



Ethernet Communication Converter Host Communication

COM-ML-1 [For SRZ] Data List

IMR02E15-E1 All Rights Reserved, Copyright © 2018, RKC INSTRUMENT INC.

This manual describes the communication data of the COM-ML-1. For the installation, the detail handling procedures and various function settings, please read if necessary the following separate manuals.

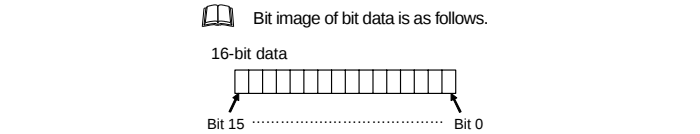
- COM-ML-1 [For SRZ] Installation Manual (IMR02E13-EC): Enclosed with COM-ML
- COM-ML-1 [For SRZ] Quick Instruction Manual (IMR02E14-EC): Enclosed with COM-ML
- COM-ML-1 [For SRZ] PLC Communication Data List (IMR02E16-EC): Enclosed with COM-ML
- COM-ML-1 [For SRZ] Instruction Manual (IMR02E17-EC): Separate (Download or sold separately)

These manuals can be downloaded from the official RKC website:
http://www.rkcinst.com/english/manual_load.htm

1. HOW TO READ THE DATA MAP

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]	—

- (1) Name: Name of communication data
- (2) RKC Identifier: Communication identifier of RKC communication
- (3) Modbus register address: Register address of Modbus data item specification (Vacant numbers become unused)
HEX: Hexadecimal
DEC: Decimal
- (4) Digits: The number of communication data digits in RKC communication
- (5) Attribute: A method of how communication data items are read or written when viewed from the host computer is described
RO: Read only data (Host computer ← COM-ML)
RW: Read and Write data (Host computer ↔ COM-ML)
- (6) Data range and Number of data: Read or Write range of communication data
[]: Number of data (This is the maximum number per communication data that can be handled by one SRZ unit.)



- (7) Factory set value: Factory set value of communication data

- Symbols
- : Data for each SRZ unit
 - ◆: Data for each module
 - ▲: Data for each channel
 - ♥: Data that are activated by rebooting
 - ★: 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 (0), but the result of Write is disregarded.]

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

2. HOST COMMUNICATION DATA MAP

2.1 Host Communication Data of COM-ML

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Instrument number ◆ (COM-ML)	RX	—	—	8	RO	Serial number (character) [1]	—
Instrument number ◆ (Function module *)	RZ	—	—	8	RO	Serial number (character) [100]	—
Model code ◆ (COM-ML)	ID	—	—	32	RO	Model code (character) [1]	—
Model code ◆ (Function module *)	IE	—	—	32	RO	Model code (character) [100]	—
ROM version ◆ (COM-ML)	VR	—	—	8	RO	ROM version [1]	—
ROM version ◆ (Function module *)	VQ	—	—	8	RO	ROM version [100]	—
Integrated operating time monitor ◆ (COM-ML)	UT	—	—	7	RO	0 to 19999 hours [1]	—

