ICS Triplex T9832

AADvance Dual Analog Input Termination Assembly

ICS Triplex T9832 is the dual analog-input termination assembly for an AADvance controller. T9832 connects field signals to two compatible analog input modules; it is a termination assembly rather than a processor or an independent signal-processing module.



Technical Specifications

Product Identity	
Manufacturer	Rockwell Automation, Inc.
Model	T9832
Platform	AADvance
Product type	Analog input termination assembly
Base system	AADvance T9300 I/O base
Functional Configuration	
Redundancy arrangement	Dual
Field connections	16 analog inputs
Input modules supported	2
Compatible input family	T9431 / T9432, matched types per group
Maximum conductor cross-section	1.31 mm² (16 AWG)
Conductor stripping length	6 mm
Performance & Power	
Sensor-input fuse	50 mA, 125 V, Type T
Nominal channel load	135 Ω ±0.2%
Environment	
Installation enclosure	AADvance open-type assembly requires an enclosure with adequate cooling and access clearance

Selected original manufacturer pages follow on pages 3–8.

Compatibility & Selection Guide

System compatibility. Use T9832 with the matching AADvance T9431 or T9432 analog input module arrangement on T9300 I/O base units. Do not mix 8-channel and 16-channel input modules within one redundant group. Match the termination coding and installed controller/application configuration before replacement.

Wiring & Installation Reference

Analog-input terminations

Field inputs. 16 connections · Follow the printed channel +/– identity

Module arrangement. Dual matched analog inputs · Do not mix 8- and 16-channel modules

Field wire. Maximum 1.31 mm² / 16 AWG · Strip 6 mm

Mounting and handling

Check the base arrangement. Use the matching T9300 I/O base and verify the two-module redundant group.

Match coding and connections. Check the analog-input coding pegs and printed terminal identities before fitting.

Verify the completed assembly. Check field wiring, fuse ratings and the controller/application assignment before energizing.

Installation precautions. Do not remove or replace fuses while energized. Use the specified 50 mA, 125 V, Type T input fuses. AADvance is open-type equipment and requires an appropriate enclosure with adequate cooling and access clearances.

View mounting diagram · PDF page 8 | Rockwell terminal diagram, original manual p. 104 · PDF page 5

Manufacturer sources: ICSTT-RM447N-EN-P, February 2021.

Specify I/O Base Units

The T9300 I/O base unit (3 way) is a single, standardized design which suits all termination assemblies and I/O modules. The base unit can have one triple modular redundant assembly, one dual assembly and one simplex assembly or up to three to simplex assemblies. The dual and triple modular redundant assemblies can bridge adjacent base units, so two base units can (for example) hold three dual assemblies.

Choosing Termination Assemblies

The use of termination assemblies gives the AADvance system flexibility for creating different architectures and expanding the system. Each termination assembly is a very simple circuit that is matched to a type of I/O module and to a specified module configuration. This table shows a summary of the termination assemblies which are available and the related I/O module configurations.

