Graphical Digital Panel Meter
WPMZ-1/3

RS-232C

Originalcommand/Originaloutput communication manual

IM-0885-03

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Introduction

This instruction manual explains notes and information on using WPMZ series "original command" "original output" communication.

The Modbus RTU protocol can also be used with the WPMZ series RS - 232C output mounted products. For the Modbus RTU protocol, another manual is available so please inquire.

Be sure to observe the contents of this instruction manual in order to use the product correctly and safely.

- Please read this manual carefully before setting and connecting.
- When building the system, carefully read the instructions of the product you use and other equipment and use it properly
- After reading this manual, please keep it and read it when necessary.

RESTRICTION FOR USE

● Do not use this product as a part of equipment which aimed at life maintenance of human bodies.
● Please avoid usages of this product which bring physical accident or property damage when it breaks down.

We do not take any responsibility about the special damage, the indirect damage and the passivity damage that occurred due to this product under any circumstance.

In this manual, hexadecimal data is indicated by appending "H" after the numeric value. Nothing is appended to decimal data.
ex) Hexadecimal number: 123H, decimal number: 123

1. Overview

Describe the specifications of WPMZ series original command communication.

This manual is intended for engineers who connect WPMZ series to the master device and create control / data collection processing.
As a master device, it is assumed to be a PC or Programmable Logic Controller (PLC). Please prepare the equipment to be used for the master in advance.

First of all, please refer to "2. Communication condition " and set so that the module (WPMZ - 1/3) connected to the master device conforms to the communication specifications.
If the communication protocol is original, refer to "4. Originalcommand" of the corresponding module according to "3. Original command communication specification" and control and read necessary items.
Or, if the communication protocol is unique and continuous output, refer to "6. Unique continuous output response" of the corresponding module according to "5. Originaloutput communication specification" and read the necessary items.

For the Modbus RTU protocol, another manual is available so please inquire.

1-1. What can be done with this function?

For products with RS-232C option output, you can select Modbus protocol and original protocol. The following table shows the contents that can be communicated by each protocol.
Note that only Modbus protocol can be selected for products with RS-485 option output, and original protocols cannot be selected.

Function	Modbus protocol	Original protocol (Mentioned in this document)
Getting setting value	○	×
Setting change /control	○	×
Getting measured value and comparison judgment value	○	○
Measurement, hold instruction, instruction cancellation	×	○
Original output of measured value	×	○

2. Communication condition

2-1. Supported Modules

The corresponding modules assumed in this manual are as follows.

・WPMZ-1
・WPMZ-3

2-2. Communication condition of module

The communication conditions for connecting to each module are as shown in the table below.

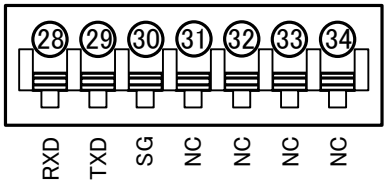
table 2.1 **Communication specification**

	WPMZ-1/3
standard	based on RS-232C
protocol	OriginalCommand,OriginalOutput
Synchronization method	Asynchronous
Communication method	Full duplex
Error detection	None
Baud rate	9600bps,19200bps,38400bps
Data length	7bit,8bit
Start bit	1bit,
Parity bit	None, Odd, Even
Stop bit	1bit,2bit
Used signal names	TXD,RXD,SG
Terminating resistance	Not equipped
Number of connectable units	1 Master / 1 Slave（WPMZ）
Cable length	Max. 15m

2-2. Wiring Connection

2-2-1. Connection terminal

The figure below shows the RS - 232C connection terminal of WPMZ - 1/3.



Conductor cross-section : AWG24～16

fig 2.1 Terminal diagram

table 2.2 terminal descriptions

Terminal number	symbol	descriptions
28	RXD	receive data terminal
29	TXD	transmit data terminal
30	SG	Signal ground
31～34	NC	Do not connect

2-2-2. Connection diagram example

The figure below shows an example connection diagram of WPMZ-1/3.

Master and slave (WPMZ) connect with 1: 1.

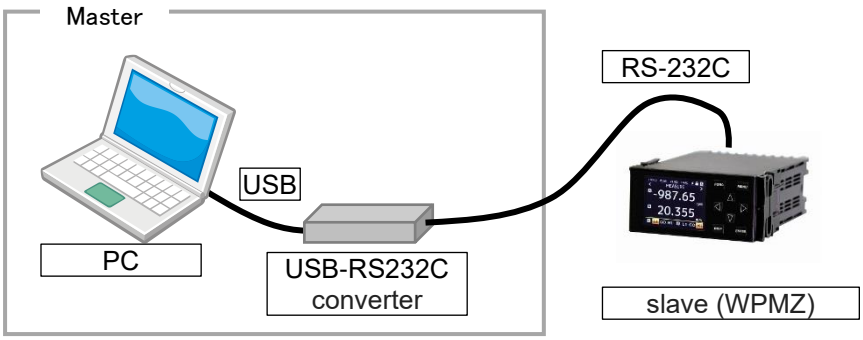


fig 2.2 using USB-RS232C converter

3. Originalcommand communication specification

Describe the behavior when protocol setting is set to "originalcommand".

The originalcommand is a single master / single slave method.
A message is sent from one master to the slave (WPMZ).

3-1. Communication procedure (Protocol setting"Originalcommand")

When the protocol setting is set to "Originalprotocol", the following operation is performed.
Master sends a command message, the slave (WPMZ) sends a response message to the contents of the message.
The operations of the master side message and the slave side message are as follows.

