



# AADvance Controller

Catalog Numbers T9110, T9300, T9310, T9401/2, T9431/2,  
T9451, T9481/2



**Allen-Bradley**

by ROCKWELL AUTOMATION

System Build Manual

Original Instructions

**Table 5 - Maximum Electrical Rating Values**

Module	Back-plane Electrical Ratings		Input/Output Electrical Ratings
	Voltage Range (Vdc)	Maximum Current (mA)	
T9100	18-32	10.4A (400 mA per slot)	-
T9300	18-32	9.6A (400 mA per slot)	-
T9110	18-32	380	-
T9401	18-32	260	Input: 18-32 Vdc @ 24 mA
T9402	18-32	260	Input: 0-32 Vdc @ 6.5 mA
T9431	18-32	260	Input: 0-32 Vdc @ 6.5 mA
T9432	18-32	260	Input: 18-32 Vdc @ 24 mA
T9481	18-32	260	Output: 18-32 Vdc/0-20 mA
T9482	18-32	260	Output: 18-32 Vdc/0-20 mA
T9451	18-32	165	Output: 18-32 Vdc @ 0.5 A, Pilot duty 16 VA, 1.5 A Inrush
T9801	18-32	6.5	-
T9802	18-32	6.5	-
T9803	18-32	6.5	-
T9831	18-32	0-24	-
T9832	18-32	0-24	-
T9833	18-32	0-24	-
T9851	18-32	500	-
T9852	18-32	500	-
T9892	18-32	500	-
T9881	18-32	0-24	-
T9882	18-32	0-24	-

## Expansion Cable

This is used to add extra rows of I/O base units and modules.

**Table 9 - AADvance Controller Module Weight**

Item	Number Used	Weight Allowance g (oz.)	Subtotal
T9100 Processor Base Unit		x 460 g (16 oz.)	
T9110 Processor Module		x 430 g (15 oz.)	
T9401 Digital input module, 24 Vdc, 8 channel		x 280 g (10 oz.)	
T9402 Digital input module, 24 Vdc, 16 channel		x 340 g (12 oz.)	
T9431 Analogue input module, 8 channel		x 280 g (10 oz.)	
T9432 Analogue input module, 16 channel		x 340 g (12 oz.)	
T9451 Digital output module, 24 Vdc, 8 channel		x 340 g (12 oz.)	
T9482 Analogue output module, 8 channel		x 290 g (10.5 oz.)	
T9300 I/O base unit (3 way)		x 133 g (5 oz.)	
T98x1 Simplex Termination assembly		x 133 g (5 oz.)	
T98x2 Dual Termination Assembly		x 260 g (10 oz.)	
T98x3 Triple Termination Assembly		x 360 g (13 oz.)	
T9310 Expansion cable assembly and 2 m cable		x 670 g (24 oz.)	
T9841 Termination Assemblies (average weight)		x 175 g (6 oz.)	
Total estimated controller weight			

## Estimating Center of Gravity Information

If it is necessary to calculate the location of the center of gravity of an AADvance controller destined for a maritime or other shock-mounted application, it is reasonable to assume the center of gravity of each assembly of modules and their base unit is at the geometric center of the assembly.

