User's Manual

Notice of Alterations

Models SR10001/SR10002/SR10003/SR10004/
SR10006

SR10000 Recorder

Please make the following alterations to the User's Manual IM 04P03B01-01E.

Function Upgrades and Versions

The following functions have been added to the SR10000 Recorder.

Firmware Version	Added Functions
1.31	Header printout (/BT1 option)

Page 4-10 **Please note the addition of the explanation to section 4.8, "Setting the Periodic Printout ." (Underlined)**

Interval

Select the interval from 10, 12, 15, 20, 30 minutes, 1, 2, 3, 4, 6, 8, 12, and 24 hours (10 m to 24h). However, printout might not take place at the specified interval depending on the chart speed and items printed.

Page 4-17 **Please note changes to the explanation in section 4.13, "Changing the Printout Font." (Underlined)**

Font

English (Eng.): Uses the English alphabet, numbers, and symbols for printout.
German (Ger.)*2: Uses the German alphabet, numbers, and symbols for printout.
French (Fre.)*2: Uses the French alphabet, numbers, and symbols for printout.

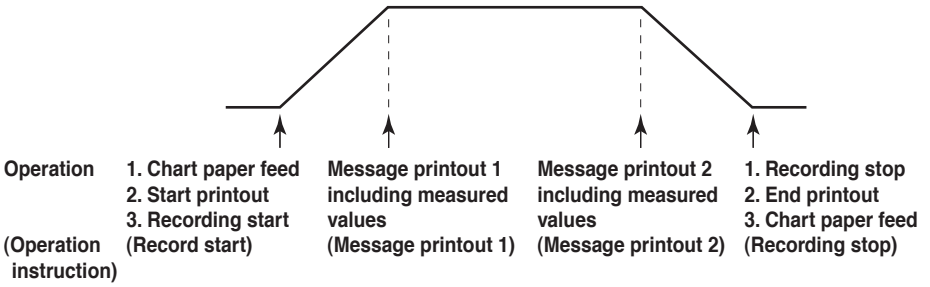
*2: Use the English alphabet, numbers, and symbols for "Header printouts (/BT1 option)."

Please note the addition of Header printout (/BT1 option).

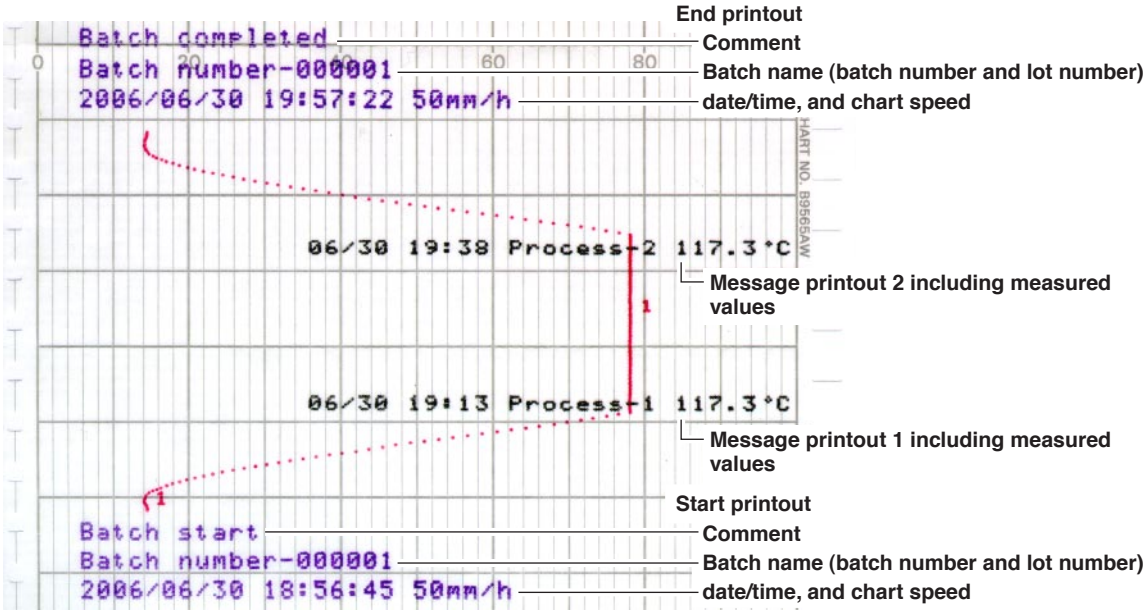
- **Page 1-15 1.3, "Recording"**

  Header Printout (/BT1 Option)

  When recording is started, the Start printout is performed, and recording starts. During analog recording, you can print out messages (up to 5) that include measured values. When recording is stopped, End printout is performed.