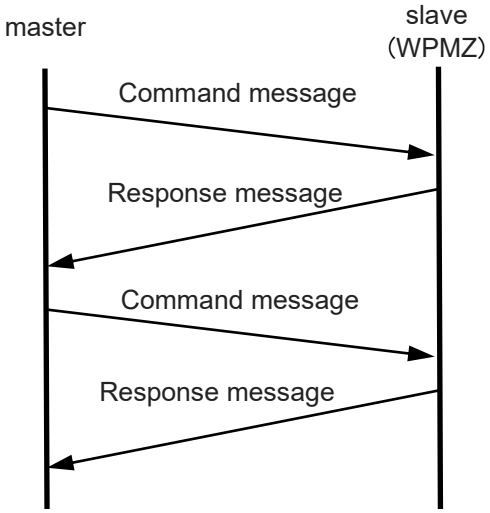


fig 3.1 Communication procedure

3-2. Communication procedure(Protocol setting"Originaloutput")

The following operation is performed under the condition that the protocol setting is set to "Original output".

The slave (WPMZ) periodically sends messages to the master and does not receive messages from the master. The operations of the master side message and the slave side message are as follows.

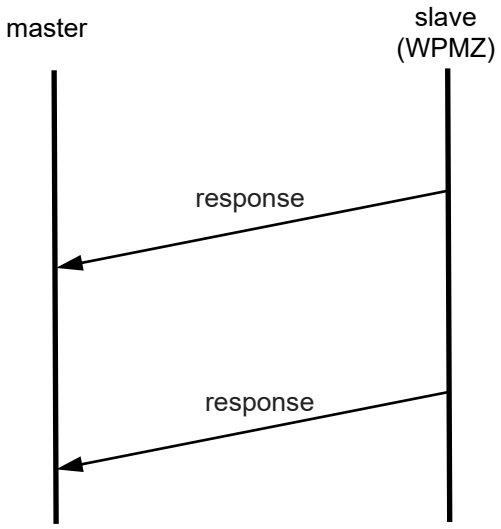


fig 3.2 Communication procedure

For each baud rate, the transmission interval with Original output setting is as follows.

table 3.1 **baud rate−Transmission cycle**

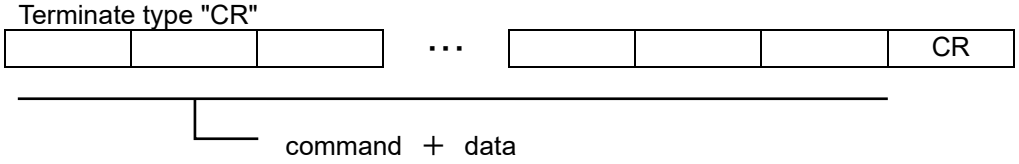
baud rate	Transmission cycle (msec)
9600bps	150msec
19200bps	100msec
38400bps	50msec

3−3. Command format

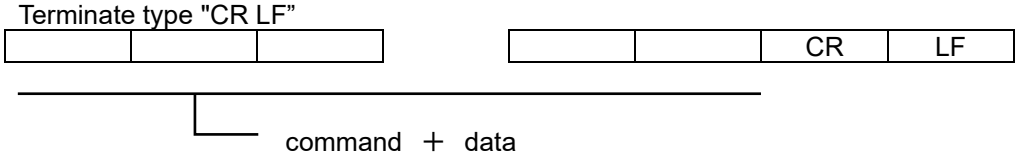
3−3−1. Command composition

It consists of the ASCII character string command part and delimiter part.
Control codes such as STX and ETX and error detection codes such as BCC are not included.

Terminate type "CR"



Terminate type "CR LF”



3−3−2. Communication example

An example of acquiring measurement data with the MESA command is as follows.
Terminate type is "CR LF".

Request

1	2	3	4	5	6
M	E	S	A	CR	LF

Response (for -1.23457)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
		−	1	.	2	3	4	5	7			CR	LF

4. Originalcommand

In this section, the command when the protocol setting is "Originalcommand" is described.
If protocol setting is "Originaloutput", refer to chapter 5 and later.

4-1. Common Command to WPMZ-1 and 3

The command of WPMZ - 1/3 is explained below.

The delimiter is for CRLF. If the delimiter is CR, LF will be deleted.

Command notation-1

1	2	3	4	5	6
D	S	P	A	CR	LF

It represents the character position. ex) The first character if 1.

It represents ASCII characters sent and received as command.

CR is “Carriage return”（ASCII code : 0DH）
LF is ”Line feed”（ASCII code: 0AH）

Command notation-2

1	2	3	4	5	6	7	8	9	10	11	12	13	14
		-	0	.	0	0	0	0	7			CR	LF

A space character (ASCII code: 20H) is entered in each blank space.

4-1-1. DSPA command

DSPA is a command that responds to the display value of the instantaneous value of Ach and the comparison result.

