Ethernet [Modbus/TCP] Communication Converter

COM-JL [For SRJ] Communication Data List

IMR01Y50-E1

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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 SRJ] Installation Manual (IMR01Y48-E□): Attached to the product
- COM-JL [For SRJ] Quick Instruction Manual (IMR01Y49-E□): Attached to the product
- COM-JL [For SRJ] Instruction Manual (IMR01Y51-E□): Separate volumes (Download or sold separately)

The above manuals can be downloaded from the official RKC website:
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 (Input range low to Input range high)	—

(1) Name: Name of communication data

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

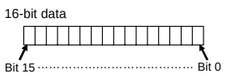
(3) Number of data: Number of data points
The address in the register address column will be the head address, and the number of data items is indicated in this column.

In the case of 8-channel type (J-TI-B modules), the number of the data per one module is the same as 16-channel type (J-TI-A modules).
(16 channels × 14 modules = 64)

(4) Attribute: RO: Read only data
(Host computer ⟵ Controller)
R/W: Read and Write data
(Host computer ⟷ Controller)

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

Bit image of bit data is as follows.



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

CH9 to CH16 of J-TI-B (8-channel type) are as follows.
- Operation mode: "0: Unused"
- Communication data except in the operation mode: Invalid [1]

[1] Communication data in CH9 to CH16 are equal to the factory set values for CH1 to CH8. When the data is written, it is written properly, but not used.

In the case of the communication data [2] corresponding to each module, as for the data of the module which is not connected, become to "Read data: 0" and "Write data: invalid".

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

Communication data includes both "Normal setting data" and "Engineering setting data" [3].

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

⚠ WARNING

Communication data in the Engineering setting data should be set according to the application before setting any parameter related to operation. Once the communication data in the Engineering setting data is set correctly, no further changes need to be made to parameters for the same application under normal conditions. If they are changed unnecessarily, it may result in malfunction or failure of the instrument. RKC will not bear any responsibility for malfunction or failure as a result of improper changes in the Engineering setting data.

Communication data in Engineering setting data is settable only when the controller is in STOP mode. However, only checking can be made even in the RUN state.

2. DATA MAP

The data map shows data which can be used for communication between the host computer and controller (SRJ).