- **Example Printout (Dot Model)**



Start Printout and End printout

You can set "Start printout" and "Start printout 2" for the printout when recording starts. Also, you can set "End printout" and "End printout 2" for the printout when recording stops.

Printout/Operation	Description	Notes
Comment	Prints 32 characters x 5 lines or less.	
Batch name		
Batch number	Prints up to 26 characters.	
Lot number	Prints a number from 4-digits or 6-digits.	You can automatically increment by 1 when recording stops.
Date/time	The date format prints out according to the date printout/display format.	Date and time cannot be turned ON/OFF independently.
Chart speed	Prints the current chart paper feed speed.	
Chart paper feed	Feeds the chart paper 50 mm or less before Start printout. Feeds the chart paper 50 mm or less after End printout.	Steps of 1 mm Steps of 1 mm
Ejection of pen offset compensating data	You can record the portion of the data that remains after recording stops. Also, when recording the remaining portion of the data, you can change the chart speed to 450 mm/h (fixed).	When pen offset compensating is ON (pen model).

You can select whether to print out the batch name, date/time, and chart speed. By default, the printout is enabled.

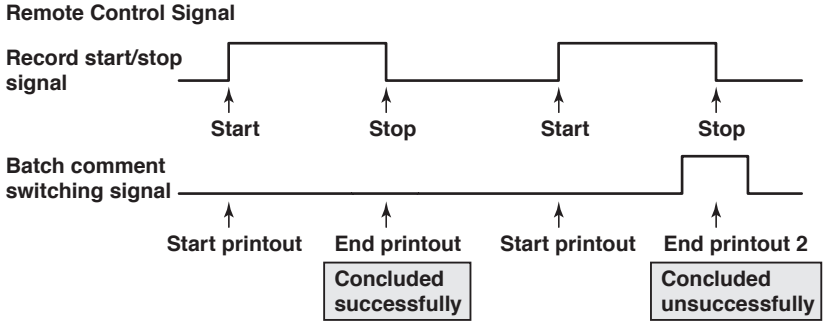
- **Switching between Start Printout and Start printout 2, and between End printout and End printout 2**

  With the remote control function (/R1 option), you can change the items that are printed out.

  For example, when a process ends successfully, End printout is performed and the lot number is updated. If the process fails, you can have End printout 2 be carried out and the lot number remain not updated.

  Depending on the status of the "batch comment switching signal," the following switches occur when the "record start/stop signal" switches:

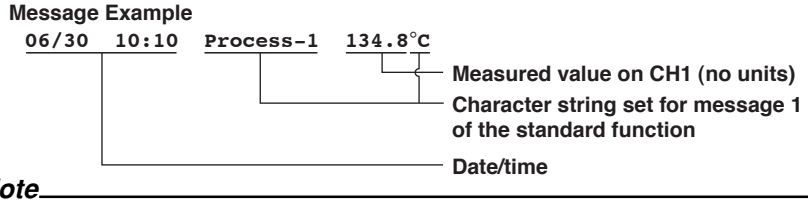
Record start/Stop Signal Status		Batch Comment Switching Signal Status	
		Level: 0 (Open)	Level: 1 (Closed)
Upon start	Edge (rising)	Start printout	Start printout 2
Upon stop	Edge (falling)	End printout	End printout 2



Message Printout Including Measured Values

Following the specified message format, the date/time, message strings of the standard function (5 strings of up to 16 characters), and measured instantaneous values are printed out together.

- Up to 5 messages of 35 characters can be entered.
- Messages are printed out in the order in which they are set.
- The specified number of characters specified for standard function messages is used, then if a subsequent character string has been set, it is used next. Also, it can only be used once for the message format.



Note

The message format cannot be set by key operation. Set the format using the RXA10-03 or RXA10-04 Configuration software (sold separately) or a communication command.

- **Page 1-16 Please note the addition to "Assignable Functions." (Underlined)**
  - **Manual Printout**
    - Remote input signal: Trigger
  - **Priority to Remote Recording**
    - Remote input signal: Edge (rising/start or falling/stop)
    - Starts/stops recording.
    - When started with a remote signal (on a remote signal rise), stop per key operation or communication is disabled.
  - **Batch comment switching**
    - Remote input signal: Level
    - Switches between Start printout and Start printout 2, and between End printout and End printout 2 depending on the status of the batch comment switching signal when recording is started/stopped remotely.
    - When starting/stopping by key operation, performs Start printout and End printout.

- **Page 1-20 Please note the addition of the underlined text and header printout to section 1.6, "Function Setup Guide."**

Remote control function (/R1 option)

Item	Description
Remote control function	• Switching between Start printout and Start printout 2, and between End printout and End printout 2 (/BT1 option) If **DUAL** (Batch comment switching) is assigned, Use **BATCH > DUAL** (Dual comment) in Basic Setting mode. Set **BATCH > DETAI > STAT2**, and **END2** in Setting mode.