Command

1	2	3	4	5	6
D	S	P	A	CR	LF

Response

（In 99999 display, AL1 to AL4 are allotted to instantaneous value Ach, and all channels are turned ON）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
				9	9	9	9	9		A	L	1		A	L	2		A	L	3		A	L	4	CR	LF

Response

（In 999.99 display, AL1 to AL4 are allotted to instantaneous value Ach and all the channels are turned ON）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
				9	9	9	.	9	9		A	L	1		A	L	2		A	L	3		A	L	4	CR	LF

Response

（In 9 display, AL1 assigned to instantaneous value Ach is ON）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
								9		A	L	1	CR	LF

Response

（In 0.9 display, all the comparison outputs allocated to instantaneous value Ach are OFF）

1	2	3	4	5	6	7	8	9	10	11	12
							0	.	9	CR	LF

Response

(In -7 display, AL1 and AL2 allocated to instantaneous value Ach are ON)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
							-	7		A	L	1		A	L	2	CR	LF

Response

(It is assumed that there is no decimal point setting and "over" is displayed, and the response when AL 3 allocated to the instantaneous value Ach is ON)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<	=			9	9	9	9	9		A	L	3	CR	LF

Response

(In the situation where the decimal point setting is "#. ####" and "- over" is displayed, the response when the comparison output allocated to the instantaneous value Ach is OFF.)

1	2	3	4	5	6	7	8	9	10	11	12
<	=	-		9	.	9	9	9	9	CR	LF

Response

(Response when measurement value is invalid)

1	2	3	4	5	6
N	O	N	E	CR	LF

※ First and second characters…It means “over state” or “hold state”.
Normal : Two space
Over : <=
DispHold : SH
MaxHold : PH
MinHold : BH
AmpHold : PP
DevHold : PV
AveHold : AV
InflectionHold : IF (WPMZ-3 only)
MaximalHold : MX (WPMZ-3 only)
MinimalHold : MN (WPMZ-3 only)

DifferenceHold : MD (WPMZ-3 only)
3rd character…polarity indication at maximum digit number.
If there is no polarity at maximum digit, blank.
4th to 10th characters…Display value. If there are no decimal points and the number of digits is small, right-justified.
After the 11th character…comparison result. When there is no comparison result, the comparison result is not output.

※ Calculated value of instantaneous value A, instantaneous value B, instantaneous value in the analog input specification is a numerical value of up to 5 digits and a numerical value after the decimal point.

4-1-2. DSPB command

DSPB is a command that responds to the instantaneous value display value of Bch and the comparison result.

Command

1	2	3	4	5	6
D	S	P	B	CR	LF

Response…Same as DSPA command.

4-1-3. DSPC command

DSPC is a command that responds to display value of instantaneous calculation value and comparison result.

Command

1	2	3	4	5	6
D	S	P	C	CR	LF

Response…Same as DSPAcommand。
※ "NONE" is returned when the instantaneous operation expression is "None"。

4-1-4. MESA command

MESA is a command that responds to the displayed value of the instantaneous value of Ach.

Command

1	2	3	4	5	6
M	E	S	A	CR	LF

Response
（Response of condition displaying 0）

1	2	3	4	5	6	7	8	9	10	11	12	13	14
			0									CR	LF

Response
（Response of condition displaying 0.15）

1	2	3	4	5	6	7	8	9	10	11	12	13	14
			0	.	1	5						CR	LF

Response
（Response of condition displaying 99999）

1	2	3	4	5	6	7	8	9	10	11	12	13	14
			9	9	9	9	9					CR	LF

Response
（Response of condition displaying -1）

1	2	3	4	5	6	7	8	9	10	11	12	13	14
		-	1									CR	LF

Response
(Response of condition displaying 0.0007)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
		-	0	.	0	0	0	7				CR	LF

Response (Set the decimal point setting to "##. ###" and respond to conditions in over display)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
<	=		9	9	.	9	9	9				CR	LF

Response (Response at the condition without decimal point and with display "-OVER")

1	2	3	4	5	6	7	8	9	10	11	12	13	14
<	=	-	9	9	9	9	9					CR	LF

Response (Response when measurement value is invalid)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
N	O	N	E									CR	LF

※ All responses are fixed length of 12 characters
※ Instantaneous value A, instantaneous value B and instantaneous operation value of analog input are a numerical value of 5 digits at the maximum and a decimal point.

4-1-5. MESB command

MESB is a command that responds to the instantaneous value display value of Bch.

Command

1	2	3	4	5	6
M	E	S	B	CR	LF

Response…Same as MESA command.

4-1-6. MESC command

MESC is a command that responds to display value of instantaneous calculation value.

Command

1	2	3	4	5	6
M	E	S	C	CR	LF

Response
Same as MESA command.
※ "NONE" is returned when the instantaneous operation expression is "None".

4-1-7. JGMA command

JGMA is a command that responds to the comparison result of instantaneous value of Ach.

Command

1	2	3	4	5	6
J	G	M	A	CR	LF

Response

（Assign AL1 to AL4 to instantaneous value Ach, and respond when all channels are turned ON.）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A	L	1		A	L	2		A	L	3		A	L	4	CR	LF

Response

（Response of the case where the comparison output allocated to the instantaneous value Ach is OFF for all the channels.）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
O	F	F													CR	LF

Response

(AL1 and AL2 are assigned to the instantaneous value Ach, and the responses of cases where both channels are ON.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A	L	1		A	L	2									CR	LF

Response

(Comparative output is not allocated to the instantaneous value Ach)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
N	O	N	E												CR	LF

※ All responses are fixed length of 15 characters

4-1-8. JGMB command

JGMB is a command that responds to the comparison result of instantaneous value of Bch.

Command

1	2	3	4	5	6
J	G	M	B	CR	LF

Response
Same as JGMA command.

4-1-9. JGMC command

JGMC is a command that responds to the comparison result of the instantaneous calculation value.