* Function module: Z-TIO module, Z-DIO module or Z-CT module

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Integrated operating time monitor ◆ (Function module *)	UV	—	—	7	RO	0 to 19999 hours [100]	—
Error code □ (COM-ML)	ER	0000	0	7	RO	• RKC communication 1: Adjustment data error ¹ 2: Data back-up error 4: A/D conversion error ¹ 32: Logic output data error ² 64: Stack overflow ³ 512: Network module error ³ • Modbus Bit 0: Adjustment data error ¹ Bit 1: Data back-up error Bit 2: A/D conversion error ¹ Bit 3 to Bit 4: Unused Bit 5: Logic output data error ² Bit 6: Stack overflow ³ Bit 7 to Bit 9: Unused Bit 10: Network module error ³ Bit 11 to Bit 15: Unused ¹ Only the function module * ² Only the Z-TIO and Z-DIO module ³ Only the COM-ML Data: 0: OFF 1: ON [Decimal number: 0 to 1127] 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. [COM-ML: 1] [Z-TIO, Z-DIO and Z-CT: 100]	—
Error code ◆ (Function module *)	EZ	0001 : 0064	1 : 100	7	RO	Bit 10: Network module error ³ Bit 11 to Bit 15: Unused ¹ Only the function module * ² Only the Z-TIO and Z-DIO module ³ Only the COM-ML Data: 0: OFF 1: ON [Decimal number: 0 to 1127] 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. [COM-ML: 1] [Z-TIO, Z-DIO and Z-CT: 100]	—
Backup memory state monitor ◆ (COM-ML)	EM	0065	101	1	RO	0: The content of the backup memory does not coincide with that of the RAM.	—
Backup memory state monitor ◆ (Function module *)	CZ	0066 : 00C9	102 : 201	1	RO	1: The content of the backup memory coincides with that of the RAM. [COM-ML: 1] [Z-TIO, Z-DIO and Z-CT: 100]	—
System communication state □	QM	00CA	202	1	RO	Bit data Bit 0: Data collection condition Bit 1 to Bit 15: Unused Data: 0: Before data collection is completed 1: Data collection is completed [Decimal number: 0, 1] [1]	—
Normal communication state □	QL	00CB	203	1	RO	0/1 transfer or Count up at 0 to 30000 (For communication checking) "0" and "1" are repeated for each communication period. Or 1 is added in the range of 0 to 30000 for each communication cycle. (The count is reset to zero when 30000 is reached). Use the identifier QT (Normal communication state selection) to select. [1]	—
PLC communication error code □	ES	00CC	204	7	RO	Bit data Bit 0: Network operation not possible Bit 1: PLC register read/write error Bit 2: PLC communication timeout Bit 3: Unused Bit 4: Internal communication error Bit 5 to Bit 15: Unused Data: 0: OFF 1: ON [Decimal number: 0 to 31] [1]	—
PLC communication unit recognition flag □	QN	00CD	205	7	RO	Bit data Bit 0: SRZ unit Bit 1 to Bit 15: Unused Data: 0: No unit exists 1: Unit exists [Decimal number: 0 to 1] [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 □	SR	0133	307	1	R/W	0: STOP (Control stop) 1: RUN (Control start) [1]	0
RUN/STOP transfer ◆	SW	0134 : 0197	308 : 407	1	R/W	0: STOP (Control stop) 1: RUN (Control start) [100]	0
Control RUN/STOP holding setting ◆	X1	0198 : 01FB	408 : 507	1	R/W	0: Not holding (STOP start) 1: Holding (RUN/STOP hold) [100]	1
Ethernet selection □♥	VK	8000	32768	1	R/W	0: Modbus/TCP 3: PLC communication (MAPMAN) MITSUBISHI MELSEC series (QnA-compatible 3E frame [SLMP]) [1]	0
ASCII/Binary selection □	VL	8001	32769	1	R/W	0: ASCII 1: Binary [1]	1
TCP port number □♥	VM	8002	32770	7	R/W	0 to 65535 Modbus/TCP: 502 PLC communication (MITSUBISHI PLC): 4096 [1]	—
Unused	—	8003	32771	—	—	—	—
Host communication protocol □	VP	8004	32772	1	R/W	0: RKC communication 1: Modbus [1]	0
Host communication Communication speed □	VU	8005	32773	1	R/W	0: 4800 bps 2: 19200 bps 1: 9600 bps 3: 38400 bps [1]	2
Host communication data bit configuration □	VW	8006	32774	7	R/W	0 to 5 Refer to Table 1 Data bit configuration. [1]	0

