
Industrial Automation Using E3 I/O™ Heartbeat Bypass

Tech Note 34



Abstract

This document provides step-by-step instructions for using the heartbeat bypass bit in Red Lion E3 I/O modules.

Products:

All Red Lion E3 I/O modules

Use Case: Bypassing the E3 Heartbeat

Disabling the heartbeat is useful when testing applications that do not have a heartbeat.

Required Software:

Crimson® 3.0 or 3.1

Required Firmware:

Build 700, or higher

Required Operating System:

Microsoft Windows 2000, or above

Introduction

There are two primary tasks that must be completed when configuring Crimson to support the E3 I/O Heartbeat Bypass. First, the heartbeat must be enabled and configured within Crimson. Second, the heartbeat bypass must be configured. This document describes how to perform both tasks.

NOTE 1: Crimson support for the E3 I/O Heartbeat Bypass requires Crimson 3.0 or higher and is only available to Windows 2000 or above users. Please update your version of Crimson to the latest; available online at www.redlion.net.

NOTE 2: This document is not intended to provide comprehensive information on E3 I/O Heartbeat Bypass operation. The *E3 I/O Modules Hardware Guide (LP0976)* provides detailed E3 I/O module operational information, including configuration settings/options and a list of all digital and analog inputs/outputs. Download the latest version; available online at www.redlion.net.

Enable and Configure Heartbeat

To enable and configure Crimson to support the heartbeat, refer to Figure 1 and perform the following steps:

1. Start Crimson and click on *Communications* in the Navigation Pane.
2. Click on *Watchdog/Heartbeat* under Services in the Navigation Pane.
3. Set the Heartbeat Timeout option to *Enabled*.
4. Set other configuration options, as needed.

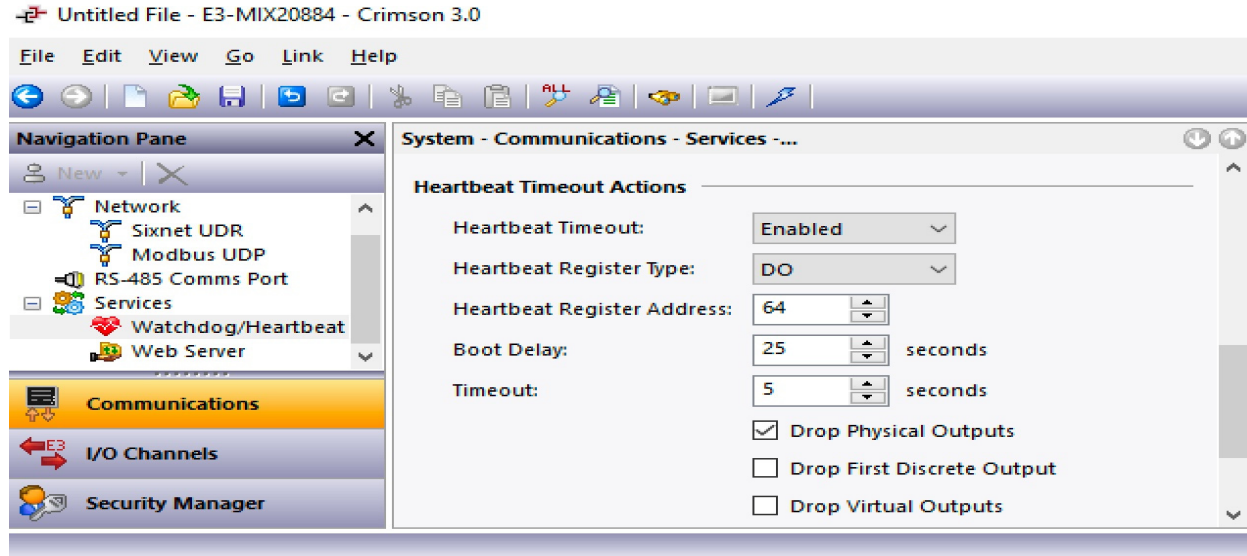


Figure 1.

Configure Heartbeat Bypass

The Heartbeat Bypass bit is a writable discrete and is part of each E3 I/O module's Discrete Input (DI) status bit set. The Heartbeat Bypass bit's address is DI 41 (Modbus 100041). As shown in Figure 2, a definition for each DI status bit is located on the System - I/O Channels page (accessed via the Navigation Pane: *I/O Channels > I/O Channels*). While exposed as a Modbus register, DI registers are read only. Therefore, they are only useful for monitoring Heartbeat Bypass status. Bypassing the Heartbeat needs to be done via the E3 I/O module's web interface or via the Crimson user interface.

