

Thank you for purchasing this RKC product. In order to achieve maximum performance and ensure proper operation of your new instrument, carefully read all the instructions in this manual. Please place this manual in a convenient location for easy reference. This manual explains the communication settings using DIP switches and the communication data when performing host communication while joining the Z-COM module to the Z-TIO and Z-DIO modules. For the installation, the detail handling procedures and various function settings, please read if necessary the following separate manuals.

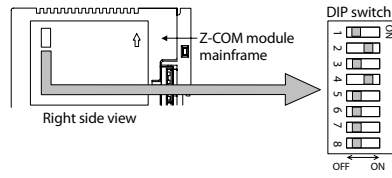
- Z-COM Installation Manual (IMS01T05-E): Enclosed with Z-COM
- Z-COM Host Communication Quick Instruction Manual (IMS01T09-E): Enclosed with Z-COM
- Z-COM PLC Communication Quick Instruction Manual (IMS01T14-E): Enclosed with Z-COM
- Z-COM PLC Communication Data List (IMS01T15-E): Enclosed with Z-COM
- Z-COM Instruction Manual (IMS01T07-E): Separate volumes *
- Z-TIO INSTRUCTION MANUAL (IMS01T01-E): Enclosed with Z-TIO
- Z-TIO Host Communication Quick Instruction Manual (IMS01T02-E): Enclosed with Z-TIO
- SRZ Instruction Manual (IMS01T04-E): Separate volumes *
- Z-DIO INSTRUCTION MANUAL (IMS01T03-E): Enclosed with Z-DIO

* Download or sold separately
 The above manuals can be downloaded from our website:
 URL: http://www.rkcinst.com/english/manual_load.htm

1. COMMUNICATION SETTING OF Z-COM MODULE

Use the DIP switch on the right side of Z-COM module to select communication speed, data bit configuration and protocol.

The data change become valid the power of the Z-COM module is turned on again or when control is switched from STOP to RUN.



Contents of the DIP switch

Communication 1 (COM. PORT1 and COM. PORT2) setting
 Use switches No. 1, No. 2, and No. 3 to set the communication speed, communication protocol and data bit configuration for Communication 1.

Communication speed		
1	2	
OFF	OFF	4800 bps
ON	OFF	9600 bps
OFF	ON	19200 bps (Factory set value)
ON	ON	38400 bps

Communication protocol and Data bit configuration		
3		
OFF	Host communication (RKC communication) Data 8-bit, without parity, Stop 1-bit	(Factory set value *)
ON	Host communication (Modbus) Data 8-bit, without parity, Stop 1-bit	

* Factory set values when the communication protocol is not specified at the order.

Communication 2 (COM. PORT3 and COM. PORT4) setting

Use switches No. 4, No. 5, No. 6, and No. 7 to set the communication speed, communication protocol and data bit configuration for Communication 2.

Communication speed			
4			
OFF	OFF	9600 bps	
ON	OFF	19200 bps	(Factory set value)

Communication protocol and Data bit configuration			
5	6	7	
OFF	OFF	OFF	Host communication (RKC communication) Data 8-bit, without parity, Stop 1-bit (Factory set value *)
ON	OFF	OFF	Host communication (Modbus) Data 8-bit, without parity, Stop 1-bit

* Factory set values when the communication protocol is not specified at the order.

DIP switch setting validity/invalidity

Set switch No.8 to "ON" when performing communication by the communication settings set via host communication or loader communication. When set to "ON," the DIP switch settings are disabled.

DIP switch setting validity/invalidity			
8			
OFF	Valid		(Factory set value)
ON	Invalid	(According to the settings in Host communication or Loader communication)	

2. HOST COMMUNICATION DATA MAP

Symbols used in MAP

Attribute
 RO: Read only data (Host computer ← SRZ)
 R/W: Read and Write data (Host computer ↔ SRZ)

Symbols
 □: Data for each SRZ unit ▲: Data for each channel
 ♦: Data for each module ★: Parameters which can be used in multi-memory area function
 ▲: Parameters only used for heat/cool control or position proportioning control, therefore data for CH2 and CH4 of Z-TIO module are unused.
 [Read is possible (O), but the result of Write is disregarded.]