* Function module: Z-TIO module, Z-DIO module or Z-CT module

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Host communication interval time □	VX	8007	32775	7	R/W	0 to 250 ms [1]	10
Unused	—	8008	32776	—	—	—	—
Unused	—	8009	32777	—	—	—	—
System data register type □	QZ	800A	32778	7	R/W	MITSUBISHI MELSEC series 0: D register (Data register) 1: R register (File register) 2: W register (Link register) 3: ZR register 4 to 29: Unused [1]	0
System data register start number (High-order 4-bit) □	QS	800B	32779	7	R/W	0 to 15 [1]	0
System data register start number (Low-order 16-bit) □	QX	800C	32780	7	R/W	0 to 65535 [1]	1000
System data address bias □	QQ	800D	32781	7	R/W	0 to 65535 [1]	0
Normal communication state selection □♥	QT	800E	32782	7	R/W	0: "0" and "1" are repeated for each communication period. 1: 1 is added in the range of 0 to 30000 for each communication cycle. (The count is reset to zero when 30000 is reached). [1]	0
Unused	—	800F	32783	—	—	—	—
Unused	—	8010	32784	—	—	—	—
Method for setting the number of connected modules □	RY	8011	32785	7	R/W	0: No action 1: Automatically set the maximum number of connected function modules only when power is turned on. 2: Execute automatic setting of the maximum number of connected function modules. (After automatic setting of the number of connected function modules, the value automatically reverts to 0.) [1]	1
Slave mapping method □	RK	8012	32786	7	R/W	0: Bias from the address setting switch [Register address + (Set value of address setting switch) × System data address bias] 1: Bias disabled [1]	1
Number of connected modules ¹ (Z-TIO module) □	QY	8013	32787	7	R/W	0 to 16 Maximum number of Z-TIO modules connected to COM-ML [1]	—
Number of connected modules ¹ (Z-DIO module) □	QU	8014	32788	7	R/W	0 to 16 Maximum number of Z-DIO modules connected to COM-ML [1]	—
Number of connected modules ¹ (Z-CT module) □	QO	8015	32789	7	R/W	0 to 16 Maximum number of Z-CT modules connected to COM-ML [1]	—
Unused	—	8016 : 8019	32790 : 32793	—	—	—	—
Number of valid groups □	QA	801A	32794	7	RO	0 to 30 [1]	—
First-byte of IP address ² □♥	QB	801B	32795	7	R/W	0 to 255 [1]	192
Second-byte of IP address ² □♥	QC	801C	32796	7	R/W	0 to 255 [1]	168
Third-byte of IP address ² □♥	QD	801D	32797	7	R/W	0 to 255 [1]	1
Fourth-byte of IP address ² □♥	QE	801E	32798	7	R/W	0 to 255 [1]	1
Unused	—	801F : 80B5	32799 : 32949	—	—	—	—
MAPMAN transmission delay timer (<0.01 sec) □	Y6	80B6	32950	7	R/W	0 to 100 (0.00 seconds to 1.00 seconds) [1]	0
Control RUN/STOP holding setting □	X2	80B7	32951	1	R/W	0: Not holding (STOP start) 1: Holding (RUN/STOP hold) [1]	1
Unused	—	80B8	32952	—	—	—	—
Unused	—	80B9	32953	—	—	—	—
First-byte of remote IP address □♥	Q6	80BA	32954	7	R/W	0 to 255 [1]	192
Second-byte of remote IP address □♥	Q7	80BB	32955	7	R/W	0 to 255 [1]	168
Third-byte of remote IP address □♥	Q8	80BC	32956	7	R/W	0 to 255 [1]	1
Fourth-byte of remote IP address □♥	Q9	80BD	32957	7	R/W	0 to 255 [1]	2
Unused	—	80BE : 813E	32958 : 33086	—	—	—	—

¹ When 1 or 2 is set for the communication identifier RY (method of setting the number of connected modules), the maximum number of connected modules is set automatically. When 0 is set, the maximum number of connected modules is set manually.

Maximum number of connected modules:
Maximum address of function modules (address setting switch set value + 1)
COM-ML uses this set value to calculate the number of channels of communication data (RKC communication only).

² When the IP address is 0.0.0.0, the IP address is obtained through DHCP.

Table 1: Data bit configuration

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

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

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
First-byte of gateway address □♥	W1	813F	33087	7	R/W	0 to 255 [1]	0
Second-byte of gateway address □♥	W2	8140	33088	7	R/W	0 to 255 [1]	0
Third-byte of gateway address □♥	W3	8141	33089	7	R/W	0 to 255 [1]	0
Fourth-byte of gateway address □♥	W4	8142	33090	7	R/W	0 to 255 [1]	0
Subnet mask CIDR □♥	W5	8143	33091	7	R/W	0 to 32 [1]	24
Unused	—	8144 : 814A	33092 : 33098	—	—	—	—

