

SIEMENS

Preface

Properties

1

SIMATIC

ET 200S distributed I/O Terminal modules

Manual

Safety Guidelines

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.
⚠ WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.
⚠ CAUTION
with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.
CAUTION
without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.
NOTICE
indicates that an unintended result or situation can occur if the corresponding information is not taken into account.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The device/system may only be set up and used in conjunction with this documentation. Commissioning and operation of a device/system may only be performed by **qualified personnel**. Within the context of the safety notes in this documentation qualified persons are defined as persons who are authorized to commission, ground and label devices, systems and circuits in accordance with established safety practices and standards.

Prescribed Usage

Note the following:

⚠ WARNING
This device may only be used for the applications described in the catalog or the technical description and only in connection with devices or components from other manufacturers which have been approved or recommended by Siemens. Correct, reliable operation of the product requires proper transport, storage, positioning and assembly as well as careful operation and maintenance.

Trademarks

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Preface

Purpose of the manual

This manual supplements the *ET 200S Distributed I/O System* Operating Instructions. General functions for the ET 200S are described in the *ET 200S Distributed I/O System* Operating Instructions.

The information in this document along with the operating instructions enables you to commission the ET 200S.

Basic knowledge requirements

To understand these operating instructions you should have general knowledge of automation engineering.

Scope of the manual

This manual applies to this ET 200S module. It describes the components that are valid at the time of publication.

Recycling and disposal

Thanks to the fact that it is low in contaminants, this ET 200S module is recyclable. For environmentally compliant recycling and disposal of your electronic waste, please contact a company certified for the disposal of electronic waste.

Additional support

If you have any questions relating to the products described in these operating instructions, and do not find the answers in this document, please contact your local Siemens representative.

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The portal to our technical documentation for the various SIMATIC products and systems is available at:

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Training center

We offer courses to help you get started with the ET 200S and the SIMATIC S7 automation system. Please contact your regional training center or the central training center in D - 90327, Nuremberg, Germany.

Phone: +49 (911) 895-3200.

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- The right documentation for you using our Service & Support search engine.
- The bulletin board, a worldwide knowledge exchange for users and experts.
- Your local contact for Automation & Drives in our contact database.
- Information about on-site services, repairs, spare parts. Lots more can be found on our "Services" pages.

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Properties

1.1 Function of terminal modules

Terminal modules implement the electrical and mechanical connection of the I/O modules with the interface module and the terminating module.

- The inserted I/O module determines the signals to terminals 1 to 16, A3, A4, A7, A8, A11, A12, A15, A16.
- Depending on the selected terminal module only certain terminals are available.

Select the required terminal module based on the potentials required by your application. For more detailed information on assigning terminal signals, refer to the manual for the relevant I/O module.

An AUX(iliary) bus AUX1 is integrated into the terminal modules. Any desired potential (up to 230 VAC) can be applied there. You can use the AUX(iliary) bus individually:

- As a protective conductor bar
- For additionally required voltage

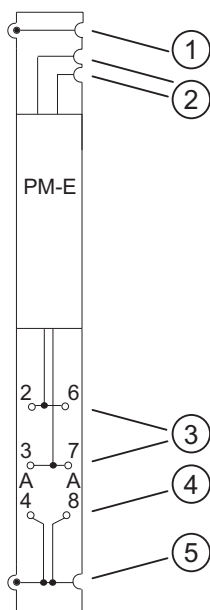
1.2 Terminal module TM-P15x23-A1 (6ES7193-4CCx0-0AA0)

Properties

- Terminal modules for power modules
- Infeed for a new potential group up to the next TM-P terminal module
- Available in three variants: screw terminal, spring terminal, "fast connect" quick connection method without stripping
- Solid AUX1 bus with electrical connection to the next potential group to the left
- Access to the AUX1 potential through terminals A4 and A8

Block diagram

Block diagram of the TM-P15S23-A1, TM-P15C23-A1, and TM-P15N23-A1 terminal modules



- ① Backplane bus
- ② Infeed of the power buses to the electronic modules
- ③ Terminals with connection to the power module
- ④ Use of terminals A4 and A8 as protective conductor terminals or potential terminals of any kind
- ⑤ Infeed of the AUX1 bus by means of terminals A4 and A8

