

# Trusted 24 Vdc Fan Assembly Rack Mounted

## Product Overview

This document provides general information for the Trusted® Fan Tray 24 Vdc Rack Mounted.

The Fan Tray is designed to provide forced cooling within a module rack of a Trusted System.

The distribution of Fan Trays within a module rack is on a basis of one per module chassis.

## Features:

- Simple installation and connection.
- Capable of moving 69 m<sup>3</sup>/h (40.6 ft<sup>3</sup>/min).
- 24 Vdc operation.
- Low noise (32 dB per fan).

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## PREFACE

In no event will Rockwell Automation be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment. The examples given in this manual are included solely for illustrative purposes. Because of the many variables and requirements related to any particular installation, Rockwell Automation does not assume responsibility or reliability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, with respect to use of information, circuits, equipment, or software described in this manual.

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### DISCLAIMER

It is not intended that the information in this publication covers every possible detail about the construction, operation, or maintenance of a control system installation. You should also refer to your own local (or supplied) system safety manual, installation and operator/maintenance manuals.

### REVISION AND UPDATING POLICY

This document is based on information available at the time of its publication. The document contents are subject to change from time to time. The latest versions of the manuals are available at the Rockwell Automation Literature Library under "Product Information" information "Critical Process Control & Safety Systems".

### TRUSTED RELEASE

This technical manual applies to **Trusted Release: 3.6.1**.

### LATEST PRODUCT INFORMATION

For the latest information about this product review the Product Notifications and Technical Notes issued by technical support. Product Notifications and product support are available at the Rockwell Automation Support Centre at <http://rockwellautomation.custhelp.com>

At the Search Knowledgebase tab select the option "By Product" then scroll down and select the Trusted product.

Some of the Answer ID's in the Knowledge Base require a TechConnect Support Contract. For more information about TechConnect Support Contract Access Level and Features please click on the following link:

[https://rockwellautomation.custhelp.com/app/answers/detail/a\\_id/50871](https://rockwellautomation.custhelp.com/app/answers/detail/a_id/50871)

This will get you to the login page where you must enter your login details.

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**IMPORTANT** A login is required to access the link. If you do not have an account then you can create one using the "Sign Up" link at the top right of the web page.

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**DOCUMENTATION FEEDBACK**

Your comments help us to write better user documentation. If you discover an error, or have a suggestion on how to make this publication better, send your comment to our technical support group at <http://rockwellautomation.custhelp.com>

## SCOPE

This manual specifies the maintenance requirements and describes the procedures to assist troubleshooting and maintenance of a Trusted system.

## WHO SHOULD USE THIS MANUAL

This manual is for plant maintenance personnel who are experienced in the operation and maintenance of electronic equipment and are trained to work with safety systems.

## SYMBOLS

In this manual we will use these notices to tell you about safety considerations.



**SHOCK HAZARD:** Identifies an electrical shock hazard. If a warning label is fitted, it can be on or inside the equipment.



**WARNING:** Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which can cause injury or death, property damage or economic loss.



**ATTENTION:** Identifies information about practices or circumstances that can cause injury or death.



**CAUTION:** Identifies information about practices or circumstances that can cause property damage or economic loss.



**BURN HAZARD:** Identifies where a surface can reach dangerous temperatures. If a warning label is fitted, it can be on or inside the equipment.



This symbol identifies items which must be thought about and put in place when designing and assembling a Trusted controller for use in a Safety Instrumented Function (SIF). It appears extensively in the Trusted Safety Manual.

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### IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

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### NOTE

Provides key information about the product or service.

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### TIP

Tips give helpful information about using or setting up the equipment.

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**WARNINGS AND CAUTIONS**

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**WARNING: EXPLOSION RISK**

Do not connect or disconnect equipment while the circuit is live or unless the area is known to be free of ignitable concentrations or equivalent

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**AVERTISSEMENT - RISQUE D'EXPLOSION**

Ne pas connecter ou déconnecter l'équipement alors qu'il est sous tension, sauf si l'environnement est exempt de concentrations inflammables ou équivalente

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**MAINTENANCE**

Maintenance must be carried out only by qualified personnel. Failure to follow these instructions may result in personal injury.

