Ethernet [Modbus/TCP] Communication Converter

COM-JL [For SRZ] Communication Data List

IMR01Y33-E1

This manual describes the communication data of the COM-JL. For the installation, the detail handling procedures and various function settings, please refer to the following separate manuals.

- COM-JL [For SRZ] Installation Manual (IMR01Y25-E□): Attached to the product
- COM-JL [For SRZ] Quick Instruction Manual (IMR01Y29-E□): Attached to the product
- COM-JL [For SRZ] Instruction Manual (IMR01Y37-E□): Separate volumes (Download or sold separately)

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

1. REFERENCE TO DATA MAP

(1) (2) (3) (4) (5) (6)

Name	Register address HEX	Register address DEC	Number of data	Attribute	Data range	Factory set value
Measured value (PV)	0000	0	64	RO	Input scale low to Input scale high	—
Current transformer (CT) input value monitor	0040	64	64	RO	CTL-6-P-N: 0.0 to 30.0A CTL-12-S56-10L-N: 0.0 to 100.0 A	—

(1) Name: Name of communication data

(2) Register address: The head address of each item (Vacant numbers become unused)
HEX: Hexadecimal
DEC: Decimal

(3) Number of data: Number of data points
The address in the register address column will be the head address, and the number of data items is indicated in this column.

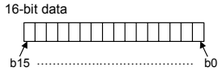
In the case of two-channel type (Z-TIO-B modules), the number of the data per one module is the same as four-channel type (Z-TIO-A modules).
(4 channels × 16 modules = 64)
In addition, as for the Z-DIO module [1], the number of the data per one module is 64.
(8 channels × 8 modules = 64)

[1] The ♣ mark of the name column is communication data of the Z-DIO module.

(4) Attribute: RO: Read only data
(Host computer [Client] ← Controller [Server])
R/W: Read and Write data
(Host computer [Client] ↔ Controller [Server])

(5) Data range: Read or write range of communication data

Bit image of bit data is as follows.



With respect to the following communication data of the Z-TIO module, the data of the indicated channels are "Read data: 0" and "Write data: invalid".

- Two-channel type module: Data of the 3rd and 4th channels
- Heat/cool control and position proportioning control: Data of the 2nd and 4th channels [2]
- Cool-only communication data of heat/cool control: Data of the 2nd and 4th channels [2]

[2] Communication data with a ♦ mark in the name column

In the case of the communication data [3] corresponding to each module, as for the data of the module which is not connected, become to "Read data: 0" and "Write data: invalid".

[3] Communication data with a ♥ mark in the name column

(6) Factory set value: Factory set value of communication data

2. DATA MAP

The data map shows data which can be used for communication between the host computer [client] and controller (SRZ) [server].

