Module Type Controller SRZ

Temperature Control Module [for PLC Communication]

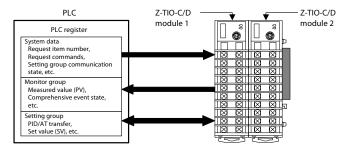
PLC Communication **Quick Instruction Manual** [PART2: Operation]

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Thank you for purchasing this RKC product. In order to achieve maximum performance and ensure proper operation of your new instrum ent, carefully read all the instructions in this manual. Please place this manual in a convenient location for easy reference.

1. PLC COMMUNICATION DATA TRANSFER

The data transmitted between the PLC and the Z-TIO-C/D module is compiled in the PLC communication data map. In the PLC communi cation data map the communication data is classified into system data, monitor groups, and setting groups.



For the communication data, see 2. PLC COMMUNICATION DATA MAP

1.1 Data Transfer Type

Data transfer between PLC and Z-TIO-C/D m odule are executed by the request item number and the request command.

Request item number

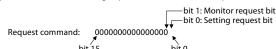
This command sets the communication data of the e setting group that is transferred. Set transfer of all communication data of t he setting group, or transfer by one data item. Data transfer are executed by request command.

Setting range: 0 or 1 to 64 (Item number)

- When set to 0, all communication dat a of the setting group is transferred.
- When set to a number from 1 to 64 (item number), only the set communication data item is transferred (t ransfer by one data item).
- For the item number 1 to 64, see " Table 2: Setting item selection (Communication data of setting group) " of Z-TIO PLC Communication Quick Instruction Manual [PART1: Preparation] (IMS01T11-F 🗖)
- Note that communication data that is not selected (set to binary: 0) in setting item selection of the PLC communication environment is not

Request command

For the request command, both "setting request bi t" and "monitor request bit" are available.



Setting request bit (PLC → Z-TIO-C/D module)

This command requests that the Z-TIO- C/D module read the communication data of the setting group on the PLC side.

[Processing]

- (1) Just when "1 (decimal numbers: 1)" is se to the setting request bit, the Z-TIO-C/D module starts reading the data from the PLC side.
- (2) The setting group communication data set in "Request item number" is transferred from the PCL to the 7-TIO-C/D module
- (3) After data transmission is complet ed, the setting request bit becomes "0."

Monitor request bit (PLC ← Z-TIO-C/D module)

This command requests that the Z-TIO-C/D module write the communication data of the setting group on the PLC side.

[Processina]

- (1) Just when "1 (decimal numbers: 2)" is set to the monitor request bit, the Z-TIO-C/D starts writing the dat a to the PLC side
- (2) The setting group communication data set in "request item number" is transferred from the 7-TIO-C/D module to the PLC.
- (3) After data transmission is completed, the monitor request bit becomes "0."

When setting both the setting request bit and the monitor request bit to "1," set the bits simultaneously. If se t separately, the bit set later may be disregarded



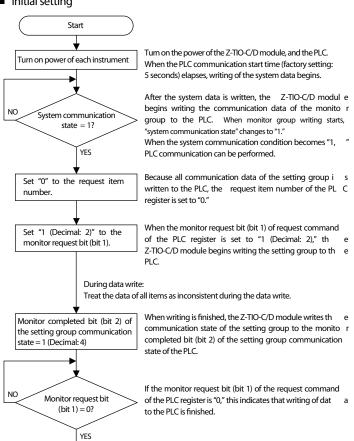
■ Monitor group

The monitor group communication data is always transferred as monitor item data between the PLC and the Z-TIO-C/D module rega rdless of the request command setting.

1.2 Data Transfer Procedures

Change each set value of Z-TIO-C/D m odule from the PLC after the initial settings are made. If each set value of Z-TIO-C/D module is changed from the PLC without setting the initial values, it is re-written to "0" with each set value of the PLC at that time set to "0."

Initial setting

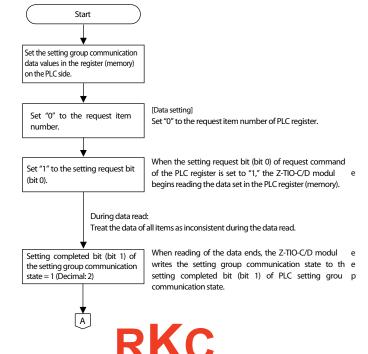


Data setting

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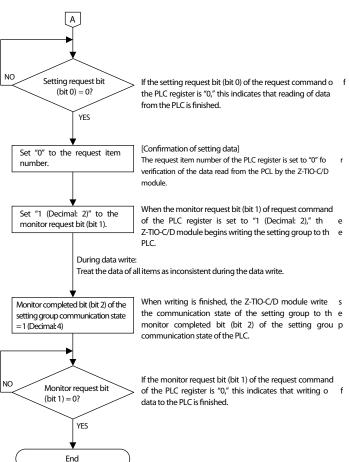
End

When the setting group communication data is transferred from PLC to the Z-TIO-C/D $\,$ module.



