

7SR11 and 7SR12

Installation Guide

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2012/01	Software Maintenance
2011/06	Software Maintenance
2011/06	Added CT and VT connection information
2010/04	Amendments following PLM review
2010/02	Document reformat due to rebrand
2009/09	Revised format
2009/04	First issue

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Section 1: Installation

1.1 Packaging

Relays are supplied in packaging designed to mechanically protect them while in both transit and storage.

This packaging should be recycled where systems exist, or disposed of in a manner which does not provide a threat to health or the environment. All laws and regulations specific to the country of disposal should be adhered to.

1.2 Unpacking, Storage and Handling

On receipt remove the relay from the container in which it was received and inspect it for obvious damage. It is recommended that the relay not be removed from its case.

If damage has been sustained a claim should be immediately be made against the carrier, also inform Siemens Protection Devices Limited, and the nearest Siemens agent.

When not required for immediate use, Relays should be stored in their original packaging. The place of storage should be dry and free from dust. It should also not exceed the storage temperature and humidity limits of the Relay; given in the Performance Specification of this manual.

The relay contains static sensitive devices, which are susceptible to damage due to static discharge. The relay's electronic circuits are protected from damage by static discharge when the relay is housed in its case.

There can be no requirement to disassemble any relay, since there are no user serviceable parts in the relay. If any modules have been tampered with, then the guarantee will be invalidated. Siemens Protection Devices Limited reserves the right to charge for any subsequent repairs.

1.3 Recommended Mounting Position

The relay uses a liquid crystal display (LCD) for programming and operation. The LCD has a vertical viewing angle of $\pm 30^\circ$ and is back-lit. However, the best viewing position is at eye level, and this is particularly important given its control features.

The relay should be mounted on the circuit breaker (or protection panel) to allow the operator the best access to the relay functions

1.4 Wiring

The product should be wired according to the scheme requirements, with reference to the appropriate wiring diagram.

1.5 Earthing

Terminal 28 of the PSU (Power Supply Unit) should be solidly earthed by a direct connection to the panel earth. The Relay case earth stud connection should be connected to terminal 28 of the PSU.

It is normal practice to additionally 'daisy chain' together the case (safety) earths of all the Relays installed in a panel to prevent earth current loops posing a risk to personnel.

1.6 Ancillary Equipment

The relay can be interrogated locally or remotely. For local interrogation a portable PC with suitable version of MS Windows (2000 SP4 or XP SP2) and Reydisp Evolution™ s/w (Latest Version available 32 bit) using USB port situated on front of the relay.

1.7 Disposal

The Relay should be disposed of in a manner which does not provide a threat to health or the environment. All laws and regulations specific to the country of disposal should be adhered to.

The relays and protection systems manufactured under the Reyrolle brand currently do not come within the scope of either the European WEEE or RoHS directives as they are equipment making up a fixed installation.

Section 2: Equipment Operating Conditions

2.1 Current Transformer Circuits



The secondary circuit of a live CT must not be open circuited. Non-observance of this precaution can result in injury to personnel or damage to equipment.

2.2 External Resistors



Where external resistors are connected to the relay circuitry, these may present a danger of electric shock or burns, if touched.

2.3 Front Cover



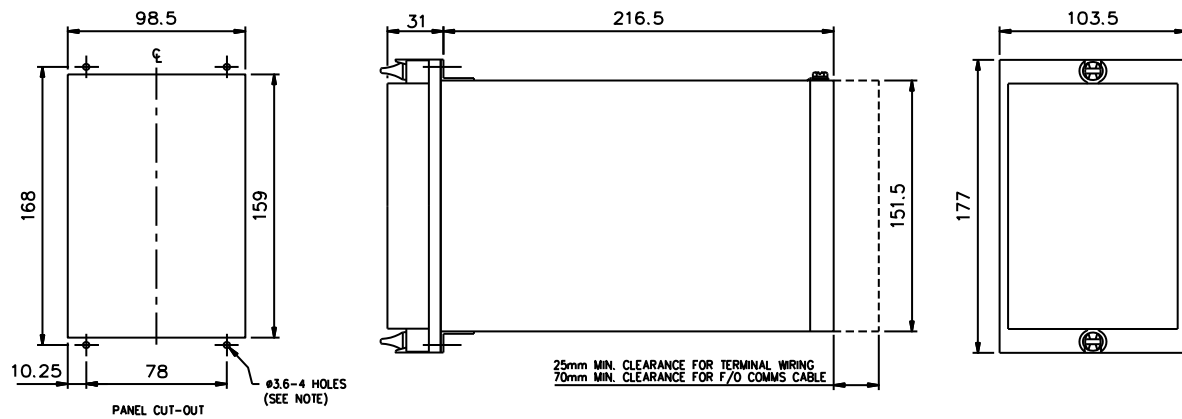
The front cover provides additional securing of the relay element within the case. The relay cover should be in place during normal operating conditions.

Section 3: Dimensions and Panel Fixings

3.1 Relay Dimensions and Weight

Relays are supplied in the modular size E4

The following drawing which is available from the website gives panel cut-out and mounting details.



NOTE:
THE Ø3.6 HOLES ARE FOR M4 THREAD FORMING (TRILOBULAR) SCREWS. THESE ARE SUPPLIED AS STANDARD AND ARE SUITABLE FOR USE IN FERROUS/ALUMINIUM PANELS 1.6mm THICK AND ABOVE. FOR OTHER PANELS, HOLES TO BE M4 CLEARANCE (TYPICALLY Ø4.5) AND RELAYS MOUNTED USING M4 MACHINE SCREWS, NUTS AND LOCKWASHERS (SUPPLIED IN PANEL FIXING KIT).

Figure 3.1-1 Overall Dimensions and Panel Drilling for Size E4 Epsilon Case

Hardware Model	Net Weight Kg
7SR1101	2.7
7SR1102	3.2
7SR1103	3.2
7SR1204	2.7
7SR1205	3.2
7SR1206	3.2

3.2 Fixings

3.2.1 Crimps

Ring tongued crimps with 90° bend are recommended.