2.1 SRZ (Z-TIO/Z-DIO module) Communication Data

Name	Register address HEX	Register address DEC	Number of data	Attribute	Data range	Factory set value
Measured value (PV)	0000	0	64	RO	Input scale low to Input scale high	—
Current transformer (CT) input value monitor	0040	64	64	RO	CTL-6-P-N: 0.0 to 30.0A CTL-12-S56-10L-N: 0.0 to 100.0 A	—
Unused	0080	128	64	—	—	—
Set value (SV) monitor	00C0	192	64	RO	Setting limiter (low) to Setting limiter (high)	—
Remote setting (RS) input value monitor	0100	256	64	RO	Setting limiter (low) to Setting limiter (high)	—
Burnout state monitor	0140	320	64	RO	0: OFF 1: ON	—
Unused	0180	384	64	—	—	—
Event 1 state monitor	01C0	448	64	RO	0: OFF 1: ON	—
Event 2 state monitor	0200	512	64	RO	If the Event 3 type is temperature rise completion, check the temperature rise completion state in the comprehensive event state. (The Event 3 state monitor does not turn ON.)	—
Event 3 state monitor	0240	576	64	RO		—
Event 4 state monitor	0280	640	64	RO		—
Heater break alarm (HBA) state monitor	02C0	704	64	RO	0: OFF 1: ON	—
Unused	0300	768	64	—	—	—
Manipulated output value (MV) monitor [heat-side] ♦	0340	832	64	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] ♦	0380	896	64	RO	−5.0 to +105.0 %	—
Error code [1] ♥	03C0	960	64	RO	Bit data b0: Adjustment data error b1: Back-up error b2: A/D conversion error b3 to b4: Unused b5: Logic output data error b6 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 63]	—
Unused	0400	1024	64	—	—	—
Output state monitor ♥	0440	1088	64	RO	Bit data b0: OUT1 state b2: OUT3 state b1: OUT2 state b3: OUT4 state b4 to b5: Unused Data 0: OFF 1: ON [Decimal number: 0 to 15]	—
Operation mode state monitor	0480	1152	64	RO	Bit data b0: Control STOP b1: Control RUN b2: Manual mode b3: Remote mode b4 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 15]	—
Memory area soak time monitor	04C0	1216	64	RO	0 to 11999 seconds or 0 to 5999 minutes Data range of Area soak time can be selected on the Soak time unit.	—
Integrated operating time monitor [1] ♥	0500	1280	64	RO	0 to 19999 hours	—
Holding peak value ambient temperature monitor	0540	1344	64	RO	−10.0 to +100.0 °C or 14 to 212 °F	—
Unused	0580	1408	64	—	—	—
Backup memory state monitor [1] ♥	05C0	1472	64	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.	—
Comprehensive event state	0600	1536	64	RO	Bit data b0 to b3: Event 1 state to 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]	—
Logic output monitor ♥	0640	1600	64	RO	Bit data b0 to b7: Logic output 1 to Logic output 8 b8 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255]	—
Digital input (DI) state ♣ ♥	0680	1664	64	RO	Bit data b0 to b7: DI1 state to DI8 state b8 to b15: Unused Data 0: Contact open 1: Contact closed [Decimal number: 0 to 255]	—
Digital output (DO) state ♣ ♥	06C0	1728	64	RO	Bit data b0 to b7: DO1 state to DO8 state b8 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255]	—
Unused	0700 ⋮ 07C0	1792 ⋮ 1984	64 ⋮ 64	—	—	—
PID/AT transfer	0800	2048	64	R/W	0: PID control 1: Autotunig (AT) * * Automatically reverts to 0 after auto-tuning ends.	0
Auto/Manual transfer	0840	2112	64	R/W	0: Auto mode 1: Manual mode	0
Remote/Local transfer	0880	2176	64	R/W	0: Local mode 1: Remote mode	0
RUN/STOP transfer [1] ♥	08C0	2240	64	R/W	0: STOP (control stop) 1: RUN (control start)	0
Memory area transfer	0900	2304	64	R/W	1 to 8	1
Interlock release	0940	2368	64	R/W	0: Normal state 1: Interlock release execution	0
Event 1 set value (EV1)	0980	2432	64	R/W	Deviation action, Deviation action between channels, Temperature rise completion range *: −Input span to +Input span Process action, SV action: Input scale low to Input scale high Manipulated output value (MV): −5.0 to +105.0 % * When temperature rise completion is selected at Event 3 action type.	50
Event 2 set value (EV2)	09C0	2496	64	R/W		50
Event 3 set value (EV3)	0A00	2560	64	R/W		50
Event 4 set value (EV4)	0A40	2624	64	R/W		50
Control loop break alarm (LBA) time	0A80	2688	64	R/W	0 to 7200 seconds (0: Unused)	480
LBA deadband	0AC0	2752	64	R/W	0 (0.0) to Input span	0 (0.0)
Set value (SV)	0B00	2816	64	R/W	Setting limiter (low) to Setting limiter (high)	TC/RTD: 0 °C [°F] V/I: 0.0 %
Proportional band [heat-side] ♦	0B40	2880	64	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)	TC/RTD: 30 V/I: 30.0
