INSTRUCTION MANUAL

STANDARD MULTI-TRANSMISSION UNIT | MODEL DLA1

BEFORE USE ....

Thank you for choosing us. Before use, please check contents of the package you received as outlined below.
If you have any problems or questions with the product, please contact our sales office or representatives.

■ PACKAGE INCLUDES:

Standard Multi-Transmission Unit .....(1)

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

POINTS OF CAUTION

■ POWER INPUT RATING & OPERATIONAL RANGE

- Locate the power input rating marked on the product and confirm its operational range as indicated below:
  85 – 132V AC rating: 85 – 132V, 47 – 66 Hz, approx. 17.5VA (max.)
  170 – 264V AC rating: 170 – 264V, 47 – 66 Hz, approx. 17.5VA (max.)
  24V DC rating: 24V ±10%, approx. 17W (max.)
  12V DC rating: 12V ±10%, approx. 17W (max.)

■ GENERAL PRECAUTIONS

- Before you remove the unit or mount it, turn off the power supply and input signal and output signal for safety.

■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -5 to +50°C (23 to 122°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

■ WIRING

- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND ....

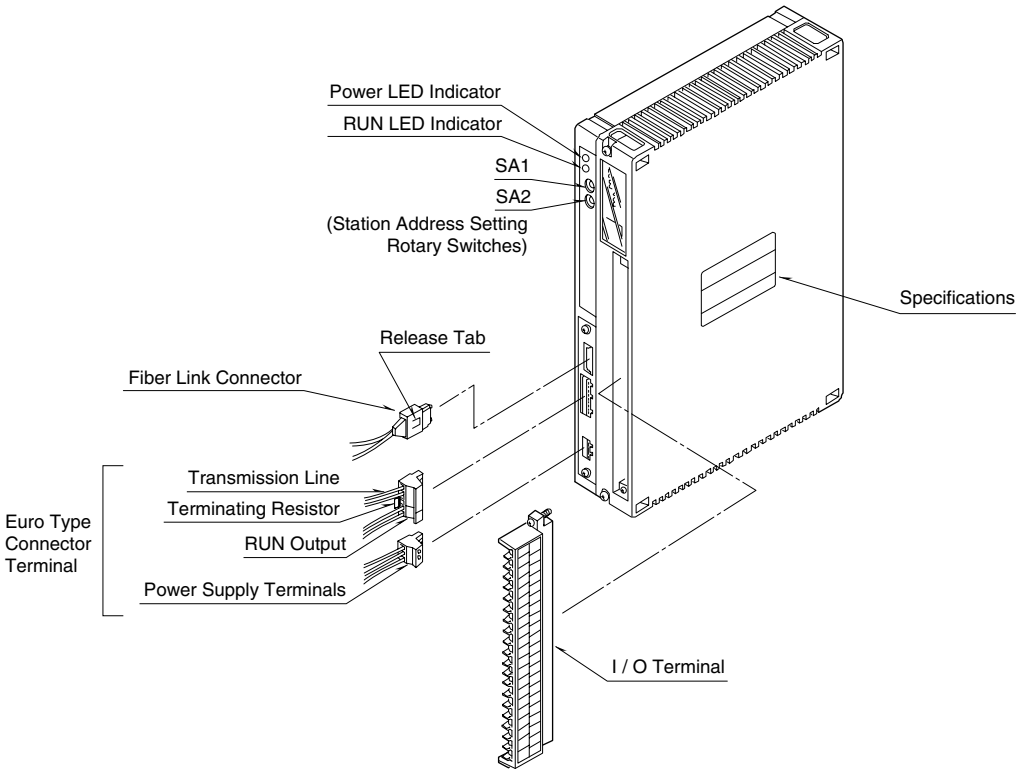
- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

INSTALLATION PROCEDURES

■ GENERAL PROCEDURE

1) Assign and set Station Numbers to all units.
2) Connect the power supply.
3) Connect the transmission cables.
4) Connect all other external I/O devices.

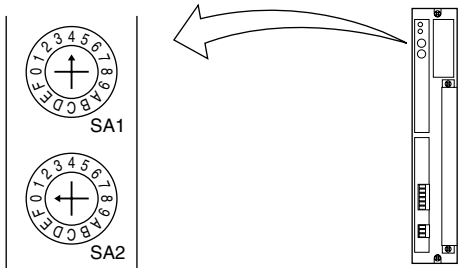
■ COMPONENT IDENTIFICATION



■ STATION ADDRESS NUMBER (SA)

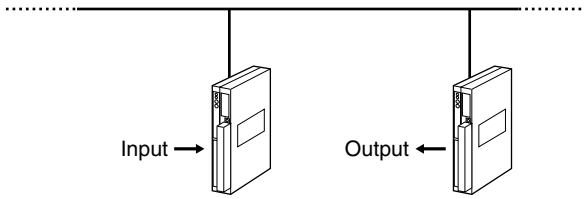
1. HOW TO SET AN SA

The 2-digit SA number is set at the front with two rotary switches (SA1 and SA2) for values from 00H up to FFH for a total of 256 different combinations. The upper switch (SA1) adjusts the first digit of an SA number. For example, set the SA1 to "4" and the SA2 to "0" for assigning "40H".



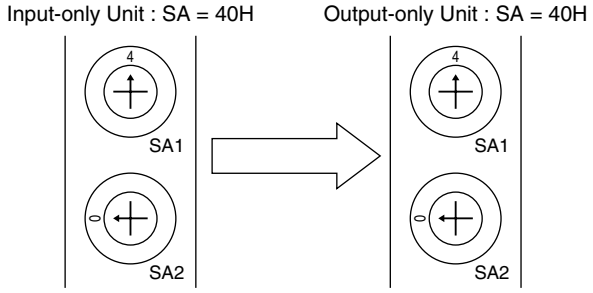
2. HOW TO ASSIGN SA FOR EACH UNIT

2 - 1. Input-only Units and Output-only Units

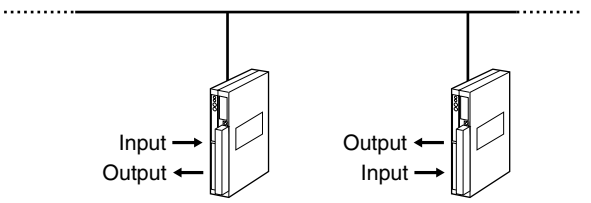


An output-only unit (code: C1, C2, C3, C4, M1 or U1) receives its signals from an input-only unit (code: A1, A2, G1 or P1) with the same address.
Identical addresses can be given to many receiving (output-only) units. A transmitting (input-only) address can be assigned only to one unit.
Therefore, when input from one unit is distributed to two or more output units, all receiving station's SA must be identical to the SA of the transmitting unit.
A 64-point input-only unit (code A1) uses an SA set with the switch and the number plus 1. Do not use this following number for other units.

