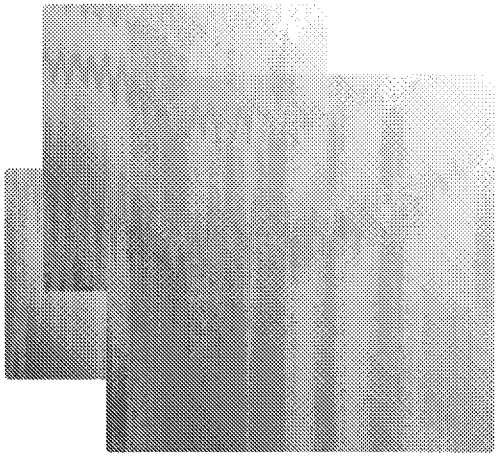


Chapter 5

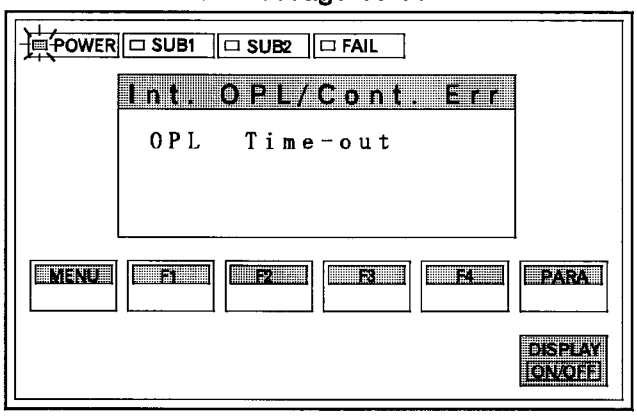
MEASURES TAKEN AT ERROR OCCURRENCE

5. MEASURES TAKEN AT ERROR OCCURRENCE

5.1 Error messages

If a system error occurs during operation or when the power is turned on, the error message screen will be displayed, and at the same time it will be possible to have confirmation of the contents of the error (Inversed display part).

Error message screen



* The MENU switch is enabled only when the FAIL lamp does not light.

(1) Concerning the operation panel

① **Parity error** ····· During communication, the data has been wrongly written
(OPL Parity)

② **Framing error** ····· During communication, the data has been wrongly written
(OPL Framing)

③ **Over Run** ····· Problem with the taking–in of the received data
(OPL Over Run)

④ **Time–out** ····· No response from the controller
(OPL Time–out)

⑤ **EEPROM write error** ····· Incorrect writing into EEPROM.
(EEPROM Write)

⑥ **OPL RAM read/write error** ··· Problem with the system RAM.
(OPL RAM R/W)

- If errors ① to ④ have occurred, there will be a possibility that too much noise or surge might be applied to the connecting cable with REX–B850. Investigate the wiring condition of the connecting cable and whether there is a noise generating source nearby, then turn on the power again.
- If errors ⑤ or ⑥ have occurred, request for the replacement or the repair of the operation panel. Refer to "5.3 Replacement precautions" (P. 5–6).

* If the above–mentioned processing does not improve the problem, please contact RKC's sales representative, our closest sales office, or the agent who has supplied the equipment.

(2) Concerning the REX-B850

① **Back-up data error** ····· The control data has been destroyed or written wrongly
(**Back Up Data U □□**)

② **RAM read/write error** ····· Problem with the system RAM
(**RAM R/W U □□**)

③ **A/D converter error** ····· Problem with the A/D converter
(**A/D Convert. U □□**)

④ **Adjustment data error** ····· The adjustment data has been written wrongly
(**Adjust Data U □□**)

⑤ **System data error** ····· Breakdown of he ROM, etc.
(**Sys. Data. U □□**)

⑥ **Channel selection error** ····· Channel No. which does not exist was specified
(**CH Select U □□**)

⑦ **Output monitoring time over** ····· The control output exceeds 100% in succession for 60 min.
(**OUT MONI.T.U □□**)

* Unit No. is displayed in □□.

● If error ①, ②, ③ or ⑤ occurs :

Cause : The RAM, ROM or A/D converter is faulty.
Action : Request us to repair it or replace the defective control unit.
(The module whose FAIL lamp is lit).

● If error ③ or ④ occurs :

Cause : The excessive noise, surge or strong impact might be added to the REX-B850.
Action : Request us to repair it or replace the defective REX-B850.
(The module whose FAIL lamp is lit).

● If error ⑥ occurs :

Cause : Channel No. which does not exist was specified
Action : Re-check the specification, then specify the correct channel No. again.

