

Product Alert Notice #25—Potential Safety Issue

Invensys has reviewed the issue described in this Product Alert Notice and determined that, if no action is taken to resolve the issues described in this notice, there is a potential risk of harm to people, property, and/or the environment. Third-party integrators and distributors of Triconex® systems need to notify their end-user customers of this issue. All end-users should immediately review and analyze the impact of this issue to their applications. If this issue is found to be applicable, remedial actions should be taken to ensure the continued safe operation of affected systems.

Subject: Possible Spurious Output Transitions on the Tricon 3625 24V Digital Output Modules

Affected Products

The following modules used in Tricon™ system versions 10.2.0–10.2.5, 10.3.0–10.3.3, 10.4.0–10.4.3, and 10.5.0–10.5.2 are affected:

- Model 3625 24V Digital Output Module
- Model 3625A 24V Digital Output Module
- Model 3625N 24V Digital Output Module

Problem Description

When points 1, 2, 17, and 18 on an affected module are *ALL* commanded OFF, one or both of the following issues may occur:

1. In the presence of specific output voter faults, a point on an affected module may transition to the opposite of the commanded state for as long as 227 milliseconds.

This issue has not been reported in the field.

2. When a Tricon controller is operated with a hot-spare Model 3625/A/N module installed, multiple output points on the affected modules may simultaneously transition to the opposite of the commanded state. The duration of the output transitions can last as long as 227 milliseconds.

Affected modules with all points commanded OFF are immune to these transitions.

This issue has been reported in the field only on affected modules where a hot-spare module is also installed in the slot, AND points 1, 2, 17, and 18 are *all* commanded OFF.

Background

Investigation of the problem discovered an initialization error in the output register circuitry. The output register is periodically reset by the watchdog timeout diagnostic routine.

When an output register watchdog reset occurs, the register may not be immediately re-initialized to the correct commanded values. When a watchdog timeout diagnostic routine runs on a second channel before the first channel has completely recovered from its watchdog diagnostic routine, then spurious output transitions are possible.

Operational Restrictions and Recommended Actions

This problem described in the Problem Description has been fixed in the following Tricon system versions: 10.2.6, 10.3.4, 10.4.4, and 10.5.3. Fixed modules have the following firmware meta numbers:

Fixed Modules	Firmware Meta Number
3625 DO	6293
3625A DO	6293
3625N DO	6293

Invensys recommends upgrading to the above system versions (with the corresponding module firmware revisions) as the primary means of fixing this problem. The upgrade should occur as soon as possible. Contact the Global Customer Support Center (GCS) for assistance in upgrading your system to one of the above versions.

However, if you are unable to immediately upgrade, you may take the following *temporary* measures to resolve the problem. The *only* way to eliminate *both* Issue 1 and Issue 2 without upgrading your Tricon system is to take the following actions for each slot configured with an affected module.

1. Verify that *at least one* of the following points is always commanded ON: 1 or 2 or 17 or 18.
2. If none of these points are always commanded ON, then an installation modification to allow at least one of these points to always be commanded ON *must* be made.

For each slot that does not comply with the above, Invensys recommends you comply with BOTH of the following items to reduce the risk of—but NOT eliminate—spurious output transitions. The following actions only mitigate Issue 2.

1. Remove the hot-spare modules and leave them out of the system.
2. When replacing an affected module, ensure that the module being replaced is removed within 4 minutes after the system has made the replacement module active.

Note: If you require probability of failure on demand (PFD) and spurious mean time to failure (MTTF spurious) calculations to assess the impact of this issue, please contact the Global Customer Support Center for assistance.

If you have any questions regarding this Product Alert Notice, please contact the Global Customer Support Center, or your local Invensys office.

Invensys Global Customer Support (GCS) Contact Information

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Changes from Previous Release (Rev. 1)

Section	Description
Affected Products	Changed to indicate that only the following Tricon versions are affected: 10.2.0–10.2.5, 10.3.0–10.3.3, 10.4.0–10.4.3, and 10.5.0–10.5.2.
Operational Restrictions and Recommended Actions	- Added that the problem has been fixed in Tricon versions 10.2.6, 10.3.4, 10.4.4, and 10.5.3. - Added table listing firmware meta number for fixed modules.

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