On a Z-TIO module (2-channel type), the communication data of CH3 and CH4 becomes invalid.

Host communication data of Z-COM module

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Communication 2 protocol	VP	8004	32772	1	R/W	0: RKC communication 1: Modbus 2: MITSUBISHI MELSEC series special protocol 3: OMRON SYMAC series special protocol 4: MITSUBISHI MELSEC series special protocol ACPU common command (WR/WW)	0
Model code (Z-COM module)	ID	—	—	32	RO	Model code (character)	—
Model code (Functional module*)	IE	—	—	32	RO	Model code (character)	[100]
ROM version (Z-COM module)	VR	—	—	8	RO	ROM version	—
ROM version (Functional module*)	VQ	—	—	8	RO	ROM version	[100]
Integrated operating time monitor (Z-COM module)	UT	—	—	7	RO	0 to 19999 hours	—
Integrated operating time monitor (Functional module*)	UV	—	—	7	RO	0 to 19999 hours	[100]
Error code (Z-COM module)	ER	0000	0	7	RO	• RKC communication 1: Adjustment data error 2: Data back-up error 4: A/D conversion error 32: Logic output data error 64: Program error (stack) * 128: Watchdog timer error * • Modbus b0: Adjustment data error b1: Data back-up error b2: A/D conversion error b3, b4: Unused b5: Logic output data error b6: Program error (stack) * b7: Watchdog timer error * b8 to b15: Unused * Only the Z-COM module Data 0: OFF 1: ON [Decimal number: 0 to 255] For the identifier ER, the error condition is shown by the OR of each module. When multiple errors occur, the error No. is the sum value. [Z-COM: 1, Z-TIO and Z-DIO: 100]	—
Error code (Functional module)*	EZ	0001 ... 0064	1 ... 100	7	RO	b0: Adjustment data error b1: Data back-up error b2: A/D conversion error b3, b4: Unused b5: Logic output data error b6: Program error (stack) * b7: Watchdog timer error * b8 to b15: Unused * Only the Z-COM module Data 0: OFF 1: ON [Decimal number: 0 to 255]	—
Backup memory state monitor (Z-COM module)	EM	0065	101	1	RO	0: The content of the backup memory does not coincide with that of the RAM.	—
Backup memory state monitor (Functional module*)	CZ	0066 ... 00C9	102 ... 201	1	RO	1: The content of the backup memory coincides with that of the RAM. [Z-COM: 1, Z-TIO and Z-DIO: 100]	—
System communication state	QM	00CA	202	1	RO	Bit 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]	[1]
SRZ normal communication flag	QL	00CB	203	1	RO	0/1 transfer (For communication checking) "0" and "1" are repeated for each communication period.	[1]
PLC communication error code	ES	00CC	204	7	RO	Bit data b0: PLC register read/write error b1: Slave communication timeout b2: Unused b3: Internal communication error b4: Master communication timeout b5 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 31]	[1]
Unit recognition flag	QN	00CD	205	7	RO	Bit data b0: SRZ unit 1 b1: SRZ unit 2 b2: SRZ unit 3 b3: SRZ unit 4 b4 to b15: Unused Data 0: No unit exists 1: Unit exists [Decimal number: 0 to 15]	[1]
Unused	—	00CE ... 0131	206 ... 305	—	—	—	—
Monitor for the number of connected modules	QK	0132	306	7	RO	0 to 31	[1]
RUN/STOP transfer (Each SRZ unit)	SR	0133	307	1	R/W	0: STOP (Control stop) 1: RUN (Control start)	0
RUN/STOP transfer (Each module)	SW	0134 ... 0197	308 ... 407	1	R/W	0: STOP (Control stop) 1: RUN (Control start)	[100]
Control RUN/STOP holding setting	X1	0198 ... 01FB	408 ... 507	1	R/W	0: Not holding (STOP start) 1: Holding (RUN/STOP hold)	[100]
The following items are enabled when the power is turned on again or when control is changed from STOP to RUN.							
Communication 1 protocol	VK	8000	32768	1	R/W	0: RKC communication 1: Modbus	[1]
Communication 1 communication speed	VL	8001	32769	1	R/W	0: 4800 bps 1: 9600 bps 2: 19200 bps 3: 38400 bps	[1]
Communication 1 data bit configuration	VM	8002	32770	7	R/W	0 to 5 See table 1.	[1]
Communication 1 interval time	VN	8003	32771	7	R/W	0 to 250 ms	[1]

