

Please make the following alterations to the User's Manual IM 04P01B01-17E.

Function Upgrades and Versions

The following functions have been added to the μR10000/μR20000 Recorder.

Firmware Version	Added Functions
1.21	Calibration correction (/CC1 option), 24 V DC/AC power supply (/P1 option), and German and French language support.
1.31	Customized menu, and Header printout (/BT1 option)

Page ii Please note the addition of the following versions and functions (Underlined).

Version	Suffix Code	Added or Modified Functions
1.21	-2 /CC1	(Added) German and French language support (Added) Calibration correction
1.31	- /BT1	(Added) Customized menu (Added) Header printout

Page 3-10 Please note the following changes and additions to the list of registers. (Underlined)

Input register	Data
36026	<ul style="list-style-type: none"> Registers 36001 to 36026 can be read with a single command.
Hold register	Data
40024	
40301	<u>Communication input data of C01 (lower word)</u>
40302	<u>Communication input data of C01 (upper word)</u>
40303	<u>Communication input data of C02 (lower word)</u>
40304	<u>Communication input data of C02 (upper word)</u>
⋮	⋮
40347	<u>Communication input data of C24 (lower word)</u>
40348	<u>Communication input data of C24 (upper word)</u>
⋮	⋮
<ul style="list-style-type: none"> <u>Pen model: C01 to C08; Dot model: C01 to C12 (μR10000), C01 to C24 (μR20000)</u> <u>Registers are of a floating point type.</u> <u>The values that can be input are -9.9999E29 to -1E-30, 0, and 1E-30 to 9.9999E29.</u> <u>If a value exceeding this range is input, a computation error will occur when using the value on computation channels.</u> 	

Please note the addition of the following ten commands to chapter 4.

Setting Commands

Command Name	Function	Execution Mode	Administrator	User
VL	Sets the calibration correction (/CC1 option).	Run mode	Yes	No
VH	Sets the batch number and lot number (/BT1 option).	Run mode	Yes	No
VC	Sets the batch comment (/BT1 option).	Run mode	Yes	No
VP	Turns Start printout/End printout ON/OFF (/BT1 option).	Run mode	Yes	No
VA	Sets the Start printout/End printout action (/BT1 option).	Run mode	Yes	No
VM	Sets the message format (/BT1 option).	Run mode	Yes	No

Basic Setting Commands

Command Name	Function	Execution Mode	Administrator	User
UG	Sets the Setting mode menu selection.	Basic Setting mode	Yes	No
UH	Sets the FUNC key menu selection.	Basic Setting mode	Yes	No
UE	Selects enable/disable for Start printout/End printout and message format (/BT1 option).	Basic Setting mode	Yes	No
UQ	Sets the calibration correction mode and the number of set points (/CC1 option).	Basic Setting mode	Yes	No

VL Sets the calibration correction.

Syntax	VL, p1, p2, p3, p4, ..., p33, p34 <terminator> p1 Channel number p2 Calibration correction function (ON, OFF) p3 Set point p4 Correction value ... p33 Set point p34 Correction value
Query	VL[p1]?
Example	Set three sets of set point and correction values when channel 02 is set to 2 V range (measurable range: -2.000 V to 2.000 V) and the calibration correction mode is set to Revise Value. (0.000 and 0.001), (1.000 and -0.002), and (2.000 and 0.001) VL 02, ON, 0, 1, 1000, -2, 2000, 1 Set three sets of set point and correction values when channel 02 is set to 2 V range (measurable range: -2.000 V to 2.000 V) and the calibration correction mode is set to Abs. Value. VL 02, ON, 0, 1, 1000, 998, 2000, 2001
Description	<ul style="list-style-type: none">• The number of parameters p3 to p34 varies depending on the number of points specified by the basic setting command UQ.• If the input type of the source channel is VOLT, TC, or RTD, the range of the set point and correction values is the same as the range of the range type (see section 4.3).• If the measurement mode of the source channel is SCALE or 1-5V, the range of the set point and correction values is -5% to 105% of the scaling range or -20000 to 30000.<ul style="list-style-type: none">• The following limitations exist.• $p3 < p5 \leq \dots \leq p31 \leq p33$• During revise value mode $p3+p4 < p5+p6 < \dots < p33+p34$• During absolute value mode $p4 < p6 < \dots < p32 < p34$

