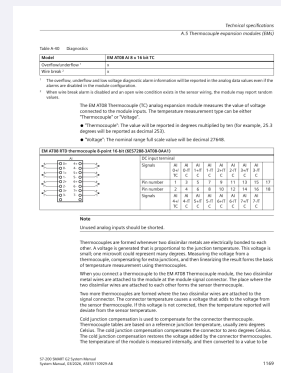


FIELD INSTALLATION QUICK GUIDE

Installation Instructions

Siemens 6ES7288-3AT08-0AA1

EM AT08 Thermocouple Input Module



PRODUCT	6ES7288-3AT08-0AA1
FAMILY	SIMATIC S7-200 SMART G2
FUNCTION	EM AT08 Thermocouple Input Module
STATUS	Verify exact configuration

Prepared by Amikon Limited from Siemens S7-200 SMART G2, 03/2026, A5E55110929-AB. 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
Temperature representation	0.1 degree C / 0.1 degree F
Voltage resolution	15 bits plus sign
Nominal voltage range	-80 to +80 mV
Input impedance	At least 10 MOhm
Maximum withstand voltage	+/-35 V
Noise rejection	85 dB at the selected filter frequency

02 MOUNTING AND CONNECTION

- Isolate power to the CPU, all G2 modules and related equipment before mounting or wiring.
- Mount on the grounded DIN rail with at least 25 mm clearance above, below and in front; observe vertical derating.
- Connect the module bus as instructed and use the exact EM AT08 pin diagram for each thermocouple pair.
- Short unused analog inputs; preserve polarity and select each installed thermocouple type in the project.
- Choose the filter and reference junction; keep the module away from rapid thermal changes and moving air.

OFFICIAL INSTALLATION REFERENCE

Technical specifications

A.5 Thermocouple expansion modules (EMs)

Table A-40 Diagnostics

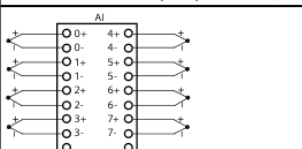
Model	EM AT08 AI 8 x 16 bit TC
Overflow/underflow ¹	x
Wire break ²	x

¹ The overflow, underflow and low voltage diagnostic alarm information will be reported in the analog data values even if the alarms are disabled in the module configuration.

² When wire break alarm is disabled and an open wire condition exists in the sensor wiring, the module may report random values.

The EM AT08 Thermocouple (TC) analog expansion module measures the value of voltage connected to the module inputs. The temperature measurement type can be either "Thermocouple" or "Voltage".

- "Thermocouple": The value will be reported in degrees multiplied by ten (for example, 25.3 degrees will be reported as decimal 253).
- "Voltage": The nominal range full scale value will be decimal 27648.

EM AT08 RTD thermocouple 8-point 16-bit (6ES7288-3AT08-0AA1)													
				DC input terminal									
				Signals	AI 0+/TC	AI 0-/T	AI 1+/T	AI 1-/T	AI 2+/T	AI 2-/T	AI 3+/T	AI 3-/T	
				Pin number	1	3	5	7	9	11	13	15	17
				Pin number	2	4	6	8	10	12	14	16	18
				Signals	AI 4+/TC	AI 4-/T	AI 5+/T	AI 5-/T	AI 6+/T	AI 6-/T	AI 7+/T	AI 7-/T	

Note

Unused analog inputs should be shorted.

Thermocouples are formed whenever two dissimilar metals are electrically bonded to each other. A voltage is generated that is proportional to the junction temperature. This voltage is small; one microvolt could represent many degrees. Measuring the voltage from a thermocouple, compensating for extra junctions, and then linearizing the result forms the basis of temperature measurement using thermocouples.

When you connect a thermocouple to the EM AT08 Thermocouple module, the two dissimilar metal wires are attached to the module at the module signal connector. The place where the two dissimilar wires are attached to each other forms the sensor thermocouple.

Two more thermocouples are formed where the two dissimilar wires are attached to the signal connector. The connector temperature causes a voltage that adds to the voltage from the sensor thermocouple. If this voltage is not corrected, then the temperature reported will deviate from the sensor temperature.

Cold junction compensation is used to compensate for the connector thermocouple. Thermocouple tables are based on a reference junction temperature, usually zero degrees Celsius. The cold junction compensation compensates the connector to zero degrees Celsius. The cold junction compensation restores the voltage added by the connector thermocouples. The temperature of the module is measured internally, and then converted to a value to be

04

CABLE ROUTING AND CONNECTION

- Mount on the grounded DIN rail with at least 25 mm clearance above, below and in front; observe vertical derating.
- Connect the module bus as instructed and use the exact EM AT08 pin diagram for each thermocouple pair.
- Short unused analog inputs; preserve polarity and select each installed thermocouple type in the project.
- Choose the filter and reference junction; keep the module away from rapid thermal changes and moving air.
- Wait for valid data after startup calibration and apply the specified warm-up when testing accuracy and diagnostics.

05

INITIAL SYSTEM CHECKS

- Confirm model identity and compatible system components before energizing.
- Verify wiring, grounding, enclosure, and applicable hazardous-area requirements.
- Verify channel scaling, calibration completion, cold-junction stability and wire-break handling.
- Record the installed order number and baseline operating condition.

06

CONTROLLED DOCUMENTS

Official source	Siemens S7-200 SMART G2, 03/2026, A5E55110929-AB
Product record	6ES7288-3AT08-0AA1
Manufacturer	Siemens
Support	INFO@AMIKON.CN