



EtherCAT Communication Converter

COM-ME-3 [For SRZ] Communication Data List

IMR02E22-E4

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This manual describes the communication data of the COM-ME-3. In order to achieve maximum performance and ensure proper operation of the instrument, carefully read all the instructions in this manual. Please place the manual in a convenient location for easy reference.

For the installation, the detail handling procedures and various function settings, please read if necessary the following separate manuals.

- COM-ME-3 [For SRZ] Installation Manual (IMR02E21-ED): Enclosed with COM-ME-3
- COM-ME-3 [For SRZ] Instruction Manual (IMR02E23-ED): Separate (Download or sold separately)



These manuals can be downloaded from the official RKC website:
<https://www.rkinst.co.jp/english/download-center/>

1. EXPLANATION OF DATA MAP ITEMS

Contents of the Communication data map list are compatible parameters between the SRZ and EtherCAT master or Host computer by using COM-ME.

Name: Name of communication data
Symbols
□: Data for each SRZ unit
▲: Data for each channel
•: On a Z-TIO module (2-channel type), the communication data of CH3 and CH4 becomes invalid.
★: Data for each module
◆: Parameters which can be used in multi-memory area function
▲: The values on channels 2 and 4 of each Z-TIO module under Heat/Cool PID control or Position proportioning PID control will be "0" for readout and ignored for writing.
■: The values on channels 2 and 4 of each Z-TIO module under Heat/Cool PID control will be "0" for readout and ignored for writing. All of the channels of the Z-TIO module under control mode other than Heat/Cool PID control will be "0" for readout and ignored for writing.

RKC Identifier: Communication identifier of RKC communication

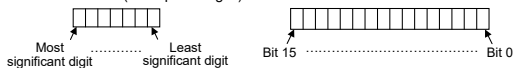
Modbus register address:
A register address of Modbus and EtherCAT data item specification
HEX: Hexadecimal
DEC: Decimal

Digits: The number of communication data digits in RKC communication

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 or PLC ← The controller)
RW: Read and Write data (Host computer or PLC ↔ The controller)

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.)
• ASCII code data (Example: 7 digits) • 16-bit data



Factory set value: Factory set value of communication data

2. COMMUNICATION DATA MAP

■ Communication data of COM-ME

Name	RKC Identifier	Modbus register address HEX DEC	Digits	Attribute	Data range and Number of data	Factory set value
Serial number ◆ (COM-ME)	RX	— —	8	RO	Character	—
Serial number ◆ (Function module*)	RZ	— —	8	RO	Character	—
Model code ◆ (COM-ME)	ID	— —	32	RO	Model code (character)	—
Model code ◆ (Function module*)	IE	— —	32	RO	Model code (character)	—
ROM version ◆ (COM-ME)	VR	— —	8	RO	ROM version	—
ROM version ◆ (Function module*)	VQ	— —	8	RO	ROM version	—
Integrated operating time monitor ◆ (COM-ME)	UT	— —	7	RO	0 to 19999 hours	—
Integrated operating time monitor ◆ (Function module*)	UV	— —	7	RO	0 to 19999 hours	—
Error code □ (COM-ME)	ER	0000 0	7	RO	2: Data back-up error 16: Internal communication error 64: Stack overflow The error condition is shown by the OR of each module. When multiple errors occur, the error No. is the sum value.	—
Error code ◆ (Function module*)	EZ	0001 0064	7	RO	1: Adjustment data error 2: Data back-up error 4: A/D conversion error (Temperature compensation error included) 32: Error of custom data (Error of downloaded data of logic output) When multiple errors occur, the error No. is the sum value.	—
Backup memory state monitor ◆ (COM-ME)	EM	0065 101	1	RO	0: The content of the backup memory does not coincide with that of the RAM. 1: The content of the backup memory coincides with that of the RAM.	—
Backup memory state monitor ◆ (Function module*)	CZ	0066 00C9	1	RO	[COM-ME: 1] [Z-TIO, Z-DIO and Z-CT: 100]	—
System communication status □	QM	00CA 202	1	RO	Bit data Bit 0: Data acquisition status 0: Before the completion of data collection 1: After the completion of data collection Bit 1 to Bit 15: Unused	—
Unused	—	00CB 203	—	—	—	—
Network error code □	ES	00CC 204	7	RO	Bit data Bit 0: Network operation not possible Bit 1 to Bit 15: Unused Data: 0: OFF 1: ON [Decimal number: 0, 1]	—