Integral time [heat-side] ♦	0B80	2944	64	R/W	PID control or heat/cool PID control: 0 to 3600 seconds or 0.0 to 1999.9 seconds [2] (0, 0.0: PD action) Position proportioning control: 1 to 3600 seconds or 0.1 to 1999.9 seconds [2]	240
Derivative time [heat-side] ♦	0BC0	3008	64	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds [2] (0, 0.0: PI action)	60
Control response parameter ♦	0C00	3072	64	R/W	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] ♦	0C40	3136	64	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] ♦	0C80	3200	64	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds [2] (0, 0.0: PD action)	240
Derivative time [cool-side] ♦	0CC0	3264	64	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds [2] (0, 0.0: PI action)	60
Overlap/Deadband ♦	0D00	3328	64	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 Minus (−) setting results in overlap. However, the overlapping range is within the proportional range.	0
Manual reset	0D40	3392	64	R/W	−100.0 to +100.0 %	0.0
Setting change rate limiter (up)	0D80	3456	64	R/W	0 (0.0) to Input span/unit time * 0 (0.0): Unused	0 (0.0)
Setting change rate limiter (down)	0DC0	3520	64	R/W	* Unit time: 60 seconds (factory set value)	0 (0.0)
Area soak time	0E00	3584	64	R/W	0 to 11999 seconds or 0 to 5999 minutes	0
Link area number	0E40	3648	64	R/W	0 to 8 (0: No link)	0
Heater break alarm (HBA) set value	0E80	3712	64	R/W	CTL-6-P-N: 0.0 to 30.0 A (0.0: Unused) CTL-12-S56-10L-N: 0.0 to 100.0 A (0.0: Unused)	0.0
Heater break determination point	0EC0	3776	64	R/W	0.0 to 100.0 % of HBA set value (0.0: Heater break determination is invalid)	30.0
Heater melting determination point	0F00	3840	64	R/W	0.0 to 100.0 % of HBA set value (0.0: Heater melting determination is invalid)	30.0
Unused	0F40	3904	64	—	—	—
Unused	0F80	3968	64	—	—	—
Unused	0FC0	4032	64	—	—	—
PV bias	1000	4096	64	R/W	−Input span to + Input span	0
PV digital filter	1040	4160	64	R/W	0.0 to 100.0 seconds (0.0: Unused)	0.0
PV ratio	1080	4224	64	R/W	0.500 to 1.500	1.000
PV low input cut-off	10C0	4288	64	R/W	0.00 to 25.00 % of input span	0.00
RS bias [1]	1100	4352	64	R/W	−Input span to + Input span	0
RS digital filter [1]	1140	4416	64	R/W	0.0 to 100.0 seconds (0.0: Unused)	0.0
RS ratio [1]	1180	4480	64	R/W	0.001 to 9.999	1.000
Proportional cycle time	11C0	4544	64	R/W	0.1 to 100.0 seconds M: Relay contact output V: Voltage pulse output T: Triac output D: Open collector output	M output: 20.0 V, T, D output: 2.0
Unused	1200	4608	64	—	—	—
Manual manipulated output value ♦	1240	4672	64	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	0.0
Unused	1280 ⋮ 1440	4736 ⋮ 5184	64 ⋮ 64	—	—	—
Engineering mode For the data, see the **COM-JL [For SRZ] Instruction Manual (IMR01Y37-E□)**.						
Startup tuning (ST)	32C0	12992	64	R/W	0: ST unused 1: Execute once * 2: Execute always * Automatically reverts to 0 after Startup tuning (ST) ends.	0
Engineering mode For the data, see the **COM-JL [For SRZ] Instruction Manual (IMR01Y37-E□)**.						
Automatic temperature rise learning	3440	13376	64	R/W	0: Unused 1: Learning * * Automatically reverts to 0 after automatic temperature rise learning ends.	1
Engineering mode For the data, see the **COM-JL [For SRZ] Instruction Manual (IMR01Y37-E□)**.						
Unused	3E80 ⋮ 3FC0	16000 ⋮ 16320	64 ⋮ 64	—	—	—
Memory area data For the data, see the **2.2 Memory Area Data**.						
Unused	4540 ⋮ 47C0	17728 ⋮ 18368	64 ⋮ 64	—	—	—
Output distribution selection	4800	18432	64	R/W	0: Control output 1: Distribution output	0
Output distribution bias	4840	18496	64	R/W	−100.0 to +100.0 %	0.0
Output distribution ratio	4880	18560	64	R/W	−9.999 to +9.999	1.000
Minimum ON/OFF time of proportioning cycle	48C0	18624	64	R/W	0 to 1000 ms	0
Area soak time stop function	4900	18688	64	R/W	0: No function 3: Event 3 1: Event 1 4: Event 4 2: Event 2	0
EDS mode (for disturbance 1)	4940	18752	64	R/W	0: No function 1: EDS function mode 2: Learning mode 3: Tuning mode EDS function: External disturbance suppression function	0
EDS mode (for disturbance 2)	4980	18816	64	R/W		0
EDS value 1 (for disturbance 1)	49C0	18880	64	R/W	−100.0 to +100.0 %	0.0
EDS value 1 (for disturbance 2)	4A00	18944	64	R/W		0.0
EDS value 2 (for disturbance 1)	4A40	19008	64	R/W		0.0
EDS value 2 (for disturbance 2)	4A80	19072	64	R/W		0.0