[Example]

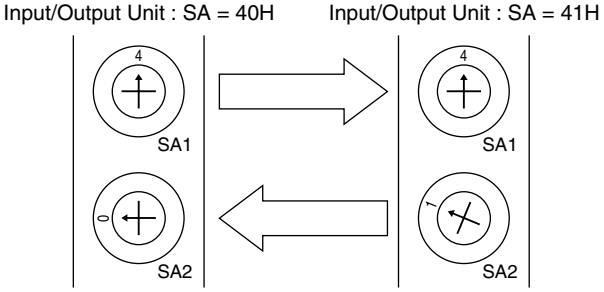


2 - 2. Paired Units

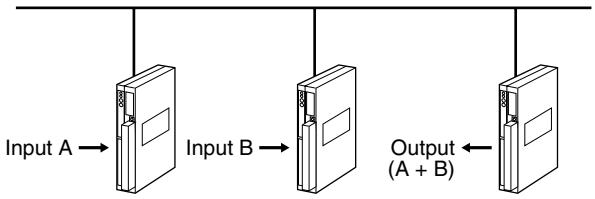


Input/output (dual purpose) units (code: E1, E2, R1 and S1) can be paired with other dual purpose units with identical I/O specifications. An even SA number is given to either unit and this number plus 1 is assigned as SA of the paired unit.

[Example]

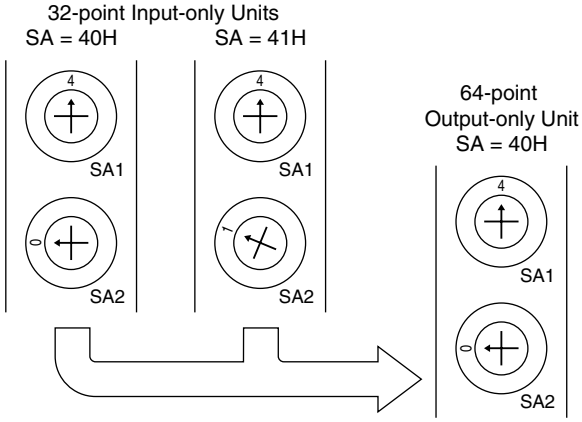


2 - 3. Contact 32-point Input Units and 64-point Output Units

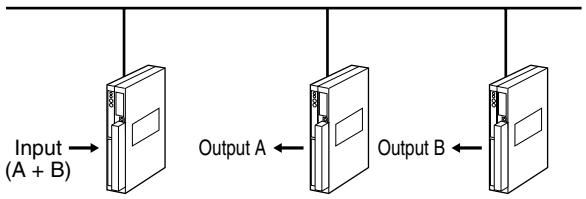


A 64-point output-only unit (code: C3 and C4) receives its signals from two input-only units (code A1). Chs. 1 to 32 of the 64-point output unit are assigned to the signals from the input-only unit of the identical SA, and Chs. 33 to 64 are assigned to those from the unit of this number plus 1.

[Example]

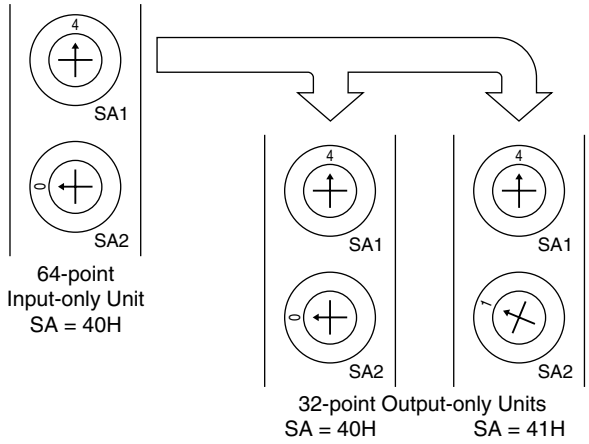


2 - 4. Contact 64-point Input Units and 32-point Output Units



Two 32-point output-only units (code: C1 and C2) receive their signals from an input-only unit (code A2). Chs. 1 to 32 of the 64-point input unit are assigned to the signals sent to the output-only unit of the identical SA, and Chs. 33 to 64 are assigned to those to the unit of this number plus 1.

[Example]



■ TRANSMISSION CABLES

• Twisted-Pair Cables

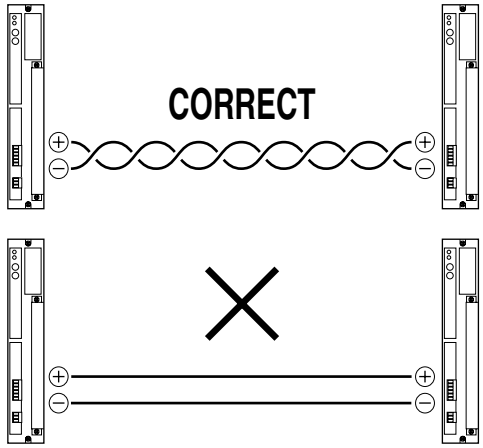
Use wires 0.9 mm dia. or larger.

Connect LINE terminals (+) to (+) and (–) to (–) between corresponding units.

Transmission will be impossible with as little as one unit's transmission lines reversed.

In order to prevent noise interference, install transmission cables in instrumentation cable pits or racks, separate from power lines.

[Example] Two units



• Fiber Optics

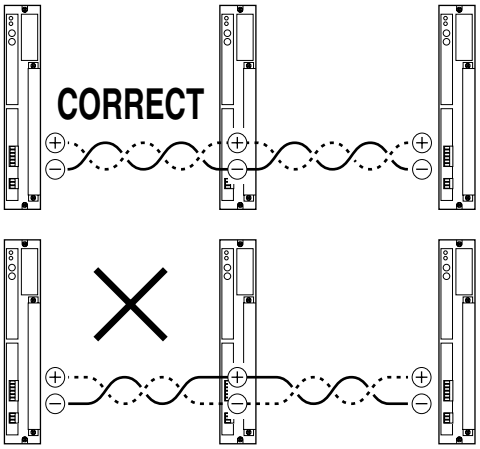
Remove protective covers over the FIBER LINK terminals and connect FIBER LINK connectors.

Observe appropriate radiuses when bending fiber-optic cables.

Follow cable manufacturer's installation procedures.

