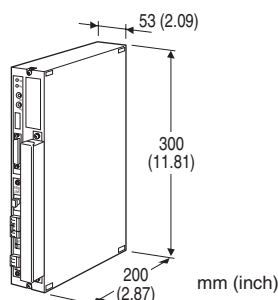


Remote I/O

REMOTE I/O INTERFACE UNIT

Functions & Features

- Interfacing between the host computer and remote I/O devices
- RS-232-C (non-procedure)
- Buffer memory common for DLC commands enables quick I/O without waiting time
- Process I/O



MODEL: DLC-[1][2]-[3]

ORDERING INFORMATION

- Code number: DLC-[1][2]-[3]

Specify a code from below for each [1] through [3].
(e.g. DLC-1S1A4B4-K)

[1] TRANSMISSION MEDIA

- 1: Twisted-pair cable
- 2: Fiber optics cable
- 7: Twisted-pair - fiber optics (repeater incorporated)

[2] I/O SECTION

[Computer Interface without Process I/O]

00: RS-232-C (non-procedure)

[RS-232-C with Process I/O]

A1: Di 32 points

A2: Di 64 points

C1: Do 32 points (relay)

C2: Do 32 points (open collector)

C3: Do 64 points (relay)

C4: Do 64 points (open collector)

E1: Di 16 + Do 16 points (relay)

E2 : Di 16 + Do 16 points (open collector)

G1x: Ai 32 points

M1x: Ao 32 points

P1x : Pi 16 + Ai 16 points

R1xx: Ai 16 + Ao 16 points

S1xx: Ai 8 + Ao 8 + Di 8 + Do 8 points

U1x : Po 16 + Ao 16 points

See data sheet for Standard Multi-Transmission Unit (model: DLA1) for specifications of I/O sections.

[3] POWER INPUT

AC Power

K: 85 - 132 V AC

(Operational voltage range 85 - 132 V, 47 - 66 Hz)

L: 170 - 264 V AC

(Operational voltage range 170 - 264 V, 47 - 66 Hz)

DC Power

S: 12 V DC

(Operational voltage range 12 V $\pm$ 10 %, ripple 10 %p-p max.)

R: 24 V DC

(Operational voltage range 24 V $\pm$ 10 %, ripple 10 %p-p max.)

RELATED PRODUCTS

- Standard multi-transmission unit (model: DLA1)

GENERAL SPECIFICATIONS

Construction: Surface mounting; terminal access on the front

Connection

Transmission line terminal: Euro type connector terminal; wire size 1.25 mm² max.

Power supply terminal: Euro type connector terminal; wire size 1.25 mm² max.

RUN contact: Euro type connector terminal; wire size 1.25 mm² max.

I/O section:

• **32-point I/O (or less):** 40-pin connector terminal; M3 $\times$ 6 screws (torque 0.7 N·m)

• **64-point I/O:** FCN 40-pin connector (two);
(FUJITSU FCN-365P040-AU)

Housing material: Flame-resistant resin (beige)

Isolation: I/O to transmission section to power

Station No. adjustment: 2 rotary switches; 00 - FF (256)

■ Controller & Transmission Sections

Power indicator: Red LED turns ON in normal conditions; OFF when the voltage level becomes low.

RUN indicator: Red LED turns OFF in error.

■ I/O Section

Contact I/O indicator LED: Red lights turn on when the respective I/O channels are ON.

Analog I/O CPU RUN indicator LED: Red LED turns ON when the CPU function proves normal, OFF in error.

■ **RUN Output:** Contact opens in error.

Rated load: 100 V AC or 30 V DC @ 1 A (resistive load)

Maximum switching voltage: 120 V AC or 30 V DC

Maximum switching power: 100 VA or 30 W

Minimum load: 5 V DC @ 10 mA

Error detection

- **Communication:** The receiver units detect loss of communication and wire break.
- **CPU:** Watch-dog timer
- **Power voltage:** Detects when the voltage supply to the CPU drops by 10 %.