## Design Considerations for Electrical Grounding

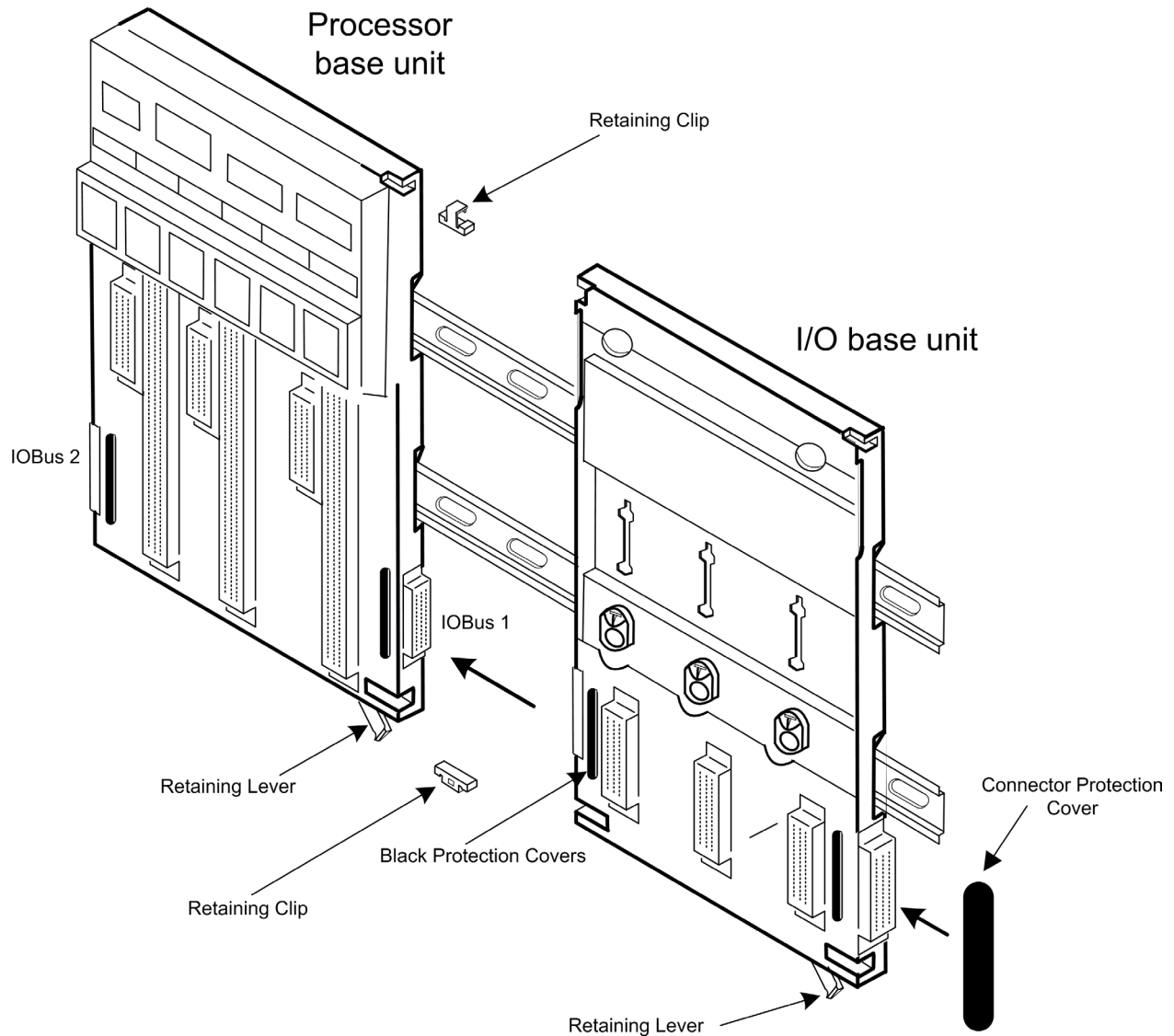
All applications of the controller will require at least two separate ground (earth) systems:

- An AC safety ground (sometimes called the 'dirty ground') to protect people in the event of a fault. The ground stud on the T9100 processor base unit, and all exposed metalwork such as DIN rails, will be bonded to the AC safety ground.
- An instrument ground (sometimes called the 'clean ground' or the '0 Vdc ground') to provide a good stable 0 V reference for the system. Every signal return will be referenced to the instrument ground. The instrument ground will be isolated from the AC safety ground.

The AC safety ground and the instrument ground will usually be made available through bus-bars. Bus-bars must be of copper; they may be nickel plated. For a small application, you may use ground studs instead of bus-bars.

Some field wiring, such as communications cables, will need shielded (screened) cable. There may be a shield ground, in addition to the AC safety and instrument grounds, to provide a common point to terminate shields of such cables. The shield ground will usually be connected to the AC safety ground; or, more rarely, to the instrument ground. In practice, the continuity of the shield connections will be more important than the goodness of the ground connection provided.

Figure 15 - Fit I/O Base Unit onto DIN Rails




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**IMPORTANT** Fit the rubber connector protection cover to exposed connectors that are not joined to another base unit.

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For a system build that uses DIN rails do the following:

1. Install the **DIN rails**.
  - The AADvance controller will be mounted onto one or more pairs of parallel DIN rails. For each pair of rails, mount the lower rail with its center line 101.0mm below the center line of the upper rail. M5 thread rolling screws are suitable.
2. Mount the **T9100 processor base unit**
  - Place the **T9100 processor base unit** onto the **DIN rails** and position it towards the left, leaving space for the T9300 I/O base units to the right.
  - Secure the **processor base unit** onto the **DIN rails** by sliding the retaining lever (below the base unit) to the left.
3. Mount each **T9300 I/O base unit**
  - Place a **T9300 I/O base unit** onto the **DIN rails** to the right of the T9100 processor base unit.