* Functional module: Z-TIO-A/B module or Z-DIO module

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Communication 2 communication speed	VU	8005	32773	1	R/W	0: 4800 bps 1: 9600 bps 2: 19200 bps 3: 38400 bps	2
Communication 2 data bit configuration	VV	8006	32774	7	R/W	0 to 11 See table 1.	0
Communication 2 interval time	VX	8007	32775	7	R/W	0 to 250 ms	10
Station number	QV	8008	32776	7	R/W	0 to 31	0
PC number (CPU No.)	QW	8009	32777	7	R/W	0 to 255	255
Register type	QZ	800A	32778	7	R/W	MITSUBISHI MELSEC series 0: D register 1: R register 2: W register 3: ZR register 4 to 29: Unused OMRON SYMAC series 0: DM register (Data memory) 1 to 9: Unused 10 to 22: EM register (Extended data memory) [Specify the bank No.] [Specify the bank No.+10] 23 to 28: Unused 29: EM register (Extended data memory) [Specify the current bank]	0
Register start number (High-order 4-bit)	QS	800B	32779	7	R/W	0 to 15: QnA compatible, 3C frame	0
Register start number (Low-order 16-bit)	QX	800C	32780	7	R/W	0 to 9999: A compatible, 1C frame, ACPUCPU common command (WR/WW), OMRON SYMAC series 0 to 65535: A compatible 1C frame, ACPUCPU common command (QR/QW), QnA compatible 3C frame	1000
System data address bias	QQ	800D	32781	7	R/W	0 to 65535	2100
COM module link recognition time	QT	800E	32782	7	R/W	0 to 255 seconds	10
PLC scanning time	VT	800F	32783	7	R/W	0 to 3000 ms	255
PLC communication start time	R5	8010	32784	7	R/W	0 to 255 seconds	5
Method for setting the number of connected modules	RY	8011	32785	7	R/W	0: Does nothing 1: The maximum number of connected modules for functional modules is automatically set only when the power is turned ON. 2: The maximum number of connected modules for functional modules is automatically set when the number of connected modules is changed.	1
Slave mapping method	RK	8012	32786	7	R/W	0: Bias from the address setting switch [Register address + (Remainder of set value of address setting switch/4) × System data address bias] 1: Bias disabled	0
Number of connected modules* (Z-TIO module)	QY	8013	32787	7	R/W	0 to 16 This is the maximum address of the Z-TIO module that is connected to the Z-COM module.	[1]
Number of connected modules* (Z-DIO module)	QU	8014	32788	7	R/W	0 to 16 This is the maximum address of the Z-DIO module that is connected to the Z-COM module.	[1]
Unused	—	8015 ... 801A	32789 ... 32794	—	—	—	—

* This depends on the setting value of the communication identifier RY (method for setting the number of connected modules).

Table 1: Data bit configuration

Set value	Data bit	Parity bit	Stop bit	Settable communication
0	8	Without	1	Modbus
1	8	Even	1	RKC Communication
2	8	Odd	1	PLC communication
3	7	Without	1	RKC Communication
4	7	Even	1	PLC communication
5	7	Odd	1	PLC communication