2.1 SRJ (J-T 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 (Low limit of input range to High limit of input range)	—
Unused	0040	64	64	—	—	—
Unused	0080	128	64	—	—	—
Set value (SV) monitor	00C0	192	64	RO	Input scale low to Input scale high (Low limit of input range to High limit of input range)	—
Unused	0100	256	64	—	—	—
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	0: OFF 1: ON	—
Unused	0240	576	64	—	—	—
Unused	0280	640	64	—	—	—
Unused	02C0	704	64	—	—	—
Control loop break alarm (LBA) state monitor	0300	768	64	RO	0: OFF 1: ON	—
Manipulated output value (MV) monitor [heat-side]	0340	832	64	RO	–5.0 to +105.0 %	—
Unused	0380	896	64	—	—	—
Error code ♥	03C0	960	64	RO	Bit data Bit 0: Data back-up error Bit 1: CVM address duplication or setting error Bit 2: Module configuration error Bit 3: Adjustment data error Bit 4: A/D conversion error Bit 5 to Bit 7: Unused Data 0: OFF 1: ON [Decimal number: 0 to 31]	—
Unused	0400 ⋮ 073F	1024 ⋮ 1855	64	—	—	—
ROM version ♥	0740	1856	64	RO	Version of ROM built in the instrument	—
Unused	0780	1920	64	—	—	—
Unused	07C0	1984	64	—	—	—
PID/AT transfer	0800	2048	64	R/W	0: PID control 1: Autotunig (AT) * * Automatically reverts to 0 after autotuning ends.	0
Auto/Manual transfer	0840	2112	64	R/W	0: Auto mode 1: Manual mode	0
Unused	0880	2176	64	—	—	—
RUN/STOP transfer ♥	08C0	2240	64	R/W	0: STOP (control stop) 1: RUN (control start)	0
Unused	0900	2304	64	—	—	—
Unused	0940	2368	64	—	—	—
Event 1 set value (EV1)	0980	2432	64	R/W	• Deviation high, Deviation low –Input span to +Input span • Deviation high/low, Band 0.0 to Input span	0.0
Event 2 set value (EV2)	09C0	2496	64	R/W	• Process high, Process low Input scale low to Input scale high (Low limit of input range to High limit of input range)	0.0
Unused	0A00	2560	64	—	—	—
Unused	0A40	2624	64	—	—	—
Control loop break alarm (LBA) time	0A80	2688	64	R/W	1 to 7200 seconds	480
LBA deadband	0AC0	2752	64	R/W	0.0 to Input span	0.0
Set value (SV)	0B00	2816	64	R/W	Input scale low to Input scale high (Low limit of input range to High limit of input range)	0.0
Proportional band [heat-side]	0B40	2880	64	R/W	0.0 to Input span (Unit: °C) (0.0: ON/OFF action)	10.0
Integral time [heat-side]	0B80	2944	64	R/W	1 to 3600 seconds	240
Derivative time [heat-side]	0BC0	3008	64	R/W	0 to 3600 seconds (0: PI action)	60
Control response parameter	0C00	3072	64	R/W	0: Slow 1: Medium 2: Fast [When the P or PD action is selected, this setting becomes invalid]	2
Unused	0C40 ⋮ 0FFF	3136 ⋮ 4095	—	—	—	—
PV bias	1000	4096	64	R/W	–Input span to + Input span	0
PV digital filter	1040	4160	64	R/W	0 to 100 seconds 0: Unused	0
Unused	1080 ⋮ 11BF	4224 ⋮ 4543	—	—	—	—
Proportional cycle time [heat-side]	11C0	4544	64	R/W	1 to 100 seconds This settings are only effective for CH1 of the J-TI master. Settings made on channels other than CH1 of the J-TI master are ignored. J-TI master: J-TI module of the communication address 0, 4, 8 or C	2
Unused	1200	4608	64	—	—	—
Manual manipulated output value	1240	4672	64	R/W	–5.0 to +105.0 % When "Running" is set in the Auto mode: Normal response (Same action as writing to RO)	0.0
Unused	1280 ⋮ 147F	4736 ⋮ 5247	—	—	—	—
Input range number ♦	1480	5248	64	R/W	• TC input 0: K 0.0 to 400.0 °C 1: K 0.0 to 800.0 °C 2: K 0.0 to 1300.0 °C 3: R 0.0 to 1700.0 °C • RTD input 10: Pt100 0.0 to 400.0 °C 11: Pt100 0.0 to 600.0 °C 12: Pt100 0.0 to 800.0 °C When the input range is switched, wait for three seconds or more before running the system.	Same as the input range of the input range code specified at the time of J-TI module order.
Unused	14C0	5312	64	—	—	—
Decimal point position monitor	1500	5376	64	RO	0: No decimal place 1: One decimal place	—
Input scale high monitor	1540	5440	64	RO	High limit of input range	—
Input scale low monitor	1580	5504	64	RO	Low limit of input range	—
Input error determination point (high)	15C0	5568	64	R/W	Input error determination point (low) to Input scale high [Input error determination point (low) to High limit of input range]	Input scale high (High limit of input range)
Input error determination point (low)	1600	5632	64	R/W	Input scale low to Input error determination point (high) [Low limit of input range to Input error determination point (high)]	Input scale low (Low limit of input range)
Unused	1640 ⋮ 1C3F	5696 ⋮ 7231	—	—	—	—
Event 1 type ♦	1C40	7232	64	R/W	0: None 1: Process high [a] 2: Process low [a] 3: Deviation high [b] 4: Deviation low [b] 5: Deviation high/low [b] 6: Band [b] [a] Event hold action is available. [b] Event hold and re-hold action is available.	If the Event type is specified by the initial setting code when J-TI module ordering, that Event type will be the factory set value. If the Event type is not specified: 3
Event 1 hold action ♦	1C80	7296	64	R/W	Bit data Bit 0: with/without hold action Bit 1: with/without re-hold action Bit 2 to Bit 7: Unused Data 0: None 1: Supplied [Decimal number: 0 to 3] Setting hold or re-hold action on the event that is not available with hold and re-hold actions will just be ignored.	If the Event type is specified by the initial setting code when J-TI module ordering, the factory set value of Event hold action differs depending on the Event type. If the Event type is not specified: 1
Unused	1CC0	7360	64	—	—	—
Event 1 differential gap ♦	1D00	7424	64	R/W	0.0 to Input span	2.0
Unused	1D40	7488	64	—	—	—
Unused	1D80	7552	64	—	—	—
Event 2 type ♦	1DC0	7616	64	R/W	0: None 1: Process high [a] 2: Process low [a] 3: Deviation high [b] 4: Deviation low [b] 5: Deviation high/low [b] 6: Band [b] [a] Event hold action is available. [b] Event hold and re-hold action is available.	If the Event type is specified by the initial setting code when J-TI module ordering, that Event type will be the factory set value. If the Event type is not specified: 4
Event 2 hold action ♦	1E00	7680	64	R/W	Bit data Bit 0: with/without hold action Bit 1: with/without re-hold action Bit 2 to Bit 7: Unused Data 0: None 1: Supplied [Decimal number: 0 to 3] Setting hold or re-hold action on the event that is not available with hold and re-hold actions will just be ignored.	If the Event type is specified by the initial setting code when J-TI module ordering, the factory set value of Event hold action differs depending on the Event type. If the Event type is not specified: 1
Unused	1E40	7744	64	—	—	—
Event 2 differential gap ♦	1E80	7808	64	R/W	0.0 to Input span	2.0
Unused	1EC0 ⋮ 243F	7872 ⋮ 9279	—	—	—	—
Hot/Cold start	2440	9280	64	R/W	0: Hot start 1 1: Hot start 2 2: Cold start	1
Start determination point	2480	9344	64	R/W	0.0 to Input span 0.0: Operation starts from any start state selected by Hot/Cold start	0.0
Unused	24C0 ⋮ 25BF	9408 ⋮ 9663	—	—	—	—
Control action ♦	25C0	9664	64	R/W	0: Brilliant II PID control (direct action) 1: Brilliant II PID control (reverse action)	1
Unused	2600 ⋮ 277F	9728 ⋮ 10111	—	—	—	—
Action (high) at input error	2780	10112	64	R/W	0: Control continues (with the latest output) 1: Manipulated output value at input error (Manual mode) The Operation mode is switched to the Manual mode and the Manipulated output at Input error is output. 2: Manipulated output value at input error (Auto mode) The Operation mode remains in the Auto mode and the Manipulated output at Input error is output. When the error is recovered, the operation mode is switched to the PID control.	0
Action (low) at input error	27C0	10176	64	R/W		0
Manipulated output value at input error	2800	10240	64	R/W	–5.0 to +105.0 % Actual output value is restricted by the Output limiter.	0.0
Unused	2840 ⋮ 2B3F	10304 ⋮ 11071	—	—	—	—
AT bias	2B40	11072	64	R/W	–Input span to +Input span	0.0
Unused	2B80 ⋮ 4CBF	11136 ⋮ 19647	—	—	—	—
Operation mode	4CC0	19648	64	R/W	0: Unused (Neither monitor nor control is performed.) 1: Monitor (Only data monitor is performed.) 2: Monitor + Event function (Data monitor and event action [including LBA] are performed.) 3: Control (Control is performed.)	3
Unused	4D00 ⋮ 4EFF	19712 ⋮ 20223	—	—	—	—