MULTIPLEX COMMUNICATION

Communication: Half-duplex, synchronous

Transmission: Conform to RS-422, EIA

Transmission speed: 125 kbps

Protocol: SIN-NET (M-System's; data format conforms to SDLC)

Error check: CRC

■ **Twisted-pair Cable**

Cable: CPEV-0.9 dia.

Connection: Euro Type connector terminal; wire size 1.25 mm² max.

Transmission Distance: 1 kilometer max. with 16 units connected; 3 kilometers max. between 2 stations each of which consists of 3 units

Terminator: Incorporated (Remove the attached jumper pin when the unit is not located at the end of transmission line.)

■ **Fiber Optics Cable**

Link: JIS F07 connector (Consult factory for details)

Transmission distance: 1 kilometer max. with PCF

Transmission loss: 7 dB max.

■ **Twisted-pair – Fiber Optics:** Converting signals between two media and waveform shaping

INTERFACE

Transmission: Conform to EIA RS-232-C

Communication: Asynchronous, half-duplex, non-procedure

DIP switch: Setting RS-232-C specifications

Transmission speed: 300 – 9600 bps

Data bit: 7 or 8 bits

Stop bit: 1, 1.5 or 2 bits

Parity: Even or odd

RS-232-C connector: 25-pin D-sub connector (female) (M2.6 × 0.45 screw connector)

RS-232-C cable: Cross (provided by the user)

INSTALLATION

Power consumption

- **AC:** Approx. 17.5 VA max.
 - **DC:** Approx. 17 W max. (1.1 A with 24 V)
- Grounding:** Not required in normal environments; 100 Ω or less grounding resistance in noisy environments
- Operating temperature:** -5 to + 50°C (23 to 122°F)

Operating humidity: 30 to 90 %RH (non-condensing)

Atmosphere: No corrosive gas or heavy dust

Mounting: Surface; Rack Mounting Frame (model: BX-1DL) available

Weight: 2 kg (4.4 lb)

PERFORMANCE

Permissible power failure duration: ≤ 20 ms

Insulation resistance: ≥ 100 MΩ with 500 V DC

Dielectric strength: 1500 V AC @ 1 minute
(I/O to transmission to power)

DESCRIPTIONS

•RUN Contact (LED) Behaviors

Input units (00, A1, A2, G1 and P1): The LED turns ON with the network configured; OFF in an abnormality; the network is reconfigured after an abnormality.

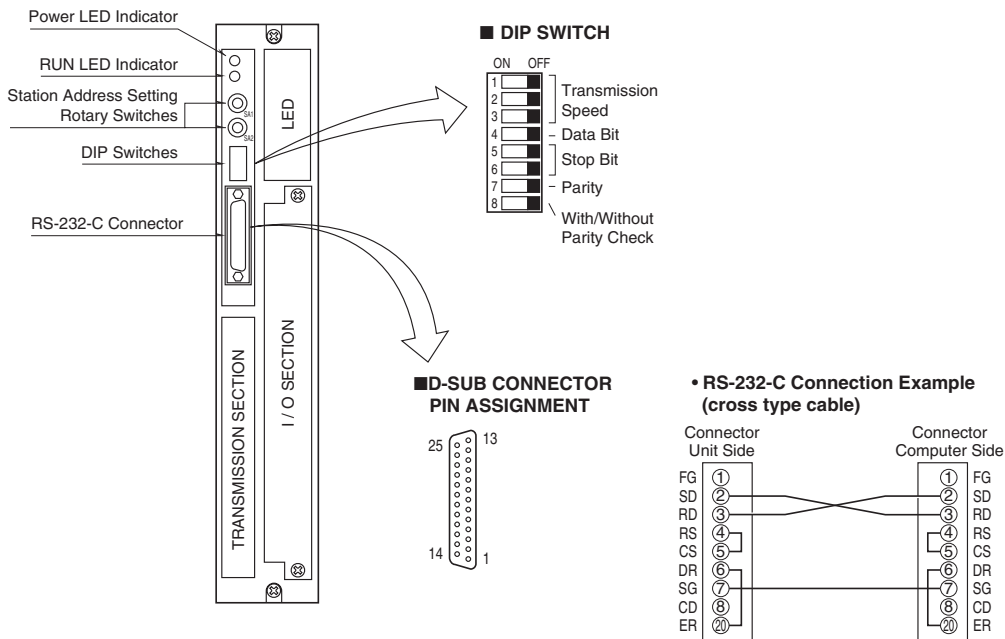
Output units (C1, C2, C3, C4, M1 and U1): The LED turns ON when data from the paired input unit is received normally, with the network configured; OFF when the data is lost; turns also OFF in an abnormality in the network.