Command

1	2	3	4	5	6
J	G	M	C	CR	LF

Response…Same as JGMA command.

※ "NONE" is returned when the instantaneous operation expression is "None".

4-1-10. COMR command

COMR is a command to check the instruction status of “CompareReset”.
Instruction state with "COMR ON" and "COMR OFF" command is returned instead of the actual “CompareReset” state.

Command

1	2	3	4	5	6
C	O	M	R	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instructions）

1	2	3	4
O	N	CR	LF

4-1-11. COMR ON command

COMR ON is a command that instructs “CompareReset”. WPMZ enters the “CompareReset” state.

Command

1	2	3	4	5	6	7	8	9
C	O	M	R		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-12. COMR OFF command

COMR OFF is a command to cancel the “CompareReset” instruction. The “CompareReset” state of WPMZ is canceled.

Command

1	2	3	4	5	6	7	8	9	10
C	O	M	R		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-13. HDRA command

HDRA is a command to check the instruction status of “HoldReset” of Ach.
Instruction state with "HDRA ON" and "HDRA OFF" command is returned instead of the actual “HoldReset” state.

Command

1	2	3	4	5	6
H	D	R	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-14. HDRA ON command

HDRA ON is a command that instructs “HoldReset”. Ach enters the “HoldReset” state.

Command

1	2	3	4	5	6	7	8	9
H	D	R	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-15. HDRA OFF command

HDRA OFF is a command to cancel the “HoldReset” instruction of Ach. The “HoldReset” state of Ach is canceled.

Command

1	2	3	4	5	6	7	8	9	10
H	D	R	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-16. HDRB command

HDRB is a command to check the instruction status of “HoldReset” of Bch.
Instruction state with "HDRB ON" and "HDRB OFF" command is returned instead of the actual “HoldReset” state.

Command

1	2	3	4	5	6
H	D	R	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-17. HDRB ON command

HDRB ON is a command that instructs “HoldReset”. Bch enters the “HoldReset” state.

Command

1	2	3	4	5	6	7	8	9
H	D	R	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-18. HDRB OFF command

HDRB OFF is a command to cancel the “HoldReset” instruction. The “HoldReset” state of Bch is canceled.

Command

1	2	3	4	5	6	7	8	9	10
H	D	R	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-19. HDRAB command

HDRAB is a command to check the instruction status of “HoldReset” of Ach and Bch.
Instruction state with "HDRAB ON" and "HDRAB OFF" command is returned instead of the actual “HoldReset” state.

Command

1	2	3	4	5	6	7
H	D	R	A	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-20. HDRAB ON command

HDRAB ON is a command that instructs “HoldReset”. Ach and Bch enter the “HoldReset” state.

Command

1	2	3	4	5	6	7	8	9	10
H	D	R	A	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-21. HDRAB OFF command

HDRAB OFF is a command to cancel the “HoldReset” instruction. The “HoldReset” state of Ach and Bch are canceled.

Command

1	2	3	4	5	6	7	8	9	10	11
H	D	R	A	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-22. DHDA command

DHDA is a command to check the indication state of holding the current value of Ach.
Instruction state with "DHDA ON", "DHDA OFF" command is returned instead of the actual current value holding state.

Command

1	2	3	4	5	6
D	H	D	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-23. DHDA ON command

DHDA ON is a command that instructs to hold the current value of Ach.

Command

1	2	3	4	5	6	7	8	9
D	H	D	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-24. DHDA OFF command

DHDA OFF is a command to cancel the instruction to hold the current value of Ach.

Command

1	2	3	4	5	6	7	8	9	10
D	H	D	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-25. DHDB command

DHDB is a command to check the indication state of holding the current value of Bch.
Instruction state with "DHDB ON", "DHDB OFF" command is returned instead of the actual current value holding state.

Command

1	2	3	4	5	6
D	H	D	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-26. DHDB ON command

DHDB ON is a command that instructs to hold the current value of Bch.

Command

1	2	3	4	5	6	7	8	9
D	H	D	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-27. DHDB OFF command

DHDB OFF is a command to cancel the instruction to hold the current value of Bch

Command

1	2	3	4	5	6	7	8	9	10
D	H	D	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-28. DHDAB command

DHDAB is a command to check the indication state of holding the current value at the same time for Ach and Bch.
Instruction state with "DHDAB ON" and "DHDAB OFF" command is returned instead of the actual current value holding state.

Command

1	2	3	4	5	6	7
D	H	D	A	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-29. DHDAB ON command

DHDAB ON is a command that instructs to hold the current value of Ach and Bch at the same time.

Command

1	2	3	4	5	6	7	8	9	10
D	H	D	A	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-30. DHDAB OFF command

DHDAB OFF is a command that cancels the instruction to hold the current value at the same time for Ach and Bch.

Command

1	2	3	4	5	6	7	8	9	10	11
D	H	D	A	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-31. MAXA command

MAXA is a command to check the indication state of Ach maximum value preservation.
Instruction state with "MAXA ON", "MAXA OFF" command is returned instead of the actual maximum value holding state.

Command

1	2	3	4	5	6
M	A	X	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-32. MAXA ON command

MAXA ON is a command that instructs to hold the maximum value of Ach.

Command

1	2	3	4	5	6	7	8	9
M	A	X	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-33. MAXA OFF command

MAXA OFF is a command to cancel the instruction to hold the maximum value of Ach.