Table 17 - Choosing a Termination Assembly

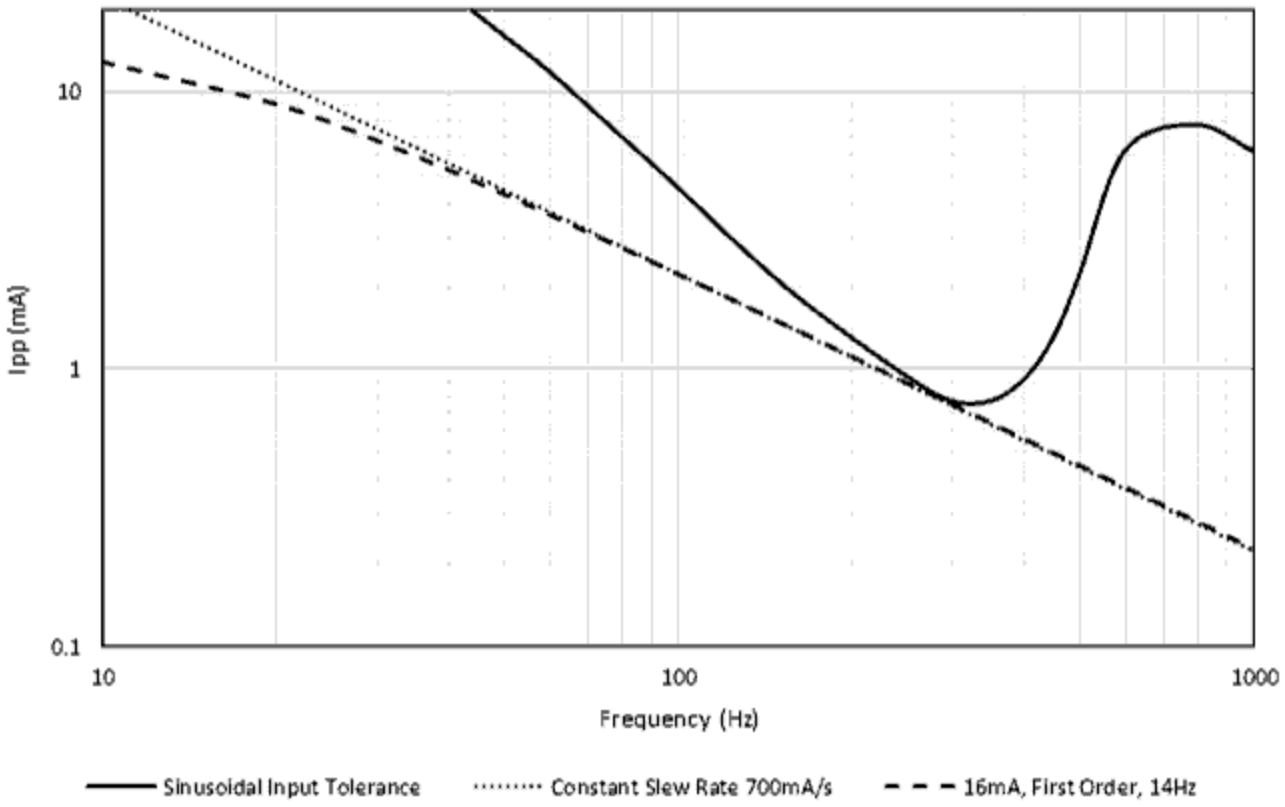
	Simplex I/O Module Configuration	Dual I/O Module Configuration	Triple I/O Module Configuration
Digital input	T9801, Digital Input TA, 16 channel, Simplex Commoned (non-isolated)	T9802, Digital Input TA, 16 channel, Dual	T9803, Digital Input TA, 16 channel, Triple
Analogue input	T9831, Analogue Input TA, 16 channel, Simplex, commoned (non-isolated)	T9832, Analogue Input TA, 16 channel, Dual	T9833, Analogue Input TA, 16 channel, Triple
Digital output	T9851, Digital Output TA, 8 channel, Simplex, commoned (non-isolated)	T9852, Digital Output TA, 8 channel, Dual (non-isolated)	Not applicable
Analogue Output	T9881, Analogue Output TA, 8 Channel, Simplex, commoned	T9882, Analogue Output TA, 8 channel, Dual	Not applicable

IMPORTANT The termination assemblies for inputs have 8-channel I/O modules and 16-channel I/O modules. A dual or triple arrangement can be made of 8- or 16-channel modules, but not a mixture of the two.

You need one termination assembly for each group of related modules. For example:

- Four T9401 digital input modules used in two, dual redundant configurations need two T9802 termination assemblies — one for each pair of modules
- Four T9401 digital input modules used for simplex inputs need four T9801 termination assemblies — one for each module

Figure 32 - Analogue Input Slew Tolerance



Transgression of the slew rate limits identified above may lead to channel failure resulting from diagnostics otherwise designed to verify that channels are operating within their defined safety accuracy.