VH Sets the batch number and lot number (/BT1 option)

When setting the batch number

Syntax	VH p1, p2<terminator> p1 BATCH p2 Batch number (up to 26 characters)
Query	VH[p1]?
Example	Set character string Product as a batch number. VH BATCH, Product
Description	Valid with the header printout (/BT1 option) when set to use Start printout/End printout (see the UE command).

When setting lot number for the 4 digits

Syntax	VH p1, p2<terminator> p1 LOT p2 0000-9999
Query	VH[p1]?
Example	Set 0001 as the lot number. VH LOT, 0001
Description	Valid with the header printout (/BT1 option) when lot number is set to 4 digits (see the UE command).

When setting lot number for the 6 digits

Syntax	VH p1, p2<terminator> p1 LOT p2 000000-999999
Query	VH[p1]?
Example	Set 000001 as the lot number. VH LOT, 000001
Description	Valid with the header printout (/BT1 option) when lot number is set to 6 digits (see the UE command).

VC Sets the batch comment (/BT1 option)

Syntax	VC p1, p2, p3<terminator> p1 Mode selection START Start printout END End printout START2 Start printout 2 END2 End printout 2 p2 line number (up to 5) p3 Batch comment (μ R10000: up to 32 chars., μ R20000: up to 64 chars.)
Query	VC[p1[, p2]]?
Example	Set the string Batch start to the first line of the Start printout batch comment. VC START, 1, Batch start
Description	<ul style="list-style-type: none">• Valid with the header printout (/BT1 option) when set to use Start printout/End printout (see the UE command).• Start printout 2 and End printout 2 valid when set to use Start printout 2 and End printout 2 (see the UE command).

VP Turns Start printout/End printout ON/OFF (/BT1 option)

Syntax	VP p1, p2, p3, p4<terminator> p1 Mode selection START Start printout END End printout START2 Start printout 2 END2 End printout 2 p2 Batch name printout ON/OFF (ON, OFF) p3 Chart speed printout ON/OFF (ON, OFF) p4 Date/time printout ON/OFF (ON, OFF)
Query	VP[p1]?
Example	Turn the Start printout batch name (batch number and lot number) ON, chart speed OFF, and date/time ON. VP START, ON, OFF, ON
Description	<ul style="list-style-type: none">• Valid with the header printout (/BT1 option) when set to use Start printout/End printout (see the UE command).• Start printout 2 and End printout 2 valid when set to use Start printout 2 and End printout 2 (see the UE command).

VA Sets the Start printout/End printout action (/BT1 option)

When setting Start printout

Syntax VA p1,p2<terminator>
 p1 Mode selection
 START Start printout
 START2 Start printout 2
 p2 Feed amount before Start printout (0-50)
 [mm]

Query VA[p1]?

Example Set feed amount before Start printout to 10 mm.
 VA START,10

Description

- Valid with the header printout (/BT1 option) when set to use Start printout/End printout (see the UE command).
- Start printout 2 valid when set to use Start printout 2 and End printout 2 (see the UE command).

When setting End printout

Syntax VA p1,p2,p3,p4,p5<terminator>
 p1 Mode selection
 END End printout
 END2 End printout 2
 p2 Feed amount after End printout (0-50) [mm]
 p3 Lot number automatic updating ON/OFF
 (ON, OFF)
 p4 Pen offset compensating recording ejection
 ON/OFF (ON, OFF)
 p5 Select chart speed when ejecting pen offset
 compensating record.
 C.SPEED Chart speed setting
 450mm/h Fixed to 450 mm/h

Query VA[p1]?

Example Set feed amount after End printout to 10 mm.
 VA END,10

Description

- Valid with the header printout (/BT1 option) when set to use Start printout/End printout (see the UE command).
- End printout 2 valid when set to use Start printout 2 and End printout 2 (see the UE command).
- P3 valid when lot number is set to 4 or 6 digits (see the UE command).
- P4 valid when POC is set to ON with the pen model (see the UE command).
- P5 is valid when p4 is ON.