2.2 Host Communication Data of Z-TIO

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 to Event 4 5th digit: Heater break alarm (HBA) 6th digit: Temperature rise completion 7th digit: Burnout Data: 0: OFF 1: ON • Modbus Bit 0 to Bit 3: Event 1 to Event 4 Bit 4: Heater break alarm (HBA) Bit 5: Temperature rise completion Burnout Bit 6: Burnout Bit 7 to Bit 15: Unused Data: 0: OFF 1: ON [Decimal number: 0 to 127] [64]	—
Operation mode state monitor ▲	L0	027C : 02BB	636 : 699	7	RO	• RKC communication Least significant digit: STOP 2nd digit: RUN 3th digit: Manual mode 4th digit: Remote mode 5th digit to Most significant digit: Unused Data: 0: OFF 1: ON [Decimal number: 0 to 15] [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 % [64]	—
Manipulated output value (MV) monitor [cool-side] ▲▲	O2	030C : 034B	780 : 843	7	RO	-5.0 to +105.0 % [64]	—
Current transformer (CT) input value monitor ▲	M3	034C : 038B	844 : 907	7	RO	CTL-6-P-N: 0.0 to 30.0A 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	If the Event 3 type is Temperature rise completion, check the Temperature rise completion state in the Comprehensive event state (Identifier: AJ, Register address: 023C to 027B). (The Event 3 state monitor does not turn ON.)	—
Event 3 state monitor ▲	AC	04CC : 050B	1228 : 1291	1	RO	Comprehensive event state (Identifier: AJ, Register address: 023C to 027B). (The Event 3 state monitor does not turn ON.) [Each 64]	—
Event 4 state monitor ▲	AD	050C : 054B	1292 : 1355	1	RO	0: OFF 1: ON	—
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 [Decimal number: 0 to 15] [16]	—

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Memory area soak time monitor ▲	TR	059C ⋮ 05DB	1436 ⋮ 1499	7	RO	0 minutes 00 seconds to 199 minutes 59seconds: 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 [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 (14.0 to 212.0 °F) [64]	—
Unused	—	062C ⋮ 063B	1580 ⋮ 1595	—	—	—	—
Logic output monitor 1 ♦	ED	063C ⋮ 064B	1596 ⋮ 1611	7	RO	• 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 Bit 0 to Bit 7: Logic output 1 to 8 Bit 8 to Bit 15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255] [16]	—
Logic output monitor 2 ♦	EE	—	—	7	RO	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 [16]	—
Unused	—	064C ⋮ 080B	1612 ⋮ 2059	—	—	—	—
PID/A transfer ▲	G1	080C ⋮ 084B	2060 ⋮ 2123	1	R/W	0: PID control 1: Autotuning (AT) When the Autotuning (AT) is finished, the control will automatically returns to 0: PID control. [64]	0
Auto/Manual transfer ▲	J1	084C ⋮ 088B	2124 ⋮ 2187	1	R/W	0: Auto mode 1: Manual mode [64]	0
Remote/Local transfer ▲	C1	088C ⋮ 08CB	2188 ⋮ 2251	1	R/W	0: Local mode 1: Remote mode [64]	0
Unused	—	08CC ⋮ 08DB	2252 ⋮ 2267	—	—	—	—
Memory area transfer ▲	ZA	08DC ⋮ 091B	2268 ⋮ 2331	7	R/W	1 to 8 [64]	1
Interlock release ▲	AR	091C ⋮ 095B	2332 ⋮ 2395	1	R/W	0: Normal state 1: Interlock release execution [64]	0
Event 1 set value (EV1) ▲ ★	A1	095C ⋮ 099B	2396 ⋮ 2459	7	R/W	Deviation action, Deviation action between channels, Temperature rise completion range *: [64]	50 (50.0)
Event 2 set value (EV2) ▲ ★	A2	099C ⋮ 09DB	2460 ⋮ 2523	7	R/W	−Input span to +Input span * When temperature rise completion is selected at Event 3 action type. [64]	50 (50.0)
Event 3 set value (EV3) ▲ ★	A3	09DC ⋮ 0A1B	2524 ⋮ 2587	7	R/W	Process action, SV action: Input scale low to Input scale high [64]	50 (50.0)
Event 4 set value (EV4) ▲ ★	A4	0A1C ⋮ 0A5B	2588 ⋮ 2651	7	R/W	MV action: −5.0 to +105.0 % [Each 64]	50 (50.0)
Control loop break alarm (LBA) time ▲ ★	A5	0A5C ⋮ 0A9B	2652 ⋮ 2715	7	R/W	0 to 7200 seconds (0: Unused) [64]	480
LBA deadband ▲ ★	N1	0A9C ⋮ 0ADB	2716 ⋮ 2779	7	R/W	0 (0.0) to Input span [64]	0 (0.0)
Set value (SV) ▲ ★	S1	0ADC ⋮ 0B1B	2780 ⋮ 2843	7	R/W	Setting limiter low to Setting limiter high [64]	TC/RTD: 0 (0.0) V/I: 0.0
Proportional band [heat-side] ▲ ★ ★	P1	0B1C ⋮ 0B5B	2844 ⋮ 2907	7	R/W	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 [64]	TC/RTD: 30 (30.0) V/I: 30.0
Integral time [heat-side] ▲ ★ ★	I1	0B5C ⋮ 0B9B	2908 ⋮ 2971	7	R/W	PID control or Heat/Cool PID action: 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 [64]	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) [64]	60
Control response parameter ▲ ★ ★	CA	0BDC ⋮ 0C1B	3036 ⋮ 3099	1	R/W	0: Slow 1: Medium 2: Fast When the P or PD action is selected, this setting becomes invalid. [64]	PID control, Position proportioning control: 0 Heat/Cool PID control: 2
Proportional band [cool-side] ▲ ★ ★	P2	0C1C ⋮ 0C5B	3100 ⋮ 3163	7	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 [64]	TC/RTD: 30 (30.0) 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) [64]	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) [64]	60
Overlap/ Deadband ▲ ★ ★	V1	0CDC ⋮ 0D1B	3292 ⋮ 3355	7	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 [64]	0 (0.0)