3.2.2 Panel Fixings

Typical mounting screw kit per Relay

Consists of 4 off M4x10mm Screws

4 off M4 Nuts

4 off M4 Lock Washer

Typical rear terminal block fixing kit (1kit per terminal block fitted to relay) Consists of:

28 off M4, 8mm Screws

28 off M4 Lock Washer

Section 4: Rear Terminal Drawings

4.1 E4 Case



Figure 4.1-1 E4 Case viewed from rear

Notes

- 1) Recommended terminations are pre-insulated and must be crimped using approved tooling.
- 2) RS485 (Block "B" Terms 14, 16, 18, 20) connection to this communication facility is by screened, twisted pair cable. On site when wiring other facilities ensure that these terminals are not obscured by other wiring runs. Cable should be RS485 compliant.

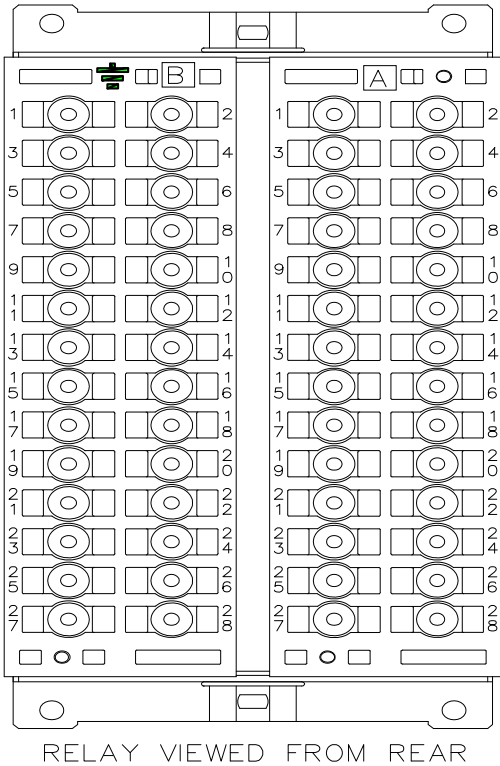


Figure 4.1-2 E4 Case Terminal Arrangement viewed from rear

Section 5: Connection/Wiring/Diagrams

5.1 Wiring Diagram: 7SR1101 EF Relay with 3BI & 5BO

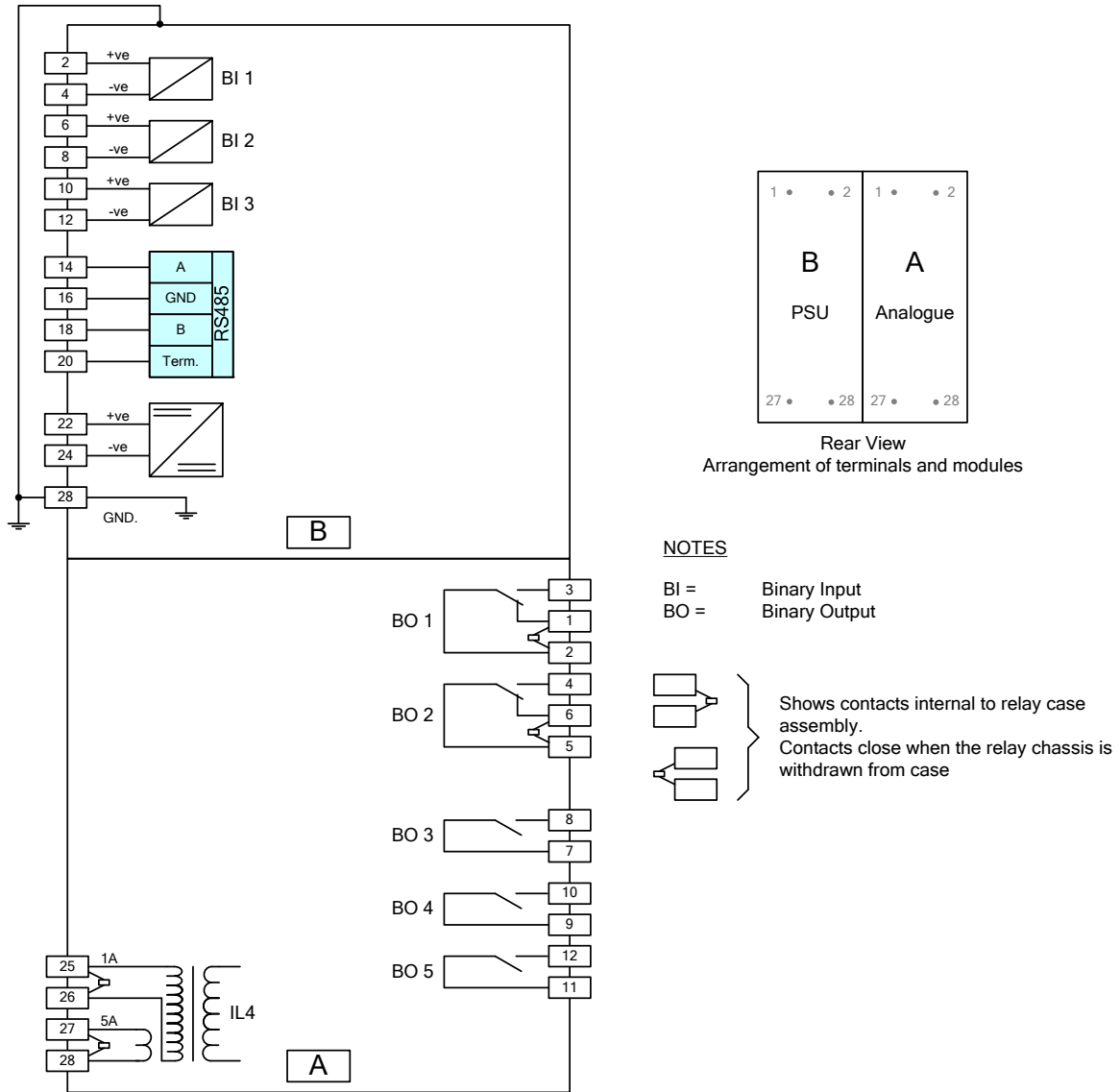


Figure 5.1-1 7SR1101 Connection Diagram

5.2 Wiring Diagram: 7SR1102 OC/EF Relay with 3BI & 5BO