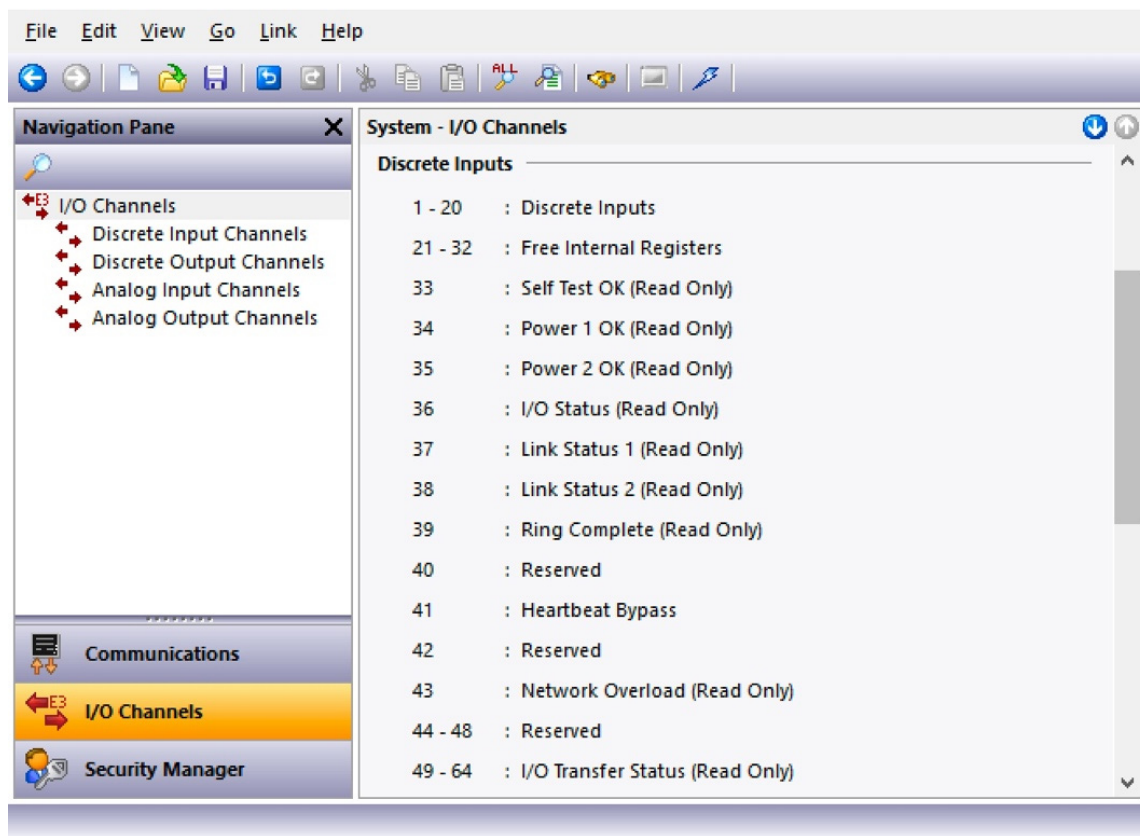


Figure 2.

To configure the Heartbeat Bypass via an E3 I/O module's web interface, perform the following steps:

1. Open a web browser (Chrome, Internet Explorer, Firefox, etc...).
2. Enter the E3 I/O module's IP address in the address bar and press *Enter*.

NOTE: The E3 I/O module's default IP address, as shipped from the factory, is: 192.168.1.21

3. Navigate to the Full Access Watch Window tool by clicking *Tools > Watch Window > Full Access*.
4. Enable Refresh page every 3 seconds.
5. Referring to Figure 3, scroll down to DI 41 and specify the desired option:
 - a. *Checked*: Heartbeat Bypassed.
 - b. *Unchecked*: Heartbeat Honored.
6. Set other configuration options, as needed.

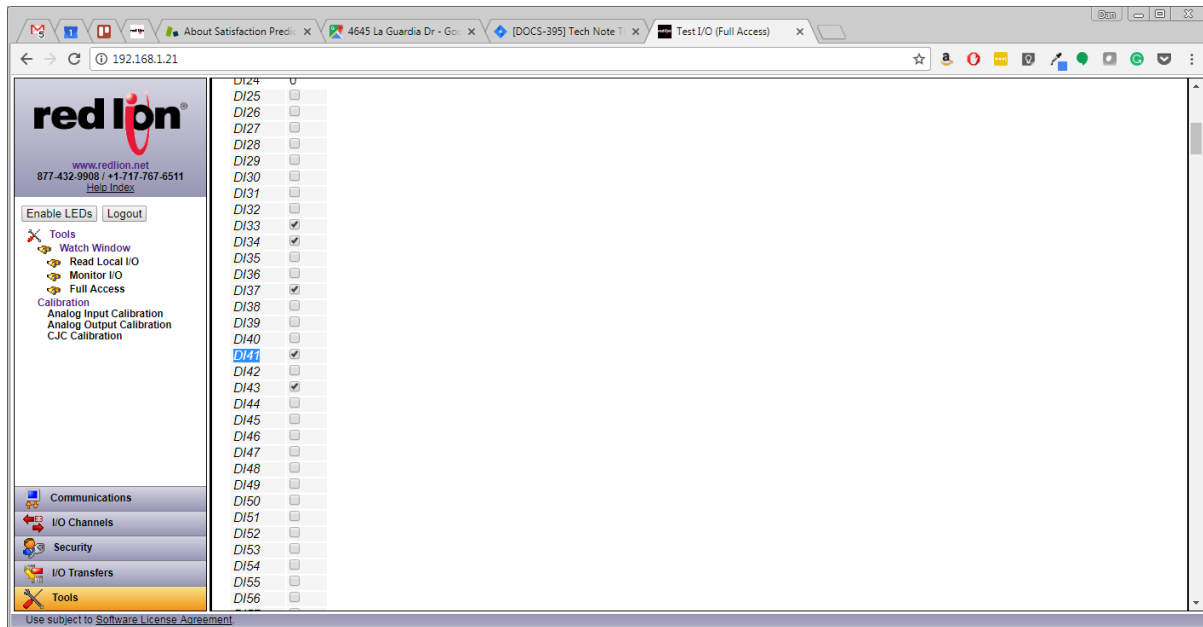


Figure 3.

Disclaimer

It is the customer's responsibility to review the advice provided herein and its applicability to the system. Red Lion makes no representation about specific knowledge of the customer's system or the specific performance of the system. Red Lion is not responsible for any damage to equipment or connected systems. The use of this document is at your own risk. Red Lion standard product warranty applies.

Red Lion Technical Support

If you have any questions or trouble contact Red Lion Technical Support by emailing support@redlion.net or calling 1-877-432-9908.

For more information: <http://www.redlion.net/support/policies-statements/warranty-statement>