Data range: Modbus: 0 to 2 RKC communication: 0 to 5 PLC communication: 0 to 11

Host communication data of Z-TIO module

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Measured value (PV) ▲	M1	01FC ... 023B	508 ... 571	7	RO	Input scale low to Input scale high [64]	—
Comprehensive event state ▲	AJ	023C ... 027B	572 ... 635	7	RO	• RKC communication Least significant digit to 4th digit: Event 1 state Event 4 state Heater break alarm state 5th digit: Temperature rise completion 6th digit: Burnout 7th digit: Data 0: OFF 1: ON • Modbus b0 to b3: Event 1 state to Event 4 state Heater break alarm state b4: Temperature rise completion b5: Burnout b6 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 127]	[64]
Operation mode state monitor ▲	LO	027C ... 02BB	636 ... 699	7	RO	• RKC communication Least significant digit: Control STOP 2nd digit: Control RUN 3rd digit: Manual mode 4th digit: Remote mode 5th digit to Most significant digit: Unused Data 0: OFF 1: ON [Decimal number: 0 to 127]	[64]
Unused	—	02BC ... 02CB	700 ... 715	—	—	—	—
Manipulated output value (MV) monitor [heat-side] ▲ ▲	O1	02CC ... 030B	716 ... 779	7	RO	PID control or heat/cool PID control −5.0 to +105.0 % Position proportioning control (FBR input): 0.0 to 100.0 % [heat-side]	[64]
Manipulated output value (MV) monitor [cool-side] ▲ ▲	O2	030C ... 034B	780 ... 843	7	RO	−5.0 to +105.0 % [cool-side]	[64]
Current transformer (CT) input value monitor ▲	M3	034C ... 038B	844 ... 907	7	RO	CTL-6-P-N: 0.0 to 30.0 A CTL-12-S56-10L-N: 0.0 to 100.0 A	[64]
Set value (SV) monitor ▲	MS	038C ... 03CB	908 ... 971	7	RO	Setting limiter (low) to Setting limiter (high)	[64]
Remote setting (RS) input value monitor ▲	S2	03CC ... 040B	972 ... 1035	7	RO	Setting limiter (low) to Setting limiter (high)	[64]
Burnout state monitor ▲	B1	040C ... 044B	1036 ... 1099	1	RO	0: OFF 1: ON	[64]
Event 1 state monitor ▲	AA	044C ... 048B	1100 ... 1163	1	RO	0: OFF 1: ON	—
Event 2 state monitor ▲	AB	048C ... 04CB	1164 ... 1227	1	RO	—	—
Event 3 state monitor ▲	AC	04CC ... 050B	1228 ... 1291	1	RO	—	—
Event 4 state monitor ▲	AD	050C ... 054B	1292 ... 1355	1	RO	—	—
Heater break alarm (HBA) state monitor ▲	AE	054C ... 058B	1356 ... 1419	1	RO	0: OFF 1: ON	[64]
Output state monitor ▲	Q1	058C ... 059B	1420 ... 1435	7	RO	• RKC communication Least significant digit to 4th digit: OUT1 to OUT4 5th digit to Most significant digit: Unused Data 0: OFF 1: ON • Modbus b0 to b3: OUT1 to OUT4 b4 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 15]	[16]
Memory area soak time monitor ▲	TR	059C ... 05DB	1436 ... 1499	7	RO	0 minutes 00 seconds to 199 minutes 59 seconds: RKC communication: 0:00 to 199:59 (minsec) Modbus: 0 to 11999 seconds 0 hours 00 minutes to 99 hours 59 minutes: RKC communication: 0:00 to 99:59 (hrs:min) Modbus: 0 to 5999 minutes [64]	[64]
Unused	—	05DC ... 05EB	1500 ... 1515	—	—	—	—
Holding peak value ambient temperature monitor ▲	Hp	05EC ... 062B	1516 ... 1579	7	RO	−10.0 to +100.0 °C or 14.0 to 212.0 °F	[64]
Unused	—	062C ... 063B	1580 ... 1595	—	—	—	—

