8 8-Channel TC Input MTA

Part No. 6ES7650-1AF51-2XX0 or 6ES7650-1AF50-2XX0

8.1 Description

This section contains information and requirements to facilitate installation of Siemens Marshalled Termination Assembly (MTA) (6ES7650-1AF51-2XX0 or 6ES7650-1AF50-2XX0), designed to interface with the Siemens ET 200M 8-Channel TC Input Module (6ES7 331-7PF10-0AB0, E-Stand 4 or higher, & 6ES7 331-7PF11-0AB0).

Note: The only major difference between the two part numbers is the housing. The Anthracite Gray housing is the latest design. Functionality of both part numbers is the same.

8.2 Features

The following features have been incorporated into this MTA:

- Built in Reference Junction Sensor
- LED indication of power supply condition
- Module power fusing
- Shield connections available for channel cabling
- Ground stud for connecting shield to earth ground
- Power input terminations are pluggable for easy maintenance

8.3 Operation

Power is supplied via the removable power connector that is retained by screws and marked **L+**, **M**. The **Module 1** LED indicates the presence of voltage and **F100** supplies power to the module connected to **J1**. The Power Monitor board option is not available on this MTA.

Incoming power is sent to the module via the power fuse.

Field Terminals, **TCx+**, **TCx-**, and **SHx** connect to the field devices. The **TCx+** and **TCx-** field connections allow many types of thermocouples to be used with this MTA. The **SHx** is the field cable shield connection. The field termination connections are not removable so that measurement errors can be reduced.

The channel connections connect to the I/O module input via **J1**.

The MTA also contains an RTD for use as a reference junction sensor. It is thermally coupled to the field terminals and is used by the Module for reference.

8.4 Installation Requirements

See Section 2, *Installation*, before performing any installation and observe all warnings

A common interconnecting cable (6ES7922-3BD00-0AS0 or 6ES7922-3BJ00-0AS0), supporting eight Thermocouple input channels, interconnects the Thermocouple input termination assembly to the 8-channel Thermocouple input module (6ES7 331-7PF10-0AB0, E-Stand 4 or higher & 6ES7 331-7PF11-0AB0). See Figure 8–1.

Note

To disconnect the interconnecting cable shield from ground at the MTA only, cut and remove the shield disconnect jumper, **W100**.

8.5 Maintenance

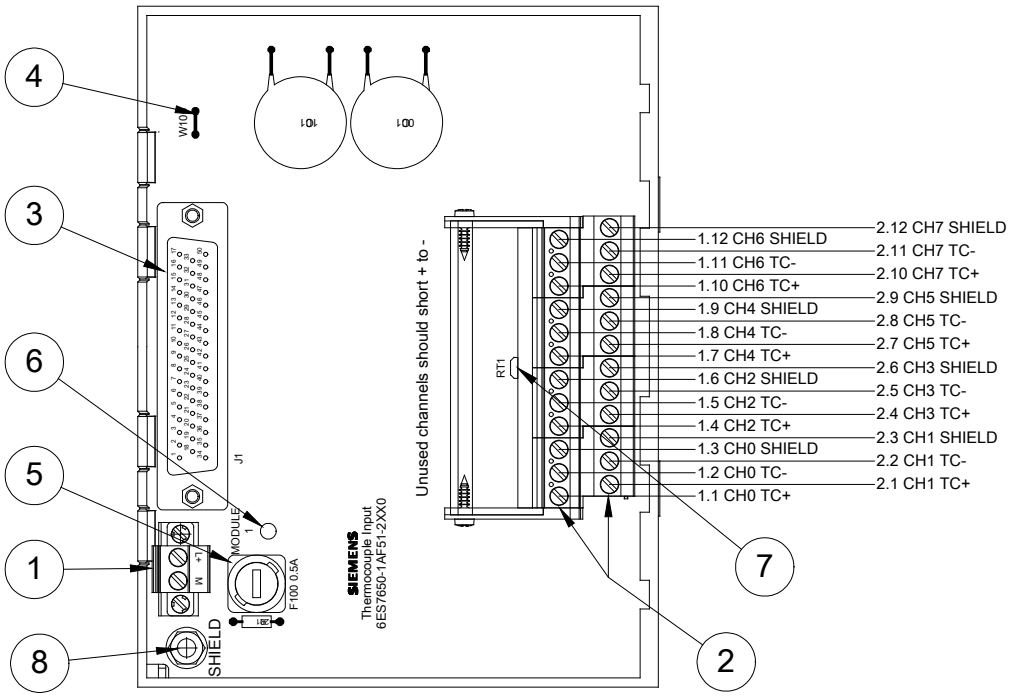
See Section 3, *Maintenance*, before performing any maintenance and observe all warnings