VM Sets the message format (/BT1 option)

Syntax VM p1,p2<terminator>
 p1 Message number (1-5)
 p2 Message format setting
 (μR10000: up to 35 chars., μR20000: up to
 69 chars.)
 H:M Hours:minutes (5 characters)
 H:M:S Hours:minutes:seconds
 (8 characters)

M/D H:M Month/day hours:minutes
 (11 characters)
 M/D H:M:S Month/day hours:minutes:
 seconds (14 characters)
 D/M H:M Day/month hours:minutes
 (11 characters)
 D/M H:M:S Day/month hours:minutes:
 seconds (14 characters)
 D.M H:M Day.month hours:minutes
 (11 characters)
 D.M H:M:S Day.month hours:minutes:
 seconds (14 characters)
 M.D H:M Month.day hours:minutes
 (12 characters)
 M.D H:M:S Month.day hours:minutes:
 seconds (15 characters)
 Y/M/D H:M:S Year/month/day hours:
 minutes:seconds
 (19 characters)
 M/D/Y H:M:S Month/day/year:hours:
 minutes:seconds
 (19 characters)
 D/M/Y H:M:S Day/month/year hours:
 minutes:seconds
 (19 characters)
 D.M.Y H:M:S Day.month.year hours:
 minutes:seconds
 (19 characters)
 M.D.Y H:M:S Month/day/year hours:
 minutes:seconds
 (20 characters)
 01 Measured value of CH01
 (7 characters)
 02 Measured value of CH02
 (7 characters)
 :
 24 Measured value of CH24
 (7 characters)
 (The valid range from 01-24 depends on the
 model).
 0A Computation channel 0A
 (9 characters)
 0B Computation channel 0B
 (9 characters)
 :
 1P Computation channel 1P
 (9 characters)
 (The valid range from 0A-1P depends on
 the model).
 L01 Message 1 character
 (1 character)
 L02 Message 2 characters
 (2 characters)
 :
 L16 Message 16 characters
 (16 characters)
 ␣ Space (1 character)

Query VM[p1]?

Example Message 1 string: Process-1°C
 Message 1 printout result:
 06/30 10:10 Process-1 134.8°C
 Message format 1:
 VM 1,M/D H:M L09 01L02

Description

- Valid with the header printout (/BT1 option) when set to use message format (see the UE command).
- Prints out in the order for parameters specified by the message format.
- 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.
- The parentheses () indicate the number of characters used. Set the message format so that the total number of characters does not exceed the maximum number allowed.

UG Sets the Setting mode menu selection

Syntax UG p1,p2,p3,p4,p5,p6,p7,p8,p9,p10 <terminator>
 p1 Range (ON, OFF)
 p2 Bias (ON, OFF)
 p3 Alarm (ON, OFF)
 p4 Units (ON, OFF)
 p5 Chart speed (ON, OFF)
 p6 Other (ON, OFF)
 p7 Calibration correction (ON, OFF) (/CC1 option)
 p8 Computation (ON, OFF) (/M1 option)
 p9 Batch name (ON, OFF) (/BT1 option)
 p10 Batch details (ON, OFF) (/BT1 option)

Query UG?

Example Display all menus.
 UG ON,ON,ON,ON,ON,ON,ON,ON,ON,ON

Description

- Parameter p7 can be specified on models with the calibration correction (/CC1 option).
- Parameter p8 can be specified on models with the computation function (/M1 option).
- Parameters p9 and p10 can be specified on models with the header printout (/BT1 option).

Note

Parameters p7 and higher are skipped when no options are installed.

UH Sets the FUNC key menu selection

Syntax UH p1,p2,p3,p4,p5<terminator>
 p1 Manual printout (ON, OFF)
 p2 Setup printout (ON, OFF)
 p3 Message printout (ON, OFF)
 p4 Buffer clear (ON, OFF)
 p5 Periodic printout (ON, OFF)

Query UH?