Header printout (/BT1 option)

Item	Description
Setting Start printout/End printout	Use **BATCH > DUAL** (Dual comment) in Basic Setting mode, and select a **LOT** from **4** or **6** digits. Use **BATCH > B.NUM** in Setting mode to set the batch number. Use **BATCH > LOT** in Setting mode to set the lot number. Use **BATCH > DETAI > START**, **END**, **STAT2**, and **END2** in Setting mode to set the various comments, printout ON/OFF, and chart paper feed amount for each. Also, in **END** and **END2**, enter the settings for lot number update and ejection of pen offset compensating data (Pen model).
Switching between Start printout and Start printout 2, and between End printout and End printout 2 (/R1 option)	• Switching settings Assign **DUAL** (Batch comment switching) to the remote control input terminal. Use **BATCH > DUAL** (Dual comment) in Basic Setting mode and select Use. Set **BATCH > DETAI > STAT2**, and **END2** in Setting mode. • Executing the switch The switch occurs according to the status of the **DUAL** (Batch comment switching) signal when **RCD** or **PR.RCD** signal assigned to the remote control input terminal rises or falls.
Printout of messages including measured values	• Setting message strings Use **AUX > MSG** in Setting mode to enter the message to print out. • Setting the message format Use **BATCH > MSG_F** in Basic Setting mode and select Use. Set the message format using the PC software (sold separately) or a communication command. • Executing message printout Execute the message printout by choosing **FUNC key > MSG** in Operation mode.

- **Please note the addition of section 3.13 to chapter 3.**

3.13 Setting Up Start Printout and End printout (/BT1 Option)

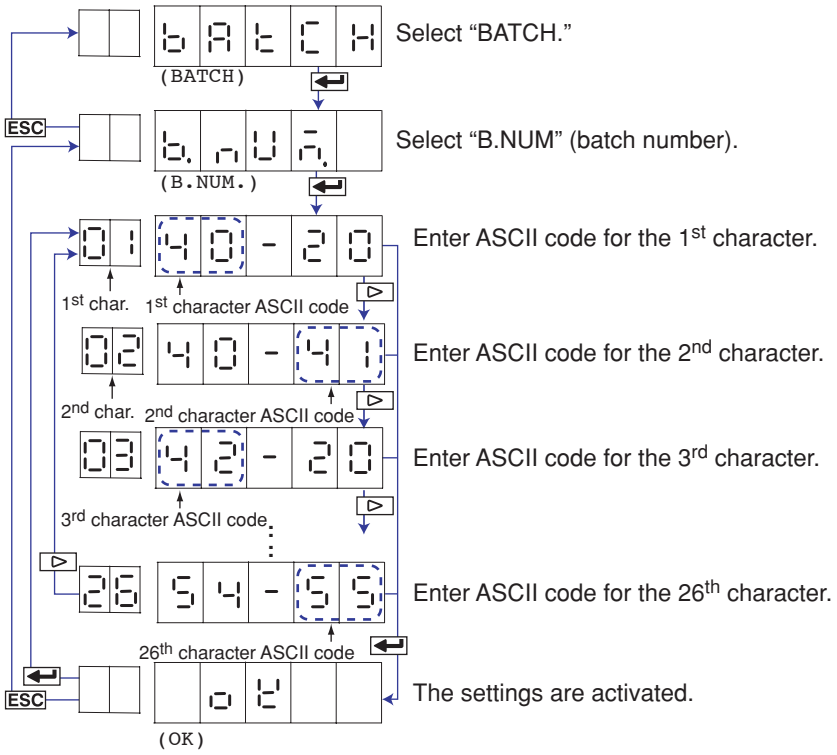
Enter settings for Start printout/Start printout 2 when starting recording, and for End printout/End printout 2 when stopping recording.

Before entering settings, enable “Start printout and End printout” in Basic Setting mode (see section 4.24 on page 12 of this manual).

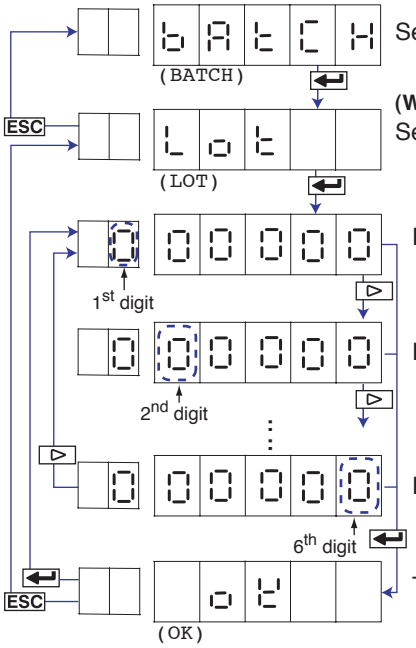
Procedure

1. Hold down the MENU key for 3 seconds to enter Setting mode.
2. Carry out the procedure shown in the figure below.
   Press the △ or ▽ key to select the value.
   For the procedure on how to enter values or characters, see page 18 in the *Operation Guide*.
   If you press the **ESC** key, the operation is cancelled, and the display returns to a higher level menu.

