

**SAM-422**

# **User Manual**



UM095-200305-0001  
Revision : A02  
June 26, 2020

## Copyright Notice

© 2020 QuEST Rail LLC. All rights reserved.

## Warranty and Service Information

Each unit is assembled and tested in Wellington, MO. All boards and systems come with a 2-year warranty, which begins from the date of shipping. Please contact [RMA@questrail.com](mailto:RMA@questrail.com), if your product requires service or repair. The 2 year warranty covers defects in materials and workmanship. This warranty does not cover misuse & abuse.

## Product Support

<b>Product Orders</b>	<a href="mailto:orders@questrail.com">orders@questrail.com</a>
<b>Technical Support</b>	<a href="mailto:waysideproducts@questrail.com">waysideproducts@questrail.com</a>
<b>RMA Requests</b>	<a href="mailto:rma@questrail.com">rma@questrail.com</a>
<b>Accounts Payable</b>	<a href="mailto:ap@questrail.com">ap@questrail.com</a>
<b>Accounts Receivable</b>	<a href="mailto:ar@questrail.com">ar@questrail.com</a>
<b>Other Inquiries</b>	(816)-240-8425

## Return Material Authorizations

Send inquiries and requests for RMAs to [rma@questrail.com](mailto:rma@questrail.com). Information to include with a RMA request:

QuEST Part Numbers (QPNs)  
Serial Numbers  
Problem Statement  
Date of Problem Occurrence  
Name and Contact Info

# Table of Contents

---

Product Contents	1
About This User Manual	1
SAM-422 Overview	1
Installation	2
Connection Guide	3
Grounding	4

# Styles

---

The following conventions appear in this manual:



This icon indicates a note, which suggests important information.

# Product Contents

---

Item	Part Number	Quantity
SAM-422 Assembly	810-200305-0001	1
Four-pin, cage-clamp, wire-mount, connectors (included with SAM-422 assembly)	143-033004-0001	2
Fastener Kit (4 Mounting Screws)	151-005107-0100	1

Table 1-1 Product Contents

## About This User Manual

---

The SAM-422 User Manual provides information about how to install, configure, and operate the SAM-422 (Surge Arrester Module, 422). This manual assumes that you have previous experience with railroad surge protection devices.

## SAM-422 Overview

---

The SAM-422 is an inline surge protector intended to protect an RS-422 link against egregious surge events, such as those produced by lightning strikes. In addition to providing protection against primary surge events, the SAM-422 includes a pass-through interface which can be used in cases where the surge-protected link has been damaged. The SAM-422 also includes a loopback connection for convenient diagnostics of RS-422 connected equipment.

# Installation

The hole spacing on the SAM-422 is 3 $\frac{3}{8}$ " to match many existing surge suppression devices. The SAM-422 ships with a fastener kit containing four mounting screws.

Part Number	Manufacturer	Manufacturer Part Number	Description
151-005107-0100	McMaster-Carr	93406A153	Screw, 6-32, PTH, S/S, 1"

Table 1-2 Mounting Screw Description



It is highly recommended that all mounting holes be utilized for stability when removing cables.

