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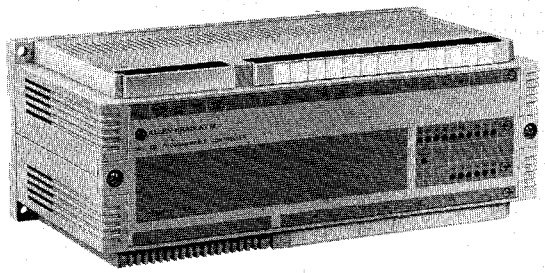
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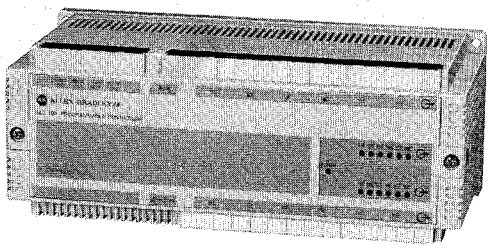
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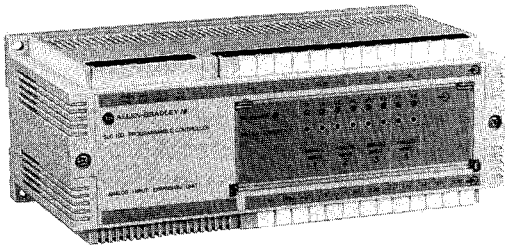
Find the *Rockwell / Allen-Bradley 1745-E151* at our website: *Click HERE*

SLC™ 100 I/O Expansion Units

Catalog Nos. 1745-E101, -E102, -E103, -E104, -E105, -E106, -E107







The Expansion Unit

SLC 100 expansion units can be used with either the SLC 100 processor unit or SLC 150 processor unit to expand the number of I/O circuits to a maximum of 112. This is explained in "Addressing I/O" on Page 6.

SLC 100 expansion units have the same construction as the SLC 100 processor unit. Expansion units are available in 3 I/O configurations. The basic unit has 10 input circuits and 6 output circuits. The relay output unit has no input circuits and 12 output circuits. The analog input unit has 4 analog input circuits (2 set points per input) and no output circuits.

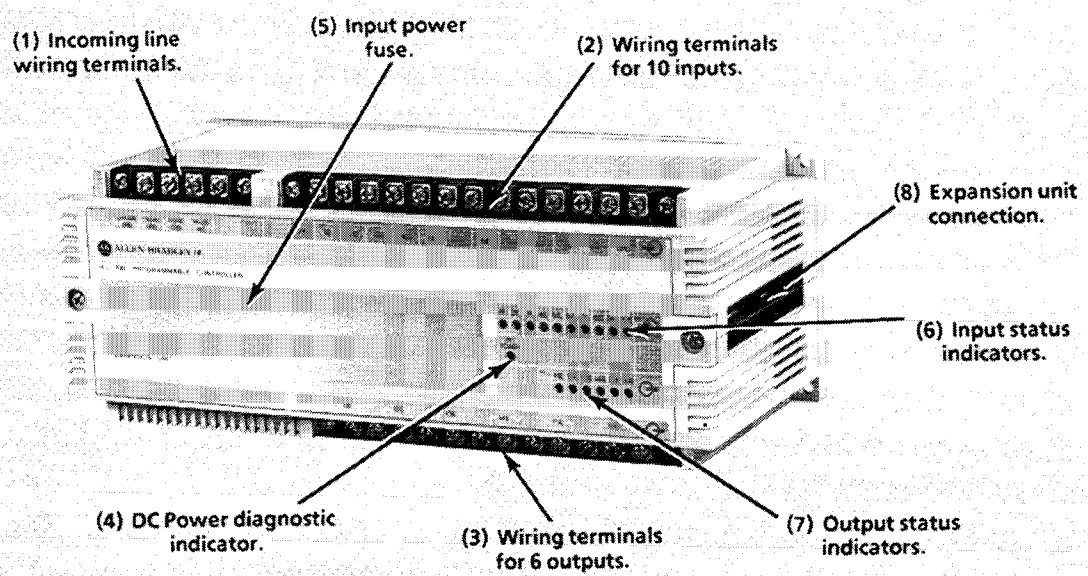
Subjects covered in this product data sheet:

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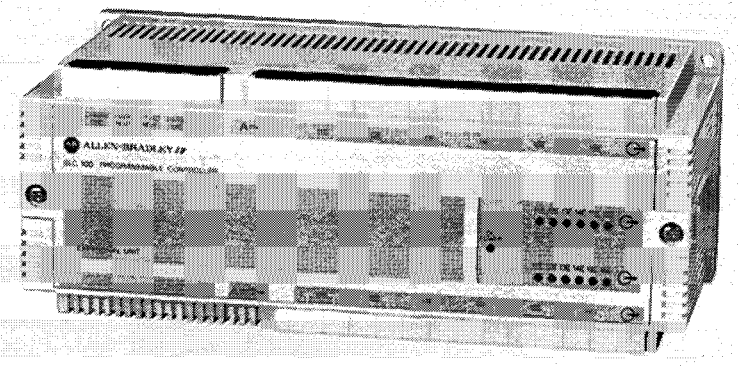


Basic Expansion Unit

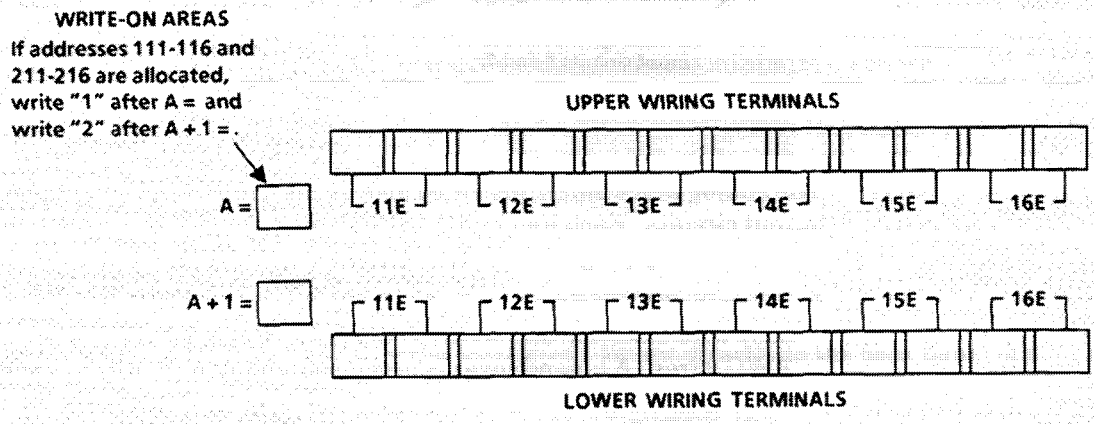
The basic unit, illustrated above, has 10 input circuits and 6 relay (hard contact) output circuits. The following features are pointed out.