Setting the Batch Number



Setting the Lot Number



Select “BATCH.”

(When LOT is 4 or 6 digits)
Select “LOT” (lot number).

Enter the 1st digit.

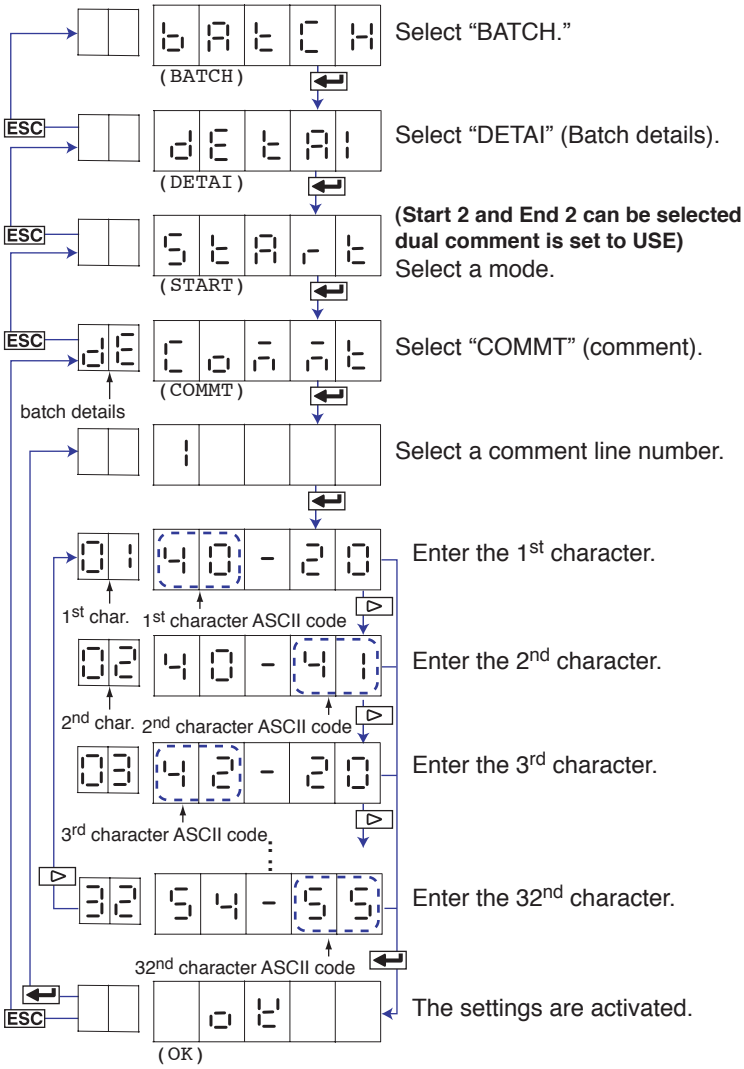
Enter the 2nd digit.

Enter the 6th digit.

The settings are activated.

Setting example when the LOT is 6 digits.

Setting Comments



Select “BATCH.”

Select “DETAI” (Batch details).

(Start 2 and End 2 can be selected when dual comment is set to USE)
Select a mode.

Select “COMMT” (comment).

Select a comment line number.

Enter the 1st character.

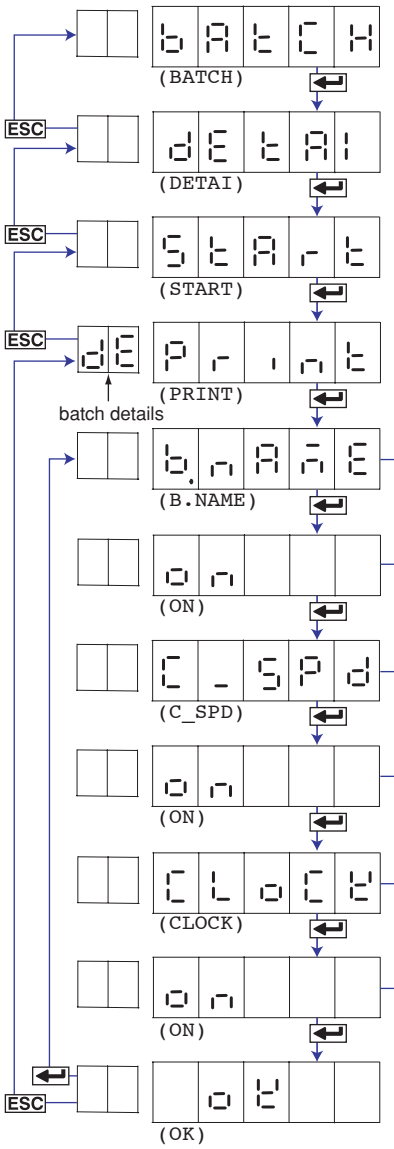
Enter the 2nd character.