Fiber breakdown can be easily checked: hold a flashlight toward an end of the cable and see if the light is seen at the other end.

[Example] Multiple units



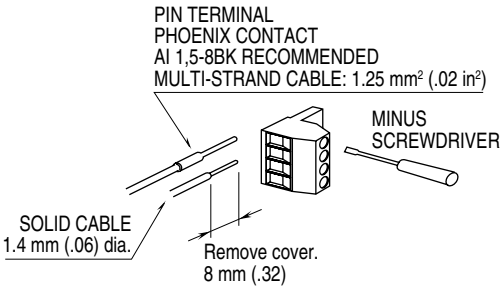
■ EURO TYPE CONNECTOR TERMINALS

Transmission lines (when using twisted-pair cables), power lines and RUN contact output lines are all connected with Euro type connector terminals.

The connector can be unplugged from the base. Connect cables to the screw terminals on the connector.

Use multi-strand cables with pin terminals or solid cables of ≤ 1.4 mm dia. Do not solder core cable of a multi-strand cable.

•Wiring Procedure of Eyro Type Connector Terminals



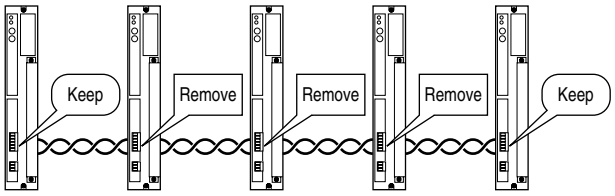
■ JUMPER CONNECTIONS

A DLA1 unit is factory-equipped with a "lead-wire jumper connection" across the Jumper Connection terminals in order to close the circuit and thereby prevent transmission-line waveform reflections.

• Twisted-pair Cable

With systems of 3 or more units, remove these jumper connections from all units except those at the ends of a transmission line.

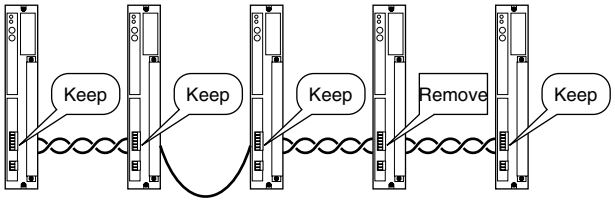
[Example]



• Fiber Optics

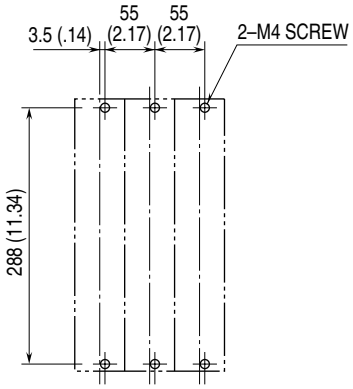
When installing systems with both fiber-optic and twisted-pair transmission lines, treat each fiber-optic station as an end-station and remove jumper connections only from units inside twisted-pair cable loops.

[Example]

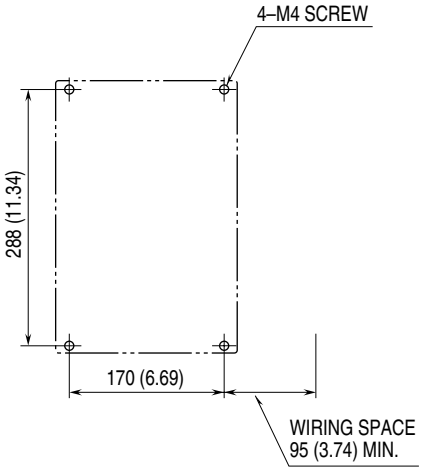


MOUNTING REQUIREMENTS unit: mm (inch)

■ SURFACE MOUNTING

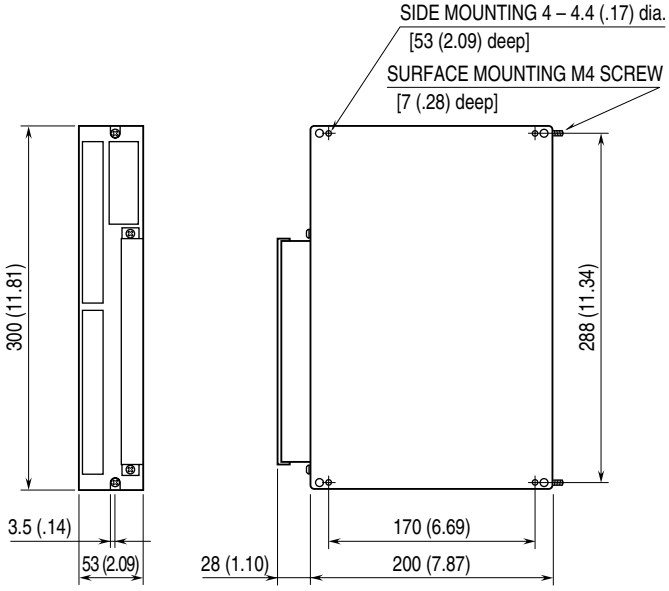


■ SIDE MOUNTING (terminal block at the right side)



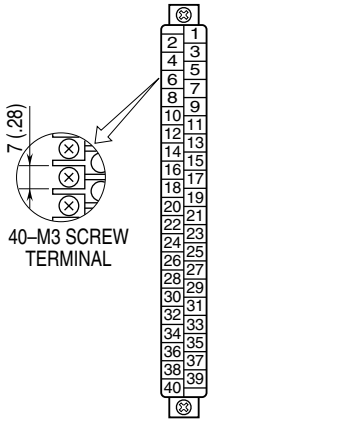
EXTERNAL DIMENSIONS unit: mm (inch)

■ STANDARD TYPE



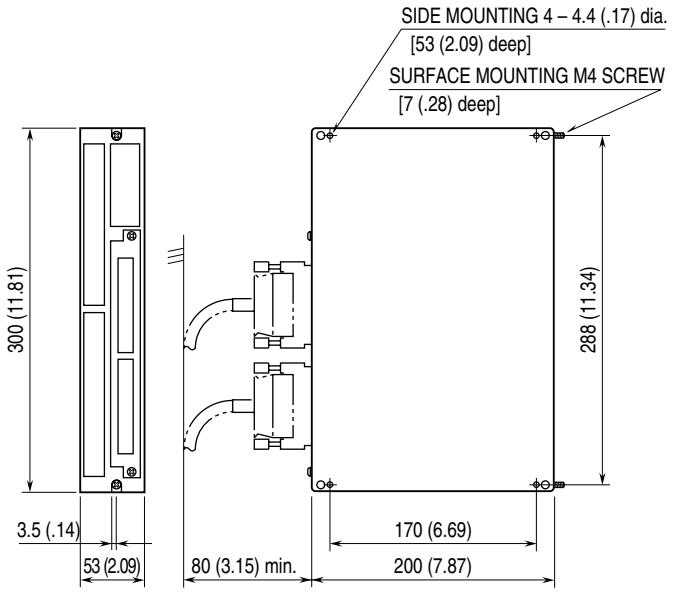
(Fig. A-1)