● If error ⑦ occurs :

Cause : The control output exceeds 100% in succession for 60 min.
Action : Change the output monitoring time, only if required.

* If the above-mentioned processing does not improve the problem, please contact RKC's sales representative, our closest sales office, or the agent who has supplied the equipment.
* When replacing the instrument, refer to "5.3 Replacement precautions" (P. 5-6).

5.2 Troubleshooting

This section describes probable causes and measures to be taken when any problem would arise in this instrument.
If you have any queries about matters not described in this section, contact your nearest RKC sales agent or RKC sales office directly giving as much information on the Model No., specifications, etc. as possible.
If the instrument is necessary to be replaced, observe the following warning.

⚠ WARNING

- **In order to prevent electric shock or instrument failure, always turn OFF the system power before replacing the instrument.**
- **In order to prevent electric shock or instrument failure, always turn OFF the power before mounting or removing the operation panel.**
- **In order to prevent electric shock or instrument failure, do not turn ON the power before all the wiring is finished.**
- **Wiring is necessary to be performed by personnel who have a fundamental knowledge of electricity and also have experience in wiring.**

NOTE

When replacing the operation panel, see "5.3 Replacement procedure" (P. 5−6).

Relating to the operation panel

Description of error	Presumed cause	Measures
The power supply lamp does not light	The power is not being supplied.	Check the external breaker, etc.
	The proper power supply voltage is not being supplied.	Confirm the supplied power supply.
	Poor contacts at the power supply terminals.	Tighten the terminals.
	Problem in the power supply unit.	Replace the operation panel .
The screen display is abnormal	A noise generating source is close by.	Move the equipment away from the noise generating source.
	The proper power supply voltage is not being supplied.	Confirm the power supply specification.
The screens are not displayed	The display ON/OFF switch is set to OFF.	Press the display ON/OFF switch is turned ON.
	The display is turned off by the screen saver.	Press the display ON/OFF switch is turned ON.
	Problem with the LCD back light.	Replace the operation panel.
·The specified channel does not operate ·The specified control output does not operate	The operation mode changing specifying has not been correctly set.	Change each item to the operation mode.
The switches do not operate	The screen is set to Computer mode.	Set to Local mode.
	Problem with the switches.	Replace the operation panel.
Error messages are displayed	See section "5.1 Error messages" (P. 5−2).	

5.3 Replacement precautions

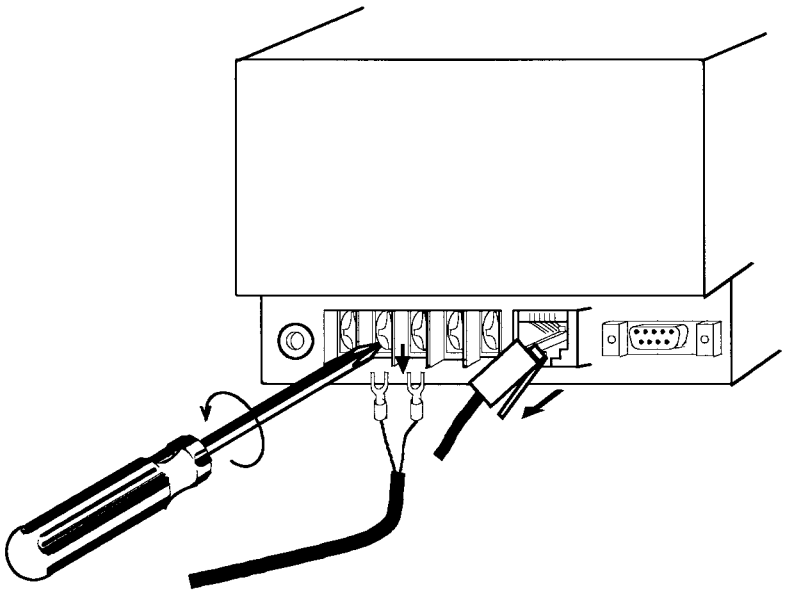
⚠ WARNING

- **In order to prevent electric shock or instrument failure, always turn OFF the power before mounting or removing the operation panel.**
- **In order to prevent electric shock or instrument failure, always turn OFF the system power before replacing the instrument.**
- **In order to prevent electric shock or instrument failure, do not turn ON the power before all the wiring is finished.**