Command

1	2	3	4	5	6	7	8	9	10
M	A	X	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-34. MAXB command

MAXB is a command to check the indication state of holding maximum value of Bch.
Instruction state with "MAXB ON", "MAXB OFF" command is returned instead of the actual maximum value holding state.

Command

1	2	3	4	5	6
M	A	X	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-35. MAXB ON command

MAXB ON is a command that instructs to hold the maximum value of Bch

Command

1	2	3	4	5	6	7	8	9
M	A	X	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-36. MAXB OFF command

MAXB OFF is a command to cancel the instruction to hold Bch maximum value.

Command

1	2	3	4	5	6	7	8	9	10
M	A	X	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-37. MAXAB command

MAXAB is a command to check the indication state of holding the maximum value of Ach and Bch at the same time.
Instruction state with "MAXAB ON", "MAXAB OFF" command is returned instead of the actual maximum value holding state.

Command

1	2	3	4	5	6	7
M	A	X	A	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-38. MAXAB ON command

MAXAB ON is a command that instructs maximum value hold of Ach and Bch at the same time.

Command

1	2	3	4	5	6	7	8	9	10
M	A	X	A	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-39. MAXAB OFF command

MAXAB OFF is a command to cancel the instruction to hold the maximum value of Ach and Bch at the same time.

Command

1	2	3	4	5	6	7	8	9	10	11
M	A	X	A	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-40. MINA command

MINA is a command to check the indication state of holding minimum value of Ach.
Instruction state with "MINA ON", "MINA OFF" command is returned instead of the actual minimum value holding state.

Command

1	2	3	4	5	6
M	I	N	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-41. MINA ON command

MINA ON is a command that instructs to hold the minimum value of Ach.

Command

1	2	3	4	5	6	7	8	9
M	I	N	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-42. MINA OFF command

MINA OFF is a command to cancel the instruction to hold minimum value of Ach.

Command

1	2	3	4	5	6	7	8	9	10
M	I	N	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-43. MINB command

MINB is a command to check the indication state of holding minimum value of Bch.
Instruction state with "MAXB ON", "MAXB OFF" command is returned instead of the actual minimum value holding state.

Command

1	2	3	4	5	6
M	I	N	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-44. MINB ON command

MINB ON is a command that instructs to hold the minimum value of Bch.

Command

1	2	3	4	5	6	7	8	9
M	I	N	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-45. MINB OFF command

MINB OFF is a command to cancel the instruction to hold Bch's minimum value.

Command

1	2	3	4	5	6	7	8	9	10
M	I	N	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-46. MINAB command

MINAB is a command to check the indication state of holding the miniimum value of Ach and Bch at the same time.
Instruction state with "MINAB ON", "MINAB OFF" command is returned instead of the actual minimum value holding state.

Command

1	2	3	4	5	6	7
M	I	N	A	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-47. MINAB ON command

MINAB ON is a command that instructs to hold the minimum value of Ach and Bch at the same time.

Command

1	2	3	4	5	6	7	8	9	10
M	I	N	A	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-48. MINAB OFF command

MINAB OFF is a command to cancel the instruction to hold the minimum value of Ach and Bch at the same time

Command

1	2	3	4	5	6	7	8	9	10	11
M	I	N	A	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-49. AMPA command

AMPA command is a command to check the “AmpHold” indication state of Ach.
Instruction state with "AMPA ON" and "AMPA OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
A	M	P	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-50. AMPA ON command

AMPA ON is a command that instructs to hold the amplitude value of Ach.

Command

1	2	3	4	5	6	7	8	9
A	M	P	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-51. AMPA OFF command

AMPA OFF is a command to cancel the instruction to hold amplitude value of Ach.

Command

1	2	3	4	5	6	7	8	9	10
A	M	P	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-52. AMPB command

AMPB command is a command to check the “AmpHold” indication state of Bch.
Instruction state with "AMPB ON" and "AMPB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
A	M	P	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-53. AMPB ON command

AMPB ON is a command that instructs to hold the amplitude value of Bch.

Command

1	2	3	4	5	6	7	8	9
A	M	P	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-54. AMPB OFF command

AMPB OFF is a command to cancel the instruction to hold amplitude value of Bch.

Command

1	2	3	4	5	6	7	8	9	10
A	M	P	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-55. AMPAB command

AMPAB is a command to check the “AmpHold” indication state of Ach and Bch at the same time.
Instruction state with "AMPAB ON" and "AMPAB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6	7
A	M	P	A	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-56. AMPAB ON command

AMPAB ON is a command that instructs to hold the amplitude value of Ach and Bch at the same time.

Command

1	2	3	4	5	6	7	8	9	10
A	M	P	A	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-57. AMPAB OFF command

AMPAB OFF is a command to cancel the instruction to hold amplitude value of Ach and Bch at the same time

Command

1	2	3	4	5	6	7	8	9	10	11
A	M	P	A	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-58. DEVA command

DEVA command is a command to check the “DevHold” indication state of Ach.
Instruction state with "DEVA ON" and "DEVA OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
D	E	V	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-59. DEVA ON command

DEVA ON is a command that instructs to hold the deviation of Ach from reference value.

Command

1	2	3	4	5	6	7	8	9
D	E	V	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-60. DEVA OFF command

DEVA OFF is a command to cancel the instruction to hold the deviation of Ach from reference value.