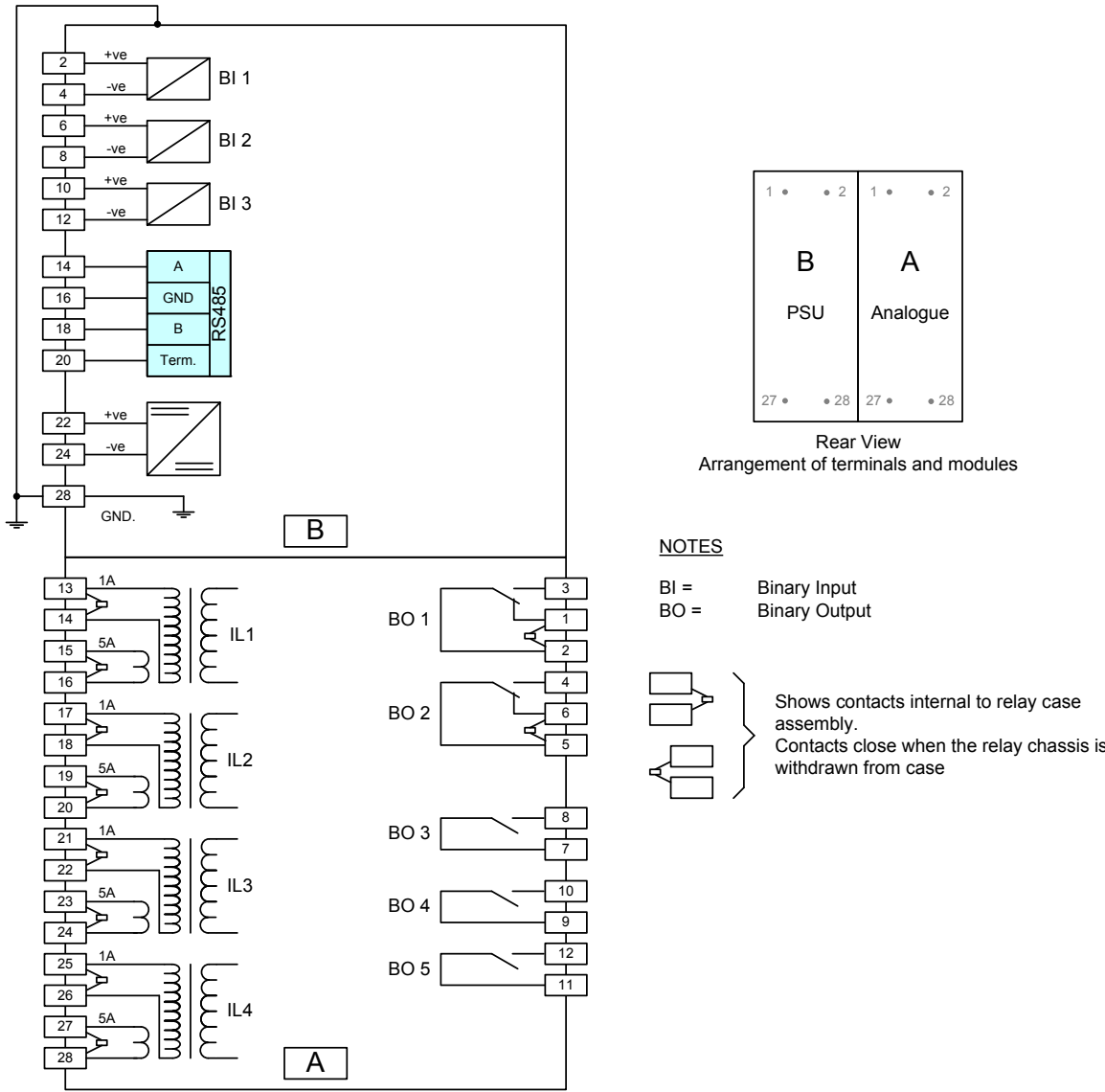


Figure 5.2-1 7SR1102 Connection Diagram

5.3 Wiring Diagram: 7SR1103 OC/EF Relay with 6 BI & 8BO

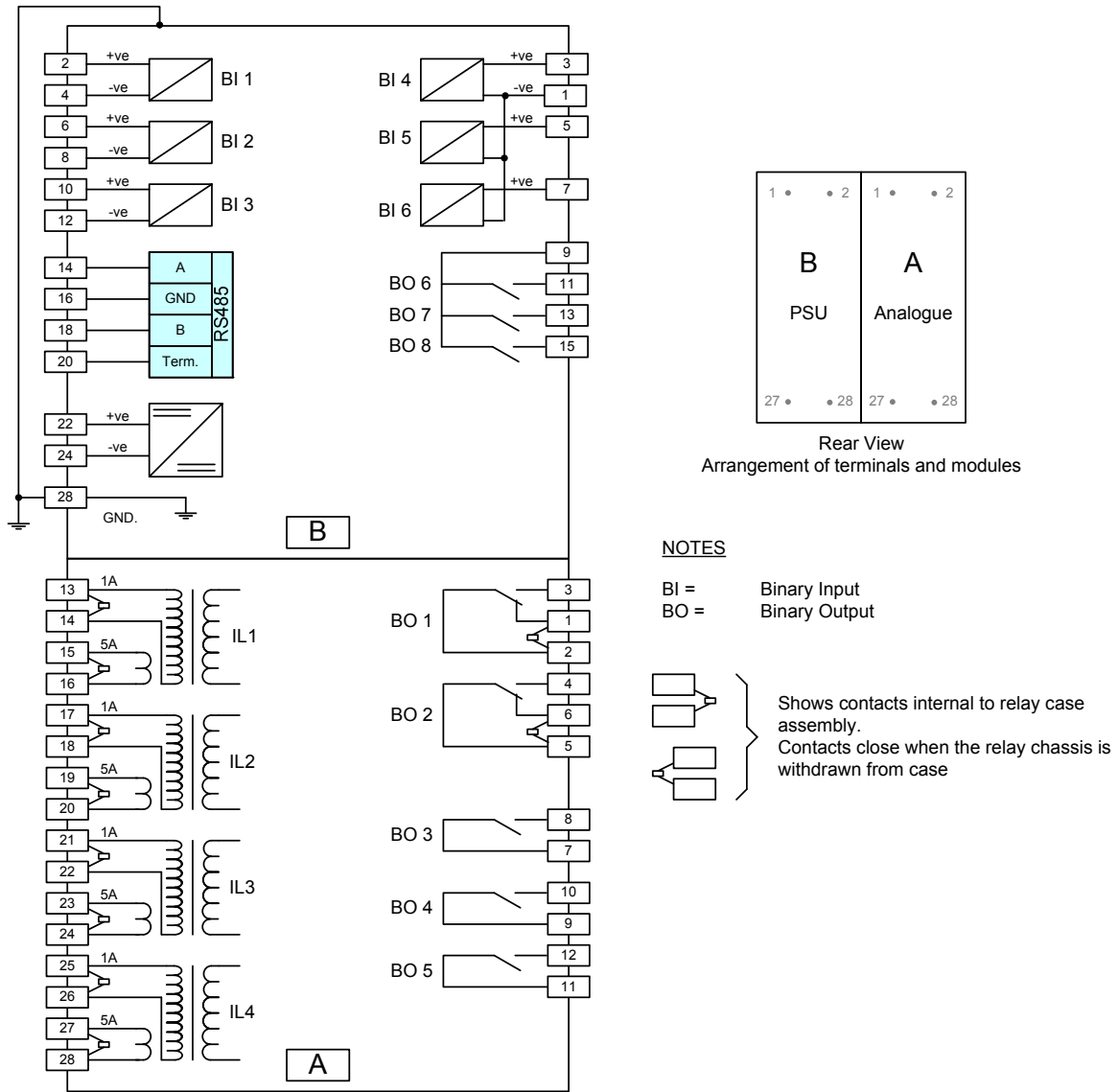


Figure 5.3-1 7SR1103 Connection Diagram

5.4 Wiring Diagram: 7SR1204 Directional EF Relay with 3BI & 5BO

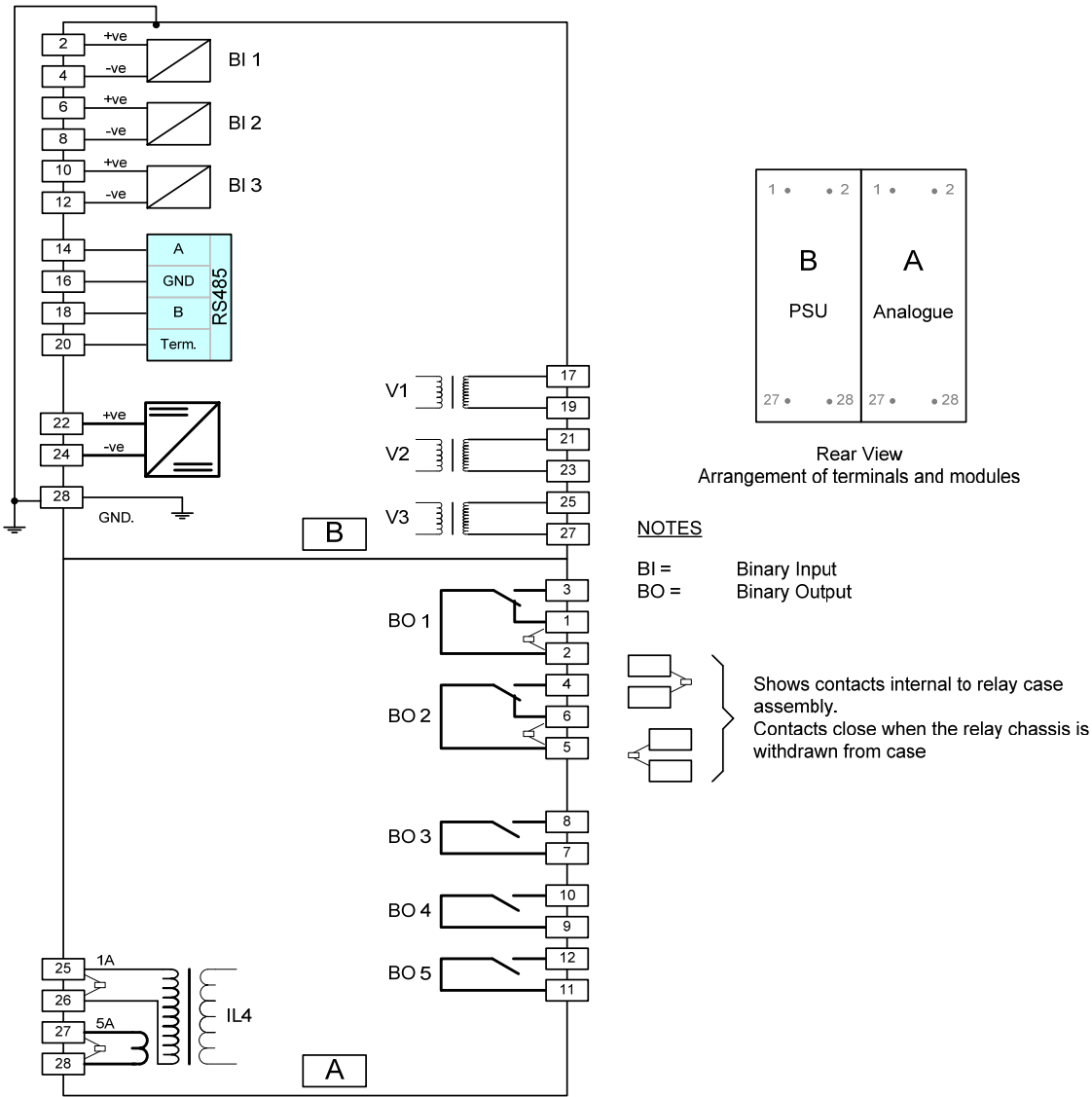


Figure 5.4-1 7SR1204 Connection Diagram