TM-P15x23-A1 technical data (6ES7193-4CCx0-0AA0)

Dimensions and weight	
Dimensions W × H × D (mm)	
• Screw/spring terminals	15 × 132 × 43
• Fast Connect	15 × 162 × 43
Weight	Approx. 65 g

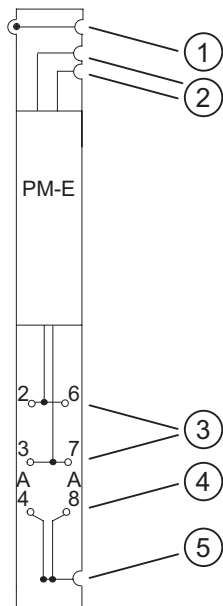
1.3 Terminal module TM-P15x23-A0 (6ES7193-4CDx0-0AA0)

Properties

- Terminal modules for power modules
- Infeed for a new potential group up to the next TM-P terminal module
- Available in three variants: screw terminal, spring terminal, "fast connect" quick connection method without stripping
- The signal assignment of the AUX1 bus is specified by the feed to the power module of this potential group.
- Interrupted AUX1 bus without electrical connection to the next potential group to the left
- Access to the AUX1 potential through terminals A4 and A8

Block diagram

Block diagram for the TM-P15S23-A0, TM-P15C23-A0, and TM-P15N23-A0 terminal modules



- ① Backplane bus
- ② Infeed of the power buses to the electronic modules
- ③ Terminals with connection to the power module
- ④ Use of terminals A4 and A8 as protective conductor terminals or potential terminals of any kind
- ⑤ Infeed of the AUX1 bus by means of terminals A4 and A8

TM-P15x23-A0 technical data (6ES7193-4CDx0-0AA0)

Dimensions and weight	
Dimensions W x H x D (mm)	
• Screw/spring terminals	15 × 132 × 43
• Fast Connect	15 × 162 × 43
Weight	Approx. 65 g

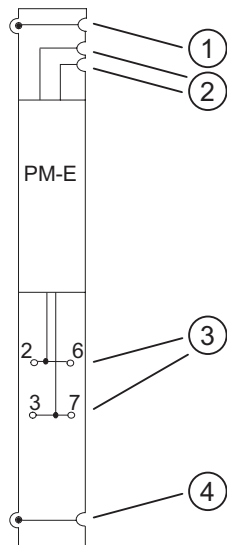
1.4 Terminal module TM-P15x22-01 (6ES7193-4CEX0-0AA0)

Properties

- Terminal modules for power modules
- Infeed for a new potential group up to the next TM-P terminal module
- Available in three variants: screw terminal, spring terminal, "fast connect" quick connection method without stripping
- The signal assignment of the AUX1 bus is specified by the feed to the power module of this potential group.
- Solid AUX1 bus with electrical connection to the next potential group to the left
- No access to the AUX1 potential through terminals

Block diagram

Block diagram for the TM-P15S22-01, TM-P15C22-01, and TM-P15N22-01 terminal modules



- ① Backplane bus
- ② Infeed of the power buses to the electronic modules
- ③ Terminals with connection to the power module
- ④ Solid AUX1 bus without a connection to the terminals

TM-P15x22-01 technical data (6ES7193-4CEX0-0AA0)

Dimensions and weight	
Dimensions W × H × D (mm)	
• Screw/spring terminals	15 x 119.5 x 43
• Fast Connect	15 x 142 x 43
Weight	Approx. 55 g

1.5 Terminal module TM-P30x44-A0 (6ES7193-4CKx0-0AA0)

Properties

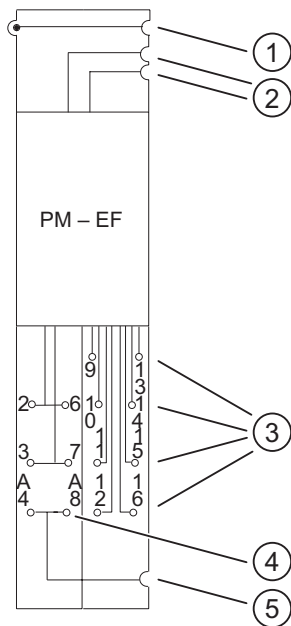
- Terminal module for fail-safe PM-E F 24 VDC PROFIsafe power modules
- Infeed for a new potential group up to the next TM-P terminal module
- Available in two variants: screw terminal, spring terminal
- Wiring of the fail-safe digital outputs of the PM-E F 24 VDC PROFIsafe
- Interrupted AUX1 bus without electrical connection to the next potential group to the left
- Access to the AUX1 potential through terminals A4 and A8