I/O-mixed units (E1, E2, R1 and S1): Functions of both input and output units are used.

[CAUTION]

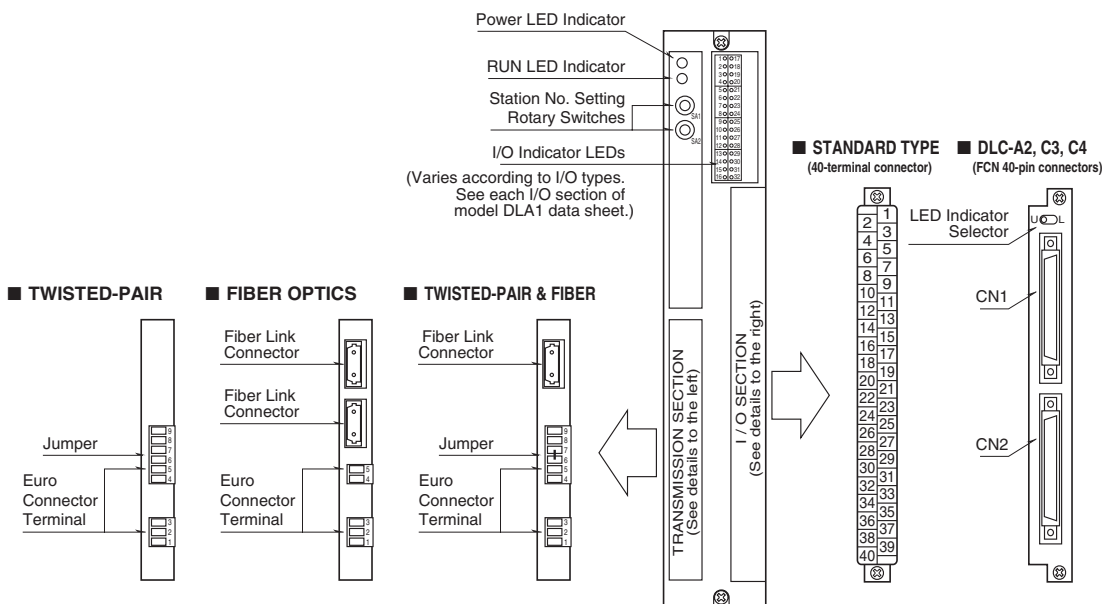
When the network is reconfigured e.g. by noise interference, the RUN LED and output for all units on the network turn briefly OFF until they are turned ON after the reconfiguration is complete.

EXTERNAL VIEW



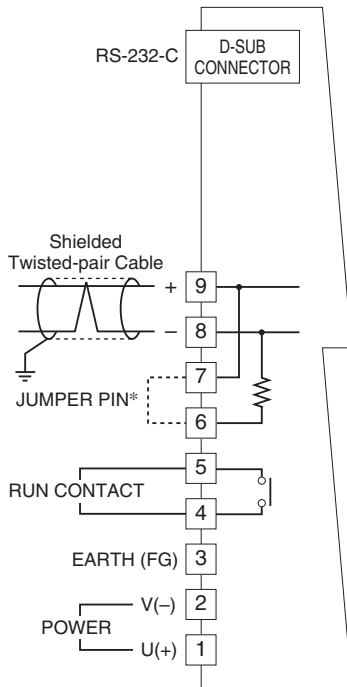
■ MULTI-TRANSMISSION SECTION, PROCESS I/O SECTION & INDICATOR LED SECTION

(Process I/O and indicator LED sections are provided only for process I/O type)