5.5 Wiring Diagram: 7SR1205 Directional OC/EF Relay with 3BI & 5BO

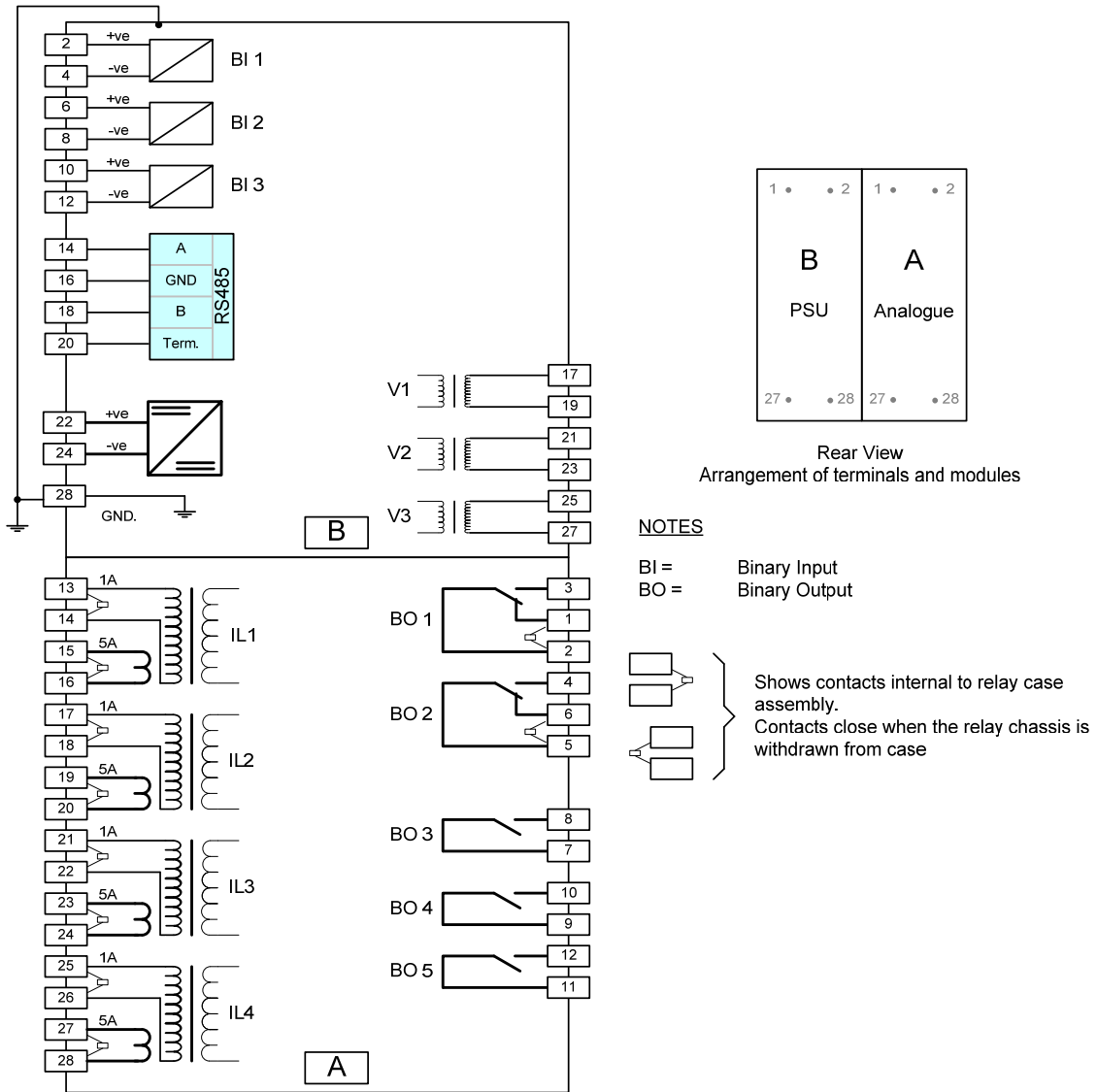


Figure 5.5-1 7SR1205 Connection Diagram

5.6 Wiring Diagram: 7SR1206 Directional OC/EF Relay with 6BI & 8BO

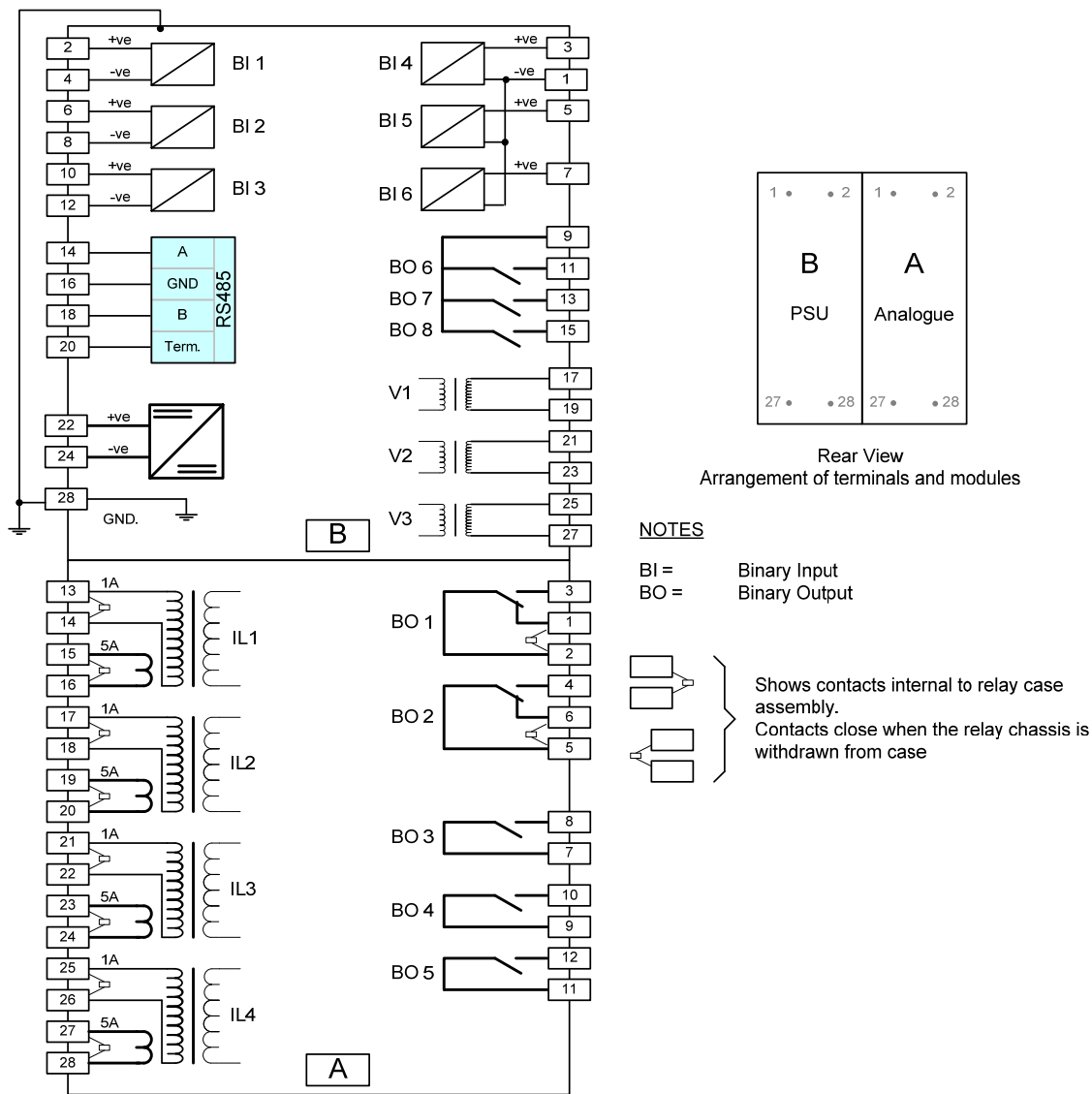
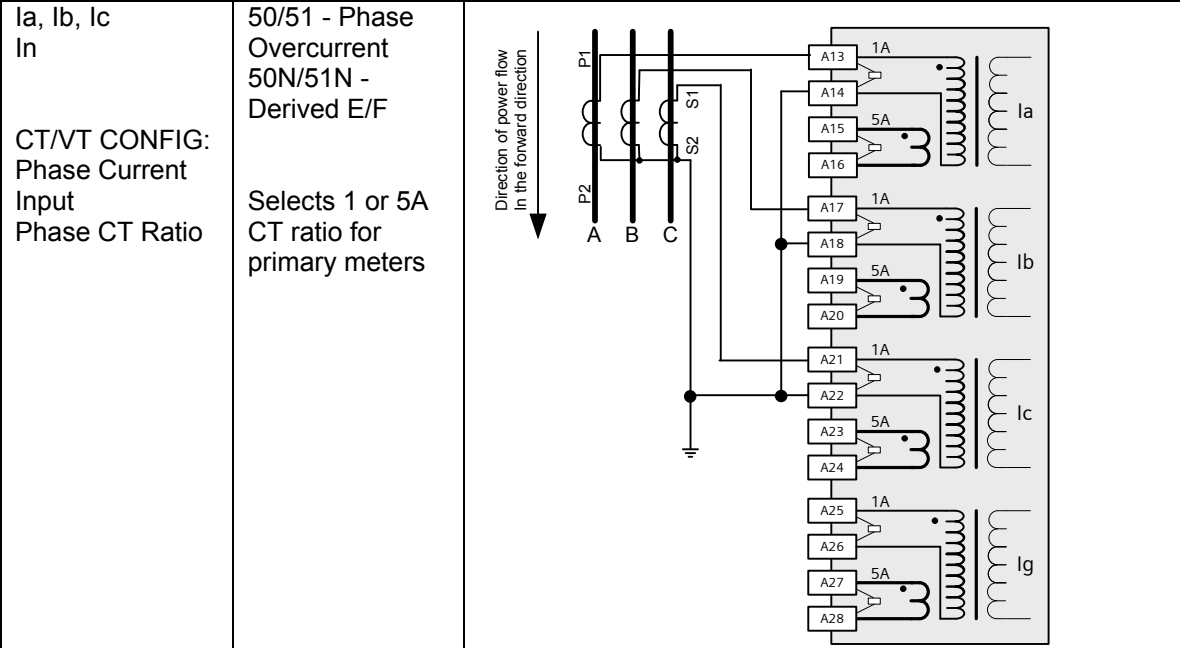
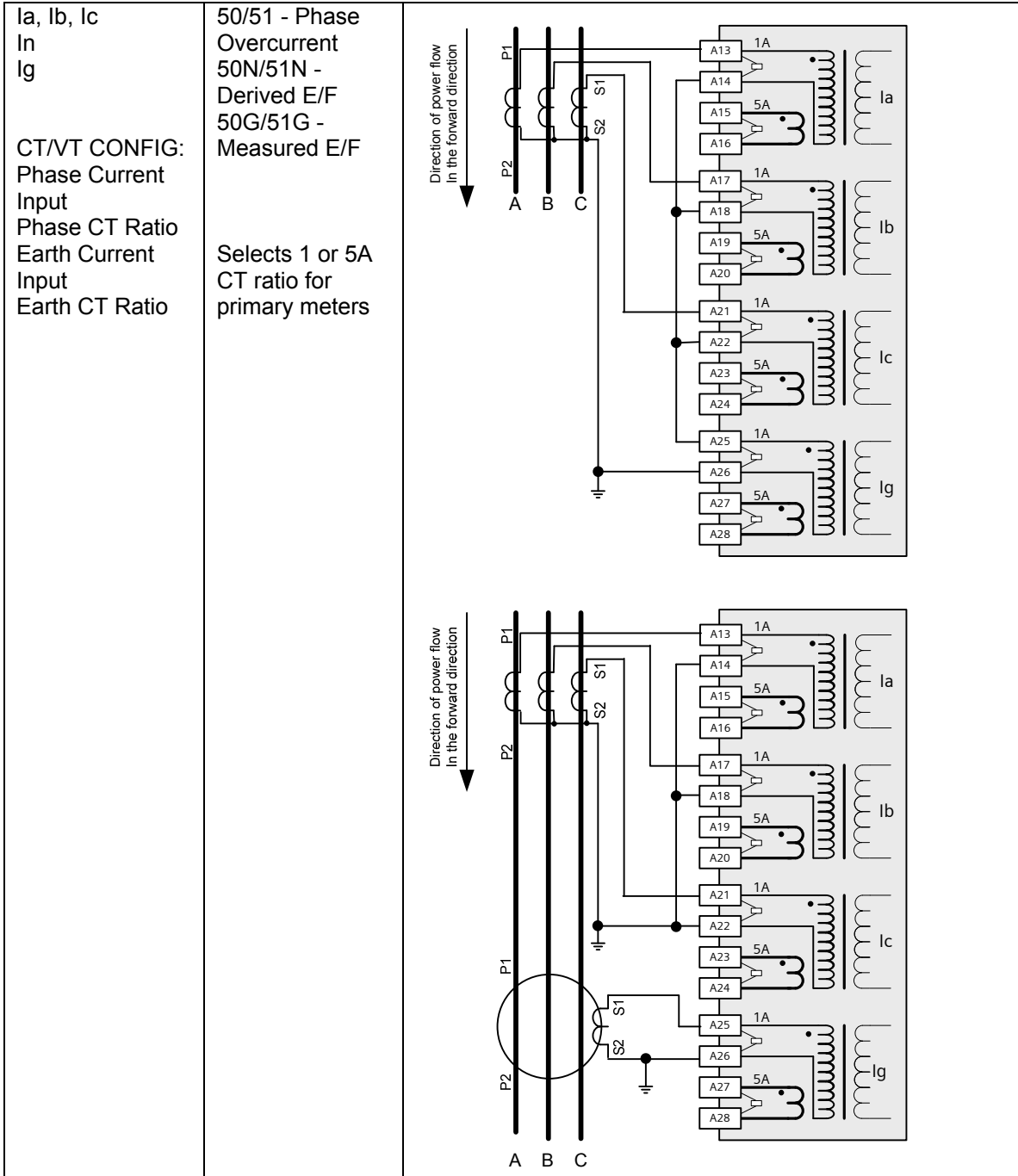