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Logic output monitor 1	ED	063C 064B	1596 1611	7	RO	<ul style="list-style-type: none"> RKC communication Least significant digit to 4th digit: Logic output 1 to 4 5th digit to Most significant digit: Unused Data 0: OFF 1: ON • Modbus b0 to b7: Logic output 1 to 8 b8 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255] [16] 	—
Logic output monitor 2	EE	—	—	7	RO	<ul style="list-style-type: none"> RKC communication Least significant digit to 4th digit: Logic output 5 to 8 5th digit to Most significant digit: Unused Data 0: OFF 1: ON 	—
Unused	—	064C 080B	1612 2059	—	—	—	—
PID/AT transfer	G1	080C 084B	2060 2123	1	R/W	<ul style="list-style-type: none"> PID control 1: Autotuning (AT) 	0
Auto/Manual transfer	J1	084C 088B	2124 2187	1	R/W	<ul style="list-style-type: none"> 0: Auto mode 1: Manual mode 	0
Remote/Local transfer	C1	088C 08CB	2188 2251	1	R/W	<ul style="list-style-type: none"> 0: Local mode 1: Remote mode 	0
Unused	—	08CC 08DB	2252 2267	—	—	—	—
Memory area transfer	ZA	08DC 091B	2268 2331	7	R/W	0 to 8	1
Interlock release	AR	091C 095B	2332 2395	1	R/W	<ul style="list-style-type: none"> 0: Normal state 1: Interlock release execution 	0
Event 1 set value (EV1)	A1	095C 099B	2396 2459	7	R/W	Deviation action, Deviation action between channels, Temperature rise completion range *	50
Event 2 set value (EV2)	A2	099C 09DB	2460 2523	7	R/W	<ul style="list-style-type: none"> -Input span to +Input span Process action, SV action: Input scale low to Input scale high 	50
Event 3 set value (EV3)	A3	09DC 0A1B	2524 2587	7	R/W	MV action: -5.0 to +105.0 %	50
Event 4 set value (EV4)	A4	0A1C 0A5B	2588 2651	7	R/W	* When temperature rise completion is selected at Event 3 action type.	50
Control loop break alarm (LBA) time	A5	0A5C 0A9B	2652 2715	7	R/W	0 to 7200 seconds (0: Unused)	480
LBA deadband	N1	0A9C 0ADB	2716 2779	7	R/W	0 (0.0) to Input span	0 (0.0)
Set value (SV)	S1	0ADC 0B1B	2780 2843	7	R/W	Setting limiter (low) to Setting limiter (high)	TC/RTD: 0 °C (°F) V/I: 0.0 %
Proportional band (heat-side)	P1	0B1C 0B5B	2844 2907	7	R/W	<ul style="list-style-type: none"> 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 	TC/RTD: 30 V/I: 30.0
Integral time (heat-side)	I1	0B5C 0B9B	2908 2971	7	R/W	<ul style="list-style-type: none"> 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)	D1	0B9C 0BDB	2972 3035	7	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds (0, 0.0: PI action)	60
Control response parameter	CA	0BDC 0C1B	3036 3099	1	R/W	<ul style="list-style-type: none"> PID control, Position proportioning control: 0 Heat/cool PID control: 2 0: Slow 1: Medium 2: Fast P or PD action: 2 (Fast) fixed 	64
Proportional band (cool-side)	P2	0C1C 0C5B	3100 3163	7	R/W	<ul style="list-style-type: none"> 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)	I2	0C5C 0C9B	3164 3227	7	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds (0, 0.0: PD action)	240
Derivative time (cool-side)	D2	0C9C 0CDB	3228 3291	7	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds (0, 0.0: PI action)	60
Overlap/Deadband	V1	0CDC 0D1B	3292 3355	7	R/W	<ul style="list-style-type: none"> -Input span to +Input span (Unit: °C (°F)) Voltage (V)/current (I) inputs: -100.0 to +100.0 % of input span 	0
Manual reset	MR	0D1C 0D5B	3356 3419	7	R/W	-100.0 to +100.0 %	0.0
Setting change rate limiter (up)	HH	0D5C 0D9B	3420 3483	7	R/W	0 (0.0) to Input span/unit time 0 (0.0): Unused Unit time: 60 seconds (factory set value)	0 (0.0)