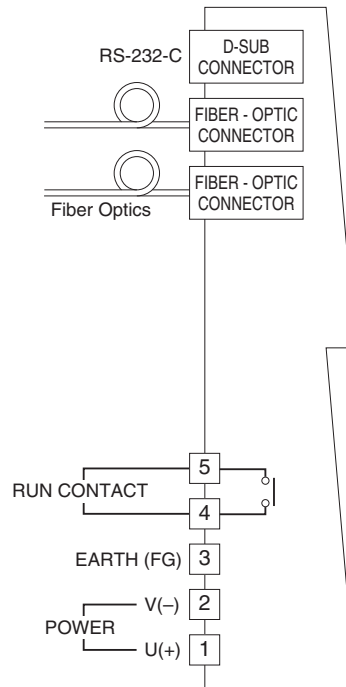


CONNECTION DIAGRAM

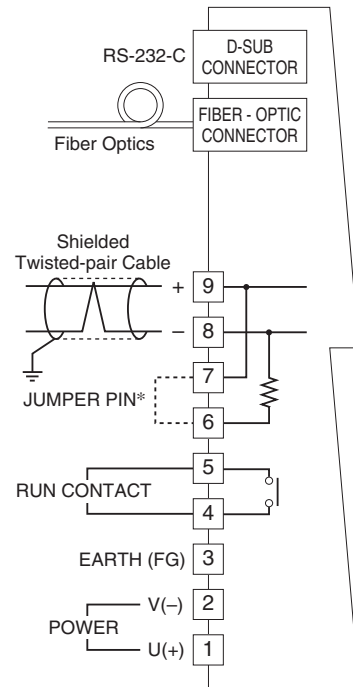
■ TWISTED-PAIR CABLE (transmission media code: 1)



■ FIBER OPTICS CABLE (transmission media code: 2)



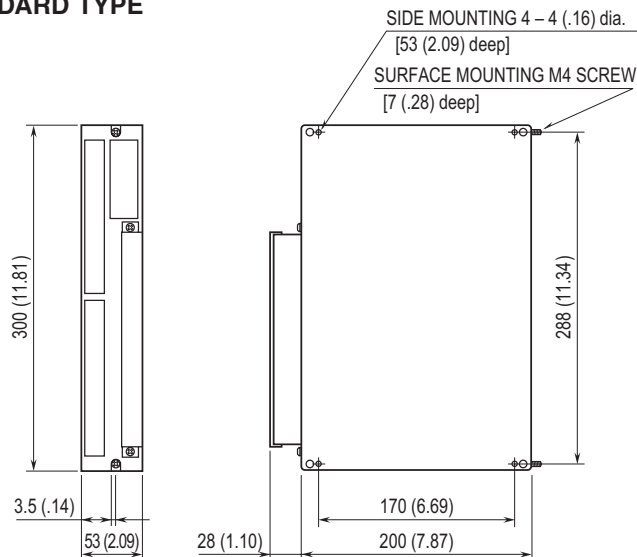
■ TWISTED-PAIR & FIBER OPTICS (transmission media code: 7)



*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 all the unit not located at the end.

DIMENSIONS unit: mm (inch)

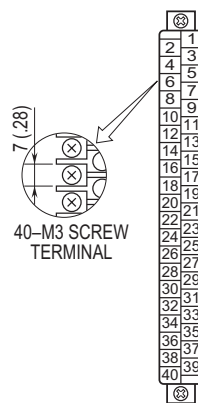
■ STANDARD TYPE



Observe appropriate space for the front RS-232-C cable (provided by user).