⚠ CAUTION

If high currents occur at DO 2 P and DO 2 M, you must wire terminals 11 and 15 (DO 2 P) and 12 and 16 (DO 2 M) in parallel. Otherwise, the temperature of the terminals cannot be prevented from rising due to the current load.

Block diagram

Block diagram of the TM-P30S44-A0 and TM-P30C44-A0 terminal module



- ① Backplane bus
- ② Infeed of the power buses to the electronic modules
- ③ Terminals with connection to the power module
- ④ Use of terminals A4 and A8 as protective conductor terminals or potential terminals of any kind
- ⑤ Infeed of the AUX1 bus by means of terminals A4 and A8

TM-P30x44-A0 technical data (6ES7193-4CKx0-0AA0)

Dimensions and weight	
Dimensions W × H × D (mm)	30 x 132 x 43
Weight	Approx. 116 g (TM-P30S44-A0)
	Approx. 100 g (TM-P30C44-A0)

Description of the PM-E F 24 VDC PROFIsafe power module

You can find a description of the PM-E F 24 VDC PROFIsafe power module that you can use with the above terminal modules in the *ET 200S Distributed I/O System, Fail-Safe Modules* manual.

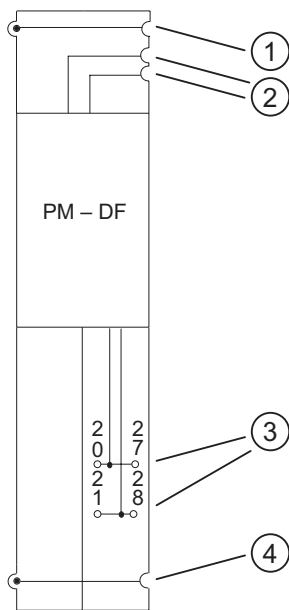
1.6 TM-PF30S47-F1 terminal module for PM-D F DC24V PROFIsafe (3RK1903-3AA00)

Properties

- Terminal module for fail-safe PM-E F 24 VDC PROFIsafe power modules
- Infeed for a new potential group up to the next TM-P terminal module
- Available with screw terminal
- Solid AUX1 bus with electrical connection to the next potential group to the left
- No access to the AUX1 potential through terminals

Block diagram

Block diagram of the TM-PF30S47-F1 terminal module



- ① Backplane bus
- ② Infeed of the power buses to the electronic modules
- ③ Terminals with connection to the power module
- ④ Solid AUX1 bus without a connection to the terminals

TM-PF30S47-F1 technical data (3RK1903-3AA00)

Dimensions and weight	
Dimensions W x H x D (mm)	30 × 196.5 × 102
Weight	Approx. 300 g

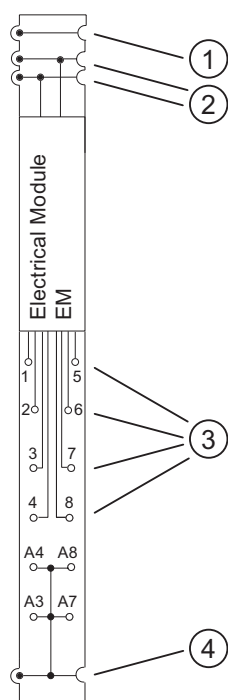
1.7 Universal terminal module TM-E15x26-A1 (6ES7193-4CAx0-0AA0)

Properties

- Universal terminal module for all 15 mm wide electronic modules
- Available in three variants: screw terminal, spring terminal, "fast connect" quick connection method without stripping
- The electronic module determines the assignment to terminals 1 to 8.
- Solid AUX1 bus with electrical connection to the next potential group to the left
- Access to the AUX1 potential through terminals A4, A8 and A3, A7

