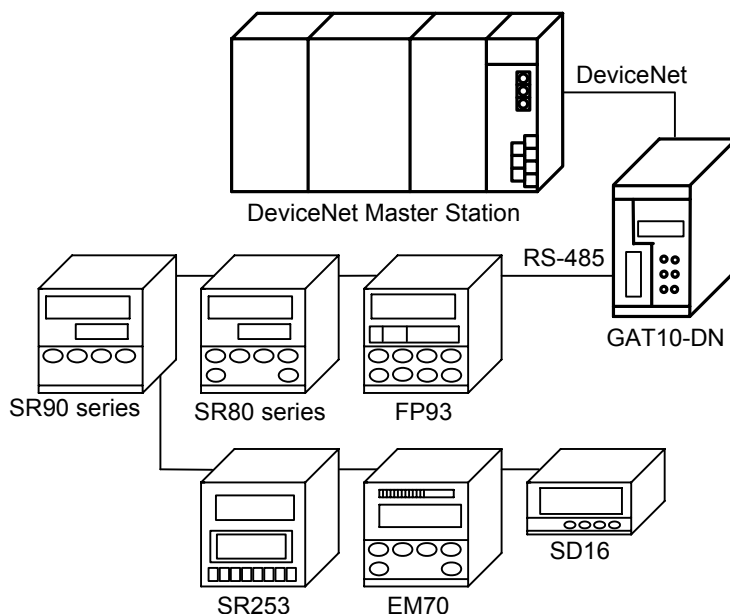


GAT10-DN RS-485/DeviceNet Converter Instruction Manual Design Part

Thank you for purchasing our product. Please check that the delivered product is the item exactly as ordered by you. Please read this manual thoroughly to understand the contents before you start operating the product.

GAT10-DNF-1BE
May. 2016

This is the "Design" Part of the instruction manual. Please also read the "Basic" Part.



1. Setup

■ DeviceNet Setup

Set up DeviceNet transmission rate and node address for the GAT10-DN. Set values become effective upon applying power or resetting.

Obtain the EDS file for the GAT10-DN (downloadable from <http://www.shimaden.co.jp>) and carry out the DeviceNet host station setup.

For details, refer to the instruction manual of the DeviceNet Setting Tool (e.g., WS02-CFDC1-E by OMRON Corp.) for Master Station PLC.

■ RS-485 Communication Parameter Setup for Shimaden instrument

For communication with the GAT10-DN, set parameters as follows:

- Communication address : Set a unique number (1 to 8) to each Shimaden instrument.
- Data format : "7E1" (default value)
- Start character : "STX" (default value)
- BCC operation : "1" (default value)
- Communication rate : "19200bps."
- Communication delay : Use the default value.

Note: Factory default values are as follows.

SR80 series, SR90 series, EM70, FP93: "20"
SR253: "40"
SD16 : "80"

- Communication memory mode: In case SV and other parameters are set frequently through DeviceNet, it is recommended to change the communication memory mode. Please note, however, that in this case, some parameters are not stored when power is turned OFF. For details, refer to the Instruction Manual of each Shimaden instrument.

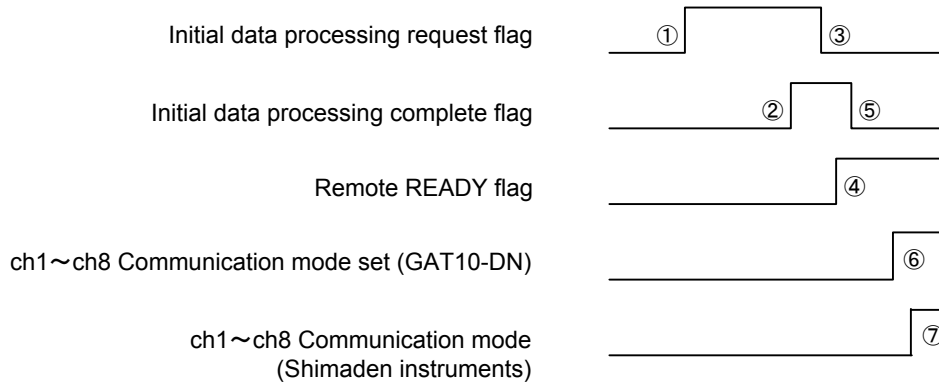
- The GAT10-DN is allocated, as a slave station of DeviceNet, to the input/output relay of the I/O area of the Master station channel. (Input: 24 words; output: 24 words)

2. Initial Data Processing

Upon applying power, initial data processing should be carried out from the Master to the GAT10-DN. Although it is possible to read a PV (measured value) of a Shimaden instrument connected to the GAT10-DN without the process, updating an SV (target set value) and access to a parameter are not possible.

The basic timing of a request for initial data processing is shown below. Refer also to "4. Input/Output Mapping."

- ① When power is applied or the GAT10-DN is reset, the "Initial data processing request flag" is turned ON.
 - ② The "Initial data processing complete flag" is turned ON by the Master.
 - ③ Seeing the "Initial data processing complete flag" of the remote input/output turn ON (②), the GAT10-DN turns the "Initial data processing request flag" OFF.
 - ④ The GAT10-DN turns the "Remote READY flag" ON.
 - ⑤ The Master turns the "Initial data processing complete flag" OFF.
 - ⑥ The "ch1~ch8 communication mode set" is turned ON by the Master.
 - ⑦ The GAT10-DN changes the communication mode of the Shimaden instruments to "COM." Following the change, "ch1~ch8 communication mode" is turned ON.
- ※ Once the communication mode of the Shimaden instrument is turned to "COM," updating an SV value or writing a parameter in the Shimaden instrument through the GAT10-DN becomes possible.



3. Input and Output Signals

The allocation of input and output signals and their functions are described in the following. Please also refer to "4. Input/Output Mapping."

■ Input Signals (GAT10-DN→Master)

- ch1 ~ch8 PV
Measured value of ch1 to ch8 Shimaden instrument.
- ch1 ~ch8 read value
Parameters of Shimaden instrument connected to GAT10-DN can be read by handshaking from the Master. For details, see "5. Reading/Writing Parameters of Shimaden Instrument."
- ch1 ~ch8 EV1
Event 1 condition of ch1 to ch8 Shimaden instrument.
- ch1 ~ch8 EV2
Event 2 condition of ch1 to ch8 Shimaden instrument.
- ch1 ~ch8 EV3
Event 3 condition of ch1 to ch8 Shimaden instrument.
- ch1 ~ch8 Scaleover
Scaleover state of ch1 to ch8 Shimaden instrument.
- ch1 ~ch8 Parameter error flag
Parameter error state of ch1 to ch8 Shimaden instrument. For details, see "5. Reading/Writing Parameters of Shimaden instrument."
- ch1 ~ch8 SV update error
SV update error state of ch1 to ch8.
- Parameter read complete flag
After this flag turns ON, valid values are set at ch1 ~ch8 read value. For details, see "5. Reading/Writing Parameters of Shimaden instrument."
- Parameter write complete flag
This flag turns ON when a parameter was written in successfully. For details, see "5. Reading/Writing Parameters of Shimaden instrument."
- Initial data processing request flag
When power is applied or the GAT10-DN is reset, this flag turns ON. In order to update an SV value or read or write a parameter of a Shimaden instrument, "initial data processing" should be carried out. For details, see "2. Initial Data Processing."
- Error status flag
This flag turns ON when any of the ch1 ~ch8 parameter error flags turns ON.
- Remote READY flag
This flag turns OFF when an error occurs or while a parameter is being read or written. For details, see "5. Reading/Writing Parameters of Shimaden instrument."
- ch1 ~ch8 Communication mode
Indicates communication mode of ch1 to ch8 Shimaden instrument. Changing an SV value or writing a parameter is possible only in the "COM" mode.
- ch1 ~ch8 AT
During the execution of auto tuning in a channel, this flag turns ON.
- ch1 ~ch8 MAN
During the execution of manual control output, this flag turns ON.
- ch1 ~ch8 Link error
When communication fails between the GAT10-DN and Shimaden instruments, this flag turns ON.

■ Output Signals (Master→GAT10-DN)

- ch1 ~ch8 SV
Target set value of ch1 to ch8 Shimaden instrument.
- ch1 ~ch8 Write value
A parameter value to be written in a Shimaden instrument connected to the GAT10-DN can be set by handshaking from the Master. For details, see "5. Reading/Writing Parameters of Shimaden Instrument."
- Set No. of parameters to read
Set No. of parameters to read out from the Shimaden instrument can be set from the Master. For details, see "5. Reading/Writing Parameters of Shimaden Instrument."
- Set No. of parameters to write
Set No. of parameters to write in the Shimaden instrument can be set from the Master. For details, see "5. Reading/Writing Parameters of Shimaden Instrument."
- ch1 ~ch8 Parameter R/W flag
This flag must be set ON before any read/write action. For details, see "5. Reading/Writing Parameters of Shimaden Instrument."
- ch1 ~ch8 SV update flag
If set ON from the master, SV of ch1 to ch8 Shimaden are updated according to the set value of "ch1 ~ch8 SV."
- Parameter read request flag
The flag must be set ON when reading a parameter of the Shimaden. For details, see "5. Reading/Writing Parameters of Shimaden Instrument."
- Parameter write request flag
The flag must be set ON when writing a parameter of the Shimaden. For details, see "5. Reading/Writing Parameters of Shimaden Instrument."
- Initial data processing complete flag
This flag must be set ON from the Master in "Initial data processing." The GAT10-DN is then put into the READY status. For details, see "2. Initial Data Processing."
- Error reset request flag
This flag must be set ON to clear "Error status flag."
- ch1 ~ch8 Communication mode set
This flag must be set ON to set the communication mode of ch1 to ch8 Shimaden to "COM."