Enter the 3rd character.

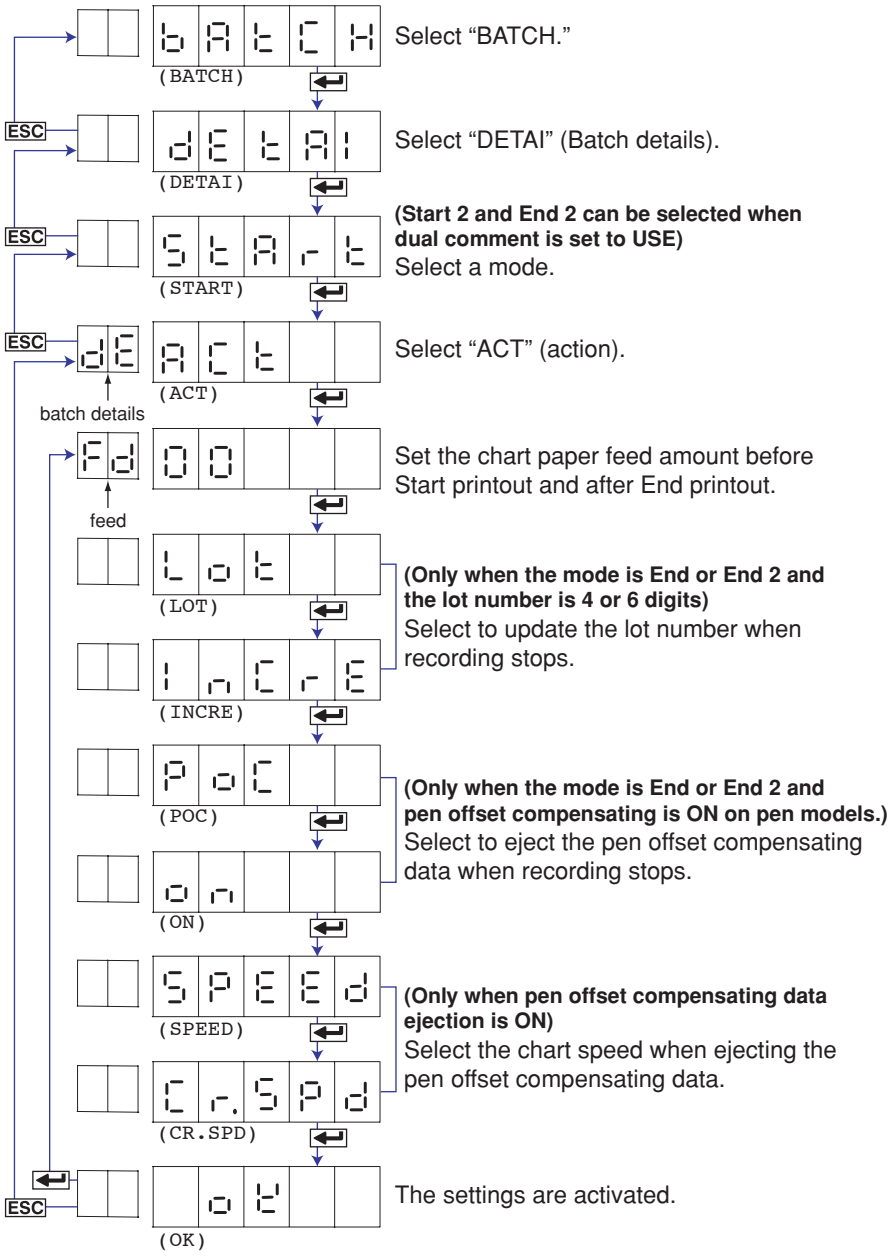
Enter the 32nd character.

The settings are activated.

Selecting Printout ON/OFF for the Batch Name, Chart Speed, and Date/Time.



Setting the Feed Amount, Lot Number Update, and Ejection of Pen Offset Compensating Data



3. Press the ↵ key to set other items.
   If you are done, press the **ESC** key.
4. Hold down the MENU key for 3 seconds to return to Operation mode.

Explanation

Batch Number

You can enter up to 26 characters.
The following are the characters that can be used.
Alphabet, numbers, symbols (%, #, °, @, +, –, *, /, (,), μ, Ω, ^{2}, ^{3}, .), and space

Lot Number

Enter using a 4 or 6 digit number. Select which number of digits to use (4 or 6) under "Lot No." in Basic Setting mode.