Block diagram

Block diagram for the TM-E15S26-A1, TM-E15C26-A1, and TM-E15N26-A1 terminal modules



- ① Backplane bus
- ② Solid power buses from the power module
- ③ Terminals with connection to the electronic module
- ④ Solid AUX1 bus with connection to terminals A4, A8 and A3, A7

TM-E15x26-A1 technical data (6ES7193-4CAx0-0AA0)

Dimensions and weight	
Dimensions W x H x D (mm)	
• Screw/spring terminals	15 × 157 × 43
• Fast Connect	15 × 202 × 43
Weight	Approx. 70 g (TM-E15C26-A1)
	Approx. 83 g (TM-E15S26-A1)
	Approx. 95 g (TM-E15N26-A1)

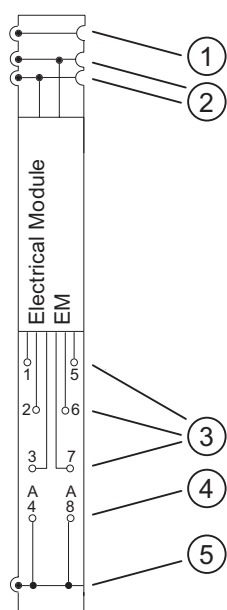
1.8 Terminal module TM-E15x24-A1 (6ES7193-4CAx0-0AA0)

Properties

- Terminal module for all 15 mm wide electronic modules
- Available in three variants: screw terminal, spring terminal, "fast connect" quick connection method without stripping
- The electronic module determines the signal assignment at terminals 1 to 3 and 5 to 7.
- Solid AUX1 bus with electrical connection to the next potential group to the left
- Access to the AUX1 potential through terminals A4 and A8

Block diagram

Block diagram for the TM-E15S24-A1, TM-E15C24-A1, and TM-E15N24-A1 terminal modules



- ① Backplane bus
- ② Solid power buses from the power module
- ③ Terminals with connection to the electronic module
- ④ Use of terminals 4 and 8 as protective conductor terminals or potential terminals of any kind
- ⑤ Solid AUX1 bus with connection to terminals A4 and A8

Properties

1.8 Terminal module TM-E15x24-A1 (6ES7193-4CAx0-0AA0)

TM-E15x24-A1 technical data (6ES7193-4CAx0-0AA0)

Dimensions and weight	
Dimensions W x H x D (mm)	
• Screw/spring terminals	15 × 132 × 43
• Fast Connect	15 × 162 × 43
Weight	Approx. 65 g (TM-E15S24-A1 and TM-E15C24-A1) Approx. 72 g(TM-E15N24-A1)

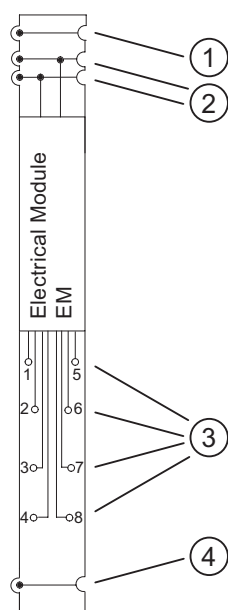
1.9 Terminal module TM-E15x24-01 (6ES7193-4CBx0-0AA0)

Properties

- Terminal module for all 15 mm wide electronic modules
- Available in three variants: screw terminal, spring terminal, "fast connect" quick connection method without stripping
- The electronic module determines the assignment to terminals 1 to 8.
- Solid AUX1 bus with electrical connection to the next potential group to the left
- No access to the AUX1 potential through terminals

Block diagram

Block diagram for the TM-E15S24-01, TM-E15C24-01, and TM-E15N24-01 terminal modules



- ① Backplane bus
- ② Solid power buses from the power module
- ③ Terminals with connection to the electronic module
- ④ Solid AUX1 bus without a connection to the terminals

Properties

1.9 Terminal module TM-E15x24-01 (6ES7193-4CBx0-0AA0)

TM-E15x24-01 technical data (6ES7193-4CBx0-0AA0)