4. Input/Output Mapping (24 word/24 word)

Input (1/3)			Output (1/3)		
GAT10-DN → Master			Master → GAT10-DN		
Address (Decimal)	Signal		Address (Decimal)	Signal	
Word data			Word data		
0	ch1 PV	(measured value)	0	ch1 SV	(target set value)
1	ch2 PV	(measured value)	1	ch2 SV	(target set value)
2	ch3 PV	(measured value)	2	ch3 SV	(target set value)
3	ch4 PV	(measured value)	3	ch4 SV	(target set value)
4	ch5 PV	(measured value)	4	ch5 SV	(target set value)
5	ch6 PV	(measured value)	5	ch6 SV	(target set value)
6	ch7 PV	(measured value)	6	ch7 SV	(target set value)
7	ch8 PV	(measured value)	7	ch8 SV	(target set value)
8	ch1 read value		8	ch1 write value	
9	ch2 read value		9	ch2 write value	
10	ch3 read value		10	ch3 write value	
11	ch4 read value		11	ch4 write value	
12	ch5 read value		12	ch5 write value	
13	ch6 read value		13	ch6 write value	
14	ch7 read value		14	ch7 write value	
15	ch8 read value		15	ch8 write value	
16	bit 0	ch1 EV1 (event 1)	16	Set No. of parameters to read (see the appendix.)	
	1	ch2 EV1 (event 1)			
	2	ch3 EV1 (event 1)			
	3	ch4 EV1 (event 1)			
	4	ch5 EV1 (event 1)			
	5	ch6 EV1 (event 1)			
	6	ch7 EV1 (event 1)			
	7	ch8 EV1 (event 1)			
	8	ch1 EV2 (event 2)			
	9	ch2 EV2 (event 2)			
	10	ch3 EV2 (event 2)			
	11	ch4 EV2 (event 2)			
	12	ch5 EV2 (event 2)			
	13	ch6 EV2 (event 2)			
	14	ch7 EV2 (event 2)			
	15	ch8 EV2 (event 2)			
17	bit 0	ch1 EV3 (event 3)	17	Set No. of parameters to write (see the appendix.)	
	1	ch2 EV3 (event 3)			
	2	ch3 EV3 (event 3)			
	3	ch4 EV3 (event 3)			
	4	ch5 EV3 (event 3)			
	5	ch6 EV3 (event 3)			
	6	ch7 EV3 (event 3)			
	7	ch8 EV3 (event 3)			
	8	ch1 scaleover			
	9	ch2 scaleover			
	10	ch3 scaleover			
	11	ch4 scaleover			
	12	ch5 scaleover			
	13	ch6 scaleover			
	14	ch7 scaleover			
	15	ch8 scaleover			

Input (2/3)

Output (2/3)

GAT10-DN → Master		
Address (Decimal)	Signal	
Word data		
18	bit 0	ch1 Parameter error
	1	ch2 Parameter error
	2	ch3 Parameter error
	3	ch4 Parameter error
	4	ch5 Parameter error
	5	ch6 Parameter error
	6	ch7 Parameter error
	7	ch8 Parameter error
	8	Unused
	9	
	10	
	11	
	12	
	13	
	14	
	15	
19	bit 0	ch1 SV update error
	1	ch2 SV update error
	2	ch3 SV update error
	3	ch4 SV update error
	4	ch5 SV update error
	5	ch6 SV update error
	6	ch7 SV update error
	7	ch8 SV update error
	8	Unused
	9	
	10	
	11	
	12	
	13	
	14	
	15	
20	bit 0	Parameter read complete
	1	Parameter write complete
	2	Initial data processing request
	3	Unused
	4	Error status
	5	Remote READY
	6	Unused
	7	
	8	
	9	
	10	
	11	
	12	
	13	
	14	
	15	

Master → GAT10-DN		
Address (Decimal)	Signal	
Word data		
18	bit 0	ch1 Parameter R/W
	1	ch2 Parameter R/W
	2	ch3 Parameter R/W
	3	ch4 Parameter R/W
	4	ch5 Parameter R/W
	5	ch6 Parameter R/W
	6	ch7 Parameter R/W
	7	ch8 Parameter R/W
	8	Unused
	9	
	10	
	11	
	12	
	13	
	14	
	15	
19	bit 0	ch1 SV update
	1	ch2 SV update
	2	ch3 SV update
	3	ch4 SV update
	4	ch5 SV update
	5	ch6 SV update
	6	ch7 SV update
	7	ch8 SV update
	8	Unused
	9	
	10	
	11	
	12	
	13	
	14	
	15	
20	bit 0	Parameter read request
	1	Parameter write request
	2	Initial data processing complete
	3	Unused
	4	Error reset request
	5	Unused
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	13	
	14	
	15	

Input (3/3)

Output (3/3)

GAT10-DN → Master		
Address (Decimal)	Signal	
Word data		
21	bit 0	ch1 Communication mode
	1	ch2 Communication mode
	2	ch3 Communication mode
	3	ch4 Communication mode
	4	ch5 Communication mode
	5	ch6 Communication mode
	6	ch7 Communication mode
	7	ch8 Communication mode
	8	Unused
	9	
	10	
	11	
	12	
	13	
	14	
	15	
22	bit 0	ch1 AT (Auto tuning)
	1	ch2 AT (Auto tuning)
	2	ch3 AT (Auto tuning)
	3	ch4 AT (Auto tuning)
	4	ch5 AT (Auto tuning)
	5	ch6 AT (Auto tuning)
	6	ch7 AT (Auto tuning)
	7	ch8 AT (Auto tuning)
	8	ch1 MAN (Manual operation)
	9	ch2 MAN (Manual operation)
	10	ch3 MAN (Manual operation)
	11	ch4 MAN (Manual operation)
	12	ch5 MAN (Manual operation)
	13	ch6 MAN (Manual operation)
	14	ch7 MAN (Manual operation)
	15	ch8 MAN (Manual operation)
23	bit 0	ch1 link error
	1	ch2 link error
	2	ch3 link error
	3	ch4 link error
	4	ch5 link error
	5	ch6 link error
	6	ch7 link error
	7	ch8 link error
	8	Unused
	9	
	10	
	11	
	12	
	13	
	14	
	15	

Master → GAT10-DN		
Address (Decimal)	Signal	
Word data		
21	bit 0	ch1 Communication mode set
	1	ch2 Communication mode set
	2	ch3 Communication mode set
	3	ch4 Communication mode set
	4	ch5 Communication mode set
	5	ch6 Communication mode set
	6	ch7 Communication mode set
	7	ch8 Communication mode set
	8	Unused
	9	
	10	
	11	
	12	
	13	
	14	
	15	
22	bit 0	Unused
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	13	
	14	
	15	
23	bit 0	Unused
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	
	13	
	14	
	15	

5. Reading/Writing Parameters of Shimaden

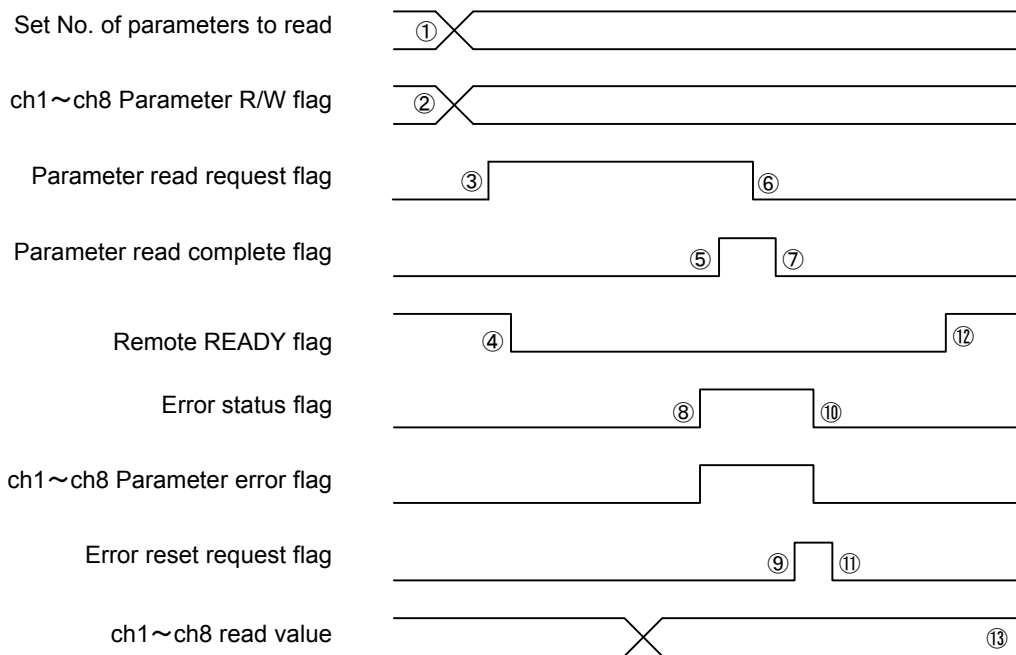
By setting output signal from the Master, parameters of Shimaden Instrument connected to the GAT10-DN can be read and written. The procedure is described in the following. Please also refer to "4. Input/Output Mapping."

Note: For parameter set No., see the "Appendix: Shimaden instrument parameter list (P14)."

Note: For details of parameters, refer to the Instruction Manual of each Shimaden instrument.

■ Parameter Read-out

- ① In the output signal "Set No. of parameters to read" is set by the Master.
- ② In the output signal "ch1~ch8 parameter R/W flag" is turned ON by the Master.
- ③ In the output signal "Parameter read request flag" is turned ON by the Master.
- ④ In the input signal "Remote READY flag" is turned OFF by the GAT10-DN.
- ⑤ Upon completion of reading the parameter of the Shimaden instrument, the GAT10-DN turns the input signal, "Parameter read complete flag" ON.
- ⑥ After confirming that the input signal "Parameter read complete flag" is ON, the Master turns the output signal "Parameter read request flag" OFF.
- ⑦ The GAT10-DN turns the input signal, "Parameter read complete flag" OFF.
- ⑧ In the event of an error, the GAT10-DN turns the input signal "Error status flag" ON. If no error occurs, it proceeds to the step ⑫.
- ⑨ In case the "Error status flag" has been turned ON, the Master turns the "Error reset request flag" ON.
- ⑩ The GAT10-DN turns the input signal "Error status flag" OFF.
- ⑪ The Master turns the "Error reset request flag" OFF.
- ⑫ The GAT10-DN turns the input signal "Remote READY flag" ON.
- ⑬ Shimaden instruments' parameter values are set at the input signal "ch1~ch8 read value."
(In case the "Error status flag" turns ON, "ch1~ch8 read value" remain previous data.)



※ Carry out other procedures only after confirming that the "remote READY flag" is ON.

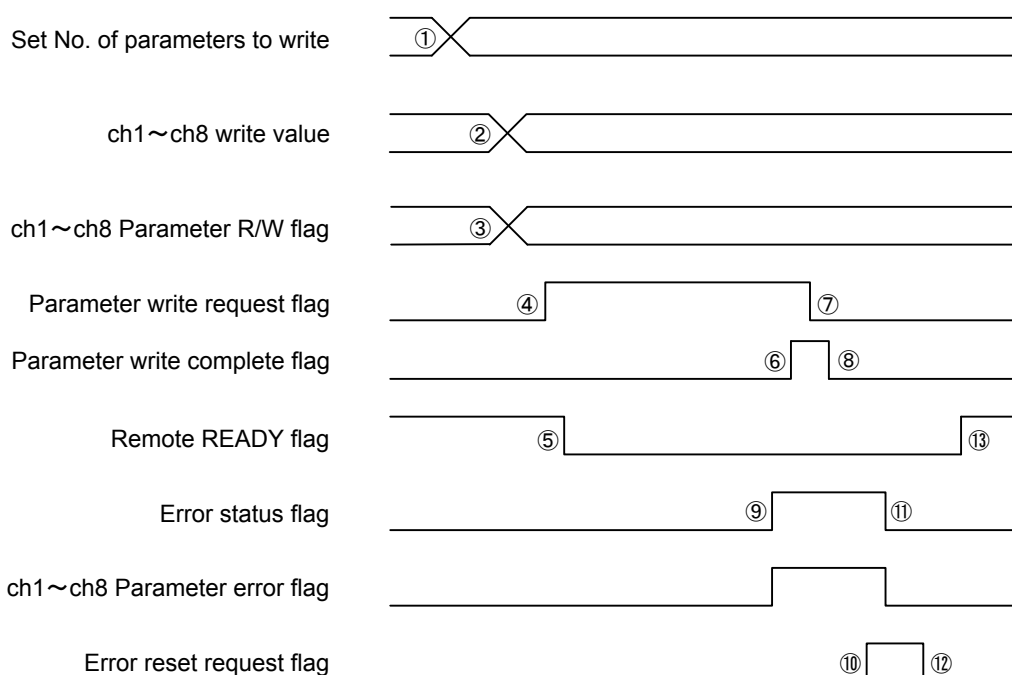
※ Parameters of two or more Shimaden instruments are read simultaneously by setting the "ch1~ch8 Parameter R/W flag" to ON.