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Data processing precautions

The data type is treated as binary data with a sign and without a decimal point. For this reason, carefully express and set the data. (Excluding the bit data)

2. PLC COMMUNICATION DATA MAP

The data that can be communicated by the PL C and Z-TIO-C/D module is compiled in the PLC communication data map. The data map indicated in this manual is the data map of factory set value. The data map ca n be changed using the PLC communication environment items below

- Register type
- Setting item register bias
- Register start number (High-order 4-bit)
- Monitor item selection
- Register start number(Low-order 16-bit)
 Setting item selection Monitor item register bias
- Slave register bias

For the PLC communication environment item, see Z-TIO PLC Communication Quick Instruction Manual [PAR T1: Preparation] (IMS01T11-E

...

For communication data not described in this manual, see the Manual [PLC Communication] (IMS01T13-E

).

2.1 Explanation of Data Map Items

Name: Name of communication data

Register address: A register address of communication data in PLC communication

(MITSUBISHI MELSEC series)

Structure: C: Data for each channel M: Data for each module

RO: Read only data (PLC ← Z-TIO-C/D module)

R/W: Read and Write data (PLC \leftrightarrow Z-TIO-C/D module)

Data range and Number of data:

Read or write range of communication data Data range: Number of data: This is the maximum number per communication data that can be handled by one Z-TIO-C/D

module.

(Numerical value in the [] at the lower right) The total number of communication data is 150

Factory set value: Factory set value of communication data

2.2 Data Map

Setting item selection:

The data map register address is the addre ss when the following items are used at their factory set values.

Register start number (Low-order 16-bit): 1000

0 (D register) Register type: Monitor item register bias: 10 Setting item register bias: Monitor item selection: 33535

ch1:62427 ch2: 15583 ch3: 512 ch4: 512

Z-TIO-C/D module 2 7-TIO-C/D module 1

System data: D01000 to D01009 System data: D01150 to D01159 Monitor group: D01160 to D01199 Monitor group: D01010 to D01049 Setting group: D01050 to D01149 Setting group: D01200 to D01299

Data map of Z-TIO-C/D module 1

Name	Register address	Structure	Attribute	Data range and Number of data	Factory set value
System communication state	D01000	М	RO	Bt data b0: Data collection condition b1 to b15: Unused Data 0: Before data collection is completed 1: Data collection is completed [Decimal number: 0, 1]	
Z-TIO normal communication flag	D01001	М	RO	0/1 transfer (For communication checking) "0" and "1" are repeated for each communication period. [1]	_
_	D01002	_	RO	Internal processing Do not use the register address [1]	_
_	D01003	_	RO	Internal processing Do not use the register address [1]	_
PLC communication error code	D01004	М	RO	Bit data b0: PLC register read/write error b1: Slave communication timeout b2: Unused b3: Unused b4: Master communication timeout b5 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 31]	_
Z-TIO module recognition flag	D01005	М	RO	Bit data b0: Z-TIO module 1 b1: Z-TIO module 2 b2: Z-TIO module 3 b3: Z-TIO module 4 b4: Z-TIO module 5 b5: Z-TIO module 5 b5: Z-TIO module 6 b6: Z-TIO module 6 b6: Z-TIO module 7 b7: Z-TIO module 8 b8: Z-TIO module 9 b9: Z-TIO module 10 b10: Z-TIO module 11 b11: Z-TIO module 12 b12: Z-TIO module 13 b13: Z-TIO module 14 b14: Z-TIO module 14 b14: Z-TIO module 15 b15: Z-TIO module 16 Data 0: No module exists 1: Module exists [Decimal number: 0 to 65535]	_
_	D01006	_	_	Internal processing Do not use the register address [1]	_
Request item number	D01007	М	R/W 0	or 1 to 64 0: Transfer all communication data of the setting group. * 1 to 64: Transfer only the communication data of the selected item number. *	0
Request command	D01008	М	R/W B	tdata b0: Setting request bit b1: Monitor request bit Data 0: OFF 1: ON [Decimal number: 0 to 3]	0
Setting group communication state	D01009	М	RO	Bit data b0: Setting error bit b1: Setting completed bit b2: Monitor completed bit Data 0: OFF 1: ON [Decimal number: 0 to 7]	_

