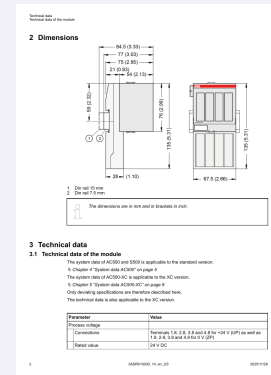


FIELD INSTALLATION QUICK GUIDE

Installation Instructions

ABB AI531

Eight-channel analog input module



PRODUCT	AI531
FAMILY	AC500 / S500 I/O
FUNCTION	Eight-channel analog input module
STATUS	Verify exact configuration

Prepared by Amikon Limited from ABB 3ADR010030 rev.14, 2025-11-28; AI531 connections. This guide does not replace the complete manufacturer manual, site procedure, hazardous-area drawing, or approval document.

01 CONFIRM THE ORDERED CONFIGURATION

Analog input channels	8; independently configurable
Conversion resolution	16 bits including sign
Process supply voltage	24 V DC; -15% to +20% tolerance
Supply ripple limit	5% maximum
Normal process-supply current	130 mA from UP
Voltage measuring ranges	+/-50 mV, +/-500 mV, +/-1 V, +/-5 V, +/-10 V; 0-5 V, 0-10 V
Current measuring ranges	-20 to +20 mA; 0-20 mA; 4-20 mA

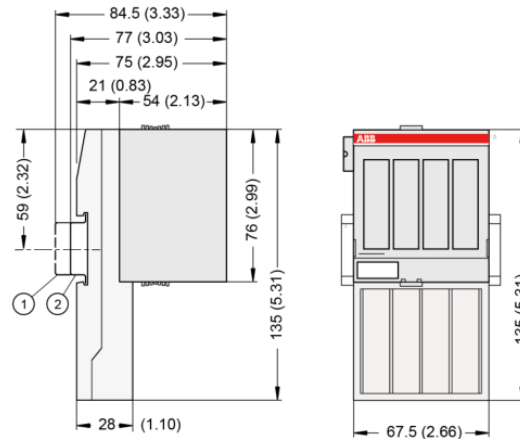
02 MOUNTING AND CONNECTION

- Isolate power and identify AI531, order 1SAP250600R0001; use the documented TU515 or TU516 terminal unit.
- Lock the module onto its terminal unit; preserve airflow and the permitted horizontal or vertical mounting temperature.
- Use a SELV/PELV 24 V DC supply. Connect UP at 1.8/2.8/3.8/4.8 and ZP at 1.9/2.9/3.9/4.9.
- Match the sensor circuit to the ABB terminal drawing; isolate analog sensors from ground as documented.
- Select each channel range and 50 Hz, 60 Hz or no suppression; verify shield and functional-earth arrangements.

OFFICIAL INSTALLATION REFERENCE

Technical data
Technical data of the module

2 Dimensions



- 1 Din rail 15 mm
- 2 Din rail 7.5 mm



The dimensions are in mm and in brackets in inch.

3 Technical data

3.1 Technical data of the module

The system data of AC500 and S500 is applicable to the standard version.

☞ Chapter 4 "System data AC500" on page 5

The system data of AC500-XC is applicable to the XC version.

☞ Chapter 5 "System data AC500-XC" on page 9

Only deviating specifications are therefore described here.

The technical data is also applicable to the XC version.

Parameter	Value
Process voltage	
Connections	Terminals 1.8, 2.8, 3.8 and 4.8 for +24 V (UP) as well as 1.9, 2.9, 3.9 and 4.9 for 0 V (ZP)
Rated value	24 V DC

Official manufacturer reference reproduced from ABB 3ADR010030 rev.14, 2025-11-28; AI531 connections. Use the current source document and all referenced drawings and notes for installation.

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CABLE ROUTING AND CONNECTION

- Lock the module onto its terminal unit; preserve airflow and the permitted horizontal or vertical mounting temperature.
- Use a SELV/PELV 24 V DC supply. Connect UP at 1.8/2.8/3.8/4.8 and ZP at 1.9/2.9/3.9/4.9.
- Match the sensor circuit to the ABB terminal drawing; isolate analog sensors from ground as documented.
- Select each channel range and 50 Hz, 60 Hz or no suppression; verify shield and functional-earth arrangements.
- Check measured values and diagnostics before release. Powered replacement requires all documented hot-swap conditions.

05

INITIAL SYSTEM CHECKS

- Confirm model identity and compatible system components before energizing.
- Verify wiring, grounding, enclosure, and applicable hazardous-area requirements.
- Check channel readings and fault diagnostics against the connected sensors.
- Record the installed order number and baseline operating condition.

06

CONTROLLED DOCUMENTS

Official source	ABB 3ADR010030 rev.14, 2025-11-28; AI531 connections
Product record	AI531
Manufacturer	ABB
Support	INFO@AMIKON.CN