1. Incoming line wiring terminals. Self-lifting pressure plates allow for easy wire insertion and secure connections. Terminals accept two #14 AWG wires. A hinged cover is provided (but not illustrated). The cover needn't be removed to gain access to the terminals.
2. Wiring terminals for 10 inputs. Same construction as line terminals. The hinged cover (not illustrated) has write-on areas for identification of external circuits. Cover is color-coded to identify the circuit voltage level. The cover needn't be removed to gain access to the terminals.
3. Wiring terminals for 6 outputs. Same construction as line terminals. Hinged cover (not illustrated) has write-on areas to identify external circuits. The cover needn't be removed to gain access to the terminals.
4. Diagnostic indicator: **DC POWER** (green LED) – Indicates that the expansion unit is energized and DC power is being supplied.
5. Input power fuse (behind front cover). If line terminal voltage is present but the DC POWER LED is not lit, the fuse may be blown.
6. Input status indicators. Ten red LEDs, 1E thru 10E, correspond to input device wiring terminals 1E thru 10E. When an input circuit is energized, the corresponding status indicator will be lit.
7. Output status indicators. Six red LEDs, 11E thru 16E, correspond to output contact wiring terminals 11E thru 16E. When a programmed output instruction is TRUE, the corresponding output status indicator will be lit, and the corresponding output contact will close.
8. Expansion unit connection. The expansion unit is interconnected with the processor unit and other expansion units via ribbon cable. See Connection Cables, Page 9.

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Relay output expansion unit.



Wiring terminal identification.

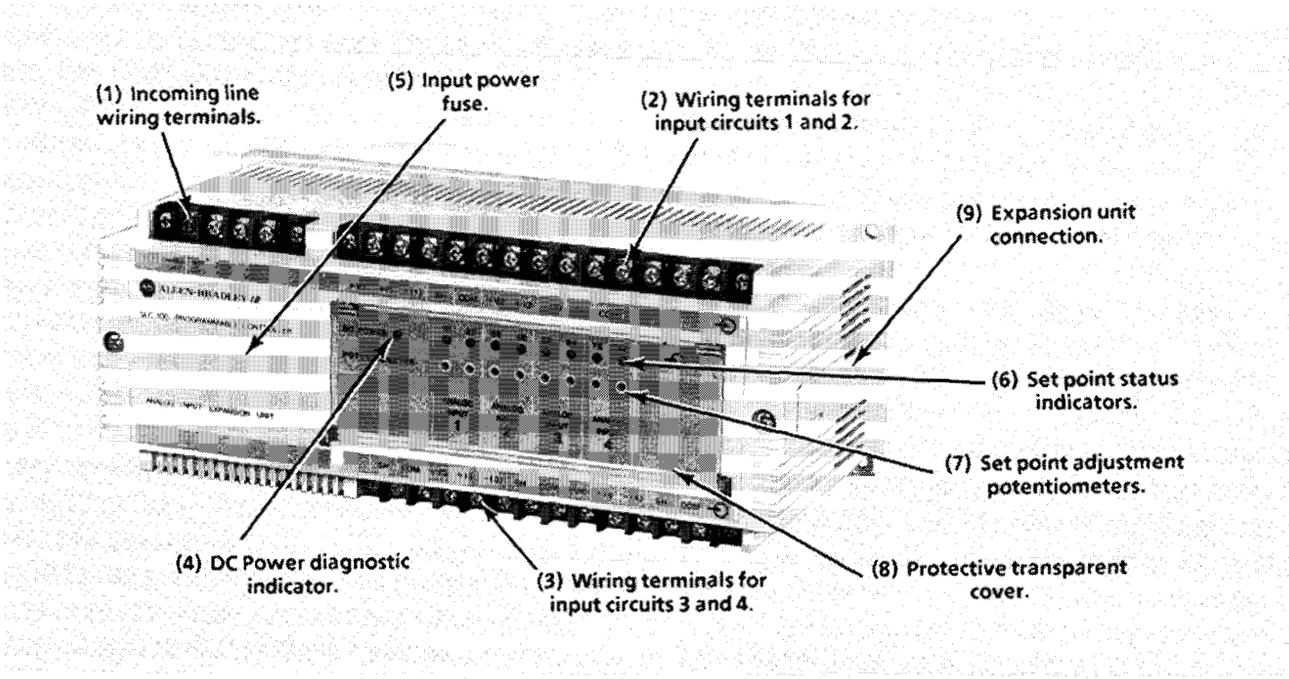
Relay Output Expansion Unit

The relay output expansion unit has the same construction features and dimensions as the basic expansion unit except that the 10 input circuits are replaced by 6 additional relay (hard contact) output circuits.

Relay output expansion units have wiring terminals for 6 output circuits on the upper edge of the unit and wiring terminals for 6 more output circuits on the lower edge of the unit. Write-on areas are provided for you to identify the first digit of the upper and lower addresses.

The upper group always uses the lower number address block. For example, if address blocks 2 and 3 apply to a unit, the upper group of addresses must be 111-116 (address block 2) and the lower group 211-216 (address block 3). This is illustrated in the diagram above.

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Analog Input Expansion Unit

The analog input unit, illustrated above, has 4 input circuits and no output circuits. Each input circuit has 2 adjustable set points which can be individually programmed. The following features are pointed out.

1. Incoming line wiring terminals. Self-lifting pressure plates allow for easy wire insertion and secure connections. Terminals accept two #14 AWG wires. A hinged cover is provided (but not illustrated). The cover needn't be removed to gain access to the terminals.

2 and 3. Wiring terminals for 4 input circuits. Same construction as line terminals. The hinged cover (not illustrated) has write-on areas for identification of external circuits. The cover needn't be removed to gain access to the terminals.

4. Diagnostic indicator: **DC POWER** (green LED) – Indicates that the expansion unit is energized and DC power is being supplied.

5. Input power fuse (behind front cover). If line terminal voltage is present but the DC POWER LED is not lit, the fuse may be blown.

6. Set point status indicators (red LEDs). The 8 set points (2 per input circuit) are labeled 1E thru 8E. When an input circuit set point is reached, the corresponding status indicator will be lit.

7. Set point adjustment potentiometers.

8. Protective transparent cover. Hinged to allow access to the adjustment potentiometers.

9. Expansion unit connection. The expansion unit is interconnected with the processor unit and other expansion units via ribbon cable. See Connection Cables, Page 9.

