

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7650-1BD51-0XX0

FET SWITCH ADAPTER FOR FAIL SAFE ANALOG INPUT MTA

Used with the applicable SIMATIC ET 200M MTA configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Complete official manufacturer PDF follows this cover.

Source: Siemens official technical documentation for 6ES7650-1BD51-0XX0

Approvals

Marshallled Termination Assembly	Part Numbers	Agency Approvals
Analog Input 8-Channel 16 bit	6ES7650-1AA50-2XX0	CE EMC in accordance with EN61000-6-2 EN61000-6-4 ATEX in accordance with EN600079-0 EN600079-15
	6ES7650-1AA51-2XX0	
	6ES7650-1AA52-2XX0	
Analog Output 8-Channel 12 bit	6ES7650-1AB50-2XX0	Safety: ⁸⁾ EN 61131-2:2007
	6ES7650-1AB51-2XX0	
RTD Input 8-Channel	6ES7650-1AG50-2XX0	FM Approved: FM3600, FM3611, FM3810
	6ES7650-1AG51-2XX0	
TC Input 8-Channel	6ES7650-1AF50-2XX0	Class I, Division 2, Groups A,B,C,D; Temperature code T4A at Ta = 60°C
	6ES7650-1AF51-2XX0	
Discrete Input 16-Channel 24 VDC	6ES7650-1AC10-3XX0	Class I, Zone 2, Group IIC; Temperature code T4 at Ta = 60°C
	6ES7650-1AC11-3XX0	
F Relay Output ²⁾ 10-Channel 24-150 VDC 120-230 VAC	6ES7650-1AM30-6XX0 ^{6) 7) 10)}	cULus - UL508, CSA C22.2 No.142 cULus haz.loc. - UL1604, CSA C22.2 No.213 ¹¹⁾ ISA 12.12.01, CSA C22.2 No.213
	6ES7650-1AM31-6XX0 ^{6) 7) 10)}	
Relay Output 16-Channel 24-150 VDC 120-230 VAC	6ES7650-1AM30-3XX0 ^{6) 7) 10)}	KEMA ATEX in accordance with EN 60079-15: 2005 and EN 60079-0 : 2006 II 3 G Ex nA II T4 T/C & RTD MTA II 3 G Ex nC IIC T4 All others
	6ES7650-1AH50-5XX0	
F Analog Input ²⁾ 6-Channel Failsafe	6ES7650-1AH51-5XX0	C-Tick
	6ES7650-1AH61-5XX0	
F Analog Input HART ²⁾ 6-Channel Failsafe	6ES7650-1AH62-5XX0 ¹¹⁾	Temperature Range -25 to 60°C ²⁾ TÜV (Functional Safety) IEC61508 (SIL3, Relay MTA's SIL 2) ³⁾ Accessory TÜV when used with any Failsafe MTA ⁴⁾ Accessory - used with F Analog Input ⁵⁾ Accessory - used with F Analog Input MTA
	6ES7650-1AK10-7XX0	
F Discrete Input ²⁾ 12/24-Channel Failsafe 24 VDC	6ES7650-1AK11-7XX0	⁶⁾ UL60079-15 instead of UL1604 ⁷⁾ Class I, Division 2, Groups A,B,C,D; Temperature code T4 ⁹⁾ Not for use on MTAs with covers ¹⁰⁾ See manual for special temperature restrictions
	6ES7650-1AL10-6XX0	
F Discrete Output ²⁾ 10-Channel Failsafe 24 VDC	6ES7650-1AL11-6XX0	
	6ES7650-1BA02-0XX0 ⁷⁾	
Power Monitor Board ³⁾	6ES7650-1BB50-0XX0 ⁹⁾	⁷⁾ Class I, Division 2, Groups A,B,C,D; Temperature code T4
	6ES7650-1BB51-0XX0 ⁹⁾	
5.6V Diode Board ⁵⁾	6ES7650-1BC50-0XX0	⁹⁾ Not for use on MTAs with covers ¹⁰⁾ See manual for special temperature restrictions
	6ES7650-1BC51-0XX0	
6.2V Diode Board ⁵⁾	6ES7650-1BD50-0XX0	
	6ES7650-1BD51-0XX0	
FET Switch Adapter ^{4) 5)}	6ES7650-1AD10-2XX0	
	6ES7650-1AD11-2XX0 ¹¹⁾	
Discrete Output 16-Channel 24 VDC	6ES7650-1AA61-2XX0 ⁷⁾	
	6ES7650-1AB61-2XX0 ⁷⁾	
HART Analog Input 8-Channel		
HART Analog Output 8-Channel		