♥: Communication data for each module

♦: Engineering setting data

Name	Register address		Number of data	Attri-bute	Data range	Factory set value
	HEX	DEC				
Control loop break alarm (LBA) usage selection	4F00	20224	64	R/W	0: Unused 1: Used	0
Transistor output selection	4F40	20288	64	R/W	0: No assignment 1: CH1 to CH8 2: CH9 to CH16 * 3: CH17 to CH24 4: CH25 to CH32 * 5: CH33 to CH40 6: CH41 to CH48 * 7: CH49 to CH56 8: CH57 to CH64 * * Assignable only for the J-TI-A These settings are only effective for CH1 to CH8 of the J-TI master. Settings made on channels other than CH1 to CH8 of the J-TI master are ignored. CH1 to CH8 of the J-TI master correspond to address 0 to 7 of the J-CVM. J-TI master: J-TI module of the communication address 0, 4, 8 or C	0
Event timer ♦	4F80	20352	64	R/W	0 to 255 seconds	0
Interval time ♥	4FC0	20416	64	R/W	0 to 100 ms	0
Operation mode holding setting ♥	5000	20480	64	R/W	0: Not hold Initialize the operation mode to "1: Monitor" 1: Hold	1
Communication speed ♦♥	5040	20544	64	R/W	0: 19200 bps 1: 38400 bps The data changes become valid when the power is turned on again.	1

♦: Engineering setting data
♥: Communication data for each module

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.

♠: 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 SRJ (J-TI module) Communication Data and Memory Area Data. **Therefore, exercise sufficient care if you change the setting as the data mappings will also change.**

♣: The value of this item should always be set to 6 (J-TI modules). (Factory set value: 6)

Name	Register address		Number of data	Attri-bute	Data range	Factory set value
	HEX	DEC				
Unused	FA00 ⋮ FA07	64000 ⋮ 64007	—	—	—	—
COM-JL error code	FA08	64008	1	RO	Bit data Bit 0: Memory backup error Bit 1: RAM error Bit 2: Controller configuration error Bit 3: Unused Bit 4: Ethernet hardware error Bit 5 to Bit 15: 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 Bit 0: Address setting 0: Continuous setting 1: Free setting Bit 1 to Bit 15: 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	—	—	—	—
♣ No. 1 Controller type	FA28	64040	1	R/W	0 to 65534 6: J-TI module	6
⋮						
No. 31 Controller type	FA46	64070	1	R/W	0 to 65534 6: J-TI module	6
Controller type (batch setting)	FA47	64071	1	R/W	0 to 65534 4: SRJ	4
No. 1 Controller state	FA48	64072	1	RO	Bit data Bit 0: Presence or absence of controller Bit 1: Presence or absence of abnormal response Bit 2 to Bit 15: Unused Data 0: Absence 1: Presence [Decimal number: 0 to 3]	—
⋮						
No. 31 Controller state	FA66	64102	1	RO	Bit data Bit 0: Presence or absence of controller Bit 1: Presence or absence of abnormal response Bit 2 to Bit 15: 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 99 0: No controller is connected	1 *
⋮						
No. 31 Controller address	FA86	64134	1	R/W	1 to 99 0: No controller is connected	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

* Controller address Nos.1 to 31 are settable from 1 to 99, but at the time of shipment, sequence numbers 1 to 31 are assigned.

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