In case all the "ch1~ch8 Parameter R/W flag" are OFF, no parameter reading is carried out.

Whether there is an error in parameter reading of each channel can be known by checking the "ch1~ch8 Parameter error flags" from the Master.

■ Parameter write-in Procedure

- ① In the output signal "Set No. of parameters to write" is set by the Master.
- ② In the output signal "ch1 ~ch8 write value," data to be written is set by the Master.
- ③ The output signal "ch1 ~ch8 parameter display/setting flag" is turned ON by the Master.
- ④ The output signal "Parameter write request flag" is turned ON by the Master.
- ⑤ The input signal "Remote READY flag" is turned OFF by the GAT10-DN.
- ⑥ Upon completion of writing the parameter to Shimaden instruments, the GAT10-DN turns the input signal "Parameter write complete flag," ON.
- ⑦ After confirming that the input signal, "Parameter write complete flag" is ON, the Master turns the output signal "Parameter write request flag," OFF.
- ⑧ The GAT10-DN turns the input signal "Parameter write complete flag" OFF.
- ⑨ In the event of an error, the GAT10-DN turns the input signal "Error status flag" ON. If no error occurs, it proceeds to the step ⑬.
- ⑩ In case the "Error status flag" has been turned ON, the Master turns the "error reset request flag" ON.
- ⑪ The GAT10-DN turns the input signal "Error status flag" OFF.
- ⑫ The Master turns the "Error reset request flag" OFF.
- ⑬ The GAT10-DN turns the input signal "Remote READY flag" ON.



Note: Carry out other procedures only after confirming that the "remote READY flag" is ON.

Note: Target set value (SV) is updated with "ch1 ~ch8 SV." Even when an SV value is written by means of "write-in procedure," it may soon be overwritten.

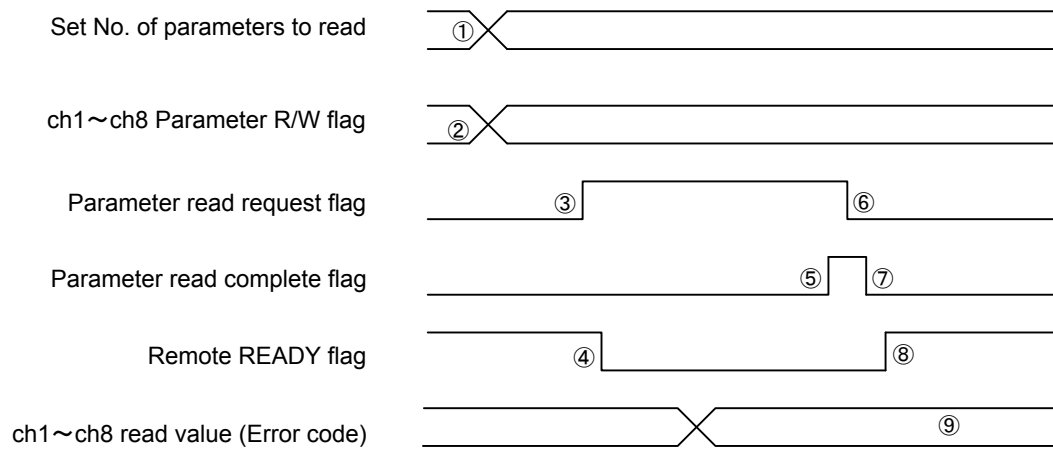
※ Parameters of two or more Shimaden instruments are written simultaneously by setting the "ch1 ~ch8 Parameter R/W flags" to ON.

In case all the "ch1 ~ch8 parameter R/W flags" are OFF, no parameter writing is carried out.

Whether there is an error in parameter writing in a channel can be known by checking the "ch1 ~ch8 Parameter error flags."

■ Error Code Read-out Procedure

- ① The Master sets "1000" in the output signal "Set No. of parameters to read."
- ② The output signal "ch1 ~ch8 Parameter R/W flag" is turned ON by the Master.
- ③ The output signal "Parameter read request flag" is turned ON by the Master.
- ④ The input signal "Remote READY flag" is turned OFF by the GAT10-DN.
- ⑤ The GAT10-DN turns the input signal "Parameter read complete flag" ON.
- ⑥ After confirming that the input signal "Parameter read complete flag" is ON, the Master turns the output signal "Parameter read request flag" OFF.
- ⑦ The GAT10-DN turns the input signal "Parameter read complete flag" OFF.
- ⑧ The GAT10-DN turns the input signal "Remote READY flag" ON.
- ⑨ Error code values are set at the input signal "ch1 ~ch8 read value."



6. Device Profile and Object Implementation (DeviceNet)

■ Device Profile

General Data	Conforms to DeviceNet Specification	Volume1 Release2.0 Volume2 Release2.0
	Vendor ID	498 (SHIMADEN CO., LTD.)
	Type of device	12 (Communication adaptor)
	Product code	1
Physical Conformance Data	Network Power Consumption	40mA max.
	Connector Style	Open Pluggable
	Isolated Physical Layer	Yes
	LEDs Support	Module/Network
	MAC ID setting	DIP switch
	Default MAC ID	0
	Setting of communication rate	DIP switch
	Supported communication rate	125kbps, 250kbps, 500kbps
Communication Data	Predefined master/slave connection set	Group 2 only server
	Dynamic connection support (UCMM)	No
	Explicit message fragmentation	Yes

■ Object Implementation

● Identity Object (Class ID: 01H)

Object Class	Attributes	None supported
	Services	None supported

Object Instance	Attributes	ID	Description	get	set	Value	
		1	Vendor	○	×	498	
		2	Device Type	○	×	12	
		3	Product Code	○	×	1	
		4	Revision	○	×	1.10	
		5	Status (bits supported)	○	×	bit0, bit10	
		6	Serial Number	○	×	Set for every unit	
		7	Product Name	○	×	GAT10-DN	
		8	State	×	×		
		9	Configuration Consistency Value	×	×		
	10	Heartbeat Interval	×	×			
	Services	DeviceNet services			Parameter options		
		05H	Reset	None supported			
0EH		Get_Attribute_Single	None supported				

● Message Router Object (Class ID: 02H)

Object Class	Attributes	None supported
	Services	None supported
Object Instance	Attributes	None supported
	Services	None supported
Vendor Specific Additions		No

● DeviceNet Object (ID: 03H)

Object Class	Attributes	ID	Description	get	set	Value	
		1	Revision	○	×	02H	
	Services	DeviceNet service			Parameter options		
		0EH	Get_Attribute_Single	None supported			

Object Instance	Attributes	ID	Description	get	set	Value	
		1	Mac ID	○	×		
		2	Baud Rate	○	×		
		3	BOI	○	×	00H	
		4	Bus-off Counter	○	×		
		5	Allocation Information	○	×		
		6	Mac ID switch changed	×	×		
		7	Baud Rate switch changed	×	×		
		8	Mac ID switch value	×	×		
		9	Baud Rate switch value	×	×		
	Services	DeviceNet service			Parameter option		
		0EH	Get_Attribute_Single	None supported			
		4BH	Allocate Master/Slave Connection Set	None supported			
		4CH	Release Master/Slave Connection Set	None supported			

● Assembly Object (Class ID: 04H)

Object Class	Attributes	None supported
	Services	None supported

Object Instance 1	Section		Information	Max. Instance			
	Type of instance		Static I/O	1			
	Attributes	ID	Description	get	set	Value	
		1	Number of Members in List	×	×		
		2	Member List	×	×		
		3	Data	○	×		
	Services	DeviceNet service			Parameter option		
		0EH	Get_Attribute_Single	None supported			

● Connection Object (Class ID: 05H)

Object Class	Attributes	None supported	
	Services	None supported	
	Total Active Connection Possible		1

Object Instance 1	Section		Information			Maximum number of instances	
	Type of instance		Explicit message			1	
	Production trigger		Cyclic				
	Type of transport		Server				
	Class of transport		3				
	Attributes	ID	Description	get	set	Value	
		1	State	○	×		
		2	Instance type	○	×	00H	
		3	Transport class trigger	○	×	83H	
		4	Produced connection ID	○	×		
		5	Consumed connection ID	○	×		
		6	Initial comm. characteristics	○	×	21H	
		7	Produced connection size	○	×	3000H	
		8	Consumed connection size	○	×	3000H	
		9	Expected packet rate	○	○		
		12	Watchdog timeout action	○	○		
		13	Produced connection path length	○	×	0000H	
		14	Produced connection path	○	×		
		15	Consumed connection path length	○	×	0000H	
		16	Consumed connection path	○	×		
		17	Production inhibit time	○	×		
Services		DeviceNet services			Parameter options		
	05H	Reset	None supported				
	0EH	Get_Attribute_Single	None supported				
	10H	Set_Attribute_Single	None supported				

Object Instance 2	Section		Information			Maximum number of instances	
	Type of instance		Polled I/O			1	
	Production trigger		Cyclic				
	Type of transport		Server				
	Class of transport		2				
	Attributes	ID	Description	get	set	Value	
		1	State	○	×		
		2	Instance type	○	×	00H	
		3	Transport class trigger	○	×	82H	
		4	Produced connection ID	○	×		
		5	Consumed connection ID	○	×		
		6	Initial comm. characteristics	○	×	01H	
		7	Produced connection size	○	×	3000H	
		8	Consumed connection size	○	×	3000H	
		9	Expected packet rate	○	○		
		12	Watchdog timeout action	○	○		
		13	Produced connection path length	○	×	0600H	
		14	Produced connection path	○	×	20_04_64_01_30_03	
		15	Consumed connection path length	○	×	0600H	
		16	Consumed connection path	○	×	20_04_64_01_30_03	
		17	Production inhibit time	○	×		
Services		DeviceNet services			Parameter options		
	05H	Reset	None supported				
	0EH	Get_Attribute_Single	None supported				
	10H	Set_Attribute_Single	None supported				

Appendix: Shimaden instrument parameter list

1. SR80 Series
2. SR90 Series
3. SR253
4. SD16
5. EM70
6. FP93

For details of each parameter, please refer to the instruction manual of the Shimaden instrument as well as the communication interface instruction manual.