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Installation Considerations

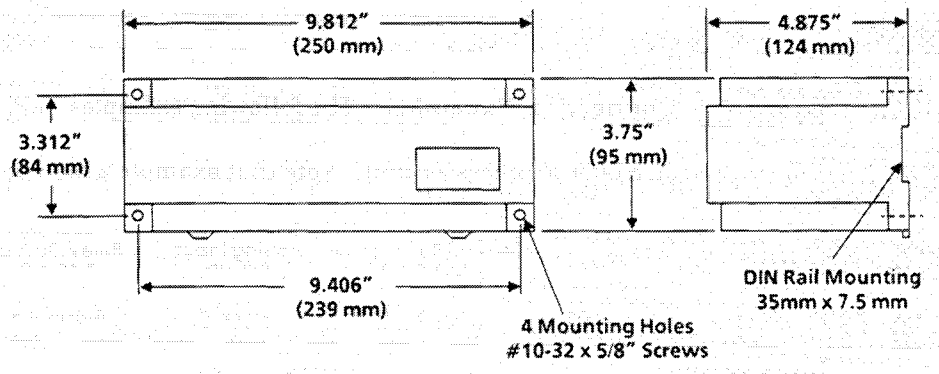
Refer to the User's Manual for details on the following important installation considerations:

- The enclosure should be adequate (NEMA approved) for the environmental conditions of the particular application.
- The processor unit, expansion units, and input/output device circuits should have the same power source. The processor and expansion units should be properly grounded.
- Include an electrical disconnect in the enclosure. An isolation transformer may also be required.
- A master control relay circuit should be included to permit disabling of the I/O devices independent of the processor and expansion unit power supply circuit. One or more emergency-stop switches should also be included.
- Follow the recommendations for component spacing within the enclosure, to help keep the controller temperature within the specified limits.
- Wiring should be routed to minimize electrical noise effects. Surge suppressors should be used for inductive loads in series with hard contacts and for other noise-generating equipment.
- Fusing should be provided to protect loads and wiring from short circuits or overloading.

Mounting

1. Screw mounting: Mount directly to the back panel of your enclosure. Hole locations are shown in the dimension drawing below.
2. DIN rail mounting: The expansion unit can be installed on a 35 mm x 7.5 mm DIN mounting rail (Cat. No. 199-1DR). Two DIN rail fasteners are included on the expansion unit.

   The DIN rail can be screwed, bolted, or welded to the enclosure back panel. Install the expansion unit by hanging the unit on the top edge of the DIN rail, then pressing the unit toward the rail until it snaps into place. To remove the expansion unit, pry open the fasteners.



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Addressing I/O

To obtain the I/O combination best suited to your application, you can use various combinations of SLC 100 expansion units and SLC 150 expansion units. Assigning addresses is simple, once you understand how processor "address blocks" are allocated.

Address Blocks – The I/O image table of the SLC 100 and SLC 150 processor unit consists of 112 I/O, divided into 7 address blocks (10 input addresses and 6 output addresses per block). The SLC 100 processor unit uses block 1. The SLC 150 processor unit uses blocks 1 and 2. In either case, the remaining blocks are available to you for adding I/O expansion units. The figure below identifies the address blocks and summarizes the address block requirements for the various processor and expansion units.

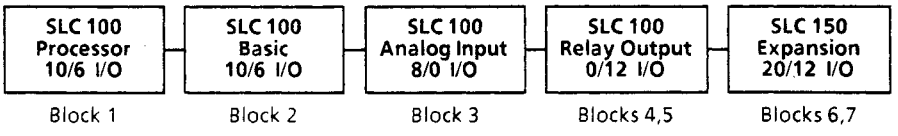
The 7 address blocks are identified in the table to the right. Address block requirements for the various processor and expansion units are shown below.

Address Block Number	Input Addresses (10)	Output Addresses (6)
1	1–10	11–16
2	101–110	111–116
3	201–210	211–216
4	301–310	311–316
5	401–410	411–416
6	501–510	511–516
7	601–610	611–616

ADDRESS BLOCKS REQUIRED FOR PROCESSOR AND EXPANSION UNITS

Type of Unit	I/O	Address Blocks Required	Addresses Used
SLC 100 Processor Unit	10/6	1	Block 1 addresses are used. Inputs: 1-10. Outputs: 11-16.
SLC 100 Basic Expansion Unit	10/6	1	All addresses of the block are used.
SLC 100 Relay Output Expansion Unit	0/12	2	Output addresses of 2 consecutive blocks are used. Input addresses of the 2 blocks are bypassed.
SLC 100 Analog Input Expansion Unit	8/0	1	Upper two input addresses (_9, _10) are bypassed. All output addresses of the block are bypassed.
SLC 150 Processor Unit	20/12	2	Block 1 and 2 addresses are used. Inputs: 1-10, 101-110. Outputs: 11-16, 111-116.
SLC 150 Expansion Unit	20/12	2	All addresses of 2 consecutive blocks are used.
SLC 150 High Speed Input Module	1/0	None	An internal SQO address is associated with the HSI module.

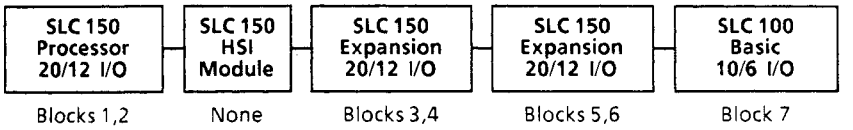
Connection Examples – The following examples indicate how you might interconnect expansion units with an SLC 100 processor unit and an SLC 150 processor unit. Note that example 2 includes an HSI module.



EXAMPLE 1: All 7 address blocks are used. The configuration provides 84 I/O: 40 digital inputs (blocks 1, 2, 6, 7 – addresses 1-10, 101-110, 501-510, 601-610); 8 analog set points (block 3 – addresses 201-208); and 36 outputs (blocks 1, 2, 4, 5, 6, 7 – addresses 11-16, 111-116, 311-316, 411-416, 511-516, 611-616).

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Addressing I/O
(continued)



EXAMPLE 2: All input and output addresses of all 7 address blocks are used. The configuration provides 112 I/O (70 inputs, 42 outputs). It also provides 1 high speed input circuit.

I/O Terminal Identification – Assume you are adding one of the 4 types of expansion units to an SLC 100 processor unit. Address block 1 applies to the processor unit. Address block 2 (or blocks 2 and 3) applies to the expansion unit. I/O terminals are assigned addresses as follows:

Expansion Unit	I/O Terminal Identification	Corresponding Addresses
SLC 100 Basic	Inputs: 1E-10E. Outputs: 11E-16E.	Block 2 is used. Input addresses: 101-110. Output addresses: 111-116.
SLC 100 Relay Output	Upper terminals (A): 11E-16E. Lower terminals (A + 1): 11E -16E.	Blocks 2 and 3 are used. A = 1 and A + 1 = 2. Upper addresses: 111-116. Lower addresses. 211-216. Input addresses of blocks 2 and 3 are bypassed.
SLC 100 Analog Input	Set points of the 4 input circuits: 1E-8E.	Block 2 is used. Set point addresses: 101-108. Output addresses of block 2 are bypassed.
SLC 150	Inputs: A01-A10 and B01-B10. Outputs: A11-A16 and B11-B16.	Blocks 2 and 3 are used. A = 1 and B = 2. Input addresses: 101-110 and 201-210. Output addresses: 111-116 and 211-216.

Maximum I/O Configuration – The maximum I/O configuration is 112, using all addresses of the image table. If you use SLC 100 relay output or analog input expansion units, the maximum configuration will be less, and varies with the particular combination of expansion units used. Keep in mind that when you've used all 7 address blocks, you've reached the maximum.