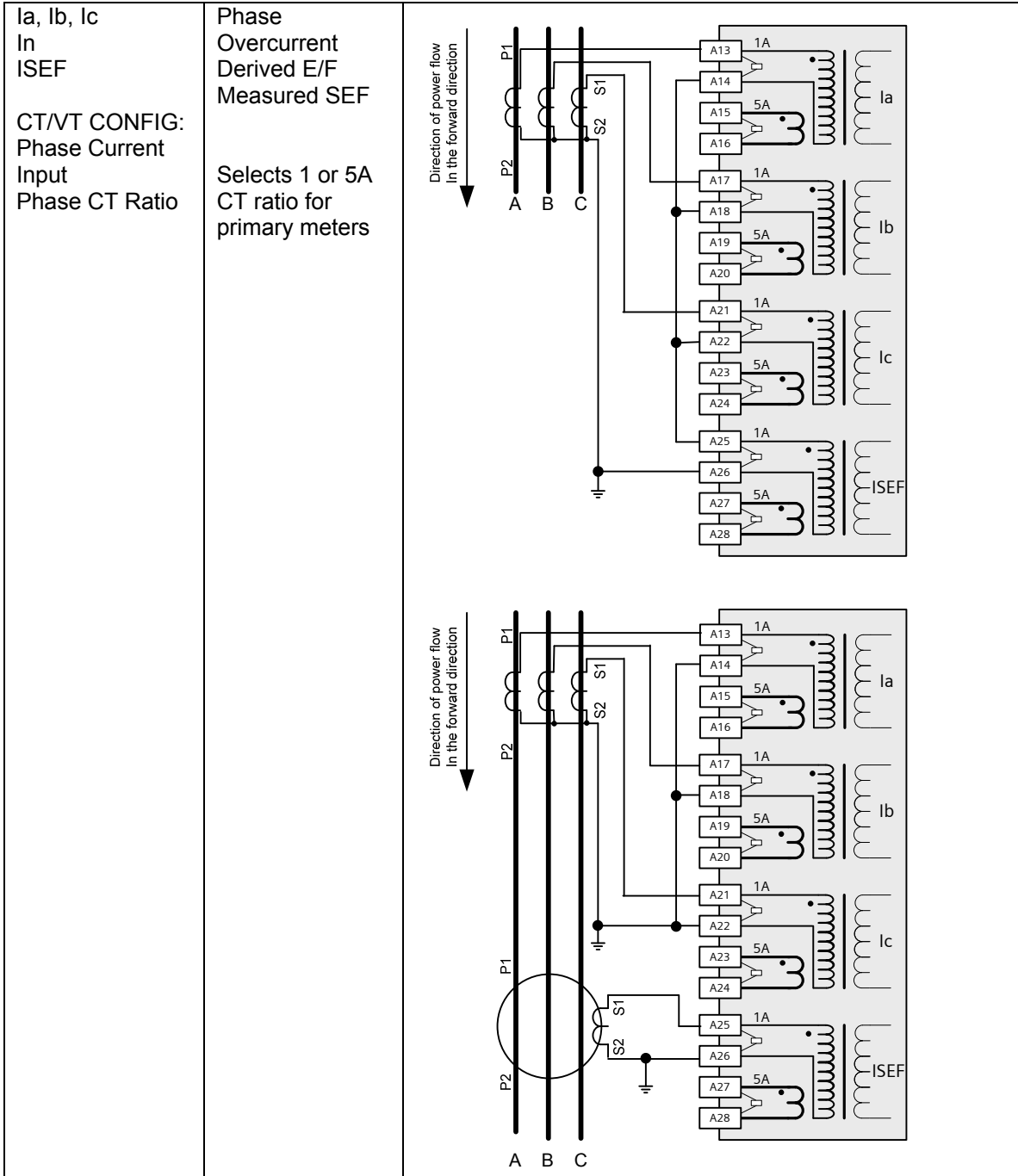
Figure 5.6-1 7SR1206 Connection Diagram

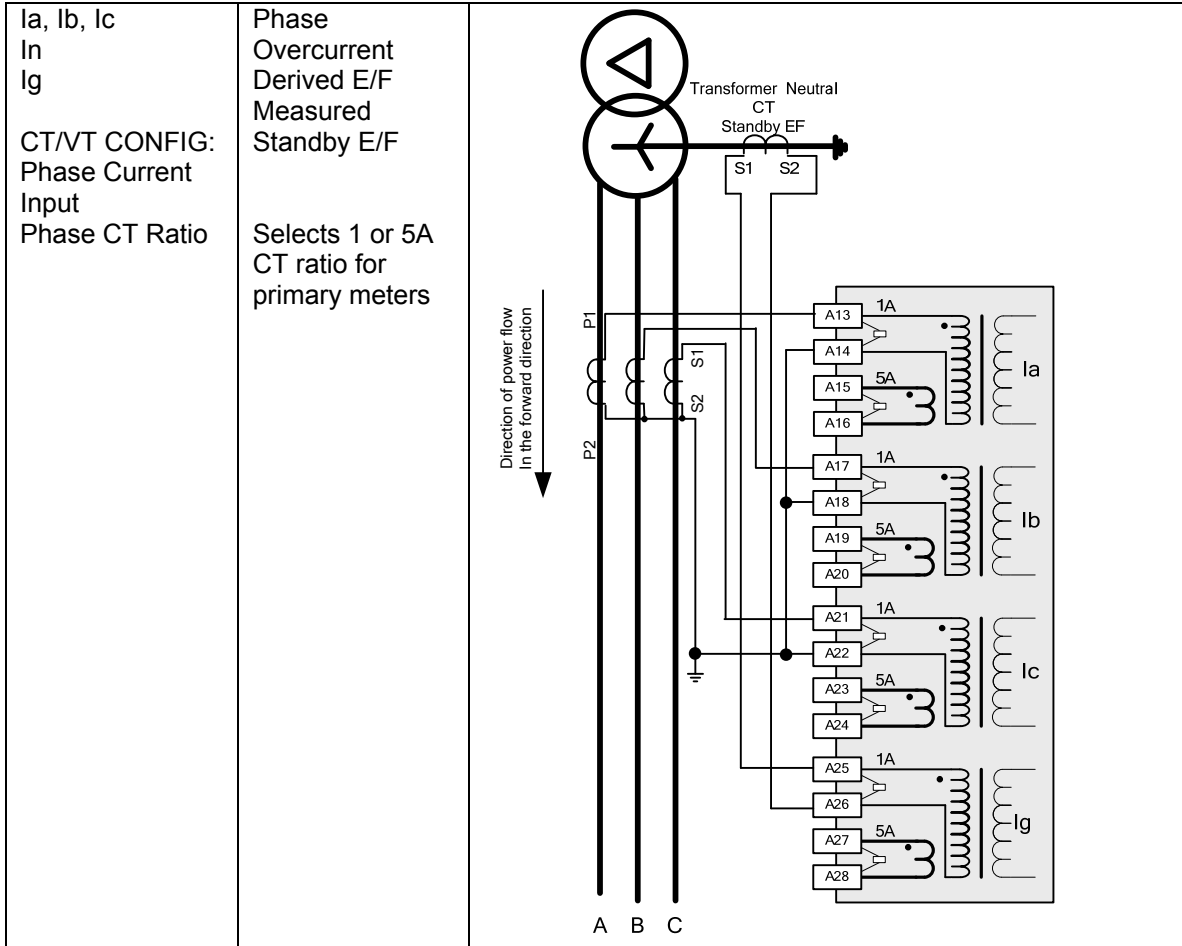
5.7 Current Transformer Configurations

Relay Current Configuration Setting	Description	Connection
In	50G/51G - Measured E/F	
ISEF	50SEF/51SEF - Measured Sensitive E/F	
IREF	64H – Measured Restricted E/F	









5.8 Voltage Transformer Configurations

Relay Voltage Configuration Setting	Description	Connection
Van, Vbn, Vcn	67 & 67N & 67G 47, 59N, 27/59 & 81 Phase – Neutral Phase – Phase Calculated NPS ZPS	
Va, Vb, Vc	67 & 67N & 67G 47, 27/59 & 81 Phase – Neutral Phase – Phase Calculated NPS No ZPS available	
Vab, Vbc, 3Vo	67 & 67N & 67G 47, 59N, 27/59 & 81 Phase – Neutral Calculated Phase – Phase Phase Vca Calculated NPS ZPS	

Section 6: Data Comms Connections

6.1 RS485 Connection

