  | Low      | False     | Low      | Low  | Low | 30             | Sum Severity |
| 11789-2  | DEV_ALM | 0.00  | Low      | False     | Low      | Low  | Low | 30             | Sum Severity |
| 11789-3  | DEV_ALM | 0.00  | Low      | False     | Low      | Low  | Low | 30             | Sum Severity |
| 11846-1  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-2  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-3  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-4  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-5  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-6  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-7  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-8  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-9  | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-10 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-11 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-12 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-13 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-14 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-15 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-16 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-17 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-18 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-19 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-20 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-21 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-22 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-23 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-24 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-25 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-26 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-27 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-28 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-29 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |
| 11846-30 | DEV_ALM | 0.00  | Low      | False     | Low      | High | Low | 30             | Sum Severity |

Tag and Alarm List

The screenshot shows the 'Alarm' detail window. It includes the following fields and options:

- Tag:** A dropdown menu showing 'AD99-1'.
- Type:** A dropdown menu showing 'DEV\_ALM'.
- Limit:** A text input field.
- Priority:** A dropdown menu showing 'Low'.
- Inhibited:** A checkbox.
- Severity:** A dropdown menu showing 'Low'.
- Safety:** A dropdown menu showing 'Low'.
- Environmental:** A dropdown menu showing 'Low'.
- Financial:** A dropdown menu showing 'Low'.
- Time Available:** A text input field showing '30'.
- Prioritization Method:** A dropdown menu showing 'Sum Severity'.
- Cause:** A text area with the text 'Cause of DEV\_ALM'.
- Confirmation:** A text area with the text 'Confirmation of DEV\_ALM'.

Alarm Detail

## How Do I Get Started?

Moving forward requires sitting down to assess alarms and to discuss the proper design of the alarm system. We understand that the additional time required is difficult to find. To help you move forward with improvement of your alarm system, we offer a one week on site program.

During the on site visit we will configure your LogMate reports to properly analyze plant data and automatically email them to the appropriate personnel. We will train personnel in the use and interpretation of each report and organize several discussions regarding system changes.

To document changes and provide a historic and ongoing information resource, we will import your current DCS configuration into the Alarm KB and train your team to document rationale and operations information.

After one week, staff will be trained to assess alarm behavior and alarm design and to use the Alarm KB to document, monitor, and maintain progress.

## Contact Us

We are happy to further discuss an onsite visit to help you reap the benefits of alarm redesign and the Alarm KB. Contact us at:

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