Internal Addresses Associated with I/O Address Blocks – The table below lists relay-type instruction addresses associated with I/O address blocks. You can use these addresses in your program, but *only if expansion units using the associated address blocks are connected to the processor unit.*

If you are using the SLC 100 processor unit, addresses 17 and 18 (address block 1) can always be used. If you are using the SLC 150 processor unit, addresses 17, 18, 117, and 118 (address blocks 1 and 2) can always be used.

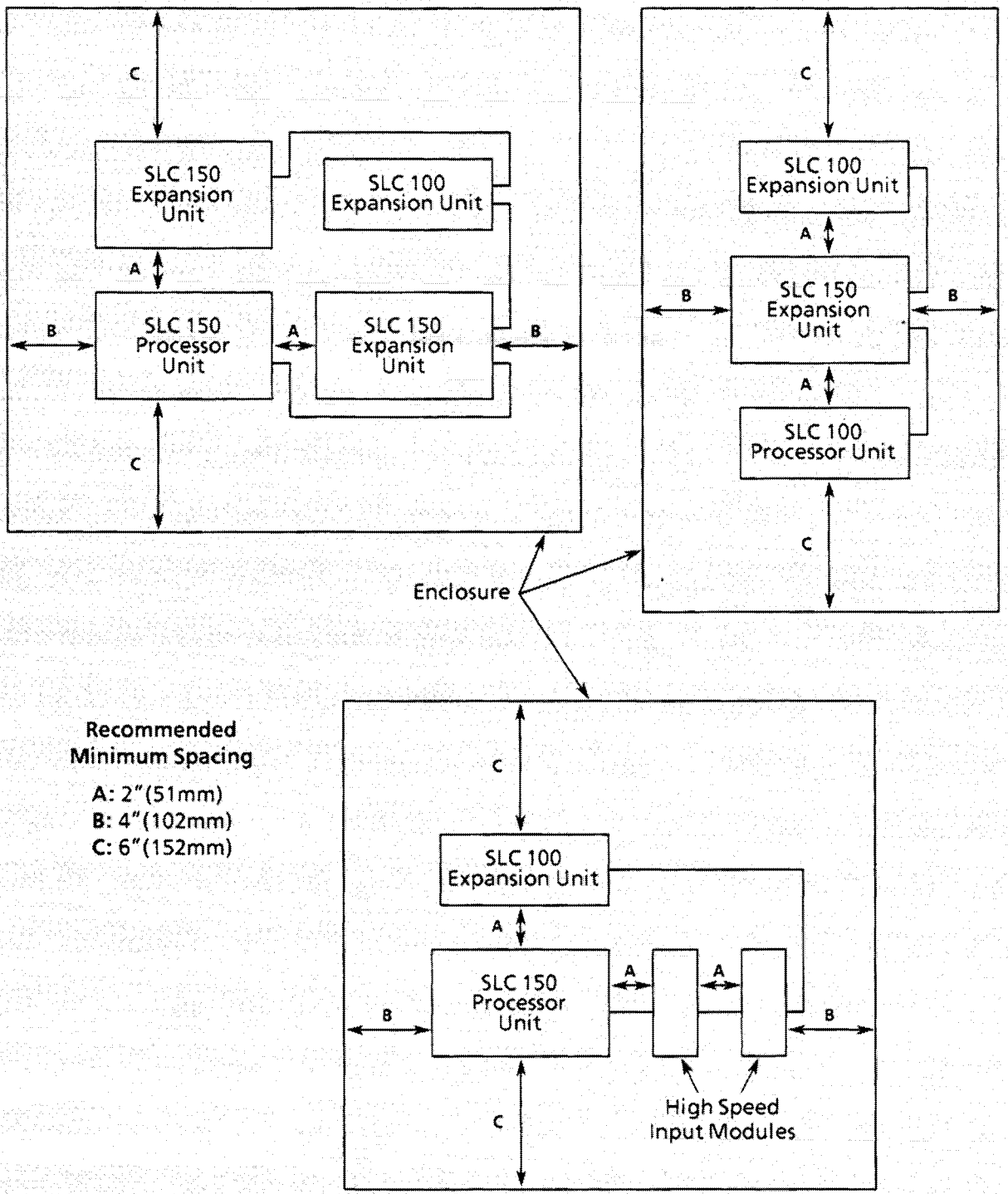
Relay-Type Instruction Addresses	Associated Address Block Number
17, 18	1
117, 118	2
217, 218	3
317, 318	4
417, 418	5
517, 518	6
617, 618	7

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System Layout

The figure below shows acceptable layouts. Follow the recommended minimum spacing to allow for convection cooling within the enclosure. Cooling air in the enclosure must be kept within a range of 0° to 60°C.

Note that SLC 100 and SLC 150 expansion units can be interconnected with either an SLC 100 or an SLC 150 processor unit. High speed input modules can be used with the SLC 150 processor unit only.



Recommended Minimum Spacing

A: 2"(51mm)
B: 4"(102mm)
C: 6"(152mm)

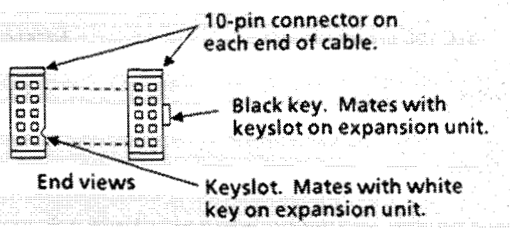
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Connection Cables

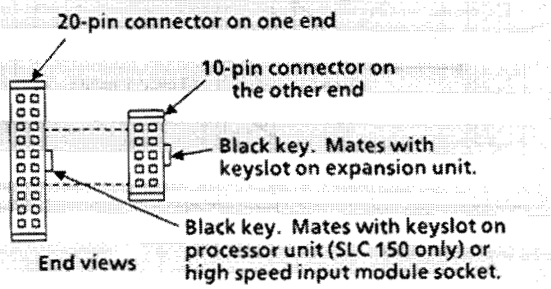
Two cables are used for interconnecting processor and expansion units: Interconnect cable 1745-C2 is a 10-pin to 10-pin cable supplied with each expansion unit. Interconnect cable 1745-C3 is a 20-pin to 10-pin cable supplied with the SLC 150 processor unit. Both cables are 18.5 inches (47 cm) long. See the figure below for cable connector details.

Important: Do not use cables longer than those provided. Longer cables could affect the integrity of data communications between the processor and expansion units, possibly causing unsafe operation.