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Manual reset ▲ ★	MR	0D1C ⋮ 0D5B	3356 ⋮ 3419	7	R/W	−100.0 to +100.0 % [64]	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) [64]	0 (0.0)
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) [64]	0 (0.0)
Area soak time ▲ ★	TM	0DDC ⋮ 0E1B	3548 ⋮ 3611	7	R/W	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 [64]	RKC communication: 0:00 Modbus: 0
Link area number ▲ ★	LP	0E1C ⋮ 0E5B	3612 ⋮ 3675	7	R/W	0 to 8 (0: No link) [64]	0
Heater break alarm (HBA) set value ▲	A7	0E5C ⋮ 0E9B	3676 ⋮ 3739	7	R/W	When CTL-6-P-N: 0.0 to 30.0 A (0.0: Not used) When CTL-12-S56-10L-N: 0.0 to 100.0 A (0.0: Not used) [64]	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) [64]	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) [64]	30.0
PV bias ▲	PB	0F1C ⋮ 0F5B	3868 ⋮ 3931	7	R/W	−Input span to +Input span [64]	0 (0.0)
PV digital filter ▲	F1	0F5C ⋮ 0F9B	3932 ⋮ 3995	7	R/W	0.0 to 100.0 seconds (0.0: Unused) [64]	0.0
PV ratio ▲	PR	0F9C ⋮ 0FDB	3996 ⋮ 4059	7	R/W	0.500 to 1.500 [64]	1.000
PV low input cut-off ▲	DP	0FDC ⋮ 101B	4060 ⋮ 4123	7	R/W	0.00 to 25.00 % of Input span [64]	0.00
RS bias* ▲	RB	101C ⋮ 105B	4124 ⋮ 4187	7	R/W	−Input span to +Input span [64]	0 (0.0)
RS digital filter * ▲	F2	105C ⋮ 109B	4188 ⋮ 4251	7	R/W	0.0 to 100.0 seconds (0.0: Unused) [64]	0.0
RS ratio * ▲	RR	109C ⋮ 10DB	4252 ⋮ 4315	7	R/W	0.001 to 9.999 [64]	1.000
Output distribution selection ▲	DV	10DC ⋮ 111B	4316 ⋮ 4379	1	R/W	0: Control output 1: Distribution output [64]	0
Output distribution bias ▲	DW	111C ⋮ 115B	4380 ⋮ 4443	7	R/W	−100.0 to +100.0 % [64]	0.0
Output distribution ratio ▲	DQ	115C ⋮ 119B	4444 ⋮ 4507	7	R/W	−9.999 to +9.999 [64]	1.000
Proportional cycle time ▲	TO	119C ⋮ 11DB	4508 ⋮ 4571	7	R/W	0.1 to 100.0 seconds M: Relay contact output V: Voltage pulse output T: Triac output D: Open collector output [64]	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 [64]	0
Manual manipulated output value ▲ ★	ON	121C ⋮ 125B	4636 ⋮ 4699	7	R/W	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 [64]	0.0
Area soak time stop function ▲	RV	125C ⋮ 129B	4700 ⋮ 4763	1	R/W	0: No function 3: Event 3 1: Event 1 4: Event 4 2: Event 2 [64]	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 [Each 64]	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	[Each 64]	0.0
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 [Each 64]	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 2) ▲	NO	145C ⋮ 149B	5212 ⋮ 5275	7	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds [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		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		0.0
EDS value learning times ▲	NT	159C ⋮ 15DB	5532 ⋮ 5595	7	R/W	0 to 10 times (0: No learning mode) [64]	1
EDS start signal ▲	NU	15DC ⋮ 161B	5596 ⋮ 5659	1	R/W	0: EDS start signal OFF 1: EDS start signal ON (for disturbance 1) 2: EDS start signal ON (for disturbance 2) [64]	0
Operation mode ▲	EI	161C ⋮ 165B	5660 ⋮ 5723	1	R/W	0: Unused 1: Monitor 2: Monitor + Event function 3: Control [64]	3
Startup tuning (ST) ▲	ST	165C ⋮ 169B	5724 ⋮ 5787	1	R/W	0: ST unused 1: Execute once (Returns to "0" after the tuning is finished.) 2: Execute always [64]	0
Automatic temperature rise learning ▲	Y8	169C ⋮ 16DB	5788 ⋮ 5851	1	R/W	0: Unused 1: Learning (Returns to "0" after the tuning is finished.) [64]	0
Communication switch (for logic) ♦	EF	16DC ⋮ 16EB	5852 ⋮ 5867	7	R/W	• 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 Bit 0 to Bit 3: Communication switch 1 to 4 Bit 4 to Bit 15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 15] [16]	0
Unused	—	16EC ⋮ 196B	5868 ⋮ 6507	—	—	—	—