* Function module: Z-TIO-A/B module or Z-DIO-A module or Z-CT-A module

Name	RKC Identifier	Modbus register address HEX DEC	Digits	Attribute	Data range and Number of data	Factory set value
Unused	—	00CD 205	—	—	—	—
Monitor for the number of connected modules □	QK	0132 306	7	RO	0 to 31	—
RUN/STOP transfer ¹ □	SR	0133 307	1	RW	0: STOP (Control stop) 1: RUN (Control start)	0
RUN/STOP transfer ² ◆	SW	0134 308	1	RW	0: STOP (Control stop) 1: RUN (Control start)	0
Control RUN/STOP holding setting ^{2, 8} ◆	X1	0198 408	1	RW	0: Not holding (STOP start) 1: Holding (RUN/STOP hold)	1
Unused	—	8000 32768	—	—	—	—
Host communication protocol ^{3, 9} □	VP	8004 32772	1	RW	0: RKC communication 1: Modbus	0
Host communication speed ^{3, 9} □	VU	8005 32773	1	RW	0 or 1: 9600 bps 2: 19200 bps 3: 38400 bps 4: 57600 bps	2
Host communication data bit configuration ^{3, 9} □	VW	8006 32774	7	RW	0 to 11 See Table 1.	0
Host communication interval time □	VX	8007 32775	7	RW	0 to 250 ms	10
Unused	—	8008 32776	—	—	—	—
Method for setting the number of connected modules □	RY	8011 32785	7	RW	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. ⁴	1
Unused	—	8012 32786	—	—	—	—
Number of connected modules ⁵ (Z-TIO module) □	QY	8013 32787	7	RW	0 to 16 Maximum number of Z-TIO modules connected to COM-ME.	—
Number of connected modules ⁵ (Z-DIO module) □	QU	8014 32788	7	RW	0 to 16 Maximum number of Z-DIO modules connected to COM-ME.	—
Number of connected modules ⁵ (Z-CT module) □	QO	8015 32789	7	RW	0 to 16 Maximum number of Z-CT modules connected to COM-ME.	—
Number of connected modules (Module 4) □	QP	8016 32790	7	RW	0 to 16	—
Number of connected modules (Module 5) □	QR	8017 32791	7	RW	0 to 16	—
Number of connected modules (Module 6) □	RI	8018 32792	7	RW	0 to 16	—
Number of connected modules (Module 7) □	RQ	8019 32793	7	RW	0 to 4	—
Unused	—	801A 32794	—	—	—	—
Communication data items setting ⁴ □	QG	8020 32800	7	RW	0 to 65535	65535
Number of measured data items (IN) ⁶ □	QH	8052 32850	7	RW	0 to 128 0: Unused	0
Number of setting data items (OUT) ⁶ □	QI	8084 32900	7	RW	0 to 127 0: Unused	0
Unused	—	80B6 32950	—	—	—	—
Control RUN/STOP holding setting ³ (COM-ME) □	X2	80B7 32951	1	RW	0: Not holding (STOP start) 1: Holding (RUN/STOP hold)	1
EtherCAT address ⁷ □	QJ	80B8 32952	7	RO	0 to 4095	—
Network status ⁸ □	—	80B9 32953	—	RO	Bit data Bit 0 to Bit 7: Update counter of Read data Bit 8: Toggle counter of Data mapping update Bit 9: Write completion flag Bit 10: Write error flag Bit 11: Error occurring flag Bit 12 to Bit 15: Unused	—
Unused	—	80BA 32954	—	—	—	—
Host communication device address ³ □	VY	8144 33092	7	RW	0 to 255 In Modbus: If the address is set to 0, it is considered as 1. In RKC communication: If the address is set to 100 or more, it is considered as 99.	99
Unused	—	8145 33093	—	—	—	—
EtherCAT write status □	—	8147 33095	7	RO	Bit data Bit 0: PDO is being written Bit 1: Writing to PDO is completed Bit 2: SDO is being written Bit 3: Reserved Bit 4: Write error Bit 5 to Bit 15: Unused	—
Unused	—	8148 33096	—	—	—	—
General-purpose readout register □	JX	8200 33280	7	RW	0 to 65535 Data of 0x3600 on EtherCAT Readable only on EtherCAT	0
Unused	—	8240 33344	—	—	—	—
General-purpose write register □	JY	8300 33536	7	RW	0 to 65535 Data of 0x3600 on EtherCAT Readable and writable on EtherCAT	0
Unused	—	8340 33900	—	—	—	—