Dimensions and weight	
Dimensions W x H x D (mm)	
• Screw/spring terminals	15 × 132 × 43
• Fast Connect	15 × 162 × 43
Weight	Approx. 65 g (TM-E15S24-01 and TM-E15C24-01) Approx. 72 g (TM-E15N24-01)

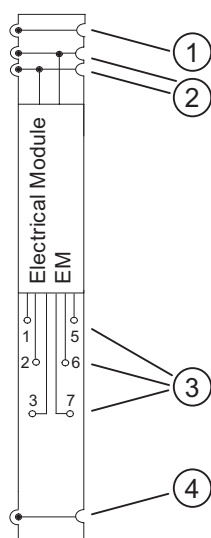
1.10 Terminal module TM-E15x23-01 (6ES7193-4CBx0-0AA0)

Properties

- Terminal module for all 15 mm wide electronic modules
- Available in three variants: screw terminal, spring terminal, "fast connect" quick connection method without stripping
- The electronic module determines the signal assignment at terminals 1 to 3 and 5 to 7.
- Solid AUX1 bus with electrical connection to the next potential group to the left
- No access to the AUX1 potential through terminals

Block diagram

Block diagram for the TM-E15S23-01, TM-E15C23-01, and TM-E15N23-01 terminal modules



- ① Backplane bus
- ② Solid power buses from the power module
- ③ Terminals with connection to the electronic module
- ④ Solid AUX1 bus without a connection to the terminals

TM-E15x23-01 technical data (6ES7193-4CBx0-0AA0)

Dimensions and weight	
Dimensions W x H x D (mm)	
• Screw/spring terminals	15 × 120 × 43
• Fast Connect	15 × 142 × 43
Weight	Approx. 55 g (TM-E15S23-01 and TM-E15C23-01)
	Approx. 60 g (TM-E15N23-01)

1.11 Terminal module TM-E15x24-AT (6ES7193-4CLx0-0AA0)

Properties

- Terminal module for the 15 mm wide 2AI TC HF terminal module

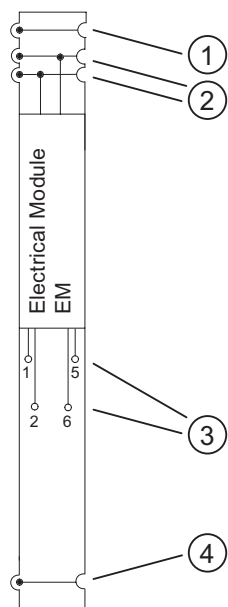
⚠ CAUTION

You can only insert the 2AI TC HF electronic module into the TM-E15S24-AT/TM-E15C24-AT terminal module. Inserting another electronic module can result in the destruction of the internal reference junction of the terminal module.

- The terminal module disposes of an internal reference junction for temperature compensation. Temperature compensation is thus possible directly at the reference junction of the thermocouples.
- Available in two variants: screw terminal, spring terminal
- The electronic module determines the signal assignment at terminals 1, 2 and 5, 6.
- Solid AUX1 bus with electrical connection to the next potential group to the left
- No access to the AUX1 potential through terminals

Block diagram

Block diagram of the TM-E15S24-AT and TM-P15C24-AT terminal module



- ① Backplane bus
- ② Solid power buses from the power module
- ③ Terminals with connection to the electronic module
- ④ Solid AUX1 bus without a connection to the terminals

TM-E15x24-AT technical data (6ES7193-4CLx0-0AA0)

Dimensions and weight	
Dimensions W x H x D (mm)	15 × 132 × 43
Weight	Approx. 55 g

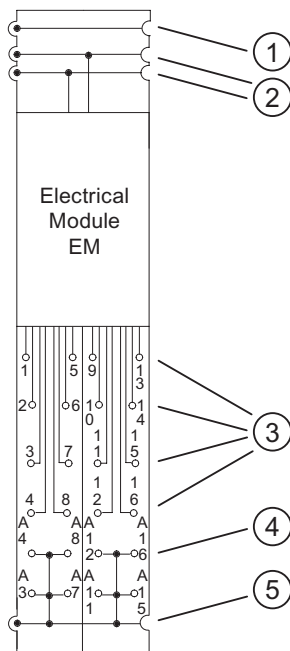
1.12 Universal terminal module TM-E30x46-A1 (6ES7193-4CFx0-0AA0)