For communication data (Engineering setting), refer to the COM-ML-1 [for SRZ] Instruction Manual (IMR02E17-ED).

2.3 Host Communication Data of Z-DIO

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	• RKC communication Least significant digit to 4th digit: D11 to D14 5th digit to Most significant digit: Unused Data 0: Contact open 1: Contact closed • Modbus Bit 0 to Bit 7: D11 to D18 Bit 8 to Bit 15: Unused Data 0: Contact open 1: Contact closed [Decimal number: 0 to 255] [16]	—
Digital input (DI) state 2 ♦	L6	—	—	7	RO	RKC communication Least significant digit to 4th digit: D15 to D18 5th digit to Most significant digit: Unused Data 0: Contact open 1: Contact closed [16]	—
Digital output (DO) state 1 ♦	Q2	3E7C ⋮ 3E8B	15996 ⋮ 16011	7	RO	• RKC communication Least significant digit to 4th digit: DO1 to DO4 5th digit to Most significant digit: Unused Data 0: OFF 1: ON • Modbus Bit 0 to Bit 7: DO1 to DO8 Bit 8 to Bit 15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255] [16]	—
Digital output (DO) state 2 ♦	Q3	—	—	7	RO	RKC communication Least significant digit to 4th digit: DO5 to DO8 5th digit to Most significant digit: Unused Data 0: OFF 1: ON [16]	—
Unused	—	3E8C ⋮ 3FDB	16012 ⋮ 16347	—	—	—	—
DO manual output 1 ♦	Q4	3FDC ⋮ 3FEB	16348 ⋮ 16363	7	R/W	• 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 Bit 0 to Bit 7: DO1 manual output to DO8 manual output Bit 8 to Bit 15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255] [16]	0
DO manual output 2 ♦	Q5	—	—	7	R/W	RKC communication 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 [16]	0

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
DO output distribution selection ▲	DO	3FEC ⋮ 406B	16364 ⋮ 16491	1	R/W	0: DO output 1: Distribution output [128]	0
DO output distribution bias ▲	O8	406C ⋮ 40EB	16492 ⋮ 16619	7	R/W	−100.0 to +100.0 % [128]	0.0
DO output distribution ratio ▲	O9	40EC ⋮ 416B	16620 ⋮ 16747	7	R/W	−9.999 to +9.999 [128]	1.000
DO proportioning cycle time ▲	V0	416C ⋮ 41EB	16748 ⋮ 16875	7	R/W	0.1 to 100.0 seconds M: Relay contact output D: Open collector output [128]	M: 20 D: 2
DO minimum ON/OFF time of proportioning cycle ▲	VJ	41EC ⋮ 426B	16876 ⋮ 17003	7	R/W	0 to 1000 ms [128]	0
Unused	—	426C ⋮ 433B	17004 ⋮ 17211	—	—	—	—

For communication data (Engineering setting), refer to the COM-ML-1 [for SRZ] Instruction Manual (IMR02E17-ED).