1. SR80 Series

SR80 Series parameter list (1/3)

Set No.	Parameter	Address(R)	Address(W)	Description
0	MODEL	"1" (Read only)		
1	PV_W	100	-	Measured value (Read only)
2	OUT1W	102	-	Control output 1 value (Read only)
3	HB_W	109	-	HB electric current value (Read only)
4	SV1	300	300	Target set value 1
5	AT	104	184	Execution of auto tuning
6	PB1	400	400	SV1 control output 1 proportional band
7	IT1	401	401	SV1 control output 1 integral time
8	DT1	402	402	SV1 control output 1 derivative time
9	PV_B	701	701	PV bias
10	EV1_SP	501	501	Event 1 set value
11	EV2_SP	509	509	Event 2 set value
12	COM	104	18C	Communication mode
13	STBY	104	186	Standby
14	MAN	104	185	Manual
15	SV No	106	180	Setting of No. of execution SV
16	REM	104	187	Remote
17	SV2	301	301	Set value 2
18	SB	311	311	Set value bias
19	REM_W	108	-	Remote input value (Read only)
20	OUT1_W	-	182	Control output 1 set value in MAN mode (Write only)
21	OUT2_W	-	183	Control output 2 set value in MAN mode (Write only)
22	OUT2W	103	-	Control output 2 output value (Read only)
23	DF1	404	404	SV1 hysteresis
24	SF1	407	407	SV1 control output 1 target value function
25	MR1	403	403	SV1 manual reset
26	PB21	460	460	SV1 control output 2 proportional band
27	IT21	461	461	SV1 control output 2 integral time
28	DT21	462	462	SV1 control output 2 derivative time
29	DF21	464	464	SV1 hysteresis
30	DB21	463	463	SV1 dead band
31	SF21	467	467	SV1 control output 1 target value function
32	PB2	408	408	SV2/SB, remote control output 1 proportional band
33	IT2	409	409	SV2/SB, remote control output 1 integral time
34	DT2	40A	40A	SV2/SB, remote control output 1 derivative time
35	DF2	40C	40C	SV2/SB, remote control output 1 hysteresis
36	SF2	40F	40F	SV2/SB, remote control output 1 target value function
37	MR2	40B	40B	SV2/SB, remote control output 1 manual reset
38	PB22	468	468	SV2/SB, remote control output 2 proportional band
39	IT22	469	469	SV2/SB, remote control output 2 integral time
40	DT22	46A	46A	SV2/SB, remote control output 2 derivative time
41	DF22	46C	46C	SV2/SB, remote control output 2 hysteresis
42	DB22	46B	46B	SV2/SB, remote control output 2 dead band
43	SF22	46F	46F	SV2/SB, remote control output 2 target value function
44	EV1_MD	500	500	Event 1 mode
45	EV1_DF	502	502	Event 1 hysteresis
46	EV1_STB	503	503	Event 1 standby action
47	EV1_TM	504	504	Event 1 delay time

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR80 Series parameter list (2/3)

Set No.	Parameter	Address(R)	Address(W)	Description
48	EV2_MD	508	508	Event 2 mode
49	EV2_DF	50A	50A	Event 2 hysteresis
50	EV2_STB	50B	50B	Event 2 standby action
51	EV2_TM	50C	50C	Event 2 delay time
52	EV3_MD	510	510	Event 3 mode
53	EV3_SP	511	511	Event 3 set value
54	EV3_DF	512	512	Event 3 hysteresis
55	EV3_STB	513	513	Event 3 standby action
56	EV3_TM	514	514	Event 3 delay time
57	DI1	580	580	DI1 assignment
58	DI2	581	581	DI2 assignment
59	HBM	592	592	Heater break alarm mode
60	HBS	590	590	Heater break alarm
61	HBL	591	591	Heater loop alarm
62	RAMP_UP	30C	30C	Ascending ramp
63	RAMP_DW	30D	30D	Descending ramp
64	RAMP_UNT	30E	30E	Ramp unit
65	RAMP_RTE	30F	30F	Ramp multiple
66	REM_B	316	316	Remote bias
67	REM_F	317	317	Remote filter
68	REM_P	31D	31D	Remote point
69	REM_D	31E	31E	Remote point hysteresis
70	REM_L	314	314	Remote scale lower limit value
71	REM_H	315	315	Remote scale higher limit value
72	SV_MD	312	312	SV/SB setting mode
73	SV_L	30A	30A	Set value lower limit value
74	SV_H	30B	30B	Set value higher limit value
75	ACTMD	600	600	Output characteristics
76	O1_CYC	601	601	Control output 1 proportional cycle
77	O2_CYC	604	604	Control output 2 proportional cycle
78	O11_L	405	405	SV1 control output 1 lower limit
79	O11_H	406	406	SV1 control output 1 higher limit
80	O21_L	465	465	SV1 control output 2 lower limit
81	O21_H	466	466	SV1 control output 2 higher limit
82	O12_L	40D	40D	SV2/SB, remote control output 1 lower limit
83	O12_H	40E	40E	SV2/SB, remote control output 1 higher limit
84	O22_L	46D	46D	SV2/SB, remote control output 2 lower limit
85	O22_H	46E	46E	SV2/SB, remote control output 2 higher limit
86	DI_FLG	10B	-	DI input status flag (Read only)
87	STOP	-	18B	STOP (Write only)
88	AO1_MD	5A0	5A0	Analog output mode
89	AO1_L	5A1	5A1	Analog output scale on lower limit side
90	AO1_H	5A2	5A2	Analog output scale on higher limit side
91	ERR OUT1	602	602	Control output 1 error output
92	ERR OUT2	605	605	Control output 2 error output
93	PV_F	702	702	PV filter
94	ATP	610	610	AT point
95	KLOCK	611	611	Keylock

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR80 Series parameter list (3/3)

Set No.	Parameter	Address(R)	Address(W)	Description
96	SC_L	114	-	Measuring range lower limit value (Read only)
97	SC_H	115	-	Measuring range higher limit value (Read only)
98	DP	113	-	Decimal point position (Read only)
99	EXE_FLG	104	-	Action flag (Read only)
100	EV_FLG	105	-	Event flag (Read only)
1000	ERROR	In case parameter read/write fails, error code can be read. (Read only)		

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

2. SR90 Series

SR90 Series parameter list (1/2)

Set No.	Parameter	Address(R)	Address(W)	Description
0	MODEL	"2" (Read only)		
1	PV_W	100	-	Measured value (Read only)
2	OUT1_W	102	-	Control output 1 value (Read only)
3	HB_W	109	-	HB electric current value (Read only)
4	SV1	300	300	Set value 1
5	AT	104	184	Execution of auto tuning
6	PB1	400	400	Control output 1 proportional band
7	IT1	401	401	Control output 1 integral time
8	DT1	402	402	Control output 1 derivative time
9	PV_B	701	701	PV bias
10	EV1_SP	501	501	Event 1 set value
11	EV2_SP	509	509	Event 2 set value
12	COM	104	18C	Communication mode
13	MAN	104	185	Manual
14	SV_L	30A	30A	Set value lower limit value
15	SV_H	30B	30B	Set value higher limit value
16	O11_L	405	405	Control output 1 lower limit
17	O11_H	406	406	Control output 1 higher limit
18	O21_L	465	465	Control output 2 lower limit
19	O21_H	466	466	Control output 2 higher limit
20	OUT1_W	-	182	Control output 1 set value in MAN mode (Write only)
21	OUT2_W	-	183	Control output 2 set value in MAN mode (Write only)
22	OUT2W	103	-	Control output 2 output value (Read only)
23	DF1	404	404	Control output 1 hysteresis
24	SF1	407	407	Control output 1 target value function
25	MR1	403	403	Manual reset
26	PB21	460	460	Control output 2 proportional band
27	IT21	461	461	Control output 2 integral time
28	DT21	462	462	Control output 2 derivative time
29	DF21	464	464	Control output 2 hysteresis
30	DB21	463	463	Dead band
31	SF21	467	467	Control output 2 target value function
32	HBS	590	590	Heater break alarm
33	HBL	591	591	Heater loop alarm
34	HB_MD	592	592	Heater break alarm mode
35	HB_STB	594	594	Heater break standby
36	AO1_MD	5A0	5A0	Analog output mode
37	AO1_L	5A1	5A1	Analog output scale on lower limit value
38	AO1_H	5A2	5A2	Analog output scale on higher limit value
39	ACTMD	600	600	Output characteristics
40	O1_CYC	601	601	Control output 1 proportional cycle
41	O2_CYC	604	604	Control output 2 proportional cycle
42	SOFTD1	60A	60A	Soft start 1 setting data
43	PV F	702	702	PV filter
44	EV1_MD	500	500	Event 1 mode
45	EV1_DF	502	502	Event 1 set value
46	EV1_STB	503	503	Event 1 standby action
47	Unused			

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR90 Series parameter list (2/2)

Set No.	Parameter	Address(R)	Address(W)	Description
48	EV2_MD	508	508	Event 2 mode
49	EV2_DF	50A	50A	Event 2 set value
50	EV2_STB	50B	50B	Event 2 standby action
51	KLOCK	611	611	Keylock
52	SC_L	708	-	Measuring range lower limit value (Read only)
53	SC_H	709	-	Measuring range higher limit value (Read only)
54	DP	707	-	Decimal point position (Read only)
55	EXE_FLG	104	-	Action flag (Read only)
56	EV_FLG	105	-	Event flag (Read only)
1000	ERROR	In case parameter Read/Write fails, error code can be read. (Read only)		

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

3. SR253

SR253 parameter list (1/7)

Set No.	Parameter	Address(R)	Address(W)	Description
0	MODEL	"3" (Read only)		
1	PV value	100	-	Measured value (Read only)
2	OUT1	102	-	Control output 1 value (Read only)
3	CT Current	109	-	HB electric current value (Read only)
4	SV No.1	300	300	Set value 1
5	AT	104	184	Execution of auto tuning
6	PID No.1 P1	400	400	PID1 control output 1 proportional band
7	PID No.1 I1	401	401	PID1 control output 1 integral time
8	PID No.1 D1	402	402	PID1 control output 1 derivative time
9	PV Bias	701	701	PV bias
10	Event1 Set Point	501	501	Event 1 set value
11	Event2 Set Point	509	509	Event 2 set value
12	Operation	104	18C	Communication mode
13	Control Exe	104	186	Standby
14	Control A/M	104	185	Manual
15	No. of execution SV	106	180	Setting of No. of execution SV
16	REM	104	187	Remote
17	SV No.2	301	301	Set value 2
18	SV No.3	302	302	Set value 3
19	REM value	108	-	Remote input value (Read only)
20	OUT1	-	182	Control output 1 set value in MAN mode (Write only)
21	OUT2	-	183	Control output 2 set value in MAN mode (Write only)
22	OUT2	103	-	Control output 2 output value (Read only)
23	PID No.1 DF1	404	404	PID1 control output 1 hysteresis
24	SF (Common)	407	407	Target value function
25	PID No.1 MR	403	403	PID1 manual reset
26	PID No.2 P1	408	408	PID2 control output 1 proportional band
27	PID No.2 I1	409	409	PID2 control output 1 integral time
28	PID No.2 D1	40A	40A	PID2 control output 1 derivative time
29	PID No.2 DF1	40C	40C	PID2 control output 1 hysteresis
30	PID No.2 MR	40B	40B	PID2 manual reset
31	PID No.3 P1	410	410	PID3 control output 1 proportional band
32	PID No.3 I1	411	411	PID3 control output 1 integral time
33	PID No.3 D1	412	412	PID3 control output 1 derivative time
34	PID No.3 DF1	414	414	PID3 control output 1 hysteresis
35	PID No.3 MR	413	413	PID3 manual reset
36	PID No.4 P1	418	418	PID4 control output 1 proportional band
37	PID No.4 I1	419	419	PID4 control output 1 integral time
38	PID No.4 D1	41A	41A	PID4 control output 1 derivative time
39	PID No.4 DF1	41C	41C	PID4 control output 1 hysteresis
40	PID No.4 MR	41B	41B	PID4 manual reset
41	PV D.P.	113	-	Decimal point position (Read only)
42	EXE_FLG	104	-	Action flag (Read only)
43	EV_FLG	105	-	Event flag (Read only)
44	EV1 Mode	500	500	Event 1 mode
45	EV1 Diffrentl	502	502	Event 1 hysteresis
46	EV1 Inhibit	503	503	Event 1 standby action
47	EV1 Delay	504	504	Event 1 delay time