1745-C2 interconnect cable supplied with expansion units



1745-C3 interconnect cable supplied with SLC 150 processor unit

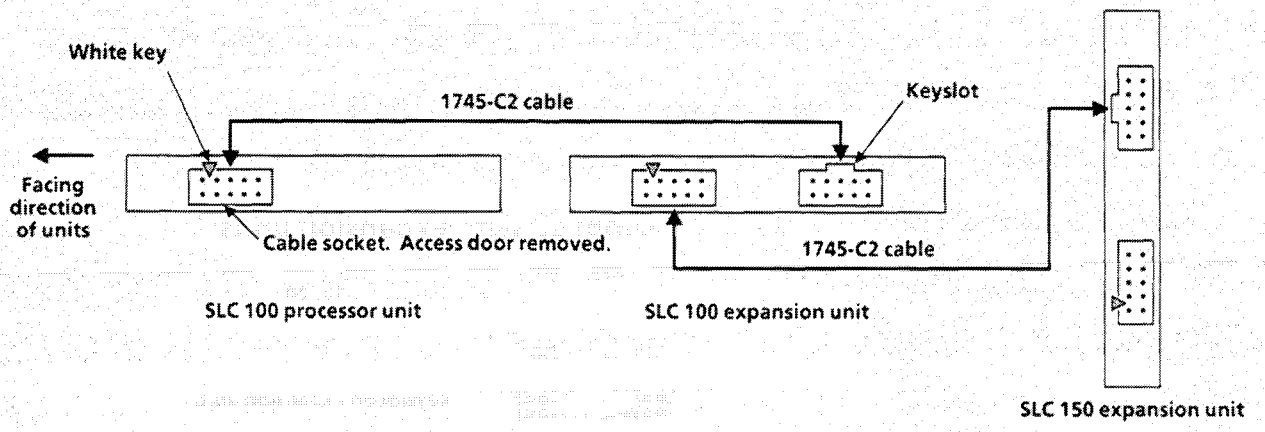


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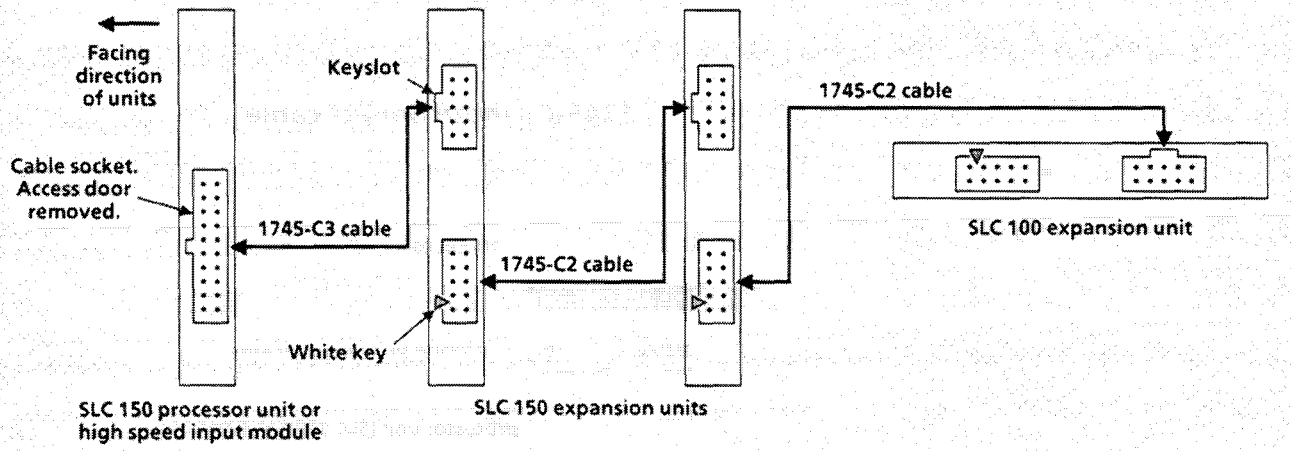
Connection Cables *(continued)*

The figure below explains how to install the interconnect cables.

A – Connecting expansion units to an SLC 100 processor unit



B – Connecting expansion units to an SLC 150 processor unit



Connecting an expansion unit to an SLC 100 processor unit:

Use cable 1745-C2, supplied with the expansion unit.

1. Open the access doors.
2. Refer to illustration A. Align the cable connector having the keyslot with the socket on the processor unit. Push gently; tabs will lock the connector in place.
3. Align the connector having the black key with the expansion unit socket having the keyslot . Push gently; tabs will lock the connector in place.
4. Close the access doors.

Connecting an expansion unit to an SLC 150 processor unit or high speed input module:

Use cable 1745-C3, supplied with the SLC 150 processor unit.

1. Open the access doors.
2. Refer to illustration B. Align the 20-pin cable connector with the socket on the processor unit (or high speed input module). Push gently; tabs will lock the connector in place.
3. Align the 10-pin connector with the expansion unit socket having the keyslot. Push gently; tabs will lock the connector in place.
4. Close the access doors.

Connecting one expansion unit to another:

Use cable 1745-C2, supplied with the expansion unit.

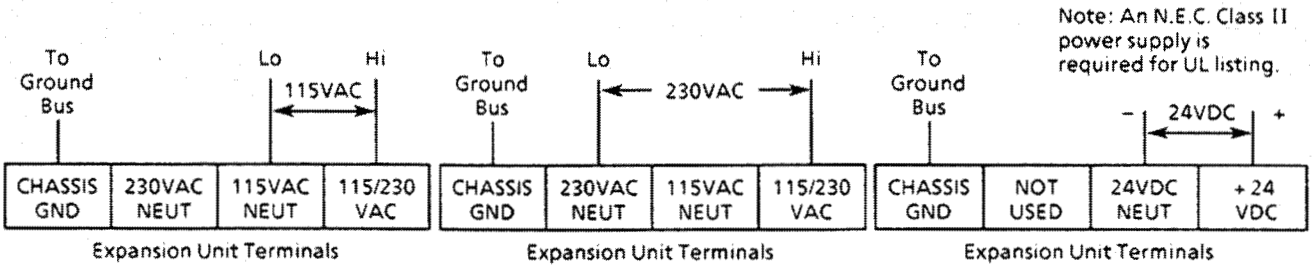
1. Open the access doors.
2. Refer to illustrations A and B. On the expansion unit already connected to another unit: Align the cable connector having the keyslot with the socket. Push gently; tabs will lock the connector in place.
3. On the other expansion unit: Align the connector having the black key with the socket having the keyslot. Push gently; tabs will lock the connector in place.
4. Close the access doors.

To remove cable: Move tabs on socket outward; the connector will pop out.

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Line Wiring Connections

Make line connections to the expansion unit as follows:

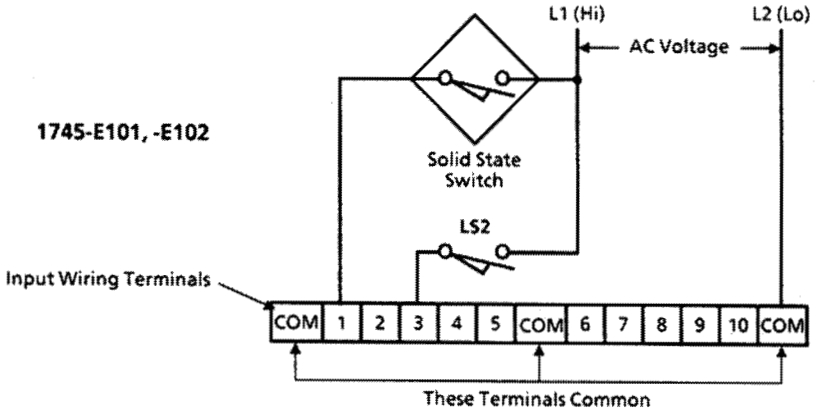


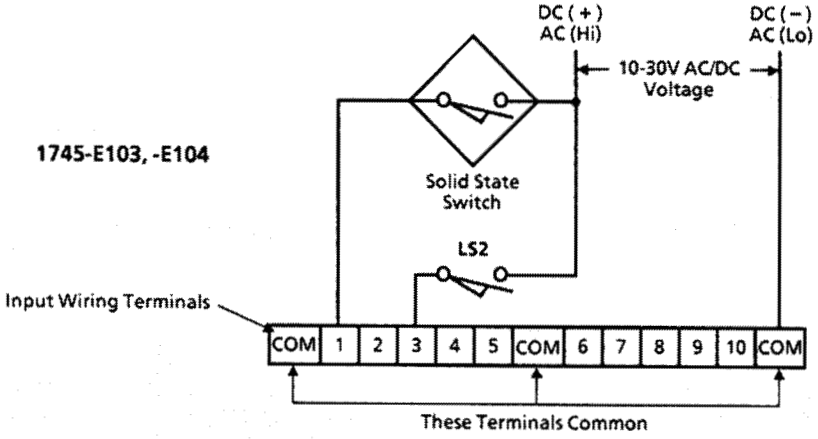
Catalog Nos. 1745-E101, -E102, -E103, -E105, -E106

Catalog Nos. 1745-E104, -E107

Digital Input Wiring Connections

Wiring connections for digital input devices are shown below. Note that input ground terminals are common to each other.

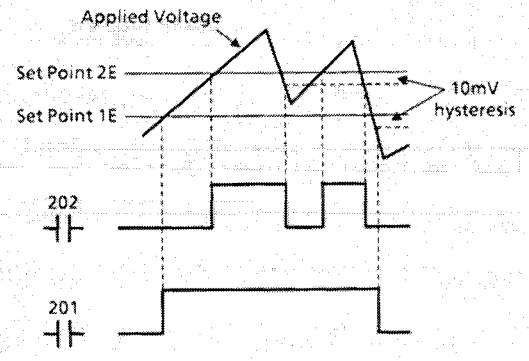


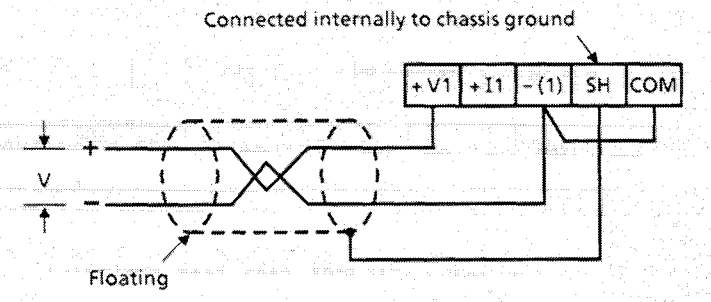


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Analog Input Wiring Connections

Wiring connections for the analog input expansion unit are shown below. These connection diagrams use a single analog input circuit, providing one or two programmable set points. If you require more than two set points per input circuit, use the connection diagrams on the next page.



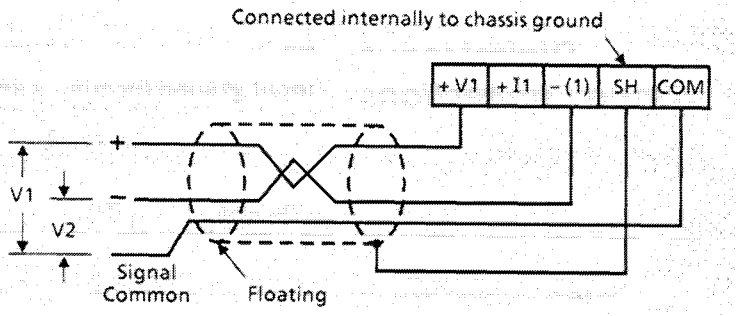


1. Voltage source, single ended connection.

The following applies to the diagram above:

Analog input circuit number 1 is used, as in connection diagrams 1 and 2. Set points 1E and 2E apply. Arbitrarily, address block 3, addresses 201-208 is assigned. Examine ON instructions 201 and 202 are programmed for set points 1E and 2E.

The "applied voltage" is V for connection diagram 1, or V1–V2 for diagram 2. When this voltage increases to set point 1E, instruction 201 goes TRUE. When the voltage increases to set point 2E, instruction 202 goes TRUE. When the voltage drops below these set point levels (note hysteresis), the respective instructions go FALSE.



2. Voltage source, differential connection.

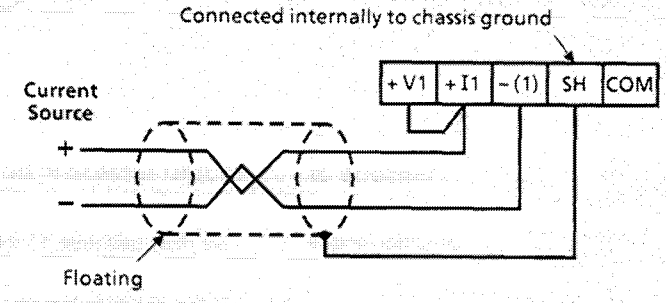
APPLICATION NOTES

1. **+V must be 0-10 volts greater than (–).**
2. **+V and (–) must be kept within 35 volts of COM.**
3. **All COM terminals of the expansion unit are connected together internally.**
4. **All SH terminals are connected together internally, and are connected to chassis ground.**
5. **Important wiring recommendations will be found in Publication 1770-4.1, "Programmable Controller Grounding and Wiring Guidelines".**
6. **Adjustment: Use a screwdriver with a blade width of 0.1 inch or less. Procedure:**

   a) Apply the desired set point voltage or current to the input circuit. Measure the voltage or current, or simulate the condition for which the set point is to be adjusted.

   b) Turn the adjustment potentiometer until the corresponding LED indicator lights. CW increases the setting. There are 18 turns between minimum and maximum setting.

   c) Verify the setting during controller Start Up procedures.



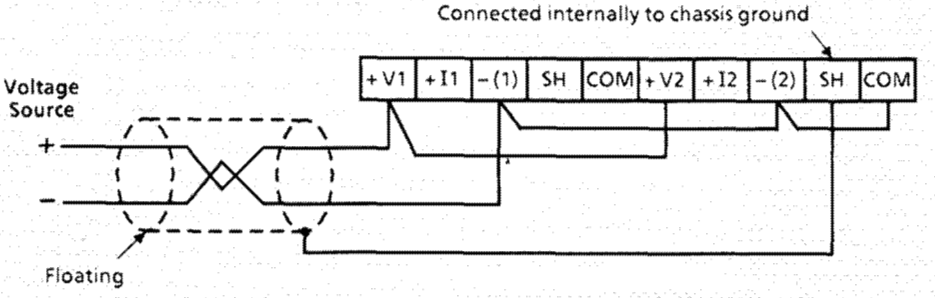
3. Current source. Terminal +V connected to terminal +I. COM not used.