•40-pin Connector Terminal Block



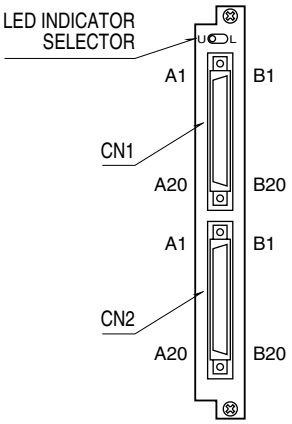
(Fig. A-2)

■ WITH I/O CONNECTORS



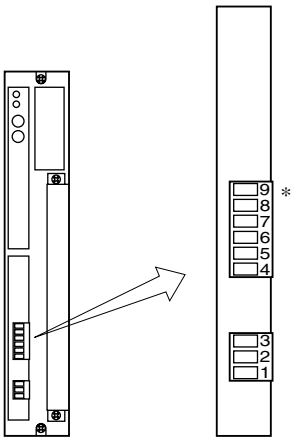
(Fig. B-1)

•Connector Pin Assignment

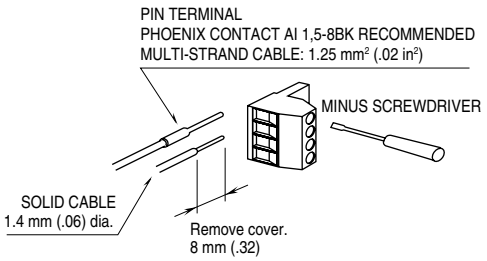


(Fig. B-2)