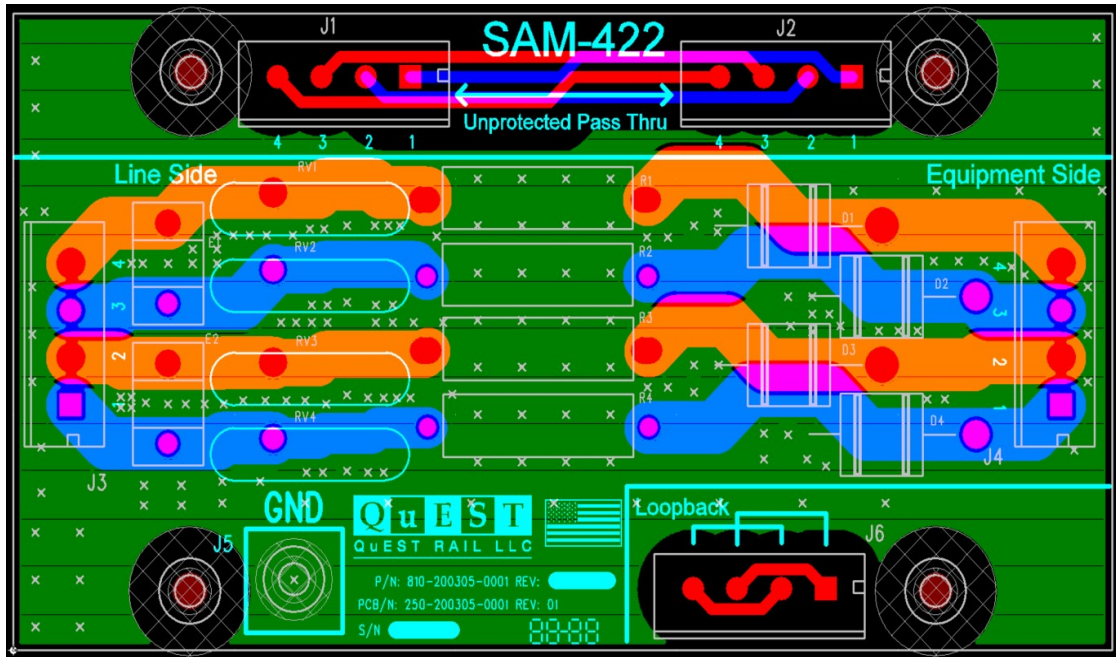


Figure 1-1 SAM-422 Copper Line Traces Visible

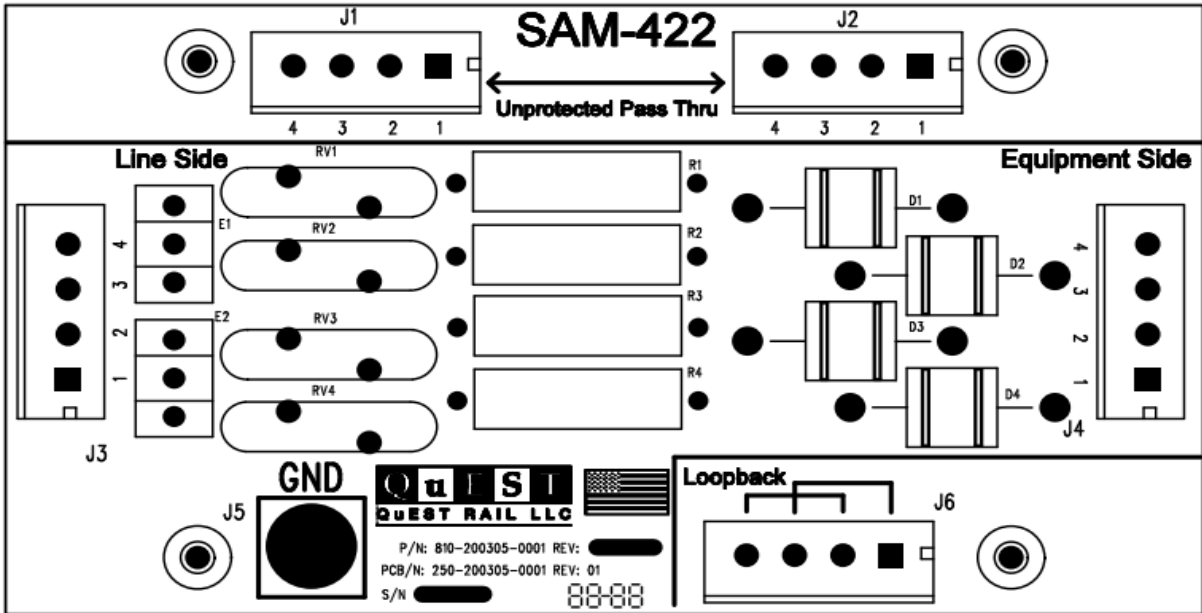


Figure 1-2 SAM-422 Copper Line Traces Hidden

## Connection Guide

Two, four-pin connectors ship with the SAM-422. These connectors are installed on your surge suppression device and should be wired as shown in Figure 1-2.

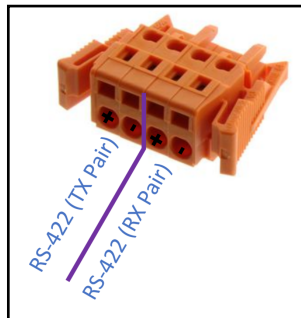


Figure 1-2 Connector Pinout

## Grounding

There is a single, #10, grounding post on the SAM-422. Make a short, low impedance connection between the SAM-422 grounding post and ground. Use a size 10AWG wire or larger to make this connection.



It is recommended that the low impedance connection not exceed 3' in length in order to keep wire impedance as low as possible.