CAUTION: If an open circuit exists at the source end of the input circuit, the input could oscillate around the set point, adversely affecting user program operation.

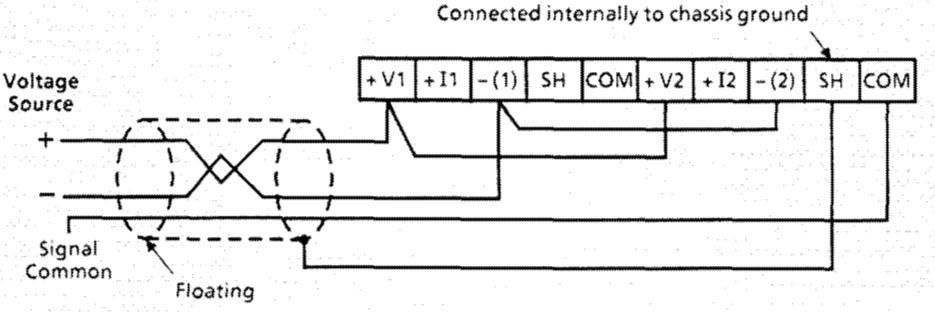
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Analog Input Wiring Connections *(continued)*

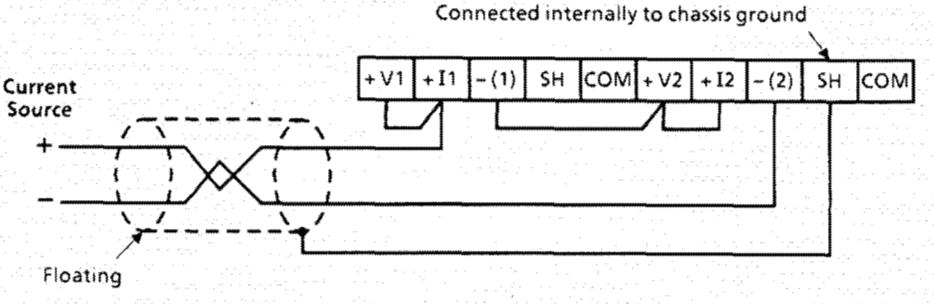
In these connection diagrams, two analog input circuits of the expansion unit are interconnected, providing four programmable set points (1E, 2E, 3E, and 4E in this case).



1. Voltage source, single ended connection.



2. Voltage source, differential connection.



3. Current source. COM terminal not used.

IMPORTANT: Refer to the APPLICATION NOTES and CAUTION box on Page 12.

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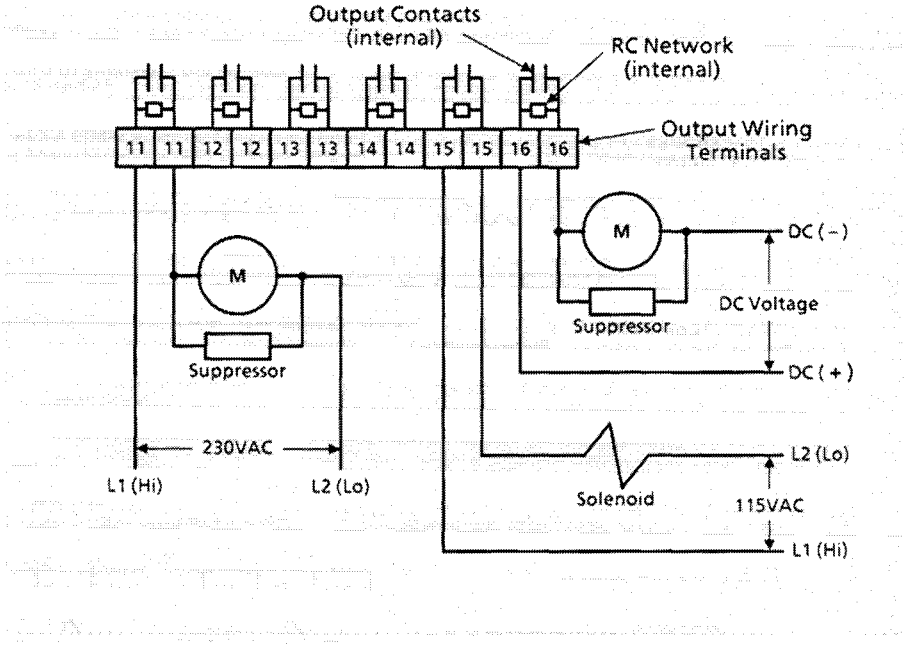
Output Wiring Connections

Wiring connections for output devices are shown below. Note that the diagram shows the internally-connected output contacts and parallel RC networks. The RC networks guard against possible damage by transients from external output devices.

External connections are shown for outputs 11, 15, and 16. We've added a suppressor in parallel with two of the external devices for the purpose of contact protection. Contact protection is discussed on Page 15.

Since the expansion unit output contacts are isolated from each other, each output circuit can be wired independently, with its own ground return. You can apply a different voltage in each output circuit, as your application might require. Power or ground wires can be jumpered between sets of terminals if desired.

You should provide appropriate fusing to protect the output devices and wiring from short circuits and overload conditions.



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Output Contact Protection

Inductive output devices such as motor starters and solenoids may require that you use some type of surge suppression to protect the output contacts. Examples are shown below.

These surge suppression circuits are connected directly across the output device. The effect is to reduce arcing of the output contacts (arcing can be caused by the high transient voltage which occurs when an inductive device is switched off).

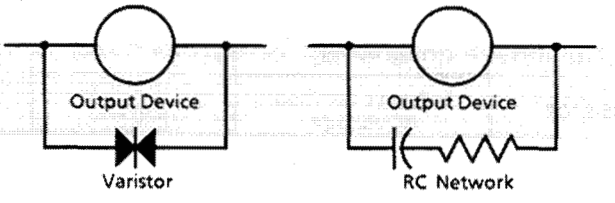
Suitable surge suppression methods for inductive AC output devices include a varistor, an RC network, and an Allen-Bradley surge suppressor. These components must be appropriately rated to suppress the switching transient characteristic of the particular inductive device.

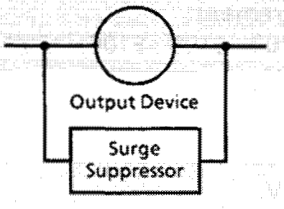
For inductive DC output devices, a diode or a varistor is suitable. A 1N4004 diode is acceptable for most applications. A surge suppressor can also be used (Figure 18.4 in the User's Manual).

We recommend that you locate the suppression device as close as possible to the output device.

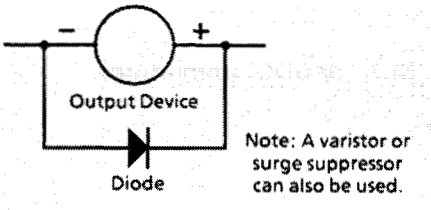
Suppressors recommended for use with Allen-Bradley relays, contactors, and motor starters are listed in Figure 18.4 of the User's Manual.