2.4 Host Communication Data of Z-CT

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
		HEX	DEC				
Current transformer (CT) input value monitor ▲	M4	46BC ⋮ 477B	18108 ⋮ 18299	7	RO	CTL-6-P-Z: 0.0 to 10.0 A CTL-6-P-N: 0.0 to 30.0 A CTL-12-S56-10L-N: 0.0 to 100.0 A [192]	—
Load factor conversion CT monitor ▲	M5	477C ⋮ 483B	18300 ⋮ 18491	7	RO	0.0 to 100.0 A [192]	—
Heater break alarm (HBA) state monitor ▲	AF	483C ⋮ 48FB	18492 ⋮ 18683	1	RO	0: Normal 1: Break 2: Melting [192]	—
Heater overcurrent alarm state monitor ▲	AG	48FC ⋮ 49BB	18684 ⋮ 18875	1	RO	0: Normal 1: Heater overcurrent [192]	—
Automatic setting state monitor ♦	CJ	49BC ⋮ 49CB	18876 ⋮ 18891	1	RO	0: Normal state 1: Automatic setting execution 2: Automatic setting failure [16]	—
Unused	—	49CC ⋮ 4FCB	18892 ⋮ 20427	—	—	—	—
Heater break/ Heater overcurrent alarm automatic setting selection ▲	BT	4FCC ⋮ 508B	20428 ⋮ 20619	1	R/W	0: Automatic setting is disabled. (Alarm set value cannot be automatically set by the push button and communication.) 1: Automatic setting for heater break alarm (HBA) is enabled. 2: Automatic setting for heater overcurrent alarm set value is enabled. 3: Automatic setting for heater break alarm (HBA) and heater overcurrent alarm set values are enabled. [192]	1
Automatic setting transfer ▲	BU	508C ⋮ 514B	20620 ⋮ 20811	1	R/W	0: Normal state 1: Automatic setting execution 2: Automatic setting failure (RO) [192]	0
Heater break alarm (HBA) set value ▲	A8	514C ⋮ 520B	20812 ⋮ 21003	7	R/W	0.0 to 100.0 A 0.0: Heater break alarm (HBA) function OFF (The current transformer (CT) input value monitoring is available.) [192]	0.0
Heater break alarm (HBA) selection ▲	BZ	520C ⋮ 52CB	21004 ⋮ 21195	1	R/W	0: Heater break alarm (HBA) unused 1: Heater break alarm (HBA) 2: Heater break alarm (HBA) (with Alarm interlock function) [192]	1
Heater overcurrent alarm set value ▲	A6	52CC ⋮ 538B	21196 ⋮ 21387	7	R/W	0.0 to 105.0 A 0.0: Heater overcurrent alarm function OFF [192]	0.0
Heater overcurrent alarm selection ▲	BO	538C ⋮ 544B	21388 ⋮ 21579	1	R/W	0: Heater overcurrent alarm unused 1: Heater overcurrent alarm 2: Heater overcurrent alarm (with Alarm interlock function) [192]	1
Heater break alarm (HBA) interlock release ▲	CX	544C ⋮ 550B	21580 ⋮ 21771	1	R/W	0: Normal state 1: Interlock release execution [192]	0
Heater overcurrent alarm interlock release ▲	CY	550C ⋮ 55CB	21772 ⋮ 21963	1	R/W	0: Normal state 1: Interlock release execution [192]	0
Unused	—	55CC ⋮ 5E0B	21964 ⋮ 24075	—	—	—	—
Set lock ♦	LK	5E0C ⋮ 5E1B	24076 ⋮ 24091	1	R/W	0: Unlock 1: Lock [16]	0
For communication data (Engineering setting), refer to the COM-ML-1 [for SRZ] Instruction Manual (MR02E17-ED)							