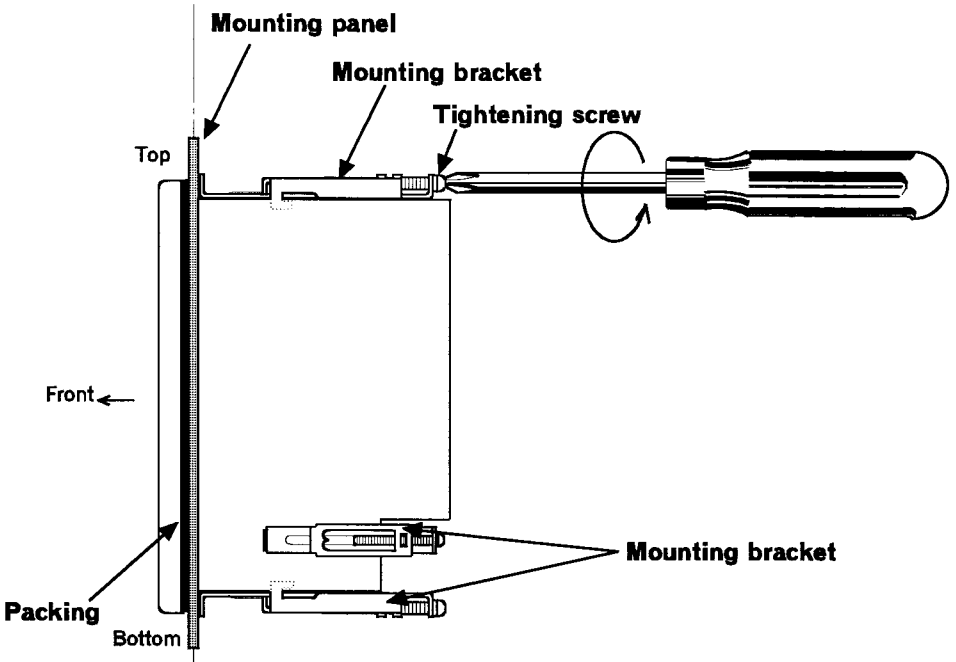
Replacement procedure

① Turn off the power for the Operation Panel.

② Remove the wires connected to the rear terminal board and the connector.

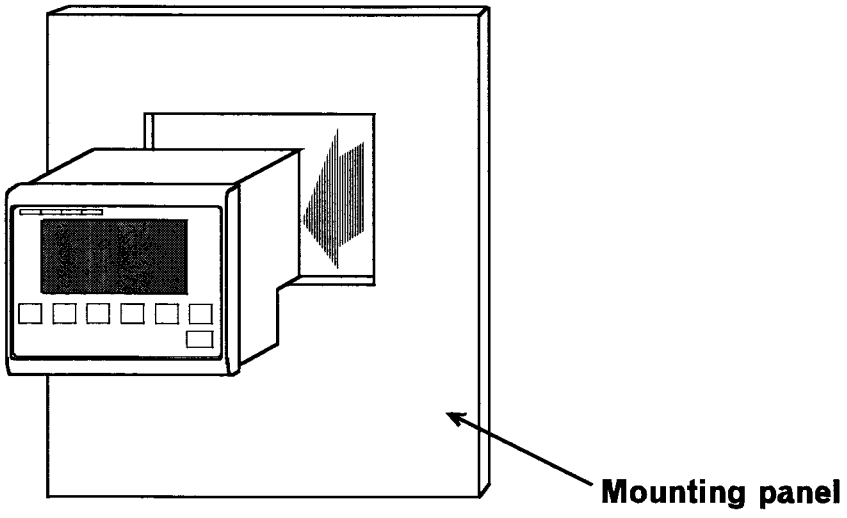


③ Removing the mounting brackets.



Loosen the tightening screws of the mounting brackets in the 2 places at the top and bottom of the main unit rear side (Total 4 places), and remove the mounting brackets. At this time, support the main unit to stop it falling out from the front face of the mounting panel.