Surge Suppression for Inductive AC Output Devices





Surge Suppression for Inductive DC Output Devices



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General Specifications

General specifications for the basic, relay output, and analog input expansion units are shown below.

Voltage Ranges (Incoming Power, Input Circuits, Output Circuits):

Catalog Number	Voltage Ranges (Incoming Power Connections)	External I/O	
		Input Circuits	Output Circuits – Hard Contact
1745-E101	85-132/170-265 VAC 50/60 Hz	85-132 VAC 50/60 Hz	10-250VAC/10-125VDC
1745-E102	85-132/170-265 VAC 50/60 Hz	170-265 VAC 50/60 Hz	
1745-E103	85-132/170-265 VAC 50/60 Hz	10-30V AC/DC	
1745-E104	18-30 VDC	10-30V AC/DC	
	Full wave rectified AC voltage 18 volts RMS ±20%, 30 volts peak		
1745-E105	85-132/170-265 VAC 50/60 Hz	N/A	
1745-E106	85-132/170-265 VAC 50/60 Hz	Analog Inputs 0-10 VDC or 0-20 mA	N/A
1745-E107	18-30 VDC		
	Full wave rectified AC voltage 18 volts RMS ±20%, 30 volts peak		

Input Terminal Cover Color Code	
Volts	Color
85-132 VAC 50/60 Hz	Red
170-265 VAC 50/60 Hz	Black
10-30V AC/DC	Blue

Maximum Power Requirement:
1745-E101, -E102, -E103, -E105, -E106: 12VA.
1745-E104, -E107: 9VA.

Input Power Fuse Protection:
1745-E101, -E102, -E103: 315mA/250V.
1745-E104: 1.6A/250V.
1745-E105: 160mA/250V.
1745-E106: 200mA/250V.
1745-E107: 1A/250V.

Fuse Types: SAN-O: SOC SD4.
Bussman: MDL, or GDC1 (miniature).

I/O Capacity:
1745-E101, -E102, -E103, -E104:
16 I/O (10 inputs, 6 outputs).
1745-E105: 12 I/O (0 inputs, 12 outputs).
1745-E106, -E107: 4 analog input circuits, with 2 adjustable set points per input.

Input specifications: Pages 17 and 18.
Output specifications: Page 19.

Specifications applying to all Catalog Numbers

Noise Immunity: NEMA Standard ICS 2-230.

Vibration:
DIN Rail Mounting: 0.006 inch peak to peak displacement, 1.0g peak (max) acceleration, 1 Hr/axis. Screw Fastener Mounting: 0.015 inch peak to peak displacement, 2.5g peak(max) acceleration, 1 Hr/axis.

Ambient Temperature Rating:
0° to 60° C (operating).
– 40° to 85° C (storage).

Humidity Rating:
5 to 95% (without condensation).

Wiring: #14 - #24 AWG stranded.
3/64" insulation (max).

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Input Specifications – Basic Expansion Unit

Input specifications for the basic expansion unit are shown below. The 2 mA OFF state leakage current specification allows direct interface to solid state sensing devices and SLC 100 controller output circuits.

Note that the 2 mA OFF state leakage current for 24VAC circuits applies to inputs 1 and 2 only. When required, you can also achieve a 2 mA OFF state leakage current for inputs 3 thru 10, as indicated in the specifications.

All input circuits include optical isolation as well as filtering and surge suppression to guard against damage by transients from external input devices.

ON State Voltage Range and Frequency:
1745-E101: 85-132 VAC, 50/60 Hz.
1745-E102: 170-265 VAC, 50/60 Hz.
1745-E103, -E104: 10-30V, AC/DC.

Maximum OFF State Voltage:
1745-E101: 35V.
1745-E102: 50V.
1745-E103, -E104: 5V.

Maximum OFF State Leakage Current:
1745-E101, -E102: 2 mA.
1745-E103, -E104: 2mA, inputs 1 and 2 only. To achieve a 2 mA OFF state leakage current for inputs 3 thru 10, connect a 5.6KΩ, 1/2 watt (min) resistor from the input terminal to the common terminal.

Nominal Input Current:
1745-E101, -E102: 8 mA.
1745-E103, -E104: Inputs 1 and 2 – 8mA at 12V, 18mA at 24V. Inputs 3 through 10 – 6 mA at 12V, 14 mA at 24V.

Specifications applying to all Catalog Numbers:

Input Filter Time Delay: 10-25 msec.

Electrical-Optical Isolation:
1500 volts between input voltage and control logic.

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Input Specifications – Analog Input Expansion Unit

Input specifications for the analog input expansion unit are shown below.

Voltage Inputs

Minimum Isolation Between Input and Control Logic: 1500 volts.

Input Type: Differential.

Input Impedance:
+ V to (–): > 1000 K ohms.
+ V or (–) to COM: > 500 K ohms.

Trip Point Repeatability over Time and Temperature:
25-35°C: 0.25% of full scale or 25 millivolts (typical).
1.00% of full scale or 100 millivolts (worst case).
0-60°C: 0.50% of full scale or 50 millivolts (typical).
1.50% of full scale or 150 millivolts (worst case).

Hysteresis: 10 millivolts.

Maximum Operating Range:
+ V to (–): 0 to + 10 volts.
+ V or (–) to COM: –35 to + 35 volts.

Minimum Circuit Protection Range:
+ V to (–), + V or (–) to COM: ± 50.0 volts.

Maximum Input Response Time:
3.5 milliseconds.

Current Inputs

Minimum Isolation Between Input and Control Logic: 1500 volts.

Input Type: Differential.

Input Impedance:
+ I to (–): 250 ohms ± 1.0%.

Trip Point Repeatability over Time and Temperature:
25-35°C: 0.50% of full scale or 0.10mA (typical).
1.75% of full scale or 0.35mA (worst case).
0-60°C: 1.00% of full scale or 0.20mA (typical).
2.75% of full scale or 0.55mA (worst case).

Hysteresis: 40 microamps.

Maximum Operating Range:
+ I to (–): 0 to 20 mA.
+ I or (–) to COM: –35 to + 35 volts.

Minimum Circuit Protection Range:
+ I to (–): ± 40mA.
+ I or (–) to COM: ± 50.0 volts.

Maximum Input Response Time:
3.5 milliseconds.

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Output Specifications

Output specifications for the basic and relay output expansion units are shown below.

Internal output circuitry includes surge suppression to guard against possible damage by transients from external output devices. We recommend that you also use some type of contact protection when switching inductive load devices. Refer to Pages 14 and 15.

Voltage Range and Frequency:
10-250 VAC (50/60 Hz), 10-125 VDC.

Contact Ratings:

Maximum Volts	Amperes		Amperes Continuous	Voltamperes	
	Make	Break		Make	Break
240VAC 120VAC	7.5A 15A	0.75A 1.5A	2.5A	1800VA	180VA
125VDC	0.22A		1.0A	28VA	
24VDC	1.2A		2.5A	28VA	

Contact Resistance: 20 mΩ (typical).

Electrical Isolation: 2000 volts.

OFF State Leakage Current: 2 mA (AC voltage only).

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