communication environment is not transferred

		1			
Name	Register address	Structure	Attribute	Data range and Number of data	Factory set value
Measured value (PV)	D01010 to	С	RO	Input scale low to	_
	D01013			Input scale high [4]	
Comprehensive event state	D01014 to D01017	С	RO	Bit data b0: Event 1 state b1: Event 2 state b2: Event 3 state b3: Event 4 state b4: Heater break alarm state b5: Temperature rise completion b6: Burnout b7 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 127]	
				[4]	
Operation mode state monitor	D01018 to D01021	С	RO	Bit data b0: 1: Control STOP b1: 1: Control RUN b2: 1: Manual mode (Including Remote mode and Manual mode) b3: 1: Remote mode b4 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 15]	
Error code *	D01022 to D01025	М	RO	Adjustment data error Data back-up error A/D conversion error Logic output data error	_
Manipulated output value (MV) monitor [heat-side] &	D01026 to D01029	С	RO	[4] PID control or heat/cool PID control: -5.0 to +105.0 % Position proportioning control with feedback resistance (FBR) input: 0.0 to 100.0 % [4]	_
Manipulated output value (MV) monitor [cool-side] &	D01030 to D01033	С	RO	-5.0 to +105.0 %	_
Current transformer (CT) input value monitor	D01034 to D01037	С	RO	CTL-6-P-N: 0.0 to 30.0A CTL-12-S56-10L-N: 0.0 to 100.0 A	
Set value (SV) monitor	D01038 to D01041	С	RO	Setting limiter (low) to Setting limiter (high)	_
Output state monitor *	D01042 to D01045	М	RO	Bit data b0: OUT1 b1: OUT2 b2: OUT3 b3: OUT4 b4-b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 15]	_
Memory area	D01046 to	С	RO	1 to 8	_
number monitor PID/AT transfer	D01049 D01050 to D01053	С	RW	[4] 0: PID control 1: Autotuning (AT)	0
Auto/Manual transfer	D01054 to D01057	С	RW	0: Auto mode 1: Manual mode [4]	0
RUN/STOP transfer *	D01058 to D01061	М	RW	0: STOP (Control stop) 1: RUN (Control start) [4]	0
Memory area transfer	D01062 to D01065	С	R/W	1 to 8 [4]	1
Event 1 set value (EV1) *	D01065 D01066 to D01069	С	RW	Deviation action, Deviation action between channels, Temperature rise completion range ¹ :	50
Event 2 set value (EV2) ★	D01070 to D01073	С	R/W	-Input span to +Input span Process action, SV action: Input scale low to	50
Event 3 set value (EV3) ★	D01074 to D01077	С	RW	Input scale high MV action: -5.0 to +105.0 %	50
Event 4 set value (EV4) ★	D01078 to D01081	С	R/W	When temperature rise completion is selected at Event 3 action type. [Each 4]	50
Set value (SV) ★	D01082 to D01085	С	R/W	Setting limiter (low) to Setting limiter (high)	TC/RTD: 0 °C [°F] V/I: 0.0 %
Proportional band [heat-side]	D01086 to D01089	С	RW	TC/RTD inputs: 0 (0.0) to Input span (Unit: °C [°F]) Voltage (V)/current (I) inputs: 0.0 to 1000.0 % of Input span 0 (0.0): ON/OFF action [4]	TC/RTD: 30 V/I: 30.0

- Occupies four PLC registers, however, the actual number of data items is 1 (data units are modules), and thus only the data of CH1 is effective.
- * When heat/cool control or position proportioning control is performed, there will be communication data (indicated by • in the name column) for which the 2nd channel and 4th channel will be invalid. [Read is possible (0 is shown), but the result of Write is disregarded.]
- ★ Parameters which can be used in multi-memory area function