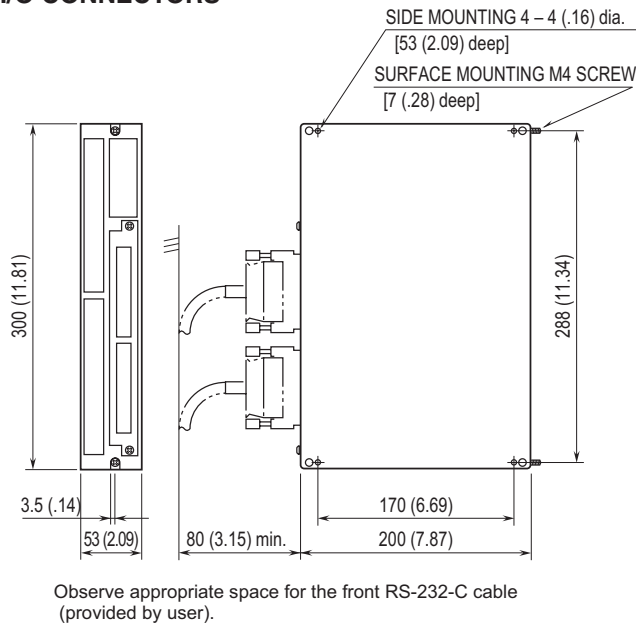
(Fig. A-1)

• 40-pin Connector Terminal Block

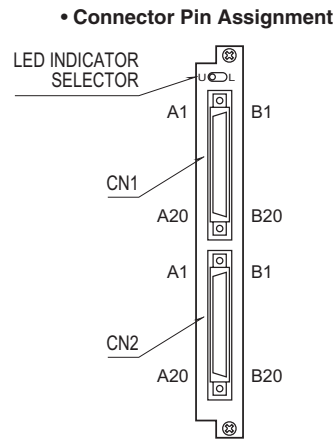


(Fig. A-2)

■ WITH I/O CONNECTORS

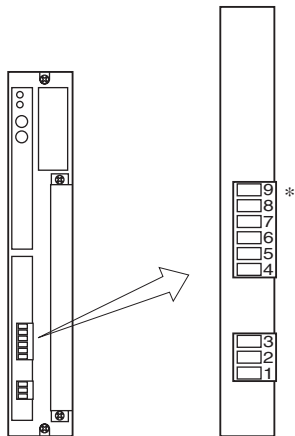


(Fig. B-1)

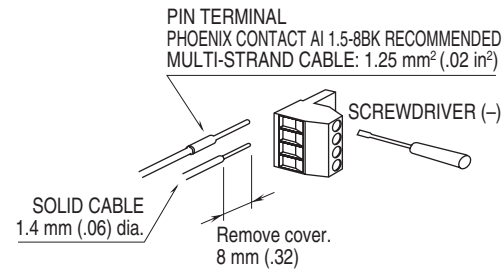


(Fig. B-2)

•Terminal Assignment, Euro Type Connector Terminals



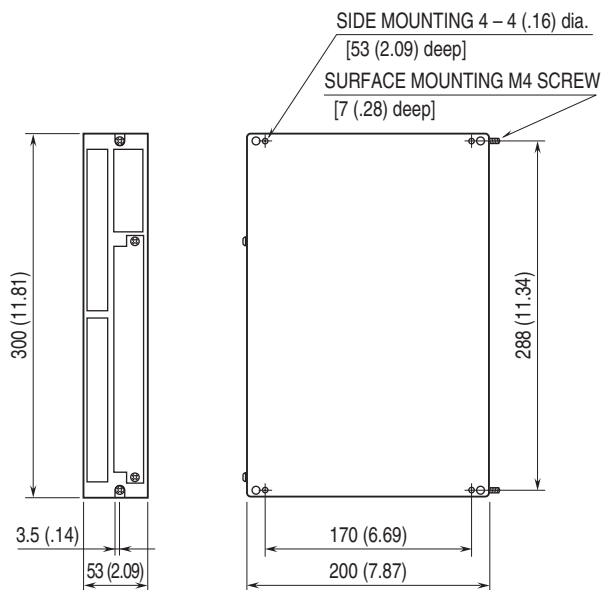
•Wiring Procedure of Connector Terminals



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

■ WITHOUT PROCESS I/O

• DLC-00

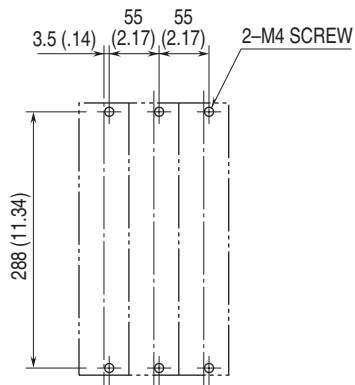


Observe appropriate space for the front RS-232-C cable (provided by the user).