¹ When RUN/STOP transfer (Identifier: SR, Register address: 0133H) becomes STOP, the set lock (Identifier: LK, Register address: 5E0CH to 5E1BH) of the Z-CT module becomes "0: Unlock".
² This item does not support a Z-CT module.
³ Data that are activated by rebooting.
⁴ After automatic setting of the number of connected function modules, the value automatically reverts to 0.
⁵ 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-ME uses this set value to calculate the number of channels of communication data (RKC communication only).
⁶ Data used for the COM-ME-3 compatible communication.
⁷ Data that are activated by starting the network operation after power is re-applied.
⁸ Settable only when the RUN/STOP transfer (Identifier: SR, Register address: 0133H) is switched to STOP.
⁹ Enabled when the RUN/STOP transfer (Identifier: SR, Register address: 0133H) is switched to RUN from STOP.

Table 1: Data bit configuration

Set value	Data bit	Parity bit	Stop bit	Settable communication	Set value	Data bit	Parity bit	Stop bit	Settable communication
0	8	None	1	Modbus RKC communication	6	8	None	2	Modbus RKC communication
1	8	Even	1		7	8	Even	2	
2	8	Odd	1		8	8	Odd	2	
3	7	None	1		9	7	None	2	
4	7	Even	1	RKC communication	10	7	Even	2	RKC communication
5	7	Odd	1		11	7	Odd	2	

■ Communication data of Z-TIO module

Name	RKC Identifier	Modbus register address HEX DEC	Digits	Attribute	Data range and Number of data	Factory set value
Measured value (PV) ▲	M1	01FC 508	7	RO	Input scale low to Input scale high	—
Comprehensive event state ▲	AJ	023B 571	7	RO	• RKC communication Least significant digit to 4th digit: Event 1 state to Event 4 state 5th digit: Heater break alarm state 6th digit: Temperature rise completion 7th digit: Burnout Data: 0: OFF 1: ON • Modbus Bit 0 to Bit 3: Event 1 state to Event 4 state Bit 4: Heater break alarm state Bit 5: Temperature rise completion Bit 6: Burnout Bit 7 to Bit 15: Unused Data: 0: OFF 1: ON [Decimal number: 0 to 127]	—
Operation mode state monitor ▲	L0	027C 636	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 15]	—
Unused	—	02BC 700	—	—	—	—
Manipulated output value (MV) monitor [heat-side] ¹ ▲	O1	02CC 716	7	RO	PID control or Heat/Cool PID control: -5.0 to +105.0 % Position proportioning control (FBR input): 0.0 to 100.0 %	—
Manipulated output value (MV) monitor [cool-side] ² ▲	O2	030C 780	7	RO	-5.0 to +105.0 %	—
Current transformer (CT) input value monitor ▲	M3	034C 844	7	RO	CTL-6-P-N: 0.0 to 30.0 A CTL-12-SS6-10L-N: 0.0 to 100.0 A	—
Set value (SV) monitor ▲	MS	038C 908	7	RO	Setting limiter low to Setting limiter high	—
Remote setting (RS) input value monitor ▲	S2	03CC 972	7	RO	Setting limiter low to Setting limiter high	—
Burnout state monitor ▲	B1	040C 1036	1	RO	0: OFF 1: ON	—
Event 1 state monitor ▲	AA	044C 1100	1	RO	0: OFF 1: ON	—
Event 2 state monitor ▲	AB	048C 1163	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: 023CH to 027BH). (The Event 3 state monitor does not turn ON.)	—
Event 3 state monitor ▲	AC	04CC 1228	1	RO	—	—
Event 4 state monitor ▲	AD	050C 1292	1	RO	—	—
Heater break alarm (HBA) state monitor ▲	AE	054C 1356	1	RO	0: OFF 1: ON	—
Output state monitor ◆	Q1	058C 1420	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]	—
Memory area soak time monitor ▲	TR	059C 1436	7	RO	• 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	—
Unused	—	05DC 1500	—	—	—	—
Holding peak value ambient temperature monitor ▲	Hp	05EC 1516	7	RO	-10.0 to +100.0 °C or 14.0 to 212.0 °F	—
Unused	—	062B 1579	—	—	—	—
Unused	—	062C 1580	—	—	—	—