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Setting change rate limiter (down)	HL	0D9C 0DDB	3484 3547	7	R/W	0 (0.0) to Input span/unit time 0 (0.0): Unused Unit time: 60 seconds (factory set value)	0 (0.0)
Area soak time	TM	0DDC 0E1B	3548 3611	7	R/W	<ul style="list-style-type: none"> 0 minutes 00 seconds to 199 minutes 59 seconds RKC communication: 0.00 to 199:59 (min:sec) Modbus: 0 to 11999 seconds 0 hours 00 minutes to 99 hours 59 minutes RKC communication: 0:00 to 99:59 (hrs:min) Modbus: 0 to 5999 minutes 	RKC communication: 0.00 Modbus: 0
Link area number	LP	0E1C 0E5B	3612 3675	7	R/W	0 to 8 (0: No link)	0
Heater break alarm (HBA) set value	A7	0E5C 0E9B	3676 3739	7	R/W	<ul style="list-style-type: none"> When CT is CTL-6-P-N: 0.0 to 30.0 A (0.0: Not used) When CT is CTL-12-556-10L-N: 0.0 to 100.0 A (0.0: Not used) 	0.0
Heater break determination point	NE	0E9C 0EDB	3740 3803	7	R/W	0.0 to 100.0 % of HBA set value (0.0: Heater break determination is invalid)	30.0
Heater melting determination point	NF	0EDC 0F1B	3804 3867	7	R/W	0.0 to 100.0 % of HBA set value (0.0: Heater melting determination is invalid)	30.0
PV bias	PB	0F1C 0F5B	3868 3931	7	R/W	-Input span to +Input span	0
PV digital filter	F1	0F5C 0F9B	3932 3995	7	R/W	0.0 to 100.0 seconds (0.0: Unused)	0.0
PV ratio	PR	0F9C 0FDB	3996 4059	7	R/W	0.500 to 1.500	1.000
PV low input cut-off	DP	0FDC 101B	4060 4123	7	R/W	0.0 to 25.00 % of input span	0.00
RS bias *	RB	101C 105B	4124 4187	7	R/W	-Input span to +Input span	0
RS digital filter *	F2	105C 109B	4188 4251	7	R/W	0.0 to 100.0 seconds (0.0: Unused)	0.0
RS ratio *	RR	109C 10DB	4252 4315	7	R/W	0.001 to 9.999	1.000
Output distribution selection	DV	10DC 111B	4316 4379	1	R/W	0: Control output 1: Distribution output	0
Output distribution bias	DW	111C 115B	4380 4443	7	R/W	-100.0 to +100.0 %	0.0
Output distribution ratio	DQ	115C 119B	4444 4507	7	R/W	-9.999 to +9.999	1.000
Proportional cycle time	TO	119C 11DB	4508 4571	7	R/W	0.1 to 100.0 seconds M: Relay contact output T: Triac output V: Voltage pulse output D: Open collector output	M output: 20.0 V, T, D output: 2.0
Minimum ON/OFF time of proportioning cycle	VI	11DC 121B	4572 4635	7	R/W	0 to 1000 ms	0
Manual manipulated output value	ON	121C 125B	4636 4699	7	R/W	<ul style="list-style-type: none"> PID control: Output limiter (low) to Output limiter (high) Heat/cool PID control: -Cool-side output limiter (high) to +Heat-side output limiter (high) Position 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 ON, Open-side output OFF 2: Close-side output OFF, Open-side output ON 	0.0
Area soak time stop function	RV	125C 129B	4700 4763	1	R/W	0: No function 1: Event 1 2: Event 2 3: Event 3 4: Event 4	0
EDS mode (for disturbance 1)	NG	129C 12DB	4764 4827	1	R/W	0: No function 1: EDS function mode 2: Learning mode 3: Tuning mode	0
EDS mode (for disturbance 2)	NX	12DC 131B	4828 4891	1	R/W	EDS function: External disturbance suppression function	0
EDS value 1 (for disturbance 1)	NI	131C 135B	4892 4955	7	R/W	-100.0 to +100.0 %	0.0
EDS value 1 (for disturbance 2)	NJ	135C 139B	4956 5019	7	R/W	—	0.0
EDS value 2 (for disturbance 1)	NK	139C 13DB	5020 5083	7	R/W	—	0.0
EDS value 2 (for disturbance 2)	NM	13DC 141B	5084 5147	7	R/W	—	0.0

* Data on RS bias, RS ratio and RS digital filter is that in cascade control or ratio setting.