	Desistes		1	Dete seems and	
Name	Register address	Structure	Attribute	Data range and Number of data	Factory set value
Integral time [heat-side]	D01090 to D01093	С	RW	PID control or heat/cool PID control: 0 to 3600 seconds or 0.0 to 1999.9 seconds (0, 0.0: PD action) Position proportioning control: 1 to 3600 seconds or 0.1 to 1999.9 seconds	240
Derivative time [heat-side] ♣★	D01094 to D01097	С	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds (0, 0.0: Pl action) [4]	60
Control response parameter	D01098 to D01101	С	R/W	0: Slow 1: Medium 2: Fast P or PD action: 2 (Fast) fixed [4]	PID control, Position proportioning control: 0 Heat/cool PID control: 2
Proportional band [cool-side]	D01102 to D01105	С	R/W	TC/RTD inputs: 1 (0.1) to Input span (Unit: °C [°F]) Voltage (V)/current (I) inputs: 0.1 to 1000.0 % of Input span	TC/RTD: 30 V/I: 30.0
Integral time [cool-side] ♣★	D01106 to D01109	С	RW	0 to 3600 seconds or 0.0 to 1999.9 seconds (0, 0.0: PD action)	240
Derivative time [cool-side] ♣★	D01110 to D01113	С	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds (0, 0.0: Pl action)	60
Overlap/Deadband ♣★	D01114 to D01117	С	R/W	TC/RTD inputs: -Input span to +Input span (Unit:*C [*F]) Voltage (V)/current (I) inputs: -100.0 to +100.0 % of Input span [4]	0
Setting change rate limiter (up)	D01118 to D01121	С	RW	0 (0.0) to Input span/unit time 0 (0.0): Unused	0 (0.0)
Setting change rate limiter (down)	D01122 to D01125	С	RW	Unit time: 60 seconds (factory set value) [4]	0 (0.0)
Heater break alarm (HBA) set value	D01126 to D01129	С	RW	When CT is CTL-6-P-N: 0.0 to 30.0 A (0.0: Not used) When CT is CTL-12-S56-10L-N: 0.0 to 100.0 A (0.0: Not used)	0.0
Heater break determination point	D01130 to D01133	С	R/W	0.0 to 100.0 % of HBA set value (0.0: Heater break determination is invalid) [4]	30.0
Heater melting determination point	D01134 to D01137	С	R/W	0.0 to 100.0 % of HBA set value (0.0: Heater melting determination is invalid) [4]	
PV bias	D01138 to D01141	С	RW	-Input span to +Input span [4]	0
Manual manipulated output value	D01142 to D01145	С	RW	PID control: Output limiter (low) to Output limiter (high) Heat/cool PID control: -Cool-side output limiter (high) to +Heat-side output limiter (high) to Hostition proportioning control (with FBR input): Output limiter (low) to Output limiter (high) Position proportioning control (without FBR input): 0: Close-side output OFF, Open-side output OFF 1: Close-side output OFF 2: Close-side output OFF 2: Close-side output OFF	0.0
Operation mode	D01146 to D01149	С	R/W	[4] 0: Unused 1: Monitor 2: Monitor+ Event function 3: Control [4]	3

- Occupies four PLC registers, however, the actual number of data items is 1 (data units are modules), and thus only the data of CH1 is effective.
- * When heat/cool control or position proportioning control is performed, there will be communication data (indicated by & in the name column) for which the 2nd channel and 4th channel will be invalid. [Read is possible (0 is shown), but the result of Write is disregarded.]
- ★ Parameters which can be used in multi-memory area function