[1] Uses the same register address in the Z-TIO module and Z-DIO module.

[2] Varies with the setting of the integral/derivative time decimal point position selection.

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

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Name	Register address HEX	Register address DEC	Number of data	Attribute	Data range	Factory set value
EDS transfer time (for disturbance 1)	4AC0	19136	64	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds	0
EDS transfer time (for disturbance 2)	4B00	19200	64	R/W		0
EDS action time (for disturbance 1)	4B40	19264	64	R/W	1 to 3600 seconds	600
EDS action time (for disturbance 2)	4B80	19328	64	R/W		600
EDS action wait time (for disturbance 1)	4BC0	19392	64	R/W	0.0 to 600.0 seconds	0.0
EDS action wait time (for disturbance 2)	4C00	19456	64	R/W		0.0
EDS value learning times	4C40	19520	64	R/W	0 to 10 times (0: No learning mode)	1
EDS start signal	4C80	19584	64	R/W	0: EDS start signal OFF 1: EDS start signal ON (for disturbance 1) 2: EDS start signal ON (for disturbance 2)	0
Operation mode	4CC0	19648	64	R/W	0: Unused 1: Monitor 2: Monitor + Event function 3: Control	3
Communication switch (for logic) ♥	4D00	19712	64	R/W	b0 to b3: Communication switch 1 to 4 b4 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 15]	0
DO manual output ♣ ♥	4D40	19776	64	R/W	b0 to b7: DO1 manual output to DO8 manual output b8 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 255]	0
DO output distribution selection ♣	4D80	19840	64	R/W	0: DO output 1: Distribution output	0
DO output distribution bias ♣	4DC0	19904	64	R/W	–100.0 to +100.0 %	0.0
DO output distribution ratio ♣	4E00	19968	64	R/W	–9.999 to +9.999	1.000
DO proportioning cycle time ♣	4E40	20032	64	R/W	0.1 to 100.0 seconds M: Relay contact output D: Open collector output	M output: 20.0 D output: 2.0
DO minimum ON/OFF time of proportioning cycle ♣	4E80	20096	64	R/W	0 to 1000 ms	0
Unused	4EC0 ⋮ 4F80	20160 ⋮ 20352	64 ⋮ 64	—	—	—

2.2 Memory Area Data

The register addresses, 4000H to 453FH are used for checking and changing each set value belonging to the memory area.

Name	Register address HEX	Register address DEC	Number of data	Attribute	Data range	Factory set value
Setting memory area number	4000	16384	64	R/W	1 to 8	1
Event 1 set value (EV1)	4040	16448	64	R/W	Deviation action, Deviation action between channels, Temperature rise completion range*: –Input span to +Input span Process action, SV action: Input scale low to Input scale high Manipulated output value (MV): –5.0 to +105.0 % * When temperature rise completion is selected at Event 3 action type.	50
Event 2 set value (EV2)	4080	16512	64	R/W		50
Event 3 set value (EV3)	40C0	16576	64	R/W		50
Event 4 set value (EV4)	4100	16640	64	R/W		50
Control loop break alarm (LBA) time	4140	16704	64	R/W	0 to 7200 seconds (0: Unused)	480
LBA deadband	4180	16768	64	R/W	0 (0.0) to Input span	0 (0.0)
Set value (SV)	41C0	16832	64	R/W	Setting limiter (low) to Setting limiter (high)	TC/RTD: 0 °C [°F] V/I: 0.0 %
Proportional band [heat-side]	4200	16896	64	R/W	TC/RTD inputs: 0 (0.0, 0.00) 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]	4240	16960	64	R/W	PID control or heat/cool PID control: 0 to 3600 seconds or 0.0 to 1999.9 seconds [1] (0, 0.0: PD action) Position proportioning control: 1 to 3600 seconds or 0.1 to 1999.9 seconds [1]	240
Derivative time [heat-side]	4280	17024	64	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds [1] (0, 0.0: PI action)	60
Control response parameter	42C0	17088	64	R/W	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]	4300	17152	64	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]	4340	17216	64	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds [1] (0, 0.0: PD action)	240
Derivative time [cool-side]	4380	17280	64	R/W	0 to 3600 seconds or 0.0 to 1999.9 seconds [1] (0, 0.0: PI action)	60
Overlap/Deadband	43C0	17344	64	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 Minus (–) setting results in overlap. However, the overlapping range is within the proportional range.	0
Manual reset	4400	17408	64	R/W	–100.0 to +100.0 %	0.0
Setting change rate limiter (up)	4440	17472	64	R/W	0 to Input span/unit time * 0 (0.0): Unused	0 (0.0)
Setting change rate limiter (down)	4480	17536	64	R/W	* Unit time: 60 seconds (factory set value)	0 (0.0)
Area soak time	44C0	17600	64	R/W	0 to 11999 seconds or 0 to 5999 minutes	0
Link area number	4500	17664	64	R/W	0 to 8 (0: No link)	0