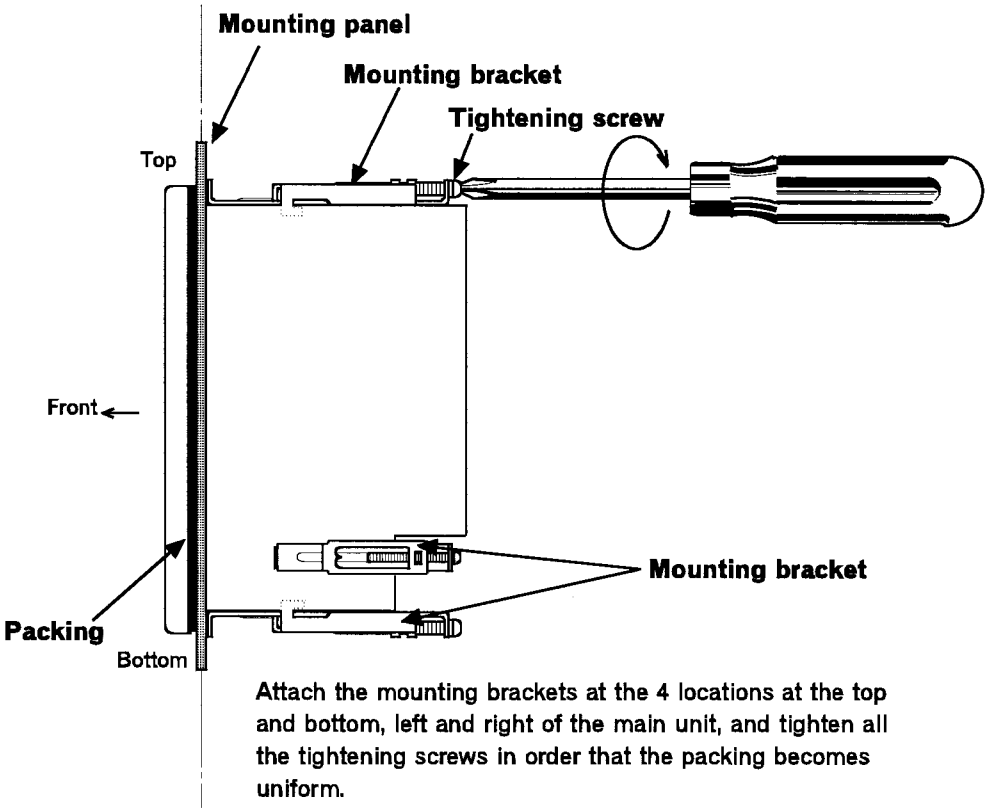
④ Remove the operation panel from the mounting panel.



⑤ Mount the normal operation panel.
For mounting, follow the reverse order of dismounting.

CAUTION

Tighten the bracket setscrew so that the thickness of the dust–proof packing is uniform, otherwise the operation panel may not be fully dust–proof and splash–proof.



Attach the mounting brackets at the 4 locations at the top and bottom, left and right of the main unit, and tighten all the tightening screws in order that the packing becomes uniform.

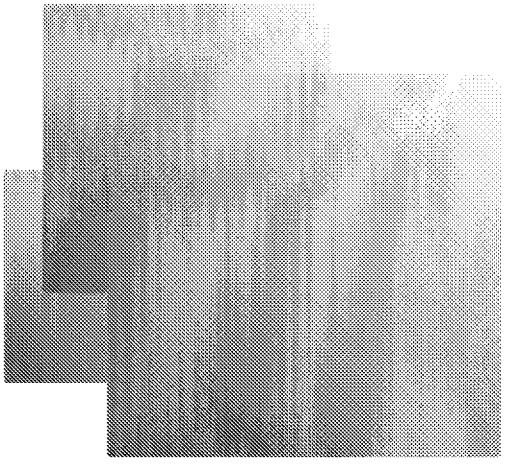
Tightening torque (Recommended value) : 0.3N · m (3kgf · cm)

⑥ Conduct the wiring and connection.

⑦ Turn on the power for the Operation Panel.

⑧ Replacement completion

* For details of mounting and wiring, see *Chapter 2, "MOUNTING AND WIRING"* (P. 2–1).



Chapter 6

SPECIFICATIONS

6. SPECIFICATIONS

6.1 Display specifications

Display

Screen type:	STN dot–matrix LCD (transmissivity type)
Number of dots:	128 (W) × 48 (H) dots
Screen area:	90 (W) × 36 (H) mm
Color:	Blue type
Backlight:	Cool fluorescent tube (CFL)
Contrast:	Adjustment with switches on front panel
Number of screened characters:	16 characters × 3 lines (Half–size characters)
	16 characters × 6 lines (5 × 7 dots characters)
Character types:	Alphanumeric, symbols
Character size:	Half–size characters (8 × 16 dots)
	Full–size characters (16 × 16 dots)
	Characters (5 × 7 dots)
Display details:	Displays the measured–value and set–value of REX–B850.

LED indicators

POWER:	Green LED (Lights when power goes on.)
SUB1, SUB2:	Red LED (Indicates sub output)
FAIL:	Red LED (Lights when the operation panel malfunctions.)