The RS485 communication port is located on the rear of the relay and can be connected using a suitable RS485 120Ω screened twisted pair cable.

The RS485 electrical connection can be used in a single or multi-drop configuration. The RS485 master must support and use the Auto Device Enable (ADE) feature.

The last device in the connection must be terminated correctly in accordance with the master driving the connection. A terminating resistor is fitted in each relay, when required this is connected in circuit using an external wire loop between terminals 18 and 20 of the power supply module.

Up to 64 relays can be connected to the RS485 bus.

The RS485 data communications link with a particular relay will be broken if the relay element is withdrawn from the case, all other relays will still communicate.

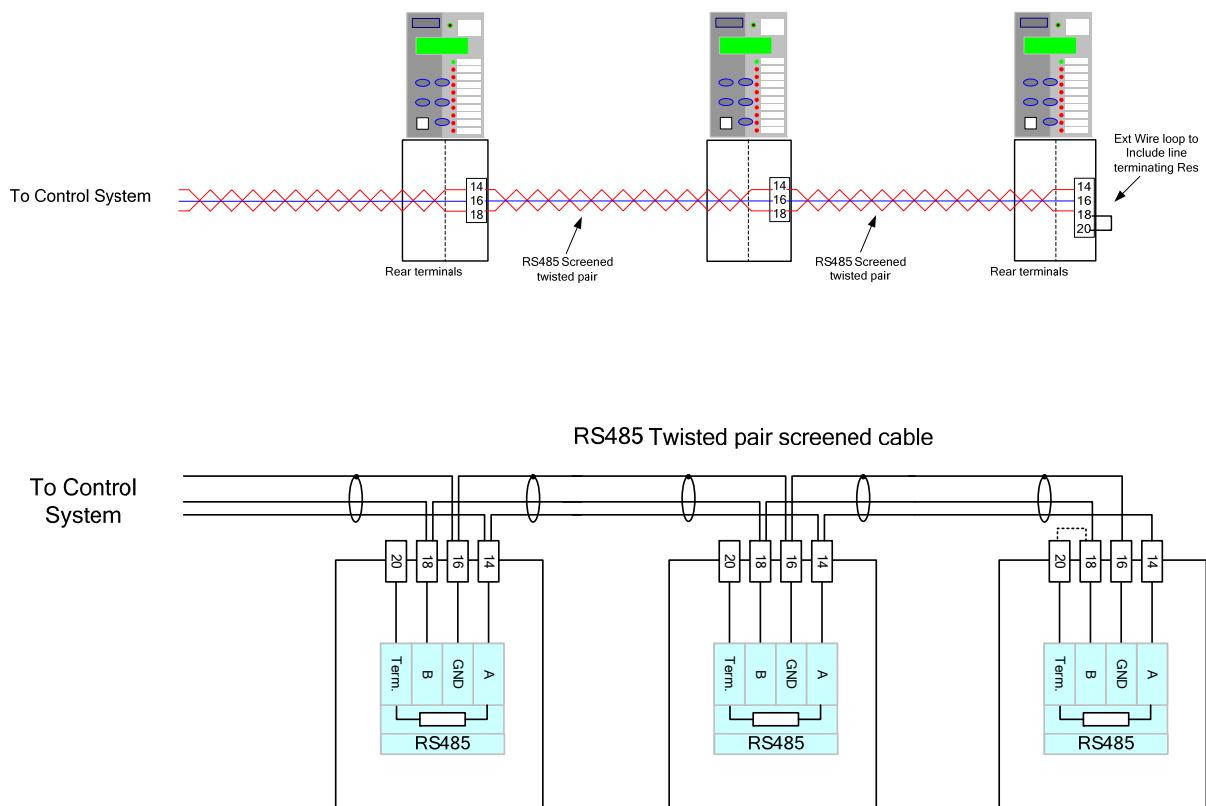


Figure 6.1-1 RS485 Data Comms Connections Between Relays