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
EDS transfer time (for disturbance 1)	NN	141C 145B	5148 5211	7	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds	0
EDS transfer time (for disturbance 2)	NO	145C 149B	5212 5275	7	R/W	[Each 64]	0
EDS action time (for disturbance 1)	NQ	149C 14DB	5276 5339	7	R/W	1 to 3600 seconds	600
EDS action time (for disturbance 2)	NL	14DC 151B	5340 5403	7	R/W	[Each 64]	600
EDS action wait time (for disturbance 1)	NR	151C 155B	5404 5467	7	R/W	0.0 to 600.0 seconds	0.0
EDS action wait time (for disturbance 2)	NY	155C 159B	5468 5531	7	R/W	[Each 64]	0.0
EDS value learning times	NT	159C 15DB	5532 5595	7	R/W	0 to 10 times (0: No learning mode)	1
EDS start signal	NU	15DC 161B	5596 5659	1	R/W	<ul style="list-style-type: none"> 0: EDS start signal OFF (for disturbance 1) 1: EDS start signal ON (for disturbance 1) 2: EDS start signal ON (for disturbance 2) 	0
Operation mode	EI	161C 165B	5660 5723	1	R/W	<ul style="list-style-type: none"> 0: Unused 1: Monitor 2: Monitor + Event function 3: Control 	3
Startup tuning (ST)	ST	165C 169B	5724 5787	1	R/W	<ul style="list-style-type: none"> 0: ST unused 1: Execute once 2: Execute always 	0
Automatic temperature rise learning	Y8	169C 16DB	5788 5851	1	R/W	0: Learning	0
Communication switch (for logic)	EF	16DC 16EB	5852 5867	7	R/W	<ul style="list-style-type: none"> RKC communication Least significant digit to 4th digit: Communication switch 1 to 4 5th digit to Most significant digit: Unused Data 0: OFF 1: ON • Modbus b0 to b4: Communication switch 1 to 4 b5 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 31] [16] 	0
Unused	—	16EC 196B	5868 6507	—	—	—	—

For communication data (Engineering setting), refer to the Z-COM Instruction Manual (IMS01T07-E □).

■ Communication data for multi-memory area data (only for Modbus)

Use the register addresses of 386CH to 3DABH to confirm or change set values of parameters in multi-memory areas which are not selected.

Name	Modbus register address		Attribute	Data range and Number of data	Factory set value
	HEX	DEC			
Setting memory area number	386C 38AB	14444 14507	R/W	The data range, the number of data, and factory set value are the same as for communication identifier ZA.	—
Event 1 set value (EV1)	38AC 38EB	14508 14571	R/W	The data range, the number of data, and factory set value are the same as for communication identifier A1.	—
Event 2 set value (EV2)	38EC 392B	14572 14635	R/W	The data range, the number of data, and factory set value are the same as for communication identifier A2.	—
Event 3 set value (EV3)	392C 396B	14636 14699	R/W	The data range, the number of data, and factory set value are the same as for communication identifier A3.	—
Event 4 set value (EV4)	396C 39AB	14700 14763	R/W	The data range, the number of data, and factory set value are the same as for communication identifier A4.	—
Control loop break alarm (LBA) time	39AC 39EB	14764 14827	R/W	The data range, the number of data, and factory set value are the same as for communication identifier A5.	—
LBA deadband	39EC 3A2B	14828 14891	R/W	The data range, the number of data, and factory set value are the same as for communication identifier N1.	—
Set value (SV)	3A2C 3A6B	14892 14955	R/W	The data range, the number of data, and factory set value are the same as for communication identifier S1.	—
Proportional band (heat-side)	3A6C 3AAB	14956 15019	R/W	The data range, the number of data, and factory set value are the same as for communication identifier P1.	—
Integral time (heat-side)	3AAC 3AEB	15020 15083	R/W	The data range, the number of data, and factory set value are the same as for communication identifier I1.	—
Derivative time (heat-side)	3AEC 3B2B	15084 15147	R/W	The data range, the number of data, and factory set value are the same as for communication identifier D1.	—
Control response parameter	3B2C 3B6B	15148 15211	R/W	The data range, the number of data, and factory set value are the same as for communication identifier CA.	—
Proportional band (cool-side)	3B6C 3BAB	15212 15275	R/W	The data range, the number of data, and factory set value are the same as for communication identifier P2.	—
Integral time (cool-side)	3BAC 3BEB	15276 15339	R/W	The data range, the number of data, and factory set value are the same as for communication identifier I2.	—
Derivative time (cool-side)	3BEC 3C2B	15340 15403	R/W	The data range, the number of data, and factory set value are the same as for communication identifier D2.	—