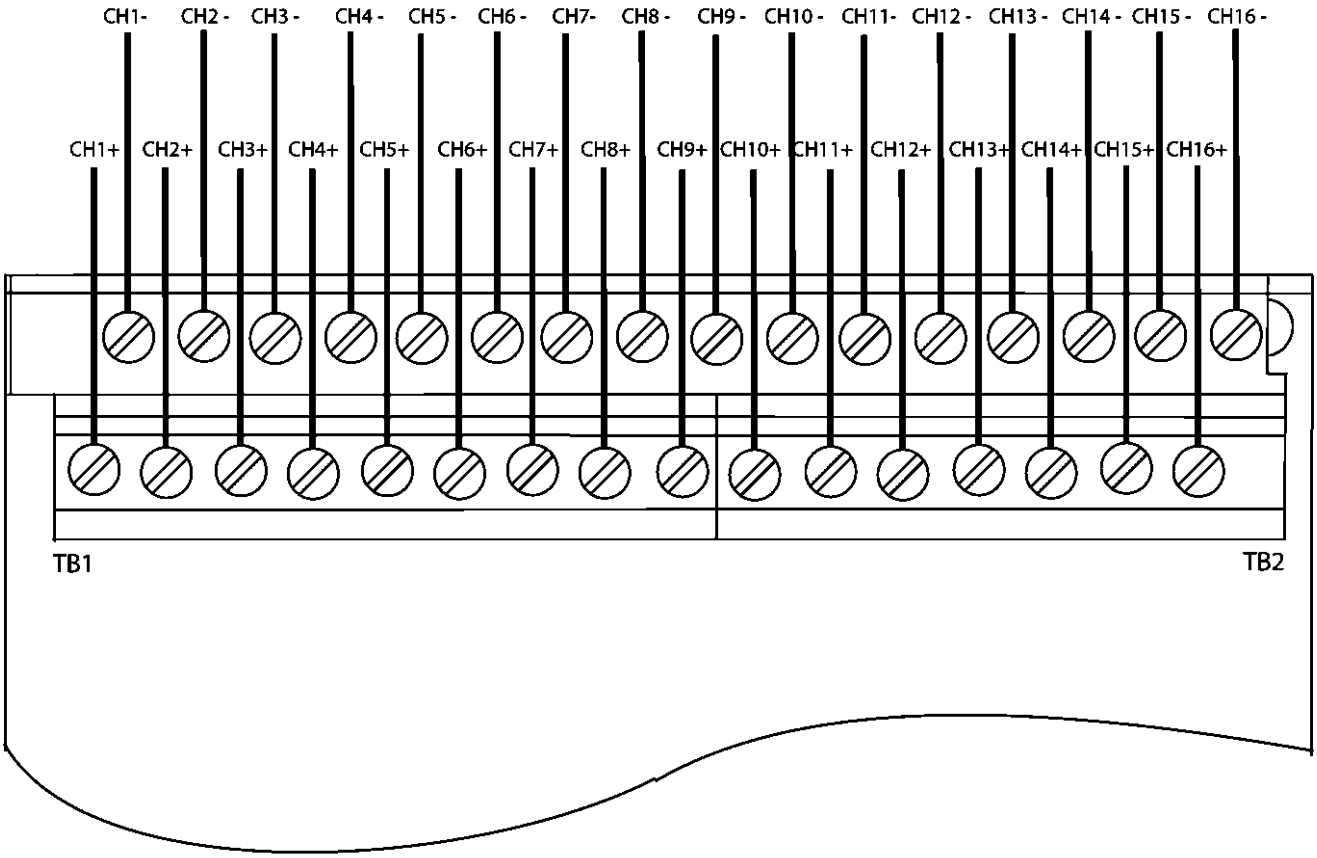
T9831/2/3 Termination Assemblies for Analogue Inputs

There are three termination assemblies for use with analogue input modules for simplex, dual and triple modular redundant configurations.

A T9831 termination assembly is for a simplex application and has terminations for 16 non-isolated analogue inputs. It supports one T9431 or T9432 analogue input module. The T9832 and T9833 termination assemblies support 16 isolated analogue inputs for dual and triple modular redundant arrangements of analogue input modules. Illustrated is the T9832 termination assembly:

Analog input terminal diagram

ICS Triplex T9832 | AADvance dual analog input, 16 field connections



Terminal screw torque: 0.5 N·m minimum (0.37 lbf·ft).

The terminal layout is shared by T9832 and T9833. T9832 is the dual assembly.

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Open the Rockwell manual at page 104

Analog input specifications

ICS Triplex T9832 | Dual Analog Input Termination Assembly

Field connections	16 isolated analog inputs
Supported module arrangement	Two matching T9431 or two matching T9432 modules
Field conductor cross section	Up to 1.31 mm² (16 AWG)
Stripping length	6 mm (¼ in.)
Input-channel fuse	50 mA, 125 V, Type T (Littelfuse)
Channel load	135 Ω ± 0.2%
Channel isolation withstand	±1.5 kV DC maximum for 1 minute
Maximum field-loop dissipation	0.08 W (0.27 BTU/hr) per field loop

Source: Rockwell Automation ICSTT-RM447N-EN-P, pp. 113–115 and Table 30.

Open the Rockwell Solutions Handbook at page 113

System Build

The AADvance® controller is supplied as an 'open' type equipment, prepared for installation on a wall or panel or inside a cabinet. This chapter gives an overview of a system construction to demonstrate how easy and simple the process can be; refer to the AADvance System Build Manual for more detailed information about constructing a system.

Controller Mounting

An AADvance controller and I/O bases can be mounted using one of two methods:

- A pair of parallel TS35 DIN rails.
- Panel mounted using three holes on each base.

Free Space around the Controller

Whichever mounting method is used the minimum depth from the rear mounting panel to the front panel and space around the base units are shown in the illustration, if you wish to mount the controller on DIN rails, increase this allowance by the increased depth of the DIN rails. The DIN rails must be TS35 rail, which is a 35mm × 7.5mm standard symmetric rail.

You must have sufficient free space around the base units to allow for the following:

- Space above, to adjust and install field wiring.
- Space below, to let modules fit and to be able to hold a module during removal.
- Space to the right of the last base unit in the row, to move an I/O base unit during assembly or if you are installing a new base unit.

If an expansion cable is to connect to the left-most base unit, the controller also needs space to the left, to fit the expansion cable adapter.

This illustration shows the minimum recommended clearances for a flat panel or DIN rail mounting.