¹ The values on channels 2 and 4 on each Z-TIO module will be "0" for readout under Heat/Cool PID control or Position proportioning PID control.
² The values on channels 2 and 4 of each Z-TIO module under Heat/Cool PID control as well as all of the channels of the Z-TIO module under the control mode other than Heat/Cool PID control will be "0" for readout.

Name	RKC Identifier	Modbus register address HEX DEC	Digits	Attribute	Data range and Number of data	Factory set value
Logic output monitor 1 ◆	ED	063C 1596	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]	—
Logic output monitor 2 ◆	EE	— —	7	RO	• RKC communication only 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 1612	—	—	—	—
PID/AT transfer ▲	G1	080C 2060	1	RW	0: PID control 1: Autotuning (AT) * * Automatically reverts to 0 after auto-tuning ends.	0
Auto/Manual transfer ▲ ▲	J1	084C 2124	1	RW	0: Auto mode 1: Manual mode	0
Remote/Local transfer ▲	C1	088C 2188	1	RW	0: Local mode 1: Remote mode	0
Unused	—	08CC 2252	—	—	—	—
Memory area transfer ▲	ZA	08DC 2268	7	RW	1 to 8	1
Interlock release ▲	AR	091C 2332	1	RW	0: Normal state 1: Interlock release execution	0
Event 1 set value (EV1) ★ ▲	A1	095C 2396	7	RW	Deviation action, Deviation action between channels, Temperature rise completion range *	50 (50.0)
Event 2 set value (EV2) ★ ▲	A2	099C 2460	7	RW	-Input span to +Input span * When temperature rise completion is selected at Event 3 type.	50 (50.0)
Event 3 set value (EV3) ★ ▲	A3	09DC 2524	7	RW	Process action, SV action: Input scale low to Input scale high	50 (50.0)
Event 4 set value (EV4) ★ ▲	A4	0A1C 2588	7	RW	MV action: -5.0 to +105.0 %	50 (50.0)
Control loop break alarm (LBA) time ★ ▲	A5	0A5C 2652	7	RW	0 to 7200 seconds (0: Unused)	480
LBA deadband ★ ★ ▲	N1	0A9C 2716	7	RW	0 (0.0) to Input span	0 (0.0)
Set value (SV) ★ ★ ▲	S1	0ADC 2780	7	RW	Setting limiter low to Setting limiter high	TC/RTD: 0 (0.0) V/I: 0.0
Proportional band [heat-side] ★ ★ ▲	P1	0B1C 2844	7	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 ON/OFF action for both heat and cool actions in case of a Heat/Cool control type.	TC/RTD: 30 (30.0) V/I: 30.0
Integral time [heat-side] ★ ★ ▲	I1	0B5C 2908	7	RW	PID control or heat/cool PID control: 0 to 3600 seconds or 0.0 to 1999.9 seconds (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 2972	7	RW	0 to 3600 seconds or 0.0 to 1999.9 seconds (0.0: PI action)	60
Control response parameter ★ ▲	CA	0BDC 3036	1	RW	0: Slow 1: Medium 2: Fast P or PD action: 2 (Fast) fixed	PID control, Position proportioning control: 0 Heat/Cool PID control: 2
Proportional band [cool-side] ★ ★ ■	P2	0C1C 3100	7	RW	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 (30.0) V/I: 30.0
Integral time [cool-side] ★ ★ ■	I2	0C5C 3164	7	RW	0 to 3600 seconds or 0.0 to 1999.9 seconds (0.0: PD action)	240
Derivative time [cool-side] ★ ★ ■	D2	0C9C 3228	7	RW	0 to 3600 seconds or 0.0 to 1999.9 seconds (0.0: PI action)	60
Overlap/Deadband ★ ★ ■	V1	0CDC 3292	7	RW	TC/RTD inputs: -Input span to +Input span (Unit: °C [°F]) Voltage (V)/Current (I) inputs: -100.0 to +100.0 % of input span	0 (0.0)
Manual reset ★ ★ ▲	MR	0D1C 3356	7	RW	-100.0 to +100.0 %	0.0
Setting change rate limiter (up) ★ ▲	HH	0D5C 3420	7	RW	0 (0.0) to Input span/unit time 0 (0.0): Unused Unit time: 60 seconds (factory set value)	0 (0.0)
Setting change rate limiter (down) ★ ▲	HL	0D9C 3484	7	RW	—	0 (0.0)
Area soak time ★ ▲	TM	0DDC 3547	7	RW	• 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 3612	7	RW	0 to 8 (0: No link)	0
Heater break alarm (HBA) set value ▲	A7	0E5C 3676	7	RW	When CT is CTL-6-P-N: 0.0 to 30.0 A (0.0: Not used) When CT is CTL-12-SS6-10L-N: 0.0 to 100.0 A (0.0: Not used)	0.0