6.2 Function specifications

Screen scanning function

Applicable screens:	Automatically scans the operating monitoring screens
Setting method:	Set on initialize screen
Setting item:	Scan time: 1 to 9999 second
	Selection of presence or absence of scan function
	Scan type: Unit/item transfer select

Screen saver function

Applicable screens:	All screens
Setting method:	Set on initialize screen
Setting item:	Screen saver time: 1 to 99 minute
	Selection of presence or absence of screen saver function

Name setting function

Applicable screens:	Applied to the operation monitoring 1–CH display type screen, setting screen or operation mode screen channel name.
Setting method:	Set on initialize screen
Character types:	Alphanumeric, symbol (5 × 7 dots characters)
Number of setting characters:	Up to 5 (half–size characters)

Alarm message setting function

Applicable screens:	Applied to the alarm message screen (1st alarm, 2nd alarm, burnout or HBA)
Setting method:	Set on initialize screen
Character types:	Alphanumeric, symbol (5 × 7 dots characters)
Number of setting characters:	Up to 16 (half-size characters)

SUB output function

Output details:	First alarm output, Second alarm output, Burnout output, Heater break alarm output and communication error output (Common to all Units). * Anyone of the above is selected.
Number of output points:	1
Output type:	Relay contact output
Rating:	250 V AC, 0.1 A or less (Resistive load)
Electrical life:	300,000 times or more (Rated load)
Contact:	1 'a' contact * Energized 'a' or de-energized 'b' can be selected.

Self-diagnostic function

Check items:	ROM check, RAM check, Backup RAM check, Watchdog timer
Error display:	FAIL lamp lighting or error message screen display.

REX-B850 error monitoring function

Check items:	Communication stop, Parity error, Flaming error, Over run error
Error display:	An error message screen is displayed.

REX-B850 error code display function

Check items:	Backup data error, RAM read/write error, A/D converter error, Adjustment data error, System data error, Channel selection error, Output monitoring time exceeded
Error display:	An error message screen is displayed.

6.3 REX–B850 communication specifications

Communication interface

Based on RS–422A, EIA standard

Communication protocol

Based on ANSI X3.28 subcategory 2.5, A4
Polling/selection type

Communication method

RS–422A: 4–wire system, multi–drop connection

Maximum number of connection

RS–422A: 16 sets

Synchronous method

Start/stop synchronous type

Communication speed

2400bps, 4800bps, 9600bps

Data format

Start bit: 1
Data bit: 7 or 8
Parity bit: Unused or Used (Odd number or Even number)
Stop bit: 1 or 2

Communication code

JIS/ASCII (7 bit code)

6.4 Host computer communication specifications (Option)

Communication interface

Based on RS−232C, EIA standard
Based on RS−422A, EIA standard
Based on RS−485, EIA standard
* Can be specified when ordering.

Communication protocol

Based on ANSI X3.28 subcategory 2.5, A4
Polling/selection type

Communication method

RS−232C: Point−to−point connection
RS−422A: 4−wire system, multi−drop connection
RS−485: 2−wire system, multi−drop connection

Maximum number of connection

RS−232C: 1 set
RS−422A: 16 sets
RS−485: 16 sets

Synchronous method

Start/stop synchronous type

Communication speed

2400bps, 4800bps, 9600bps

Data format

Start bit: 1
Data bit: 7 or 8
Parity bit: Unused or Used (Odd number or Even number)
Stop bit: 1 or 2

Communication code

JIS/ASCII (7 bit code)

6.5 General specifications

Power supply

Power supply voltage:	90 to 264V AC (Common 50/60 Hz) Including power supply voltage variation. Rated:100 to 240 V AC
Power consumption:	14 VA max.

Data protection at power failure

Data protection:	Backup by EEPROM * However, data in REX−B850 is excluded.
Life:	Number of re−writing times:10,000 times Data storage period : Approx. 10 years *However, the above life differs depending on the product storage period, and storage and operating environments.

Performance

Insulation resistance:	Between power and grounding terminals : 20 M Ω or more at 500 V DC
Withstand voltage:	Between power and grounding terminals : 1500 V AC for 1 minute
Dustproof and waterproof:	IP55 *However, applied only to the front panel of the operation panel mounted on the panel

Working environment conditions

Allowable ambient temperature:	0 to 40 °C
Allowable ambient humidity:	45 to 85 % RH (No condensation)
Ambient operating atmosphere:	No corrosive gases, no large amounts of dust or particulates.

Construction

Method of attachment:	Panel attachment
Weight:	Approx. 700 g
External dimension:	144 (W) × 96 (H) × 70 (D) mm