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR253 parameter list (2/7)

Set No.	Parameter	Address(R)	Address(W)	Description
48	EV2 Mode	508	508	Event 2 mode
49	EV2 Diffrentl	50A	50A	Event 2 hysteresis
50	EV2 Inhibit	50B	50B	Event 2 standby action
51	EV2 Delay	50C	50C	Event 2 delay time
52	EV3 Mode	510	510	Event 3 mode
53	EV3 Set Point	511	511	Event 3 set value
54	EV3 Diffrentl	512	512	Event 3 hysteresis
55	EV3 Inhibit	513	513	Event 3 standby action
56	EV3 Delay	514	514	Event 3 delay time
57	No. of execution PID	107	-	0 (SV No.1)~10 (REM) (Read only)
58	CT Current	10A	-	HL current value (Read only)
59	DI_FLG	10B	-	DI input status (Read only)
60	Unit	110	-	Unit of measured value (Read only)
61	Range	111	-	Measuring range (Read only)
62	CJ/Pt Type	112	-	Type of temperature sensor (Read only)
63	PV Sc_L	114	-	Measuring range lower limit (Read only)
64	PV Sc_H	115	-	Measuring range higher limit (Read only)
65	Figur	116	-	(Read only)
66	USGN	117	-	(Read only)
67	No. of execution SV (Q)	-	181	0 (SV No.1)~10 (REM) quick change (Write only)
68	Ramping Run	-	18B	0: RUN 1: STOP (Write only)
69	COMDIR_FLG	-	18D	COMDIR flag (Write only)
70	PV value (higher order)	200	-	Within measuring range (Read only)
71	PV value (lower order)	201	-	
72	Execution SV value (higher order)	202	-	Within measured value limiter (Read only)
73	Execution SV value (lower order)	203	-	
74	REM value (higher order)	204	-	Within measured value limiter (Read only)
75	REM value (lower order)	205	-	
76	SV No.4	303	303	Set value 4
77	SV No.5	304	304	Set value 5
78	SV No.6	305	305	Set value 6
79	SV No.7	306	306	Set value 7
80	SV No.8	307	307	Set value 8
81	SV No.9	308	308	Set value 9
82	SV No.10	309	309	Set value 10
83	SV Limit_L	30A	30A	Within measuring range (On condition that SV Limit_L<SV Limit_H)
84	SV Limit_H	30B	30B	
85	RAMP Up	30C	30C	0-9999
86	RAMP Down	30D	30D	0-9999
87	RAMP Unit	30E	30E	0: Sec 1: Min
88	RAMP Rate	30F	30F	0: x1 1: x0.1
89	SV Select	310	310	0: Key 1: EXT
90	REM Sc_L	314	314	Within measuring range
91	REM Sc_H	315	315	
92	REM Bias	316	316	-9999~9999 Unit
93	REM Filt	317	317	0~300
94	REM Trak	318	318	0: NO 1: YES
95	REM PID	319	319	0 (PID No.1)~9 (PID No.10)

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR253 parameter list (3/7)

Set No.	Parameter	Address(R)	Address(W)	Description
96	REM Mode	31A	31A	0: RSV 1: CTRL
97	REM P.B	31B	31B	0.0~999.9%
98	REM Time	31C	31C	0~9999
99	1_O1 Lmt_L	405	405	-5.0~104.9%
100	1_O1 Lmt_H	406	406	-4.9~105.0%
101	2_O1 Lmt_L	40D	40D	-5.0~104.9%
102	2_O1 Lmt_H	40E	40E	-4.9~105.0%
103	3_O1 Lmt_L	415	415	-5.0~104.9%
104	3_O1 Lmt_H	416	416	-4.9~105.0%
105	4_O1 Lmt_L	41D	41D	-5.0~104.9%
106	4_O1 Lmt_H	41E	41E	-4.9~105.0%
107	PID No.5 P1	420	420	0.0~999.9% (0.0=OFF)
108	PID No.5 I1	421	421	0~6000 Sec (0=OFF)
109	PID No.5 D1	422	422	0~3600 Sec (0=OFF)
110	PID No.5 MR	423	423	-50.0~50.0%
111	PID No.5 DF1	424	424	1~9999 Unit
112	5_O1 Lmt_L	425	425	-5.0~104.9%
113	5_O1 Lmt_H	426	426	-4.9~105.0%
114	PID No.6 P1	428	428	0.0~999.9% (0.0=OFF)
115	PID No.6 I1	429	429	0~6000 Sec (0=OFF)
116	PID No.6 D1	42A	42A	0~3600 Sec (0=OFF)
117	PID No.6 MR	42B	42B	-50.0~50.0%
118	PID No.6 DF1	42C	42C	1~9999 Unit
119	6_O1 Lmt_L	42D	42D	-5.0~104.9%
120	6_O1 Lmt_H	42E	42E	-4.9~105.0%
121	PID No.7 P1	430	430	0.0~999.9% (0.0=OFF)
122	PID No.7 I1	431	431	0~6000 Sec (0=OFF)
123	PID No.7 D1	432	432	0~3600 Sec (0=OFF)
124	PID No.7 MR	433	433	-50.0~50.0%
125	PID No.7 DF1	434	434	1~9999 Unit
126	7_O1 Lmt_L	435	435	-5.0~104.9%
127	7_O1 Lmt_H	436	436	-4.9~105.0%
128	PID No.8 P1	438	438	0.0~999.9% (0.0=OFF)
129	PID No.8 I1	439	439	0~6000 Sec (0=OFF)
130	PID No.8 D1	43A	43A	0~3600 Sec (0=OFF)
131	PID No.8 MR	43B	43B	-50.0~50.0%
132	PID No.8 DF1	43C	43C	1~9999 Unit
133	8_O1 Lmt_L	43D	43D	-5.0~104.9%
134	8_O1 Lmt_H	43E	43E	-4.9~105.0%
135	PID No.9 P1	440	440	0.0~999.9% (0.0=OFF)
136	PID No.9 I1	441	441	0~6000 Sec (0=OFF)
137	PID No.9 D1	442	442	0~3600 Sec (0=OFF)
138	PID No.9 MR	443	443	-50.0~50.0%
139	PID No.9 DF1	444	444	1~9999 Unit
140	9_O1 Lmt_L	445	445	-5.0~104.9%
141	9_O1 Lmt_H	446	446	-4.9~105.0%
142	PID No.10 P1	448	448	0.0~999.9% (0.0=OFF)
143	PID No.10 I1	449	449	0~6000 Sec (0=OFF)

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR253 parameter list (4/7)

Set No.	Parameter	Address(R)	Address(W)	Description
144	PID No.10 D1	44A	44A	0~3600 Sec (0=OFF)
145	PID No.10 MR	44B	44B	-50.0~50.0%
146	PID No.10 DF1	44C	44C	1~9999 Unit
147	10_O1 Lmt_L	44D	44D	-5.0~104.9%
148	10_O1 Lmt_H	44E	44E	-4.9~105.0%
149	PID No.1 P2	460	460	0.0~999.9% (0.0=OFF)
150	PID No.1 I2	461	461	0~6000 Sec (0=OFF)
151	PID No.1 D2	462	462	0~3600 Sec (0=OFF)
152	PID No.1 DB	463	463	-20000~20000 Unit
153	PID No.1 DF2	464	464	1~9999 Unit
154	1_O2 Lmt_L	465	465	-5.0~104.9%
155	1_O2 Lmt_H	466	466	-4.9~105.0%
156	PID No.2 P2	468	468	0.0~999.9% (0.0=OFF)
157	PID No.2 I2	469	469	0~6000 Sec (0=OFF)
158	PID No.2 D2	46A	46A	0~3600 Sec (0=OFF)
159	PID No.2 DB	46B	46B	-20000~20000 Unit
160	PID No.2 DF2	46C	46C	1~9999 Unit
161	2_O2 Lmt_L	46D	46D	-5.0~104.9%
162	2_O2 Lmt_H	46E	46E	-4.9~105.0%
163	PID No.3 P2	470	470	0.0~999.9% (0.0=OFF)
164	PID No.3 I2	471	471	0~6000 Sec (0=OFF)
165	PID No.3 D2	472	472	0~3600 Sec (0=OFF)
166	PID No.3 DB	473	473	-20000~20000 Unit
167	PID No.3 DF2	474	474	1~9999 Unit
168	3_O2 Lmt_L	475	475	-5.0~104.9%
169	3_O2 Lmt_H	476	476	-4.9~105.0%
170	PID No.4 P2	478	478	0.0~999.9% (0.0=OFF)
171	PID No.4 I2	479	479	0~6000 Sec (0=OFF)
172	PID No.4 D2	47A	47A	0~3600 Sec (0=OFF)
173	PID No.4 DB	47B	47B	-20000~20000 Unit
174	PID No.4 DF2	47C	47C	1~9999 Unit
175	4_O2 Lmt_L	47D	47D	-5.0~104.9%
176	4_O2 Lmt_H	47E	47E	-4.9~105.0%
177	PID No.5 P2	480	480	0.0~999.9% (0.0=OFF)
178	PID No.5 I2	481	481	0~6000 Sec (0=OFF)
179	PID No.5 D2	482	482	0~3600 Sec (0=OFF)
180	PID No.5 DB	483	483	-20000~20000 Unit
181	PID No.5 DF2	484	484	1~9999 Unit
182	5_O2 Lmt_L	485	485	-5.0~104.9%
183	5_O2 Lmt_H	486	486	-4.9~105.0%
184	PID No.6 P2	488	488	0.0~999.9% (0.0=OFF)
185	PID No.6 I2	489	489	0~6000 Sec (0=OFF)
186	PID No.6 D2	48A	48A	0~3600 Sec (0=OFF)
187	PID No.6 DB	48B	48B	-20000~20000 Unit
188	PID No.6 DF2	48C	48C	1~9999 Unit
189	6_O2 Lmt_L	48D	48D	-5.0~104.9%
190	6_O2 Lmt_H	48E	48E	-4.9~105.0%
191	PID No.7 P2	490	490	0.0~999.9% (0.0=OFF)

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR253 parameter list (5/7)