Data map of Z-TIO-C/D module 2

System	Name	Register address	Structure	Attribute	Data range and Number of data	Factory set value
Z-TIO nomal D01151	- ,		M	RO		— Set value
D01152		D01151	M	RO	Same as 7-TIO-C/D module 1	
Per			141			
PLC communication	_		_			
Part	PLC communication					
	error code					
Request lum number D01156		D01155	M	RO	Same as Z-TIO-C/D module 1	_
Request command	—	D01156	_	_	Same as Z-TIO-C/D module 1	_
Setting group	Request item number	D01157	М	RW	Same as Z-TIO-C/D module 1	0
Communication Communicatio	Request command		М	RW	Same as Z-TIO-C/D module 1	0
Measured value (PV)		D01159	M	RO	Same as Z-TIO-C/D module 1	_
D01163						
Comprehensive		D01160 to	С	RO	Same as Z-TIO-C/D module 1	_
Devertion mode state	Comprehensive		C	RO	Same as 7-TIO-C/D module 1	_
Manipulated output D01172 Manipulated output D01176 D01180 D01190 D01200 D012						
Error code			С	RO	Same as Z-TIO-C/D module 1	_
Manipulated output value (MV) monitor Doi 1176 to Doi 1176 to Doi 1179 to			М	RO	Same as Z-TIO-C/D module 1	_
value (MV) monitor (heat-side) D01179 (beat-side) D01180 (bod) RO Same as Z-TIO-C/D module 1 — Current transformer (cr) input value (mV) monitor D01184 to D01184 to D01184 to D01187 (col-side) C RO Same as Z-TIO-C/D module 1 — Ext value (SV) monitor D01188 to D01191 (col-side) C RO Same as Z-TIO-C/D module 1 — Memory area monitor D01191 (col-side) M RO Same as Z-TIO-C/D module 1 — Memory area monitor D01199 (col-side) C RO Same as Z-TIO-C/D module 1 — Memory area monitor D01199 (col-side) C RW Same as Z-TIO-C/D module 1 — MINNSTOP transfer D01201 (col-side) C RW Same as Z-TIO-C/D module 1 0 MINNSTOP transfer D01215 (col-side) C RW Same as Z-TIO-C/D module 1 0 Memory area transfer D01216 (col-side) C RW Same as Z-TIO-C/D module 1 0 Memory area transfer D01216 (col-side) C RW Same as Z-TIO-C/D module 1 5 <td< td=""><td>Maninulated autout</td><td></td><td>0</td><td>DO</td><td>Come on 7 TIO C/D module 1</td><td></td></td<>	Maninulated autout		0	DO	Come on 7 TIO C/D module 1	
Manipulated output value (MV) monitor	value (MV) monitor			RO	Same as Z-110-C/D module 1	_
value (MV) monitor (cool-side) D01183 (cool-side) Same as Z-TIO-C/D module 1 ————————————————————————————————————		D01100 to		BO	Samo ao 7 TIO C/D madula 1	
Current transformer (CT) input Value (CT) input Value (D1187 b) 01187 b) 01188 b) C	value (MV) monitor		C	RO	Same as Z-110-C/D module 1	_
CT) input value monitor D01187 D01187 D01187 D01188 to D01198 D01199 D01199 D01199 D01203 D01203 D01203 D01203 D01204 D01207 D01208		DOLLOU	0		0 7.TIO 0/D t-l 4	
Set value (SV)			C	RO	Same as Z-110-C/D module 1	_
Memory area D01191 D01192 to D01195 D0		D044004	0		0 7.TIO 0/D t-l 4	
Memory area D01196 to D01199 to D01203			C	RO	Same as Z-110-C/D module 1	_
Memory area mumber monitor D01196 to D01290 to D01200 to	Output state monitor		М	RO	Same as Z-TIO-C/D module 1	_
PID/AT transfer	Memory area		С	RO	Same as Z-TIO-C/D module 1	<u> </u>
Auto/Manuel transfer D01204 to D01207 D01207 D01207 D01207 D01207 D01207 D01208 to D01208 to D01208 to D01212 to D01212 to D01212 to D01212 to D01212 to D01216 to D01219 D01219 D01219 D01219 D01219 D01219 D01219 D01219 D01219 D01220 to (EV1) D01220 to D01220 to D01223 to D01228	number monitor	D01199				
Auto/Manual transfer D01204 to D01207 RUN/STOP transfer D01208 to D01208 to D01208 to D01208 to D01208 to D01208 to D01209 M RW Same as Z-TIO-C/D module 1 D01208 to D01215 C RW Same as Z-TIO-C/D module 1 D01208 to D01215 C RW Same as Z-TIO-C/D module 1 D01208 to D01216 to C RW Same as Z-TIO-C/D module 1 D01208 to D	PID/AT transfer		С	R/W	Same as Z-TIO-C/D module 1	0
RUN/STOP transfer D01208 to D01211 M R/W Same as Z-TIO-C/D module 1 D01211 Transfer D01212 to Transfer D01212 to Transfer D01215 D01215 C R/W Same as Z-TIO-C/D module 1 1 Event 1 set value D01216 to D01219 Event 2 set value D01220 to D01223 Event 3 set value D01224 to D01223 Event 3 set value D01224 to D01223 Event 4 set value D01228 to D01223 Event 4 set value D01236 to D01235 C R/W Same as Z-TIO-C/D module 1 50 CEV4) D01236 to D01235 C R/W Same as Z-TIO-C/D module 1 TC/RTI OCEVA D01236 to D01239 TC/RTI OCEVA D01239 TC/RTI OCEVA D01239 TC/RTI OCEVA D01244 to D01244 to D01244 to D01244 to D01245 D01246 to D01256 to D01	Auto/Manual transfer		С	R/W	Same as Z-TIO-C/D module 1	0