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
HEX	DEC						
Heater break determination point ▲	NE	0E9C	3740	7	RW	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	3804	7	RW	0.0 to 100.0 % of HBA set value (0.0: Heater melting determination is invalid) [64]	30.0
PV bias ▲	PB	0F1C	3868	7	RW	–Input span to +Input span	0 (0.0)
PV digital filter ▲	F1	0F5C	3932	7	RW	0.0 to 100.0 seconds (0.0: Unused) [64]	0.0
PV ratio ▲	PR	0F9C	3996	7	RW	0.500 to 1.500 [64]	1.000
PV low input cut-off ▲	DP	0FDC	4060	7	RW	0.00 to 25.00 % of input span [64]	0.00
RS bias * ▲	RB	101C	4124	7	RW	–Input span to +Input span [64]	0 (0.0)
RS digital filter * ▲	F2	105C	4188	7	RW	0.0 to 100.0 seconds (0.0: Unused) [64]	0.0
RS ratio * ▲	RR	109C	4252	7	RW	0.001 to 9.999 [64]	1.000
Output distribution selection ▲	DV	10DC	4316	1	RW	0: Control output 1: Distribution output [64]	0
Output distribution bias ▲	DW	111C	4380	7	RW	–100.0 to +100.0 % [64]	0.0
Output distribution ratio ▲	DQ	115C	4444	7	RW	–9.999 to +9.999 [64]	1.000
Proportional cycle time ▲	T0	119C	4508	7	RW	0.1 to 100.0 seconds M: Relay contact output T: Triac output V: Voltage pulse 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	4572	7	RW	0 to 1000 ms [64]	0
Manual manipulated output value ▲▲	ON	121C	4636	7	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) 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	4700	1	RW	0: No function 1: Event 1 2: Event 2 [64]	0
EDS mode (for disturbance 1) ▲	NG	129C	4764	1	RW	0: No function 1: EDS function mode 2: Learning mode 3: Tuning mode EDS function: External disturbance suppression function [Each 64]	0
EDS mode (for disturbance 2) ▲	NX	12DC	4828	1	RW		0
EDS value 1 (for disturbance 1) ▲	NI	131C	4892	7	RW	–100.0 to +100.0 %	0.0
EDS value 1 (for disturbance 2) ▲	NJ	135C	4956	7	RW		0.0
EDS value 2 (for disturbance 1) ▲	NK	139C	5020	7	RW		0.0
EDS value 2 (for disturbance 2) ▲	NM	13DC	5084	7	RW		0.0
EDS transfer time (for disturbance 1) ▲	NN	141C	5148	7	RW	0 to 3600 seconds or 0.0 to 1999.9 seconds [Each 64]	0
EDS transfer time (for disturbance 2) ▲	NO	145C	5212	7	RW		0
EDS action time (for disturbance 1) ▲	NQ	149C	5276	7	RW	1 to 3600 seconds [Each 64]	600
EDS action time (for disturbance 2) ▲	NL	14DC	5340	7	RW		600
EDS action wait time ▲ (for disturbance 1)	NR	151C	5404	7	RW	0.0 to 600.0 seconds	0.0
EDS action wait time ▲ (for disturbance 2)	NY	155C	5468	7	RW		0.0
EDS value learning times ▲	NT	159C	5532	7	RW	0 to 10 times (0: No learning mode) [64]	1
EDS start signal ▲	NU	15DC	5596	1	RW	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	5660	1	RW	0: Unused 1: Monitor 2: Monitor + Event function 3: Control [64]	3
Startup tuning (ST) ▲▲	ST	165C	5724	1	RW	0: ST unused 1: Execute once * 2: Execute always * Automatically reverts to 0 after Startup tuning (ST) ends. [64]	0
Automatic temperature rise learning ▲▲	Y8	169C	5788	1	RW	0: Unused 1: Learning * * Automatically reverts to 0 after automatic temperature rise learning ends. [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						
Communication switch (for logic) ♦	EF	16DC	5852	7	RW	• 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	5868	—	—		—
		196B	6507				