Mode

Select Start (StArt), End (End), Start 2 (StAt2), or End 2 (End2). Start 2 and End 2 become available when you enable "Dual comment" in Basic Setting mode.

Comment

You can enter up to 32 characters.
The following are the characters that can be used.
Alphabet, numbers, symbols (%, #, °, @, +, –, *, /, (,), μ, Ω, ^{2}, ^{3}, .), and space

Comment Line Number

1 to 5 lines can be printed out.

Chart Paper Feed Amount

The available setting range is 0 to 50 mm.

Lot Number Update

Update (InCrE): Increments the lot number when recording stops.
Do not update (UnCHG): Do not update the lot number.

Ejection of Pen Offset Compensating Data

You can eject the portion that is not recorded when recording stops.
ON (on): Eject
OFF (oFF): Do not eject

Chart Speed When Ejecting Pen Offset Compensating Data

Select the chart speed when ejecting the portion that was not recorded.
Current chart speed (Cr.SPd): Feeds at the specified chart speed.
450 (450): Fixed to feed at 450 mm/h.

Note

The following operations are performed when using the header printout function (/BT1 option).

- **When the power is interrupted and is reintroduced, recording always stops. End printout/End printout 2 is not performed.**
- Until Start printout/Start printout 2 and End printout/End printout 2 finishes, the instrument cannot transition to the next operation.
- When recording is started, the alarm and message printout information stored in the buffer prior to recording stop is cleared.

- **Please note the addition of section 3.14 to chapter 3.**

3.14 Setting the Message Format (/BT1 Option)

In the 5 message printouts, up to 35 characters can be printed out including the date/time and measured values.

- Under Message format, you can specify the printout contents of date/time, message string, measured values, and the order of these.
- Messages including measured values can be printed out even when Start printout or End printout is disabled.
- For entering message strings, see section 3.8.
- Before entering settings, enable Message format in Basic Setting mode (see section 4.24 on page 12 of this manual).

Procedure

The message format cannot be set by key operation. Set the format using the RXA10-03 or RXA10-04 Configuration software (sold separately) or a communication command.

Explanation

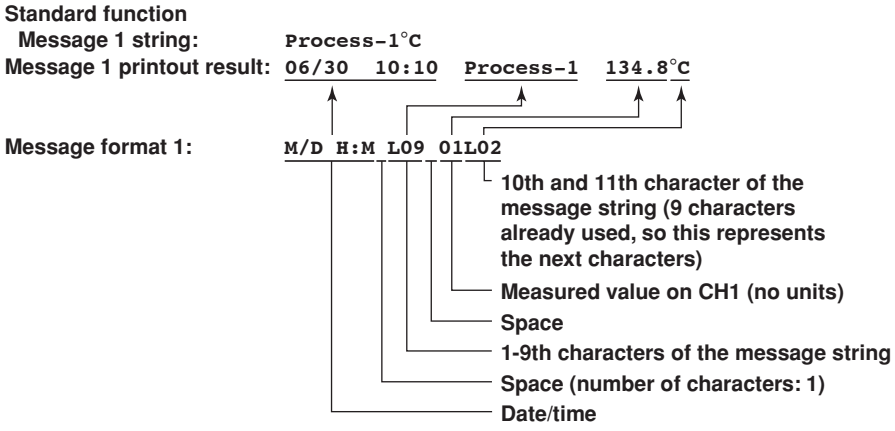
Message Number

Select from 1 to 5.

Message Format

Choose a message format. Measured values, message strings, and date/time can be set arbitrarily.

Example: Based on the message 1 string of the standard function, you can set a combination with message format 1 and print it out as message 1 including measured values.



- **Date/Time Format and Number of Characters Used**

H:M	(Hour:Minute)	5 characters
H:M:S	(Hour:Minute:Second)	8 characters
M/D H:M	(Month/Day Hour:Minute)	11 characters
M/D H:M:S	(Month/Day Hour:Minute:Second)	14 characters
D/M H:M	(Day/Month Hour:Minute)	11 characters
D/M H:M:S	(Day/Month Hour:Minute:Second)	14 characters
D.M H:M	(Day.Month Hour:Minute)	11 characters
D.M H:M:S	(Day.Month Hour:Minute:Second)	14 characters
M.D H:M	(Month.Day Hour:Minute)	12 characters
M.D H:M:S	(Month.Day Hour:Minute:Second)	15 characters
Y/M/D H:M:S	(Year/Month/Day Hour:Minute:Second)	19 characters
M/D/Y H:M:S	(Month/Day/Year Hour:Minute:Second)	19 characters
D/M/Y H:M:S	(Day/Month/Year Hour:Minute:Second)	19 characters
D.M.Y H:M:S	(Day.Month.Year Hour:Minute:Second)	19 characters
M.D.Y H:M:S	(Month.Day.Year Hour:Minute:Second)	20 characters

- **Measured Value Format and Number of Characters Used**
  The format for measured values is 01, 02, ...06 (depending on the model). No units are added. 7 characters are used.