Memory area D01211 D01212 to D01212 to D01215 Event 1 set value Event 2 set value D01220 to D01220 Event 2 set value D01220 to D01220 Event 3 set value D01220 to D01222 Event 3 set value D01224 to Event 3 set value D01224 to Event 3 set value D01224 to D01227 Event 4 set value D01228 to D01227 Event 4 set value D01228 to D01228 to D01228 to D01229 to Event 3 set value Event 4 set value D01228 to D01228 to D01230 Event 4 set value D01228 to D01231 Event 4 set value D01230 to D01235 Event 4 set value Event 4 set value D01230 to D01231 Event 4 set value Event 4 set value Event 5 set value Event 6 set value Event 7 set value Event 7 set value Event 8 set value 8 set value Event 8 set value 8 set value 9 set val	PLIN/STOP transfer		M	D///	Same as 7-TIO-C/D module 1	0
transfer	TOTAL TELESTOR		101	1000	oame as 2-110-0/D module 1	· ·
Event 1 set value			С	RW	Same as Z-TIO-C/D module 1	1
Event 2 set value			С	R/W	Same as Z-TIO-C/D module 1	50
EV2 D01223 D01224 to C RW Same as Z-TIO-C/D module 1 50	•			DAA/	Samo ao 7 TIO C/D madula 1	E0.
EVent 4 set value CEV4 D01228 to D01228 to D01231 D01232 to D01232 to D01232 to D01232 to D01233 Integral time D01240 to D01239 D01239 D01233 D01233 Integral time D01240 to D01243 D01243 D01244 to D01244 to D01247 D01244 to D01247 D01244 to D01247 D01248 to D01245 D01245 D01245 D01245 D01245 D01245 D01255 D01251 D01255 D01255 D01255 D01255 D01256 to				FVVV	Same as 2-110-0/D module 1	50
Event 4 set value			С	R/W	Same as Z-TIO-C/D module 1	50
Set value (SV)	` '		С	R/W	Same as Z-TIO-C/D module 1	50
D01235	•			DAM	0 7.TIO 0/D	TO/DTD:
Proportional band D01236 to D01239 C RW Same as Z-TIO-C/D module 1 TC/RTC V/I: 30 C RW Same as Z-TIO-C/D module 1 D01240 to D01243 Derivative time D01244 to D01247 C RW Same as Z-TIO-C/D module 1 D01247 C D01247 C D01247 C D01247 C D01247 C D01248 to D01248 to D01251 D01251 D01251 C RW Same as Z-TIO-C/D module 1 PID control response parameter D01251 D01252 to D01255 C RW Same as Z-TIO-C/D module 1 D01251 TC/RTC C RW Same as Z-TIO-C/D module 1 D01251 TC/RTC C D01259 D01255 D012	Set value (SV)		C	R/VV	Same as Z-110-C/D module 1	0°C[°F]
Integral time	Proportional hand	D01226 to	C	DAM	Same as 7 TIO C/D module 1	V/I: 0.0 % TC/RTD: 30
Ineat-side D01243 Derivative time D01244 to D01247 D01247 D01247 D01247 D01248 to D01247 D01251 D01248 to D01251 D01251 D01251 D01251 D01251 D01251 D01251 D01251 D01255 D01268 to D01268 to D01268 to D01268 to D01268 to D01275 D01280 to D01275 D01280 to D01	[heat-side]		C	FVVV	Same as 2-110-0/D module 1	V/I: 30.0
Derivative time (heat-side)			С	RW	Same as Z-TIO-C/D module 1	240
Control response parameter D01248 to D01251 D01251 C RW Same as Z-TIO-C/D module 1 Proportional band (cool-side) Proportional band (cool-side) D01255 Integral time D01256 to D01259 Derivative time D01260 to D01269 D01267 C RW Same as Z-TIO-C/D module 1 D01268 to D01267 Setting change rate limiter (up) D01272 to D01272 to limiter (down) D01275 Heater break alarm D01276 to D01275 Heater break alarm D01280 to D01280 to D01283 Heater melting D01280 to C RW Same as Z-TIO-C/D module 1 D01280 to D01275 Heater break determination point D01280 to D01283 Heater melting D01288 to D01288 to D01288 to D01288 to D01281 PV bias D01288 to D01292 to D01291 PV bias D01292 to C RW Same as Z-TIO-C/D module 1 D01291 to D01291 PV bias D01286 to C RW Same as Z-TIO-C/D module 1 D01292 to D01280 to	,		С	R/W	Same as Z-TIO-C/D module 1	60
parameter D01251						DID 1.1