For communication data (Engineering setting), refer to the **COM-ME-3 [for SRZ] Instruction Manual (IMR02E23-ED)**.

■ 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.

For the multi-memory area data, refer to the **COM-ME-3 [for SRZ] Instruction Manual (IMR02E23-ED)**.

■ 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	15980	7	RO	• RKC communication Least significant digit to 4th digit: DI1 to DI4 5th digit to Most significant digit: Unused Data 0: Contact open 1: Contact closed • Modbus Bit 0 to Bit 7: DI1 to DI8 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 only Least significant digit to 4th digit: DI5 to DI8 5th digit to Most significant digit: Unused Data 0: Contact open 1: Contact closed [Decimal number: 0 to 255] [16]	—
Digital output (DO) state 1 ♦	Q2	3E7C	15996	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 only Least significant digit to 4th digit: DO5 to DO8 5th digit to Most significant digit: Unused Data 0: OFF 1: ON	—
Unused	—	3E8C	16012	—	—		—
		3FDB	16347				
DO manual output 1 ♦	Q4	3FDC	16348	7	RW	• 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	RW	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	16364	1	RW	0: DO output 1: Distribution output [128]	0
DO output distribution bias ▲	O8	406C	16492	7	RW	–100.0 to +100.0 % [128]	0.0
DO output distribution ratio ▲	O9	40EC	16620	7	RW	–9.999 to +9.999 [128]	1.000
DO proportioning cycle time ▲	V0	416C	16748	7	RW	0.1 to 100.0 seconds M: Relay contact output D: Open collector output [128]	M output: 20.0 D output: 2.0
DO minimum ON/OFF time of proportioning cycle ▲	VJ	41EC	16876	7	RW	0 to 1000 ms [128]	0
Unused	—	426C	17004	—	—		—
		433B	17211				

For communication data (Engineering setting), refer to the **COM-ME-3 [for SRZ] Instruction Manual (IMR02E23-ED)**.

■ Communication data of Z-CT module

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	18108	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	18300	7	RO	0.0 to 100.0 A [192]	—
Heater break alarm (HBA) state monitor ▲	AF	483C	18492	1	RO	0: Normal 1: Break 2: Melting [192]	—
		48FB	18683				

Name	RKC Identifier	Modbus register address		Digits	Attribute	Data range and Number of data	Factory set value
HEX	DEC						
Heater overcurrent alarm state monitor ▲	AG	48FC	18684	1	RO	0: Normal 1: Heater overcurrent [192]	—
Automatic setting state monitor ♦	CJ	49BC	18876	1	RO	0: Normal state 1: Automatic setting execution 2: Automatic setting failure [16]	—
Unused	—	49CB	18891	—	—		—
		49CC	18892				
		4FCB	20427				
Heater break/Heater overcurrent alarm automatic setting selection ▲	BT	4FCB	20428	1	RW	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	20620	1	RW	0: Normal state 1: Automatic setting execution 2: Automatic setting failure (RO) [192]	0
Heater break alarm (HBA) set value ▲	A8	514C	20812	7	RW	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	21004	1	RW	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	21196	7	RW	0.0 to 105.0 A 0.0: Heater overcurrent alarm function OFF [192]	0.0
Heater overcurrent alarm selection ▲	BO	538C	21388	1	RW	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	21580	1	RW	0: Normal state 1: Interlock release execution [192]	0
Heater overcurrent alarm interlock release ▲	CY	550C	21772	1	RW	0: Normal state 1: Interlock release execution [192]	0
Unused	—	55CC	21964	—	—		—
		5E0B	24075				
Set lock * ♦	LK	5E0C	24076	1	RW	0: Unlock 1: Lock [16]	0
		5E1B	24091				

For communication data (Engineering setting), refer to the **COM-ME-3 [for SRZ] Instruction Manual (IMR02E23-ED)**.