Set No.	Parameter	Address(R)	Address(W)	Description
192	PID No.7 I2	491	491	0~6000 Sec (0=OFF)
193	PID No.7 D2	492	492	0~3600 Sec (0=OFF)
194	PID No.7 DB	493	493	-20000~20000 Unit
195	PID No.7 DF2	494	494	1~9999 Unit
196	7_O2 Lmt_L	495	495	-5.0~104.9%
197	7_O2 Lmt_H	496	496	-4.9~105.0%
198	PID No.8 P2	498	498	0.0~999.9% (0.0=OFF)
199	PID No.8 I2	499	499	0~6000 Sec (0=OFF)
200	PID No.8 D2	49A	49A	0~3600 Sec (0=OFF)
201	PID No.8 DB	49B	49B	-20000~20000 Unit
202	PID No.8 DF2	49C	49C	1~9999 Unit
203	8_O2 Lmt_L	49D	49D	-5.0~104.9%
204	8_O2 Lmt_H	49E	49E	-4.9~105.0%
205	PID No.9 P2	4A0	4A0	0.0~999.9% (0.0=OFF)
206	PID No.9 I2	4A1	4A1	0~6000 Sec (0=OFF)
207	PID No.9 D2	4A2	4A2	0~3600 Sec (0=OFF)
208	PID No.9 DB	4A3	4A3	-20000~20000 Unit
209	PID No.9 DF2	4A4	4A4	1~9999 Unit
210	9_O2 Lmt_L	4A5	4A5	-5.0~104.9%
211	9_O2 Lmt_H	4A6	4A6	-4.9~105.0%
212	PID No.10 P2	4A8	4A8	0.0~999.9% (0.0=OFF)
213	PID No.10 I2	4A9	4A9	0~6000 Sec (0=OFF)
214	PID No.10 D2	4AA	4AA	0~3600 Sec (0=OFF)
215	PID No.10 DB	4AB	4AB	-20000~20000 Unit
216	PID No.10 DF2	4AC	4AC	1~9999 Unit
217	10_O2 Lmt_L	4AD	4AD	-5.0~104.9%
218	10_O2 Lmt_H	4AE	4AE	-4.9~105.0%
219	Zone1	4C0	4C0	Within measuring range
220	Zone2	4C1	4C1	
221	Zone3	4C2	4C2	
222	Zone4	4C3	4C3	
223	Zone5	4C4	4C4	
224	Zone6	4C5	4C5	
225	Zone7	4C6	4C6	
226	Zone8	4C7	4C7	Within measuring range
227	Zone9	4C8	4C8	
228	Zone10	4C9	4C9	
229	Zone HYS	4CA	4CA	0~10000 Unit
230	Zone PID	4CB	4CB	0: Single 1: Zone
231	Event1 Charac	505	505	0: Open 1: Close
232	Event2 Charac	50D	50D	
233	Event3 Charac	515	515	
234	DO1 Mode	518	518	DO1 mode
235	DO1 Set Point	519	519	DO1 set value
236	DO1 Diffrentl	51A	51A	1~9999 Unit
237	DO1 Inhibit	51B	51B	0: OFF 1: ON
238	DO1 Delay	51C	51C	0~9999 Sec
239	DO1 Charac	51D	51D	0: Open 1: Close

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR253 parameter list (6/7)

Set No.	Parameter	Address(R)	Address(W)	Description
240	DO2 Mode	520	520	DO2 action mode
241	DO2 Set Point	521	521	DO2 set value
242	DO2 Diffrentl	522	522	1~9999 Unit
243	DO2 Inhibit	523	523	0: OFF 1: ON
244	DO2 Delay	524	524	0~9999 Sec
245	DO2 Charac	525	525	0: Open 1: Close
246	DO3 Mode	528	528	DO3 mode
247	DO3 Set Point	529	529	DO3 set value
248	DO3 Diffrentl	52A	52A	1~9999 Unit
249	DO3 Inhibit	52B	52B	0: OFF 1: ON
250	DO3 Delay	52C	52C	0~9999 Sec
251	DO3 Charac	52D	52D	0: Open 1: Close
252	DO4 Mode	530	530	DO4 mode
253	DO4 Set Point	531	531	DO4 set value
254	DO4 Diffrentl	532	532	1~9999 Unit
255	DO4 Inhibit	533	533	0: OFF 1: ON
256	DO4 Delay	534	534	0~9999 Sec
257	DO4 Charac	535	535	0: Open 1: Close
258	DO5 Mode	538	538	DO5 mode
259	DO5 Set Point	539	539	DO5 set value
260	DO5 Diffrentl	53A	53A	1~9999 Unit
261	DO5 Inhibit	53B	53B	0: OFF 1: ON
262	DO5 Delay	53C	53C	0~9999 Sec
263	DO5 Charac	53D	53D	0: Open 1: Close
264	DI1	580	580	0: Nop 1: Manual 2: Remote 3: Auto Tune 4: Standby 5: Dir Act 6: Stop 7: Direct
265	DI2	581	581	
266	DI3	582	582	
267	DI4	583	583	
268	HBA Curr	590	590	0.0~30.0A or 0.0~50.0A (0.0=OFF)
269	HLA Curr	591	591	0.0~30.0A or 0.0~50.0A (0.0=OFF)
270	HA Mode	592	592	0: LOCK 1: REAL
271	AO1 Mode	5A0	5A0	0: PV 1: SV 2: DEV 3: OUT1 4: OUT2
272	AO1 Sc_L	5A1	5A1	PV, SV → Within measuring range DEV → -100.0~100.0% OUT1, OUT2 → 0.0~100.0% On condition that AO1 Sc_L≠AO1 Sc_H
273	AO1 Sc_H	5A2	5A2	
274	AO2 Mode	5A4	5A4	0: PV 1: SV 2: DEV 3: OUT1 4: OUT2
275	AO2 Sc_L	5A5	5A5	PV, SV → Within measuring range DEV → -100.0~100.0% OUT1, OUT2 → 0.0~100.0% On condition that AO2 Sc_L≠AO2 Sc_H
276	AO2 Sc_H	5A6	5A6	
277	MEM	5B0	5B0	0: EEP 1: RAM
278	Out Actn	600	600	0: Rev Act. 1: Dir Act.
279	Out1 Cyc	601	601	1~200 Sec
280	Err Out1	602	602	-0.5~105.0%
281	Out2 Cyc	604	604	1~200 Sec
282	Err Out2	605	605	-0.5~105.0%

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

SR253 parameter list (7/7)

Set No.	Parameter	Address(R)	Address(W)	Description
283	AT Point	610	610	0~10000 Unit
284	Key Lock	611	611	0: OFF 1: LOCK1 2: LOCK2 3: LOCK3
285	Disp Ret	612	612	0, 10~120 Sec (0=OFF)
286	Mode	613	613	1 for output→ 0: MODE0 2: MODE2 2 for output→ 0: MODE0 1: MODE1 2: MODE2 3: MODE3
287	PV Filt	702	702	0~300 (0=OFF)
1000	ERROR	In case parameter reading/writing fails, error code can be read. (Read only)		

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

4. SD16

SD16 parameter list (1/1)

Set No.	Parameter	Address(R)	Address(W)	Description
0	MODEL	"4" (Read only)		
1	PV value	100	-	Measured value (Read only)
2	Unused			
3				
4				
5				
6				
7				
8				
9	PV Bias	701	701	PV bias
10	AL1 Set Point	501	501	Alarm 1 set value
11	AL2 Set Point	509	509	Alarm 2 set value
12	Operation	104	18C	Communication mode
13	Ao1 Sc_L	5A1	5A1	Analog output lower limit value
14	Ao1 Sc_H	5A2	5A2	Analog output higher limit value
15	Key Lock	611	611	Keylock
16	PV Filt	702	702	PV filter
17	UNIT	704	704	Temperature unit
18	RANGE	705	705	Measuring range
19	in_L	708	708	Linear input lower limit value
20	in_H	709	709	Linear input higher limit value
21	AL1 Mode	500	500	Alarm 1 action mode
22	AL1 Diffrentl	502	502	Alarm 1 hysteresis
23	AL2 Mode	508	508	Alarm 2 action mode
24	AL2 Diffrentl	50A	50A	Alarm 2 hysteresis
25	DP	707	707	Decimal point position
26	EXE_FLG	104	-	Action flag (Read only)
27	EV_FLG	105	-	Event flag (Read only)
1000	ERROR	In case parameter Read/writing fails, error code can be read. (Read only)		

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

5. EM70

EM70 parameter list (1/2)

Set No.	Parameter	Address(R)	Address(W)	Description
0	MODEL	"5" (Read only)		
1	POSI	142	-	Position value (Read only)
2	DI_FLG	10B	-	External input status flag (Read only)
3	INP_RANGE	111	-	Input range (Read only)
4	INP_MOD	118	-	Input type (Read only)
5	INP	140	-	Input value (Read only)
6	DES	141	-	Target position value (Read only)
7	LOOP_ERR	144	-	Control loop error (Read only)
8	Unused			
9				
10	EV1_SP	501		Event 1 set value
11	EV2_SP	509	509	Event 2 set value
12	COM	104	18C	Communication mode
13	STBY	104	186	Standby
14	AO_MOD	5A0	5A0	Analog output mode
15	AO_L	5A1	5A1	Analog output scale lower limit value
16	AO_H	5A2	5A2	Analog output scale higher limit value
17	COM_MEM	5B0	5B0	Communication memory mode
18	KEY_LOCK	611	611	Keylock
19	INP_FILT	642	642	Input filter
20	SQUARE	643	643	Square root extraction
21	SCL_MOD	647	647	Scaling mode
22	SCL_L	648	648	Scaling lower limit value
23	SCL_H	649	649	Scaling higher limit value
24	POSI_L	64C	64C	Position limiter lower limit value
25	POSI_H	64D	64D	Position limiter higher limit value
26	ACT_MOD	650	650	Control characteristics
27	DB	652	652	Dead band
28	ZS_MOD	655	655	Zero span mode
29	SPEED	656	656	Motor speed adjustment
30	IN_ERR_MOD	657	657	Input scaleover processing mode
31	IN_ERR_PRE	658	658	Position value when input scaleover occurs
32	P_ERR_MOD	659	659	Potentiometer scaleover processing mode
33	OPN_CLS_TM	65A	65A	Opening/closing time when potentiometer scaleover occurs
34	DI_MOD	660	660	External input mode
35	DI1_SIGNL	662	662	External input 1 individual setting
36	DI2_SIGNL	663	663	External input 2 individual setting
37	DI3_SIGNL	664	664	External input 3 individual setting
38	DI1_S_PRE	666	666	External input 1 individual setting position value
39	DI2_S_PRE	667	667	External input 2 individual setting position value
40	DI3_S_PRE	668	668	External input 3 individual setting position value
41	DI_PRE1	66A	66A	External input position value 1
42	DI_PRE2	66B	66B	External input position value 2
43	DI_PRE3	66C	66C	External input position value 3
44	EV1_M	500	500	Event 1 mode
45	EV1_DF	502	502	Event 1 hysteresis
46	EV1_STB	503	503	Event 1 standby action
47	EV2_M	508	508	Event 2 mode

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

EM70 parameter list (2/2)

Set No.	Parameter	Address(R)	Address(W)	Description
48	EV2_DF	50A	50A	Event 2 hysteresis
49	EV2_STB	50B	50B	Event 2 standby action
50	EV3_M	510	510	Event 3 mode
51	EV3_SP	511	511	Event 3 set value
52	EV3_DF	512	512	Event 3 hysteresis
53	EV3_STB	513	513	Event 3 standby action
54	EXE_FLG	104	-	Action flag (Read only)
55	EV_FLG	105	-	Event flag (Read only)
56	DI_PRE4	66D	66D	External input position value 4
57	DI_PRE5	66E	66E	External input position value 5
58	DI_PRE6	66F	66F	External input position value 6
59	DI_PRE7	670	670	External input position value 7
1000	ERROR	In case parameter Read/writing fails, error code can be read. (Read only)		