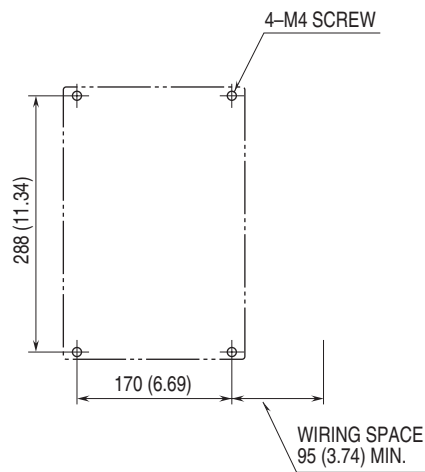
(Fig. C)

MOUNTING REQUIREMENTS unit: mm (inch)

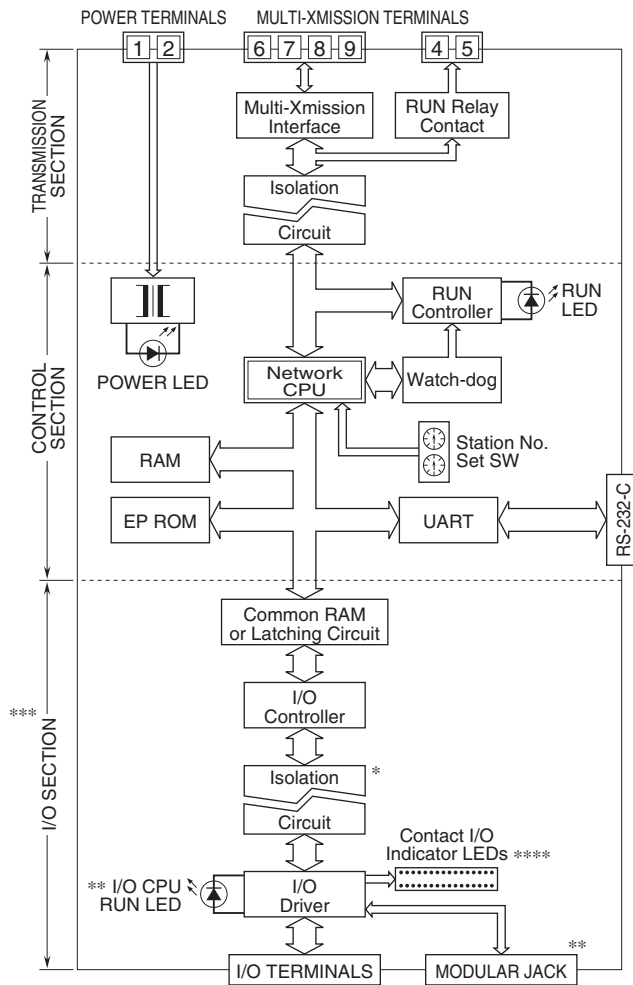
■ SURFACE MOUNTING



■ SIDE MOUNTING (terminal block at the right side)