Command

1	2	3	4	5	6	7	8	9	10
D	E	V	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-61. DEVB command

DEVB command is a command to check the “DevHold” indication state of Bch.
Instruction state with "DEVB ON" and "DEVB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
D	E	V	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-62. DEVB ON command

DEVB ON is a command that instructs to hold the deviation of Bch from reference value.

Command

1	2	3	4	5	6	7	8	9
D	E	V	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-63. DEVB OFF command

DEVB OFF is a command to cancel the instruction to hold the deviation of Bch from reference value.

Command

1	2	3	4	5	6	7	8	9	10
D	E	V	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-64. DEVAB command

DEVAB is a command to check the “DevHold” indication state of Ach and Bch at the same time.
Instruction state with "DEVAB ON" and "DEVAB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6	7
D	E	V	A	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-65. DEVAB ON command

DEVAB ON is a command that instructs to hold the deviation of Ach and Bch from reference value at the same time.

Command

1	2	3	4	5	6	7	8	9	10
D	E	V	A	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-66. DEVAB OFF command

DEVAB OFF is a command to cancel the instruction to hold the deviation of Ach and Bch from reference value at the same time.

Command

1	2	3	4	5	6	7	8	9	10	11
D	E	V	A	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-67. AVEA command

AVEA command is a command to check the “AveHold” indication state of Ach.
Instruction state with "AVEA ON" and "AVEA OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
A	V	E	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-68. AVEA ON command

AVEA ON is a command that instructs to hold the average value of Ach.

Command

1	2	3	4	5	6	7	8	9
A	V	E	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-69. AVEA OFF command

AVEA OFF is a command to cancel the instruction to hold the average value of Ach.

Command

1	2	3	4	5	6	7	8	9	10
A	V	E	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-70. AVEB command

AVEB command is a command to check the “AveHold” indication state of Bch.
Instruction state with "AVEB ON" and "AVEB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
A	V	E	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-71. AVEB ON command

AVEB ON is a command that instructs to hold the average value of Bch.

Command

1	2	3	4	5	6	7	8	9
A	V	E	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-72. AVEB OFF command

AVEB OFF is a command to cancel the instruction to hold the average value of Bch.

Command

1	2	3	4	5	6	7	8	9	10
A	V	E	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-73. AVEAB command

AVEAB is a command to check the “AveHold” indication state of Ach and Bch at the same time.
Instruction state with "AVEAB ON" and "AVEAB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6	7
A	V	E	A	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-74. AVEAB ON command

AVEAB ON is a command that instructs to hold the average value of Ach and Bch at the same time.

Command

1	2	3	4	5	6	7	8	9	10
A	V	E	A	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-75. AVEAB OFF command

AVEAB OFF is a command to cancel the instruction to hold the average of Ach and Bch at the same time.

Command

1	2	3	4	5	6	7	8	9	10	11
A	V	E	A	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-76. DZRA command

DZRA command is a command to check the digital zero indication state of Ach.
Instruction state with "DZRA ON" and "DZRA OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
D	Z	R	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-77. DZRA ON command

DZRA ON is a command that instructs Ach to execute the digital zero function.

Command

1	2	3	4	5	6	7	8	9
D	Z	R	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-78. DZRA OFF command

DZRA OFF is a command to cancel execution of the digital zero function to Ach.

Command

1	2	3	4	5	6	7	8	9	10
D	Z	R	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-79. DZRB command

DZRB command is a command to check the digital zero indication state of Bch.
Instruction state with "DZRB ON" and "DZRB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
D	Z	R	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-80. DZRB ON command

DZRB ON is a command that instructs Bch to execute the digital zero function.

Command

1	2	3	4	5	6	7	8	9
D	Z	R	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-81. DZRB OFF command

DZRB OFF is a command to cancel execution of the digital zero function to Bch.

Command

1	2	3	4	5	6	7	8	9	10
D	Z	R	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-82. DZRAB command

DZRAB is a command to check the digital zero indication state of Ach and Bch.
Instruction state with "DZRAB ON" and "DZRAB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6	7
D	Z	R	A	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-1-83. DZRAB ON command

DZRAB ON is a command to instruct execution of Ach and Bch digital zero function at the same time.

Command

1	2	3	4	5	6	7	8	9	10
D	Z	R	A	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-84. DZRAB OFF command

DZRAB ON is a command to cancel the digital zero function of Ach and Bch at the same time.

Command

1	2	3	4	5	6	7	8	9	10	11
D	Z	R	A	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-85. TRDT ON command

TRDT ON is a command that instructs execution of “TrendTrigger” function.
The instruction is going to be cleared automatically.

Command

1	2	3	4	5	6	7	8	9
T	R	D	T		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-86. PCHG command

PCHG is a command that responds to the actual pattern number that is running.

Command

1	2	3	4	5	6
P	C	H	G	CR	LF

Response（Under the condition operating with pattern 1）

1	2	3
1	CR	LF

Response（Under the condition operating with pattern 8）

1	2	3
8	CR	LF

4-1-87. PCHG X command

PCHG X is a command that specifies the pattern number to operate. Specifiable pattern numbers are 1 to 8.
The pattern number that operates is fixed until you cancel the instruction.

Command（Specify pattern 1）

1	2	3	4	5	6	7	8
P	C	H	G		1	CR	LF

Command（Specify pattern 8）

1	2	3	4	5	6	7	8
P	C	H	G		8	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-88. PCHG OFF command

PCHG OFF is a command to cancel the instruction of the pattern number to be operated.