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**CAUTION: RADIO FREQUENCY INTERFERENCE**

Most electronic equipment is influenced by Radio Frequency Interference. Caution should be exercised with regard to the use of portable communications equipment around such equipment. Signs should be posted in the vicinity of the equipment cautioning against the use of portable communications equipment.

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**CAUTION:**

The module PCBs contains static sensitive components. Static handling precautions must be observed. DO NOT touch exposed connector pins or attempt to dismantle a module.

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**ISSUE RECORD**

<b>Issue</b>	<b>Date</b>	<b>Comments</b>
7	Sep 05	Format
8	Jun 08	Fan MTBF
9	Apr 11	Specification change
10	Sep 15	Rebranded and reformatted with correction to the Operating Temperature statement in the Specification Section
11	Apr 16	Standardisation of the Relative Humidity Statement in the Specification Section

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# 1. Description

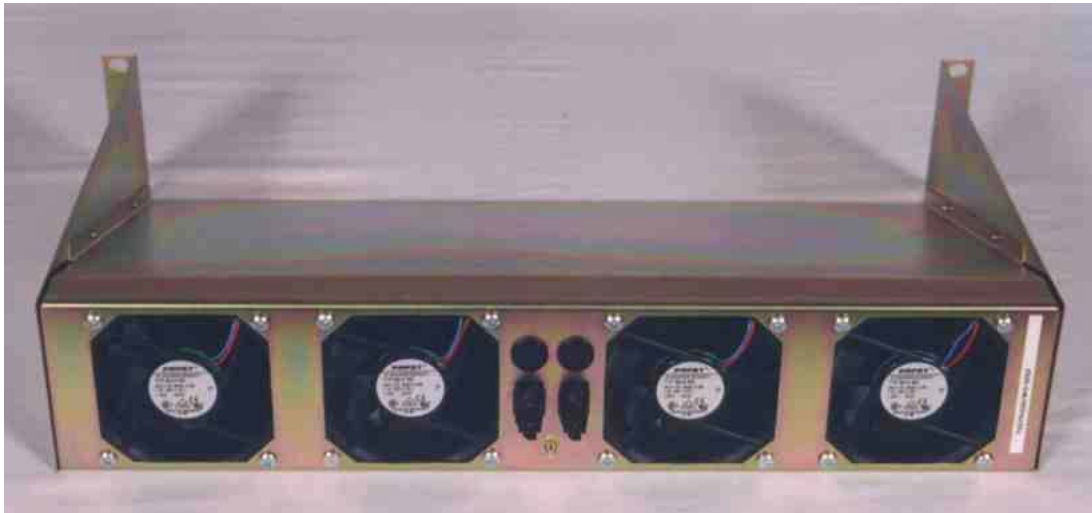


Figure 1 T8270 Photo

The Trusted Fan Tray 24 Vdc Rack Mounted comprises four fans mounted vertically at the rear of a 2U high chassis. The chassis containing the fans incorporates a baffle to prevent air drawn by the fans flowing through the module chassis immediately above the Fan Tray. Air exhausted by the fans into the rear of the system cabinet is drawn upwards and out of the cabinet by roof-mounted fans – see PD-T8271.

Figure 2 below shows the configuration of the fans within the Fan Tray.