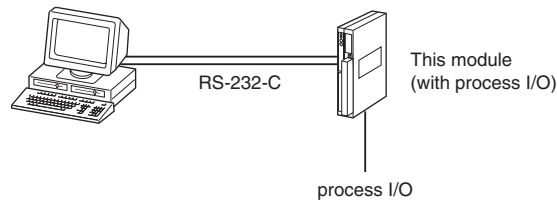
FUNCTION BLOCK DIAGRAM



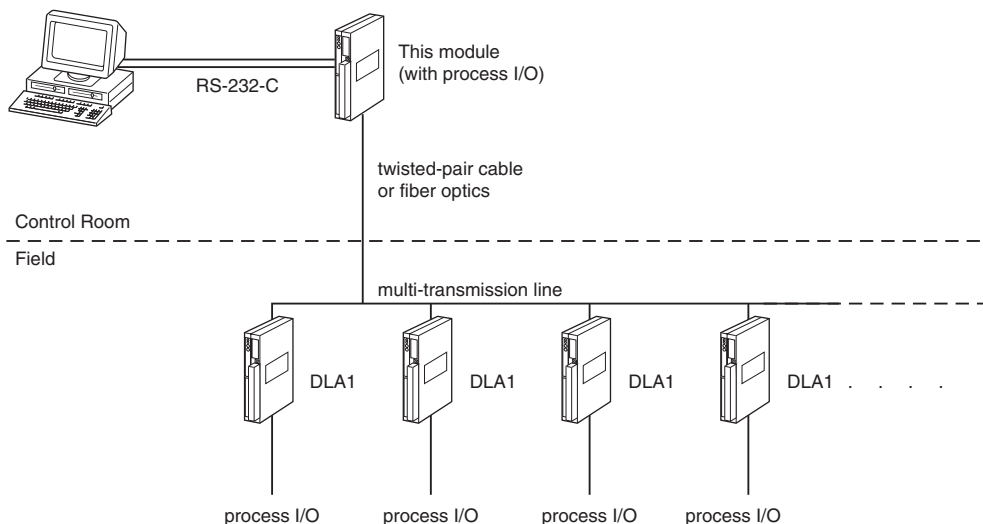
- * Not included with codes G1, P1, R1 or S1.
- ** Not included with codes A1, A2, C1, C2, C3, C4, E1 or E2.
- *** Not included when there is no process I/O.
- **** Not included with codes G1, M1 or R1.