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

Set No.	Parameter	Address(R)	Address(W)	Description
0	MODEL	"6" (Read only)		
1	PV_W	100	-	Measured value (Read only)
2	OUT1_W	102	-	Control output 1 value (Read only)
3	Unused			
4	SV1	300	300	FIX SV value
5	AT	104	184	Execution of auto tuning
6	PB1	400	400	Control output 1 proportional band 1
7	IT1	401	401	Control output 1 integral time 1
8	DT1	402	402	Control output 1 derivative time 1
9	PV_B	701	701	PV bias
10	EV1_SP	501	501	Event 1 set value
11	EV2_SP	509	509	Event 2 set value
12	COM	104	18C	Communication mode
13	EV_FLG	105	-	Event, DO output flag (Read only)
14	EXE_PID	107	-	Execution PID No. (Read only)
15	DI_FLG	10B	-	DI input status flag (Read only)
16	UNIT	110	-	Input unit (Read only)
17	RANGE	111	-	Measuring range (Read only)
18	DP	113	-	Decimal point position (Read only)
19	SC_L	114	-	Measuring range lower limit value (Read only)
20	SC_H	115	-	Measuring range higher limit value (Read only)
21	E_PRG	120	-	Program run flag (Read only)
22	E_PTN	121	-	Execution pattern No. (Read only)
23	E_RPT	123	-	The number of pattern executions (Read only)
24	E_STP	124	-	Execution step No. (Read only)
25	E_TIM	125	-	Remaining time of execution step (Read only)
26	E_PID	126	-	Execution PID No. (Read only)
27	MAN	104	185	Manual
28	RST	-	190	Reset (Write only)
29	HLD	-	191	Hold (Write only)
30	ADV	-	192	Advance (Write only)
31	SV_L	30A	30A	Set value lower limit value
32	SV_H	30B	30B	Set value higher limit value
33	MR1	403	403	Manual reset 1
34	DF1	404	404	Control output 1 hysteresis 1
35	O11_L	405	405	Control output 1 lower limit 1
36	O11_H	406	406	Control output 1 higher limit 1
37	SF1	407	407	Control output 1 target value function 1
38	EXE_FLG	104	-	Action flag (Read only)
39	PB2	408	408	Control output 1 proportional band 2
40	IT2	409	409	Control output 1 integral time 2
41	DT2	40A	40A	Control output 1 derivative time 2
42	MR2	40B	40B	Manual reset 2
43	DF2	40C	40C	Control output 1 hysteresis 2
44	O12_L	40D	40D	Control output 1 lower limit 2
45	O12_H	40E	40E	Control output 1 higher limit 2
46	SF2	40F	40F	Control output 1 target value function 2
47	PB3	410	410	Control output 1 proportional band 3

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

FP93 parameter list (2/7)

Set No.	Parameter	Address(R)	Address(W)	Description
48	IT3	411	411	Control output 1 integral time 3
49	DT3	412	412	Control output 1 derivative time 3
50	MR3	413	413	Manual reset 3
51	DF3	414	414	Control output 1 hysteresis 3
52	O13_L	415	415	Control output 1 lower limit 3
53	O13_H	416	416	Control output 1 higher limit 3
54	SF3	417	417	Control output 1 target value function 3
55	PB4	418	418	Control output 1 proportional band 4
56	IT4	419	419	Control output 1 integral time 4
57	DT4	41A	41A	Control output 1 derivative time 4
58	MR4	41B	41B	Manual reset 4
59	DF4	41C	41C	Control output 1 hysteresis 4
60	O14_L	41D	41D	Control output 1 lower limit 4
61	O14_H	41E	41E	Control output 1 higher limit 4
62	SF4	41F	41F	Control output 1 target value function 4
63	PB5	420	420	Control output 1 proportional band 5
64	IT5	421	421	Control output 1 integral time 5
65	DT5	422	422	Control output 1 derivative time 5
66	MR5	423	423	Manual reset 5
67	DF5	424	424	Control output 1 hysteresis 5
68	O15_L	425	425	Control output 1 lower limit 5
69	O15_H	426	426	Control output 1 higher limit 5
70	SF5	427	427	Control output 1 target value function 5
71	PB6	428	428	Control output 1 proportional band 6
72	IT6	429	429	Control output 1 integral time 6
73	DT6	42A	42A	Control output 1 derivative time 6
74	MR6	42B	42B	Manual reset 6
75	DF6	42C	42C	Control output 1 hysteresis 6
76	O16_L	42D	42D	Control output 1 lower limit 6
77	O16_H	42E	42E	Control output 1 higher limit 6
78	SF6	42F	42F	Control output 1 target value function 6
79	ZSP1	4C0	4C0	Zone 1 SP
80	ZSP2	4C1	4C1	Zone 2 SP
81	ZSP3	4C2	4C2	Zone 3 SP
82	ZHYS	4CA	4CA	Zone hysteresis
83	ZPID	4CB	4CB	Zone PID
84	EV1_MD	500	500	Event 1 mode
85	EV1_SP	501	501	Event 1 set value
86	EV1_DF	502	502	Event 1 hysteresis
87	EV1_STB	503	503	Event 1 standby action
88	EV2_MD	508	508	Event 2 mode
89	EV2_SP	509	509	Event 2 set value
90	EV2_DF	50A	50A	Event 2 hysteresis
91	EV2_STB	50B	50B	Event 2 standby action
92	EV3_MD	510	510	Event 3 mode
93	EV3_SP	511	511	Event 3 set value
94	EV3_DF	512	512	Event 3 hysteresis
95	EV3_STB	513	513	Event 3 standby action

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

FP93 parameter list (3/7)

Set No.	Parameter	Address(R)	Address(W)	Description
96	DO1_MD	518	518	DO1 mode
97	DO2_MD	520	520	DO2 mode
98	DO3_MD	528	528	DO3 mode
99	DO4_MD	530	530	DO4 mode
100	DI1	581	581	DI1 mode
101	DI2	582	582	DI2 mode
102	DI3	583	583	DI2 mode
103	AO1_MD	5A0	5A0	Analog output mode
104	AO1_L	5A1	5A1	Analog output scale on lower limit value
105	AO1_H	5A2	5A2	Analog output scale on higher limit value
106	COM_MEM	5B0	5B0	Communication memory mode
107	ACTMD	600	600	Output characteristics
108	O1_CYC	601	601	Control output 1 proportional cycle
109	KLOCK	611	611	Keylock
110	PV_B	701	701	PV bias
111	PV_F	702	702	PV filter
112	PRG_MD	800	800	Program mode
113	ST_PTN	802	802	Starting pattern No.
114	PTN_MOD	818	818	The number of patterns
115	TIM_MOD	819	819	Time mode
116	SHT_MOD	81A	81A	Instant stop mode
117	SCO_MOD	81B	81B	Input abnormal mode
118	FIX PID No	820	820	FIX PID No.
119	P01 STP	882	882	Pattern No.1 The number of steps
120	P01 RPT	883	883	Pattern No.1 The number of pattern executions
121	P01 ST_SV	884	884	Pattern No.1 Starting SV value
122	P01 GUA_Z	885	885	Pattern No.1 Guarantee soak zone
123	P01 PV_ST	887	887	Pattern No.1 PV start
124	P01 EV1	889	889	Pattern No.1 EV1 level value
125	P01 EV2	88A	88A	Pattern No.1 EV2 level value
126	P01 EV3	88B	88B	Pattern No.1 EV3 level value
127	P01 TS1STP	88E	88E	Pattern No.1 Time signal 1 ON/OFF STP
128	P01 TS1_ON	88F	88F	Pattern No.1 Time signal 1 ON TIME
129	P01 TS1_OFF	890	890	Pattern No.1 Time signal 1 OFF TIME
130	P01 TS2STP	891	891	Pattern No.1 Time signal 2 ON/OFF STP
131	P01 TS2_ON	892	892	Pattern No.1 Time signal 2 ON TIME
132	P01 TS2_OFF	893	893	Pattern No.1 Time signal 2 OFF TIME
133	P01 S01_SV	8A0	8A0	Pattern No.1 Step No.1 SV value
134	P01 S01_TM	8A1	8A1	Pattern No.1 Step No.1 Step time
135	P01 S01_PE	8A2	8A2	Pattern No.1 Step No.1 PID No.
136	P01 S02_SV	8A4	8A4	Pattern No.1 Step No.2 SV value
137	P01 S02_TM	8A5	8A5	Pattern No.1 Step No.2 Step time
138	P01 S02_PE	8A6	8A6	Pattern No.1 Step No.2 PID No.
139	P01 S03_SV	8A8	8A8	Pattern No.1 Step No.3 SV value
140	P01 S03_TM	8A9	8A9	Pattern No.1 Step No.3 Step time
141	P01 S03_PE	8AA	8AA	Pattern No.1 Step No.3 PID No.
142	P01 S04_SV	8AC	8AC	Pattern No.1 Step No.4 SV value
143	P01 S04_TM	8AD	8AD	Pattern No.1 Step No.4 Step time

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

FP93 parameter list (4/7)

Set No.	Parameter	Address(R)	Address(W)	Description
144	P01 S04_PE	8AE	8AE	Pattern No.1 Step No.4 PID No.
145	P01 S05_SV	8B0	8B0	Pattern No.1 Step No.5 SV value
146	P01 S05_TM	8B1	8B1	Pattern No.1 Step No.5 Step time
147	P01 S05_PE	8B2	8B2	Pattern No.1 Step No.5 PID No.
148	P01 S06_SV	8B4	8B4	Pattern No.1 Step No.6 SV value
149	P01 S06_TM	8B5	8B5	Pattern No.1 Step No.6 Step time
150	P01 S06_PE	8B6	8B6	Pattern No.1 Step No.6 PID No.
151	P01 S07_SV	8B8	8B8	Pattern No.1 Step No.7 SV value
152	P01 S07_TM	8B9	8B9	Pattern No.1 Step No.7 Step time
153	P01 S07_PE	8BA	8BA	Pattern No.1 Step No.7 PID No.
154	P01 S08_SV	8BC	8BC	Pattern No.1 Step No.8 SV value
155	P01 S08_TM	8BD	8BD	Pattern No.1 Step No.8 Step time
156	P01 S08_PE	8BE	8BE	Pattern No.1 Step No.8 PID No.
157	P01 S09_SV	8C0	8C0	Pattern No.1 Step No.9 SV value
158	P01 S09_TM	8C1	8C1	Pattern No.1 Step No.9 Step time
159	P01 S09_PE	8C2	8C2	Pattern No.1 Step No.9 PID No.
160	P01 S10_SV	8C4	8C4	Pattern No.1 Step No.10 SV value
161	P01 S10_TM	8C5	8C5	Pattern No.1 Step No.10 Step time
162	P01 S10_PE	8C6	8C6	Pattern No.1 Step No.10 PID No.
163	P02 STP	902	902	Pattern No.2 The number of steps
164	P02 RPT	903	903	Pattern No.2 The number of pattern executions
165	P02 ST_SV	904	904	Pattern No.2 Starting SV value
166	P02 GUA_Z	905	905	Pattern No.2 Guarantee soak zone
167	P02 PV_ST	907	907	Pattern No.2 PV start
168	P02 EV1	909	909	Pattern No.2 EV1 level value
169	P02 EV2	90A	90A	Pattern No.2 EV2 level value
170	P02 EV3	90B	90B	Pattern No.2 EV3 level value
171	P02 TS1STP	90E	90E	Pattern No.2 Time signal 1 ON/OFF STP
172	P02 TS1_ON	90F	90F	Pattern No.2 Time signal 1 ON TIME
173	P02 TS1_OFF	910	910	Pattern No.2 Time signal 1 OFF TIME
174	P02 TS2STP	911	911	Pattern No.2 Time signal 2 ON/OFF STP
175	P02 TS2_ON	912	912	Pattern No.2 Time signal 2 ON TIME
176	P02 TS2_OFF	913	913	Pattern No.2 Time signal 2 OFF TIME
177	P02 S01_SV	920	920	Pattern No.2 Step No.1 SV value
178	P02 S01_TM	921	921	Pattern No.2 Step No.1 Step time
179	P02 S01_PE	922	922	Pattern No.2 Step No.1 PID No.
180	P02 S02_SV	924	924	Pattern No.2 Step No.2 SV value
181	P02 S02_TM	925	925	Pattern No.2 Step No.2 Step time
182	P02 S02_PE	926	926	Pattern No.2 Step No.2 PID No.
183	P02 S03_SV	928	928	Pattern No.2 Step No.3 SV value
184	P02 S03_TM	929	929	Pattern No.2 Step No.3 Step time
185	P02 S03_PE	92A	92A	Pattern No.2 Step No.3 PID No.
186	P02 S04_SV	92C	92C	Pattern No.2 Step No.4 SV value
187	P02 S04_TM	92D	92D	Pattern No.2 Step No.4 Step time
188	P02 S04_PE	92E	92E	Pattern No.2 Step No.4 PID No.
189	P02 S05_SV	930	930	Pattern No.2 Step No.5 SV value
190	P02 S05_TM	931	931	Pattern No.2 Step No.5 Step time
191	P02 S05_PE	932	932	Pattern No.2 Step No.5 PID No.