Command

1	2	3	4	5	6	7	8	9	10
P	C	H	G		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-1-89. MONC ON command

MONC ON is a command to switch screen.
Instructions are cleared automatically after processing execution.

Command

1	2	3	4	5	6	7	8	9
M	O	N	C		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2. Dedicated commands for WPMZ-3

This section shows dedicated commands for WPMZ-3.

4-2-1. MLTA command

MLTA command is a command to check the “MultiHold” indication state of Ach.
Instruction state with "MLTA ON" and "MLTA OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
M	L	T	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-2-2. MLTA ON command

MLTA ON is a command that instructs execution of “MultiHold” function of Ach.

Command

1	2	3	4	5	6	7	8	9
M	L	T	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2-3. MLTA OFF command

MLTA OFF is a command to cancel the instruction to execute “MultiHold” function of Ach.

Command

1	2	3	4	5	6	7	8	9	10
M	L	T	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2-4. MLTB command

MLTB command is a command to check the “MultiHold” indication state of Bch.
Instruction state with "MLTB ON" and "MLTB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
M	L	T	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-2-5. MLTB ON command

MLTB ON is a command that instructs execution of “MultiHold” function of Bch.

Command

1	2	3	4	5	6	7	8	9
M	L	T	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2-6. MLTB OFF command

MLTB OFF is a command to cancel the instruction to execute “MultiHold” function of Bch.

Command

1	2	3	4	5	6	7	8	9	10
M	L	T	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2-7. MTSA command

MTSA command is a command to get the “MultiHold” parameters of Ach.
MTSA returns displayed value, overall result and operation state.

Command

1	2	3	4	5	6
M	T	S	A	CR	LF

Response
（Condition : displaying [99999], overall result is [indeterminate] and operation state is [S1 running] ）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
				9	9	9	9	9					S	1	R	U	N	CR	LF

Response
（Condition : displaying [99999], overall result is [OK] and operation state is [S4 finished] ）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
				9	9	9	9	9		O	K				F	I	N	CR	LF

※ 1st to 9th characters…Display value. (Details are same as 4-1-4. MESA command)
11th and12th characters…Display overall result [OK / NG / Two space(=indeterminate)]
14th to18th characters…Display operation state
RDY：Waiting for operation start
S1WIT：Waiting for start condition of section 1
S1RUN：Section 1 running
S1END：Interval after section 1 ends
(S2～S4 are the same as above)
FIN：After section 4 ends

4-2-8. MT1A command

MT1A command is a command to get the “MultiHold” parameters of section 1 of Ach.
MT1A returns displayed value, section alarm condition and operation state.

Command

1	2	3	4	5	6
M	T	1	A	CR	LF

Response
（Condition : displaying [99999], section alarm condition is [ON] and operation state is [END] ）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
				9	9	9	9	9			O	N		E	N	D	CR	LF

Response
（Condition : displaying [Not detected], section alarm condition is [OFF] and operation state is [RUN] ）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
N	O		D	E	T	E	C	T		O	F	F		R	U	N	CR	LF

※ 1st to 9th characters…Display value. (Details are same as 4-1-4. MESA command)
11th and13th characters…Display alarm condition [ON / OFF]
15th to17th characters…Display operation state
RDY：Waiting for operation start
WIT：Waiting for start condition
RUN：Running
END：Interval after section ends

4-2-9. MT2A command

MT2A command is a command to get the “MultiHold” parameters of section 2 of Ach.
MT2A returns displayed value, section alarm condition and operation state.

Command

1	2	3	4	5	6
M	T	2	A	CR	LF

Response is the same as section 1(MT1A command).

4-2-10. MT3A command

MT3A command is a command to get the “MultiHold” parameters of section 3 of Ach.
MT3A returns displayed value, section alarm condition and operation state.

Command

1	2	3	4	5	6
M	T	3	A	CR	LF

Response is the same as section 1(MT1A command).

4-2-11. MT4A command

MT4A command is a command to get the “MultiHold” parameters of section 4 of Ach.
MT4A returns displayed value, section alarm condition and operation state.

Command

1	2	3	4	5	6
M	T	4	A	CR	LF

Response is the same as section 1(MT1A command).

4-2-12. MTSB command

MTSB command is a command to get the “MultiHold” parameters of Bch.
MTSB returns displayed value, overall result and operation state.

Command

1	2	3	4	5	6
M	T	S	B	CR	LF

Response is the same as Ach (MTSA command).

4-2-13. MT1B command

MT1B command is a command to get the “MultiHold” parameters of section 1 of Bch.
MT1B returns to displayed value, section alarm condition and operation state.

Command

1	2	3	4	5	6
M	T	1	B	CR	LF

Response is the same as section 1 of Ach (MT1A command).

4-2-14. MT2B command

MT2B command is a command to get the “MultiHold” parameters of section 2 of Bch.
MT2B returns displayed value, section alarm condition and operation state.

Command

1	2	3	4	5	6
M	T	2	B	CR	LF

Response is the same as section 1 of Ach (MT1A command).

4-2-15. MT3B command

MT3B command is a command to get the “MultiHold” parameters of section 3 of Bch.
MT3B returns displayed value, section alarm condition and operation state.

Command

1	2	3	4	5	6
M	T	3	B	CR	LF

Response is the same as section 1 of Ach (MT1A command).

4-2-16. MT4B command

MT4B command is a command to get the “MultiHold” parameters of section 4 of Bch.
MT4B returns displayed value, section alarm condition and operation state.