Proportional band D01252 to D01255 to D01255 to D01255 to D01255 to D01255 to D01255 to D01256 to D01256 to D01256 to D01259 to D01256 to D01263 to D01263 to D01264 to D01267 to D01267 to D01271 to D01271 to D01271 to D01271 to D01275 to D01276 to D01288 to D01288 to D01288 to D01288 to D01288 to D01288 to D01281 to D01291 to D01292 to D01292 to D01295 to D01296 to D01295 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to D01296 to D01296 to C RW Same as Z-TIO-C/D module 1 D0.00 to			С	R/W	Same as Z-TIO-C/D module 1	Position
Proportional band D01252 to D01255 to D01256 to D01263 D01263 D01263 D01263 D01263 D01264 to D01267 D01267 Setting change rate D01268 to D01271 to D01271 to D01275 D01275 D01275 to D01276 to D012776 to D01276 to	•	50.20.				proportioning control: 0
Proportional band D01252 to D01255 C RW Same as Z-TIO-C/D module 1 TC/RTE V/I: 30						Heat/cool
Dota	Proportional band	D01252 to	С	RW	Same as Z-TIO-C/D module 1	TC/RTD: 30
Cool-side	[cool-side]	D01255				V/I: 30.0
Derivative time	Integral time	D01256 to	С	R/W	Same as Z-TIO-C/D module 1	240
Cool-side	[cool-side]	D01259				
Overlap/Deadband D01264 to D01267 C RW Same as Z-TIO-C/D module 1 0 Setting change rate limiter (up) D01268 to D01271 C RW Same as Z-TIO-C/D module 1 0 (0.0 cm) Setting change rate limiter (down) D01272 to D01275 C RW Same as Z-TIO-C/D module 1 0 (0.0 cm) Heater break alarm (HBA) set value D01279 to D01279 C RW Same as Z-TIO-C/D module 1 0.0 cm Heater break determination point determination point D01280 to D01283 C RW Same as Z-TIO-C/D module 1 30.0 cm PV bias D01284 to D01287 C RW Same as Z-TIO-C/D module 1 0.0 cm PV bias D01288 to D01288 to D01291 C RW Same as Z-TIO-C/D module 1 0.0 cm Manual manipulated output value D01295 to D01295 C RW Same as Z-TIO-C/D module 1 0.0 cm Operation mode D01296 to C RW Same as Z-TIO-C/D module 1 3.0 cm			С	R/W	Same as Z-TIO-C/D module 1	60
Setting change rate D01268 to D01271 C RW Same as Z-TIO-C/D module 1 D (0.0 timiter (up) D01272 to D01272 to D01275 C RW Same as Z-TIO-C/D module 1 D (0.0 timiter (down) D01275 C RW Same as Z-TIO-C/D module 1 D (0.0 timiter (down) D01276 to C RW Same as Z-TIO-C/D module 1 D (0.0 timiter to possible to pos	Overlap/Deadband	D01264 to	С	RW	Same as Z-TIO-C/D module 1	0
Ilimiter (up)	Setting change rate			DAM	Same as 7 TIO C/D module 1	0 (0 0)
Imiter (down)			C	1777	Same as 2-110-0/D module 1	0 (0.0)
Heater break alarm (HBA) set value			С	R/W	Same as Z-TIO-C/D module 1	0 (0.0)
Heater break D01280 to D01283 C RW Same as Z-TIO-C/D module 1 30.0 to determination point D01284 to determination point D01287 C RW Same as Z-TIO-C/D module 1 30.0 to determination point D01287 C RW Same as Z-TIO-C/D module 1 0 D01291 C RW Same as Z-TIO-C/D module 1 0 D01291 D01291 C RW Same as Z-TIO-C/D module 1 0.0 D01295 C RW Same as Z-TIO-C/D module 1 D01295 D01295 C RW Same as Z-TIO-C/D module 1 3 Same as Z-TIO-C/D module 2 Same as Z-TIO-C/D module 3 Same as Z-TIO-C/D mo			С	R/W	Same as Z-TIO-C/D module 1	0.0
determination point D01283 RW Same as Z-TIO-C/D module 1 30.0 Heater melting determination point D01284 to D01287 C RW Same as Z-TIO-C/D module 1 30.0 PV bias D01288 to D01291 C RW Same as Z-TIO-C/D module 1 0 Manual manipulated output value D01292 to D01295 C RW Same as Z-TIO-C/D module 1 0.0 Operation mode D01296 to C RW Same as Z-TIO-C/D module 1 3	(HBA) set value	D01279				
Heater melting determination point D01284 to D01287 C RW Same as Z-TIO-C/D module 1 30.0			С	R/W	Same as ∠- ΓIO-C/D module 1	30.0
PV bias D01288 to D01281 C D01291 RW Same as Z-TIO-C/D module 1 0 Manual manipulated output value D01292 to D01295 C RW Same as Z-TIO-C/D module 1 0.0 Operation mode D01296 to C RW Same as Z-TIO-C/D module 1 3	Heater melting	D01284 to	С	R/W	Same as Z-TIO-C/D module 1	30.0
D01291 D01291 D01292 to D01292 to D01295 D01295 D01296 to D012			С	RM	Same as Z-TIO-C/D module 1	n
output value D01295 Operation mode D01296 to C R/W Same as Z-TIO-C/D module 1 3		D01291				
Operation mode D01296 to C R/W Same as Z-TIO-C/D module 1 3			С	R/W	Same as Z-TIO-C/D module 1	0.0
D01299	•	D01296 to	С	R/W	Same as Z-TIO-C/D module 1	3
		D01299				