* When the RUN/STOP transfer (Identifier: SR, Resister address: 0133H) of the COM-ME becomes STOP, set lock becomes "0: Unlock".

3. OBJECT DICTIONARY

● EtherCAT specifications

Device type: No profile
Correspondence protocol: CAN application protocol over EtherCAT (CoE)
Communication object: Service data object (SDO), Process data object (PDO)
PDO data length: Up to 1024 byte for both RxPDO and TxPDO
When the COM-ML-3 compatible PDO function is used:
Select from: RxPDO: 0, 10, 18, 34, 66, 130, 194, 256 bytes
Select from: TxPDO: 0, 8, 16, 32, 64, 128, 192, 256 bytes

Synchronization mode: Free Run

Number of supported FMUs: 8

● Object dictionary

Index	Sub-Index	Name	Type	Access	Description
Communication Specific Data (0x0000 to 0x1FFF)					
0x1000	0x00	Device Type	UDINT	RO	0x00000000 (No profile)
0x1008	0x00	Manufacturer Device Name	STRING	RO	COM-ME-3
0x1009	0x00	Manufacturer Hardware Version	STRING	RO	xxxxxxxx
0x100A	0x00	Manufacturer Software Version	STRING	RO	xxxxxxxx
0x100B	0x00	Manufacturer Bootloader Version	STRING	RO	xxxxxxxx
0x1018	—	Identity Object	IDENTITY	RO	—
	0x01	Vendor ID	UDINT	RO	0x00000563
	0x02	Product Code	UDINT	RO	0x0000000A
	0x03	Revision Number	UDINT	RO	—
	0x04	Serial Number	UDINT	RO	unique number
0x10FB	0x00	Timestamp Object	ULINT	RO	Not available for DC
0x1600	—	RxPDO mapping 1 to 7 (0x1600 to 0x1606)			
	0x00	Number of mapped application objects in PDO	USINT	RW	0 to 128
	0x01	Mapping entry 1	UDINT	RW	—
	0x02	Mapping entry 2	UDINT	RW	—
	⋮	⋮	⋮	⋮	⋮
	0x80	Mapping entry 128	UDINT	RW	—
0x1A00	—	TxPDO mapping 1 to 7 (0x1A00 to 0x1A06)			
	0x00	Number of mapped application objects in PDO	USINT	RW	0 to 128
	0x01	Mapping entry 1	UDINT	RW	—
	0x02	Mapping entry 2	UDINT	RW	—
	⋮	⋮	⋮	⋮	⋮
	0x80	Mapping entry 128	UDINT	RW	—
0x1C00	Sync Manager Communication Type				
	0x01	Mailbox wr	USINT	RO	1
	0x02	Mailbox rd	USINT	RO	2
	0x03	Process Data out	USINT	RO	3
	0x04	Process Data in	USINT	RO	4
0x1C12	Sync Manager RxPDO Assign				
	0x00	Number of entries	USINT	RW	0 to 4
	0x01	Assigned PDO1	UDINT	RW	0x1600 to 0x1606
	0x02	Assigned PDO2	UDINT	RW	
	0x03	Assigned PDO3	UDINT	RW	
	0x04	Assigned PDO4	UDINT	RW	