Command

1	2	3	4	5	6
M	T	4	B	CR	LF

Response is the same as section 1 of Ach (MT1A command).

4-2-17. WVCA command

WVCA command is a command to check the “WaveComp” indication state of Ach.
Instruction state with "WVCA ON" and "WVCA OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
W	V	C	A	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-2-18. WVCA ON command

WVCA ON is a command that instructs to execution of waveform comparison of Ach.

Command

1	2	3	4	5	6	7	8	9
W	V	C	A		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2-19. WVCA OFF command

WVCA OFF is a command to cancel the instruction to execute waveform comparison of Ach.

Command

1	2	3	4	5	6	7	8	9	10
W	V	C	A		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2-20. WVCB command

WVCB command is a command to check the “WaveComp” indication state of Bch.
Instruction state with "WVCB ON" and "WVCB OFF" command is returned instead of the actual operation state.

Command

1	2	3	4	5	6
W	V	C	B	CR	LF

Response（No instruction）

1	2	3	4	5
O	F	F	CR	LF

Response（With instruction）

1	2	3	4
O	N	CR	LF

4-2-21. WVCB ON command

WVCB ON is a command that instructs to execution of waveform comparison of Bch.

Command

1	2	3	4	5	6	7	8	9
W	V	C	B		O	N	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2-22. WVCB OFF command

WVCB OFF is a command to cancel the instruction to execute waveform comparison of Bch.

Command

1	2	3	4	5	6	7	8	9	10
W	V	C	B		O	F	F	CR	LF

Response

1	2	3	4	5	6	7
Y	E	S			CR	LF

4-2-23. WVSA command

WVSA command is a command to get the “WaveComp” parameters of Ach.
WVSA returns displayed value, overall result and operation state.

Command

1	2	3	4	5	6
W	V	S	A	CR	LF

Response
（Condition : displaying [99999], overall result is [indeterminate] and operation state is [Running] ）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
				9	9	9	9	9					R	U	N	CR	LF

Response
（Condition : displaying [99999], overall result is [NG] and operation state is [Finished] ）

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
				9	9	9	9	9		N	G		E	N	D	CR	LF

※ 1st to 9th characters…Display value. (Details are same as 4-1-4. MESA command)
11th and12th characters…Display overall result [OK / NG / Two space(=indeterminate)]
14th to16th characters…Display operation state
RDY：Waiting for operation start
WIT：Waiting for start condition
RUN：Running
END：Finished

4-2-24. WVSB command

WVSB command is a command to get the “WaveComp” parameters of Bch.
WVSB returns displayed value, overall result and operation state.

Command

1	2	3	4	5	6
W	V	S	B	CR	LF

Response is the same as Ach (WVSA command).

5. OriginalOutput communication specification

Describe the behavior when the protocol setting is "OriginalOutput".
Refer to "4. OriginalCommand" for the state of protocol setting "OriginalCommand".

5-1. WPMZ-1/3

The original output of WPM - 1/3 will be explained below.
The response format differs according to model.

Common content

- The display value is variable data of up to 10 characters left-justified. The first three characters are overrange absence and polarity.
- Comparison result: Variable data of up to 4 characters.

5-1-1. Outputs of「WPMZ-1 single channel input」and「WPMZ-3 single channel input」products

In case of WPMZ-1/3 single ch input product, "instantaneous display value of Ach" and "comparison result of AL1 ~ AL4" are output.

Response format

Instantaneous display value of Ach, AL 1 result, AL 2 result, AL 3 result, AL 4 result CRLF

Response example
Instantaneous display value of Ach: 9000.0,
AL1 Result: ON, AL2 Result: OFF, AL3 Result: NONE (no allocation), AL4 Result: OFF

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
			9	0	0	0	.	0	,	O	N	,	O	F	F	,	N	O	N	E	,	O	F	F	CR	LF

5-1-2. Outputs of「WPMZ-1 dual channel input」and「WPMZ-3 dual channel input」products

For WPMZ-1/3 dual channel input products, output "instantaneous display value of Ach" and "instantaneous display value of Bch", "calculated value of instantaneous display value" and "comparison result of AL1 to AL4" are output.

Response format

Instantaneous display value of Ach, instantaneous display value of Bch, calculated value of instantaneous display value, AL 1 result, AL 2 result, AL 3 result, AL 4 result CRLF

Response example
Instantaneous display value of Ach: 9000.0,
Instantaneous display value of Bch: 100,
Calculated value of instantaneous display value: -3
AL1 Result: ON, AL2 Result: OFF, AL3 Result: NONE (no allocation), AL4 Result: OFF

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
			9	0	0	0	.	0	,				1	0	0	,			-	3	,	O	N	,	O	F

28	29	.30	31	32	33	34	35	36	37	38	39
F	,	N	O	N	E	,	O	F	F	CR	LF

6. trouble shooting

6-1. About communication

6-1-1. In a state where communication cannot be performed

If you cannot communicate, please check the contents below.

- Are all the devices related to communication turned on?
- Is the wiring correct?
- Is the number of connected devices and connecting distance within specification range?
- Whether the settings of communication conditions between master and slave (WPMZ) match.
  (baud rate, data length, stop bit, parity)

6-1-2. The acquired data is incorrect

If you can get the data but the value is incorrect, please confirm the following contents.

- Is the protocol settings correct?
- Is the command correct?
- Is unit conversion correct?

The contents of this instruction manual are subject to change without prior notice.

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