Properties

- Universal terminal module for all 30 mm wide electronic modules
- Available in two variants: screw terminal, spring terminal
- The electronic module determines the assignment to terminals 1 to 16.
- Solid AUX1 bus with electrical connection to the next potential group to the left
- Access to the AUX1 potential via terminals A4, A8, A3, A7 and A12, A16, A11, A15

Block diagram

Block diagram of the TM-E30S46-A1 and TM-E30C46-A1 terminal module



- ① Backplane bus
- ② Solid power buses from the power module
- ③ Terminals with connection to the electronic module
- ④ Connection of terminals A4, A8, A3, A7 and A12, A16, A11, A15 as protective conductor terminals or potential terminals of any kind
- ⑤ Solid AUX1 bus with a connection to terminals A4, A3, A8, A7 and A12, A11, A16, A15

TM-E30x46-A1 technical data (6ES7193-4CFx0-0AA0)

Dimensions and weight	
Dimensions W × H × D (mm)	30 x 157 x 43
Weight	Approx. 158 g (TM-E30S46-A1)
	Approx. 131 g (TM-E30C46-A1)

Description of the electronic modules

You can find a description of the 4/8 F-DI 24 VDC PROFIsafe and the 4 F-DO 24 VDC/2 A PROFIsafe electronic modules you can use with the above terminal modules in the *ET 200S Distributed I/O Module, Fail-Safe Modules* manual.

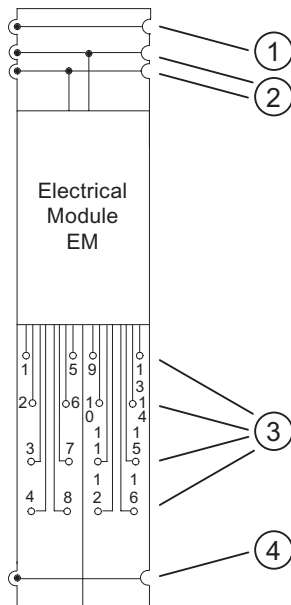
1.13 Terminal module TM-E30x44-01 (6ES7193-4CGx0-0AA0)

Properties

- Terminal module for 30 mm wide electronic modules and fail-safe electronic modules
- Available in two variants: screw terminal, spring terminal
- The electronic module determines the assignment to terminals 1 to 16.
- Solid AUX1 bus with electrical connection to the next potential group to the left
- No access to the AUX1 potential through terminals

Block diagram

Block diagram of the TM-E30S44-01 and TM-E30C44-01 terminal module



- ① Backplane bus
- ② Solid power buses from the power module
- ③ Terminals with connection to the electronic module
- ④ Solid AUX1 bus without a connection to the terminals

TM-E30x44-01 technical data (6ES7193-4CGx0-0AA0)

Dimensions and weight	
Dimensions W x H x D (mm)	30 × 132 × 43
Weight	Approx. 110 g (TM-E30C44-01) Approx. 125 g (TM-E30S44-01)

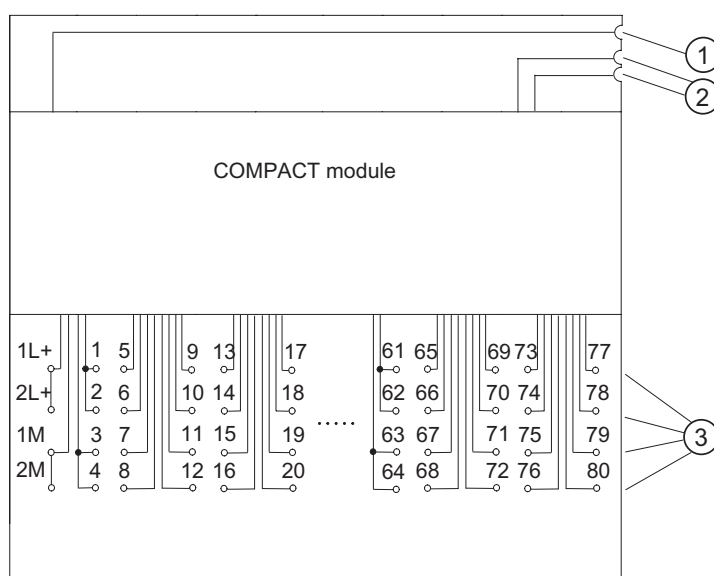
1.14 Terminal module TM-C120x (6ES7193-4DLx0-0AA0)

