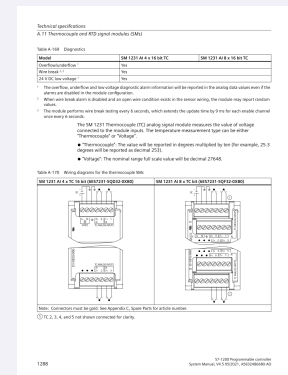


FIELD INSTALLATION QUICK GUIDE

Installation Instructions

Siemens 6ES7231-5QD32-0XB0

SM 1231 AI 4 x 16 bit TC



03 OFFICIAL INSTALLATION REFERENCE

Technical specifications

A.11 Thermocouple and RTD signal modules (SMs)

Table A-169 Diagnostics

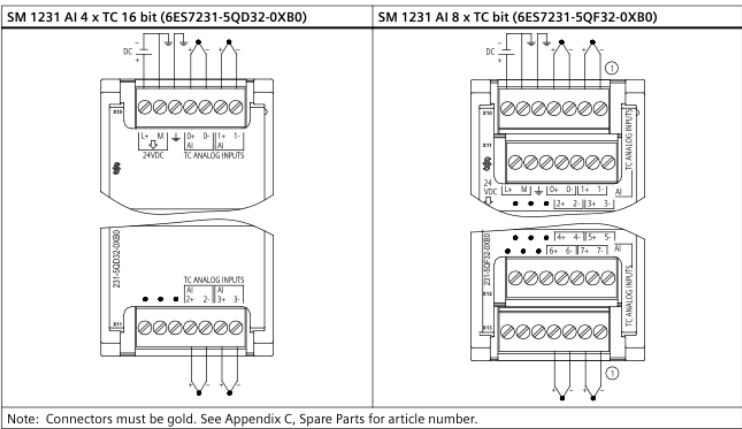
Model	SM 1231 AI 4 x 16 bit TC	SM 1231 AI 8 x 16 bit TC
Overflow/underflow ¹	Yes	
Wire break ^{2,3}	Yes	
24 V DC low voltage ¹	Yes	

- 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.
- ³ The module performs wire break testing every 6 seconds, which extends the update time by 9 ms for each enable channel once every 6 seconds.

The SM 1231 Thermocouple (TC) analog signal 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.

Table A-170 Wiring diagrams for the thermocouple SMs



① TC 2, 3, 4, and 5 not shown connected for clarity.

Official manufacturer reference reproduced from Siemens S7-1200 System Manual V4.5, A5E02486680-AO, 05/2021. Use the current source document and all referenced drawings and notes for installation.

04

CABLE ROUTING AND CONNECTION

- Connect the specified 24 V DC supply and functional earth according to the exact-model diagram.
- Use the required gold connectors and preserve thermocouple polarity and the documented input pin locations.
- Configure the sensor type, compensation method and noise-rejection setting for each channel.
- Deactivate unused thermocouple channels as documented; follow the manual treatment of unused analog inputs.
- Allow the specified warm-up and test known inputs and sensor-fault diagnostics before process operation.

05

INITIAL SYSTEM CHECKS

- Confirm model identity and compatible system components before energizing.
- Verify wiring, grounding, enclosure, and applicable hazardous-area requirements.
- Validate known temperature inputs, warm-up behavior and configured sensor-fault handling.
- Record the installed order number and baseline operating condition.

06

CONTROLLED DOCUMENTS

Official source	Siemens S7-1200 System Manual V4.5, A5E02486680-AO, 05/2021
Product record	6ES7231-5QD32-0XB0
Manufacturer	Siemens
Support	INFO@AMIKON.CN