9.15 FET Switch Adapter

Part No. 6ES7650-1BD51-0XX0 or 6ES7650-1BD50-0XX0

9.15.1 Description

This section contains installation information and requirements for the Siemens FET Switch Adapter. The FET Switch Adapter (6ES7650-1BD51-0XX0 or 6ES7650-1BD50-0XX0) is used on the ET200M Marshalled Termination Assembly (MTA) (6ES7650-1AH51-5XX0 or 6ES7650-1AH50-5XX0), which interfaces with the Siemens ET 200M 6-Channel F Analog Input Module (6ES7 336-1HE00-0AB0, E-Stand 4 or higher).

Note: The two part numbers are interchangeable.

9.15.2 Operation

The FET Switch Adapter contains optically coupled electronic switches powered by the FAI modules VS supply. These switches break the input signal path and Mana when power is lost on the FAI module or if the power supply in the FAI module fails. See Figure 9–16.

This opening in the input signal path accomplishes two things:

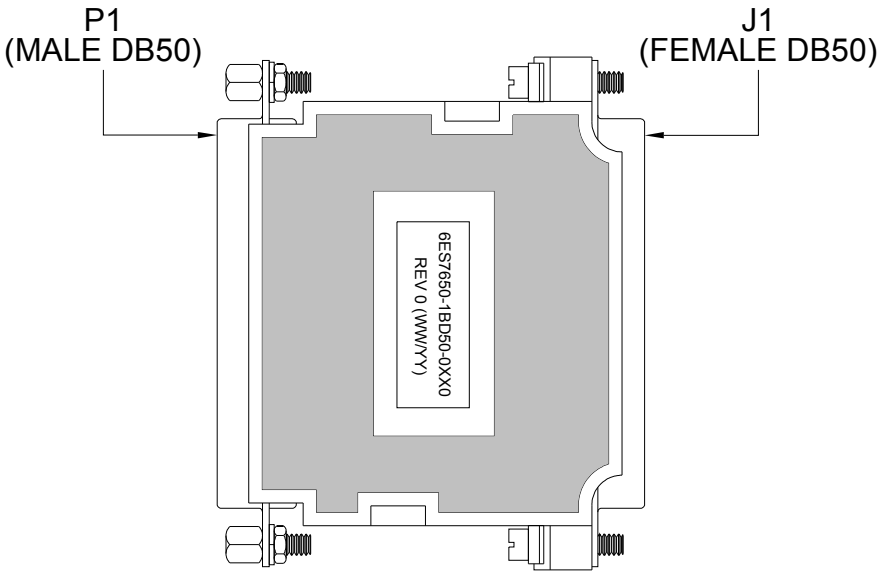
- First, if the power fails, all the electronics in the module are removed from the circuit so that they cannot affect the other, still active, module.
- Second, when power is restored and the switches close, the FAI module re-integrates correctly into the configuration without causing bumps or process fluctuations.

9.15.3 Installation Requirements

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

The FET Switch Adapter is installed between **J1** on the MTA and the interconnecting cable to the FAI Module. It should be screwed down to prevent vibration or stress from disconnecting it from the MTA.

Figure 9–16 FET Switch Adapter Assembly



9.15.5 Technical Specifications

Technical Specifications for FET Switch Adapter (6ES7650-1BD51-0XX0 or 6ES7650-1BD50-0XX0)	
Dimensions	
L x W x D – inches	2.5 x 2.75 x 0.75
L x W x D – mm	63.5 x 69.9 x 50.8 x 20
Power Use	
FAI Vs	25 mA
Environmental	
Ambient Temperature	-25C to +60C
Humidity	5% to 95% Non-condensing