Properties

- Terminal module for the COMPACT modules
- Available in two variants: screw terminal, spring terminal
- The COMPACT module determines the assignment to terminals 1 to 80.
- Infeed of the power buses to the electronic modules from the last potential group of the COMPACT module
- Solid AUX1 bus
- No access to the AUX1 potential through terminals
- Expandable with 40-pin supplementary terminal;. Additionally required potentials can be applied there

Block diagram

Block diagram of the TM-C120S and TM-C120C terminal modules



- ① Backplane bus
- ② Infeed of the power buses to the electronic modules (from the last potential group of the COMPACT module)
- ③ Terminals with connection to the COMPACT module

TM-C120x technical data (6ES7193-4DLx0-0AA0)

Dimensions and weight	
Dimensions W x H x D (mm)	
• Screw/spring terminals	120 × 132 × 43
Weight	Approx. 335 g

1.15 Supplementary Terminal TE-U120x4x10 (6ES7193-4FLx0-0AA0)

Properties

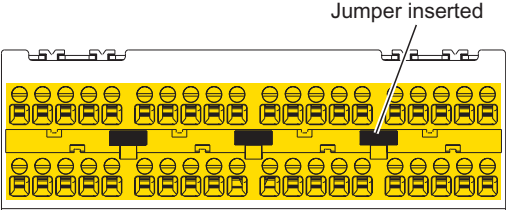
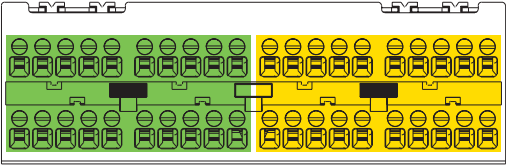
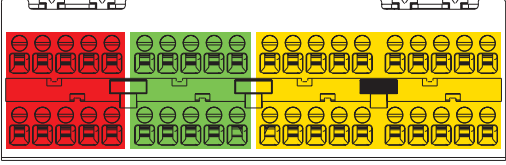
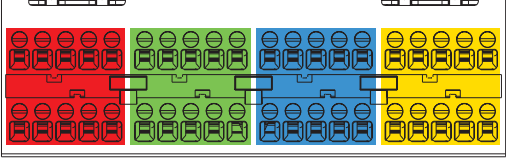
- 40-pin extension for
 - The TM-C terminal module for COMPACT modules
 - Any terminal modules with a width of 120 mm
- Available in two variants: screw terminal, spring terminal
- Any additionally required potentials can be applied to the supplementary terminal, e.g. with 3 or 4-wire connection of sensors or actuators.
- The four potential groups on the supplementary terminal can be adapted (extended) for the local requirements with pluggable bridges.

Extending the potential groups

In the state of delivery the supplementary terminal is equipped with 3 pluggable jumpers.

If it is necessary to apply more than one potential to the supplementary terminal, the potential groups on the supplementary terminal can be extended. This is done with pluggable jumpers that connect two or more groups. After removal of the corresponding jumpers, terminals are available for further potentials.

Table 1-1 Potential groups on the supplementary terminal

Quantity		Position on the supplementary terminal
Plugged jumpers	Potential groups	
3 ¹	1	 <p style="text-align: center;">Jumper inserted</p>
2	2	
1	3	
None	4	
¹ Delivery status		

TE-U120x4x10 technical data (6ES7193-4FLx0-0AA0)

Dimensions and weight	
Dimensions W × H × D (mm)	
• Screw/spring terminals	120 × 38 × 30
• With mounting bracket	120 × 79 × 30
Weight	Approx. 160 g
Terminal-specific data	
Connectable potentials	Up to 230 VAC
Current-carrying capacity (of supplementary terminal and pluggable jumpers)	10 A

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