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

FP93 parameter list (5/7)

Set No.	Parameter	Address(R)	Address(W)	Description
192	P02 S06_SV	934	934	Pattern No.2 Step No.6 SV value
193	P02 S06_TM	935	935	Pattern No.2 Step No.6 Step time
194	P02 S06_PE	936	936	Pattern No.2 Step No.6 PID No.
195	P02 S07_SV	938	938	Pattern No.2 Step No.7 SV value
196	P02 S07_TM	939	939	Pattern No.2 Step No.7 Step time
197	P02 S07_PE	93A	93A	Pattern No.2 Step No.7 PID No.
198	P02 S08_SV	93C	93C	Pattern No.2 Step No.8 SV value
199	P02 S08_TM	93D	93D	Pattern No.2 Step No.8 Step time
200	P02 S08_PE	93E	93E	Pattern No.2 Step No.8 PID No.
201	P02 S09_SV	940	940	Pattern No.2 Step No.9 SV value
202	P02 S09_TM	941	941	Pattern No.2 Step No.9 Step time
203	P02 S09_PE	942	942	Pattern No.2 Step No.9 PID No.
204	P02 S10_SV	944	944	Pattern No.2 Step No.10 SV value
205	P02 S10_TM	945	945	Pattern No.2 Step No.10 Step time
206	P02 S10_PE	946	946	Pattern No.2 Step No.10 PID No.
207	P03 STP	982	982	Pattern No.3 The number of steps
208	P03 RPT	983	983	Pattern No.3 The number of pattern executions
209	P03 ST_SV	984	984	Pattern No.3 Starting SV value
210	P03 GUA_Z	985	985	Pattern No.3 Guarantee soak zone
211	P03 PV_ST	987	987	Pattern No.3 PV start
212	P03 EV1	989	989	Pattern No.3 EV1 level value
213	P03 EV2	98A	98A	Pattern No.3 EV2 level value
214	P03 EV3	98B	98B	Pattern No.3 EV3 level value
215	P03 TS1STP	98E	98E	Pattern No.3 Time signal 1 ON/OFF STP
216	P03 TS1_ON	98F	98F	Pattern No.3 Time signal 1 ON TIME
217	P03 TS1_OFF	990	990	Pattern No.3 Time signal 1 OFF TIME
218	P03 TS2STP	991	991	Pattern No.3 Time signal 2 ON/OFF STP
219	P03 TS2_ON	992	992	Pattern No.3 Time signal 2 ON TIME
220	P03 TS2_OFF	993	993	Pattern No.3 Time signal 2 OFF TIME
221	P03 S01_SV	9A0	9A0	Pattern No.3 Step No.1 SV value
222	P03 S01_TM	9A1	9A1	Pattern No.3 Step No.1 Step time
223	P03 S01_PE	9A2	9A2	Pattern No.3 Step No.1 PID No.
224	P03 S02_SV	9A4	9A4	Pattern No.3 Step No.2 SV value
225	P03 S02_TM	9A5	9A5	Pattern No.3 Step No.2 Step time
226	P03 S02_PE	9A6	9A6	Pattern No.3 Step No.2 PID No.
227	P03 S03_SV	9A8	9A8	Pattern No.3 Step No.3 SV value
228	P03 S03_TM	9A9	9A9	Pattern No.3 Step No.3 Step time
229	P03 S03_PE	9AA	9AA	Pattern No.3 Step No.3 PID No.
230	P03 S04_SV	9AC	9AC	Pattern No.3 Step No.4 SV value
231	P03 S04_TM	9AD	9AD	Pattern No.3 Step No.4 Step time
232	P03 S04_PE	9AE	9AE	Pattern No.3 Step No.4 PID No.
233	P03 S05_SV	9B0	9B0	Pattern No.3 Step No.5 SV value
234	P03 S05_TM	9B1	9B1	Pattern No.3 Step No.5 Step time
235	P03 S05_PE	9B2	9B2	Pattern No.3 Step No.5 PID No.
236	P03 S06_SV	9B4	9B4	Pattern No.3 Step No.6 SV value
237	P03 S06_TM	9B5	9B5	Pattern No.3 Step No.6 Step time
238	P03 S06_PE	9B6	9B6	Pattern No.3 Step No.6 PID No.
239	P03 S07_SV	9B8	9B8	Pattern No.3 Step No.7 SV value

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

FP93 parameter list (6/7)

Set No.	Parameter	Address(R)	Address(W)	Description
240	P03 S07_TM	9B9	9B9	Pattern No.3 Step No.7 Step time
241	P03 S07_PE	9BA	9BA	Pattern No.3 Step No.7 PID No.
242	P03 S08_SV	9BC	9BC	Pattern No.3 Step No.8 SV value
243	P03 S08_TM	9BD	9BD	Pattern No.3 Step No.8 Step time
244	P03 S08_PE	9BE	9BE	Pattern No.3 Step No.8 PID No.
245	P03 S09_SV	9C0	9C0	Pattern No.3 Step No.9 SV value
246	P03 S09_TM	9C1	9C1	Pattern No.3 Step No.9 Step time
247	P03 S09_PE	9C2	9C2	Pattern No.3 Step No.9 PID No.
248	P03 S10_SV	9C4	9C4	Pattern No.3 Step No.10 SV value
249	P03 S10_TM	9C5	9C5	Pattern No.3 Step No.10 Step time
250	P03 S10_PE	9C6	9C6	Pattern No.3 Step No.10 PID No.
251	P04 STP	A02	A02	Pattern No.4 The number of steps
252	P04 RPT	A03	A03	Pattern No.4 The number of pattern executions
253	P04 ST_SV	A04	A04	Pattern No.4 Starting SV value
254	P04 GUA_Z	A05	A05	Pattern No.4 Guarantee soak zone
255	P04 PV_ST	A07	A07	Pattern No.4 PV start
256	P04 EV1	A09	A09	Pattern No.4 EV1 level value
257	P04 EV2	A0A	A0A	Pattern No.4 EV2 level value
258	P04 EV3	A0B	A0B	Pattern No.4 EV3 level value
259	P04 TS1STP	A0E	A0E	Pattern No.4 Time signal 1 ON/OFF STP
260	P04 TS1_ON	A0F	A0F	Pattern No.4 Time signal 1 ON TIME
261	P04 TS1_OFF	A10	A10	Pattern No.4 Time signal 1 OFF TIME
262	P04 TS2STP	A11	A11	Pattern No.4 Time signal 2 ON/OFF STP
263	P04 TS2_ON	A12	A12	Pattern No.4 Time signal 2 ON TIME
264	P04 TS2_OFF	A13	A13	Pattern No.4 Time signal 2 OFF TIME
265	P04 S01_SV	A20	A20	Pattern No.4 Step No.1 SV value
266	P04 S01_TM	A21	A21	Pattern No.4 Step No.1 Step time
267	P04 S01_PE	A22	A22	Pattern No.4 Step No.1 PID No.
268	P04 S02_SV	A24	A24	Pattern No.4 Step No.2 SV value
269	P04 S02_TM	A25	A25	Pattern No.4 Step No.2 Step time
270	P04 S02_PE	A26	A26	Pattern No.4 Step No.2 PID No.
271	P04 S03_SV	A28	A28	Pattern No.4 Step No.3 SV value
272	P04 S03_TM	A29	A29	Pattern No.4 Step No.3 Step time
273	P04 S03_PE	A2A	A2A	Pattern No.4 Step No.3 PID No.
274	P04 S04_SV	A2C	A2C	Pattern No.4 Step No.4 SV value
275	P04 S04_TM	A2D	A2D	Pattern No.4 Step No.4 Step time
276	P04 S04_PE	A2E	A2E	Pattern No.4 Step No.4 PID No.
277	P04 S05_SV	A30	A30	Pattern No.4 Step No.5 SV value
278	P04 S05_TM	A31	A31	Pattern No.4 Step No.5 Step time
279	P04 S05_PE	A32	A32	Pattern No.4 Step No.5 PID No.
280	P04 S06_SV	A34	A34	Pattern No.4 Step No.6 SV value
281	P04 S06_TM	A35	A35	Pattern No.4 Step No.6 Step time
282	P04 S06_PE	A36	A36	Pattern No.4 Step No.6 PID No.
283	P04 S07_SV	A38	A38	Pattern No.4 Step No.7 SV value
284	P04 S07_TM	A39	A39	Pattern No.4 Step No.7 Step time
285	P04 S07_PE	A3A	A3A	Pattern No.4 Step No.7 PID No.
286	P04 S08_SV	A3C	A3C	Pattern No.4 Step No.8 SV value
287	P04 S08_TM	A3D	A3D	Pattern No.4 Step No.8 Step time

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

FP93 parameter list (7/7)

Set No.	Parameter	Address(R)	Address(W)	Description
288	P04 S08_PE	A3E	A3E	Pattern No.4 Step No.8 PID No.
289	P04 S09_SV	A40	A40	Pattern No.4 Step No.9 SV value
290	P04 S09_TM	A41	A41	Pattern No.4 Step No.9 Step time
291	P04 S09_PE	A42	A42	Pattern No.4 Step No.9 PID No.
292	P04 S10_SV	A44	A44	Pattern No.4 Step No.10 SV value
293	P04 S10_TM	A45	A45	Pattern No.4 Step No.10 Step time
294	P04 S10_PE	A46	A46	Pattern No.4 Step No.10 PID No.
1000	ERROR	In case parameter reading/writing fails, error code can be read. (Read only)		

Note: Address (R) and Address (W) represent data addresses (only the last three digits of hexadecimal numbers).
For details, please refer to the "Communication Interface Instruction Manual" of the Shimaden instrument.

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

Temperature and Humidity Control Specialists

SHIMADEN CO., LTD.

Head Office: 2-30-10 Kitamachi, Nerima-Ku, Tokyo 179-0081 Japan

Phone: +81-3-3931-7891 Fax: +81-3-3931-3089

E-MAIL: exp-dept@shimaden.co.jp URL: <http://www.shimaden.co.jp>

PRINTED IN JAPAN