Index	Sub-Index	Name	Type	Access	Description
0x1C13	Sync Manager TxPDO Assign				
	0x00	Number of entries	USINT	RW	0 to 4
	0x01	Assigned PDO1	UINT	RW	0x1A00 to 0x1A06
	0x02	Assigned PDO2	UINT	RW	
	0x03	Assigned PDO3	UINT	RW	
	0x04	Assigned PDO4	UINT	RW	
0x1C32	SM output parameter				
	0x01	Synchronization Type	UINT	RW	0x0000 (Free Run)
	0x02	Cycle Time	UDINT	RO	Not available
	0x03	Shift Time	UDINT	RO	0
	0x04	Synchronization Types supported	UINT	RO	0x0001 (Free Run)
	0x05	Minimum Cycle Time	UDINT	RO	Not available
	0x06	Calc and Copy Time	UDINT	RO	Not available
0x1C33	SM input parameter				
	0x01	Synchronization Type	UINT	RW	0x0000 (Free Run)
	0x02	Cycle Time	UDINT	RO	Not available
	0x03	Shift Time	UDINT	RO	0
	0x04	Synchronization Types supported	UINT	RO	0x0001 (Free Run)
	0x05	Minimum Cycle Time	UDINT	RO	Not available
	0x06	Calc and Copy Time	UDINT	RO	Not available
0x2003	RxPDO Buffer				
	0x01	RxPDO Data1	UINT	RW	Setting state selection Bit data Bit 0: Data setting disabled/enabled 0: Setting disabled 1: Setting enabled Bit 1 to Bit 15: Unused Valid only when assigned to RxPDO
	⋮	⋮	⋮	⋮	
	⋮	⋮	⋮	⋮	
	0x80	RxPDO Data128	UINT	RW	
	⋮	⋮	⋮	⋮	
0x2004	TxPDO Buffer				
	0x01	TxPDO Data1	UINT	RW	
	⋮	⋮	⋮	⋮	
	0x80	TxPDO Data128	⋮	⋮	
0x2064	Controller Data				
	0x00	Number of entries	USINT	RO	50
	0x01	Data 1	UINT	RW	The Modbus register address data specified in the index 20C5H. (Only data used for SDO communication are validated.) When an RO item is written to, the value reverts to the original value several seconds later. Items that are not used are RO, and the data is 0.
	0x02	Data 2	⋮	⋮	
	⋮	⋮	⋮	⋮	
	⋮	⋮	⋮	⋮	
	⋮	⋮	⋮	⋮	
	0x32	Data 50	⋮	⋮	
⋮	⋮	⋮	⋮		
0x20C5	Communication Item Setting				
	0x00	Number of entries	USINT	RO	50
	0x01	Item setting of Data 1	UINT	RW	Set Modbus register address of communication item. If not used, set 0xFFFF.
	0x02	Item setting of Data 2	⋮	⋮	
	⋮	⋮	⋮	⋮	
	⋮	⋮	⋮	⋮	
	0x32	Item setting of Data 50	⋮	⋮	
0x20C6	Communication IN Setting				
	0x00	Number of entries	USINT	RO	50
	0x01	Number of times to use Data 1 as measured data items (IN)	UINT	RW	0: Unused, 1 to 128 ^a
	0x02	Number of times to use Data 2 as measured data items (IN)	⋮	⋮	
	⋮	⋮	⋮	⋮	
	⋮	⋮	⋮	⋮	
	0x32	Number of times to use Data 50 as measured data items (IN)	⋮	⋮	
0x20C7	Communication OUT Setting				
	0x00	Number of entries	USINT	RO	50
	0x01	Number of times to use Data 1 as setting data items (OUT)	UINT	RW	0: Unused, 1 to 127 ^b
	0x02	Number of times to use Data 2 as setting data items (OUT)	⋮	⋮	
	⋮	⋮	⋮	⋮	
	0x32	Number of times to use Data 50 as setting data items (OUT)	⋮	⋮	
Refer to the separate manual COM-ME-3 [for SRZ] Instruction Manual (IMR02E23-ED) for details of the following indexes.					
Index items of COM-ME-3 Index: 0x2100 to 0x210A, 0x3100 to 0x3120, 0x2600 (General-purpose readout register), 0x3600 (General-purpose write register)					
Index items of SRZ (TIO module) Index: 0x2200 to 0x2215, 0x3200 to 0x3301, 0x3310 to 0x3328 (Memory area)					
Index items of SRZ (DIO module) Index: 0x2400 to 0x2401, 0x3400 to 0x3420					
Index items of SRZ (CT module) Index: 0x2500 to 0x2504, 0x3500 to 0x351A					