SYSTEM CONFIGURATION EXAMPLES

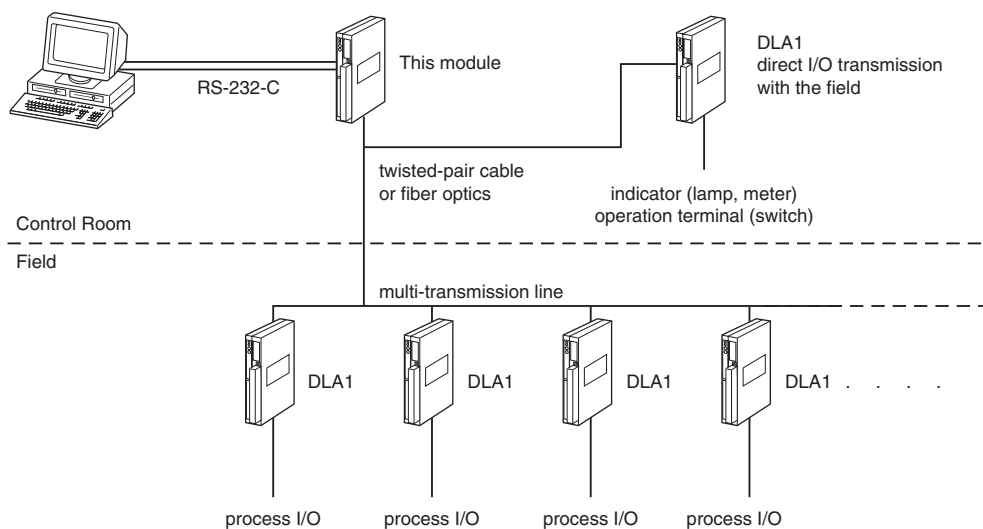
1. Minimum System Configuration



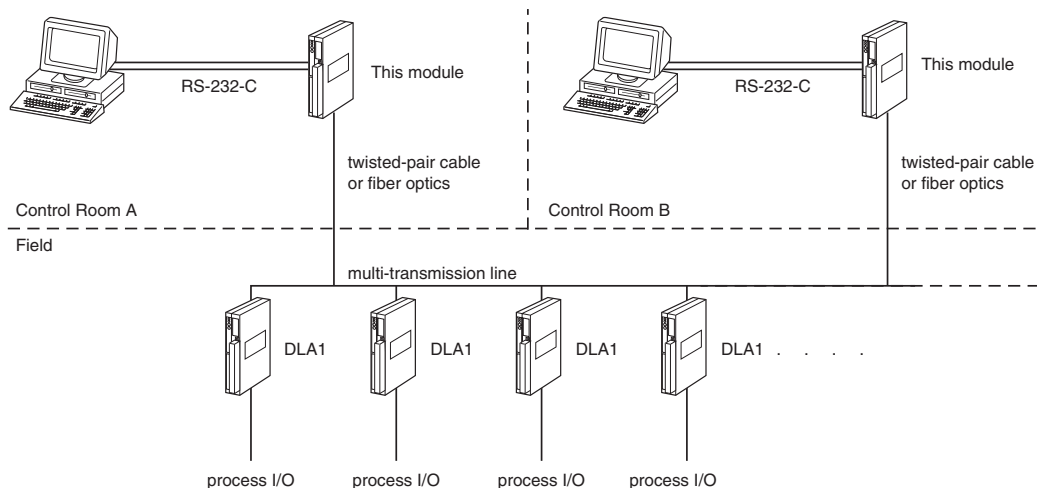
2. Remote I/O: 1 Computer



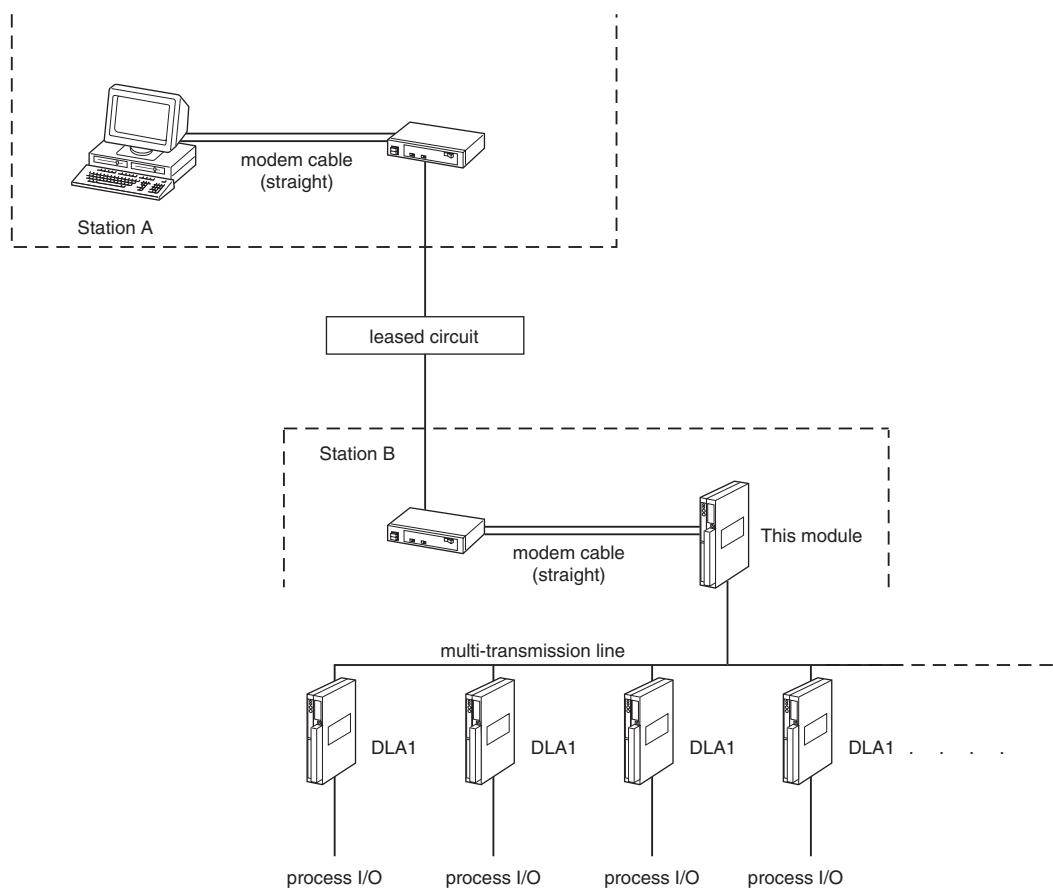
3. Remote I/O: 1 Computer and Multi-Transmission Unit for Back-Up



4. Remote I/O: Several Computers



5. Remote I/O: Via Modem



Specifications are subject to change without notice.