



# AlarmWorX64 Server

## ISA 18.2 support



### APPLICATION NOTE

June 2017

**Description:** This application note will guide you through the new ISA 18.2 support in GENESIS64 and describe the basics for better understanding.

## Introduction

The basic intent of ISA-18.2 is to improve safety. Ineffective alarm systems have often been documented as contributing factors to major process accidents. The types of alarm system problems that ISA-18.2 addresses have been well known for nearly two decades.

ISA 18.2 is rapidly becoming an industry requirement for alarm SCADA projects. To meet future needs, the ICONICS alarm family is updated to come into compliance starting GENESIS64 version 10.95.

This application note will describe the new feature and changes for ISA 18.2, and then walk you through setting them up and using them in runtime.

## New Features

These new features were implemented to comply with ISA 18.2 standards:

**“Latch”** maintains alarm condition information in current state until reset by operator

- Latch Ack State: Latch occurs after Alarm is acknowledged and has returned to normal.
- Latch Unack State: Latch occurs after Alarm has return to normal but is not yet acknowledged.
- Even though there are two Latch states, the operator can only reset (e.g. unlatch) a given alarm once per alarm cycle.
- If the State is Latch Unack the user can transition to Latch Ack by acknowledging the alarm.

**“Re-Alarming”** means after some period of time the configured alarm will transition from in alarm and acknowledged back to in alarm and unacknowledged.

**“Shelved”** is an alarm that is temporarily suppressed, usually via a manual initiation by the operator, using a method meeting a variety of administrative requirements to ensure the shelved status is known and tracked.

**“Suppressed by Design”** is an alarm intentionally suppressed due to a designed condition. This is a generic state that can cover situations including both simple logic-based alarms and advanced state-based alarming techniques.

**“Out of Service”** is a non-functioning alarm, usually for reasons associated with maintenance. An “Out of Service” alarm is tracked using similar administrative requirements as a shelved alarm.

## Operational Changes

The following changes were made to existing features to better comply with ISA 18.2 standards:

### Changes to Auto Acknowledgement

When running with ISA 18.2 support, alarms configured with “auto acknowledgement” will generate into the alarm/unacknowledged state. When the alarm returns to normal it is automatically acknowledged at the same time, causing it to transition to the “normal/acknowledged” state.

To compare, without ISA 18.2 support, alarms configured with “auto acknowledgement” will generate into the alarm/acknowledged state. Then when the alarm returns to normal, it transitions to the normal/acknowledged state.

### Alternative to Clear

New ISA 18.2 support provides an alternative to the ICONICS “Clear” state.

When running without ISA 18.2 support, ICONICS has an optional additional state called “Clear” which happens after the alarm has transitioned to both normal and acknowledged. It displays as normal/acknowledged/clear. The “Clear” state was designed to allow alarms to remain in the alarm viewer once they had transitioned to normal, even if they had already been acknowledged, and require an extra step to dismiss them (acknowledgement).

With ISA 18.2 support, the Latch feature can be used for this purpose. The operator will need to reset (or “unlatch”) a latched alarm before it disappears from the viewer.

## New DA Points

When ISA 18.2 support is enabled, the following additional DA points will be available for each alarm.

### Per Alarm Type

These points will occur several times for each alarm, once for each alarm type (such as digital, limit, etc.):



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- LatchAck (data type Boolean)
- LatchUnack (data type Boolean)
- LatchReset (data type Boolean)
- ReAlarm (data type Boolean)
- Shelve (data type Boolean)
- OutOfService (data type Boolean)
- Suppress (data type Boolean)

### Per Alarm

These points will occur only once for each alarm.

- ReAlarmTime (data type string)
- ShelveTime (data type string)
- OffDelay (data type string)

## Setting up ISA 18.2 Support

### Enabling ISA Support for Alarms

1. Open Workbench and select the AlarmWorX64 Server provider.
2. Select your configuration.
3. Check the "ISA Mode" checkbox and hit Apply.
4. For each alarm you will find checkboxes for Latch, Shelve, Suppressed by Design, Out of Service and Re-Alarm in the Advanced Settings section. Check these boxes for your alarms as needed to enable these different states for your alarms.

Alkaline Level ↑ ×

Tag Name: Alkaline Level

Alarm Settings Areas Alarm Limit Digital Alarm Deviation

General Settings

Advanced Settings

☐ Enable Clear

☐ Exclude Equal To

Off Delay:

☐ Latch on Acknowledge

☐ Latch on Unacknowledge

☒ Enable Out of Service

☒ Enable Suppress by Design

☐ Re-Alarm:

☒ Shelve:

Figure 1 – ISA 18.2 support in Workbench

## Using New ISA Features in Runtime

1. In GraphWorX64, put an AlarmWorX64 Viewer into your display and go into runtime.
2. Open the Acknowledge Alarms dialog. In the Operation field in addition to a standard acknowledgement you can now find all your ISA 18.2 actions.

| Description                   | NewState |
|-------------------------------|----------|
| Ash Content of Tank1 is...    | SUP      |
| Arm Torque is at...           | SHE      |
| Alkaline level in Tank1 is... | OOS      |

Acknowledge & Operation of Alarms and Events

Type: All Items Operation: Acknowledge

What: Operation Clear, LatchAck Off, LatchUnack Off, Shelve On, Shelve Off, OutofService On, OutofService Off, Suppress On, Suppress Off, Report Progress, Acknowledge

Filter: Severity between: 0 and: 1,000

Field: AckRequired with value:

Comment:

Key Pad Ok Cancel

Figure 2 – ISA 18.2 support AlarmWorX64 Viewer