•Terminal Assignment, Euro Type Connector Terminals

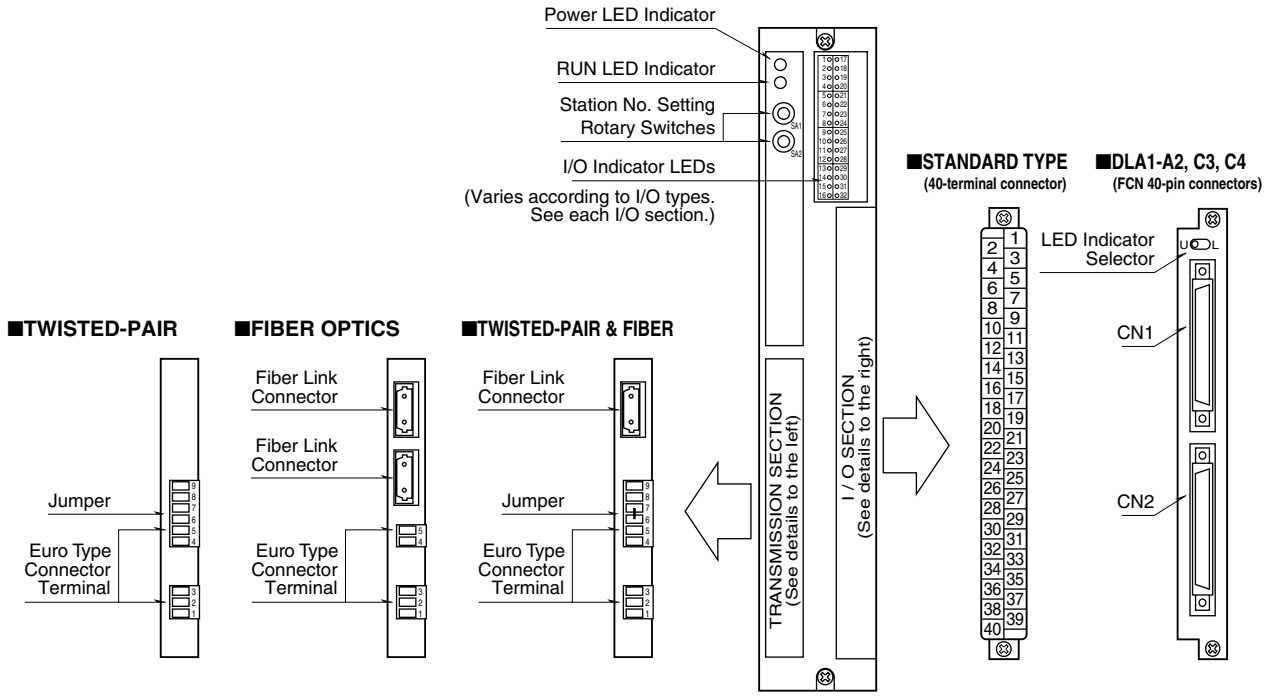


•Wiring Procedure of Euro Type Connector Terminals

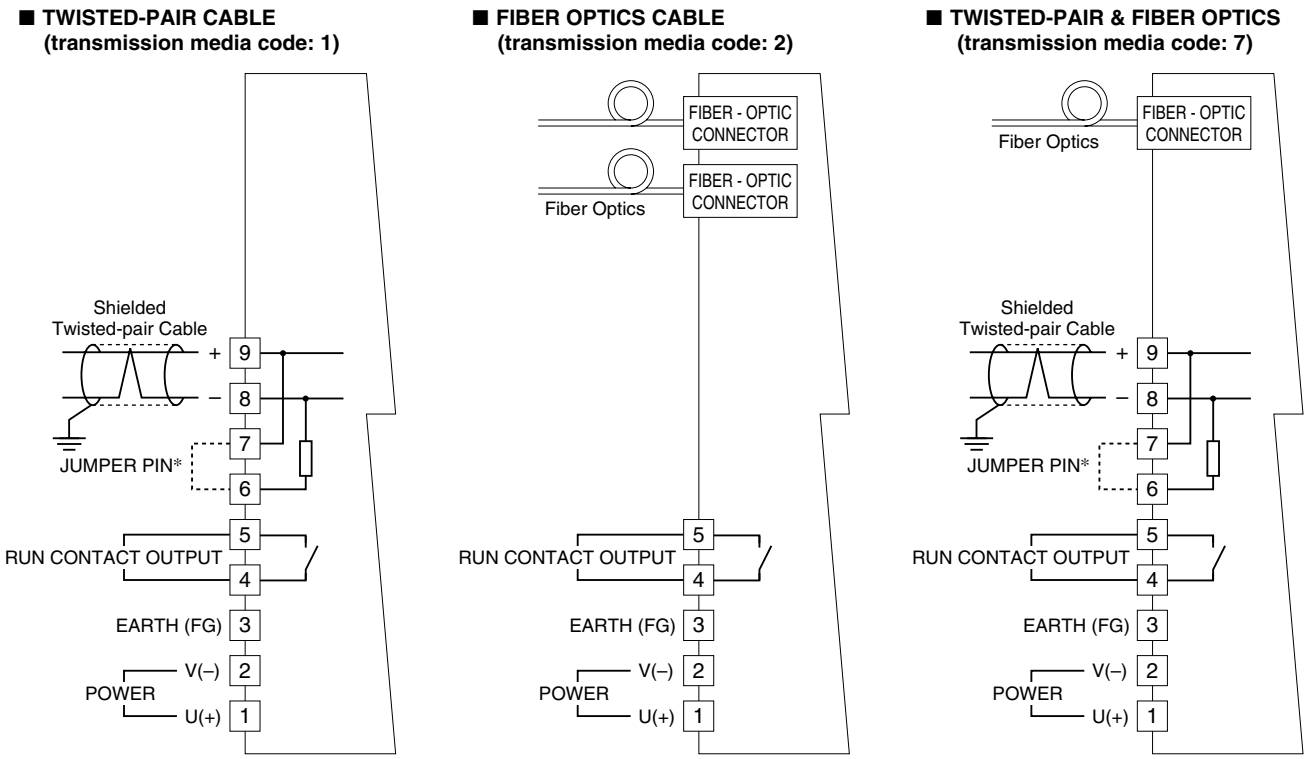


*Not provided for fiber optics (code 2)
Note : There is no specific order for connecting fiber optics.

FRONT PANEL CONFIGURATION



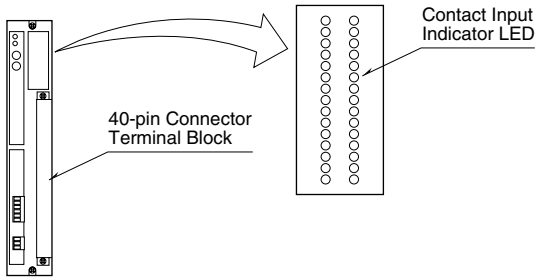
TRANSMISSION & POWER CONNECTION DIAGRAM



*When the unit is located at the end of transmission line via twisted-pair cable (= no cross-wiring), short across the terminals 6 – 7 with the jumper pin (or wire) provided with the unit. Remove the jumper pin for the one not located at the end.

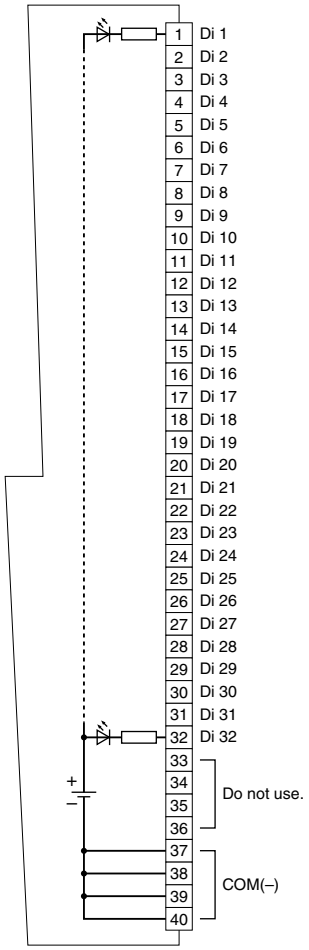
Model DLA1–xA1

■ FRONT PANEL (INPUT)



External dimensions: See Figure A-1.

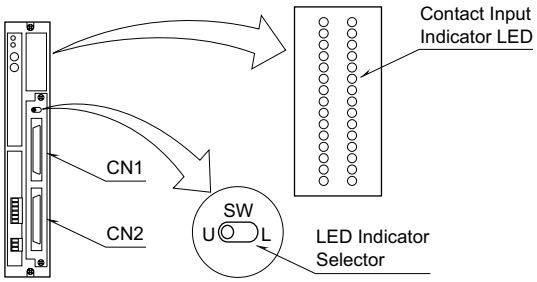
■ CONNECTION DIAGRAM (INPUT)



Terminal assignment: See Figure A-2.

Model DLA1–xA2

■ FRONT PANEL (INPUT)



External dimensions: See Figure B-1.

■ CONNECTOR PIN ASSIGNMENT (INPUT)

CONNECTOR CN1

PIN NO.	CH. NO.	PIN NO.	CH. NO.
A1	Di 1	B1	Di17
2	2	2	18
3	3	3	19
4	4	4	20
5	5	5	21
6	6	6	22
7	7	7	23
8	8	8	24
9	9	9	25
10	10	10	26
11	11	11	27
12	12	12	28
13	13	13	29
14	14	14	30
15	15	15	31
16	16	16	32
17	C1	17	C1
18	C1	18	C1
19	C1	19	C1
20	C1	20	C1

CONNECTOR CN2

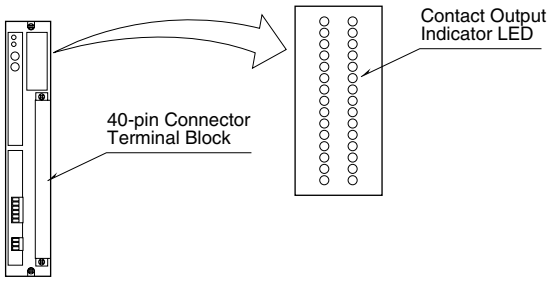
PIN NO.	CH. NO.	PIN NO.	CH. NO.
A1	Di33	B1	Di49
2	34	2	50
3	35	3	51
4	36	4	52
5	37	5	53
6	38	6	54
7	39	7	55
8	40	8	56
9	41	9	57
10	42	10	58
11	43	11	59
12	44	12	60
13	45	13	61
14	46	14	62
15	47	15	63
16	48	16	64
17	C1	17	C1
18	C1	18	C1
19	C1	19	C1
20	C1	20	C1

C1: negative common to all channels

Terminal assignment: See Figure B-2.