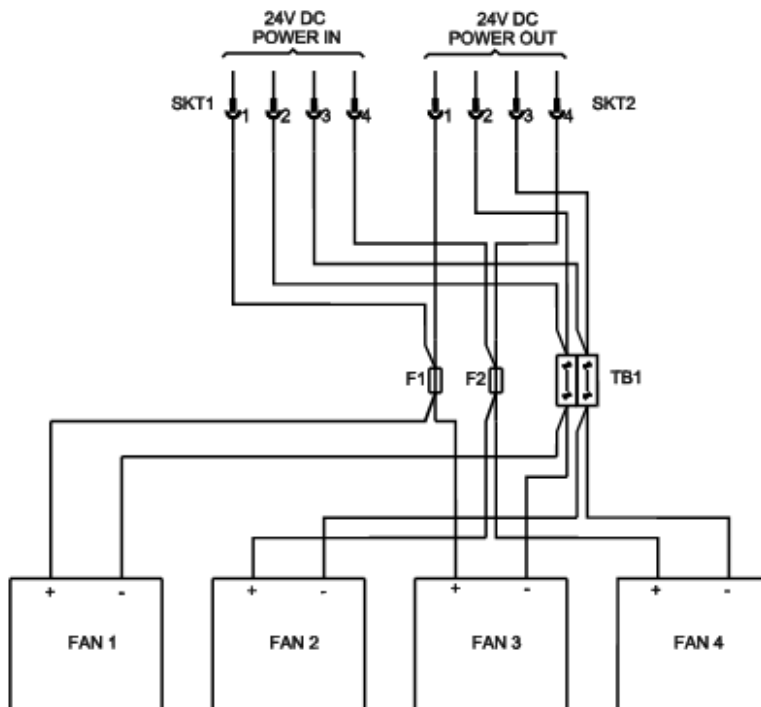
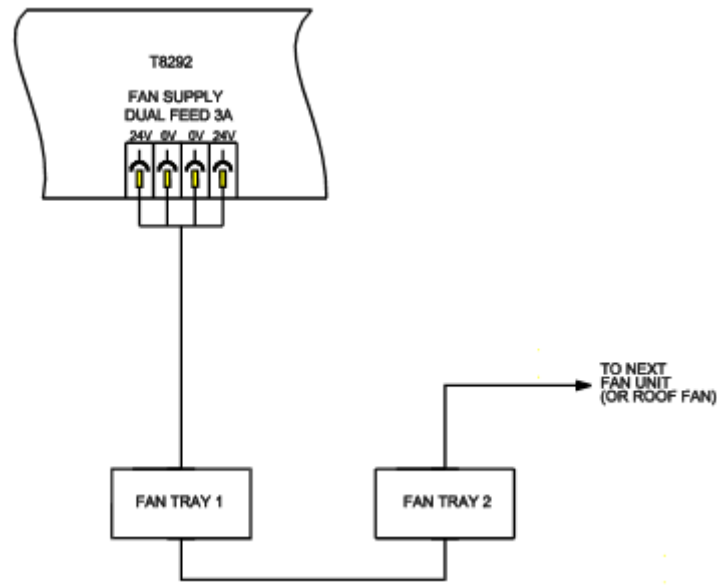


Figure 2 Fan Tray Wiring Diagram

The Fan Tray is powered from dual 24 Vdc supplies arranged such that the fans are supplied in pairs via 250 mA anti-surge fuses. The 0 V supply is connected via terminal block TB1.

Each fan is capable of moving 69 m<sup>3</sup>/h when operating with a nominal rotor speed of 3100 rpm. Protection against overloading and reverse polarity is provided electronically for each fan.

Figure 3 shows the method used to connect power to the Fan Trays in a Trusted System.



**Figure 3 Fan Tray Power Connection Detail**

The main supply for the Fan Tray is derived from a Trusted Power Distribution Unit MCB 24 Vdc - T8292 via a Trusted Fan Power Cable – TC-011-01. The same type of cable is used to interconnect the Fan Trays/Roof Fans in a Trusted System module rack. A fully populated module rack will include five Fan Trays, and may also include a Roof Fan Unit. This is the maximum number of Fan Trays/Roof Fan Units that may be powered from a single Trusted Power Distribution Unit miniature circuit breaker (MCB).

The pin connections of SKT 1 and SKT 2 are identical and are detailed below:

Pin	Service
1	24 V-1
2	0 V
3	0 V
4	24 V-2

**Table 1 Fan Tray Pin Connections**

## 2. Specifications

Voltage Range	18 Vdc to 28 Vdc
Fans	4-off Papst Type 8414NG
<b>Individual Fan MTBF</b>	
at 40°C	70,000 hours
at 70°C	35,000 hours
Fusing	Internal 250 mA anti-surge
Power Consumption	2 x 4 W
Air Flow (at 3100 rpm)	69 m <sup>3</sup> /h (40.6 ft <sup>3</sup> /min)
Operating Temperature	0 °C to +60 °C (+32 °F to +140 °F)
Non-operating Temperature	-20 °C to +70 °C (-4 °F to +158 °F)
Relative Humidity range (operating, storage & transport)	10 % – 95 %, non-condensing
Environmental Specifications	<a href="#">Refer to document 552517</a>
<b>Dimensions</b>	
Height	88 mm (3.46 in)
Width	483 mm (19 in)
Depth	267 mm (10.5 in)
Weight	1.8 kg (3.97 lb)