Under normal operation, the I/O Power LED is on. If it is off, check the I/O Module Fuse and the power supply to the MTA.

8.6 8-Channel TC Input Marshalled Termination Assembly

Figure 8–1 8-Channel TC Input Marshalled Termination Assembly

(6ES7650-1AF51-2XX0 or 6ES7650-1AF50-2XX0)



Key to numbered items in Figure 8–1	
Item	**Description**
1	Input power connection
2	Field wiring connections
3	I/O Module connection
4	Shield disconnect jumper (W100)
5	I/O module power fuse
6	I/O module power indicator
7	Reference Junction Sensor (PT100)
8	Shield Ground Stud for connecting to earth ground

8.7 Technical Specifications

Technical Specifications for 8-Channel TC Input MTA (6ES7650-1AF51-2XX0 or 6ES7650-1AF50-2XX0)	
Dimensions - See Section 1, Figure 1.3, Short Version	
Mounting	
Din Rail	35mm (deep top hat style)
Power Input	
Voltage Input for Single Feed	21.6 to 28.8 VDC
Current Consumption (nominal ratings; all channels connected)	0.243 A maximum
Power Dissipation (typical)	1 W
Terminal Block Wire Sizes	TB100
Wire Size – US	24 – 14 gauge AWG
Wire Size – Metric	0,205 – 2,08 mm sq.
Power Supply Specifications	See Module Specs
Fuse Ratings	
Individual channel	NA
Module Power	0.5 A (Bussmann P/N: GMA-0.5A) (Siemens Spare P/N: A5E01568885)
Indicators	
Input Power	NA
Module Power	Green LED on when input power available
Channel Power	NA
Field Terminal Block Wire Sizes TB1 – TB2	
Wire Size – US	24 – 14 gauge AWG
Wire Size – Metric	0,205 – 2,08 mm sq.
Environmental	
Ambient Temperature	-25C to +60C
Humidity	5% to 95% Non-condensing
Approvals	
MTA Agency Approvals	See Preface section, Approvals Table

Note

Fuses are available as spare parts from Siemens.

Fuse information can be found at:

http://www.bussmann.com

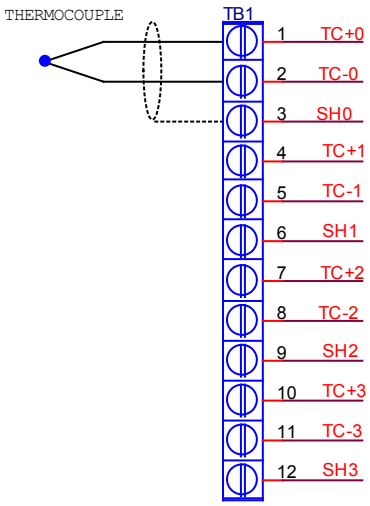
See the Section 8.10, *Hardware Configuration*, for more information.

8.8 Module Restrictions

Restrictions for 8-Channel TC Input MTA (6ES7650-1AF51-2XX0 or 6ES7650-1AF50-2XX0)	
I/O Module Restrictions	
MTA Design	External Junction Compensation only
Module Accuracy	
External Compensation Accuracy	+/-0.3C or 0.6% of terminal temperature

8.9 Typical Thermocouple Connection to Field Terminals

Figure 8–2 Typical Thermocouple Connection to Field Terminals



8.10 Hardware Configuration

Neither the 8-Channel Thermocouple Module nor the MTA supports redundant operation.

8.10.1 Addresses

Input address and process image should be set to the user preferences.

Figure 8–3 8-Channel TC Input Hardware Configuration: Address Setup