- **Character String Format**
  The format for message strings is L01 (1 character), L02 (2 characters), ... L16 (16 characters).
  In the example on the previous page, L09 indicates “Process-1” and L02 indicates “°C .”

- **Page 4-24** **Please note the addition of the underlined text to the explanation in section 4.18, “Assigning Functions to the Remote Control Input Terminals (/R1 Option).” (Underlined)**

MSG5 (MSG5): Prints message 5.

Priority to remote recording (Pr.rCd):

Starts/stops recording. When starting remotely, you cannot stop using key operation or communication (/BT1 option).

Batch comment switching (dUAL):

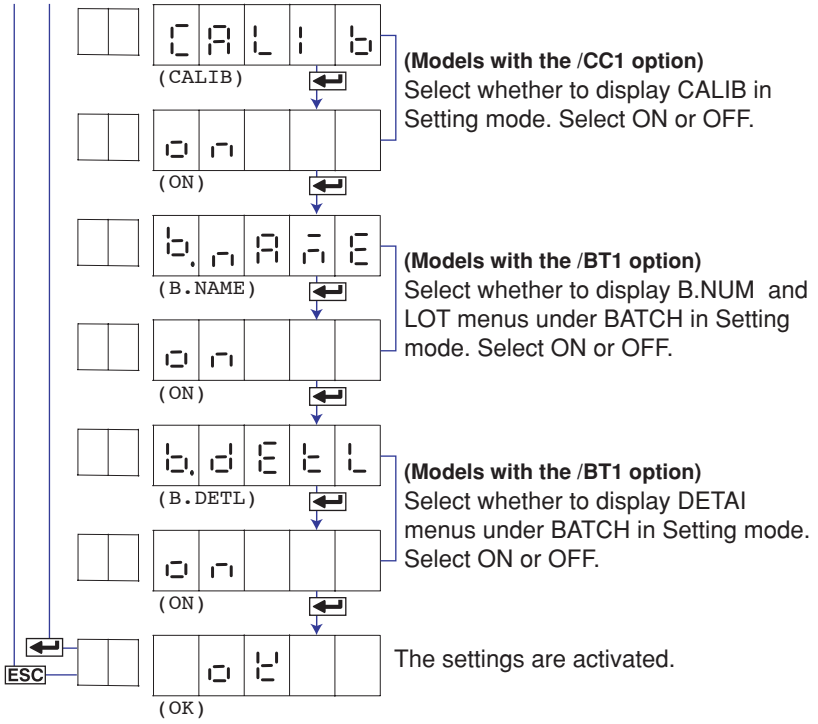
Start printout/Start printout 2 and End printout/End printout 2 switches according to the status of the “Batch comment switching” signal during the rising or falling of the “Starts/stops recording” or “Priority to remote recording” signal (/BT1 option).

None (none): No function is assigned.

Note

When you select “Priority to remote recording” and start recording remotely, you cannot stop recording using key operation or communications.

- **Page 4-27** **Please note the addition of B.NAME and B.DETL to the figure in section 4.20, “Selecting the Menus to Be Hidden in Setting Mode.”**