Example Display all menus.
 UH ON,ON,ON,ON,ON,ON

UE Selects enable/disable for Start printout/End printout and message format (/BT1 option)

When using Start printout/End printout

Syntax UE p1,p2,p3,p4<terminator>
 p1 Use of Start printout/End printout (USE)
 p2 Number of digits for lot number (4, 6, NOT)
 p3 Use/Not use Start printout 2/End printout 2 (USE, NOT)
 p4 Use/Not use message format (USE, NOT)

Query UE?

Example Perform Start printout/End printout, set 6 digits for lot number, use Start printout 2/End printout 2 and message format.
 UE USE,6,USE,USE

Description

- Set the lot number using the VH command.
- Set the message format using the VM command.

When not using Start printout/End printout

Syntax UE p1,p2<terminator>
 p1 Start printout/End printout not used (NOT)
 p2 Use/Not use message format (USE, NOT)

Query UE?

Example Use message format but do not use Start printout/End printout.
 UE NOT,USE

Description Set the message format using the VM command.

UQ Sets the calibration correction mode and the number of set points.

Syntax UQ p1,p2,p3<terminator>
 p1 Channel number
 p2 Setting mode
 ReviseValue Specify deviation.
 Abs.Value Specify absolute value.
 p3 Number of calibration set points (2 to 16)

Query UQ[p1]?

Example Set the setting mode to Abs.Value and the number of calibration set points to 2 on channel 01.
 UQ 01,ABS.VALUE,2

Description

- This setting is valid when the calibration correction function is enabled (see the UF command).
- Use the VL command to set the calibration set points and correction values.

Page 4-16 See underlined text.

VD Sets the data display screen.

On screens without detailed parameters

System
 System display
Batch name
 Batch name (/BT1 option)
Lights out

Page 4-20 See underlined text.
UL **Selects the display/record language.**

Syntax UL p1<terminator>
 p1 Language (ENGLISH, JAPANESE, GERMAN, FRENCH)
 Query UL?
 Example Use English.
 UL ENGLISH

Page 4-21 See underlined text.
UF **Sets whether to use the extended functions.**

Syntax UF p1 , p2 , p3 , p4 , p5<terminator>
 p1 Bias function (USE, NOT)
 p2 Square root low-cut function (USE, NOT)
 p3 1-5V input low-cut function (USE, NOT)
 p4 Alarm delay function (USE, NOT)
 p5 Calibration correction function. (USE, NOT) (/CC1 option) This cannot be used with the bias.
 Query UF?
 Example Use the calibration correction extended function.
The bias function is not used.
 UF NOT, USE, USE, USE, USE

Description • The input offset is set using the VB command.
 • The low-cut function is set using the SR command.
 • The delay alarm is set using the SA and BD commands.
 • Parameter p5 can be specified on models with the calibration correction (/CC1 option). Use the UQ and VL commands to set the correction values.

XR **Sets the remote control input (/R1 option)**

Message 5
Priority R_RCD
Priority to remote recording
Can be set on products with header printout (/BT1 option).
BatchCMT switch
Batch comment switching
Can be set on products with header printout (/BT1 option).
 Query XR[p1]?

Page 6-2 Please note the addition of status information. (Underlined)
Status information 4

Bit	Name	Description
5	–	
6	<u>Header printing out</u>	<u>Set to “1” only between start of Start printout and end of End printout.</u>
7	–	

Page App-2 Please note the addition of error messages.

Cord	Message	Explanation/Countermeasures
15	Too many characters for printout.	Too many characters in the message printout including measured/computed values.
16	Too many characters for message.	Cannot enter a setting that exceeds the message string (16 characters).
39	The bias and the calibration cannot be used simultaneously.	–
40	Datume value(1 >= 2)	Set the measured value of the first point less than that of the second point in the calibration correction.
41	Datume value(n-1 > n)	Set the measured value of the n–1 th point less than or equal to that of the n th point in the calibration correction.
42	Revise value(n-1 >= n)	Set the correction value of the n–1 th point less than that of the n th point in the calibration correction.
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).