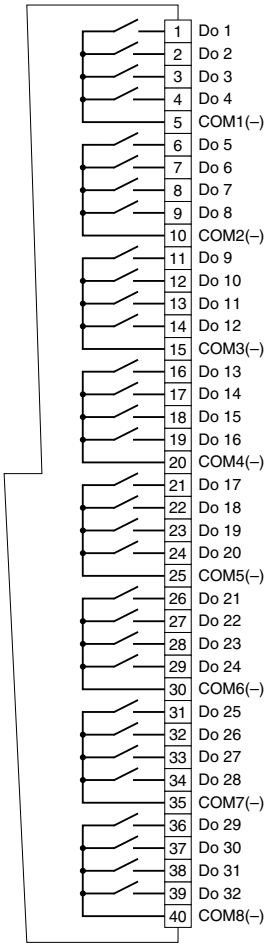
Model DLA1–xC1

■ FRONT PANEL (OUTPUT)



External dimensions: See Figure A-1.

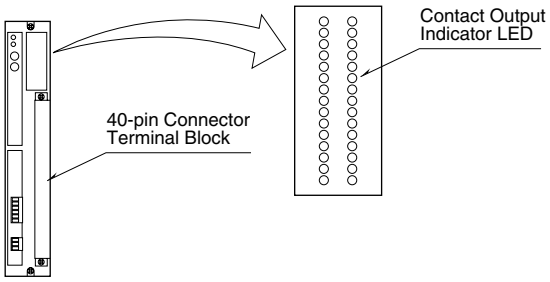
■ CONNECTION DIAGRAM (OUTPUT)



Terminal assignment: See Figure A-2.

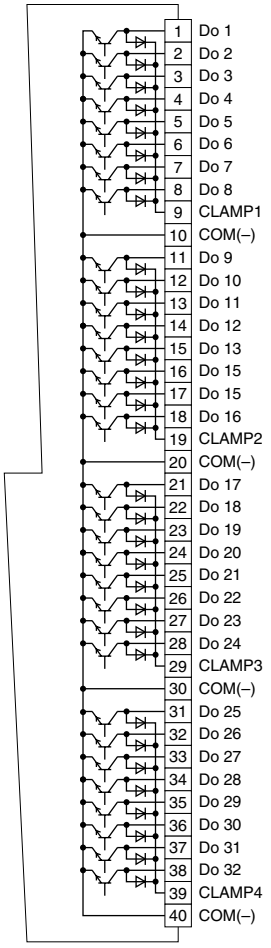
Model DLA1–xC2

■ FRONT PANEL (OUTPUT)



External dimensions: See Figure A-1.

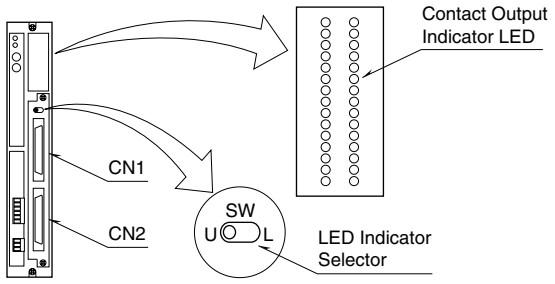
■ CONNECTION DIAGRAM (OUTPUT)



Terminal assignment: See Figure A-2.

Model DLA1–xC3

■ FRONT PANEL (OUTPUT)



External dimensions: See Figure B-1.

■ CONNECTOR PIN ASSIGNMENT (OUTPUT)

CONNECTOR CN1

PIN NO.	CH. NO.	PIN NO.	CH. NO.
A1	Do 1	B1	Do17
2	2	2	18
3	3	3	19
4	4	4	20
17	C1	17	C5
5	Do 5	5	Do21
6	6	6	22
7	7	7	23
8	8	8	24
18	C2	18	C6
9	Do 9	9	Do25
10	10	10	26
11	11	11	27
12	12	12	28
19	C3	19	C7
13	Do13	13	Do29
14	14	14	30
15	15	15	31
16	16	16	32
20	C4	20	C8

CONNECTOR CN2

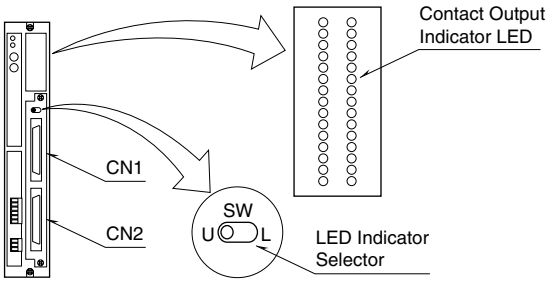
PIN NO.	CH. NO.	PIN NO.	CH. NO.
A1	Do33	B1	Do49
2	34	2	50
3	35	3	51
4	36	4	52
17	C9	17	C13
5	Do37	5	Do53
6	38	6	54
7	39	7	55
8	40	8	56
18	C10	18	C14
9	Do41	9	Do57
10	42	10	58
11	43	11	59
12	44	12	60
19	C11	19	C15
13	Do45	13	Do61
14	46	14	62
15	47	15	63
16	48	16	64
20	C12	20	C16

C1 – C16: negative common per 4 points

Terminal assignment: See Figure B-2.

Model DLA1–xC4

■ FRONT PANEL (OUTPUT)



External dimensions: See Figure B-1.

■ CONNECTOR PIN ASSIGNMENT (OUTPUT)

CONNECTOR CN1

PIN NO.	CH. NO.	PIN NO.	CH. NO.
A1	Do 1	B1	Do17
2	2	2	18
3	3	3	19
4	4	4	20
5	5	5	21
6	6	6	22
7	7	7	23
8	8	8	24
17	C1	17	C1
18	C1	18	C1
9	Do 9	9	Do25
10	10	10	26
11	11	11	27
12	12	12	28
13	13	13	29
14	14	14	30
15	15	15	31
16	16	16	32
19	C1	19	C1
20	CL1	20	CL2

CONNECTOR CN2

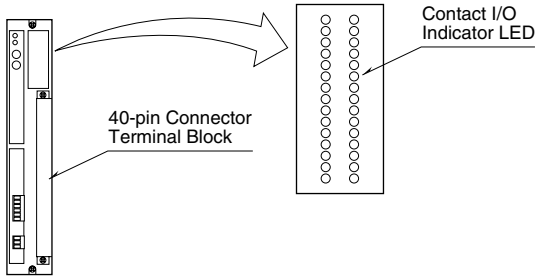
PIN NO.	CH. NO.	PIN NO.	CH. NO.
A1	Do33	B1	Do49
2	34	2	50
3	35	3	51
4	36	4	52
5	37	5	53
6	38	6	54
7	39	7	55
8	40	8	56
17	C1	17	C1
18	C1	18	C1
9	Do41	9	Do57
10	42	10	58
11	43	11	59
12	44	12	60
13	45	13	61
14	46	14	62
15	47	15	63
16	48	16	64
19	C1	19	C1
20	CL3	20	CL4

C1: negative common to all channels
CL1 – CL4: clamp terminals per 16 points

Terminal assignment: See Figure B-2.