- **Please note the addition of section 4.24 to chapter 4.**

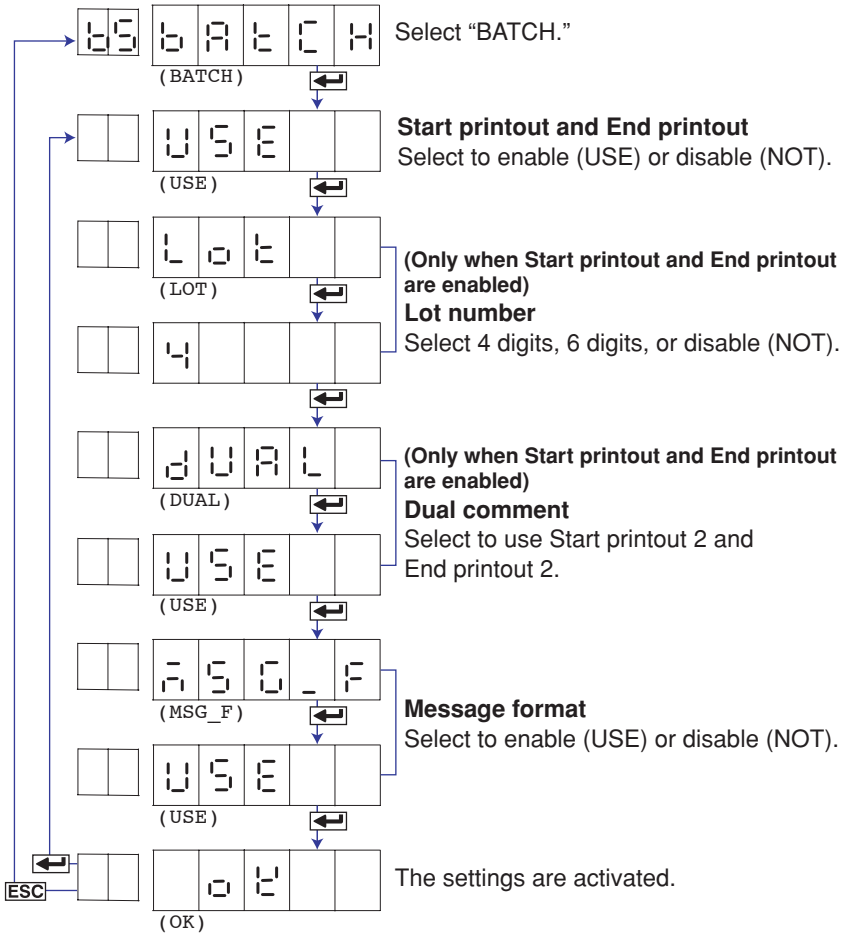
4.24 Enabling Start Printout, End printout, and Message Format (/BT1 Option)

This section explains the details of enabling/disabling the Start printout, End printout, and Message format.

Basic Setting mode cannot be entered when recording is in progress .

Procedure

1. Hold down the MENU key for 3 seconds to enter Setting mode.
2. Hold down the △ and ▷ keys simultaneously for 3 seconds to display the Basic Setting mode screen.
3. Carry out the procedure shown in the figure below.
   Press the △ or ▽ key to select the value.
   If you press the **ESC** key, the operation is cancelled, and the display returns to a higher level menu.



4. If you are done, press the **ESC** key.
5. To return to the Operation mode,
   1 . Press the **ESC** key, use the △ or ▽ key to select End, and press the ↵ key.
   2. Press the △ or ▽ key to select StorE or Abort, and press the ↵ key.

Explanation

Start printout and End printout

USE (USE): When starting/stopping recording, performs Start printout and End printout. You can now set "Start printout and End printout" under "Lot number," "Dual comment" and in Setting mode.

NOT (not): Do not perform Start printout/End printout.

Lot number

Batch name = Batch No. (character string) and Lot No. (number)

4 (4): Prints out a 4-digit lot number. You can now set this under "LOT" in Setting mode.

6 (6): Prints out a 6-digit lot number. You can now set this under "LOT" in Setting mode.

NOT (not): Does not print out the lot number.

Dual comment

USE (USE): You can now select Start printout 2 and End printout 2 in Setting mode's Mode.

NOT (not): There are no Start printout 2 and End printout 2 choices in Setting mode's Mode.

Message Format

USE (USE): You can now set the message format using the RXA10-03 or RXA10-04 software (sold separately) or a communication command.

NOT (not): Message format settings cannot be entered.

- **Page 5-1 Please note the addition to "Setting Errors."**

Code	Message	Explanation/Countermeasures
015	Too many characters for printout.	Too many characters in the message printout including measured values.
016	Too many characters for message.	Cannot enter a setting that exceeds the message string (16 characters).
170	This action is invalid during priority remote record.	Recording stop via communications or key operation cannot be accepted under the current settings. Perform the Stop using the remote control function.
171	This action is invalid during batch.	Cannot enter Basic Setting mode during header printout (until End printout is finished).

- **Page 7-11 Please note the addition of the underlined text and header printout to "Specifications of Optional Functions."**

Remote Control 5 Points (/R1)

Item	Specifications
Operation	• Switch the chart speed (level) • Priority to remote Recording (/BT1 option) (edge) • Batch comment switching (/BT1 option) (level)

Header Printout (/BT1)

Item	Specifications
Printout function	When recording starts or stops, prints out the batch name, comment, date/time, and chart speed. Also, messages can be printed out including measured values.
Printed items	
Recording start/recording end printouts	Batch name: Batch number (up to 26 characters) and lot number (4 or 6 digit number, or OFF), Comment (up to 32 characters x 5 lines) Chart speed Date/time: Year, month, date, time, minute, second (date format depends on the date printout/ display format) Printout ON/OFF selection: Batch name, chart speed, and date/time
Message printouts	In the 5 message formats, measured values, strings (up to 16 characters), and date/time can be arbitrarily combined and printed out (up to 35 characters total). However, message format settings cannot be entered using the keys.