3. COMMUNICATION SPECIFICATIONS

■ PLC communication

Base on RS-485, EIA standard Interface:

MITSUBISHI MELSEC series special protocol (type 4) Protocol:

> A compatible, 1C frame, ACPU common command (WR/WW) (A series, FX2N/FX2NC series or FX3U/FX3UC series) - A compatible, 1C frame, AnA/AnUCPU common command

(QR/QW) D register, R register, W register QnA compatible, 3C frame, command (0401/1401)

Only ZR register

(AnA/AnU/QnA series, Q series)

Synchronous method: Start/stop synchronous type Communication speed: 4800 bps, 9600 bps, 19200 bps, 38400 bps

Data bit configuration: Start bit:

Data bit: 7 or 8 Parity bit:

Without, Odd or Even Stop bit:

Maximum connections: 16 Z-TIO-C/D modules per communication port of PLC

The maximum number of SRZ modules (including other function modules) on the same communication line is 31.

MITSUBISHI MELSEC series

Usable PLC type: Computer link unit

AJ71UC24、A1SJ71UC24-R4、A1SJ71C24-R4, etc.

The unit which AnA/AnUCPU common command (type 4) can use.

- Serial communication unit

AJ71QC24N, A1SJ71QC24N, QJ71C24, etc.

The unit which AnA/AnUCPU common command (type 4) can

- Adapter

FX0N-485ADP, FX2NC-485ADP, FX3U-485ADP

 Expanded function board FX2N-485BD, FX3U-485-BD

Interval time: 0 to 250 ms

■ Host communication

Interface: Base on RS-485, EIA standard

RKC communication (Based on ANSI X3.28 subcategory 2.5 B1) Protocol:

Modbus-RTU

Connection method: 2-wire system, half-duplex multi-drop connection

Synchronous method: Start/stop synchronous type

Communication speed: 4800 bps, 9600 bps, 19200 bps, 38400 bps

Data bit configuration: Start bit: 1

Data bit: RKC communication: 7 or 8

Modbus: Parity bit: RKC communication: Without or 1 (Odd or Even)

Modbus: Without

Stop bit: 1

Protocol: RKC communication (Based on ANSI X3.28 subcategory 2.5 B1)

Modbus-RTU (Selectable)

Error control: RKC communication: Vertical parity, Horizontal parity

Modbus: CRC-16

Termination resistor: Externally terminal connected (example: 120 Ω 1/2W)

Interval time: 0 to 250 ms

Maximum connections:

Up to 16 Z-TIO-C/D modules

The maximum number of SRZ modules (including other function

modules) on the same communication line is 31.

■ Loader communication

Connection with a loader communication cable for our USB Interface:

converter COM-K (sold separately). Synchronous method: Start/stop synchronous type

Communication speed: 38400 bps Data bit configuration: Start bit:

Data bit: Parity bit: Without

Stop bit:

Data bit configuration is fixed to the above value. Module address is fixed at 0

ANSI X3.28 subcategory 2.5, B1

Protocol: Maximum connections: 1 point

Modbus is a registered trademark of Schneider Electric.

The name of each programmable controller (PLC) means the products of each manufacturer.

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RKC RKC INSTRUMENT INC.

HEADQUARTERS: 16-6, KUGAHARA 5-CHOME, OHTA-KU TOKYO 146-8515 JAPAN