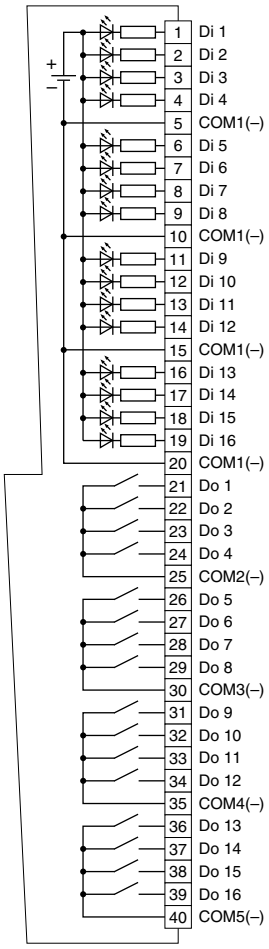
Model DLA1–xE1

■ FRONT PANEL (I/O)



External dimensions: See Figure A-1.

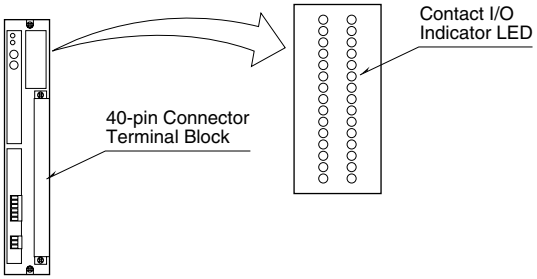
■ CONNECTION DIAGRAM (I/O)



Terminal assignment: See Figure A-2.

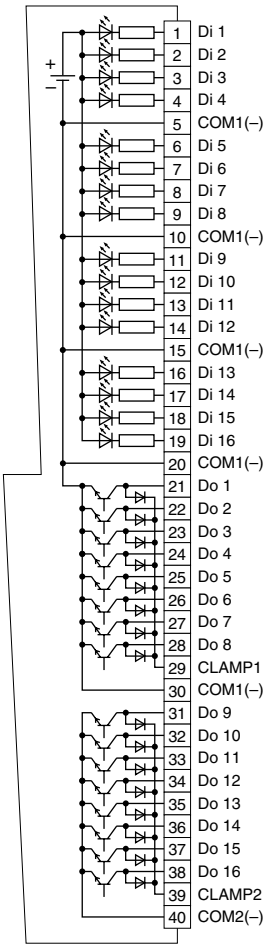
Model DLA1–xE2

■ FRONT PANEL (I/O)



External dimensions: See Figure A-1.

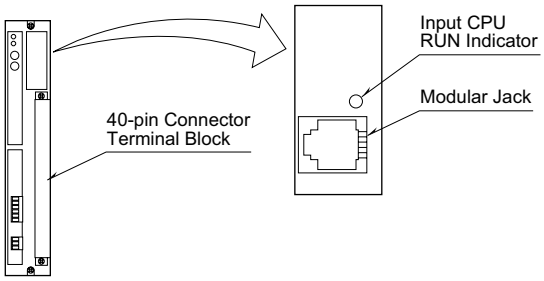
■ CONNECTION DIAGRAM (I/O)



Terminal assignment: See Figure A-2.

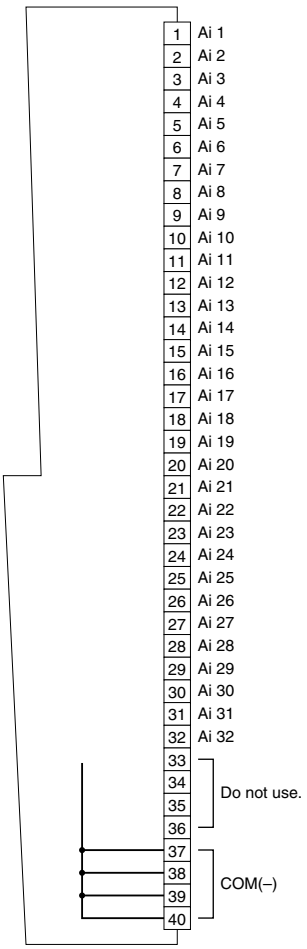
Model DLA1–xG1

■ FRONT PANEL (INPUT)



External dimensions: See Figure A-1.

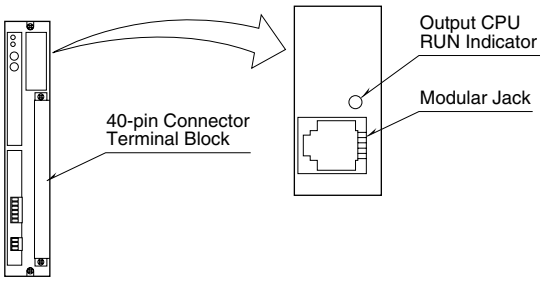
■ CONNECTION DIAGRAM (INPUT)



Terminal assignment: See Figure A-2.

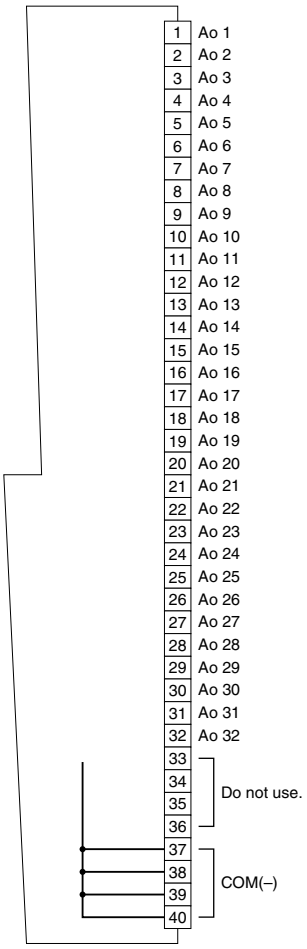
Model DLA1–xM1

■ FRONT PANEL (OUTPUT)



External dimensions: See Figure A-1.