Name	Modbus register address		Attribute	Data range and Number of data	Factory set value
	HEX	DEC			
Overlap/Deadband	3C2C 3C6B	15404 15467	R/W	The data range, the number of data, and factory set value are the same as for communication identifier V1.	—
Manual reset	3C6C 3CAB	15468 15531	R/W	The data range, the number of data, and factory set value are the same as for communication identifier MR.	—
Setting change rate limiter (up)	3CAC 3CEB	15532 15595	R/W	The data range, the number of data, and factory set value are the same as for communication identifier HH.	—
Setting change rate limiter (down)	3CEC 3D2B	15596 15659	R/W	The data range, the number of data, and factory set value are the same as for communication identifier HL.	—
Area soak time	3D2C 3D6B	15660 15723	R/W	0 to 11999 seconds or 0 to 5999 minutes	0
Link area number	3D6C 3DAB	15724 15787	R/W	The data range, the number of data, and factory set value are the same as for communication identifier LP.	—

For the Modbus data mapping function, see the SRZ Instruction Manual (IMS01T04-E □).

■ Host communication data of Z-DIO module

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Digital input (DI) state 1	L1	3E6C 3E7B	15980 15995	7	RO	<ul style="list-style-type: none"> RKC communication Least significant digit to 4th digit: D1 to D4 5th digit to Most significant digit: Unused Data 0: Contact open 1: Contact closed • Modbus b0 to b7: D1 to D8 b8 to b15: Unused Data 0: Contact open 1: Contact closed [Decimal number: 0 to 255] [16] 	—
Digital input (DI) state 2	L6	—	—	7	RO	<ul style="list-style-type: none"> Least significant digit to 4th digit: D5 to D8 5th digit to Most significant digit: Unused Data 0: Contact open 1: Contact closed 	—
Digital output (DO) state 1	Q2	3E7C 3E8B	15996 16011	7	RO	<ul style="list-style-type: none"> RKC communication Least significant digit to 4th digit: DO1 to DO4 5th digit to Most significant digit: Unused Data 0: OFF 1: ON • Modbus b0 to b7: DO1 to DO8 b8 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255] [16] 	—
Digital output (DO) state 2	Q3	—	—	7	RO	<ul style="list-style-type: none"> Least significant digit to 4th digit: DO5 to DO8 5th digit to Most significant digit: Unused Data 0: OFF 1: ON 	—
Unused	—	3E8C 3FDB	16012 16347	—	—	—	—
DO manual output 1	Q4	3FDC 3EFB	16348 16353	7	R/W	<ul style="list-style-type: none"> RKC communication Least significant digit to 4th digit: DO1 manual output to DO4 manual output 5th digit to Most significant digit: Unused Data 0: OFF 1: ON • Modbus b0 to b7: DO1 manual output to DO8 manual output b8 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255] [16] 	0
DO manual output 2	Q5	—	—	7	R/W	<ul style="list-style-type: none"> Least significant digit to 4th digit: DO5 manual output to DO8 manual output 5th digit to Most significant digit: Unused Data 0: OFF 1: ON 	0
DO output distribution selection	DO	3FEC 406B	16364 16491	1	R/W	0: DO output 1: Distribution output	0
DO output distribution bias	O8	406C 40EB	16492 16619	7	R/W	-100.0 to +100.0 %	0.0
DO output distribution ratio	O9	40EC 416B	16620 16747	7	R/W	-9.999 to +9.999	1.000
DO proportioning cycle time	V0	416C 41EB	16748 16875	7	R/W	0.1 to 100.0 seconds	Depend on specification
DO minimum ON/OFF time of proportioning cycle	VJ	41EC 426B	16876 17003	7	R/W	0 to 1000 ms	0
Unused	—	4					