[1] Varies with the setting of the integral/derivative time decimal point position selection.

2.3 COM-JL Communication Data

The register addresses, FA00H (64000) or more are used for checking and changing each set value of the COM-JL.

: The value of this item should always be set to 4 (Z-TIO/Z-DIO modules).

♠: These items become valid by turning off the power of the COM-JL once, and then turning it on again after the settings are changed.

★: This setting (factory set value: 64) causes each address to be shifted by 64 for each communication item in the SRZ (Z-TIO/Z-DIO module) Communication Data and Memory Area Data. **Therefore, exercise sufficient care if you change the setting as the data mappings will also change.**

Name	Register address HEX	Register address DEC	Number of data	Attribute	Data range	Factory set value
Unused	FA00 ⋮ FA07	64000 ⋮ 64007	1 ⋮ 1	—	—	—
COM-JL error code	FA08	64008	1	RO	Bit data b0: Memory backup error b1: RAM error b2: Controller configuration error b3: Unused b4: Ethernet hardware error b5 to b15: Unused Data 0: OFF 1: ON [Decimal number: 0 to 23]	—
Unused	FA09	64009	1	—	—	—
Number of connected controller in controller communication	FA0A	64010	1	RO	0 to 31	—
Number of connected channel in controller communication	FA0B	64011	1	RO	0 to 128	—
Action mode selection ♠	FA0C	64012	1	R/W	Bit data b0: Address setting 0: Continuous setting 1: Free setting b1 to b15: Unused [Decimal number: 0 to 1]	bit 0: 1 bit 1 to 15: 0 [Decimal number: 1]
Number of connectable controller channels ♠ ★	FA0D	64013	1	R/W	1 to 128	64
Transmmision wait time of controller communication	FA0E	64014	1	R/W	0 to 100 ms	0
Backup memory state monitor	FA0F	64015	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	—
Unused	FA10 ⋮ FA27	64016 ⋮ 64039	1 ⋮ 1	—	—	—
No. 1 Controller type	FA28	64040	1	R/W	0 to 65534 4: Z-TIO/Z-DIO module	4
⋮						
No. 31 Controller type	FA46	64070	1	R/W	0 to 65534 4: Z-TIO/Z-DIO module	4
Unused	FA47	64071	1	—	—	—
No. 1 Controller state	FA48	64072	1	RO	Bit data b0: Presence or absence of controller b1: Presence or absence of abnormal response b2 to b15: Unused Data 0: Absence 1: Presence [Decimal number: 0 to 3]	—
⋮						
No. 31 Controller state	FA66	64102	1	RO	Bit data b0: Presence or absence of controller b1: Presence or absence of abnormal response b2 to b15: Unused Data 0: Absence 1: Presence [Decimal number: 0 to 3]	—
Unused	FA67	64103	1	—	—	—
No. 1 Controller address	FA68	64104	1	R/W	1 to 32 0: There is no connection controller	1
⋮						
No. 31 Controller address	FA86	64134	1	R/W	1 to 32 0: There is no connection controller	31
Automatic acquisition of controller address	FA87	64135	1	R/W	0: Do not execute the automatic acquisition 1: Execute the automatic acquisition * * Automatically reverts to 0 after automatic acquisition ends.	0

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The first edition: APR. 2007 [IMQ00]
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APR. 2007