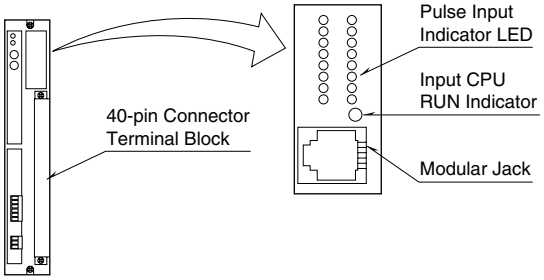
■ CONNECTION DIAGRAM (OUTPUT)



Terminal assignment: See Figure A-2.

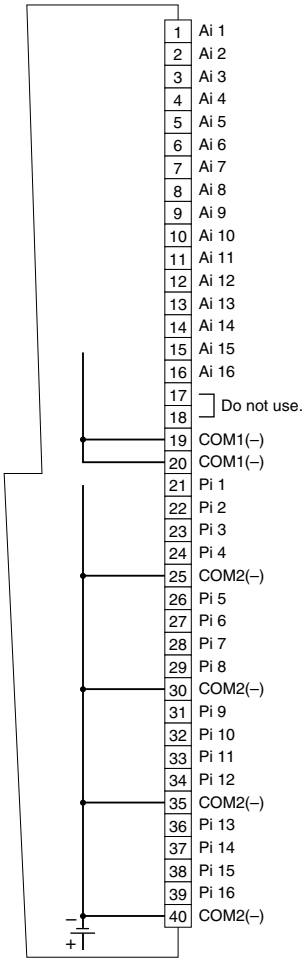
Model DLA1–xP1

■ FRONT PANEL (INPUT)



External dimensions: See Figure A-1.

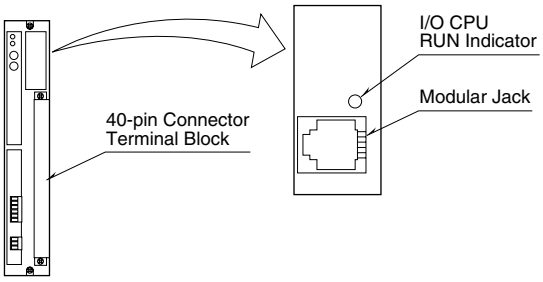
■ CONNECTION DIAGRAM (INPUT)



Terminal assignment: See Figure A-2.

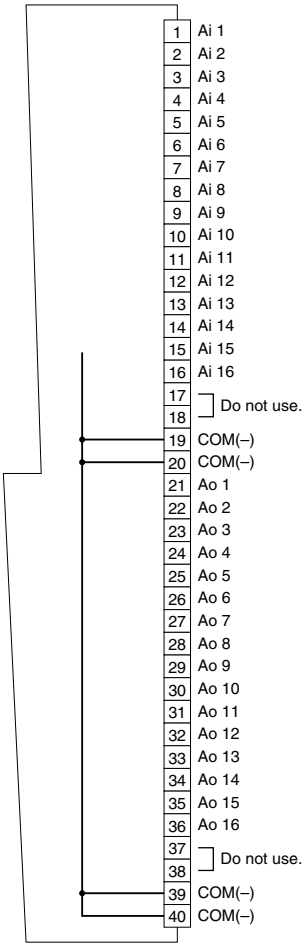
Model DLA1–xR1

■ FRONT PANEL (I/O)



External dimensions: See Figure A-1.

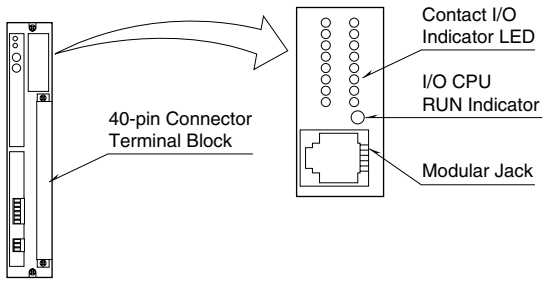
■ CONNECTION DIAGRAM (I/O)



Terminal assignment: See Figure A-2.

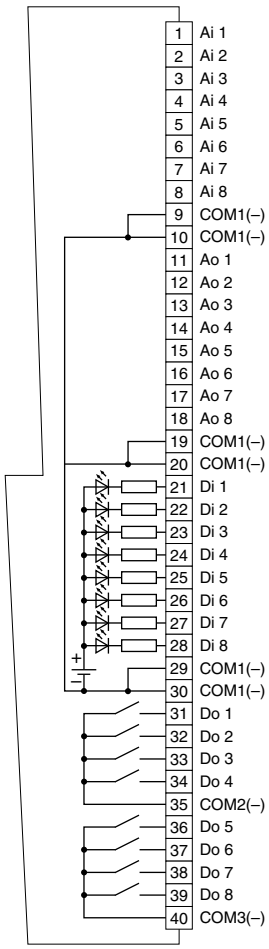
Model DLA1–xS1

■ FRONT PANEL (I/O)



External dimensions: See Figure A-1.

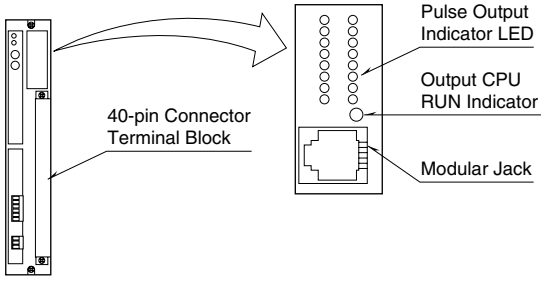
■ CONNECTION DIAGRAM (I/O)



Terminal assignment: See Figure A-2.

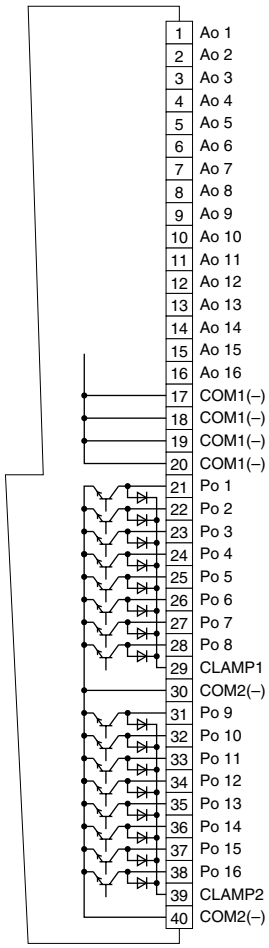
Model DLA1–xU1

■ FRONT PANEL (OUTPUT)



External dimensions: See Figure A-1.

■ CONNECTION DIAGRAM (OUTPUT)



Terminal assignment: See Figure A-2.

LIGHTNING SURGE PROTECTION

We offer a series of lightning surge protector for protection against induced lightning surges. Please contact us to choose appropriate models.